NRCD Human Full-Length cDNA Clone

Gene Engineering Division
RIKEN BioResource Research Center

RIKEN Clone ID : RBd54F07
Vector : pGCAP10

Lot# : 7677_B1II

Gene IMPG2
Accession No. AB593127 4439 bp

● Plasmid DNA purification

Date : 21.09.21 Culture : LB (100 ug/ml Ampicillin) 5 ml -> at 37 deg C O/N

Date : 21.09.22 Purification : QIAGEN Miniprep kit -> dH_2O 100 ul

● Digestion by restriction enzyme/Concentrarion calibration

Date : 21.09.22

DNA concentration (O.D.): 214 ng/ul

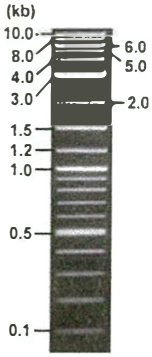
DNA	0.5 ul
Enzyme (BamHI)	1 ul
Buffer H	1 ul
dH_2O	7.5 ul
Total	10 ul

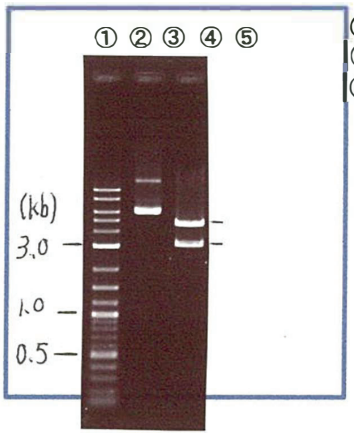
< Size of fragment expected from this clone >

BamHI 3.1kb (vector), 4.7 kb

Erectrophoresis : 1% agarose gel, 1x TAE Buffer

Marker : 2-Log DNA Ladder (NEB#N3200L)





①:Marker
②:uncut
③:BamHI

● Confirmation of the sequence

Date : 21.11.25

full sequence	RBd54F07hts01.seq

検 '25.05.08 笹沼

● Adjust plasmid DNA solution to 25 ng/ul

Date : 21.12.2

DNA (214 ng/ul)	66.0	ul
10x TE	56.4	ul
dH_2O	442.5	ul
Total	564.9	ul

● Shipping

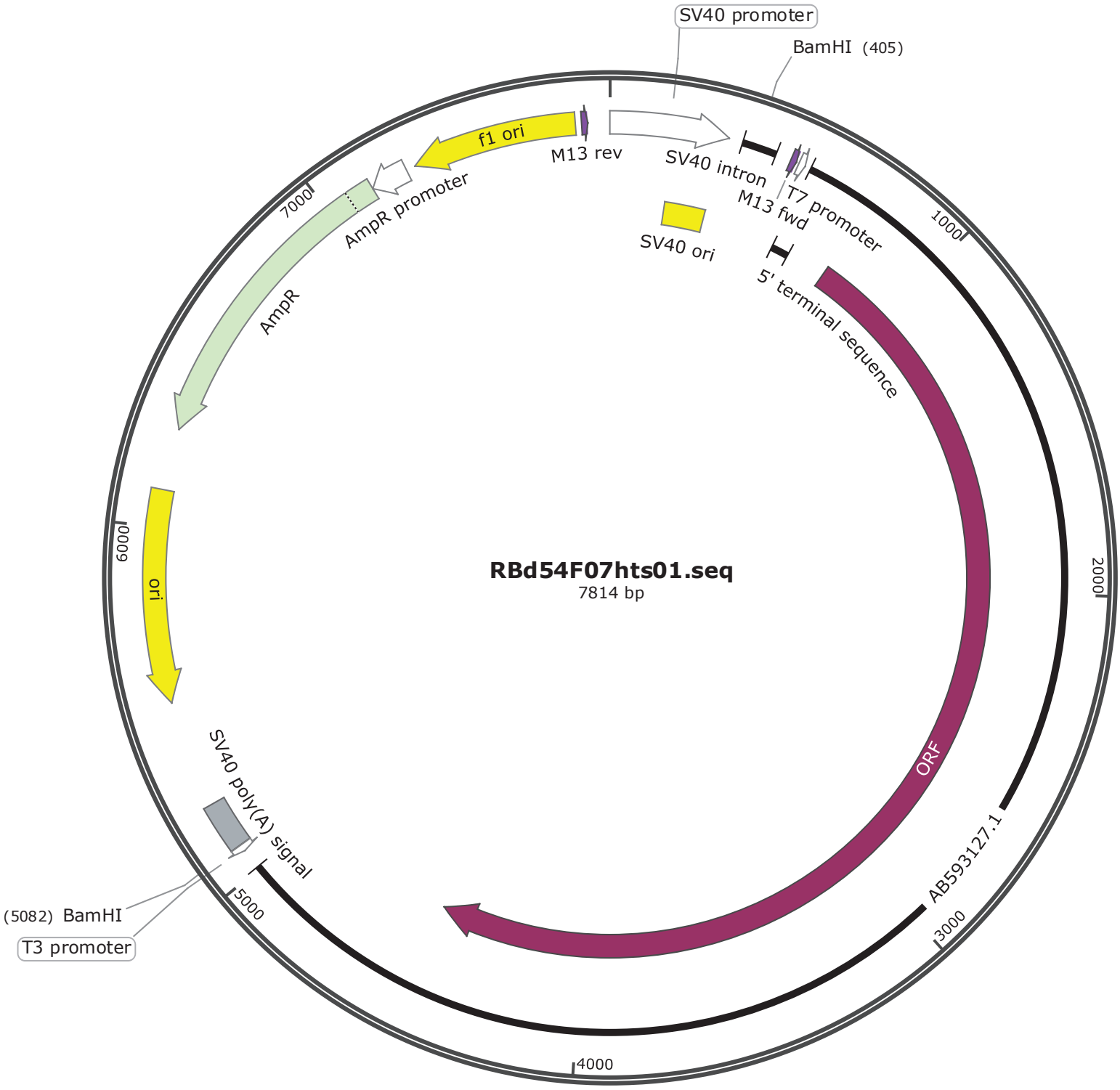
☑ Conc. : 25 ng/μl, Volume : 40 μl

☐ Conc.: [redacted]

APPROVED BY :



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SV40 promoter
BamHI (405)
f1 ori
M13 rev
SV40 intron
M13 fwd
T7 promoter
SV40 ori
5' terminal sequence
AmpR promoter
AmpR
ori
SV40 poly(A) signal
(5082) BamHI
T3 promoter
ORF
AB593127.1
RBd54F07hts01.seq
7814 bp
1000
2000
3000
4000
5000
6000
7000

BLAST Results

Questions/comments

Blast 2 sequences

Job title: AB593127:Homo sapiens IMPG2 mRNA for interphotoreceptor...

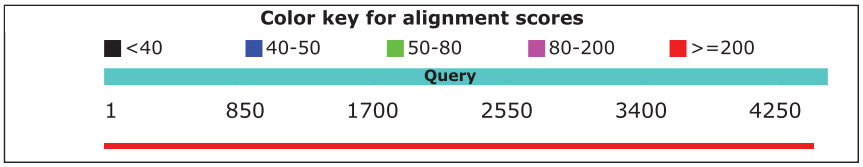
RID 1S786EJU114 (Expires on 05-09 10:55 am)

Query ID	AB593127.1	**Subject ID**	lcl|Query_4449179
Description	Homo sapiens IMPG2 mRNA for interphotoreceptor matrix proteoglycan 2, complete cds, clone: HP08405-RBd54F07	**Description**	None See details
Molecule type	nucleic acid	**Molecule type**	dna
Query Length	4439	**Subject Length**	7814
		Program	BLASTN 2.16.1+

RBd54F07hts01.seq

Graphic Summary

Distribution of the top 1 Blast Hits on 1 subject sequences



Dot Matrix View

Descriptions

Sequences producing significant alignments:

Description	Max Score	Total Score	Query Cover	E value	Per. Ident	Accession
None provided	8198	8198	100%	0.0	100.00%	Query_4449179

Alignments

Sequence ID: Query_4449179 Length: 7814 Number of Matches: 1
Range 1: 568 to 5006

Score	Expect	Identities	Gaps	Strand	Frame
8198 bits(4439)	0.0()	4439/4439(100%)	0/4439(0%)	Plus/Plus	

Features:

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Query          1    GTGAGAGCTACTTTGAAAGGACAACCATTTTTCTTTCCGCTAATTTATAATGGTTTTGAA  60
Sbjct        568    ............................................................  627

Query         61    GTGGTTGTTCATTCTCAAACATAGACTTTTAAATGTTAGGTCTTTCCTATAACTCTTTGT  120
Sbjct        628    ............................................................  687

Query        121    TATTGGAAGTTTCAAGGATTTGGACACTCAATTAAGGATTCTGTCCTCTCCTCATTCCTT  180
Sbjct        688    ............................................................  747

CDS:interphotorecept  1                  M  I  M  F  P  L  F  G  K  I  S  L  G  I  L
Query        181    TGGTTTTGGCCCAAATGATTATGTTTCCTCTTTTTGGGAAGATTTCTCTGGGTATTTTGA  240
Sbjct        748    ............................................................  807

CDS:interphotorecept  16   I  F  V  L  I  E  G  D  F  P  S  L  T  A  Q  T  Y  L  S  I
Query        241    TATTTGTCCTGATAGAAGGAGACTTTCCATCATTAACAGCACAAACCTACTTATCTATAG  300
Sbjct        808    ............................................................  867

CDS:interphotorecept  36   E  E  I  Q  E  P  K  S  A  V  S  F  L  L  P  E  E  S  T  D
Query        301    AGGAGATCCAAGAACCCAAGAGTGCAGTTTCTTTTCTCCTGCCTGAAGAATCAACAGACC  360
Sbjct        868    ............................................................  927

CDS:interphotorecept  56   L  S  L  A  T  K  K  K  Q  P  L  D  R  R  E  T  E  R  Q  W
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Sbjct                928  ..........................................................  987

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Query                421  TAATCAGAAGGCGGAGATCTATTCTGTTTCCTAATGGAGTGAAAATCTGCCCAGATGAAA  480
Sbjct                988  ..........................................................  1047

CDS:interphotorecept  96  S  V  A  E  A  V  A  N  H  V  K  Y  F  K  V  R  V  C  Q  E
Query                481  GTGTTGCAGAGGCTGTGGCAAATCATGTGAAGTATTTTAAAGTCCGAGTGTGTCAGGAAG  540
Sbjct                1048 ..........................................................  1107

CDS:interphotorecept 116  A  V  W  E  A  F  R  T  F  W  D  R  L  P  G  R  E  E  Y  H
Query                541  CTGTCTGGGAAGCCTTCAGGACTTTTTGGGATCGACTTCCTGGGCGTGAGGAATATCATT  600
Sbjct                1108 ..........................................................  1167

CDS:interphotorecept 136  Y  W  M  N  L  C  E  D  G  V  T  S  I  F  E  M  G  T  N  F
Query                601  ACTGGATGAATTTGTGTGAGGATGGAGTCACAAGTATATTTGAAATGGGCACAAATTTTA  660
Sbjct                1168 ..........................................................  1227

CDS:interphotorecept 156  S  E  S  V  E  H  R  S  L  I  M  K  K  L  T  Y  A  K  E  T
Query                661  GTGAATCTGTGGAACATAGAAGCTTAATCATGAAGAAACTGACTTATGCAAAGGAAACTG  720
Sbjct                1228 ..........................................................  1287

CDS:interphotorecept 176  V  S  S  S  E  L  S  S  P  V  P  V  G  D  T  S  T  L  G  D
Query                721  TAAGCAGCTCTGAACTGTCTTCTCCAGTTCCTGTTGGTGATACTTCAACATTGGGAGACA  780
Sbjct                1288 ..........................................................  1347

CDS:interphotorecept 196  T  T  L  S  V  P  H  P  E  V  D  A  Y  E  G  A  S  E  S  S
Query                781  CTACTCTCAGTGTTCCACATCCAGAGGTGGACGCCTATGAAGGTGCCTCAGAGAGCAGCT  840
Sbjct                1348 ..........................................................  1407

CDS:interphotorecept 216  L  E  R  P  E  E  S  I  S  N  E  I  E  N  V  I  E  E  A  T
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Sbjct                1408 ..........................................................  1467

CDS:interphotorecept 236  K  P  A  G  E  Q  I  A  E  F  S  I  H  L  L  G  K  Q  Y  R
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Sbjct                1468 ..........................................................  1527

CDS:interphotorecept 256  E  E  L  Q  D  S  S  S  F  H  H  Q  H  L  E  E  E  F  I  S
Query                961  AAGAACTACAGGATTCCTCCAGCTTTCACCACCAGCACCTTGAAGAAGAATTTATTTCAG  1020
Sbjct                1528 ..........................................................  1587

CDS:interphotorecept 276  E  V  E  N  A  F  T  G  L  P  G  Y  K  E  I  R  V  L  E  F
Query                1021 AGGTTGAAAATGCATTTACTGGGTTACCAGGCTACAAGGAAATTCGTGTACTTGAATTTA  1080
Sbjct                1588 ..........................................................  1647

CDS:interphotorecept 296  R  S  P  K  E  N  D  S  G  V  D  V  Y  Y  A  V  T  F  N  G
Query                1081 GGTCCCCCAAGGAAAATGACAGTGGCGTAGATGTTTACTATGCAGTTACCTTCAATGGTG  1140
Sbjct                1648 ..........................................................  1707

CDS:interphotorecept 316  E  A  I  S  N  T  T  W  D  L  I  S  L  H  S  N  K  V  E  N
Query                1141 AGGCCATCAGCAATACCACCTGGGACCTCATTAGCCTTCACTCCAACAAGGTGGAAAACC  1200
Sbjct                1708 ..........................................................  1767

CDS:interphotorecept 336  H  G  L  V  E  L  D  D  K  P  T  V  V  Y  T  I  S  N  F  R
Query                1201 ATGGCCTTGTGGAACTGGATGATAAACCCACTGTTGTTTATACAATCAGTAACTTCAGAG  1260
Sbjct                1768 ..........................................................  1827

CDS:interphotorecept 356  D  Y  I  A  E  T  L  Q  Q  N  F  L  L  G  N  S  S  L  N  P
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Query                1261 ATTATATTGCTGAGACATTGCAGCAGAATTTTTTTGCTGGGGAACTCTTCCTTGAATCCAG  1320
Sbjct                1828 ..........................................................  1887

CDS:interphotorecept 376  D  P  D  S  L  Q  L  I  N  V  R  G  V  L  R  H  Q  T  E  D
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Sbjct                1888 ..........................................................  1947

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Query                1381 TAGTTTGGAACACCCAAAGTTCAAGTCTTCAGGCAACGCCGTCATCTATTCTGGATAATA  1440
Sbjct                1948 ..........................................................  2007

CDS:interphotorecept 416  T  F  Q  A  A  W  P  S  A  D  E  S  I  T  S  S  I  P  P  L
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Sbjct                2008 ..........................................................  2067

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Sbjct                2068 ..........................................................  2127

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Sbjct                2128 ..........................................................  2187

CDS:interphotorecept 476  P  E  V  L  E  V  S  S  L  T  L  H  S  V  T  P  A  V  L  Q
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Sbjct                2188 ..........................................................  2247

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Sbjct                2248 ..........................................................  2307

CDS:interphotorecept 516  L  A  N  V  E  E  S  E  D  F  L  S  I  D  S  L  P  S  S  S
Query                1741 TAGCCAATGTTGAAGAGTCAGAAGATTTTCTTTCTATTGATTCATTGCCTTCAAGTTCAT  1800
Sbjct                2308 ..........................................................  2367

CDS:interphotorecept 536  F  T  Q  P  V  P  K  E  T  I  P  S  M  E  D  S  D  V  S  L
Query                1801 TCACTCAACCTGTGCCAAAAGAAACAATACCATCCATGGAAGACTCTGATGTGTCCTTAA  1860
Sbjct                2368 ..........................................................  2427

CDS:interphotorecept 556  T  S  S  P  Y  L  T  S  S  I  P  F  G  L  D  S  L  T  S  K
Query                1861 CATCTTCACCATATCTGACCTCTTCTATACCTTTTGGCTTGGACTCCTTGACCTCCAAAG  1920
Sbjct                2428 ..........................................................  2487

CDS:interphotorecept 576  V  K  D  Q  L  K  V  S  P  F  L  P  D  A  S  M  E  K  E  L
Query                1921 TCAAAGACCAATTAAAAGTGAGCCCTTTCCTGCCAGATGCATCCATGGAAAAAGAGTTAA  1980
Sbjct                2488 ..........................................................  2547

CDS:interphotorecept 596  I  F  D  G  G  L  G  S  G  S  G  Q  K  V  D  L  I  T  W  P
Query                1981 TATTTGACGGTGGTTTAGGTTCAGGGTCTGGGCAAAAGGTAGATCTGATTACTTGGCCAT  2040
Sbjct                2548 ..........................................................  2607

CDS:interphotorecept 616  W  S  E  T  S  S  E  K  S  A  E  P  L  S  K  P  W  L  E  D
Query                2041 GGAGTGAGACTTCATCAGAGAAGAGCGCTGAACCACTGTCCAAGCCGTGGCTTGAAGATG  2100
Sbjct                2608 ..........................................................  2667

CDS:interphotorecept 636  D  D  S  L  L  P  A  E  I  E  D  K  K  L  V  L  V  D  K  M
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Sbjct                2668 ..........................................................  2727
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Query                 2161  ATTCCACAGACCAAATTAGTAAGCACTCAAAATATGAACATGATGACAGATCCACACACT  2220
Sbjct                 2728  ............................................................  2787

CDS:interphotorecept  676   F  P  E  E  E  P  L  S  G  P  A  V  P  I  F  A  D  T  A  A
Query                 2221  TTCCAGAGGAAGAGCCTCTTAGTGGGCCTGCTGTGCCCATCTTCGCAGATACTGCAGCTG  2280
Sbjct                 2788  ............................................................  2847

CDS:interphotorecept  696   E  S  A  S  L  T  L  P  K  H  I  S  E  V  P  G  V  D  D  Y
Query                 2281  AATCTGCGTCTCTAACCCTCCCCAAGCACATATCAGAAGTACCTGGTGTTGATGATTACT  2340
Sbjct                 2848  ............................................................  2907

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Query                 2341  CAGTTACCAAAGCACCTCTTATACTGACATCTGTAGCAATCTCTGCCTCTACTGATAAAT  2400
Sbjct                 2908  ............................................................  2967

CDS:interphotorecept  736   S  D  Q  A  D  A  I  L  R  E  D  M  E  Q  I  T  E  S  S  N
Query                 2401  CAGATCAGGCAGATGCCATCCTAAGGGAGGATATGGAACAAATTACTGAGTCATCCAACT  2460
Sbjct                 2968  ............................................................  3027

CDS:interphotorecept  756   Y  E  W  F  D  S  E  V  S  M  V  K  P  D  M  Q  T  L  W  T
Query                 2461  ATGAATGGTTTGACAGTGAGGTTTCAATGGTAAAGCCAGATATGCAAACTTTGTGGACTA  2520
Sbjct                 3028  ............................................................  3087

CDS:interphotorecept  776   I  L  P  E  S  E  R  V  W  T  R  T  S  S  L  E  K  L  S  R
Query                 2521  TATTGCCAGAATCAGAGAGAGTTTGGACAAGAACTTCTTCCCTAGAGAAATTGTCCAGAG  2580
Sbjct                 3088  ............................................................  3147

CDS:interphotorecept  796   D  I  L  A  S  T  P  Q  S  A  D  R  L  W  L  S  V  T  Q  S
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Sbjct                 3148  ............................................................  3207

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Query                 2641  CCAAATTGCCTCCAACCACAATCTCCACCCTGCTAGAGGATGAAGTAATTATGGGTGTAC  2700
Sbjct                 3208  ............................................................  3267

CDS:interphotorecept  836   Q  D  I  S  L  E  L  D  R  I  G  T  D  Y  Y  Q  P  E  Q  V
Query                 2701  AGGATATTTCGTTAGAACTGGACCGGATAGGCACAGATTACTATCAGCCTGAGCAAGTCC  2760
Sbjct                 3268  ............................................................  3327

CDS:interphotorecept  856   Q  E  Q  N  G  K  V  G  S  Y  V  E  M  S  T  S  V  H  S  T
Query                 2761  AAGAGCAAAATGGCAAGGTTGGTAGTTATGTGGAAATGTCAACAAGTGTTCACTCCACAG  2820
Sbjct                 3328  ............................................................  3387

CDS:interphotorecept  876   E  M  V  S  V  A  W  P  T  E  G  G  D  D  L  S  Y  T  Q  T
Query                 2821  AGATGGTTAGTGTGGCTTGGCCCACAGAAGGAGGAGATGACTTGAGTTATACCCAGACTT  2880
Sbjct                 3388  ............................................................  3447

CDS:interphotorecept  896   S  G  A  L  V  V  F  F  S  L  R  V  T  N  M  M  F  S  E  D
Query                 2881  CAGGAGCTTTGGTGGTTTTCTTCAGCCTCCGAGTGACTAACATGATGTTTTCAGAAGATC  2940
Sbjct                 3448  ............................................................  3507

CDS:interphotorecept  916   L  F  N  K  N  S  L  E  Y  K  A  L  E  Q  R  F  L  E  L  L
Query                 2941  TGTTTAATAAAAACTCCTTGGAGTATAAAGCCCTGGAGCAAAGATTCTTAGAATTGCTGG  3000
Sbjct                 3508  ............................................................  3567

CDS:interphotorecept  936   V  P  Y  L  Q  S  N  L  T  G  F  Q  N  L  E  I  L  N  F  R
Query                 3001  TTCCCTATCTCCAGTCAAATCTCACGGGGTTCCAGAACTTAGAAATCCTCAACTTCAGAA  3060
Sbjct                 3568  ............................................................  3627
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CDS:interphotorecept  956   N  G  S  I  V  V  N  S  R  M  K  F  A  N  S  V  P  P  N  V
Query                 3061  ATGGCAGCATTGTGGTGAACAGTCGAATGAAGTTTGCCAATTCTGTCCCTCCTAACGTCA  3120
Sbjct                 3628  ............................................................  3687

CDS:interphotorecept  976   N  N  A  V  Y  M  I  L  E  D  F  C  T  T  A  Y  N  T  M  N
Query                 3121  ACAATGCGGTGTACATGATTCTGGAAGACTTTTGTACCACTGCCTACAATACCATGAACT  3180
Sbjct                 3688  ............................................................  3747

CDS:interphotorecept  996   L  A  I  D  K  Y  S  L  D  V  E  S  G  D  E  A  N  P  C  K
Query                 3181  TGGCTATTGATAAATACTCTCTTGATGTGGAATCAGGTGATGAAGCCAACCCTTGCAAGT  3240
Sbjct                 3748  ............................................................  3807

CDS:interphotorecept  1016  F  Q  A  C  N  E  F  S  E  C  L  V  N  P  W  S  G  E  A  K
Query                 3241  TTCAGGCCTGTAATGAATTTTCAGAGTGTCTGGTCAACCCCTGGAGTGGAGAAGCAAAGT  3300
Sbjct                 3808  ............................................................  3867

CDS:interphotorecept  1036  C  R  C  F  P  G  Y  L  S  V  E  E  R  P  C  Q  S  L  C  D
Query                 3301  GCAGATGCTTCCCTGGATACCTGAGTGTGGAAGAACGGCCCTGTCAGAGTCTCTGTGACC  3360
Sbjct                 3868  ............................................................  3927

CDS:interphotorecept  1056  L  Q  P  D  F  C  L  N  D  G  K  C  D  I  M  P  G  H  G  A
Query                 3361  TACAGCCTGACTTCTGCTTGAATGATGGAAAGTGTGACATTATGCCTGGGCACGGGGCCA  3420
Sbjct                 3928  ............................................................  3987

CDS:interphotorecept  1076  I  C  R  C  R  V  G  E  N  W  W  Y  R  G  K  H  C  E  E  F
Query                 3421  TTTGTAGGTGCCGGGTGGGTGAGAACTGGTGGTACCGAGGCAAGCACTGTGAGGAATTTG  3480
Sbjct                 3988  ............................................................  4047

CDS:interphotorecept  1096  V  S  E  P  V  I  I  G  I  T  I  A  S  V  V  G  L  L  V  I
Query                 3481  TGTCTGAGCCCGTGATCATAGGCATCACTATTGCCTCCGTGGTTGGACTTCTTGTCATCT  3540
Sbjct                 4048  ............................................................  4107

CDS:interphotorecept  1116  F  S  A  I  I  Y  F  F  I  R  T  L  Q  A  H  H  D  R  S  E
Query                 3541  TTTCTGCTATCATCTACTTCTTCATCAGGACTCTCCAAGCACACCATGACAGGAGTGAAA  3600
Sbjct                 4108  ............................................................  4167

CDS:interphotorecept  1136  R  E  S  P  F  S  G  S  S  R  Q  P  D  S  L  S  S  I  E  N
Query                 3601  GAGAGAGTCCCTTCAGTGGCTCCAGCAGGCAGCCTGACAGCCTCTCATCTATTGAGAATG  3660
Sbjct                 4168  ............................................................  4227

CDS:interphotorecept  1156  A  V  K  Y  N  P  V  Y  E  S  H  R  A  G  C  E  K  Y  E  G
Query                 3661  CTGTGAAGTACAACCCCGTGTATGAAAGTCACAGGGCTGGATGTGAGAAGTATGAGGGAC  3720
Sbjct                 4228  ............................................................  4287

CDS:interphotorecept  1176  P  Y  P  Q  H  P  F  Y  S  S  A  S  G  D  V  I  G  G  L  S
Query                 3721  CCTATCCTCAGCATCCCTTCTACAGCTCTGCTAGCGGAGACGTGATTGGTGGGCTGAGCA  3780
Sbjct                 4288  ............................................................  4347

CDS:interphotorecept  1196  R  E  E  I  R  Q  M  Y  E  S  S  E  L  S  R  E  E  I  Q  E
Query                 3781  GAGAAGAAATCAGACAGATGTATGAGAGCAGTGAGCTTTCCAGAGAGGAAATTCAAGAGA  3840
Sbjct                 4348  ............................................................  4407

CDS:interphotorecept  1216  R  M  R  V  L  E  L  Y  A  N  D  P  E  F  A  A  F  V  R  E
Query                 3841  GAATGAGAGTTTTGGAACTGTATGCCAATGATCCTGAGTTTGCAGCTTTTGTGAGAGAGC  3900
Sbjct                 4408  ............................................................  4467

CDS:interphotorecept  1236  Q  Q  V  E  E  V
Query                 3901  AACAAGTGGAAGAGGTTTAACCAAAACTCCTGTTCTGAAACTGATTAGAAGCCTGGAGAA  3960
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Sbjct  4468  ..........................................................  4527

Query  3961  GATGGAGATTACTTGTTACTTATGTCATATAATTAACCTGGATTTTAAACACTGTTGGAA  4020
Sbjct  4528  ..........................................................  4587

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Sbjct  4648  ..........................................................  4707

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Sbjct  4708  ..........................................................  4767

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Sbjct  4768  ..........................................................  4827

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Sbjct  4828  ..........................................................  4887

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Sbjct  4888  ..........................................................  4947

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Sbjct  4948  ..........................................................  5006
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BLAST Results

Questions/comments

Blast 2 sequences

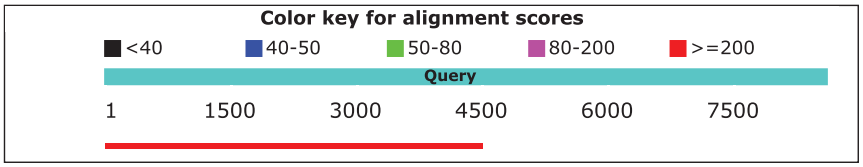
Job title: BC057808:Homo sapiens hyaluronan and proteoglycan...

RID	1S6TXHJZ114 (Expires on 05-09 10:47 am)		
Query ID	NM_016247.4	**Subject ID**	lcl|Query_4066551
Description	Homo sapiens interphotoreceptor matrix proteoglycan 2 (IMPG2), mRNA	**Description**	None See details
Molecule type	nucleic acid	**Molecule type**	dna
Query Length	8352	**Subject Length**	7813
		Program	BLASTN 2.16.1+

RBd54F07hts01.seq

Graphic Summary

Distribution of the top 1 Blast Hits on 1 subject sequences



Dot Matrix View

Descriptions

Sequences producing significant alignments:

Description	Max Score	Total Score	Query Cover	E value	Per. Ident	Accession
None provided	8194	8194	53%	0.0	100.00%	Query_4066551

Alignments

Sequence ID: Query_4066551 Length: 7813 Number of Matches: 1
Range 1: 568 to 5004

Score	Expect	Identities	Gaps	Strand	Frame
8194 bits(4437)	0.0()	4437/4437(100%)	0/4437(0%)	Plus/Plus	

Features:

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Query          10    GTGAGAGCTACTTTGAAAGGACAACCATTTTTCTTTCCGCTAATTTATAATGGTTTTGAA  69
Sbjct          568   ............................................................  627

Query          70    GTGGTTGTTCATTCTCAAACATAGACTTTTAAATGTTAGGTCTTTCCTATAACTCTTTGT  129
Sbjct          628   ............................................................  687

Query          130   TATTGGAAGTTTCAAGGATTTGGACACTCAATTAAGGATTCTGTCCTCTCCTCATTCCTT  189
Sbjct          688   ............................................................  747

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Query          190   TGGTTTTGGCCCAAATGATTATGTTTCCTCTTTTTGGGAAGATTTCTCTGGGTATTTTGA  249
Sbjct          748   ............................................................  807

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Sbjct          808   ............................................................  867

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Sbjct          868   ............................................................  927

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Sbjct                988  ..........................................................  1047

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Query                490  GTGTTGCAGAGGCTGTGGCAAATCATGTGAAGTATTTTAAAGTCCGAGTGTGTCAGGAAG  549
Sbjct                1048 ..........................................................  1107

CDS:interphotorecept 116  A  V  W  E  A  F  R  T  F  W  D  R  L  P  G  R  E  E  Y  H
Query                550  CTGTCTGGGAAGCCTTCAGGACTTTTTGGGATCGACTTCCTGGGCGTGAGGAATATCATT  609
Sbjct                1108 ..........................................................  1167

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Sbjct                1168 ..........................................................  1227

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Sbjct                1228 ..........................................................  1287

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Query                730  TAAGCAGCTCTGAACTGTCTTCTCCAGTTCCTGTTGGTGATACTTCAACATTGGGAGACA  789
Sbjct                1288 ..........................................................  1347

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Query                790  CTACTCTCAGTGTTCCACATCCAGAGGTGGACGCCTATGAAGGTGCCTCAGAGAGCAGCT  849
Sbjct                1348 ..........................................................  1407

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Query                850  TGGAAAGGCCAGAGGAGAGTATTAGCAATGAAATTGAGAATGTGATAGAAGAAGCCACAA  909
Sbjct                1408 ..........................................................  1467

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Query                910  AACCAGCAGGTGAACAGATTGCAGAATTCAGTATCCACCTTTTGGGGAAGCAGTACAGGG  969
Sbjct                1468 ..........................................................  1527

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Query                970  AAGAACTACAGGATTCCTCCAGCTTTCACCACCAGCACCTTGAAGAAGAATTTATTTCAG  1029
Sbjct                1528 ..........................................................  1587

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Sbjct                1588 ..........................................................  1647

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Sbjct                1648 ..........................................................  1707

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Sbjct                1708 ..........................................................  1767

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Query                1210 ATGGCCTTGTGGAACTGGATGATAAACCCACTGTTGTTTATACAATCAGTAACTTCAGAG  1269
Sbjct                1768 ..........................................................  1827

CDS:interphotorecept 356  D  Y  I  A  E  T  L  Q  Q  N  F  L  L  G  N  S  S  L  N  P
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Query                1270 ATTATATTGCTGAGACATTGCAGCAGAATTTTTTTGCTGGGGAACTCTTCCTTGAATCCAG  1329
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Sbjct                1888 ..........................................................  1947

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Query                1390 TAGTTTGGAACACCCAAAGTTCAAGTCTTCAGGCAACGCCGTCATCTATTCTGGATAATA  1449
Sbjct                1948 ..........................................................  2007

CDS:interphotorecept 416  T  F  Q  A  A  W  P  S  A  D  E  S  I  T  S  S  I  P  P  L
Query                1450 CCTTTCAAGCTGCATGGCCCTCAGCAGATGAATCCATCACCAGCAGTATTCCACCACTTG  1509
Sbjct                2008 ..........................................................  2067

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Sbjct                2068 ..........................................................  2127

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Sbjct                2128 ..........................................................  2187

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Sbjct                2188 ..........................................................  2247

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Sbjct                2248 ..........................................................  2307

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Sbjct                2308 ..........................................................  2367

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Sbjct                2368 ..........................................................  2427

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Sbjct                2428 ..........................................................  2487

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Query                1930 TCAAAGACCAATTAAAAGTGAGCCCTTTCCTGCCAGATGCATCCATGGAAAAAGAGTTAA  1989
Sbjct                2488 ..........................................................  2547

CDS:interphotorecept 596  I  F  D  G  G  L  G  S  G  S  G  Q  K  V  D  L  I  T  W  P
Query                1990 TATTTGACGGTGGTTTAGGTTCAGGGTCTGGGCAAAAGGTAGATCTGATTACTTGGCCAT  2049
Sbjct                2548 ..........................................................  2607

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Query                2050 GGAGTGAGACTTCATCAGAGAAGAGCGCTGAACCACTGTCCAAGCCGTGGCTTGAAGATG  2109
Sbjct                2608 ..........................................................  2667

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Query                2110 ATGATTCACTTTTGCCAGCTGAGATTGAAGACAAGAAACTAGTTTTAGTTGACAAAATGG  2169
Sbjct                2668 ..........................................................  2727
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CDS:interphotorecept  656   D  S  T  D  Q  I  S  K  H  S  K  Y  E  H  D  D  R  S  T  H
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Sbjct                 2728  ............................................................  2787

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Sbjct                 2788  ............................................................  2847

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Query                 2290  AATCTGCGTCTCTAACCCTCCCCAAGCACATATCAGAAGTACCTGGTGTTGATGATTACT  2349
Sbjct                 2848  ............................................................  2907

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Query                 2350  CAGTTACCAAAGCACCTCTTATACTGACATCTGTAGCAATCTCTGCCTCTACTGATAAAT  2409
Sbjct                 2908  ............................................................  2967

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Query                 2410  CAGATCAGGCAGATGCCATCCTAAGGGAGGATATGGAACAAATTACTGAGTCATCCAACT  2469
Sbjct                 2968  ............................................................  3027

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Query                 2470  ATGAATGGTTTGACAGTGAGGTTTCAATGGTAAAGCCAGATATGCAAACTTTGTGGACTA  2529
Sbjct                 3028  ............................................................  3087

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Query                 2530  TATTGCCAGAATCAGAGAGAGTTTGGACAAGAACTTCTTCCCTAGAGAAATTGTCCAGAG  2589
Sbjct                 3088  ............................................................  3147

CDS:interphotorecept  796   D  I  L  A  S  T  P  Q  S  A  D  R  L  W  L  S  V  T  Q  S
Query                 2590  ACATATTGGCAAGTACACCACAGAGTGCTGACAGGCTCTGGTTATCTGTGACACAGTCTA  2649
Sbjct                 3148  ............................................................  3207

CDS:interphotorecept  816   T  K  L  P  P  T  T  I  S  T  L  L  E  D  E  V  I  M  G  V
Query                 2650  CCAAATTGCCTCCAACCACAATCTCCACCCTGCTAGAGGATGAAGTAATTATGGGTGTAC  2709
Sbjct                 3208  ............................................................  3267

CDS:interphotorecept  836   Q  D  I  S  L  E  L  D  R  I  G  T  D  Y  Y  Q  P  E  Q  V
Query                 2710  AGGATATTTCGTTAGAACTGGACCGGATAGGCACAGATTACTATCAGCCTGAGCAAGTCC  2769
Sbjct                 3268  ............................................................  3327

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Query                 2770  AAGAGCAAAATGGCAAGGTTGGTAGTTATGTGGAAATGTCAACAAGTGTTCACTCCACAG  2829
Sbjct                 3328  ............................................................  3387

CDS:interphotorecept  876   F  M  V  S  V  A  W  P  T  E  G  G  D  D  L  S  Y  T  Q  T
Query                 2830  AGATGGTTAGTGTGGCTTGGCCCACAGAAGGAGGAGATGACTTGAGTTATACCCAGACTT  2889
Sbjct                 3388  ............................................................  3447

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Query                 2890  CAGGAGCTTTGGTGGTTTTCTTCAGCCTCCGAGTGACTAACATGATGTTTTCAGAAGATC  2949
Sbjct                 3448  ............................................................  3507

CDS:interphotorecept  916   L  F  N  K  N  S  L  E  Y  K  A  L  E  Q  R  F  L  E  L  L
Query                 2950  TGTTTAATAAAAACTCCTTGGAGTATAAAGCCCTGGAGCAAAGATTCTTAGAATTGCTGG  3009
Sbjct                 3508  ............................................................  3567

CDS:interphotorecept  936   V  P  Y  L  Q  S  N  L  T  G  F  Q  N  L  E  I  L  N  F  R
Query                 3010  TTCCCTATCTCCAGTCAAATCTCACGGGGTTCCAGAACTTAGAAATCCTCAACTTCAGAA  3069
Sbjct                 3568  ............................................................  3627
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CDS:interphotorecept  956   N  G  S  I  V  V  N  S  R  M  K  F  A  N  S  V  P  P  N  V
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Sbjct                 3628  ............................................................  3687

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Query                 3130  ACAATGCGGTGTACATGATTCTGGAAGACTTTTGTACCACTGCCTACAATACCATGAACT  3189
Sbjct                 3688  ............................................................  3747

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Sbjct                 3748  ............................................................  3807

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Query                 3250  TTCAGGCCTGTAATGAATTTTCAGAGTGTCTGGTCAACCCCTGGAGTGGAGAAGCAAAGT  3309
Sbjct                 3808  ............................................................  3867

CDS:interphotorecept  1036  C  R  C  F  P  G  Y  L  S  V  E  E  R  P  C  Q  S  L  C  D
Query                 3310  GCAGATGCTTCCCTGGATACCTGAGTGTGGAAGAACGGCCCTGTCAGAGTCTCTGTGACC  3369
Sbjct                 3868  ............................................................  3927

CDS:interphotorecept  1056  L  Q  P  D  F  C  L  N  D  G  K  C  D  I  M  P  G  H  G  A
Query                 3370  TACAGCCTGACTTCTGCTTGAATGATGGAAAGTGTGACATTATGCCTGGGCACGGGGCCA  3429
Sbjct                 3928  ............................................................  3987

CDS:interphotorecept  1076  I  C  R  C  R  V  G  E  N  W  W  Y  R  G  K  H  C  E  E  F
Query                 3430  TTTGTAGGTGCCGGGTGGGTGAGAACTGGTGGTACCGAGGCAAGCACTGTGAGGAATTTG  3489
Sbjct                 3988  ............................................................  4047

CDS:interphotorecept  1096  V  S  E  P  V  I  I  G  I  T  I  A  S  V  V  G  L  L  V  I
Query                 3490  TGTCTGAGCCCGTGATCATAGGCATCACTATTGCCTCCGTGGTTGGACTTCTTGTCATCT  3549
Sbjct                 4048  ............................................................  4107

CDS:interphotorecept  1116  F  S  A  I  I  Y  F  F  I  R  T  L  Q  A  H  H  D  R  S  E
Query                 3550  TTTCTGCTATCATCTACTTCTTCATCAGGACTCTCCAAGCACACCATGACAGGAGTGAAA  3609
Sbjct                 4108  ............................................................  4167

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Query                 3610  GAGAGAGTCCCTTCAGTGGCTCCAGCAGGCAGCCTGACAGCCTCTCATCTATTGAGAATG  3669
Sbjct                 4168  ............................................................  4227

CDS:interphotorecept  1156  A  V  K  Y  N  P  V  Y  E  S  H  R  A  G  C  E  K  Y  E  G
Query                 3670  CTGTGAAGTACAACCCCGTGTATGAAAGTCACAGGGCTGGATGTGAGAAGTATGAGGGAC  3729
Sbjct                 4228  ............................................................  4287

CDS:interphotorecept  1176  P  Y  P  Q  H  P  F  Y  S  S  A  S  G  D  V  I  G  G  L  S
Query                 3730  CCTATCCTCAGCATCCCTTCTACAGCTCTGCTAGCGGAGACGTGATTGGTGGGCTGAGCA  3789
Sbjct                 4288  ............................................................  4347

CDS:interphotorecept  1196  R  E  E  I  R  Q  M  Y  E  S  S  E  L  S  R  E  E  I  Q  E
Query                 3790  GAGAAGAAATCAGACAGATGTATGAGAGCAGTGAGCTTTCCAGAGAGGAAATTCAAGAGA  3849
Sbjct                 4348  ............................................................  4407

CDS:interphotorecept  1216  R  M  R  V  L  E  L  Y  A  N  D  P  E  F  A  A  F  V  R  E
Query                 3850  GAATGAGAGTTTTGGAACTGTATGCCAATGATCCTGAGTTTGCAGCTTTTGTGAGAGAGC  3909
Sbjct                 4408  ............................................................  4467

CDS:interphotorecept  1236  Q  Q  V  E  E  V
Query                 3910  AACAAGTGGAAGAGGTTTAACCAAAACTCCTGTTCTGAAACTGATTAGAAGCCTGGAGAA  3969
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Sbjct  4468  ..........................................................  4527

Query  3970  GATGGAGATTACTTGTTACTTATGTCATATAATTAACCTGGATTTTAAACACTGTTGGAA  4029
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Query  4030  GAAGAGTTTTCTATGAAAAAATTAAATATAGGGCACACTGttttttttCAGCTTAAGTT  4089
Sbjct  4588  ..........................................................  4647

Query  4090  TTCAGAATGTAGTAAGAGATGTTACCATTTTTATTTCTATAAAGACTGAATGCTGTGTTT  4149
Sbjct  4648  ..........................................................  4707

Query  4150  AAATAAATTGAAAACTACGTAAACTCTGGAAAGTATTCTATAAGAAAAAGCTGGACCTAG  4209
Sbjct  4708  ..........................................................  4767

Query  4210  GATTTAGGGCTGCAGTTGCTGTCTGCTTCTGAATCACTGGGGGTGTCTCCTAAGAACTGT  4269
Sbjct  4768  ..........................................................  4827

Query  4270  GCCTCGGGTTTTTCAATAGGAAAATAAGGTGAGACTCTTCCATGGAGAAGTCTGGCTTAG  4329
Sbjct  4828  ..........................................................  4887

Query  4330  TAAGGGAATATTTTGGAGCATATTTGTTATTGTTGGGTAGAAGGGGAAACCTTTGAAATA  4389
Sbjct  4888  ..........................................................  4947

Query  4390  GTCTTAATGGATAGTTTATAATCAGGCATTCATCTAAATAAAATTCTTTCttttttt  4446
Sbjct  4948  ..........................................................  5004
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