Gene: COL4A5 - Sequence: NG_011977.1 Transcript: NM_000495.3 - Protein: NP_000486.1 Date : March 2, 2015

1^{st} line: Base nu 2^{nd} line: Base se 3^{rd} line: Amino 4^{th} line: Amino	equence. lowe acid sequence	er case Intro e. Printed o	ons, upper cas on FIRST bas	se Exons se of codon	of 10
Exon 1 Sta	rt: 5001	End: 52	283 Leng	th: 282	
· · · · · tatcaacggaag	· · gtgcaaatg	aacgaataq	· · · gaaaagcttc	 ccggttggact	 tcatggtgctc
agtcaactagtc	 tggaagttt	ccctcccc	· · caaataactg	· · agcgtcactco	· · cctcgcaggtt
gccggtgcagtc	taaaactgt	• ggcggagto	 gatactcaaa	 ttcccttgtg	 ctggtgaggag
ggggggccttgca	cggggaaga	• gagggagga	 aaagtagatc	tgtaggaatto	gagtgaagaaa
aagtttgcaagt				gagaccggctt	
-199 AGGGGGGAAGGA			-169 FTCTTCTTT		∣−149 CACTCTTAAAA
-139 AGCTTCTTTCTC			-109 GTCCCTCTCC		-89 CTCTCCATATA
-79 AACCCTCAAGAT			-49 GCCAGCCGGG		-29 GGGTGCTGAAG
-19 GAGCTGCGGGAG	-9 CCGGAGAAG	1 AATGAAACT M K L 1		21 CAGCCTGGCTC S L A A	
41 CTTACTGGCCCT L L A L	51 GAGTCTTTG S L W				 cettectecee

	•										
tccccc	gegeed	catcac	cgctc	tttca	cgctg	aaatt	acctt	ttttt	tgggg	199999	gtc
ccttta	tcttcc										
oocca		20009	90900	gaoca	gggaa	cccaa	accc <u>-</u>	, , , , , , ,	Jeogeg	, cccag	, gaa
· gaaacg	• ++a+++										
gaaacg	ccacc	-gcaac	accyy	caacc	caage		gaagi	ccaac	-ggage	iggeee	aug
tgctta	aaaata	agggct	gcttg	CTTCC	ctgca	gctag	ctcct	ccggg	gggcaa	igagca	laag
		•			•	•	•	•			
tcagaa	gtgggg	ggacgc	taatt	aaagg	ctcac	taggc	tgtgg	gt			

Exon	2	Start	: 1048	323	End:	1048	882	Lengt	.h: 5	9		
ccat	cttta	agccttt	tattga	• agagat	tatcto	cattt	:ttaat	.gtctt	gtaa	aatgat	attt	tt
		aattata										ta
taata		ggtgcaa									cttt	tc
agata	attt	:tctggt	tatcta	atctt	caagt	tttgg	gattgt	itgatt	tcagt	ttgagc	tgta	ag
tcaga	agtct	:gattt	ttgggt	tcata	atttaa	atgat	ttttt	ccctc	· :tttc1	tcttcc	ttat	ag
		91 GGGTGT G C 31	TTCTC		ГСААА		GACTGO					
gtga		tagatt										
aata	tttt	Ettaaaa						· nagtaa			tcct	• at
tgca	ttgct	ctatttt	tagaga	agctta	ataag	gatta	ıgatta	ıtatct	taag	gtcagc	• aaag	• at
tttc	tgtaa	· aaaggco	catata	• agcaaa	acatt	ttagg	gattta	utggga	· icacat	tcagtt	tctg	· tc
acat:	attct	· -tattta	atata:	aataq	aacttt	-		rtaaaa	aatai	·	· actc	++

Exon 3	Start	: 12	4141	End:	: 124	230	Leng	th: 8	39		
attgctate											
atatgctt										tcca	ıgac
ggtttgtg											gaa
tttacataa											tca
accatgcc											
GGAGAGAGA G E R	AGGGTT	TCCA	GGTTT		SACAC	CCAG	GATTGC	CTGGA	ATTTCC	AGGT	
GAAGGGCC E G P	TCCGGG	GCCT	CGGGG								
• agatgaat	taagtc										
attatage	• aagaaa									tact	· .tta
ttgtattt	tgttaa										
ttgattgt	ttgtag	· ttati	tggct	gcctto	cacaa	ıaaatt	aagtt	ctgtd	caagag	ctta	· igct
gagctgga	gagagc	tgaat	ttacc	agttgt	·						

Exo	n ·	4		Sta	art	:	12	89	59		Ε	nd	: 1	29	00)3		Le	ng	th	:	44					
tat																											Э
gtt																								att			Ξ
cat																								3 39		tata	a
																										ttga	Э
• aaa	tg	agt	tt.	att	tç	, Jac	gga	ıct	.tt	tt	tg	ac	gga	aca	ıaa	ıa <i>a</i>	acc	cta	ıaa	aa	ta	tt	gc	att	tt	tca	3
GGT G			ТА	GGI	TAA I	ТС	CCA	.GG	GC	СА	СС		GAC	CCA	AA	AAG	GG <i>P</i>	ΑĀΊ	CA R	GΑ	gt	aa	gt			ttt	
tct	ata	ato																								gaca	
att																										aati	
taa	ga	gti	tg	gta	ata							gca												att	ac	atat	•
att	tti	tat	ta [.]	tat	tat	gt	cct	at	tt	aa	ta	taa	aaa	ıgg	rat	tt	ta	naa	ıgt	ag	ct	ta	tg	gtt	• .ga	gaat	•
tat	· ca	aad	rt.	·	aa	· nat	- + c	· ta	ıaa	a†	++	at i	· cat	++		. + +	- a a		at	·							

Exon 5 Start: 133706 End: 133750 Length: 44 BE AWARE: Flanking intron is shared with the following exon
ggatattattttattttatgggttgtcatttagtttaaggattttatttcttcttatag
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
ctttttactttgaaatctcttgaaaag



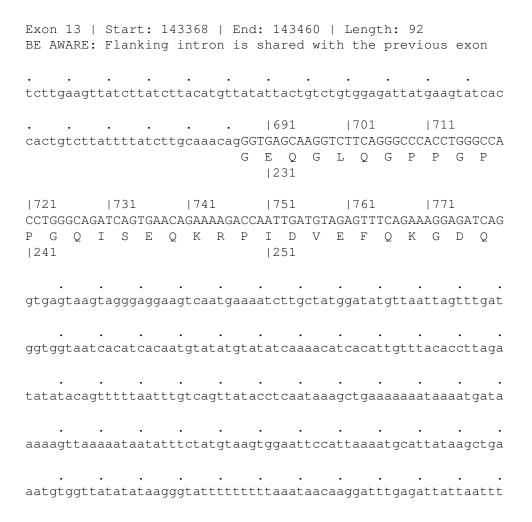
Exon 7 Start: 136490 End: 136543 Length: 53	
	aa
	gt
	:t
	ig
	1g
391 401 411 421 431 . GGAGAACGTGGATTTCCAGGCAGTCCCGGTTTTCCTGGTTTACAGGGTCCTCCAgtaag G E R G F P G S P G F P G L Q G P P 131 141	gt
tataaaaatttgggattatgatgaacacaggaattaacaaaagaagcagaaatgtagtga	ag
	• aa
	• :a
tgtatataaatgtcacctctaagtatcctaaggtatatcctattcagaaatgacgcta	• ca

Exon 8 Start: 136888 End: 136914 Length: 26
ttaaagtaataaactagaggaaaatgtttcaaaaagaagttggtaatatagctttctcct
441 451 461
ccacttactctgtagaattactttt

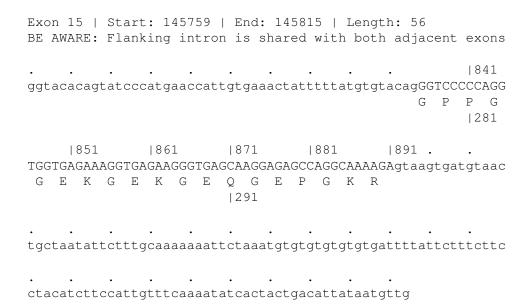
Exon	9	:	Sta	ırt	: 1	386	551		Er	nd:	13	887	31	:	Ler	ngt:	h:	80				
tctc	cat	ta	cto	gati	tac	cca	• agaa	aco	ct <i>a</i>	ıcc.	aca	ıat [.]	tgt	.tg	gca	aaa [.]	tac	etta	aata	att	tact	ta
cata	ttt	tti	taa	atga	agt	aac	ctga	aaq	ggt	ac	tac	ac [.]	tct	ta	ata	aaa	tct	act	igtt	ct	tcaq	уt
gtac	tct	gg,	cca	acti	tcc	tca	att	tto	cct	tt	aaa	ıagı	gt <i>a</i>	ıaa	ctt	tat	cat	ttt	ctat	ta	ctga	эg
· atgg																					ctg	gt
tttg	ctg	gti	ttt	cat	tgt	ata	nata	aad	ctg	ŋtg [.]	tct	ta	ga <i>a</i>	ıct [.]	tco	cat	tga	ıtgç	gctt	ct	ttta	зg
GGTGZ G E		CA	GG1	'AG'	ГАТ	AAT I	TA	TG:	ГСZ	ATC	ACI	GC	CAC	GA	CCI	AAA	GGG G	STA		CAG	521 GATA Y	AΤ
CCAG(P G	GTC	СТ	CCI		I	ACA	AAgt	taa	agt										ctat			:t
aaac	cag	aa	gat	ta	caa	caa	atco	cct	·	ac									gtca		• aaaa	аt
tatca	atc	ag	atç	gtti	tac	taç	gaca	att	cac	cat	gt <i>a</i>	ıct [.]	ttc	cta	cct	:ga	aa <i>a</i>	ıtaa	aaag	gca	atct	z g
· gacca																			ccaç			:g
gggat	ttg	gc	ago	caga	aaa	tag	gggt	tto	ct <i>a</i>	ıta [.]	ttc	tt.	att	.ct	tgt	cac	tgt	gga	agag	gca	gtaq	39
gtct	ttt	gt	aca	atti	tac	aaa	·															

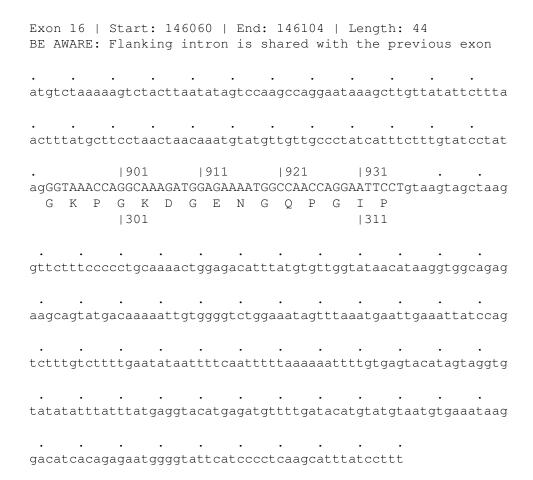
Exon	10	1	Sta	rt:	14	0987	7	End	d:	141	104	9	L	eng	th:	62	2		
cttt	ggga	ıgg	· cca	.agt	cat	gaga	atc	aaga	acc	cago	cct	ggc	cca	aca	.tgg	rtga	aaad	ccc	cgtct
ctact	caaa	ıaa	tac	gat	aat	tago	ccg	gac	ctç	gt	ggc	agg	gtg	cct	gta	ato	ctca	agc	tactc
• aggaq	ggct	ga	ggc	agg	aga	atto	gct	tgaa	acc	cca	gga	ggo	egg	agg	· rtcg	rcaç	gtga	agt	tgaga
tcato	gcca	ıtt	• gca	.ctc	cag	cct <u>c</u>	idd	cga	cac	caaq	gtg	aga	act	ttg	tgt	aaa	aaaa	aag	aaaaa
ataca	aata	ıag				tttc													aacag
		CTG		CCA		GTAI	AC P		GGC	CCAZ	ATT	GGI	CC	CCC	AGG	;AC		CAG G	601 GTTTG L 201
ATGgt M	caag	ſct	ctc	ttc	ttt	aatt	ta	· atti	tcc		ccc	ttt	cc	ttt	ctg	ract	tct	ctt	• cagga
atatt	caat	at	tat	tta	taa	tact	tg	aaaa	aca	ıtaa	atg	cat	tc	tca	.aca	· itto	cata	aat	ttata
attt	cctt	at	gta			actt													gtaat
ggct	ccat	tt	tat	aga	tgg	aaaa	at	gag	gta	ıtat	taa	• aac	gga	aag	att	tad	caat	:ga	aatat
tttgt	Etgg	ŗtt	gct	ctt	gat	gtat	ca	gtgt	ttg	Jaaq	gtc	aat	tc	tgg	сса	ıttt	cag	gaa	agtct
ttt																			

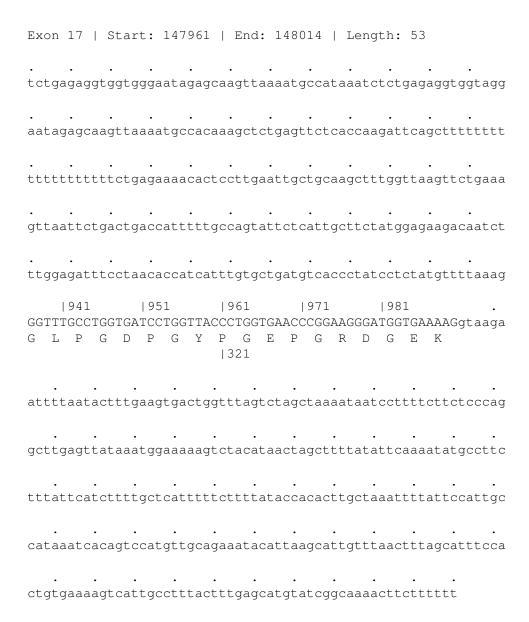
Exon 11 Start: 143029 End: 143064 Length: 35
BE AWARE: Flanking intron is shared with the following exon
aatttgatgggtctgttgagattaacttttgaattgatttttgacaatggggctacctct
$\verb ctacctctgcccatcccagcttttttctcttgcccatttctattttgtcatcagaggtac $
${\tt tcacattcatctagctcattttaatcaattaaaatgtgtgtctctgactaaaatgaaaac}$
${\tt aaacaagaaaatactattttgatgggctttttcacaccttactctttctgaaactaaata}$
acttttaaaattaacttattaatataacattttatttt
611 621 631 641
$\tt GGCCCTCCTGGTCCACCAGGACTTCCAGGACCTAAGgtaattttctttttctttatatct$
G P P G P P G L P G P K
211
tttatttggtgtggattcct



Exon 14 Start: 145610 End: 145663 Length: 53 BE AWARE: Flanking intron is shared with the following exon	
	t
	g
	t
	t
	g
781 791 801 811 821 831 . GGACTTCCTGGTGACCGAGGGCCTCCTGGACCTCCAGGGATACGTGGTCCTCCAgtaag G L P G D R G P P G P P G I R G P P 261 271	t
acctaaagtgctttagcatcatttaatgtaaattggtatt	



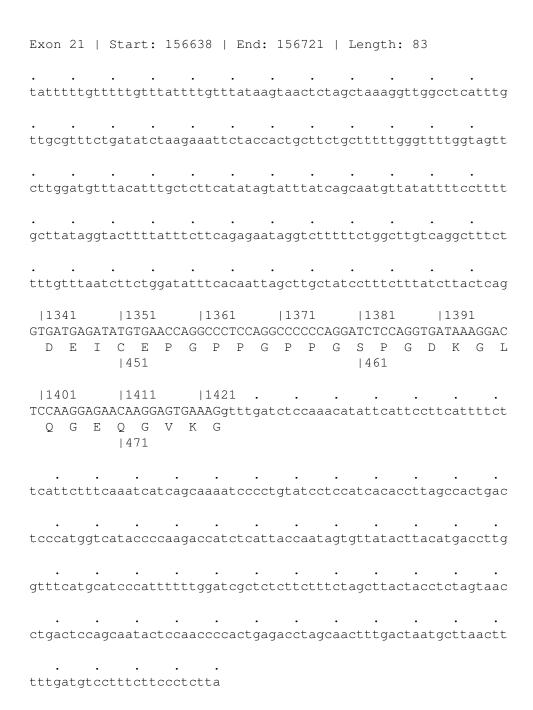


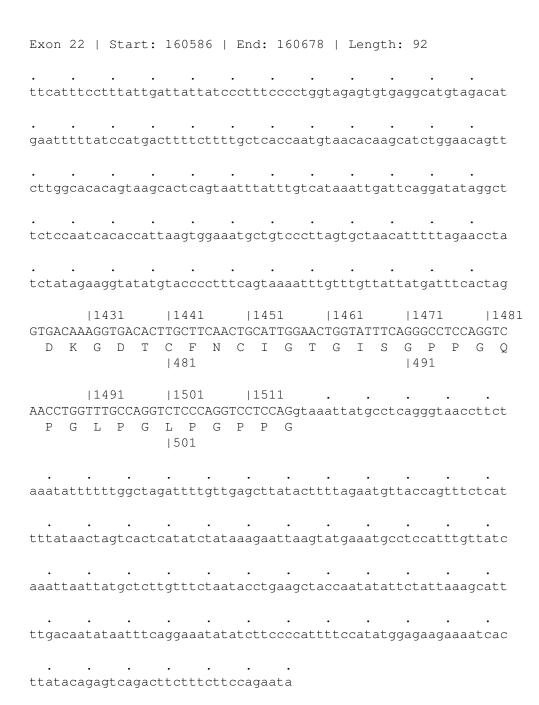


Exon	18	Star	t: 14	19561	Enc	l: 149	602	Leng	rth:	41	
											ctttatt
										Igctagt	taaatct
											gcatttc
											atattct
											• :gaacag
	AAAA	GGTGA	CACTO	GCCCZ		SACCTO	CTGG <i>I</i> G	ACTTgt		tttttt	Ettttta
										tcgcat	tactccc
											ctaaaag
											tgcctat
											catgat
tgcca	Igato	atttc	tcaaq	gcaac	cagcag	ıgtggt	• gcaaq	gtgt			

Ex	on	1	9		St	tai	rt:	: :	15	16	92		E	Enc	d:	1	. 5	18	24			Le	nç	gth	1:	13	32					
	gti																											tg	aat	Eta	ata	
																													ato		taa	
	tt																													aat	tgt	
	ct																													gtt	ttt	
	gg:																													caa	aag	
	AA' I			TP	\GZ	ACC	СТС	GG(GA T		GG' G	TΑ	ΤZ	AAC	CT	'ΑΊ	Ά	GG	AG	A	AΑ	AΑ	GG	SAZ		CA:		GG G	GT1		1 CCT	
	GT' L			ТС	G	AG <i>I</i>	λAZ	λA	AG G	GΑ	GA: E	GC	GΡ	\G(ξA	ГТ	T	CC	TG	G	AΑ	TΑ	CA	AGC	GG:	rco P	CA	CC P		GC(1 CTT L	
CC P			CC	TC	CCZ																								ctt		cta	
at																													aca		• aag	
tc	· cti	tt	tt.	aa	ıt1		aca																			ca	CC	at	att	cao	ctc	
ac																													tat		tct	
																													tat		tta	
	ac																															

Exon	20	Sta	rt:	15	613	5	En	d:	156	308		Len	gth	: 1	73			
cttg	ctaat															gat	ggg	gt
tacta	• agtaa																	ct
· gtta	cttac																	aa
· aaaa	· ataac	ataa					.gtt											ca
atga	gaact						Igat											ag
GGGC'	117 TGCAG	TTAT	GGG	TCC	TCC	TGG		TCC	TGG	ATT'	TCC	TGG.	AGA.	AAG	GGG	TCA		
A	A V 391	М	G	Р	Р	G	Ρ	Р	G	F 4		G	Ε	R	G	Q	K	G
	123 TGAAG	GACC.	ACC	TGG	AAT	TTC	CAT	TCC	TGG	ACC'	TCC	TGG.	ACT'	TGA	CGG	ACA	.GCC	ΤG
D	E G 411	Р	Р	G	1	5	Ι	Р	G	4:	P 21	G	L	D	G	Q	Р	G
GGGC' A	129 TCCTG P G 431	GGCT	TCC	AGG	GCC	TCC	13 ETGG G	CCC	TGC	TGG	CCC P		CAT		TCC	TAg S	taa	gc
tata	ttttt	ctcc	tat	taa	gtt	cta				ttg			ttg	ttt	ata	agt	aac	tc
tagc	taaag	gttg	• gcc	tca	ttt	gtt	.gcg	• ttt	ctg	ata [.]	tct	aag	aaa	ttc	tac	cac	tgc	tt
	ttttt																	
	aatgt																	
	ctggc																	







Exc	n i	24	5	Sta	ırt	::	162	454		Enc	d: 1	626	45	L	eng	rth:	19	1		
tga	ıgt	ata	tta	ata	ıaa	aac	aaa	.aag	aaq	gtag	gaag	gaa	ggc	att	tta	· cac	att	gat	ttt	caat
tat	.tc	ata	tat	tat	ac	cac	aca	tat	aca	aatt	taa	ttt	· ttc	cat	taa	ıgtt	gta	ctt	tgt	ttga
· ttc	cti	tga	ct	ctt	cc	ctg	act	cac	ato	gcct	cac		att	cag	ccc	ttt	gta	cat	taa	atgt
tat	.tg	gat	gg	• gtt	ga	• nag	ggg	· taa	.act	gga	agag	aag	• aaa	atg	tta	• Igaa	.aaa	• aag	aaa	ctga
ttt	tc	ttt	tt	ctc	ctt	·	ttc	ttt	tto	ccac	ctct	ttt:	ttc	ttt	ttt	tcc	tta	ctc	att	tcag
GGC G	•	Ρ					AGG	TGC A			GCTT F		TGG G			163 AGG G		ACC P	16 TGG G	41 TGAT D
ATC I		Т		ITC F	CCP	-66 AGG G		GAA K		GTGA	ACAA K		AGA E			169 STTC S		TGG G	17 SAGC A	01 TCCA P
GGG	•			GTI			TGG	CAC T		CTG	GACA O	GGA		ATT	GCC	175 AGG G	GCT	TCC P	17 TGG	61 CCCG P
J	5	71		-	1	-	J	_	-	J	V	5		1	-	J		-	J	ı
AAA K		Ε		СТс	ŋtg	· gag	ttg	· gtt	tga	• atat	Ettt	tgg	ttt	tgt	• gat	• .gtt	aaa	ttt	tca	• ctta
gaa	ıatı	gtt	tt	cta	ıaç	gtt	aat	tca	aaq	ggat	ggg	act	gat	gct	• gag	rata	.aac	acc	caa	tcaa
tgc	:tt	aaa	aca	aat	gt	:ga	сса	tac	agt	caat	ggc	aca	ttg	tta	ctg	ract	acg	tag	iggt:	ttct

tccccatctctt

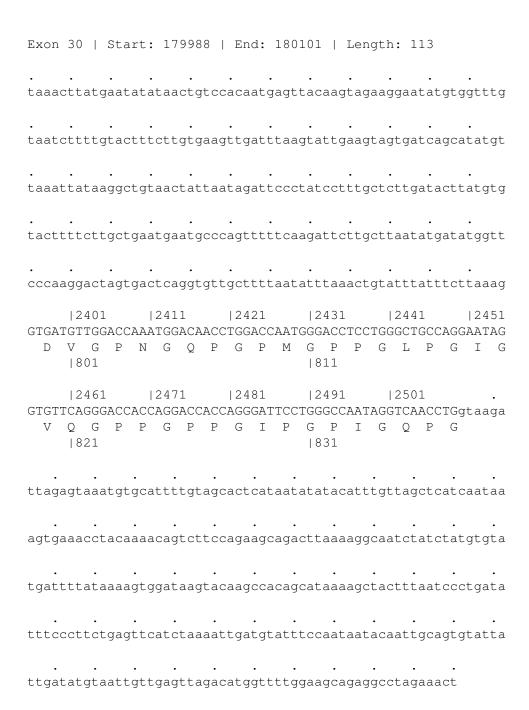
Exon 25 Start: 163779 End: 163947 Length: 168
1781 1791 1801 1811 1821 1831 GGTGGAATTACTTTTAAGGGTGAAAGAGGTCCCCCTGGGAACCCAGGTTTACCAGGCCTC G G I T F K G E R G P P G N P G L P G L 601 611
1841 1851 1861 1871 1881 1891 CCAGGGAATATAGGGCCCTATGGGTCCCCCTGGTTTCGGCCCTCCAGGCCCAGTAGGTGAA P G N I G P M G P P G F G P P G P V G E 631
1901 1911 1921 1931 1941 AAAGGCATACAAGGTGTGGCAGGAAATCCAGGCCAGCAGAATACCAGgtaagtttact K G I Q G V A G N P G Q P G I P G 641
gtgttttgttttaaacttggtgcttaaaaacagaaatttattatgttttggctactcatg
ttagcaagggatcacaatggttttataagggggtttctttttaaatcttttctaactgt
ttcattgttactgttaattttgctctttttaagtacatgatacataatgcaaagtttaat

Exon	26	I	Sta	art:	10	664	70	:	Enc	d:	166	562	2	Lei	ngt	h:	92				
atgct	ctta	acc	ago	cgat	cto	cag	tat	ct	ctt	·	tct	agt	cat	:gt	cga	aac	cct	ааа	aat	taa	cc
attat	·	atc	ttg	gaat	cat	Egg	aag	tc	ctt	taa	ggc	tgt	cat	tato	cct	ttt	tc	ttt	tt	• gaa	at
tctat	cct	tc	• tgt	ttt	ata	ata	ttt	ct	tga	nat	ata	tag	ıtg	gaaq	gat	tgt	tt	· tt	ctt	gtg	aa
ttttt	igtt	ag	• ttt	caca		tc														att	aa
aaaga	• aga	cct	tta	agtt	gaq	gta	aat	· ac	tto	ctc	att	tac	cat	Etga	att	tad	ctc	· tt	gct	ttc	ag
GTCCT	K		GGI	196 ATCC P	CAG	GTC	AGA	CT.	ATA	AAC	Q	GCC	CGGC	GAZ	AGC	СТО	GC	TT		TGG	TA N
ACCC	G	CAG	AGA	202 ATG0 G	STG	ATG'	TAG	GΤ	CTI	CC.	AGg G			gago	gaa	ttt	tat	tto	caa	agt	aa
cttca	aaca	acc	gat	ggd	cttt	ttt.	ttt	tt [.]	ttt	tt	ttt	gac	• caga	agtt	ctc	gct	tct	gto	cac	cca	tg
ctgga	agta	aca	gto	ggcg	gtga	atg [.]	ttg	gc [.]	ttg	gct	gca	gca	·	ctc	cta	ctt	ct	gg	gtt	caa	gc
agtto	ctc	cct	gco			ctc										cca	acc	aco	cac	gcc	ca
gttaa	attt	:tt	gta	attt	tta	agt	• aga	ga	cgc	gag	ttt	ctc	ccac	cgtt	Egg	cca	agg	ct	ggt	ctc	ga
actco	ctga	acc	tca	aggt	gad	ccc	att	gc	ctc	cag	cc										

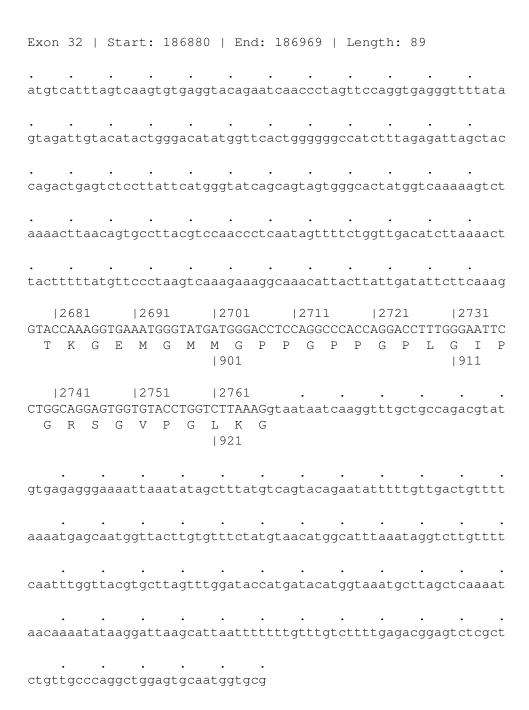
Exon	27	I	Sta	rt:	16	696	2	En	d: 1	L67	066		Len	gth	: 1	04			
ggcg	ıtga	tgt	.tgg	ctt	gct	gca	gca	lacc	tcct	ac	· ttc	tgg	ıgtt	caa	gca	gtt	ctc	cct	gc
ctca	igcc	tcc	caa	• gta	.gct	ggg •	att	aca	ggcg	JCC:	cac	cac	cac	gcc	cag	tta	att	ttt	gt
attt	.tta	gta	ıgag	acg	gag	ttt	ctc	ccac	gtto	ggc.	cag	gct	.ggt	ctc	gaa	ctc	ctg	acc	tc
aggt									gtgc									gca	CC
tggc	:cct	gat	ggc	ttc	ttt	ctt	tga	lacg	tttt	:cc	ttt	caa	ıtaa	ctg	ctg	ttt	ctc	cat	ag
GTGA D		TGG	SACT	TCC	AGG	GCA	ACC	CAGG		GCC. P	AGG	GAI	ACC	TGG	TAG	CAA	AGG		2101 AC P 701
CAGG G		CCC		AAT	TGG	GCT	TCC	TGG	21 ACC <i>I</i> P 71	P ACC'	TGG	TCC		AGg	tat	gtt	• gga	atg	gg
tago	agg	caç	ſagt	agg	tta	• gaa	gtt	tag	cato	jat:	gtt	att	ctc	· tca	taa	aat	tca	ttc	• aa
caaa	ıtaa	aat	ata	tta	att.	gca	cct	ttt	ttct	:ct	gtg	ct <i>a</i>	ıtaa	• aga	atg	taa	ata	aaa	• aa
tcac	agt	gt <i>a</i>	ıttt						tato									gaa	• aa
tato	tac	att	tta	gat	atg	· caa	aag	ŗtga	tata	ıta	agc	tta	ıaaa	atc	aca	• gga	att	att	• gt
gttt	.tgt	gtt	cac	cat	agt	att	ttc	agg	gttt	ag	aac	agt	tcc	ta					

Exon	28	3	S	taı	ct:	16	804	1	I	End	:	168	313	8	Le	eng	th	: 9	7			
ttct	tg	ggc	at	ttt	.tg	tgt	ggg	gati	tca	att	cc	tta	·	att	tag	gtt	cta	atc	tta	ntta	ata	ıtaa
tago																						ıata
aaag	Igaa	atg	· ta	aga	· atg	att	• gaç	gag	gat	ttg	· ta	agg	· gct	taa	tco	cta	.agt	ag	tag	jaa†	tgt	cat
tgtg																						ıttt
gaat	ato	ctt	tc	tta	aaa	gtg	cct	tt	cct	ttt	gg •	tgç	· gtt	aaa	aaa	atg	·act	ta	tca	ıtt!	tta	ıcag
GCTT F	TC	CTG	GA.	AT]	CC	AGG G	ACC	CTC	CA	GGA	.GC	ACC	CTG	GGA	.CAC	CCT	GGZ	AAG. R	AAI	TG	GTC	:01 :TAG
AAGG G	CCC	СТС	СТ	GGC	GCC	ACC P	CGG	GCT'	TT	CCA	.GG	ACC	CAA.									
cctt	cto	cat	tt	tct	:ta	tct	ttc	·	aco	ctt	CC	tta	att [.]	tct	ago	ctc	tct	tat	ttt	• :ga	ctc	• :aga
tato	ato		aa	gcd	ccc	aag	tct	itt	act	tat	aa	ata	ata	cag	ata	aac	tta	att	ata	itt	tcc	att
• aaaa	aaa													caa								
aaaa	aaa	• aaa	.aa	aaa	acc [.]	taa	ttt	· ct	gta	acc	ta	ctt	tt	• gaa	tgo	ccc	agt	tc	ttt	• .ga	tta	Igag
aata	caq	ggc •	at	acc	ctt	gga	gat	·	tgo	cag	gt	tta	ıgt:	tc								

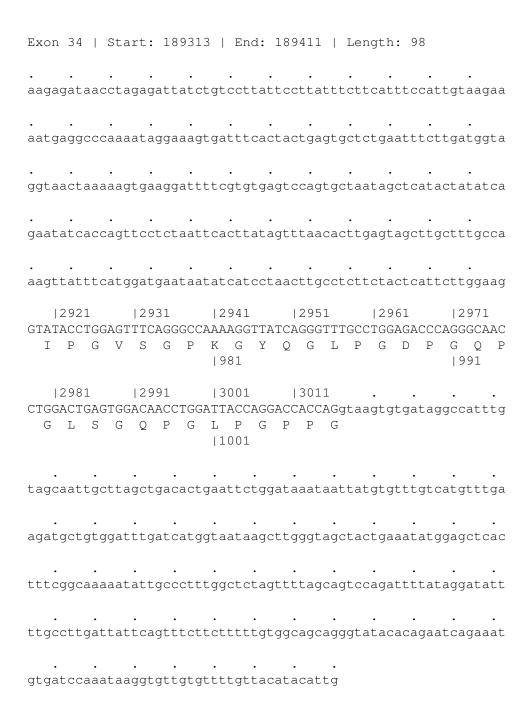
Exc	n	29		S	tar	t:	17	181	9	Ε	ind	: 1	719	69	L	eng	th:	15	0		
gcc																.atc					agtt
ttt																ttt					tttc
caa	ıtc	ct	tc													tat [.]					tcct
ctc																att					gcaa
aca	ıat	aa	gg													tgt					caag
GGI	'GA			51 .GG		TGO	CAT	TAC	CTG	GG	CCZ	ACC	TGG	GCC							2301 CAAA
G	Ε		75	G 1	F	А	L	Р	G	,	Ρ	Ρ	G		P 61	G	L	Р	G	F	K
		AC	ТΊ	'GG'	ГСС	AAZ	AAG	GTG.	ATC	GT	'GG	ГТТ	'CCC	AGG	ACC	TCC	GGG	TCC	TCC.	AGG	2361 ACGC
G	A		77		P	K	G	D	K		G	r	Р		P 81	Р	G	Р	Р	G	R
ACI T		CT L		.GA' D		GC1	rcc P	G	GAC P	CA	AAA K	AGg G	tat	gga	ggc		cac	tgc			actt
• gct	.tt	ta	ac	· :tt:	tta	tag										atg			• aag	ccc	aatt
• aac	tg	ga	aa	.cc	cta	tga	ctg									ttt		caa	tcc	ttc	attg
																atg					ggct
																gat					ggaa
· ttc								aca													

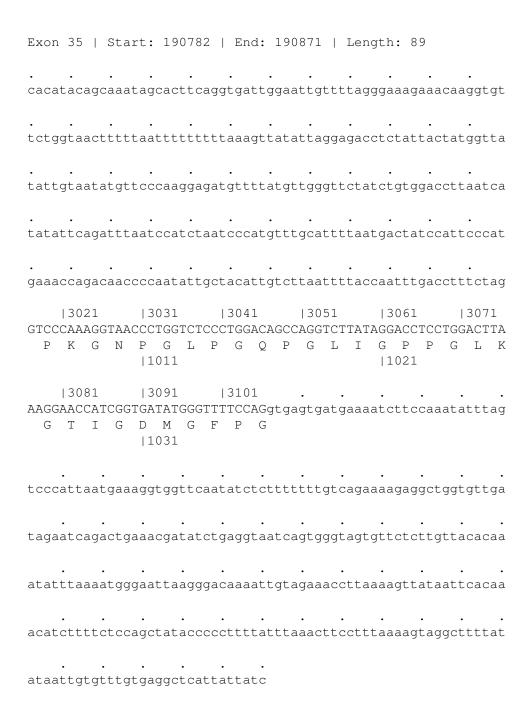


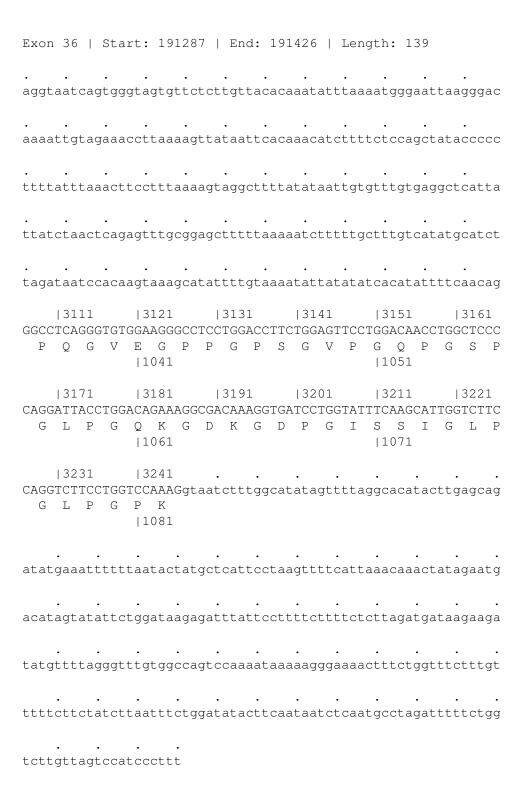
2511 2521 2531 2541 2551 2561
GTTTACATGGAATACCAGGAGAGAGAGGGGGATCCAGGACCTCCTGGACTTGATGTTCCAG L H G I P G E K G D P G P P G L D V P G [841] [851]
2571 2581 2591 2601 2611 2621
GACCCCCAGGTGAAAGAGGCAGTCCAGGGGATCCCCGGAGCACCTGGTCCTATAGGACCTC PPGERGSPGIPGAPGPIGPP
861 871
2631 2641 2651 2661 2671 CAGGATCACCAGGGCTTCCAGGAAAAGCAGGTGCCTCTGGATTTCCAGgtaatttgttta
2631 2641 2651 2661 2671
2631 2641 2651 2661 2671 CAGGATCACCAGGGCTTCCAGGAAAAGCAGGTGCCTCTGGATTTCCAGgtaatttgttta
2631 2641 2651 2661 2671 CAGGATCACCAGGGCTTCCAGGAAAAGCAGGTGCCTCTGGATTTCCAGgtaatttgttta G S P G L P G K A G A S G F P G 881 891
2631 2641 2651 2661 2671 CAGGATCACCAGGGCTTCCAGGAAAAGCAGGTGCCTCTGGATTTCCAGGtaatttgttta G S P G L P G K A G A S G F P G 881 891
2631 2641 2651 2661 2671 CAGGATCACCAGGGCTTCCAGGAAAAGCAGGTGCCTCTGGATTTCCAGgtaatttgttta G S P G L P G K A G A S G F P G 881 891
2631 2641 2651 2661 2671 CAGGATCACCAGGGCTTCCAGGAAAAGCAGGTGCCTCTGGATTTCCAGgtaatttgttta G S P G L P G K A G A S G F P G 881 891



Exon 33 Start: 187753 End: 187902 Length: 149
2771 2781 2791 2801 2811 2821 GTGATGATGGCTTGCAGGGTCAGCCAGGACTTCCTGGCCCTACAGGAGAAAAAGGTAGTA
DDGLQGQPGLPGPTGEKGSK 931
2831 2841 2851 2861 2871 2881 AAGGAGAGCCTGGCCTTCCAGGCCCTCCTGGACCAATGGATCCAAATCTTCTGGGCTCAA
GEPGLPGPPGPMDPNLLGSK 951
2891 2901 2911
ttcctgatatatctgaagtttaatttttaaatagcatgaaaagtgacttataatacagaa
ttcctgatatatctgaagtttaatttttaaatagcatgaaaagtgacttataatacagaa
ttcctgatatatctgaagtttaatttttaaatagcatgaaaagtgacttataatacagaa

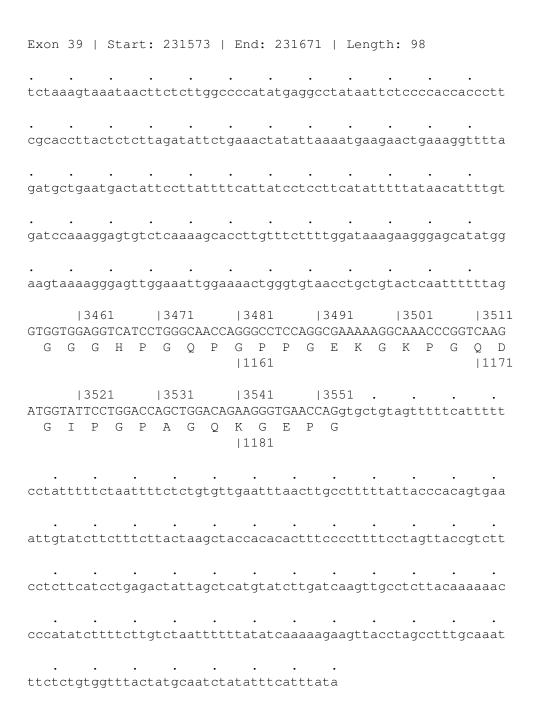


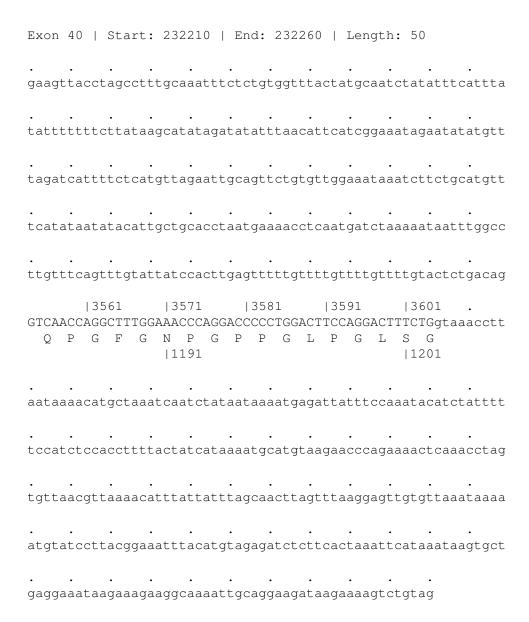




Exon 37 Start: 220408 End: 220534 Length: 126
3251
3311
3371
gactagcaacataatctcaaactatctctttaccttttctttgcccaaatttattt
attttg

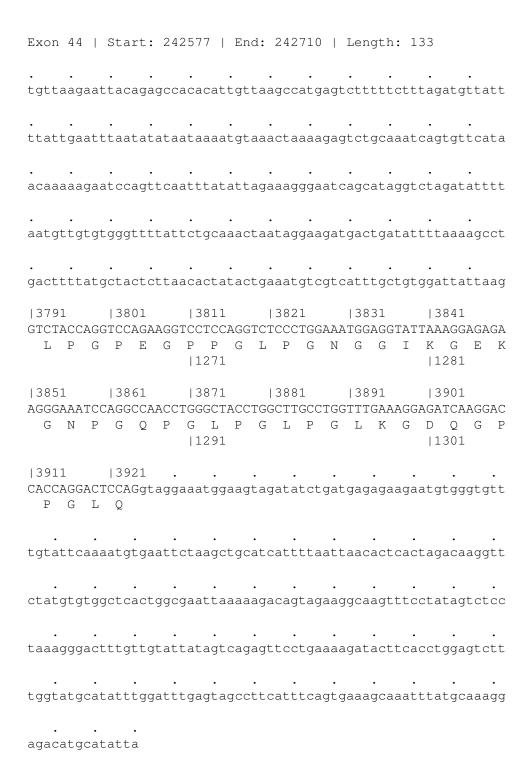
Exon	38	1	Sta	rt:	230	584	E1	nd:	230	664		Len	gth:	80			
gcaa																	cct
acca																	ttc
aggat	taa	.at	ggtt	aaaa	aaca [.]	taaa	atta	atta	atta	· .aaa	ata	· agcc	aaca	aac	·	agca	tct
tttg																	gaa
ttgta	• agc	tc	ttaa	agca	aatg	cagt	ttt!	tcti	ttca	· .ttt	tta	naat	tgag	gctc	· :ttt	actc	tag
GAAC(AG	GCCC	TCC		CCAA P K	AAG	GTA:	ГТАG	TGG	CCC	CTCC	TGGG	SAAC	CCC P	GGCC	
CAGGA G		AC	CTGG	TCC	34 IGTA V 0 11	Ggta G			• aaaa								act
aatgt																	aac
acaa	gga	.aa	tata	gtgt	tca [.]	ttca	ctt	aaca	actg	·cat	gto	gagg	taca	ıgaa	tga	ataa	ctt
ttaat					aaaa [.]												att
ttgg	gag	gc	cgag		ggag									ctag	·	ggtc	aac
atggt	tga	.ta	egcc	attt	cta [.]	t											



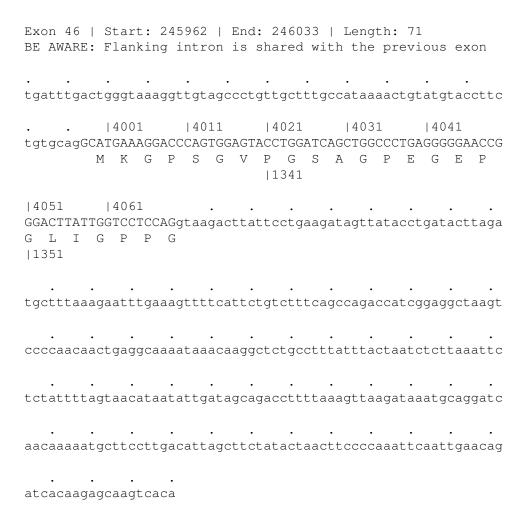


Exon 41 Start: 233396 End: 233581 Length: 185
3611 3621 3631 3641 3651 3661 GCCAAAAGGGTGATGGAGGATTACCTGGGATTCCAGGAAATCCTGGCCTTCCAGGTCCAA
Q K G D G G L P G I P G N P G L P G P K 1221
3671
3731 3741 3751 3761 3771 3781 CTCCGGGTCCAGCTCTGGAAGGACCTAAAGGCAACCCTGGGCCCCAAGGTCCTCCTGGGA P G P A L E G P K G N P G P Q G P P G R 1251 1261

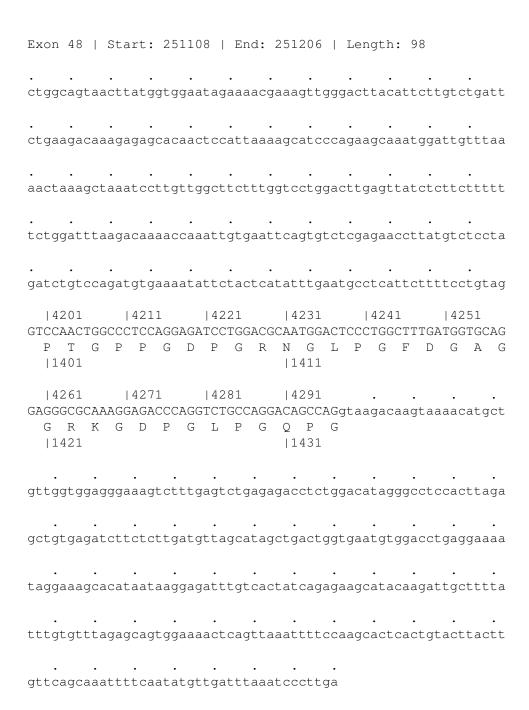
. . tactaa



				45756 intr										ez	xon
				gtata											acca
				actgt											
				actca								aaaa	ttga	gat	ttac
				ctaga											ccct
				cgctg											tcag
	ГССТО	GGCCG FR	GCCG	941 GGTCT G L	CAA	TGG	AAT	GAA	AGGA	GATO D F	CCTG	STCT	CCCT	GG:	
	399 ATTCO F	CCAGg P G		• cgaag											
gg.		· agcca		C											

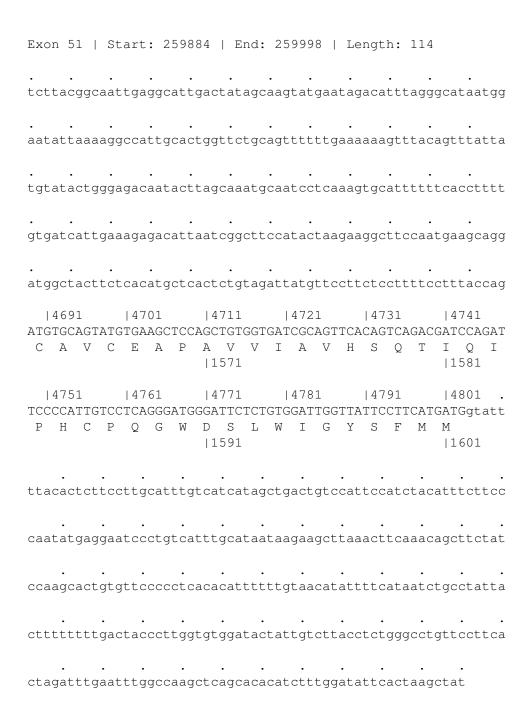


Exon	47		Sta	rt:	24	683	37	En	ıd:	246	5965	5	Len	gth	: 1	28			
gaca	cca	gtg [.]	· ttc	aca	gat	ttg	ſaac	• aca	ıgat	Egga	atga	agac	ttt	gta	gta	act	gag	taa	ga
ttca	• agg	ttt.	• gaa	aat	aga	gat	gat	atç	, sctt	caat	ttt	tac	act	gac	cct	• aag	aaa	ctt	at
tttt	· caa	ttg	aaa	att	att	ttt	caa	.ttt	taa	agtt	ttc	ccta	• aac	aga	ttt	ctg	tta	gat	at
ggca	• gca	att.	· caa	• aaa	ctg	gtt	tct	ctc	aca	acca	aatt	ttt	gtc	ctg	aac	tta	.ggt	cac	tt
tggc	· ttc	cat [.]	ttc	ttg	taa	cct	ttc	tct	ttc	ccct	tca	aaat	ttg	tgt	gtt	ttg	tct	cat	ag
40 GTCC P	TCC		ATT. L		TGG	TCC	TTC	AGG	GAC!	AGAC	GTAT	ΓCAT Ι	AAT I	TAA	AGG. G	AGA		TGG	
41 CTCC P	AGG.		CCC P		CCA Q	GCC	TGG	GCI	'AAA	AGGG	STCI	ΓACC P	4 AGG G	171 ACC	CCA Q	AGG		TCA	
41 GCTT L			tac	• caa	tgc	aga	ıtca	.tct	tta	atta	atca	atta	tta	tac	ttt	taa	.ttt	ctg	
atac	atg	tgc	aga	atg	tac	agg	rttt	gtt	aca	ata <u>c</u>	ggta	atac	act	tgc	cat	ggt	ggt	ttg	ct
gcac	cta	tca	acc	cat	cat	cta	ıcgt	tag	gat <i>a</i>	attt	cto	ccta	atg	cta	tcc	ctc	ctc	tag	cc
cccc	tac	· ccc	ttg	• aca	ggc	cct	• .ggt	gtç	Jtga	atgo	ggco	ccct	ccc	tgt	• gtc	cat	• gtg	ttc	tc
• attg	ttc	• aac	tcc	· cac	tta	tga	ıgtg	aaa	· iaca	atgt	ggt	• :gtt	tgg	ttt	tct	gtt	cct	gta	• tt
agtt	tgc	tg																	



Exon 49 Start: 252559 End: 252771 Length: 212									
4301 4311 4321 4331 4341 4351 GTACCCGTGGTTTGGATGGTCCCCCTGGTCCAGATGGATTGCAAGGTCCCCCAGGTCCCC T R G L D G P P G P D G L Q G P P G P P 1441 1451									
4361 4371 4381 4391 4401 4411 CTGGAACCTCCTCTGTTGCACATGGATTTCTTATTACACGCCACAGCCAGACAACGGATG G T S S V A H G F L I T R H S Q T T D A 1461 1471									
4421 4431 4441 4451 4461 4471 CACCACAATGCCCACAGGGAACACTTCAGGTCTATGAAGGCTTTTCTCTCTGTATGTA									
P Q C P Q G T L Q V Y E G F S L L Y V Q 1481 1491									
4481 4491 4501									
G N K R A H G Q D L G									
tgcctctctctattcttttggggcttccgaattgaaaaccatgtcaaaggcaactgaata									

Exor	5	0		Sta	rt	: 25	5782	25	E	nd:	2	58	002	-	Ler	ngtl	n:	177			
atga	ıatı																	tca		ŗttt	taa
• aaac	ag	ca	tt	• agg	gaa													tac		ıtta	aaa
caca	· itc	ct	aa	ttt														• aga		ıtaq	gta
tatt	ta	tt	ac	ct <i>a</i>															ttgt		tag
aaga	ıaa	CC	aa	agt				cac											tctt	tct	tag
451 GGAC				45 CAG				4531 GTC(4561 GCAA		ГСА
Т		(С		R	R 1511	F									С	N 1521	I	
457																					7.00
ATAA N	V				F	A	S	R 1531	N							L		Τ		Ε	
463 CCAT							AAC		ГΑА	AGG	GC	CA	GAG	CAI	CCZ	AGC(CAT		4681 TTAG		Ggt
М	Р	I	M	S	М	Q		L 1551		. G	j	Q	S	Ι	Q	Р	F		S 1561		
• aagg	rca ⁻	· tt	ga	ttt	ago	ctgt	cgad	cttt	ta	.cca	ıat	cc	cca	• gtt	agt	taq	gct	agt	• caga	ıttt	Ega
gtcc	aa	• ag	ct	aac	aat	cct	gato	gata	att	cct	cc	ta	ggt	tag	ggta	agaa	aca	gag	gtac	cto	ctt
aata																					
taaa																			ataa		



Ex	on	52	S	tar	t:	260	344	:	End	: 20	605	16	L	eng	th:	17	2		
at	tcc					tcc												• gaa	gctt
aa	act					ctat													cata
tt.	ttc	ata				atta													ctta
						tca													tgga
ta	ttc	act				ıtgg													atag
CA' H	ГАС Т	AAG		AGG	GGC		AGG		AGG:	ГСА	AGC	CCT.	AGC	CTC	CCC		TTC		4861 CTTG L 1621
GA.	AGA E				AGC		CTT		CGAZ E	ATG	ГСА	TGG	GAG	GGG	TAC		TAA		4921 CTAT Y 1641
GC(CAA N	.CTC		CAG		49 TTTG W	GCT		4 ! AAC : T	951 FGT2	AGA	TGT		AGA				gta	• aagt
gc.	tta	tag	ctt	taa	ttc											· igaa		aga	• gaca
at [.]	tta	tgg	atg	gtt	tat	cct										• gtg		ttt	attc
						ata													tatt
																			• aaag
						.cct													

Exon 53 S	tart: 2613	/4 End:	262622 1	ength: 124	8
ctcatcctgtg	· · aatattagaa	aaatgtatga	· gagaaagaga	· · · laaaagataga	• aaatgagag
ggaaacacaaa		taatagtggt		gttacaaaat	atctatgac
cactaatggct	· · cttaaaccat	actagtcact	· gcattagato	· · · · · · · · · · · · · · · · · · ·	• aaagtaaac
cattaagtcac	 caagagagct	 acttaacaca	caaaaaatgt	· · · ttagttataa	atttgaacc
agtaacagaat	· · · tgaaatacca	gaaaatgtgg	atctgattgt	 .cttatttctt	atttcccag
4981 TAAACCTCAGT K P Q S 1661	CAGAAACGCT	GAAAGCAGGA	GACTTGAGGA	5021 CACGAATTAG RIS	CCGATGTCA
AGTGTGCATGA				*21 TGTGTTTTAA	
*41	*51	* 61	* 71	*81	* 91
TATATATATAT	AAAATTCCTA	GGATGCAGTG	TCTCATTGTC	CCCAACTTTA	CTACTGCTG
				*141	
CCGTCAATGGT	GCTACTATAT.	ATGATCAAGA	TAACATGCTG	SACTAGTAACC	ATGAAGATT
*161 CAGATGTACCT				*201 ATTTTTCTACT	
*221	*231	*241	*251	*261	*271
AGGAAGTGAAT	TTACTTTTTG	GGTCCAGAAT	GACTTTCTCC	CAAGAATTATA	AGATGAAAA
*281	*291	* 301	*311	* 321	*331
TTATATATTTT	GCCCAGTTAC	TAAAATGGTA	CATTAAAAAI	TCAATTAAGA	GAAGAGTCA
*341 CATTGAGTAAA				*381 ATTTTTCACGG	

```
| * 401 | * 411 | * 421 | * 431
                          | * 4 4 1 | * 4 5 1
| *461
      | * 471 | * 481 | * 491
                          | *501
                                 | *511
AGAATGTGTATATTGTGAACAGCCTTTTAGCTCAAAATGTTGAGTCATTTACATATGACA
      | * 561
 | *521
                                | *571
{\tt TATATTCATGTTTATCAAAGTGAGAGGACTTATATTCCTACATCAAGTTACTACTGAGAG}
 | * 711
             | *721
                    | *731
                          | *741
\tt CTTTTAGTCACTTTAATCAGAATTTTAAATGTTCATGTTACATACCAAATTATAATATCT
      |*771 |*781 |*791
                          | *801
 | *761
                                 | *811
{\tt AATGGAGCAATTTGTCTTTTGCTATATTCTCCAAGATTATCTCTTAAGACCATATGCCCC}
 | *821
      I * 871
\tt CTGTTTTAATGTTTCTTACATCTTGTTTTTACTCATTTCTGACTGGACAAAGTTCTTCCA
 I *881
      | *891 | *901 | *911 | *921 | *931
AACAATTCTGAGAAACAAAAACACACGCAGAATTAACAATTCTTTTCCCTGTGCTTCT
 TATGTAAGAATCCTCCTGTGGCCTCTGCTTGTACAGAACTGGGAAACAACACTTGGTTAG
 | *1001
      | *1011 | *1021
                    | *1031
                          | *1041
                                 | *1051
{\tt TCTCTTTTAAGTTACAAAAAGCCAATTGATGTTTCTTATTCTTTTTAAATTTTAAATTT}
 | *1111
\tt TTGTTATAAATACTCACAGGATACCTTATTTCCCTAGCTATCATCTCCTGACTTAATGTT
| *1121 | *1131 | *1141 | *1151
                          | *1161
\verb|TTTTAAACCCACCAATATAAATTTAATTAAAGATATATGTTGTAAGGATggtctgttgtg|\\
. . . . .
acatcaacaagtcatctcttcccagggaatcagtttctccacgctttgatcactctgtta
```

LRG Parser: Version: 1.1, Version Date: 11/02/2015

Reader: Version: 1, Version Date: 11/02/2015 Writer: Version: 1, Version Date: 11/02/2015 Control: Version: 1, Version Date: 11/02/2015