

RIKEN Clone ID : IRAL025A16

Lot#: 7566_B4Jf

Vector : pOTB7

Gene	VAV1	
Accession No.	BC013361.2	2776 bp
	<i>CDS</i>	2373 bp

● **Plasmid DNA purification**

Date : 2024/10/16

Culture : LB (25 ug/ml Chloramphenicol) 5 ml -> at 37 deg C over night

Date : 2024/10/17

Purification : QIAGEN Miniprep kit -> dH₂O 100 ul

● **Digestion by restriction enzyme/Concentration calibration**

Date : 2024/10/17

DNA concentration (O.D.): 322 ng/ul

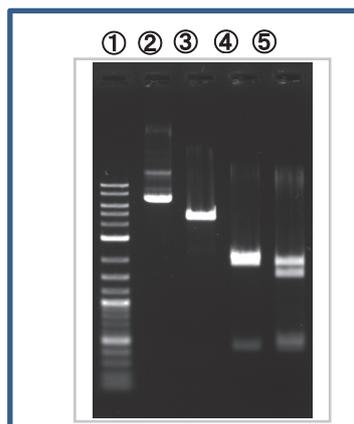
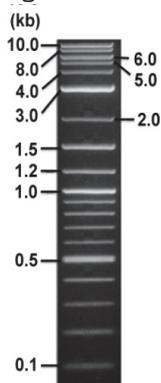
< Size of fragment expected from this clone >

DNA	0.3	ul
Enzyme (BamHI + BglII)	0.5 + 0.5	ul
Buffer H	1	ul
dH ₂ O	7.7	ul
Total	10	ul

BamHI	4.6	kb	
BglII	2.1, 2.0, 0.5	kb	
BamHI + BglII	1.6kb (Vector)	2.0, 0.5, 0.5	kb

Electrophoresis : 1% agarose gel, 1x TAE Buffer

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



①:Marker
②:uncut
③:BamHI
④:BglII
⑤:BamHI + BglII

● **Adjust plasmid DNA solution to 25 ng/ul**

Date : 2024/10/24

DNA (<u>322</u> ng/ul)	86	ul
10x TE	111	ul
dH ₂ O	911	ul
Total	1,108	ul

● **Confirmation of the sequence**

Date : 2024/10/24

full sequence	IRAL025A16hts01.seq

● **Shipping**

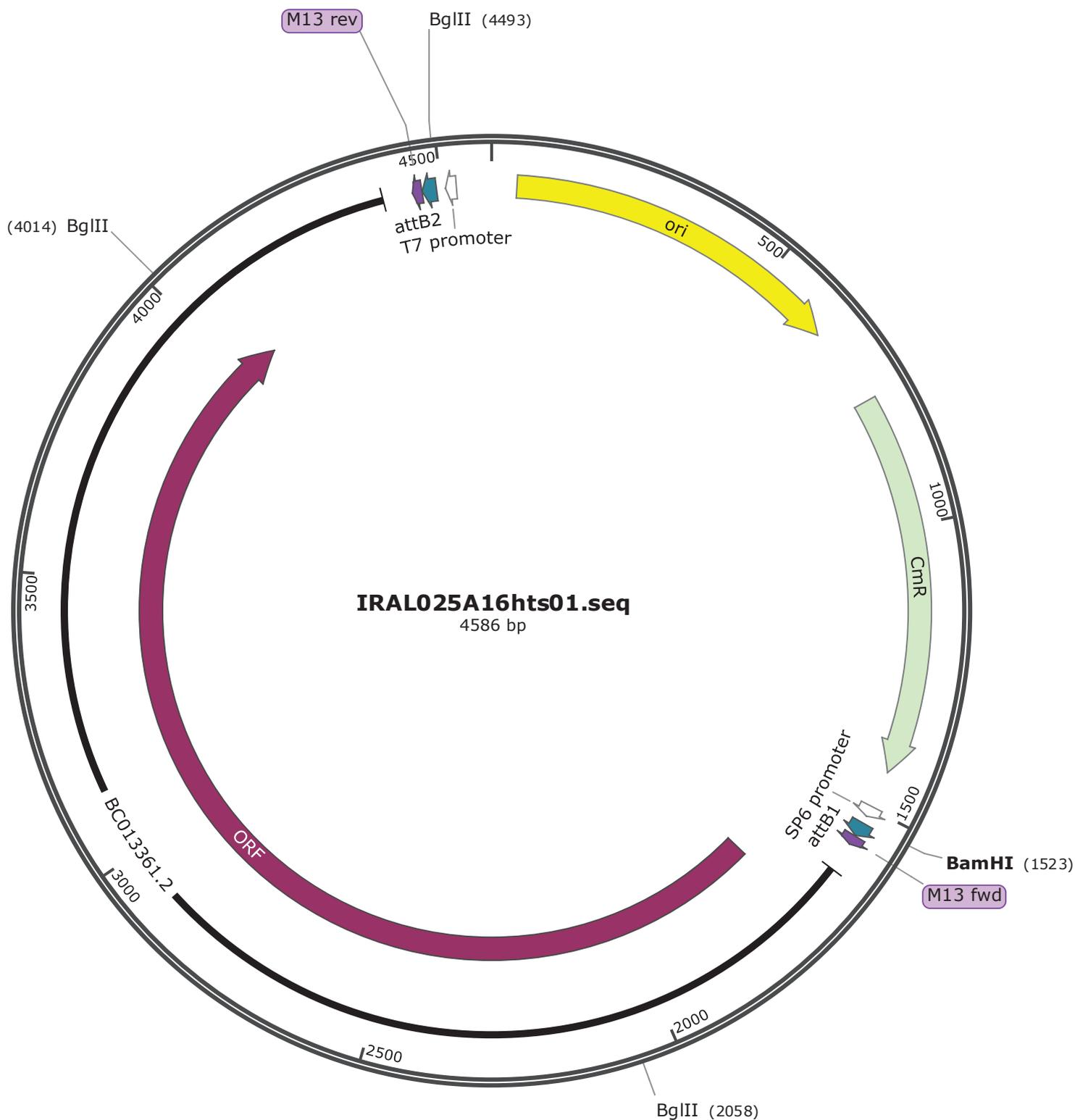
Conc. : 25 ng/ul, Volume : 40 ul

Conc. : ng/ul, Volume : ul



APPROVED BY :

<http://dna.brc.riken.jp/index.html>



BLAST Results

[Questions/comments](#)

Blast 2 sequences

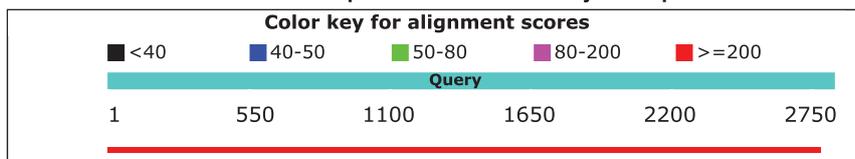
Job title: BC013361:Homo sapiens vav 1 guanine nucleotide...

RID	HK45SZ2T114 (Expires on 10-25 08:11 am)	Subject ID	Icl Query_4035311
Query ID	BC013361.2	Description	None
Description	Homo sapiens vav 1 guanine nucleotide exchange factor, mRNA (cDNA clone MGC:15356 IMAGE:3842829), complete cds		See details
Molecule type	nucleic acid	Molecule type	dna
Query Length	2776	Subject Length	4586
		Program	BLASTN 2.16.0+

IRAL025A16hts01.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	5127	5127	100%	0.0	100.00%	Query_4035311

[Alignments](#)

Sequence ID: Query_4035311 Length: 4586 Number of Matches: 1
Range 1: 1624 to 4399

Score	Expect	Identities	Gaps	Strand	Frame
5127 bits(2776)	0.0()	2776/2776(100%)	0/2776(0%)	Plus/Plus	
Features:					
Query	1	GTGGTGCACGCCATAGTCTCAGCTACTCAGGAAGTTGAGGCAGGAGGATCGCTTGAGCC	60		
Sbjct	1624	GTGGTGCACGCCATAGTCTCAGCTACTCAGGAAGTTGAGGCAGGAGGATCGCTTGAGCC	1683		
CDS:VAV1 protein [Ho	1	M I V L P L Y S R L D K			
Query	61	CAGGAGTTTGATGCTGCAGTGCAGTATGATTGTGCTACCACTGTA	120		
Sbjct	1684	CAGGAGTTTGATGCTGCAGTGCAGTATGATTGTGCTACCACTGTA	1743		
CDS:VAV1 protein [Ho	13	R F L C L K N I R T F L S T C C E K F G			
Query	121	AAGATTCCCTGTGCCTAAGAACCATTAGAACCCTTCCGTCCACCTGCTGTGAGAAGTTCGG	180		
Sbjct	1744	AAGATTCCCTGTGCCTAAGAACCATTAGAACCCTTCCGTCCACCTGCTGTGA	1803		
CDS:VAV1 protein [Ho	33	L K R S E L F E A F D L F D V Q D			
Query	181	CCTCAAGCGGAGCGAGCTCTTCAAGCCTTTGACCTCTTCGATGTGCAGGATTTGGCAA	240		
Sbjct	1804	CCTCAAGCGGAGCGAGCTCTTCAAGCCTTTGACCTCTTCGATGTGCAGGATTTGGCAA	1863		
CDS:VAV1 protein [Ho	53	V I Y T L S A L S W T P I A Q N R G I M			
Query	241	GGTCATCTACACCCTGTCTGCTGTCTGGACCCGATCGCCAGAACAGGGGGATCAT	300		
Sbjct	1864	GGTCATCTACACCCTGTCTGCTGTCTGGACCCGATCGCCAGAACAGGGGGATCAT	1923		

CDS:VAV1 protein [Ho 73 P F P T E E E S V G D E D I Y S G L S D 360
Query 301 GCCCTTCCCACCGAGGAGGAGTGTAGGTGATGAAGACATCTACAGTGGCCTGTCCGA 1983
Sbjct 1924 GCCCTTCCCACCGAGGAGGAGTGTAGGTGATGAAGACATCTACAGTGGCCTGTCCGA 1983

CDS:VAV1 protein [Ho 93 Q I D D T V E E D E D L Y D C V E N E E 420
Query 361 CCAGATCGACGACACGGTGGAGGAGGATGAGGACCTGTATGACTGCGTGGAGAATGAGGA 2043
Sbjct 1984 CCAGATCGACGACACGGTGGAGGAGGATGAGGACCTGTATGACTGCGTGGAGAATGAGGA 2043

CDS:VAV1 protein [Ho 113 A E G D E I Y E D L M R S E P V S M P P 480
Query 421 GCGGAGGCGACGAGATCTATGAGGACCTCATGCGCTCGGAGCCGTTCCATGCCGCC 2103
Sbjct 2044 GCGGAGGCGACGAGATCTATGAGGACCTCATGCGCTCGGAGCCGTTCCATGCCGCC 2103

CDS:VAV1 protein [Ho 133 K M T E Y D K R C C C L R E I Q Q T E E 540
Query 481 CAAGATGACAGATGACAGCGCTGCTGCTGCCGCGGAGATCCAGCAGACGGAGGA 2163
Sbjct 2104 CAAGATGACAGATGACAGCGCTGCTGCTGCCGCGGAGATCCAGCAGACGGAGGA 2163

CDS:VAV1 protein [Ho 153 K Y T D T L G S I Q Q H F L K P L Q R F 600
Query 541 GAAGTACTGACACGCTGGGCTCCATCCAGCAGCATTTCTTGAAGCCCTGCAACGGTT 2223
Sbjct 2164 GAAGTACTGACACGCTGGGCTCCATCCAGCAGCATTTCTTGAAGCCCTGCAACGGTT 2223

CDS:VAV1 protein [Ho 173 L K P Q D I E I I F I N I E D L L R V H 660
Query 601 CCTGAAACCTCAAGACATTGAGATCATTTATCAACATTGAGGACCTGCTTCGTGTTC 2283
Sbjct 2224 CCTGAAACCTCAAGACATTGAGATCATTTATCAACATTGAGGACCTGCTTCGTGTTC 2283

CDS:VAV1 protein [Ho 193 T H F L K E M K E A L G T P G A A N L Y 720
Query 661 TACTCATTCTAAAGGAGATGAAGGAAGCCCTGGGACCCCTGGCGACCCAATCTCTA 2343
Sbjct 2284 TACTCATTCTAAAGGAGATGAAGGAAGCCCTGGGACCCCTGGCGACCCAATCTCTA 2343

CDS:VAV1 protein [Ho 213 Q V F I K Y K E R F L V Y G R Y C S Q V 780
Query 721 CCAGGTCTTCATCAAATACAAGGAGAGGTTCTCGTCTATGGCCGCTACTGCAGCCAGGT 2403
Sbjct 2344 CCAGGTCTTCATCAAATACAAGGAGAGGTTCTCGTCTATGGCCGCTACTGCAGCCAGGT 2403

CDS:VAV1 protein [Ho 233 E S A S K H L D R V A A A R E D V Q M K 840
Query 781 GGAGTCAGCCAGCAACACCTGGACCGTGTGGCCGACCCGGGAGGACGTGCAGATGAA 2463
Sbjct 2404 GGAGTCAGCCAGCAACACCTGGACCGTGTGGCCGACCCGGGAGGACGTGCAGATGAA 2463

CDS:VAV1 protein [Ho 253 L E E C S Q R A N N G R F T L R D L L M 900
Query 841 GCTGGAGGAATGTTCTCAGAGAGCCAACAACGGGAGGTTACCCCTGCGGGACCTGCTGAT 2523
Sbjct 2464 GCTGGAGGAATGTTCTCAGAGAGCCAACAACGGGAGGTTACCCCTGCGGGACCTGCTGAT 2523

CDS:VAV1 protein [Ho 273 V P M Q R V L K Y H L L L Q E L V K H T 960
Query 901 GGTGCCATGACGCGAGTTCTCAAATATCACCTCTTCCAGGAGCTGGTAAACACAC 2583
Sbjct 2524 GGTGCCATGACGCGAGTTCTCAAATATCACCTCTTCCAGGAGCTGGTAAACACAC 2583

CDS:VAV1 protein [Ho 293 Q E A M E K E N L R L A I D A M R D L A 1020
Query 961 GCAGGAGGCGATGGAGAAGGAGAACCTGCGGCTGGCCCTGGATGCCATGAGGGACCTGGC

Sbjct 2584 GCAGGAGGCGATGGAGAAGGAGAACCTGCGGCTGGCCCTGGATGCCATGAGGGACCTGGC 2643

CDS:VAV1 protein [Ho 313 Q C V N E V K R D N E T L R Q I T N F Q 1080
Query 1021 TCAGTGGTGAACGAGGTCAAGCGAGACAACGAGACTGCGACAGATCACCAATTTCCA 2703
Sbjct 2644 TCAGTGGTGAACGAGGTCAAGCGAGACAACGAGACTGCGACAGATCACCAATTTCCA 2703

CDS:VAV1 protein [Ho 333 L S I E N L D Q S L A H Y G R P K I D G 1140
Query 1081 GCTGTCCATTGAGAACCTGGACCAGTCTTGCTCACTATGGCCGGCCCAAGATCGACGG 2763
Sbjct 2704 GCTGTCCATTGAGAACCTGGACCAGTCTTGCTCACTATGGCCGGCCCAAGATCGACGG 2763

CDS:VAV1 protein [Ho 353 E A L K I T S V E R R S K M D R Y A F L L 1200
Query 1141 GGAACCTCAAGATCACCTCGGTGGACGGCGCTCAAGATGGACAGGTATGCCCTCCTGCT 2823
Sbjct 2764 GGAACCTCAAGATCACCTCGGTGGACGGCGCTCAAGATGGACAGGTATGCCCTCCTGCT 2823

CDS:VAV1 protein [Ho 373 D K A L L I C K R R G D S Y D L K D F V 1260
Query 1201 CGACAAAGCTCTACTCATCTGTAAGCGCAGGGGAGACTCTATGACCTCAAGGACTTTGT 2883
Sbjct 2824 CGACAAAGCTCTACTCATCTGTAAGCGCAGGGGAGACTCTATGACCTCAAGGACTTTGT 2883

CDS:VAV1 protein [Ho 393 N L H S F Q V R D D S S G D R D N K K W 1320
Query 1261 AAACCTGCACAGCTTCCAGGTTCCGGATGACTTTCAGGAGACCAGACAACAAGAAGTG 2943
Sbjct 2884 AAACCTGCACAGCTTCCAGGTTCCGGATGACTTTCAGGAGACCAGACAACAAGAAGTG 2943

CDS:VAV1 protein [Ho 413 S H M F L L I E D Q G A Q G Y E L F F K 1380
Query 1321 GAGCCACATGTTCTCCTGATCGAGGACCAAGGTGCCAGGGCTATGAGTGTTCCTCAA 3003
Sbjct 2944 GAGCCACATGTTCTCCTGATCGAGGACCAAGGTGCCAGGGCTATGAGTGTTCCTCAA 3003

CDS:VAV1 protein [Ho 433 T R E L K K K W M E Q F E M A I S N I Y 1440
Query 1381 GACAAGAGAATTGAAGAAGAAGTGGATGGAGCAGTTTGGATGGCCATCTCCAACATCTA 3063
Sbjct 3004 GACAAGAGAATTGAAGAAGAAGTGGATGGAGCAGTTTGGATGGCCATCTCCAACATCTA 3063

CDS:VAV1 protein [Ho 453 P E N A T A N G H D F Q M F S F E E T T 1500
Query 1441 TCCGGAGAATGCCACCGCAACGGGATGACTTCCAGATGTTCTCCTTTGAGGAGACCAC 3123
Sbjct 3064 TCCGGAGAATGCCACCGCAACGGGATGACTTCCAGATGTTCTCCTTTGAGGAGACCAC 3123

CDS:VAV1 protein [Ho 473 S C K A C Q M L L R G T F Y Q G Y R C H 1560
Query 1501 ATCTGCAAGGCTGTGATGCTGCTTAGAGGTACCTTCTATCAGGGCTACCCGTGCCA 3183
Sbjct 3124 ATCTGCAAGGCTGTGATGCTGCTTAGAGGTACCTTCTATCAGGGCTACCCGTGCCA 3183

CDS:VAV1 protein [Ho 493 R C R A S A H K E C L G R V P P C G R H 1620
Query 1561 TCGGTGCCGGCATCTGCACACAAGGAGTGTCTGGGAGGGTCCCTCCATGTGGCCGACA 3243
Sbjct 3184 TCGGTGCCGGCATCTGCACACAAGGAGTGTCTGGGAGGGTCCCTCCATGTGGCCGACA 3243

CDS:VAV1 protein [Ho 513 G Q D F P G T M K K D K L H R R A Q D K 1680
Query 1621 TGGCAGATTTCCAGGAATATGAAGAAGGACAACTACATCGCAGGGCTCAGGACAA 3303
Sbjct 3244 TGGCAGATTTCCAGGAATATGAAGAAGGACAACTACATCGCAGGGCTCAGGACAA 3303

CDS:VAV1 protein [Ho 533 K R N E L G L P K M E V F Q E Y Y G L P 1740
Query 1681 AAAGAGGAATGAGTGGTCTGCCAAGATGGAGGTGTTTTCAGGAATACTACGGGCTTCC

Sbjct	3304	AAAGAGGAATGAGCTGGGCTGCCAAGATGGAGGTGTTTCAGGAATACTACGGGCTTCC	3363
CDS:VAV1 protein [Ho Query	553 1741	P P P G A I G P F L R L N P G D I V E L TCCACCCCTGGAGCCATTGGACCCTTCTACGGCTCAACCTGGAGACATTGTGGAGCT	1800
Sbjct	3364	TCCACCCCTGGAGCCATTGGACCCTTCTACGGCTCAACCTGGAGACATTGTGGAGCT	3423
CDS:VAV1 protein [Ho Query	573 1801	T K A E A E Q N W W E G R N T S T N E I CACGAAGGCTGAGGCTGAACAGAAGCTGGTGGGAGGGCAGAAATACATCTACTAATGAAAT	1860
Sbjct	3424	CACGAAGGCTGAGGCTGAACAGAAGCTGGTGGGAGGGCAGAAATACATCTACTAATGAAAT	3483
CDS:VAV1 protein [Ho Query	593 1861	G W F P C N R V K P Y V H G P P Q D L S TGGCTGGTTTCCTTGTAAACAGGGTGAAGCCCTATGTCCATGGCCCTCCTCAGGACCTGTC	1920
Sbjct	3484	TGGCTGGTTTCCTTGTAAACAGGGTGAAGCCCTATGTCCATGGCCCTCCTCAGGACCTGTC	3543
CDS:VAV1 protein [Ho Query	613 1921	V H L W Y A G P M E R A G A E S I L A N TGTTCATCTCGTACGAGGCCCATGGAGCGGGCAGGGGCAGAGACATCTGGCCAA	1980
Sbjct	3544	TGTTCATCTCGTACGAGGCCCATGGAGCGGGCAGGGGCAGAGACATCTGGCCAA	3603
CDS:VAV1 protein [Ho Query	633 1981	R S D G T F L V R Q R V K D A A E F A I CCGCTCGGACGGGACTTCTTGGTGCGGCAGAGGGTGAAGGATGCAGCAGAAATGGCCAT	2040
Sbjct	3604	CCGCTCGGACGGGACTTCTTGGTGCGGCAGAGGGTGAAGGATGCAGCAGAAATGGCCAT	3663
CDS:VAV1 protein [Ho Query	653 2041	S I K Y N V E V K H I K I M T A E G L Y CAGCATTAAATATAACGTCGAGGTCAAGCACATTAATAATCATGACAGCAGAAGGACTGTA	2100
Sbjct	3664	CAGCATTAAATATAACGTCGAGGTCAAGCACATTAATAATCATGACAGCAGAAGGACTGTA	3723
CDS:VAV1 protein [Ho Query	673 2101	R I T E K K A F R G L T E L V E F Y Q Q CCGGATCACAGAGAAAAAGGCTTCCGGGGCTTACGGAGCTGGTGGAGTTTACCAGCA	2160
Sbjct	3724	CCGGATCACAGAGAAAAAGGCTTCCGGGGCTTACGGAGCTGGTGGAGTTTACCAGCA	3783
CDS:VAV1 protein [Ho Query	693 2161	N S L K D C F K S L D T T L Q F P F K E GAACTCTTAAAGGATTGCTTCAAGTCTCTGGACACCACCTTGCAGTTCCTTCAAGGA	2220
Sbjct	3784	GAACTCTTAAAGGATTGCTTCAAGTCTCTGGACACCACCTTGCAGTTCCTTCAAGGA	3843
CDS:VAV1 protein [Ho Query	713 2221	P E K R T I S R P A V G S T K Y F G T A GGCTGAAAAGAGAACCATCAGCAGGCCAGCAGTGGGAAGCACAAGTATTTGGCACAGC	2280
Sbjct	3844	GGCTGAAAAGAGAACCATCAGCAGGCCAGCAGTGGGAAGCACAAGTATTTGGCACAGC	3903
CDS:VAV1 protein [Ho Query	733 2281	K A R Y D F C A R D R S E L S L K E G D CAAAGCCGCTATGACTTCTGCGCCGAGACCGATCAGAGCTGTCGCTCAAGGAGGGTGA	2340
Sbjct	3904	CAAAGCCGCTATGACTTCTGCGCCGAGACCGATCAGAGCTGTCGCTCAAGGAGGGTGA	3963
CDS:VAV1 protein [Ho Query	753 2341	I I K I L N K K G Q Q G W W R G E I Y G CATCATCAAGATCCTTAAACAAGAGGGACAGCAAGGCTGGTGGCAGGGGAGATCTATGG	2400
Sbjct	3964	CATCATCAAGATCCTTAAACAAGAGGGACAGCAAGGCTGGTGGCAGGGGAGATCTATGG	4023
CDS:VAV1 protein [Ho	773	R V G W F P A N Y V E E D Y S E Y C	

Query	2401	CCGGTTGGCTGGTCCCTGCCAACTACGTGGAGGAAGATTATTCTGAATACTGCTGAGC	2460
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Query	2461	CCTGGTGCCTTGGCAGAGAGACGAGAACTCCAGGCTCTGAGCCCGCGTGGGCAGGCAG	2520
Sbjct	4084	CCTGGTGCCTTGGCAGAGAGACGAGAACTCCAGGCTCTGAGCCCGCGTGGGCAGGCAG	4143
Query	2521	CGGAGCCAGGGGCTGTGACAGCTCCCGGCGGGTGGAGACTTTGGGATGGACTGGAGGAGG	2580
Sbjct	4144	CGGAGCCAGGGGCTGTGACAGCTCCCGGCGGGTGGAGACTTTGGGATGGACTGGAGGAGG	4203
Query	2581	CCAGCGTCCAGCTGGCGGTGCTCCCGGATGTGCCCTGACATGGTTAATTTATAACACC	2640
Sbjct	4204	CCAGCGTCCAGCTGGCGGTGCTCCCGGATGTGCCCTGACATGGTTAATTTATAACACC	4263
Query	2641	CGATTTCTCTTGGGTCCTCAAGCAGACGGGGCTCAAGGGGTTACATTTAATAAAAAG	2700
Sbjct	4264	CGATTTCTCTTGGGTCCTCAAGCAGACGGGGCTCAAGGGGTTACATTTAATAAAAAG	4323
Query	2701	GATGAAGATGGaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	2760
Sbjct	4324	GATGAAGATGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	4383
Query	2761	aaaaaaaaaaaaaaaa 2776	
Sbjct	4384	AAAAAAAAAAAAAAAA 4399	

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[USA.gov](#)

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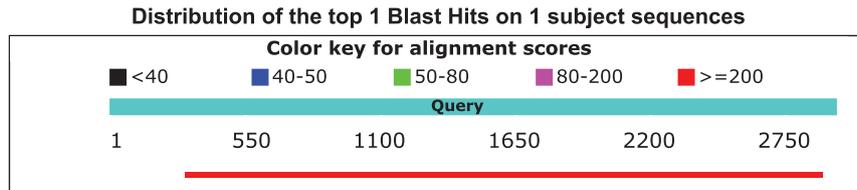
Blast 2 sequences

Job title: NM_005428:Homo sapiens vav guanine nucleotide...

RID [GVEEW5UG114](#) (Expires on 10-16 08:39 am)
Query ID [NM_005428.4](#)
Description Homo sapiens vav guanine nucleotide exchange factor 1 (VAV1), transcript variant 1, mRNA
Molecule type nucleic acid
Query Length 2892

Subject ID [BC013361.2](#)
Description Homo sapiens vav 1 guanine nucleotide exchange factor, mRNA (cDNA clone MGC:15356 IMAGE:3842829), complete cds
[See details](#)
Molecule type nucleic acid
Subject Length 2776
Program BLASTN 2.16.0+

[Graphic Summary](#)



[Dot Matrix View](#)



[Descriptions](#)

Sequences producing significant alignments:

Description	Max Score	Total Score	Query Cover	E value	Per. Ident	Accession
Homo sapiens vav 1 guanine nucleotide exchange factor, mRNA (cDNA clone MGC:15356 IMAGE:3842829), complete cds	4780	4780	89%	0.0	100.00%	BC013361.2

[Alignments](#)

Homo sapiens vav 1 guanine nucleotide exchange factor, mRNA (cDNA clone MGC:15356 IMAGE:3842829), complete cds

Sequence ID: **BC013361.2** Length: 2776 Number of Matches: 1
 Range 1: 125 to 2712

Score	Expect	Identities	Gaps	Strand	Frame
4780 bits(2588)	0.0()	2588/2588(100%)	0/2588(0%)	Plus/Plus	
Features:					
CDS:proto-oncogene v Query	69	F L C L K N I R T F L S T C C E K F G L			364
Sbjct	305	TTCTGTGCCTTAAGAACATTAGAACCTTCCTGTCCACCTGCTGTGAGAAGTTCGGCCTC			184
CDS:VAV1 protein [Ho	125	F L C L K N I R T F L S T C C E K F G L			184
Sbjct	14	TTCTGTGCCTTAAGAACATTAGAACCTTCCTGTCCACCTGCTGTGAGAAGTTCGGCCTC			244
CDS:proto-oncogene v Query	89	K R S E L F E A F D L F D V Q D F G K V			424
Sbjct	365	AAGCGGAGCGAGCTCTCGAAGCCTTTGACCTTCGATGTGCAGGATTTGGCAAGGTC			244
CDS:VAV1 protein [Ho	185	K R S E L F E A F D L F D V Q D F G K V			304
Sbjct	34	AAGCGGAGCGAGCTCTCGAAGCCTTTGACCTTCGATGTGCAGGATTTGGCAAGGTC			484
CDS:proto-oncogene v Query	109	I Y T L S A L S W T P I A Q N R G I M P			304
Sbjct	425	ATCTACACCTGTCTGCTCTGTCTGGACCCCGATCGCCAGAACAGGGGGATCATGCC			54
CDS:VAV1 protein [Ho	245	I Y T L S A L S W T P I A Q N R G I M P			
Sbjct	54	ATCTACACCTGTCTGCTCTGTCTGGACCCCGATCGCCAGAACAGGGGGATCATGCC			

CDS:proto-oncogene v 129 F P T E E E S V G D E D I Y S G L S D Q 544
Query 485 TTCCCCACGAGGAGGAGTGTAGGTGATGAAGACATCTACAGTGGCCTGTCCGACCAG 544

Sbjct 305 TTCCCCACGAGGAGGAGTGTAGGTGATGAAGACATCTACAGTGGCCTGTCCGACCAG 364
CDS:VAV1 protein [Ho 74 F P T E E E S V G D E D I Y S G L S D Q

CDS:proto-oncogene v 149 I D D T V E E D E D L Y D C V E N E E A 604
Query 545 ATCGACGACACGGTGGAGGAGGATGAGGACCTGTATGACTGCGTGGAGAAATGAGGAGGCG 604

Sbjct 365 ATCGACGACACGGTGGAGGAGGATGAGGACCTGTATGACTGCGTGGAGAAATGAGGAGGCG 424
CDS:VAV1 protein [Ho 94 I D D T V E E D E D L Y D C V E N E E A

CDS:proto-oncogene v 169 E G D E I Y E D L M R S E P V S M P P K 664
Query 605 GAAGCCAGCAGAGATCTATGAGGACCTATGCGCTCGGAGCCCGTGTCCATGCCGCCAAG 664

Sbjct 425 GAAGCCAGCAGAGATCTATGAGGACCTATGCGCTCGGAGCCCGTGTCCATGCCGCCAAG 484
CDS:VAV1 protein [Ho 114 E G D E I Y E D L M R S E P V S M P P K

CDS:proto-oncogene v 189 M T E Y D K R C C C L R E I Q Q T E E K 724
Query 665 ATGACAGAGTATGACAAGCGCTGCTGCTGCCTGCGGGAGATCCAGCAGACGGAGAGAAG 724

Sbjct 485 ATGACAGAGTATGACAAGCGCTGCTGCTGCCTGCGGGAGATCCAGCAGACGGAGAGAAG 544
CDS:VAV1 protein [Ho 134 M T E Y D K R C C C L R E I Q Q T E E K

CDS:proto-oncogene v 209 Y T D T L G S I Q Q H F L K P L Q R F L 784
Query 725 TACACTGACACGCTGGGCTCCATCCAGCAGCATTCTTGAAGCCCTGCAACGGTTCCTG 784

Sbjct 545 TACACTGACACGCTGGGCTCCATCCAGCAGCATTCTTGAAGCCCTGCAACGGTTCCTG 604
CDS:VAV1 protein [Ho 154 Y T D T L G S I Q Q H F L K P L Q R F L

CDS:proto-oncogene v 229 K P Q D I E I I F I N I E D L L R V H T 844
Query 785 AAACCTCAAGACATTGAGATCATCTTTATCAACATTGAGGACCTGCTTCGTGTTCACT 844

Sbjct 605 AAACCTCAAGACATTGAGATCATCTTTATCAACATTGAGGACCTGCTTCGTGTTCACT 664
CDS:VAV1 protein [Ho 174 K P Q D I E I I F I N I E D L L R V H T

CDS:proto-oncogene v 249 I F L K E M K E A L G T P G A A N L Y Q 904
Query 845 CACTTCCTAAAGGAGATGAAGGAAGCCCTGGGCACCCCTGGCGCAGCCAATCTCTACCAG 904

Sbjct 665 CACTTCCTAAAGGAGATGAAGGAAGCCCTGGGCACCCCTGGCGCAGCCAATCTCTACCAG 724
CDS:VAV1 protein [Ho 194 H F L K E M K E A L G T P G A A N L Y Q

CDS:proto-oncogene v 269 V F F I K Y K E R F L V Y G R Y C S Q V E 964
Query 905 GTCTTCATCAAATACAAGGAGAGTTCTCGTCTATGGCCGCTACTGCAGCCAGGTGGAG 964

Sbjct 725 GTCTTCATCAAATACAAGGAGAGTTCTCGTCTATGGCCGCTACTGCAGCCAGGTGGAG 784
CDS:VAV1 protein [Ho 214 V F F I K Y K E R F L V Y G R Y C S Q V E

CDS:proto-oncogene v 289 S A S K H L D R V A A A R E D V Q M K L 1024
Query 965 TCAGCCAGCAAAACCTGGACCGTGTGGCCGAGCCCGGGAGGACGTGCAGATGAAGCTG 1024

Sbjct 785 TCAGCCAGCAAAACCTGGACCGTGTGGCCGAGCCCGGGAGGACGTGCAGATGAAGCTG 844
CDS:VAV1 protein [Ho 234 S A S K H L D R V A A A R E D V Q M K L

CDS:proto-oncogene v 309 E E C S Q R A N N G R F T L R D L L M V 1084
Query 1025 GAGGAATGTTCTCAGAGAGCCAAACCGGAGGTTTACCCTGCGGGACCTGCTGATGGTG 1084

Sbjct 845 GAGGAATGTTCTCAGAGAGCCAAACCGGAGGTTTACCCTGCGGGACCTGCTGATGGTG 904
CDS:VAV1 protein [Ho 254 E E C S Q R A N N G R F T L R D L L M V

CDS:proto-oncogene v 329 P M Q R V L K Y H L L L Q E L V K H T Q 1144
Query 1085 CCTATGCAGCGAGTTCTCAAATACACCTCCTTCCAGGAGCTGGTAAACACACGCAG 1144

Sbjct 905 CCTATGCAGCGAGTTCTCAAATACACCTCCTTCCAGGAGCTGGTAAACACACGCAG 964
CDS:VAV1 protein [Ho 274 P M Q R V L K Y H L L L Q E L V K H T Q

CDS:proto-oncogene v 349 E A M E K E N L R L A L D A M R D L A Q 1204
Query 1145 GAGGCGATGGAGAAGGAGAACCTGCGGCTGGCCCTGGATGCCATGAGGGACCTGGCTCAG 1204

Sbjct 965 GAGGCGATGGAGAAGGAGAACCTGCGGCTGGCCCTGGATGCCATGAGGGACCTGGCTCAG 1024
CDS:VAV1 protein [Ho 294 E A M E K E N L R L A L D A M R D L A Q

CDS:proto-oncogene v 369 C V N E V K R D N E T L R Q I T N F Q L 1264
Query 1205 TCGTGAACGAGGTCAAGCGAGACAACGAGACACTGGCAGAGATCACCATTTCCAGCTG 1264

Sbjct 1025 TCGTGAACGAGGTCAAGCGAGACAACGAGACACTGGCAGAGATCACCATTTCCAGCTG 1084
CDS:VAV1 protein [Ho 314 C V N E V K R D N E T L R Q I T N F Q L

CDS:proto-oncogene v 389 S I E N L D Q S L A H Y G R P K I D G E 1324
Query 1265 TCCATTGAGAACCTGGACCACTCTGGCTCACTATGGCCGCCCCAAGATCGACGGGAA 1324

Sbjct 1085 TCCATTGAGAACCTGGACCACTCTGGCTCACTATGGCCGCCCCAAGATCGACGGGAA 1144
CDS:VAV1 protein [Ho 334 S I E N L D Q S L A H Y G R P K I D G E

CDS:proto-oncogene v 409 I K I T S V E R R S K M D R Y A F L L D 1384
Query 1325 CTCAAGATCACCTCGGTGGAACGGCCTCAAGATGGACAGGTATGCCTTCTGCTCGAC 1384

Sbjct 1145 CTCAAGATCACCTCGGTGGAACGGCCTCAAGATGGACAGGTATGCCTTCTGCTCGAC 1204
CDS:VAV1 protein [Ho 354 L K I T S V E R R S K M D R Y A F L L D

CDS:proto-oncogene v 429 K A L L L I C K R R G D S Y D L K D F V N 1444
Query 1385 AAAGCTCTACTCATCTGTAAGCGCAGGGGAGACTCCTATGACCTCAAGGACTTTGTAAC 1444

Sbjct 1205 AAAGCTCTACTCATCTGTAAGCGCAGGGGAGACTCCTATGACCTCAAGGACTTTGTAAC 1264
CDS:VAV1 protein [Ho 374 K A L L L I C K R R G D S Y D L K D F V N

CDS:proto-oncogene v 449 L H S F Q V R D D S S G D R D N K K W S 1504
Query 1445 CTGCACAGCTTCCAGGTTCCGGATGACTCTTCCAGGACCGAGACAACAAGAAGTGGAGC 1504

Sbjct 1265 CTGCACAGCTTCCAGGTTCCGGATGACTCTTCCAGGACCGAGACAACAAGAAGTGGAGC 1324
CDS:VAV1 protein [Ho 394 L H S F Q V R D D S S G D R D N K K W S

CDS:proto-oncogene v 469 H M F L L I E D Q G A Q G Y E L F F K T 1564
Query 1505 CACATGTTCTCCTGATCGAGGACCAAGGTGCCAGGGCTATGAGCTGTTCTTCAAGACA 1564

Sbjct 1325 CACATGTTCTCCTGATCGAGGACCAAGGTGCCAGGGCTATGAGCTGTTCTTCAAGACA 1384
CDS:VAV1 protein [Ho 414 H M F L L I E D Q G A Q G Y E L F F K T

CDS:proto-oncogene v 489 R E L K K K W M E Q F E M A I S N I Y P 1624
Query 1565 AGAGAATTGAAGAAGAAGTGGATGGAGCAGTTGAGATGGCCATCTCAACATCTATCCG 1624

Sbjct 1385 AGAGAATTGAAGAAGAAGTGGATGGAGCAGTTGAGATGGCCATCTCAACATCTATCCG 1444
CDS:VAV1 protein [Ho 434 R E L K K K W M E Q F E M A I S N I Y P

CDS:proto-oncogene v 509 G A G A A T A N G H D F Q M F S F E E T S 1684
Query 1625 GAGAATGCCACCCCAACGGGCATGACTTCCAGATGTTCTCCTTTGAGGAGACCACATCC 1684

Sbjct 1445 GAGAATGCCACCCCAACGGGCATGACTTCCAGATGTTCTCCTTTGAGGAGACCACATCC 1504

CDS:VAV1 protein [Ho	454	E N A T A N G H D F Q M F S F E E T T S	
CDS:proto-oncogene v	529	C K A C Q M L L R G T F Y Q G Y R C H R	
Query	1685	TGCAAGGCTGTGATGCTGCTAGAGGTACCTTCTATCAGGGCTACCGCTGCCATCGG	1744
Sbjct	1505	TGCAAGGCTGTGATGCTGCTAGAGGTACCTTCTATCAGGGCTACCGCTGCCATCGG	1564
CDS:VAV1 protein [Ho	474	C K A C Q M L L R G T F Y Q G Y R C H R	
CDS:proto-oncogene v	549	C R A S A H K E C L G R V P P C G R H G	
Query	1745	TGCCGGGCATCTGCACACAAGGAGTGTCTGGGGAGGGTCCCTCCATGTGGCCACATGGG	1804
Sbjct	1565	TGCCGGGCATCTGCACACAAGGAGTGTCTGGGGAGGGTCCCTCCATGTGGCCACATGGG	1624
CDS:VAV1 protein [Ho	494	C R A S A H K E C L G R V P P C G R H G	
CDS:proto-oncogene v	569	Q D F P G T M K K D K L H R R A Q D K K	
Query	1805	CAAGATTTCCAGGAATATGAAGAAGGACAACTACATCGAGGGCTCAGGACAAAAG	1864
Sbjct	1625	CAAGATTTCCAGGAATATGAAGAAGGACAACTACATCGAGGGCTCAGGACAAAAG	1684
CDS:VAV1 protein [Ho	514	Q D F P G T M K K D K L H R R A Q D K K	
CDS:proto-oncogene v	589	R N E L G L P K M E V F Q E Y Y G L P P	
Query	1865	AGGAATGAGCTGGGTCTGCCAAGATGGAGGTGTTTCAGGAATACTACGGGCTTCCTCCA	1924
Sbjct	1685	AGGAATGAGCTGGGTCTGCCAAGATGGAGGTGTTTCAGGAATACTACGGGCTTCCTCCA	1744
CDS:VAV1 protein [Ho	534	R N E L G L P K M E V F Q E Y Y G L P P	
CDS:proto-oncogene v	609	P P G A I G P F L R L N P G D I V E L T	
Query	1925	CCCCCGGACCAATGGACCTTCTACGGCTCAACCTGGAGACATTTGGAGCTCAGC	1984
Sbjct	1745	CCCCCGGACCAATGGACCTTCTACGGCTCAACCTGGAGACATTTGGAGCTCAGC	1804
CDS:VAV1 protein [Ho	554	P P G A I G P F L R L N P G D I V E L T	
CDS:proto-oncogene v	629	K A E A E Q N W W E G R N T S T N E I G	
Query	1985	AAGGCTGAGGCTGAACAGAAGTGGTGGAGGGCAGAAATACATCTACTAATGAAATGGC	2044
Sbjct	1805	AAGGCTGAGGCTGAACAGAAGTGGTGGAGGGCAGAAATACATCTACTAATGAAATGGC	1864
CDS:VAV1 protein [Ho	574	K A E A E Q N W W E G R N T S T N E I G	
CDS:proto-oncogene v	649	W F P C N R V K P Y V H G P P Q D L S V	
Query	2045	TGGTTTCTTGTAAACAGGGTGAAGCCCTATGTCCATGGCCCTCCTCAGGACCTGTCTGT	2104
Sbjct	1865	TGGTTTCTTGTAAACAGGGTGAAGCCCTATGTCCATGGCCCTCCTCAGGACCTGTCTGT	1924
CDS:VAV1 protein [Ho	594	W F P C N R V K P Y V H G P P Q D L S V	
CDS:proto-oncogene v	669	H L W Y A G P M E R A G A E S I L A N R	
Query	2105	CATCTCTGGTACGAGGCCCATGGAGCGGGCAGAGGCATCTGGCCAAACCGC	2164
Sbjct	1925	CATCTCTGGTACGAGGCCCATGGAGCGGGCAGAGGCATCTGGCCAAACCGC	1984
CDS:VAV1 protein [Ho	614	H L W Y A G P M E R A G A E S I L A N R	
CDS:proto-oncogene v	689	S D G T F L V R Q R V K D A A E F A I S	
Query	2165	TCCGACGGACTTCTTGGTGGCGCAGAGGGTGAAGGATGCAGCAGAAATTTGCCATCAGC	2224
Sbjct	1985	TCCGACGGACTTCTTGGTGGCGCAGAGGGTGAAGGATGCAGCAGAAATTTGCCATCAGC	2044
CDS:VAV1 protein [Ho	634	S D G T F L V R Q R V K D A A E F A I S	
CDS:proto-oncogene v	709	I K Y N V E V K H I K I M T A E G L Y R	
Query	2225	ATTAATAATAACGTCGAGGTCAGGCACATTAATAATCATGACAGCAGAAGGACTGTACCGG	2284
Sbjct	2045	ATTAATAATAACGTCGAGGTCAGGCACATTAATAATCATGACAGCAGAAGGACTGTACCGG	2104
CDS:VAV1 protein [Ho	654	I K Y N V E V K H I K I M T A E G L Y R	
CDS:proto-oncogene v	729	I T E K K A F R G L T E L V E F Y Q Q N	
Query	2285	ATCAGAGAAAAAGGCTTTCCGGGGCTTACCGAGCTGGTGGATTTTACCAGCAGAAC	2344
Sbjct	2105	ATCAGAGAAAAAGGCTTTCCGGGGCTTACCGAGCTGGTGGATTTTACCAGCAGAAC	2164
CDS:VAV1 protein [Ho	674	I T E K K A F R G L T E L V E F Y Q Q N	
CDS:proto-oncogene v	749	S L K D C F K S L D T T L Q F P F K E P	
Query	2345	TCTTAAAGGATTGCTCAAGTCTCTGGACACCACCTTGCAGTCCCTTCAAGGAGCCT	2404
Sbjct	2165	TCTTAAAGGATTGCTCAAGTCTCTGGACACCACCTTGCAGTCCCTTCAAGGAGCCT	2224
CDS:VAV1 protein [Ho	694	S L K D C F K S L D T T L Q F P F K E P	
CDS:proto-oncogene v	769	E K R T I S R P A V G S T K Y F G T A K	
Query	2405	GAAAAGAGAACCATCAGCAGGCCAGCAGTGGGAAGCACAAAGTATTTGGCACAGCCAAA	2464
Sbjct	2225	GAAAAGAGAACCATCAGCAGGCCAGCAGTGGGAAGCACAAAGTATTTGGCACAGCCAAA	2284
CDS:VAV1 protein [Ho	714	E K R T I S R P A V G S T K Y F G T A K	
CDS:proto-oncogene v	789	A R Y D F C A R D R S E L S L K E G D I	
Query	2465	GCCCGCTATGACTTCTGCGCCGAGACCGATCAGAGCTGTGCTCAAGGAGGGTGACATC	2524
Sbjct	2285	GCCCGCTATGACTTCTGCGCCGAGACCGATCAGAGCTGTGCTCAAGGAGGGTGACATC	2344
CDS:VAV1 protein [Ho	734	A R Y D F C A R D R S E L S L K E G D I	
CDS:proto-oncogene v	809	I K I L N K K G Q Q G W W R G E I Y G R	
Query	2525	ATCAAGATCCTTAACAAGAAGGGACAGCAAGGCTGGTGGCAGGGGAGATCTATGGCCCGG	2584
Sbjct	2345	ATCAAGATCCTTAACAAGAAGGGACAGCAAGGCTGGTGGCAGGGGAGATCTATGGCCCGG	2404
CDS:VAV1 protein [Ho	754	I K I L N K K G Q Q G W W R G E I Y G R	
CDS:proto-oncogene v	829	V G W F P A N Y V E E D Y S E Y C	
Query	2585	GTTGGCTGGTCCCTGCCAACTACGTGGAGGAAGATTATCTGAATACTGCTGAGCCCTG	2644
Sbjct	2405	GTTGGCTGGTCCCTGCCAACTACGTGGAGGAAGATTATCTGAATACTGCTGAGCCCTG	2464
CDS:VAV1 protein [Ho	774	V G W F P A N Y V E E D Y S E Y C	
Query	2645	GTGCCCTGGCAGAGAGACGAGAACTCCAGGCTCTGAGCCGGCGTGGGCAGGCAGCGGA	2704
Sbjct	2465	GTGCCCTGGCAGAGAGACGAGAACTCCAGGCTCTGAGCCGGCGTGGGCAGGCAGCGGA	2524
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Sbjct	2525	GCCAGGGGCTGTGACAGCTCCCGCGGGTGGAGACTTTGGGATGGACTGGAGGAGCCAG	2584
Query	2765	CGTCCAGCTGGCGGTGCTCCCGGGATGTGCCCTGACATGGTTAATTTATAACACCCCGAT	2824
Sbjct	2585	CGTCCAGCTGGCGGTGCTCCCGGGATGTGCCCTGACATGGTTAATTTATAACACCCCGAT	2644
Query	2825	TTCTCTTTGGGTCCCTCAAGCAGACGGGGCTCAAGGGGTTACATTTAATAAAAAGGATG	2884
Sbjct	2645	TTCTCTTTGGGTCCCTCAAGCAGACGGGGCTCAAGGGGTTACATTTAATAAAAAGGATG	2704
Query	2885	AAGATGGA 2892	
Sbjct	2705	AAGATGGA 2712	