〔シリーズ：最新情報“玉手箱”〕最新アリル情報

小林　賢

防衛医科大学校，検査部

はじめに

最新アリル情報はMHC誌に掲載されてからほぼ5年が過ぎました。その間にもHLAアリルはどんどん増え続けているのが現状です。HLAアリルがWHO命名委員会で毎月更新されるようになってから5年半が経ちましたので、少し統計学的にまとめてみたいと思います。

また、今回は2000年3月までに登録されている185種類のHLA-Aアリルの塩基配列を示しました。

新規HLAアリルの年別登録数

1995年にHLAアリルの更新が毎月行われるようになりました。それから5年半の間に、クラスIアリルではHLA-Aアリルが144、Bが311、Cが71種類、それぞれ増加しています。また、クラスIIアリルでは、HLA-DPB1が32、DQB1が21、DRB (DRB1, DRB3, DRB4, DRB5) が200種類、それぞれ増加しています。年平均では、HLA-Aアリルが26、Bが57、Cが13、DPB1が6、DQB1が4、DRBが36種類、それぞれ増加しています。HLA-Bアリルの増加数は、HLA-Aの約2倍、HLA-DRBの約1.5倍とかなりの速度で増加しています。図1に年別の新規アリル登録数を示しましたが、1995年から1997間ではその増加数は減少傾向にありました。しかしながら、それ以降は逆に増加に転じています。この理由として、ワークショップが影響していると考えられます。1996年の国際ワークショップが終了したため、アリルの増加数は減少していましたが、2001年に開催される国際ワークショップ（2002年5月に延期されています。）のための解析が進むにつれ、アリル

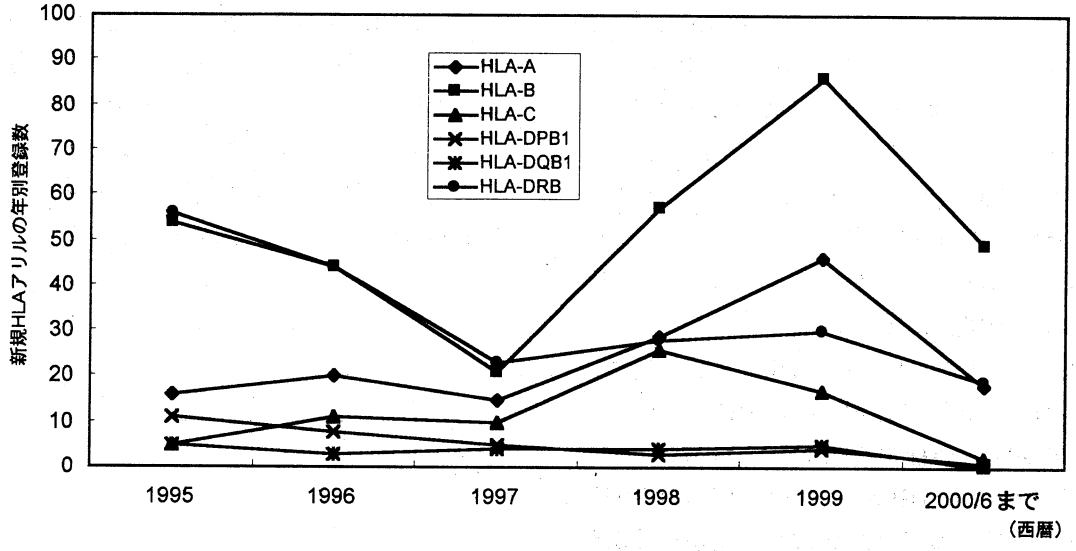

図1　新規HLAアリルの年別登録数

連絡先：〒359-8513　埼玉県所沢市並木3-2
防衛医科大学校検査部
小林　賢
電話042-995-1511内線3721
ファックス042-996-5217
電子メール　kobayasi@me.ndmc.ac.jp

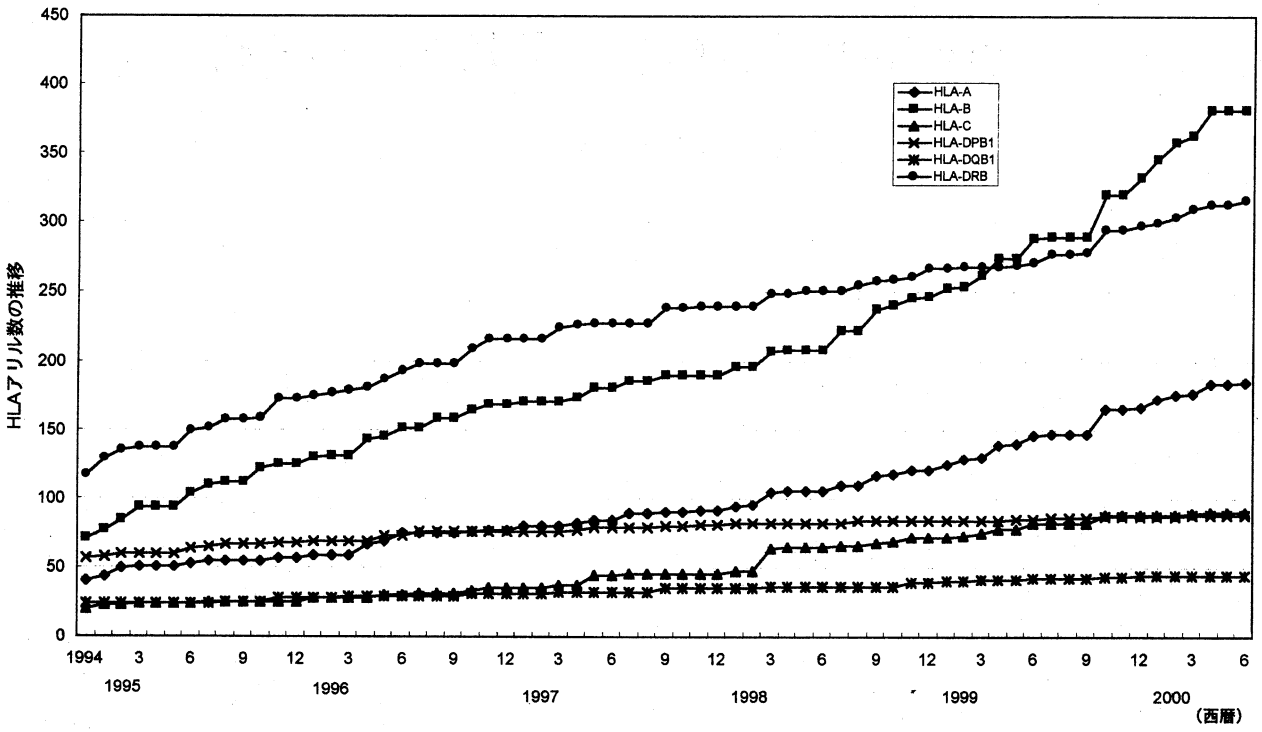

図2 HLAアリル数の推移

数が増加してきたものと思われます。今後も民族学的調査が国際レベルで進行すると、アリル数は一挙に増加することが予想されます。

HLAアリル数の推移

1995年から増加したHLAアリルの数は前記しましたが、その推移を図2に示しました。HLA-AやDRBなどは平均的に増加していることがわかります。それに対して、HLA-Bは1998年6月まではHLA-DRBとほぼ同じ増加率を示していましたが、7月からはそれまでの約1.8倍の延びに転じています。この傾向は次回のワークショップが終了する頃まで続くものと予想されます。

1994年時点で登録されていたHLAアリル数は、HLA-Aが41種類、Bが71種類、Cが20種類、DPB1が57種類、DQB1が24種類、DRBが117種類でした。1994年のアリル数からHLA-Aアリル（2000年6月までに登録されているアリル数は185種類）は3.5倍、B（382種類）は5.4倍、C（91種類）は4.3倍、DPB1（89種類）は1.6倍、DQB1（45種類）は1.9倍、DRB（317種類でDRB1が254種類、DRB3-5が63種類）は2.7倍になったことになります。このデータからもわかるようにクラスIアリルの延びはクラスIIに比べて全体的に高いことから、クラスIアリルの解析が特に進んでいるといえます。

HLA-Aアリルの塩基配列

図3に各HLA-Aアリルの塩基配列を示しました。また、今回からエクソン構造も同時に記載することにしました。HLA-Aアリルの構造は、1098塩基が8個のエクソンで分断されています。実際に細胞膜上に発現されるHLA-A抗原のα鎖タンパク質は、341個のアミノ酸から形成されています。

Positions	Exon 1																								Exon 1
Nucleotide	1									30										60					
Amino Acid	-24			-21										-11										-1	1
A*01011	ATG	GCC	GTC	ATG	GCG	CCC	CGA	ACC	CTC	CTC	CTG	CTA	CTC	TCG	GGG	GCC	CTG	GCC	CTG	ACC	CAG	ACC	TGG	GCG	GGC
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	---
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*02011	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*02013	***	***	***	***	***	***	**-	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0203	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0204	***	***	***	***	***	***	***	***	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0205	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0206	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0207	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	---	---	---
A*0209	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0210	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0211	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0212	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0213	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0215N	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0216	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*02171	---	---	---	---	--T	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
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A*0218	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0221	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0222	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0226	***	***	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*0231	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0232N	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0233	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
A*0234	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*0244	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*0305	***	***	***	***	***	***	***	***	***	***	***	***	*--	---	---	---	---	---	---	---	---	---	---	---	---
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*1103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*1105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*2305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*2402102L	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*2405	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
A*2407	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---
A*2408	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---
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A*2410	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--
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A*2413	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	*--

図3 HLA-Aアリルの塩基配列

A*2414	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	**-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---
A*2427	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2901	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*2902	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*2903	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3202	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3303	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	A--	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3402	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6601	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68012	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6802	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68031	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	.T-	---	---	---	---	---	---	---	---	---
A*6812	***	***	***	***	***	***	***	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6813	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	*--	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6817	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6901	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7401	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	A--	---	---
A*7402	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	---	---	---
A*7403	---	---	---	---	---	---	---	---	---	---	---	---	---	-T-	---	---	---	---	---	---	---	---	A--	---	---
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	---
A*8001	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---

Positions	Exon 2																								
Nucleotide					90										120										150
Amino Acid									10										20						
A*01011	TCC	CAC	TCC	ATG	AGG	TAT	TTC	TTC	ACA	TCC	GTG	TCC	CGG	CCC	GGC	CGC	GGG	GAG	CCC	CGC	TTC	ATC	GCC	GTG	GGC
A*01012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0102	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*0103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0107	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02011	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02013	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02014	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0202	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0203	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0204	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0205	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0206	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0207	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0208	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0209	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0210	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0211	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0212	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0213	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0214	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0215N	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0216	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02171	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02172	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0218	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0219	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02201	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*02202	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0221	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0222	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0224	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0225	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0226	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0227	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0228	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0229	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0230	--T	--G	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0231	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0232N	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0233	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0234	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0235	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0236	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0237	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0238	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0239	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0240	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0241	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0242	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T-A	---	---
A*0243N	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0244	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0245	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*0246	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03013	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0306	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11011	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---
A*1103	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1104	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1106	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2301	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2303	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2304	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2305	---	---	---	---	---	-G-	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2306	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24031	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24032	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2404	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2406	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2407	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	---	--A	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2410	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2411N	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2414	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2415	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2416	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2417	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2418	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2420	---	--A	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2421	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2422	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2423	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2424	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2425	---	---	---	---	---	-G-	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2426	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2427	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2428	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2501	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2503	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2601	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2606	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2607	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2609	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2610	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2611N	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2612	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2613	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2614	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2615	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2901	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2902	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2903	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2904	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3001	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3002	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3003	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3004	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3006	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3007	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3008	--T	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*3009	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	A-T	--A	---	---	---	---	---	--A	---	---
A*31012	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3102	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3103	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3104	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3105	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3201	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3202	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3203	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3204	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3205	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3206	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3301	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3303	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3304	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3305	---	---	---	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3401	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3402	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3403	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6601	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6603	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68011	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68012	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6802	---	---	---	---	---	---	---	-A-	--C	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68031	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68032	--T	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6804	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6805	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6806	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6807	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6808	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6809	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6810	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6811N	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6812	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6813	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6814	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6815	---	---	---	---	---	---	---	-A-	--C	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6816	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6817	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6901	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7401	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7402	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7403	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7404	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*8001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---

Positions	Exon 2																								
Nucleotide										180										210					
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A*01011	TAC	GTG	GAC	GAC	ACG	CAG	TTC	GTG	CGG	TTC	GAC	AGC	GAC	GCC	GCG	AGC	CAG	AAG	ATG	GAG	CCG	CGG	GCG	CCG	TGG
A*01012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0107	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02013	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02014	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0202	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	-G-	---	---	---	---	---	---	---
A*0203	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0204	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0205	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	-G-	---	---	---	---	---	---	---
A*0206	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0207	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0208	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	-G-	---	---	---	---	---	---	---
A*0209	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0211	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0212	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0213	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0214	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	-G-	---	---	---	---	---	---	---
A*0215N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0216	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02171	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02172	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0218	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0219	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02201	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*02202	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0221	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0222	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0224	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0225	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0226	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0227	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0228	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0229	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0231	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	-G-	---	---	---	---	---	---	---
A*0232N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0233	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0234	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0235	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0236	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0237	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0238	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0239	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0240	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0241	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0242	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0243N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0244	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0245	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0246	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*03012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*03013	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0305	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*0306	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*1103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*1105	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*1106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2301	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2303	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2305	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2306	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2402101	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2402102L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*24022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*24031	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*24032	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2404	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2405	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2406	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2407	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2408	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2409N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2410	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2411N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---

A*2413	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2414	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2415	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2416	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2417	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2418	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2420	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2421	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2422	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2423	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2424	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2425	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2426	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2427	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2428	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2501	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2503	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2606	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2607	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2609	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2610	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2611N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2612	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2613	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2614	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2615	---	---	---	---	---	---	---	---	---	--G	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*2901	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	--A	---	---
A*2902	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	--A	---	---
A*2903	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	--A	---	---
A*2904	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	--A	---	---
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3004	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3006	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3009	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*31012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3105	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3201	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3202	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3203	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3204	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3205	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3206	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3301	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3303	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3305	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3401	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3402	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3403	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6603	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*68011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*68012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6802	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*68031	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*68032	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6804	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6805	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6806	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6807	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6808	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6809	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6810	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6811N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6812	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6813	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6814	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6815	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6816	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6817	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*6901	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*7401	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*7402	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*7403	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*7404	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---
A*8001	---	---	---	---	T--	---	---	---	-A-	---	---	---	---	---	---	---	---	-G-	---	---	---	---	---	---	---

Positions	Exon 2																								
Nycleotide					240				60						270				70						300
Amino Acid																									
A*01011	ATA	GAG	CAG	GAG	GGG	CCG	GAG	TAT	TGG	GAC	CAG	GAG	ACA	CGG	AAT	ATG	AAG	GCC	CAC	TCA	CAG	ACT	GAC	CGA	GCG
A*01012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0107	---	---	---	---	A--	--T	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	-A-
A*02011	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*02012	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*02013	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C-T	---	-T-
A*02014	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0202	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0204	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0205	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0207	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0208	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	---	G--	---	---	---	---	---	---	C--	---	-T-
A*0209	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0212	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0216	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0225	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0226	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0227	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0228	---	---	---	---	A-T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0229	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	C-A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0233	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0234	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	--G	---	---	---	C--	---	-T-
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A*0237	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
A*0238	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0241	---	---	---	---	--T	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	C--	---	-T-
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A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G--	---	---	--G	---	---	---	---	---	-T-
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A*2411N	---	---	---	---	---	---	---	---	---	---	G--	---	---	G--	--A	G--	---	---	---	---	---	---	---	---	-A-

A*2413	---	---	---	---	---	---	---	---	---	---	G--	---	---	G--	--A	G--	---	---	---	---	---	---	---	---	-A-
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A*2418	---	---	---	---	---	---	---	---	---	---	G--	---	---	G--	--A	G--	---	---	---	---	---	---	---	---	-A-
A*2420	---	---	---	---	---	---	---	---	---	---	G--	---	---	G--	--A	G--	---	---	---	---	---	---	---	---	-A-
A*2421	---	---	---	---	---	---	---	---	---	---	G--	---	---	G--	--A	G--	---	---	---	---	---	---	---	---	-A-
A*2422	---	---	---	---	---	---	---	---	---	---	G--	---	---	G--	--A	G--	---	---	---	---	---	---	---	---	-A-
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A*2601	---	---	---	---	---	---	---	---	---	---	-G-	A-C	---	---	---	G--	---	---	---	---	---	---	---	---	---
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A*2603	---	---	---	---	---	---	---	---	---	---	-G-	A-C	---	---	---	G--	---	---	---	---	---	---	C--	---	-T-
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A*2606	---	---	---	---	---	---	---	---	---	---	-G-	A-C	---	---	---	G--	---	---	---	---	---	---	C--	---	-T-
A*2607	---	---	---	---	---	---	---	---	---	---	GG-	---	---	---	--A	G--	---	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	---	---	-G-	A-C	---	---	---	G--	---	---	---	---	---	---	---	---	---
A*2609	---	---	---	---	---	---	---	---	---	---	-G-	A-C	---	---	---	G--	---	---	---	---	---	---	---	---	---
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A*3001	---	---	---	---	A--	--T	---	---	---	---	---	---	---	---	---	G--	---	---	--G	---	---	---	---	---	-T-
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A*8001	---	---	---	---	-A-	---	---	---	---	---	G--	---	---	---	---	G--	---	---	---	---	---	---	A--	---	---

Positions																									
Nucleotide										330			Exon 2				Exon 3				360				
Amino Acid				80										90										100	
A*01011	AAC	CTG	GGG	ACC	CTG	CGC	GGC	TAC	TAC	AAC	CAG	AGC	GAG	GAC	GGT	TCT	CAC	ACC	ATC	CAG	ATA	ATG	TAT	GGC	TGC
A*01012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--G	---	---	---	---
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A*0106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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A*02012	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*02013	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*02014	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0202	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	-GG	---	---	---	---
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A*0208	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	-GG	---	---	---	---
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A*0212	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0213	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0214	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	-GG	---	---	---	---
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A*02171	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*02172	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*0218	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	-G-	---	---
A*0219	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
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A*0229	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0230	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0231	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0232N	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0233	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	-C-	---	---
A*0234	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0235	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0236	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0237	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0238	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0239	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	-T-	---	---
A*0240	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0241	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0242	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0243N	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0244	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0245	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*0246	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*03011	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*03012	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*03013	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*0302	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*0303N	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	...
A*0304	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*0305	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*0306	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*11011	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1103	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1104	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1106	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2301	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2302	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2303	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2304	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2305	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2306	---	---	C--	-T-	GC-	-T-	C--	---	---	---	G--	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2402101	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2402102L	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*24022	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*24031	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*24032	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2404	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2405	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2406	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2407	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2408	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2409N	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2410	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2411N	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---

A*2413	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2414	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*2415	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	---	---	---
A*2416	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*2417	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2418	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2420	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2421	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2422	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2423	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2424	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2425	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2426	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2427	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2428	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	C--	---	--G	---	-T-	---	---
A*2501	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2502	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2503	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2602	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2603	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2604	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2605	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2606	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2607	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2609	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2610	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2611N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2612	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2613	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2614	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2615	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*2901	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*2902	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*2903	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*2904	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3001	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3003	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3004	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3006	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3007	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3008	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3009	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*31012	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3102	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3103	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3104	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3105	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3201	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3202	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3203	---	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3204	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---
A*3205	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3206	-G-	---	C--	-T-	GC-	-T-	C--	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3301	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3303	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3304	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3305	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*3401	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*3402	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3403	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*6601	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-GG	---	---	---	---
A*6602	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	-GG	---	---	---	---
A*6603	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	-GG	---	---	---	---
A*68011	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*68012	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6802	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	-GG	---	---	---	---
A*68031	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*68032	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6804	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6805	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6806	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6807	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6808	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6809	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6810	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6811N	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6812	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6813	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6814	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6815	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	-GG	---	---	---	---
A*6816	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6817	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*6901	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	G--	---	-GG	---	---	---	---
A*7401	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*7402	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*7403	G--	---	-C-	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*7404	G--	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---	---	---	---	--G	---	---	---	---
A*8001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Positions	Exon 3																								
Nucleotide					390										420										450
Amino Acid									110										120						
A*01011	GAC	GTG	GGG	CCG	GAC	GGG	CGC	TTC	CTC	CGC	GGG	TAC	CGG	CAG	GAC	GCC	TAC	GAC	GGC	AAG	GAT	TAC	ATC	GCC	CTG
A*01012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0107	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02011	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02012	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02013	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02014	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0202	---	---	---	T--	---	T--	---	---	--G	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0203	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0204	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0205	---	---	---	T--	---	T--	---	---	--G	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0206	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0207	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0208	---	---	---	T--	---	T--	---	---	--G	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0209	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0210	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0211	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0212	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0213	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0214	---	---	---	T--	---	T--	---	---	--G	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0215N	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0216	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02171	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02172	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0218	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0219	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02201	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*02202	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0221	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0222	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0224	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0225	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0226	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0227	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0228	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0229	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0230	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0231	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0232N	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0233	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0234	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0235	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0236	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0237	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0238	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0239	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0240	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0241	---	---	---	T--	---	T--	---	---	---	---	---	---	-A-	---	T--	---	---	---	---	---	---	---	---	---	---
A*0242	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0243N	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0244	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0245	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*0246	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*03011	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03013	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0302	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	...	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0306	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2301	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2302	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2303	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	T--
A*2304	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2305	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2306	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2402101	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2402102L	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*24022	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*24031	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*24032	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2404	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2405	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2406	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2407	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2408	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2409N	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2410	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2411N	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---

A*2413	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2414	---	---	---	T--	---	T--	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2415	---	---	---	---	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2416	---	---	---	T--	---	---	---	---	---	---	---	---	-A-	---	---	---	---	---	---	---	---	---	---	---	T--
A*2417	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2418	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2420	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2421	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2422	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2423	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2424	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2425	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2426	---	---	---	T--	---	---	---	---	---	-A-	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2427	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2428	---	---	---	T--	---	---	---	---	---	---	---	---	-AC	---	T--	---	---	---	---	---	---	---	---	---	---
A*2501	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2503	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2601	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	A--	--T	---	---	---	---	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2606	---	---	---	---	---	---	---	---	---	---	---	---	-A-	-G-	---	--T	---	---	---	---	---	---	---	---	---
A*2607	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2609	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2610	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2611N	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2612	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2613	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2614	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2615	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*2901	C--	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--
A*2902	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--
A*2903	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--
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A*3006	---	---	---	T--	---	---	---	---	---	---	---	--T	GAA	---	C--	---	---	---	---	---	---	---	---	---	---
A*3007	---	---	---	T--	---	---	---	---	---	---	---	--T	GAA	---	C--	---	---	---	---	---	---	---	---	---	---
A*3008	---	---	---	T--	---	---	---	---	---	---	---	--T	GAA	---	C--	---	---	---	---	---	---	---	---	---	---
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A*3402	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---
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A*6601	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	---	---	---	---	---	-A-	---	---	--T	---	---	---	---	---	---	---	---	---
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A*68012	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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A*68031	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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A*6809	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6810	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6811N	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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A*8001	---	---	---	T--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Positions	Exon 3																									
Nucleotide										480										510						
Amino Acid				130										140												150
A*01011	AAC	GAG	GAC	CTG	CGC	TCT	TGG	ACC	GCG	GCG	GAC	ATG	GCA	GCT	CAG	ATC	ACC	AAG	CGC	AAG	TGG	GAG	...	GCG	GTC
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Positions	Exon 3																								
Nucleotide						540				160						570				170					
Amino Acid																									
A*01011	CAT	GCG	GCG	GAG	CAG	CGG	AGA	GTC	TAC	CTG	GAG	GGC	CGG	TGC	GTG	GAC	GGG	CTC	CGC	AGA	TAC	CTG	GAG	AAC	GGG
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A*0205	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0206	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0207	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0208	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0209	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0210	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0211	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0212	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0213	---	-A-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0214	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0215N	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0216	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	GA-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*02171	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*02172	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0218	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0219	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*02201	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*02202	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0221	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0222	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0224	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0225	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0226	---	-A-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0227	---	---	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0228	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0229	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0230	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0231	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0232N	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0233	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0234	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0235	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0236	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*0237	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*0238	---	-A-	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0239	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0240	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0241	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0242	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0243N	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0244	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0245	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0246	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*03011	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*03012	---	-A-	---	---	---	-T-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*03013	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0302	---	-T-	---	---	---	-A-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0303N	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0304	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*0305	---	-A-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	C--
A*0306	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	-C-	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*11011	---	---	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*1103	-G-	-A-	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*1104	---	---	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*1105	---	---	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*1106	---	---	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2301	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	-G-	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2303	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2304	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2305	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2306	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*24031	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*24032	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2404	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2406	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2407	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2410	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2411N	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2414	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2415	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2416	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2417	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2418	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2420	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2421	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2422	---	-T-	---	---	---	T--	---	---	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2423	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	T--	---	---	---	---	---	---	---	---
A*2424	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2425	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2426	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2427	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2428	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2501	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2502	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2503	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2601	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2602	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2603	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2604	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	-T-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2605	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2606	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2607	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2608	---	-A-	---	---	---	-A-	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2609	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2610	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2611N	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2612	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2613	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2614	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2615	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2901	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2902	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*2903	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*2904	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3001	-G-	TG-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3002	-G-	CG-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3003	-G-	CG-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3004	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3006	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3007	-G-	CG-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3008	-G-	TG-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3009	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*31012	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3102	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3103	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3104	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3105	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	---	---	---	---	---	---	---	---	---	---
A*3201	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3202	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3203	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3204	---	-A-	---	---	---	TT-	---	-C-	---	---	--T	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3205	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3206	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3301	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	C--	---	---	---
A*3303	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3304	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	C--	---	---	---
A*3305	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	C--	---	---	---
A*3401	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3402	---	-A-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3403	---	-A-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*4301	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6601	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	---	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6602	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	GA-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6603	---	-A-	---	---	---	T--	---	-C-	---	---	---	---	GA-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*68011	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*68012	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6802	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*68031	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*68032	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6804	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6805	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6806	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6807	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6808	---	-T-	---	---	---	-T-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6809	---	-T-	---	---	---	-A-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6810	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6811N	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6812	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6813	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6814	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6815	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6816	-T-	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6817	---	-T-	---	---	---	T--	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*6901	---	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*7401	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*7402	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*7403	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*7404	-G-	-T-	---	---	---	TT-	---	-C-	---	---	---	---	AC-	---	---	--G	T--	---	---	---	---	---	---	---	---
A*8001	-G-	CG-	---	---	---	-T-	---	-C-	---	---	---	---	GA-	---	---	---	---	---	---	---	---	---	---	---	---

Positions																									
					Exon 3							Exon 4													
Nucleotide	600											630											660		
Amino Acid					180											190									
A*01011	AAG	GAG	ACG	CTG	CAG	CGC	ACG	GAC	CCC	CCC	...	AAG	ACA	CAT	ATG	ACC	CAC	CAC	CCC	ATC	TCT	GAC	CAT	GAG	GCC
A*01012	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	C..	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*02012	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0203	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0204	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0205	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0206	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0207	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0208	---	---	---	---	---	---	-**	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0210	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0211	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0212	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0213	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0214	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0216	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*02171	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*02172	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0218	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0219	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0222	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0224	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0227	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0231	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0233	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0234	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0235	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*0244	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1103	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24032	---	---	---	---	---	---	--T	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2410	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	---	---	---	---	---	---	---	---	---	---	C..	---	---	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2423	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2503	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2606	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2609	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2612	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2901	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2902	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2903	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*2904	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3004	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	---	---	---	---	---	---	---	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3102	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	---	---	---	---	---	---	---	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3105	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3202	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3203	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3206	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	---	---	---	---	---	---	---	---	...	-G-	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3303	---	---	---	---	---	---	---	---	---	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3304	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	---	---	---	---	---	---	G--	---	...	---	---	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3402	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*3403	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*6601	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*6603	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*68012	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*6802	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*68031	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*68032	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*6809	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*6812	---	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*6814	---	---	---	---	---	---	G--	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*6901	---	---	---	---	---	---	---	---	G--	---	...	--A	--G	---	---	--T	---	---	G-T	G--	---	---	---	--A	---
A*7401	---	---	---	---	---	---	---	---	G--	---	...	---	--G	---	---	--T	---	---	G-T	G--	---	---	---	---	---
A*7402	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	---	---	---	---	---	---	---	-**	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Positions	Exon 4																								
Nucleotide							690										720								
Amino Acid	200										210										220				
A*01011	ACC	CTG	AGG	TGC	TGG	GCC	CTG	GGC	TTC	TAC	CCT	GCG	GAG	ATC	ACA	CTG	ACC	TGG	CAG	CGG	GAT	GGG	GAG	GAC	CAG
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0203	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0204	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0205	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0206	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0207	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0210	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0211	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0212	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0213	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0216	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02171	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02172	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0218	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0222	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0231	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0233	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0234	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0244	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--
A*2410	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	--T	---	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2901	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2902	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2903	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3202	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3303	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3402	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6601	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68012	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6802	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68031	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	---	---	---	---	---	---	---	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6812	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6901	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7401	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7402	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	--T	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Positions	Exon 4																							
Nucleotide		750										780										810		
Amino Acid						230											240							
A*01011	ACC	CAG	GAC	ACG	GAG	CTC	GTG	GAG	ACC	AGG	CCT	GCA	...	GGG	GAT	GGA	ACC	TTC	CAG	AAG	TGG	GCG	GCT	GTG	GTG
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	--C	.--	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0203	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0204	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0205	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0206	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0207	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	---	---	---	---	---	---	---	---	---	-A-	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0210	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0211	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0212	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0213	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0216	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*02171	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*02172	---	---	---	---	---	---	---	---	---	---	---	---	...	-**	***	***	***	***	***	***	***	***	***	***	***
A*0218	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0222	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0231	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0233	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0234	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	---	---	---	---	---	---	---	---	---	--C	A..	---	---	---	---	---	---	---	---	---	---	---	---
A*0244	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*1103	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2302	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2402101	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2402102L	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*24032	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2405	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2408	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2409N	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2410	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---

A*2413	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	--A	---	---	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2502	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2602	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2603	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2604	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2605	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2608	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*2901	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*2902	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*2903	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3202	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3303	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3402	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*6601	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	--G	---	---	---	---	---	---	T--	---	---
A*6602	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*68012	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*6802	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*68031	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6812	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	-T-	---	---	---
A*6901	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---
A*7401	---	---	---	---	---	--T	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	T--	---	---
A*7402	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	...	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	---	---	---	---	---	---	---	---	---	---	---	---	...	---	---	---	---	---	---	---	---	---	---	---	---

Positions	Exon 4																								
Nucleotide								840										870							
Amino Acid		250										260										270			
A*01011	GTG	CCT	TCT	GGA	GAG	GAG	CAG	AGA	TAC	ACC	TGC	CAT	GTG	CAG	CAT	GAG	GGT	CTG	CCC	AAG	CCC	CTC	ACC	CTG	AGA
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--*	***
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0203	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0204	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0205	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0206	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0207	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0210	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0211	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0212	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0213	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	---	---	C--	---	---	---	--A	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0216	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*02171	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*02172	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0218	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0222	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0231	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0233	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0234	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*0244	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2410	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	--A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2502	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2602	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2603	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2604	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2605	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2901	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2902	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2903	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	---	---	---	---	---	---	---	--*	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3202	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*3303	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3402	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6601	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6602	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*68012	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*6802	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*68031	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6812	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	--*	***	***	***	***	***	***	***	***
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*6901	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---	---	---	---
A*7401	---	---	---	---	C--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7402	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	--A	---	---	---	A--	---	A--	---	---	---	---	---	---	---	---	---	---	---	---	G--	---	---	---	---	---

Positions			Exon 5																						
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Amino Acid							280										290								
A*01011	TGG	GAG	CTG	TCT	TCC	CAG	CCC	ACC	ATC	CCC	ATC	GTG	GGC	ATC	ATT	GCT	GGC	CTG	GTT	CTC	CTT	GGA	GCT	GTG	ATC
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	---	-**	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0203	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0204	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0205	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0206	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0207	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0210	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0211	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0212	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0213	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0216	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*02171	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*02172	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0218	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0222	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0231	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0233	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0234	---	-**	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*0244	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-C-	---	---	---
A*0305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	---	-**	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1102	---	-**	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	---	---	-CA	---	---	---	---	---	G--	-A-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	---	---	-CA	---	---	---	---	---	G--	-A-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2410	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	---	---	-CA	---	---	---	---	---	G--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2502	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2602	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2603	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2604	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2605	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2608	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*2901	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*2902	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*2903	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	A--	T--
A*3202	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	A--	T--
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	A--	T--
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*3303	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	---	T--
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	C--	---	---	---	---	---	T--	---	---	---	---
A*3402	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*6601	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*6602	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*68012	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*6802	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*68031	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6812	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*6901	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	T--	---	---	---	---
A*7401	---	---	-C-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--A	---	---	T--	---	---	A--	T--
A*7402	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	---	---	-CA	---	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Positions																									
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Amino Acid		300										310										320			
A*01011	ACT	GGA	GCT	GTG	GTC	GCT	GCC	GTG	ATG	TGG	AGG	AGG	AAG	AGC	TCA	GAT	AGA	AAA	GGA	GGG	AGT	TAC	ACT	CAG	GCT
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0203	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0204	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0205	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0206	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0207	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0210	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0211	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0212	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0213	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0216	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*02171	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*02172	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0218	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0222	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0231	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0233	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0234	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*0244	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2302	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2402101	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2402102L	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*24032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2405	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2408	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2409N	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2410	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---

A*2413	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	---	---	---	---	---	---	--T	---	---	---	---	---	--C	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2502	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2602	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2603	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2604	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2605	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2608	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2901	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2902	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2903	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3202	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3303	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3402	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*6601	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*6602	G--	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*68012	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*6802	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*68031	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6812	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*6901	---	---	---	---	---	---	--T	---	---	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*7401	G--	---	---	---	---	---	--T	---	-G-	---	---	---	---	---	---	---	---	---	---	---	--C	---	T--	---	---
A*7402	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	G--	---	---	---	---	---	---	---	---	---	---	-A-	---	---	---	-T-	---	---	---	---	--C	---	T--	---	---

Positions																			
				Exon 7												Exon 7			Exon 8
Nucleotide			1050										1080					1098	
Amino Acid							330										340		
A*01011	GCA	AGC	AGT	GAC	AGT	GCC	CAG	GGC	TCT	GAT	GTG	TCT	CTC	ACA	GCT	TGT	AAA	GTG	TGA
A*01012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0102	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0104N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0105N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0107	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02014	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0203	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0204	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0205	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0206	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0207	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0208	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0209	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0211	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0212	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0213	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0214	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0215N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0216	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02171	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*02172	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0218	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0219	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02201	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*02202	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0221	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0222	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0224	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0225	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0226	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0227	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0228	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0229	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0231	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0232N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0233	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0234	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0235	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0236	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0237	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0238	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0239	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0240	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0241	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0242	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0243N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0244	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0245	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0246	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03011	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*03012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*03013	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0302	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*0303N	---	---	---	---	---	---	---	---	---	---	---	--C	---	---	---	---	---	---	---
A*0304	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*0305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*0306	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*11011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*11012	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1104	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*1105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*1106	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2301	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2302	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2303	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2306	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402101	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2402102L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24022	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*24031	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*24032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2404	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2405	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2406	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2407	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2408	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2409N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2410	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2411N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

A*2413	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2414	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2415	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2416	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2417	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2418	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2420	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2421	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2422	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*2423	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2424	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2425	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2426	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2427	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2428	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2501	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2502	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2503	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2601	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2602	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2603	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2604	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2605	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2606	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2607	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2608	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2609	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2610	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2611N	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2612	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2613	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2614	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*2615	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2901	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2902	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	***
A*2903	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*2904	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3003	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3004	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3006	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3007	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*3009	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*31012	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3102	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3103	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3104	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3105	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3201	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3202	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3203	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3204	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3205	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3206	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3301	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3303	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3304	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3305	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3401	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3402	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*3403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*3601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*4301	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*6601	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*6602	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*6603	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*68011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6802	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68031	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*68032	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6804	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6805	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6806	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6807	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6808	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6809	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6810	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6811N	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6812	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6813	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6814	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6815	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6816	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*6817	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*6901	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A*7401	---	---	---	---	---	---	---	---	---	---	A--	---	---	---	---	---	---	---	---
A*7402	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7403	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*7404	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
A*8001	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---