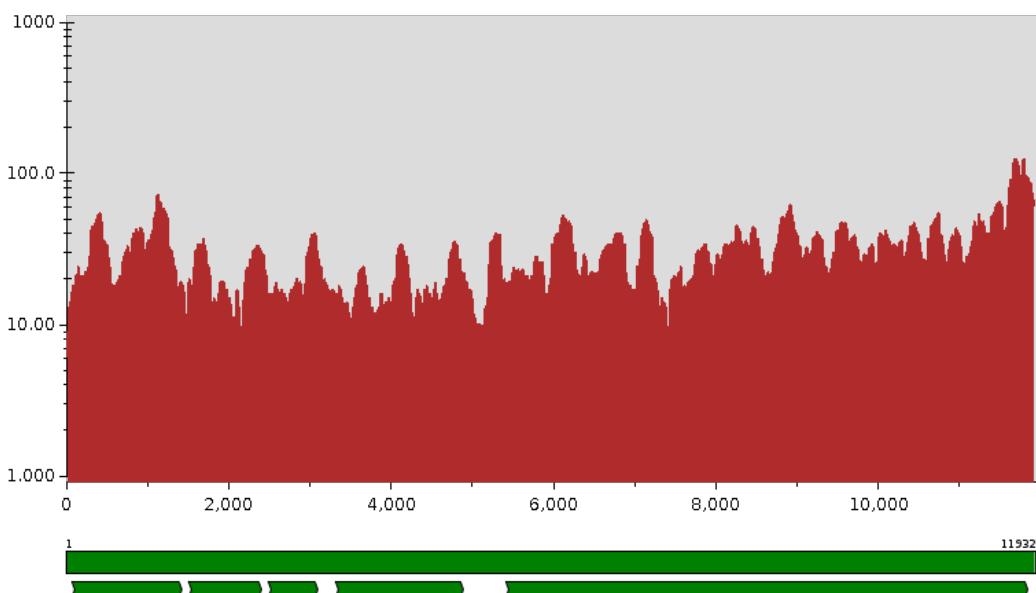


NGS Details (MG-2-RNASeq021-ZymoSeq): Lyssavirus rabies

Assembly

Coverage Length	11904 (1 contig(s))
Depth Of Coverage	28.4
Number Of Reads	2560
Reads Per Million	23.48 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Lyssavirus rabies (Taxonomy ID: 11292)
Reference Genome	NC_001542.1
NT Identity (%)	80.2169
AA Identity (%)	90.9116
Number Of Stop Codons	7
Number Of CDS	5

Alignment

Alignment Score	14321.0 (NT) + 23167.0 (AA) = 37488.0
Concordance (%)	76.4952

Alignment Method

Local, heuristic, nucleotide (BLASTN)

Genome Region

Sequence starts at position 16 and ends at position 11919 relative to NC_001542.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	
20A>G, 25A>G, 28A>G, 29C>T, 36C>T, 37G>A, 40A>G, 41A>T, 42T>C, 43G>T, 44G>A, 45C>T, 47G>A, 65T>C, 97A>G, 115C>T, 119T>C, 121G>A, 130G>A, 133T>C, 142T>C, 154C>T, 160C>T, 163T>C, 166C>T, 175T>C, 176T>C, 181A>G, 188T>A, 196T>C, 197C>T, 211C>T, 219A>G, 232G>A, 236G>A, 244A>T, 245T>G, 252G>A, 256C>A, 265T>C, 268T>C, 274C>T, 283T>C, 286C>G, 290T>C, 298G>C, 310T>C, 316G>A, 319G>A, 320A>T, 328G>T, 331A>G, 353G>C, 358T>A, 361A>T, 364A>G, 367A>G, 387G>A, 391T>C, 394G>T, 400G>C, 405A>G, 418A>G, 436G>A, 442A>G, 451A>G, 452C>T, 460A>G, 466C>T, 472C>T, 473C>T, 475T>A, 484G>A, 487C>T, 488T>C, 490A>G, 493C>T, 496T>C, 509C>T, 529A>T, 532C>T, 535G>A, 538A>G, 540G>A, 541C>T, 544T>C, 547T>C, 550C>T, 553T>C, 565T>C, 568A>G, 571C>T, 574G>A, 601T>C, 606T>C, 607T>A, 610A>G, 616G>A, 622C>T, 629C>T, 631A>G, 637A>G, 640T>C, 658T>C, 667T>C, 676G>T, 685T>C, 691A>C, 697C>T, 724C>T, 742C>T, 748G>A, 772A>G, 778T>C, 785C>T, 799T>A, 805C>T, 811A>G, 817C>A, 826C>T, 829T>G, 835G>A, 839A>C, 842C>T, 847T>C, 874G>A, 889T>C, 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CDS

RABVgp2	1	298	100%	1632	83.0%	298 (100%)	245 (82.2%)	0/0/0/0	1
Protein mutations:	N29A (1598A>G 1599A>C), E42D (1639A>T), N48S (1656A>G), G54R (1673G>A 1675G>A), H57Q (1684C>A), G61D (1695G>A 1696A>C), S63P (1700T>C), P64S (1703C>T), N65G (1706A>G 1707A>G), G67S (1712G>A 1714T>C), E68S (1715G>A 1716A>G 1717G>T), M69T (1719T>C 1720G>A), V72A (1728C>T 1729G>A), G75S (1736G>A), R78Q (1746G>A 1747A>G), G86A (1770G>C), S90A (1781A>G 1782G>C), V102I (1817G>A 1819C>T), I108M (1837A>G), R109K (1839G>A), L126V (1889A>G), A130T (1901G>A 1903G>A), P134S (1913C>T 1915C>T), N135G (1916A>G 1917A>G 1918C>T), P136A (1919C>G 1921T>G), S141L (1935C>T), E142K (1937G>A 1939G>A), S145A (1946T>G 1948A>T), T149V (1958A>G 1959C>T 1960C>T), L153V (1970C>G), K154A (1973A>G 1974A>C 1975G>T), K155W (1977A>G), T158K (1986C>A 1987A>G), P159S (1988C>T 1990C>G), T160A (1991A>G 1993T>A), P161S (1994C>T), E165A (2007A>C), A171V (2025C>T 2026C>T), R172K (2028G>A 2029G>A), Q176R (2040A>G), A178V (2046C>T 2047T>C), A188V (2076C>T 2077C>T), T189A (2078A>G), L195P (2097C>T), L223F (2180C>T), A241S (2234G>T 2236A>G), R252H (2268G>A), S280P (2351T>C), N281D (2354A>G), S284N (2364G>A 2365T>C), T295A (2396A>G), C297P (2402T>C 2403G>C)	AAG3AAA (1522G>A), ATC4ATT (1525C>T), AAT7AAC (1534T>C), CCT8CCA (1537T>A), GCT10GCG (1543T>G), ATT11ATC (1546T>C), AGA12AGG (1549A>G), GGT14GGC (1555T>C), CTG15TTG (1556C>T), GCC16GCT (1561C>T), CTT18CTA (1567T>A), GAA23AGG (1582A>G), GTT25GTA (1588T>A), CTG27CTC (1594G>C), AAT29GCT (1598A>G 1599A>C), AGA30AGG (1603A>G), AAT31AAC (1606T>C), GAA33AGG (1612A>G), GGG41GAG (1636G>A), GAA42GAT (1639A>T), GAA45GAG (1648A>G), AAT48AGT (1656A>G), CCT50CC (1663T>C), GAG51GAA (1666G>A), CAT52GAC (1669T>C), CGG54AGA (1673G>A 1675G>C), CGA55CGG (1678A>G), CAC57CAA (1684C>A), CTG58CTA (1687G>A), GGA61GAC (1695G>A 1696A>C), AAA62AAG (1699G>A), TC636CCC (1700T>C), CCC64CTT (1703C>T 1705C>A), AAC65GCC (1706A>G 1707A>G), GGT67AGC (1712G>A 1714T>C), GAG68AGT (1715G>A 1716A>G 1717G>T), ATGG9ACA (1719T>C 1720G>A), AA671AA (1726G>A), GTG72CGA (1727C>T 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1993T>A), CCT161TCT (1994C>T), AGA164GCA (2003A>C), GAA165GCA (2007A>C), AGC166AGT (2011C>T), TCC168CCC (2015T>C), TCG169TCA (2020G>A), GCC171GTT (2025C>T 2026C>T), AGG172AAA (2028G>A 2029G>A), GCG174GCA (2035G>A), CAA176CGA (2040A>G), GCT178GTC (2046C>T 2047T>C), GGC188GTT (2056C>T 2077C>T), ACC189GCC (2078A>G), ATT190AAC (2083T>C), GAT194GAC (2095T>C), ATA195CCA (2097C>T), TCA196TCT (2101A>C), GTG179CTG (2104G>C), ATC201ATT (2116C>T), GTC202CG (2119T>G), CAG204CAA (2125G>A), GCA206GCC (2131A>C), GAA207GAG (2134A>G), AGT208AGC (2137T>C), TTC209TTC (2140C>T), TCC210TCT (2143C>T), AAA211AGA (2146A>G), AAA212AGA (2149A>G), TAT213TAC (2152T>C), AAC214AAA (2155G>A), CTC216CCT (2161C>T), TCT217TCC (2164T>C), TCC219TCA (2170C>A), CTC223TTC (2180C>T), AAT226AAC (2191T>C), CAA229CAG (2200A>G), TTG230CTG (2201T>C), GAT235GAC (2218T>C), GAT236GAC (2221C>T), GTT238GTC (2227T>C), AAC239AGA (2230A>G), GCA241TCG (2234G>T 2236A>G), GT244GTC (2245A>G), ACC248ACT (2257C>T), TTA250TTG (2263A>G), 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2993C>T), GCA549GTC (299							

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	
Codon mutations:									
	CTA4TTA (2505C>T), ATA7ATG (2516A>G), AAA9AAG (2522A>G), AAT10AAC (2525T>C), TGC11TGT (2528C>T), AGG12AGA (2531G>A), GAC13GAT (2534C>T), ACT16ACC (2543T>C), CAA17CAG (2546A>G), AAA18AAG (2549A>G), CCC21CTC (2557C>T), GTG22ATA (2559G>A 2561G>A), TCA23TCG (2564A>G), GC224GCA (2567C>A), CTG26CCA (2572T>C 2573G>A), GAC30GAT (2585C>T), TTG31CTA (2586T>C 2588G>A), CCT33TTA (2592C>T 2594T>A), CCA34CCC (2597A>C), CCC35CC (2600C>T), CCT36CCG (2603T>G), TAC38TAT (2609C>T), GTG39GTT (2612C>T), CTA41TTG (2616C>T 2618A>G), AAA42AAG (2621A>G), GAA43GAG (2624A>G), CTT44CTC (2627T>C), ACA45ACG (2630A>G), AGC46GGC (2631A>G), AGG50GAT (2644G>A), AGG51AGA (2648G>A), AAC52AAT (2651C>T), TG574TC (2657T>C), AAC56AAT (2663C>T), GG57GG (2666A>G), GGG58GAA (2668G>A 2669G>A), GTT59GTC (2672T>C), AGC63AGT (2684A>G), CCG64GCC (2687G>C), ATAT56AAC (2690T>A), GGT66GCC (2693T>C), TCG68TCA (2699G>A), TTC69TTT (2702C>T), GGG70AGG (2703G>A), CTG72TGT (2709C>T), CTG76TTG (2721C>T), GAC80AAT (2733G>A 2735C>T), ATAB2CTC (2739A>C 2741A>C), TCT84TCC (2747C>C), GGG87GAA (2750G>A), CAT88TCAA (2756T>A), AGG88AAG (2759G>A), GTG90ATT (2763G>C 2765C>T), GGG91GGA (2768G>A), TTAA92CTG (2769T>C 2771A>G), AAA94AAG (2777A>G), GTA95GTT (2780A>T), ATT97GTT (2784A>G), CTG99HTT (2790C>T), GCT100CCG (2795T>G), GAA103GGG (2804A>G), GCT104GCC (2807T>C), GTC106GTT (2813C>T), GGC109GTT (2822C>T), AAC115AA (2840G>A), CTT120TA (2855T>A), TCG121ATT (2858C>T), AAC143AC (2924T>C), AAC147GAT (2934A>G), ACT148GGC (2937A>G 2939T>G), TTC150TTT (2945C>T), GTC151GTT (2948C>T), CAA154GAA (2955C>G), AAC161AGA (2974A>G), CAG161CAA (2978G>A), TGT162TG (2981C>T), ATC164ATT (2987C>T), CCG165CAA (2898G>A 2990G>A), AGA167AGG (2996A>G), ATC168ATT (2999C>T), TCG175TC (3020G>T), AGA176GGA (3021A>C), GTT178TG (3027G>T), CAA179GAG (3032A>G), ATG184CTA (3045A>C 3047G>A), TCT185TCC (3050V>C), CTT186CTC (3053T>C), CAG187CAA (3056G>A), CCT191TCT (3068C>T), GAA192GAT (3071A>T), GAC194GAT (3077C>T), AAA195AG (3080A>G), TCC197TCT (3086C>T), TCT198TCA (3089T>A), CTG199GTG (3090C>G), CTA201CTG (3098A>G), TAA203TAG (3104A>G)								
RABVgp4	1	525	100%	3274	86.1%	525 (100%)	447 (85.1%)	0/0/0/0	1
Protein mutations:									
	V21 (3321G>A 3323T>C), P3L (3325C>T), L11F (3348C>T 3350T>C), V13I (3354G>A 3356T>C), F14S (3358T>C), P15S (3360T>C 3362A>G), F18L (3369T>C 3371T>C), N56S (3484A>G 3485C>T), M75V (3504A>G), T109I (3643C>T), R132Q (3713C>A), D137E (3728C>A), V152I (3771G>A 3773T>C), R161K (3814G>A), N177K (3840T>G), S179L (3853C>T 3854A>G), V181I (3858G>A), A182T (3861G>A), N201R (3918A>G 3920T>A), M206T (3934T>C 3935G>A), N213S (3955A>G 3956T>C), R215L (3961G>A 3962A>G), R218K (3970G>A 3971A>C), S223G (3984A>G 3986T>C), AAC212P (3987G>A), E262D (4103G>A), E267D (4118A>T), G274I (4138G>A), R283H (4165G>A), H322Y (4281C>T), R365K (4411G>A), G367R (4416G>A 4418G>C), G368E (4420G>A), R408E (4426G>A), R409E (4430G>A), R415C (4436G>A), G416P (4442G>A), R420L (4459G>C 4461G>A), L462M (4701C>A), S463I (4705G>T), A466G (4714C>G), R471C (4715C>T), R476A (4728A>G 4730G>T), F475C (4741T>G), L476S (4743C>T 4744T>C 4745G>A), T478A (4749A>G), W480C (4757G>T), V483T (4764G>A 4765T>C), N484K (4769T>G), S486T (4773T>A 4775G>A), P488S (4779C>T 4781T>A), T489R (4783C>G), Q490R (4785C>A 4786A>G), H491R (4789A>G 4790UC>T), N492G (4791A>G 4792A>G 4793T>C), L493S (4794C>T 4795T>C 4796C>T), R494G (4797A>G), G495E (4801G>A), I496L (4803A>G 4804C>T), R498K (4810G>A 4811G>A), E499K (4812G>A), S500T (4817A>T 4820A>G), P502A (4822T>C 4823C>A), S506T (4834G>A 4835C>T), G507R (4836G>A), L509V (4842A>G), I510V (4845A>G), S515L (4861C>T 4862A>G), G519E (4873G>A 4874G>A), E521D (4880G>T), T522A (4881A>G), G523R (4884G>A 4886A>G)								
	GTT2ATC (3321G>A 3323T>C), CCT3CTT (3325C>T), CCT6CTT (3335C>T), GTA9GTC (3344A>G), CCC10CTC (3347C>T), CTT11TTC (3348C>T 3350T>C), CTG12CTA (3353G>A), GTT13ATC (3354G>A 3356T>C), TTT14TCT (3358T>C), CCA15TGC (3360C>T 3362A>G), TTT18CTC (3369T>C 3371T>C), CCT22CCC (3383T>C), ATT23ATC (3386T>C), ACG25ACA (3392G>A), CCA27CCG (3398A>G), CCG32CTC (3413C>T), CGG35CC (3422G>C), AT366TA (3424C>T), GAC37GAT (3428C>T), TCG43GTT (3446C>T), AAC455AT (3452C>T), TTG47TTA (3458G>A), TA484TGT (3461A>T), GAA52GAG (3473A>G), GG453GG (3476A>G), AAC56AGT (3484A>G 3485C>T), CTG57CTA (3488G>A), TCC61TCT (3500C>T), CTT65CTA (3512T>A), AAA66AAG (3515A>G), GTT67GTC (3518T>G), TCA71TCT (3530A>T), AAA74AAG (3539A>G), ATG75GTT (3540A>G), TTC78TTT (3551C>T), TGC80TGT (3557C>T), AAC81AAG (3560A>C), AAC82BGGT (3563C>T), ATC90TAT (3567C>T), CTT93TGT (3596C>T), GTT94GTC (3599T>C), ACA98ACC (3611A>C), AAC100ACA (3617G>A), AAC102AAC (3623A>G), AAC103AGA (3626A>G), AAC104AAA (3629G>A), CAA108CTC (3641A>C), AAC109ATA 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(3934T>C 3935G>A), TGT208TGT (3941T>C), AAC211AGC (3955A>C), AAC215AG (3961G>A 3962A>G), AAC217AAAG (3968G>A), AAC218AAC (3971A>G), TCC220TCT (3973C>T), AAC221AAG (3980A>G), GGG222GGA (3983G>A), AGT223GGC (3984A>G 3986T>G), GAC224AG (3987G>A), GGC227GGA (3988C>A), GTA229GTC (4004A>G), AGA232AGG (4013A>G), CT234TGT (4014C>A), TGT235TAC (4022T>C), TTA238CTA (4029T>C), TTA246CTG (4053T>C 4055A>G), TGT247TGC (4058T>C), CTA250CTC (4067A>C), ACA258ACC (4091A>C), GTC260GTT (4097C>T), GCG261TCA (4098G>T 4100G>A), ATG262ATC (4103G>C), ACA264AAC (4113A>G 4115T>C), GAA267GAT (4118A>T), CTC273CCC (4136C>G), GGT274GAT (4142C>T), GTC279GTC (4152T>C 4154G>A), CAC280CAT (4157C>T), CGC283CAC (4165G>A), ATT287ATC (4178T>A), CAC289CA (4184C>T), CTC290CTC (4186G>A), CAG275CAA (4194G>A), TGT291GTC (4193G>A), GTC292GTC (4193A>G 4195T>C), AAC293CAT (4196A>T), AAC295GTC (4197C>T), AAC300TCA (4201G>A), CTC297GTC (4198C>T), AAC305TCA (4202G>A), AAC306TCA (4203G>A), AAC307TCA (4204G>A), AAC308TCA (4205G>A), 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	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	
CTC2ATT (5421C>A 5432C>T), GTC7GTT (5438C>T), TAT8TTT (5440A>T), CCT11CCC (5450T>C), ATT12ATC (5453T>C), GAC13GAT (5456C>T), CCA14CCG (5459A>G), ATC15ATT (5462C>T), TTA17TCG (5467T>C 5468A>G), GAG18GAA (5471G>A), GCT19GCC (5474T>C), GAA20GAG (5477A>G), CCC21TCG (5478C>T 5480C>G), GGA23GGG (5486A>G), ACC24AAAT (5488C>A 5489C>T), ACT26AAC (5495T>C), GTC27ATC (5496G>A), AGG32AGA (5513G>A), TCT34TC (5519T>C), ATA37AAC (5528T>C), TTG42CTG (5541T>C), GAT45AGC (5552T>C), CTC46TCG (5583C>T), GCT74GCC (5585T>C), AGA48AAA (5606G>A), CAT49CTG (5654A>G), AA52AGG (5573A>G), TTAA54TTG (5579A>G), AGA56AGC (5585A>G), GGG57GGA (5588G>A), TAT61CTC (5598T>C 5599A>T 5600T>C), CT656CTG (5612A>G), TCC70TCT (5627C>T), TTCT73CT (5633T>A), GGC914AG (5638G>A 5639A>G), CTT75G (5642T>C), GAT78AGC (5669T>C), GGT86GGA (5675T>C), TCC88ATC (5678C>A), AAC89AAA (5684G>A), AGC91GGT (5690C>A), TGC93GCT (5694A>G), GAG96CAA (5697T>C), GCT94GCC (5699T>C), CA979TCT (5705G>A), TC979TCT (5708A>T), ATT99ATC (5714T>C), TCT100TC 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(9911C>T), TCA1501TCC (9920A>C), ATC1502ATT (9923C>T), TAT1505TAC (9932T>C), CTA1510TTG (9945C>T 9947A>G), GAG1513GA (9956G>A), GTC1516GGC (9964T>C 9965A>G), ATC1517ATA (9968C>A), ACG1518ACA (9971G>A), CGC1519GCA (9974G>A), TCT1520TCA (9977T>A), CCA1521CCG (9980A>G), GAC1524GAA (9989C>A), CTA1526TTG (9993C>T 9995A>G), ATC1528ATA (10001C>A), TTT1529TTC (10004T>C), AGT1534AGC (10019T>C), GCC1535TCT (10020G>T 10022C>T), AAA1536AAG (10025A>G), TAC1539TAT (10034C>T), CTA1540CTG (10037A>G), ACC1541ACT (10040C>T), CTC1542CTT (10043C>T), ATT1543TAC (10046T>C), CAG1546CAA (10055G>A), CTA1550TTG (10065C>T 10067A>G), CTC1551CTT (10070C>A), AGG1553AGA (10076G>A), GTT1554GTC (10079T>C), AGA1556AAA (10084G>A), AAC1557ATG (10087A>G 10088C>T), CTA1558CTC (10091A>C), TCT1559TCC (10094T>C), AAC1560AAA (10097G>A), AGT1561GGT (10098A>G), GAT1564ACC (10107G>A 10108A>C 10109T>C), CTG1566TTG (10113C>T), TTG1569ATG (10121T>A), AGT1570AGC (10127T>C), TCC1571TCT (10130C>T), TTG1572CTA (10131T>C 10133G>A), CAG1575CAA (10142G>A), GTG1576GGT (10145G>T), CTG1577TTG (10146C>T), GGC1578GGT (10151C>T), CAC1580CAT (10157C>T), GAC1588GAT (10181C>T), GAC1589GAA (10184C>A), AAC1590GAC (10185A>G), CAA1592CAG (10193A>G), CGA1593AGA (10194C>A), CTA1594CTG (10199A>G), TTA1597TTG (10214A>G), CGA1600GTC (10217A>T), ACA1602ACT (10223A>T), AGA1603AGG (10226A>G), GTG1605GTA (10232G>A), GAT1606GAC (10235T>C), CAA1607CAG (10238A>G), GAG1608GAA (10241G>A), GTG1609GTA (10244G>A), GCT1613GCG (10256T>G), AGA1614AGG (10259A>G), ACC1615ACT (10262C>T), ACT1617GTA (10266A>G), TAT1619GTT (10267A>T), TAC1620TAT (10272G>T 10273A>G), AAC1623AGC (10285A>G), AAG1625AGG (10291A>G), GTG1626ATG (10298C>A), CTC1627CTA (10301T>C), AAC1629AAA (10304G>A), GA1630GCC (10306C>C 10307A>C), GGA1631GGG (10310A>G), CAA1640CAG (10337A>G), GTG1644GTC (10349C>A), CTC1645TCA (10349C>A), CTC1650CCA (10367G>A), GTG1653GCC (10375T>C), TCG1654CTC (10379G>C), CTC1656CTG (10385T>G), ATA1658ATC (10391A>C), AGG1659AGA (10394G>A), GCC1660ACT (10395G>A 10397C>T), AGA1663AGA (10405A>G 10406G>A), TTC1665CTT (10410T>C 10412C>T), CAG1666CAC (10414G>A), CCT1668CCA (10421T>A), ATC1670ATT (10427C>T), TCG1671TCA (10430G>A), TTG1673CTG (10434T>C), CAG1677CCA (10448G>A), ACC1680A (10451C>A), GTC1680A (10457C>A), GTG1681GGG (10460T>G), GCT1682GCC (10463T>C), TAT1684TAC (10469T>C), CTC1686CTC (10475T>C), AAG1687AAA (10478G>A), CTA1690CTG (10487A>G), GTT1695GTC (10502T>C), TCT1698TCC (10511T>C), CTC1699TTA (10512C>T 10514C>A), GAC1705GAT (10532C>T), GGG1708GGT (10541G>T), AGG1712AGA (10553G>A), GCA1713CGC (10556A>G), GTC1714GTA (10559C>A), CGA1719CCG (10574A>G), GTG1724GTA (10589G>A), AAC1726AAT (10595C>A), AGT1727AGC (10598T>C), CTT1728CTA (10601T>A), GAG1730GAA (10607G>A), GAC1733GAT (10616C>T), CTG1734TTG (10617C>T), GCT1736GCA (10625T>A), CTC1737TCA (10628C>A), CGA1738GGG (10631A>G), CCA1741CCG (10640A>G), CTG1742TCA (10641C>A 10643G>A), CCT1743CC (10646T>C), AGG1749AGC (10664A>G), GGA1750GGG (10667A>G), ATA1752GAT (10671A>G), GAT1753GAC (10676T>C), ATC1755ATT (10679C>T), GTC1755ATC (10680G>A), AGA1757AGG (10688A>G), ATA1759ATT (10694A>T), GAT1760GAC (10697T>C), TCA1763TCT (10706A>T), CCG1768CTC (10721G>T), TCC1769TCT (10724C>T), GCT1775ACA (10740G>A 10742T>A), ACC1776ACA (10745C>A), CAA1778AGG (10750A>G 10751A>G), CAG1781CAA (10760G>A), AAG1785GAG (10770A>G), GAC1788GTC (10778C>G), AAC1788A (10781C>T), TCC1790TCT (10787C>T), ATT1794ATC (10799T>C), TCG1796TGT (10805C>T), GCA1798GCT (10811A>T), GAA1799GAG (10814A>G), GTT1800GTC (10817T>C), TCT1805GTC (10832T>C), CGG1808CGA (10841G>A), CTG1811TTG (10848C>T), ATT1812CTG (10851T>C), GAG1813GAT (10853A>G), GTC1814TCA (10859C>T), GAT1821GAC (10880T>C), GGA1822GGC (10883A>C), CCA1823CCA (10886A>G), ATT1825GAT (10890T>G), TTG1826CTG (10893T>C), GTC1827GTT (10898C>T), TAT1831TAC (10910T>C), GGG1832GCC (10913G>C), ACT1833AAC (10916T>C), CCTA1835TCA (10922A>G), CCA1838CCG (10932A>G), AAC1839GAC (10932A>G), AAC1841AAA (10940G>A), CAC1845CAT (10952C>T), CTA1847TCT (10958A>T), CGC1849GCT (10964G>T), TTC1850TTT (10967C>T), CCC1851CTC (10970C>T), TCG1852GTA (10971T>G 10972C>T 10973G>A), ACA1854ACT (10979A>T), ATC1857ATA (10988C>A), ACC1858ACT (10991C>T), CAA1859CAG (10994A>G), GTA1860GTC (10997A>G), TCG1862TCA (11003G>A), TTT1864TTC (11009T>C), TCT1866TCC (11015T>C), CTC1868ATA (11019C>T), AAC1869TAT (11024C>T), CTT1870CTC (11027T>C), CGA1871AGA (11028C>A), CGA1875CGG (11042A>G), TTT1878ITC (11051T>C), AGA1880CGA (10550A>C), GCT1882GCA (11063T>A), GAG1883GAA (11066G>A), TAC1884TAT (11069C>T), TTG1885CTC (11070T>C), ACC1886ACT (11075C>T), TCC1888TCT (11081C>T), ACC1889GTC (11082A>G 11084C>T), CCT1890CTC (11087C>T), CGA1891A (11088C>A), GTG1898GTC (11105G>A), TTA1897TTG (11108A>G), ATT1899AAC (11144T>C), AGC1902AGT (11123C>T), AGT1905AGC (11132C>T), GCT1910GCC (11147T>C), CGT1911GCC (11150T>C), TTG1913TTA (11156G>A), AAC1914AT (11159C>T), TAT1915TAC (11162T>C), GGA1921GGT (11180A>T), CCT1923CCA (11186T>A), GAA1924GAG (11189A>G), GAA1925GAG (11192A>G), TCA1928TCC (11201A>C), CCT1930CCC (11207T>C), TAC1931TAT (11210C>T), ACT1937ACA (11228T>C), GAG1944GAG (11249A>G), CTG1947CTC (11258A>G), GTC1948GTT (11261C>T), CTT1955CTA (11282T>A), GAG1956GAA (11285G>A), AGG1959CGA (11292A>C 11294G>A), GGA1960GGC (11297A>C), CTG1962TTA (11301C>T 11303G>A), GTG1965GTT (11312G>T), GCT1966TCA (11312C>T), AAC1967ATT (11318C>T), GCT1967GTC (11327C>T), GTT1974ATC (11337G>A 11339T>C), AAC1977AAT (11348C>T), GTC1979GTA (11354C>A), AAC1981AAT (11360C>T), GTT1982CTA (11363T>A), TCC1983TCG (11366C>G), AAA1984AG (11369A>G), CCC1985CCG (11372C>G), CTAG1988CTC (11375A>G), CCA1989CCT (11384C>T), TTG1990TCT (11387A>G), CCT1994CCA (11399G>A), AGG2001AGA (11420G>A), TGT2006TGC (11435T>C), AGT2008AGC (11441T>C), ACT2009ACC (11444T>C), TAT2012TAC (11453T>C), CTAG2013TTC (11454C>T 11456A>G), TCT2014TCA (11459T>A), GGT2018GGG (11471T>G), GAC2019GAT (11474C>T), GTC2020GTT (11477C>T), TTC2023TTT (11486C>T), CAC2028GAT (11498C>T), GAC2028GAT (11501C>T), CTG2029CTA (11504G>A), TAT2030TAC (11507T>C), CCT2033CCC (11516T>C), TAC2037TAT (11528C>T), AGA2039ATG (11533G>T 11534A>G), AAC2040AAA (11537G>A), ATT2043GTT (11544A>G), CTA2044CGG (11548T>G 11549A>G), AAC2046AAT (11555C>T), GTT2047ACT (11556G>A 11557T>C), CTA2049CTC (11564A>G), TCT2050TCC (11567T>C), TCC2054TCT (11579C>T), AAC2055GAT (11580A>G 11582C>T), ACC2057GTC (11586A>G), TCA2058GCA (11589T>T), AAC2061AAG (11600A>G), GTA2063GTC (11606A>G), GCC2064GCT (11609C>T), TGT2065TGC (11612T>C), ATT2066AAC (11615T>C), CTG2069TTG (11622C>T), CTG2071CTT (11630G>T), TTG2078CTG (11649T>C), ATT2079ATA (11654T>C), AAC2081AAG (11660G>A), ACT2085ACC (11672T>C), CCT2088CTT (11681C>T), GTT2089AGA (11682G>A 11683T>A), GGC2090GGA (11687C>A), AGC2091AGT (11690C>T), ACT2092ATA (11693C>A), AAC2093GAG (11694A>G), CTAG2095CTG (11702A>G), GG2097AAG (11706G>A 11707G>A 11708A>G), GAA2098GAG (11711A>G), GAA2100GAG (11717A>G), AGA2101AAG (11719G>A 11720A>G), CAC2102CAT (11723C>T), CAT2104CGA (11728A>G 11729T>A), AGG2105AGA (11732G>A), CTA2121CTC (11753A>G), GAG2113AAA (11754G>A 11756G>A), AAT2114GAG (11757A>G 11759T>C), TCT2117TCC (11768T>C), TCC2120TCT (11777C>T), CTA2121CTG (11780A>G), CTA2122TAA (11781C>T), GAC2123GAT (11786C>T), TAC2124TAT (11789C>T), AGT2125AGC (11792T>C), CTG2127TTA (11796C>T 11798G>A), TGC2128TAA (11800G>A 11801C>T), ACT2129ACT (11803T>C 11804C>T), GGA2130AG (11805G>A 11806G>A 11807G>A), CCT2131TGC (11809A>G), TCC2132CCC (11811T>C), TGG2133TGA (11816G>A), AAG2134TAG (11817A>T), CCT2135ATA (11820C>A 11821C>A), GCC2136ATT (11823G>A 11824C>T 11825C>T), CAT2137CAG (11828T>G), GCT2143TGG (11842T>G 11843G>A), TGA2143TGG (11846A>G)

Proteins

nucleoprotein N (NP_056793.1)	1	451	100%	2971	95.6%	451 (100%)	430 (95.3%)	0/0/0	1
Protein mutations:									
C40S (188T>A), N50S (219A>G), V56I (236G>A), C59G (245T>G), S61N (252G>A), T84S (320A>T), V95L (353G>C), G106D (387G>A), E110D (400G>C), K112R (405A>P), P135S (473C>T 475T>A), S157N (540G>A 541C>T), V179A (606T>C 607T>A), I257L (839A>C), A332T (1064G>A), T377A (1199A>G), D378E (1204C>G), V379T (1205G>A 1206T>C 1207A>G), G397S (1259G>A), I410M (1300A>G), A433T (1367G>A)									
Codon mutations:									
AAA9AAG (97A>G), GTC15GTT (115C>T), TTG17CTA (119T>C 121G>A), GAG20GAA (130G>A), ATT21ATC (133T>C), GAT24GAC (142T>C), TAC28TAT (154C>T), TAC30TAT (160C>T), CCT31CCG (163T>G), GCC32GCT (168C>T), GAT35GAC (175T>C), TTG36CTG (176T>C), AAA37AAG (181A>G), TG40AGT (188T>A), ACT42ACC (196T>C), CTA43TTA (197C>T), CCC47CTC (211C>T), AAT50AGT (219A>G), AAAG54AAA (232G>A), GTT56ATT (236G>A), TCA58TCT (244A>T), TGC59GGC (245T>G), AGC61AAC (252G>A), GGC62GCA (256C>A), CTT65CTC (265T>C), GAT66GAC (268T>C), GAC68GAT (274C>T), TTG71TCG (283T>C), TCC72TGC (286C>G), TTG74CTG (290T>C), GCG76GCC (298G>C), TTT80TTC (310T>C), GAG82GAA (316G>A), GGG83GGA (319G>A), ACA84TCA (320A>T), CGG88CTC (328G>T), GAA87GAG (331A>G), GTG88GTC (335G>C), AGA97GCT (361A>T), CGA98CCG (364A>G), AAA99AAG (367A>G), GGT106GAT (387G>T), TCT107TCC (391T>C), CTG108TCC (394T>C), GAG110GAC (400G>C), AAA112AG (405A>G), GTA116GTC (418A>G), CTG122CTA (436G>A), GGA124GGG (442A>G), GAA127GAG (451A>G), CTG128TTG (452C>T), AGA130AGG (460A>G), CCC132CT (466C>T), GTC134GTT (473C>T), CCT135CTA (473C>T 475T>C), GCG138GCA (484A>G), CCT139TCT (487C>T), TTA140CTG (488T>C 490A>G), GTC141GTT (493C>T), GGT142GTC (496T>C), CTG147TTC (509C>T), ATT153ATA (529A>C), TCC154TCT (532C>T), GGG155GGA (535G>A), CAAC156CAG (538A>G), AAC157AAT (540G>A 541C>T), ACT158ACC (544T>C), GGT159GCC (547T>C), AAC160AT (560G>C), TAT161TAC (553T>C), ATT165AT (565T>C), GAC167GAT (571C>T), AGG168AGA (574G>A), CCT177CCC (601T>C), GTT179GCA (606T>C 607T>A), AAA180AAG (610A>G), GTG182GTA (616G>A), AAC184CAT (622C>T), CTG1827TTG (631A>G), ACA189AG (637A>G), ACT190ACC (640T>C), AAC1916AC (658T>C), ACT199AC (667T>C), AAC2020ATT (676C>T), TTT205TTC (685T>C), GGC207GTC (691C>T), ACC209AAT (697C>T), GAG218GAA (724G>A), CTA202CTG (730A>G), GCA23GTC (739A>T), ATC224ATT (742C>T), GTG226TGA (748A>G), GAA234GAG (772A>G), TGT236TGC (778T>C), CTG239PTT (785C>T), ACT2434ACA (799T>A), TTC245TTT (805C>T), AAA247AAG (811A>G), ACT249ATA (817C>A), ACC252AAT (826C>T), GCT253GCG (829T>G), GAG255GAA (835G>A), ATA254TCA (839A>T), CCT258ATA (842C>T), TAT259TAC (847T>C), GAG268GA (874G>A), TGT273TTC (889T>C), CCT285CTC (895A>T), CAG297TCA (901G>A), ACA279AAT (907A>T), AAC283CAT (919C>T), ACT284TTC (922C>T), CCT288TAT (931C>T), CAC288CAT (934C>T), CCT289TTC (937C>T), TCA292TTG (944C>T 946A>G), CCT299CCG (967T>G), TAT300TAC (970T>C), TCA302TC (976A>G), GCT304GCA (982T>C), ATT310TAC (991C>T), GTG308GTA (994G>A), AAC310AT (1000T>C), GTC315GTT (1015A>T), GTC317GTT (1021C>T), CAA321CAG (1033A>G), GTC322GTC (1036G>C), TCC324TCT (1042C>T), CTG325TTC (1043C>T 1045A>G), AGC328ACA (1045G>A), GTT329GTC (1057G>A), GCT331GCA (1063T>A), GCA332ACA (1064G>A), GCT334GCA (1072T>C), GAA337GAG (1081A>G), CTG335CCG (1075T>G), GAA337GAG (1081A>G), GTC339TTC (1117C>T), GGG351GGA (1123G>A), GGG353GGA (1129G>A), ACA354AT (1132A>G), AGA357AGG (1141A>G), AGA358AGG (1144A>G), AGA361AGG (1153A>G), GAT362GAC (1156T>C), GAG363GAA (1159G>A), AAC367GAC (1171A>G), GAA368GAG (1174A>G), TAC369TAT (1177C>T), GCG371GCA (1183G>A), CTG374TTC (1190C>T), AAT367AAA (1198G>A), ACT377GTC (1199A>G), CCT378GAG (1204C>G), GTC379AGC (1205G>A 1206T>C 1207A>G), GCA380GCC (1210A>G), CTG381TTC (1211C>T), GAT384GAC (1222C>T), GAT386ACA (1228T>C), AAC388AT (1234C>T), GAC390GAT (1240C>T), GAC391GAT (1243C>T), TCA396TCC (1258A>G), GGT397TGT (1259G>A), AGA400AGG (1270A>G), CCG402CCA (1276G>A), GTC404GCA (1282T>A), TAT406TAC (1288T>C), ACT407ATA (1291T>A), AT410ATC (1300A>G), CGA415AGA (1313C>A), AGA417AAA (1321G>A), TCA419TCA (1327G>A), CGG422AGG (1334C>A), AGA4234AG (1339A>G), AGT428AGC (1354T>C), TCC429TCT (1357C>T), GCT433ACT (1367G>A), CGT434CGC (1372T>C), CCA435CCT (1375A>T), TCA437TCG (1381A>G), TTC438TTT (1384C>T), GCT449GAG (1417C>T), AAC446TAC (1408T>C), GAC449GAT (1417C>T), TCA450TCG (1420A>G), TAA451TGA (1422A>G)									
phosphoprotein M1 (NP_056794.1)	1	298	100%	1632	83.0%	298 (100%)	245 (82.2%)	0/0/0	1
N29A (1598A>G 1599A>C), E42D (1639A>T), N48S (1656A>G), G54R (1673G>A 1675G>A), H57Q (1684C>A), G61D (1695G>A 1696A>C), S63P (1700T>C), P64S (1703C>T 1705C>T), N65G (1706A>G 1707A>G), G67S (1712G>A 1714T>C), E68S (1715G>A 1716A>G 1717G>T), M69T (1719T>C 1720G>A), V72A (1728T>C 1729G>A), G75 (1736G>A), R78Q (1746G>A 1747A>G), G86A (1770G>C), S90A (1781A>G 1782G>C), V102I (1817G>A 1819C>T), I108M (1837A>G), R109K (1839G>A), I126V (1889A>G), A130T (1901G>A 1903G>A), P134S (1913C>T 1915C>T), N135G (1916A>G 1917A>G 1918C>T), P136A (1919C>G 1921T>G), S141L (1935C>T), E142K (1937G>A 1939G>A), S145A (1946T									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	
AAG3AAA (1522G>A), ATC4ATT (1525C>T), AAT7AAC (1534T>C), CCT8CCA (1537T>A), GCT10GCG (1543T>G), ATT11ATC (1546T>C), AGA12AGG (1549A>G), GGT14GGC (1555T>C), CTG15TTG (1556C>T), GCC16GCT (1561C>T), CTT18CTA (1567T>A), GAA23CAG (1582A>G), GTT25GTA (1588T>A), CTG27CTC (1594G>C), AAT29GCT (1598A>G), 1599A>C), AGA30AGG (1603A>G), AAT31AAC (1606T>C), GAA33CAG (1612A>G), GGG41GGA (1636G>A), GAA42GAT (1639A>T), GAA45GAG (1648A>G), AAT48AGT (1656A>G), CCT50CCC (1663T>C), GAG51GAA (1666G>A), GAT52GAC (1669T>C), GGG54AGA (1673G>A), CGA55CCG (1678A>G), CAC57CAA (1684C>A), CTG58CTA (1687G>A), GG61GAC (1695G>A), AAE62AAC (1699A>G), TC633CG (1700T>C), CCC64CT (1703C>T), AAC65GCC (1706A>G), GGT67AGC (1712G>A), 1714T>C), GAG68AGT (1715G>A), AAE71AAC (1716A>G), ATG69ACA (1719T>C), AAC71AAC (1720G>A), AAC71AAC (1726G>A), GTG72GCA (1728T>C), C 1729G>A), GGC75AGC (1736G>A), AAC76AAA (1741G>A), CGA78CAG (1746G>A), GAG79GAA (1750G>A), GAA85GAG (1768A>G), GGA86GCA (1770G>C), AGC90GCG (1781A>G), AAC78GCA (1782G>C), CTG92TTG (1787C>T), TTC93TTT (1792C>T), GTC102ATT (1817C>T), ATA108ATG (1837A>T), AGG109AAC (1839G>A), GAA11GGG (1846A>G), TTT114TTG (1855T>C), CTG115CTG (1858C>G), AAG116AA (1861G>A), TCA119TCT (1870A>T), CTG122GTT (1879A>T), GAA123AG (1882A>G), ATT125AC (1888T>C), ATA126GTA (1889A>G), GCG130ACA (1901G>A), AAG131CT (1913C>T), CCC134CT (1913C>T), AAC135GGT (1916A>G), GAA136GGG (1919C>G), GGT140TCC (1933T>C), TCA141TTA (1935C>T), GAG142AAA (1937G>A), GAT143GAC (1942T>C), AAC144AG (1945A>C), TCA145GCT (1946T>G), AAC146ACT (1951C>T), ACC149GTT (1958A>G), G 1959C>T 1960C>T), CGA151GCC (1966A>G), AAC154GCT (1973A>G), AAC154GCT (1973A>G), AAC155AG (1977A>G), ACA158AAC (1986C>A), AAC159TG (1988C>T), AAC160GCA (1991A>G), AAC161GCA (2003A>C), AAC164GCA (2003A>C), AAC165GCA (2007A>C), AGC166AGT (2011C>T), TCC168CCC (2015C>T), TCG169CTA (2020G>A), GGC171GTT (2025C>T), AAC172AA (2026C>T), AGG172AA (2028G>A), GGC174GCA (2035G>A), CAA176GCA (2040A>C), GCT178GTC (2046C>T), GGC180GGT (2053C>T), CCA182CCT (2059A>T), GCC183GCA (2062C>T), CTG184TTA (2063C>T), AAC187TTT (2074G>T), CCG188GTT (2076C>T), AAC189GCC (2078A>G), ATT190AAC (2083T>C), GAT194GAC (2095T>C), AAC195CCA (2097T>C), TCA196TCT (2101A>T), GTG197GTC (2104G>C), ATC201ATT (2116C>T), GTC202GG (2119T>C), AAC204CA (2125G>A), GCA206GCC (2131A>C), AAC207GAG (2134A>G), AGT208AGC (2137T>C), TCC209TTT (2140C>T), TCC210TCT (2143C>T), AAA211AAC (2146A>G), AAC212AAC (2149A>G), TAT213TAC (2152T>C), AAC214AAA (2155G>A), CCC216CT (2161C>T), TCT217TCC (2164T>C), TCC219TCA (2170C>A), CTC223TT (2180C>T), ATT226AAC (2191T>C), CAA229CAG (2200A>G), TTG230CTG (2201T>C), GAT235GAC (2218T>C), GAT236GAC (2221T>C), G17238GTC (2227T>C), AAC239AG (2230A>G), GCA411TCG (2234G>T), AAC244GTC (2245A>G), ACC248ACT (2257C>T), TTA250TTG (2263A>G), CGT252CAT (2268G>A), GGG254GGA (2275G>A), CCC258CCT (2287C>T), CTA259CTG (2290A>G), GTA262GTT (2299A>G), GTC266GTT (2311C>T), TTG268CTA (2315T>C), G2317G-TA), AAC270AT (2323C>T), TCT271TCC (2326T>C), AAC272AAA (2329G>A), TTG276CTG (2339T>C), TTA277TTG (2344A>G), GTC278GTT (2347C>T), AAC279GAG (2350A>G), TCC280CC (2351T>C), AAC281GAC (2354A>G), CTG283CTA (2362G>A), AGT284AAC (2364G>A), AAC285AG (2368A>G), ATC286ATA (2371C>A), ATT292AAC (2387T>C), CGC293CGT (2392C>T), ACA295GCG (2396A>G), TGC297CCC (2402T>C), AAC298TGA (2406A>G)									
M2 protein (NP_056795.1)	1	203	100%	1339	90.7%	203 (100%)	181 (89.2%)	0/0/0/0	1
Protein mutations:									
V1M (2516A>G), P2L (2557C>T), V2I (2559G>A), L2P (2572T>C), S4G (2631A>G), R50M (2644G>T), G58E (2668G>A), G70R (2703G>A), D80N (2733G>A), S275C>T), I82L (2739A>C), H87Q (2756T>A), V90I (2763G>A), S276C>T), I97V (2784A>G), N147D (2934A>G), T148A (2937A>G), Q154E (2955C>G), K160R (2974A>G), R165Q (2989G>A), G178C (3027G>T), M184L (3045A>C), S3047G>A), E192D (3071A>T), L199V (3090C>G)									
Codon mutations:									
CTA447TCA (2505C>T), ATA7ATG (2516A>G), AAC99AG (2522A>G), AAC101AAC (2525T>C), TCG11TGT (2528C>T), AGG12AGA (2531G>A), GAC13GAT (2534C>T), ACT16ACC (2543T>C), CAA17CAG (2546A>G), AAC18AAC (2549A>G), CCA21CTC (2557C>T), GTG22ATA (2559G>A), CAA23CTC (2561G>A), CTG23CTG (2564A>G), GCG24GCA (2567C>A), CTC26CCA (2572T>C), AAC273GG (2573G>A), GAC30GAT (2585C>T), TTG31CTA (2586T>C), AAC287GTC (2588G>A), CTT33TTA (2592C>T), AAC294T (2594T>A), AAC295CCA (2597A>C), CCC35CT (2600C>T), CCT36CCG (2603T>G), TAC38TAT (2608C>T), GTC39GTT (2612C>T), CTA41TTC (2616C>T), AAC42AAC (2621A>G), AAC43GAG (2624A>G), CTT44CTC (2627T>C), AAC45ACG (2630A>G), AGC46GGC (2631A>G), AGG500ATG (2644G>T), AAC52AAT (2651C>T), TGT54TGC (2657T>C), AAC56AAT (2663C>T), GGA57GGG (2666A>G), GGG58GAA (2668G>A), AAC269GAC (2672C>A), AGC633ATG (2693T>C), AAC644GCC (2687G>A), AAC654CC (2693T>C), TCG686GGC (2693T>C), AAC664GCC (2693T>C), AAC675GG (2699A>G), TTC69TTT (2702C>T), CGG70AGG (2703G>A), CTG72TGT (2709C>T), CTG76TTG (2721C>T), GAC80AAT (2733G>A), AAC80AAT (2735C>T), AAC82TAC (2739A>C), AAC84TAC (2741A>C), TCT84TCC (2747T>C), CGG87GG (2748G>A), TCA192CTG (2769T>C), AAC193GAT (2771A>G), AAC194AAC (2777A>G), GTC95GTT (2780A>T), ATT79GTT (2784A>G), CGT99HTT (2790C>T), GTC100GCG (2795T>G), GAA103ZGG (2804A>G), GCT104GCC (2807T>C), GTC106GTT (2813C>T), GGC109GGT (2822C>T), AAC115AAA (2840G>A), CTT120CTA (2855T>A), ATC121ATT (2858C>T), CAG123CAA (2864G>A), AGG128AGA (2879G>A), CTT131CTA (2888T>A), TAC138TAT (2909C>T), AAC142AAC (2921C>T), ACT143AAC (2942T>C), AAC147GAT (2934A>G), AAC148GGC (2937A>G), AAC149GTC (2939T>G), TTC150TTT (2945C>T), GTC151GTT (2948C>T), AAC154GAA (2955C>G), AAC160AGA (2974A>G), CAG161CAA (2978G>A), TGT162TGC (2981T>C), ATC164ATT (2987C>T), CGG165CAA (2989G>A), AAC167AGA (2996A>G), ATC168ATT (2999C>T), TCG175TCT (3027G>C), AAC176CGA (3021A>C), AAC178GAT (3027G>C), AAC179GAG (3027G>C), AAC180GAT (3045A>C), AAC3047G (3045T>C), AAC186CTC (3053T>C), AAC187CAA (3056G>A), AAC192GAT (3068C>T), AAC193GAT (3071A>T), AAC194GAT (3077C>T), AAC195AG (3080A>G), AAC196AG (3080C>T), AAC197TCT (3080E>T), AAC198TCA (3080T>A), AAC199GAT (3080T>A), AAC201CTG (3098A>G), AAC203TAG (3104A>G)									
transmembrane glycoprotein G (NP_056796.1)	1	525	100%	3274	86.1%	525 (100%)	447 (85.1%)	0/0/0/0	1
Protein mutations:									
V2I (3321G>A), S332T>C), P3L (3325C>T), L1F (3348C>T), S335T>C), F14S (3358T>C), P15S (3360C>T), S3362A>G), F18L (3369T>C), S3371T>C), N56S (3484A>G), S4385C>T), M75 (3540A>G), T10I (3634C>T), H13Q (3713C>A), D13E (3728C>A), V15I (3771G>A), R16K (3814G>A), N177K (3848T>G), S3853C>T), V181I (3858G>A), A182T (3861G>A), N201E (3819A>G), S392T (201A>G), M206T (3934T>C), N213S (3955A>G), S3956T (201C>A), R215I (3961G>A), S3962A>G), R218K (3970G>A), S3971A>G), S223G (3981G>A), C224K (3987G>A), A225A (4098G>T), AAC261 (4103G>A), M262 (4103G>A), E267D (4118A>T), G274I (4138G>A), R283H (4165G>A), R322Y (4281C>T), R365K (4411G>A), G367R (4416G>A), G368E (4420G>A), H373P (4435A>G), N375D (4436G>A), AAC408E (4504T>A), AAC4541A>G), N427E (4596A>G), AAC444AK (4647G>A), AAC445K (4651G>A), AAC445 (4651G>A), AAC455 (4681A>G), AAC462 (4682G>A), AAC466G (4670C>T), AAC467 (4714C>G), AAC468 (4722C>T), AAC469 (4724C>T), AAC470 (4726C>T), AAC471 (4730C>T), AAC472 (4732C>T), AAC473 (4734C>T), AAC474 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(5402C>T), AAC808 (5404C>T), AAC809 (5406C>T), AAC810 (5408C>T), AAC8									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	
L2I (5421C>A 5423C>T), Y8F (5440A>T), L17S (5467T>C 5468A>G), P21S (5478C>T 5480C>G), T24N (5488C>A 5489C>T), V27I (5496G>A), P46S (5553C>T 5555T>G), R48K (5560G>A), Y61L (5598T>C 5599A>T 5600T>C), F73Y (5635T>A), R74K (5638G>A 5639A>G), L88I (5679C>A), M93A (5694A>G 5695T>C 5696G>T), H107Y (5736C>T 5738C>T), R115K (5761G>A 5762A>G), H122Q (5783T>G), S128A (5799T>G), L136C (5823C>T 5824T>G), G139E (5833G>A 5834A>G), P147T (5856G>A), N161K (5900T>A), T170I (5926C>T 5927G>A), I180M (5957C>G), V205I (6030G>A 6032G>T), I207V (6036A>G 6038C>T), K209R (6043A>G), Q217K (6066G>A), N235G (6120A>G 6121A>G), L257I (6186T>A), V259I (6192G>A 6194C>T), Q285H (6272A>C), M289V (6282A>G), K315R (6361A>G), V328A (6400T>C), K331R (6409A>G), S335G (6420A>G), E339G (6433A>G 6434G>A), S343P (6444T>C 6446C>T), C344S (6447T>A), R346K (6454G>A 6455A>G), R350K (6466G>A), F428L (6697T>C 6701C>T), A430S (6705G>T 6707C>A), R489K (6883G>A), R672W (7431C>T), A681M (7458G>A 7459C>T), N683G (7464A>G 7465A>G), I717T (7567T>C), V724I (7587G>A), Q745R (7650C>A 7651A>G), F760L (7695T>C 7697T>C), V766I (7713G>A), V815I (7860G>A), A879I (8053C>T 8054T>A), E882D (8063G>C), S883N (8065G>A), H933N (8214C>A 8216C>T), R970K (8326G>A), T1018K (8470C>A), K1059R (8605A>G), S1078N (8650G>A 8651T>C), G1089R (8682G>A), P1092T (8691C>A 8693T>C), T1135S (8814A>T 8816T>C), A1136V (8824C>T 8825A>G), G1139R (8832G>A 8834A>G), V1144I (8847G>A 8849T>A), C1158S (8890G>C 8891C>A), T1159R (8892A>C 8893C>G 8894G>A), D1206N (9033G>A 9035T>C), I1214V (9057A>G), V1218I (9069G>A 9071G>A), S1255A (9180T>G 9182T>C), Q1276H (9245A>T), K1279R (9253A>G 9254G>A), R1302K (9322G>A), R1307K (9337G>A 9338A>G), Q1316R (9364A>G), N1318D (9369A>G), R1319K (9373G>A), V1321I (9378G>A 9380G>A), V1327I (9396G>A 9398G>T), I1334V (9417A>G), E1336D (9425G>T), K1342R (9442A>G), Q1356R (9484A>G 9485G>A), R1357K (9487G>A 9488G>A), R1374K (9538G>A), H1378R (9550A>G), F1476L (9843T>C), E1478G (9850A>G), I487V (9876A>G 9878C>T), K1498R (9904A>G), V1516A (9964T>C 9965A>G), D1524E (9989C>A), A1535S (10020G>T 10022C>T), R1556K (10084G>A), N1557S (10087A>G 10088C>T), S1561G (10098A>G), D1564T (10107G>A 10108A>G), D1569M (10122T>A), D1589R (10184C>A), N1590S (10185A>G), T1617Y (10266A>G 10267C>T 10268T>A), D1619C (10272G>T 10273A>G), N1623R (10285A>G), K1625R (10291A>G), V1626M (10293G>A), V1630A (10306T>C 10307A>C), V1653A (10375T>C), A1660T (10395G>A 10397C>T), K1663R (10405A>G 10406G>A), F1665L (10410T>C 10412C>T), R1749S (10664G>C), N1752D (10671A>G), V1755I (10680G>A), A1775T (10740G>A 10742T>A), K1778R (10750A>G 10751A>G), K1785E (10770A>G), Y1825D (10890T>G), N1839D (10932A>G), S1852V (10971T>G 10972C>T 10973G>A), T1889A (11082A>G 11084C>T), A1966S (11131G>T 11135T>C), V1974I (11337G>A 11339T>C), R2039M (11533G>T 11534A>G), I2043V (11544A>G), L2044R (11548T>G 11549A>G), V2047T (11556G>A 11557T>C), N2055D (11580A>G 11582C>T), T2057A (11586A>G), S2058A (11589T>G), V2089R (11682G>A 11683T>G 11684T>A), K2093E (11694A>G), G2097K (11706G>A 11707G>A 11708A>G), R2101K (11719G>A 11720A>G), H2104R (11728A>G 11729I>A), E2113K (11754G>A 11756G>A), N2114D (11757A>G 11759T>C), C2128* (11800G>A 11801C>A), L2129T (11803T>C 11804C>T), G2130K (11805G>A 11806G>A 11807A>G), Y2131C (11809A>G), S2132P (11811T>C), W2133* (11816G>A), K2134* (11817A>T), P2135N (11820C>A 11821C>A), A2136I (11823G>A 11824C>T 11825C>T), H2137Q (11828T>G), A2138T (11829G>A), K2139E (11832A>G), L2141H (11839T>A), V2142G (11842T>G 11843G>A), *2143W (11846A>G)									

Protein mutations:

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	11919	99.8%	14321	60.3%	11893 (99.9%)	9541 (80.1%)	1/11	
CTC2ATT (5421C>A 5423C>T), GTC7GTT (5438C>T), TAT8TTT (5440A>T), CCT11CCC (5450T>C), ATT12ATC (5453T>C), GAC13GAT (5456C>T), CCA14CCG (5459A>G), ATC15ATT (5462C>T), TTA17TCG (5467T>C 5468A>G), GAG18GAA (5471G>A), GCT19GCC (5474T>C), GAA20GAG (5477A>G), CCC21TCG (5478C>T 5480C>G), GGA23GGG (5486A>G), ACC24ATT (5488C>A 5489C>T), ACT26ACC (5495T>C), GTC27ATC (5496G>A), AGG32AGA (5513G>A), TCT34TCC (5519T>C), AAT37AAC (5528T>C), TTG42CTG (5541T>C), GAT45GAC (5552T>C), CCT46TCG (5553C>T 5555T>G), GCT47GCC (5558T>C), AGA48AAA (5560G>A), CTAG49CTG (5564A>G), TTA51TTG (5570A>G), GAA52GAG (5573A>G), TTA54TTG (5579A>G), ACA56ACG (5585A>G), GGG57GGA (5588G>A), TAT61CTC (5598T>C), TCA56TGC (5599A>T 5600T>C), CTAG49CTG (5607A>G), TCC70TCT (5627C>T), TTG73TAC (5635T>A), AGA74AGA (5638G>A 5639A>G), GTT75GTC (5642T>C), GAT86GAC (5669T>C), GGT86GGA (5675T>A), TCC78TCT (5678C>T), CTG88ATC (5679C>A), AAC889AA (5684G>A), GGC91GGT (5690C>A), ATG93GCT (5694A>G 5695T>C), GCT94GCC (5699T>C), CAAC96CAA (5705G>A), TCA97TCT (5708A>T), ATTC99ATC (5714T>C), TCT100TC (5717T>C), CTC101CTT (5720C>T), TTA103CTG (5724T>C 5726A>G), TAT104TAC (5729T>C), GCA106CGC (5735C>A), CAIC107TAT (5736C>T 5738C>T), TCC110TCTG (5747C>C), AGG112AGA (5753G>A), CGG114GCC (5759G>A), AGA115AG (5761G>A 5762A>G), TTG120CTC (5775T>C), CAT122ACG (5783T>G), TAT124TAG (5789T>C), TCG122TCT (5798G>T), TCC128GCC (5797G>A), GAG131GAA (5810G>A), CTG133CTA (5816G>A), TTA134CTA (5817T>C), ATAC135AC (5822T>C), CTC136TGC (5823C>T) 5824T>G), AGC137ACA (5828G>A), CTAG138CTC (5831A>C), GGA139GAG (5833G>A 5834A>G), ATC145ATT (5852C>T), CCA147ACA (5856C>A), GGA149GGG (5864A>G), GTG150GTC (5867G>C), TTA151CTA (5868T>C), AGT152AGC (5873C>T), TCG153CT (5876C>T), AAT161AA (5900T>A), GA164AGG (5909A>G), AGG165GGG (5910A>C), CTT167TTG (5916C>T 5918T>G), GCC168GCT (5921C>T), ACG170ATA (5926C>T 5927G>A), TAC174TAT (5939C>T), TTG175TAT (5942G>A), TTG177TTT (5948C>T), ATC178AC (5951T>C), GTA179GTC (5954A>C), ATC180ATG (5957C>G), ACC181ATC (5960C>T), TTA182CTT (5961T>C), AAC185AA (5972C>T), CTAG187TG (5976C>A), GAC188GAT (5981C>T), GAA191GAG (5990A>G), GAA192GAC (5993A>G), TCA196TTA (6003C>T), TTA198CTC (6009T>C 6011A>G), AAC200AA (6017A>G), ACC203AC (6026C>A), GTG205ATT (6030G>C), TAC206GAT (6035C>T), ATC207GTT (6036A>G 6038C>T), AAC209AGG (6043A>G), GTA212GTC (6053A>C), TTC214TTT (6059C>T), CAA217AAA (6066C>A), GGA220GGG (6077A>G), CTG221TTG (6078C>A), ATC223ATT (6086C>A), AAC225AC (6092A>C), AAC226AAA (6095G>A), GAC227GAT (6098C>T), GTT229GTC (6104T>G), TAC230TAT (6107C>T), TCC234TCT (6119C>T), ATA235GTT (6120A>G 6121A>G), TGT236TGC (6125T>C), CTG237TCT (6128T>C), TAC242TAT (6143C>T), CTA246TTA (6153C>T), GAT248GAC (6161T>C), TTC250TTT (6167C>T), CGC253CGG (6176C>G), TTA257ATA (6186T>A), GTC259ATT (6192G>A 6194C>T), TTA260CTT (6195C>T 6197A>T), CCA263CCT (6206C>A), CGA264CGC (6209A>G), GAG265GAA (6212G>A), CGA267GAA (6216C>A), TCA268TAT (6221C>T), TTG272CTG (6231T>C), CTA276CTG (6245A>G), TGC277TGT (6248C>T), CTG279CTA (6254G>A), TCA280AT (6257C>T), ATT281ATC (6260T>C), GTC282GCC (6263T>C), GGG283GGA (6266G>A), CAA285CAC (6272A>C), ATG289GTC (6282A>G), TGT290TGC (6287C>T), GCA291GGG (6290A>G), AAC292AA (6293C>T), TCC293TCT (6296C>T), GGC294GGA (6299C>A), GAA296GAG (6305A>G), TGT301TTA (6320G>A), GAG302GAA (6323G>A), CCA303CT (6326A>T), CTG305GTT (6332C>T), ATA307AAC (6338T>C), AGT308AGC (6341T>C), AAC315AGG (6361A>G), TTT316TC (6365T>C), GTG323TAA (6386G>A), GGA324GGG (6389A>G), GAC325GAT (6392C>T), TTG326TTC (6395T>C), CCT327CC (6398T>C), GTA328GCA (6400T>C), AAA331AGA (6409A>G), GAC332GAT (6413C>T), GTA334GTC (6419A>G), ATG335GTC (6420A>G), CTC337CT (6428C>T), GAA338GAG (6431A>G), GAG339GGA (6433A>G 6434G>A), AGC340ACA (6437G>A), TCC341TTT (6440C>T), CCT343CCT (6444T>C), TGT344AGT (6447T>A), AGA346AAC (6449G>A 6455A>G), TTT349TTC (6464T>C), AGG350AAC (6466G>A), CAA354AG (6479A>C), CCT355TIT (6482C>T), AAC357AT (6488C>T), TTG356GTC (6503T>C), TTA363TTC (6508T>C), CAT370CAC (6527T>C), GGG372GG (6533G>A), CAC373CAT (6536C>T), CCA374CTC (6539A>T), TAT375TAC (6542T>C), CGA379AGA (6552C>A), GGT381GGG (6560T>G), CTG382TTC (6561C>T), AAA384AG (6569A>G), CAG388CAA (6581G>A), GTT389GTC (6584T>C), CAC390CAT (6587C>T), ATT391AAC (6590T>C), AAA392AGA (6593A>G), AAA393AG (6596A>G), CTG394GTC (6599G>C), AAC397AA (6608G>A), TCA399TAT (6614C>A), GAC400AAC (6617G>A), ATA403TTG (6626A>G), GCA404CGG (6629A>G), AGC405AGT (6632C>T), CTA407CTG (6638A>G), AGG409AGA (6644G>A), CTT412CTC (6653T>C), AGA413AGG (6656A>G), GGT415GA (6662T>A), GAT417GAC (6668T>C), TCC420TCT (6677C>T), AAC421AAA (6680G>A), CTG424CTT (6689G>T), TCC428CTT (6699T>C 6701C>T), ATC429CTT (6704A>T), AAC430TCA (6705G>T 6707C>A), CGA431AGG (6708C>A 6710A>G), GAC432GAT (6713C>T), TGT435CTG (6720T>C), ACC441ACT (6740C>T), AAC442AG (6743A>C), CGA445CT (6752A>T), ATT449ATA (6764T>A), GTA450GTC (6767A>G), GGG454GGT (6779G>C), TGT455GAT (6782T>C), AAC456ACT (6785A>C), AGT458CAT (6791C>T), AAC463AAC (6806G>C), ATC465ATT (6812C>T), ATT468ATA (6821T>C), CCT469CCC (6824T>C), AGT473AGC (6836T>C), TCA475TCC (6842A>G), TTG478CTC (6849T>C 6851G>C), GAT479GAC (6854T>C), CAT483CAC (6866T>C), TCT484TCA (6869T>C), AGG484ACA (6881G>A), AGA489AA (6883G>A), CTA490TTA (6885C>T), GTC491GCG (6890T>C), ATC494GTC (6899G>A), GAA496GAG (6905A>G), CGA498AGA (6909C>A), GGG499GGA (6914G>C), CCT501CCA (6920T>A), GTT502GTC (6923T>C), CCT503CCC (6926T>C), AGC504AGT (6929C>T), GAA505GAG (6932A>G), AAA506AAC (6935A>G), GTT507GTC (6938T>C), ATC509ATT (6944C>T), ACG510ACA (6947G>A), CTG512CTT (6953G>T), TCT513TC (6956T>C), CGC515GCC (6962G>C), GTC517GT (6968C>T), AAC520GAA (6975C>A), AAC521GAA (6980G>A), TTT522TTC (6983T>C), AAC524AAA (6989G>A), GAC527GAT (6998C>T), CTG528CTT (7001C>T), CCA532CTT (7013A>T), GAC535GAT (7022C>T), AAC541ATA (7040G>A), CCA542CT (7043A>T), CGG545AGG (7050C>A), GAA546GAG (7055A>G), TGT547TCA (7058A>G), GAA548AA (7061G>A), GAA552GG (7067A>G), CGA552GCG (7070A>G), TCA556TTT (7083C>T 7085A>G), TCA558TCT (7091A>T), CTA561TTG (7098C>T 7100A>G), AGA562AGG (7103A>G), TAT564TAT (7109T>C), TTT565TTC (7112T>C), ACT568ACA (7121A>T), AAC570AAG (7127A>G), TTG572TCT (7131T>C 7133G>C), AAC574AT (7139C>T), TAT575TAT (7142C>T), CTC579TCT (7154T>C), GCG582GCA (7163G>A), CTG583TTC (7164C>T), CTG587TTG (7182C>T), TTT593TTC (7196T>C), AAC594AG (7199A>G), CTG596TGT (7203C>T), AGG599AGA (7214G>A), CAA603CAG (7226A>G), CTG606TTA (7233C>T 7235G>A), AGG610AGA (7247G>A), TAT613TAC (7256T>C), GCA614GCC (7259A>C), TAT619TAC (7274T>C), AAC620GAG (7277A>G), AAC623AAAT (7286C>T), AAC624AAAT (7289C>T), AAC626GAG (7295A>G), AGA627GGG (7296A>C), AAC629TCA (7297A>G), AAC631AAT (7310A>T), TTT635TTT (7322C>T), CGC637GTA (7328C>A), CTA638CTC (7313A>C), TTT642TTC (7343T>C), TTG644CTG (7347T>C), AAC645AAA (7352G>A), AGA646AGG (7355A>G), TCA647CTC (7364T>C), AAC651ACT (7370A>T), CAC652CT (7373C>T), TCA666TAT (7424C>T), ATC667ATT (7424C>T), TTG671TTG (7430A>G), CGG672TTC (7431C>T), AAC676TTC (7432C>T), ATT684ATA (6821T>C), TCG678TGT (7451C>T), TTA679CTG (7452T>C 7454A>G), GTT680GAC (7457T>C), CGG681ATG (7458G>A 7459C>T), TCC682TCA (7463C>A), AAC683GCG (7464A>G), GGC684GGT (7469C>T), CCA685CCG (7472A>G), ACC686ACA (7475C>A), GGC690GGT (7478C>T), CAG691CAA (7490G>A), GAA696GAG (7505A>G), GGC697GGT (7508C>T), CCA698TGA (7511A>G), CGG699AGA (7512C>A), CAG700CAA (7517G>A), ATC705CTG (7532A>C), AGC707AGT (7538C>T), TTA708CTG (7539T>C 7541A>G), GAT712GAC (7553T>C), AGA713CGT (7554A>C 7556A>T), CAA716CAG (7565A>G), ATC717ACC (7576T>C), AGA721AGG (7580A>G), ACC722ACT (7583C>T), AAC723AAC (7586A>G), GTC724ATA (7587G>A), TCA725TAA (7590A>C), AAC726GGC (7597S>C), AAC727CAG (7598A>G), GGA728GGG (7601G>A), AAC730AAT (7607C>T), TTT733CTT (7614T>A), CTA665TAC (7616A>T), TGT734TGC (7619T>C), TCG740TCA (7637G>A), CCTA741CCG (7640A>G), TCA743CTT (7646A>T), TCT744TCC (7649T>C), CAA745AGA (7650C>A 7651A>G), GAG746GAA (7655G>A), GGG747GGT (7658G>T), CTC755TAT (7661C>T), TCA755TAC (7667C>T), AAC756TTC (7670C>T), AAC757TTC 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*: Inserts / Deletions / Misaligned / Frameshifts

Analysis details

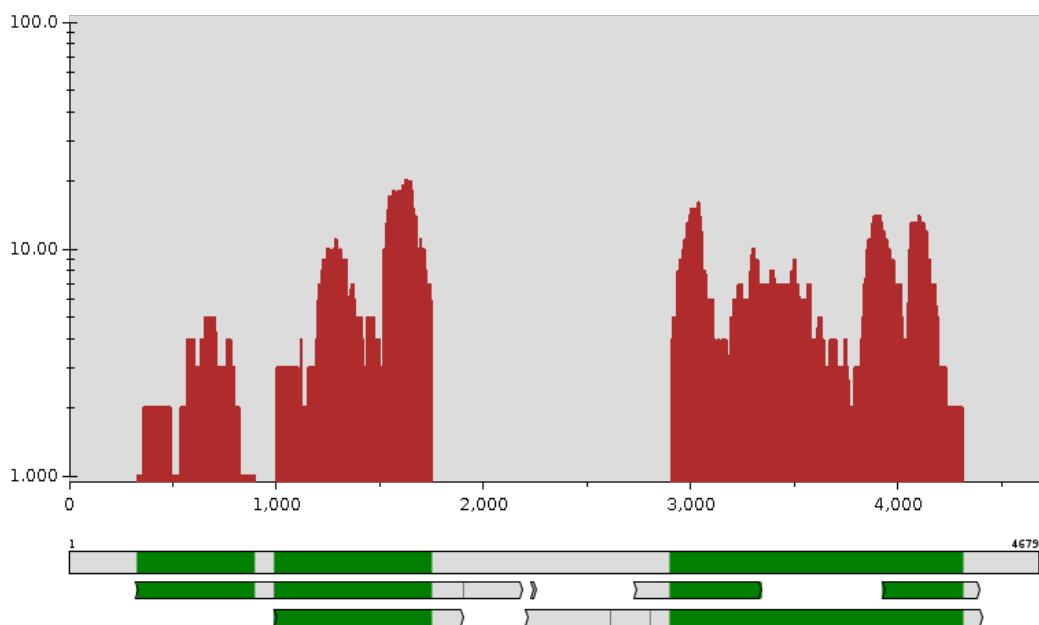
This analysis was performed with Pan-viral (2.14.6).

NGS Details (MG-2-RNASeq021-ZymoSeq): adeno-associated virus 2

Assembly

Coverage Length	2752 (3 contig(s))
Depth Of Coverage	6.1
Number Of Reads	131
Reads Per Million	1.20 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	adeno-associated virus 2 (Taxonomy ID: 10804)
Reference Genome	NC_001401.2
NT Identity (%)	66.044
AA Identity (%)	63.5861
Number Of Stop Codons	12
Number Of CDS	9

Alignment

Alignment Score	1676.0 (NT) + 14151.0 (AA) = 15827.0
Concordance (%)	59.0818

Genome Region

Sequence starts at position 328 and ends at position 4319 relative to NC_001401.2 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	332T>C, 339A>G, 341T>G, 342G>A, 344G>A, 345A>G, 347T>C, 349A>G, 350G>A, 351G>A, 353C>T, 356G>C, 363C>A, 365T>C, 368G>C, 377G>A, 380C>G, 387T>C, 389T>G, 394G>C, 395C>G, 398T>C, 402A>G, 408G>A, 410G>A, 413C>G, 415A>G, 416G>C, 422A>G, 429T>C, 434G>C, 435C>G, 436C>A, 437A>G, 438G>T, 439A>G, 440T>G, 441T>A, 442C>G, 443T>C, 452T>C, 453C>G, 454T>C, 457A>C, 458T>C, 464T>C, 467G>C, 470G>C, 471G>C, 473A>G, 475C>A, 476C>G, 482C>G, 483G>A, 485G>C, 495C>G, 497G>A, 501C>A, 503C>G, 506C>G, 514C>A, 515G>C, 518A>G, 523G>A, 524C>G, 525C>A, 526G>A, 527T>G, 528G>A, 530G>T, 531A>G, 532G>T, 533T>C, 536G>A, 537G>T, 539C>T, 540_542delCCG, 546G>C, 548C>G, 550T>A, 551T>G, 553T>G, 554C>T, 557T>G, 560G>C, 563A>G, 575A>G, 578G>C, 581C>A, 584C>T, 591A>G, 597G>A, 598T>C, 602C>G, 608A>G, 616G>C, 623A>G, 633T>C, 638A>G, 643T>C, 649G>A, 650T>C, 656T>C, 657C>A, 658G>A, 659C>G, 662A>C, 666C>T, 669A>C, 670T>G, 671T>C, 672C>G, 673A>C, 675A>G, 677A>G, 690A>G, 692C>G, 698G>C, 699A>C, 700A>G, 701C>T, 707A>G, 708A>G, 710C>A, 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Protein mutations:									
	I7V (339A>G 341T>G), V8I (342G>A 344G>A), I9V (345A>G 347T>C), K10R (349A>G 350G>A), V11I (351G>A 353C>T), L15I (363C>A 365T>C), D16E (368C>G), S23P (387T>C 389T>G), S25T (395C>G), N28D (402A>G), V30I (408G>A 410G>A), E32G (415A>G 416G>C), P39C (435C>G 436C>A 437A>G), D40W (438G>T 439A>G 440T>G), L45A (453C>G 454T>C), N46T (457A>C 458T>C), E49D (467G>C), P50I (471G>C 473G>C), P52Q (475C>G 476C>G), V55I (483G>A 485G>C), L59V (495C>G 497G>A), D62E (506C>G), T65N (514C>A 515G>C), R68Q (523G>A 524C>G), R69K (525C>A 526G>A 527T>G), V70I (528G>A 530G>T), S71V (531A>G 532G>T), A73S (537G>T 539C>T), P74del (540_542delCCG), A76P (546G>C 548C>G), L77G (550T>A 551T>G), F78Y (553T>C 554C>T), E86D (578G>C, S87R (581C>A), M91L (591A>C), V93T (597G>C 598T>C), P93G (598C>G 599T>C), Q94A (599T>C 600C>T), Q95C (600G>C 601C>T), Q96G (602G>C 603C>T), Q97G (604G>C 605C>T), Q98G (606G>C 607C>T), Q99G (608G>C 609C>T), Q100G (610G>C 611C>T), Q101G (612G>C 613C>T), Q102G (614G>C 615C>T), Q103G (616G>C 617C>T), Q104G (618G>C 619C>T), Q105G (620G>C 621C>T), Q106G (622G>C 623C>T), Q262S (1104C>T 1105A>G 1106A>G), D268G (1123A>G 1124C>A), K272V (1134A>G 1135A>T), Z273E (1137A>G 1138T>A 1139T>G), S275L (1143A>C 1144G>T 1145C>T), K278E (1152A>G, T279L (1155A>T 1156C>T 1157C>G), P281E (1161C>G 1162C>A 1163C>A), Y283C (1168A>G), V285T (1173G>A 1174T>C 1175G>T), Q287K (1179C>A), Q288I (1183A>T 1184G>T), S294T (1200T>A 1202C>A), S295K (1204G>A 1205C>G), N296D (1206A>G 1208T>C), R297K (1209C>A 1210G>A 1211G>A), I298V (1212A>G 1214T>G), Y299F (1216A>T 1217T>C), K300Q (1218A>C 1220A>G), I301L (1221A>C 1223T>G), L302I (1224T>A 1226G>T), E303S (1227G>T 1228A>C 1229A>C), L304I (1230C>A 1232A>C), N305H (1233A>C 1235C>T), G306K (1236G>A 1237G>A 1238G>A), Y307C (1240A>G), D308N (1242G>A), Q310L (1248C>T 1249								

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons	
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22		
	TTT4TTC (332T>C), ATT7GTG (339A>G 341T>G), GTG8ATA (342G>A), ATT9GTC (345A>G 347T>C), AAG10AGA (349A>G 350G>A), GTC11ATT (351G>A 353C>T), CCC12CCT (356C>T), AGC13TCC (357A>T 358G>C), CTT15ATC (363C>A 365T>C), GAC16GAG (368C>G), CTG19CTA (377G>A), CCC20CCG (380C>G), TCT23CCG (387T>C 389T>G), AGC25ACG (394G>C 395C>G), TTT26TTC (398T>C), AAC28GAC (402A>G), GTG30ATA (408G>A 410G>A), GCC31CGC (413C>G), GAG32GGC (415A>G 416G>C), GAA34GAG (422A>G), TTG37CTG (429T>C), CCG38CCC (434G>C), CCA39GAG (435C>G 436C>A 437A>G), GAT40TGG (438G>T 439A>G 440T>G), TCT41AGC (441T>A 442C>G 443T>C), GAT44GAC (452T>C), CTG45CCG (453C>G 454T>C), AAT46AAC (457A>G 458T>C), ATT48ATC (464T>C), GAG49GAC (467G>C), CAG50CAC (470G>C), GCA51CCG (471G>C 473A>G), CCG52CAG (475C>G 476C>G), ACC54AGC (482C>G), CTG55ATC (483G>A 485G>C), CTG59GTA (495C>G 497G>A), CGC61AGC (501C>A 503C>G), GAC62GAG (506C>G), ACG65AAC (514C>A 515G>C), GAA66GAG (518A>G), CGC68CAG (523G>A 524C>G), CGT69AAG (525C>A 526G>A 527T>G), GTG70ATT (528G>A 530G>T), AGT71GTC (531A>G 532G>T 533T>C), GAA72AAC (536G>A), GTC73CT (536T>G 539G>T), CGT74def (540_542delCCG), GCC76CCG (546G>C 548C>G), CTT77CAG (550T>A 551T>G), TTC78TAT (553T>A 554C>T), TTT79TTC (557T>C), GTG80GTT (560G>T), CA81CAG (563A>G), GGA85GGG (575A>G), GAG86GAC (578G>C), AGC87AGA (581C>A), TAC88TAT (584C>T), ATG91TGC (591A>C), GTC93AGC (597G>A), CTC94CTG (602G>C), AA96AGG (608A>G), GGG99GGC (617G>C), GTG100ATG (618G>A), AAA101AG (623A>G), TTG105CTG (633T>C), GGA106GGC (638A>C), TCT108ATC (643T>A), AGT110AAC (649G>A 650T>C), ATT112ATC (656T>C), CGC113AAG (657C>A 658G>C), GAA114GAC (662A>C), CTG116TGC (666C>T), ATT117TGC (669A>C 670T>G), CAG118GCC (672C>G 673A>C), AGA119CAG (675A>C 676G>A 677A>G), ATC124GTC (690A>C 692C>G), CGC126CC (698G>C), ACT127CAG (699A>C 700C>A 701T>G), TTG128ATT (702T>A 704G>T), CCA129CCG (707A>G), AAC130GAT (708A>G 710C>T), TTC132ATG (714T>A 716C>G), GCG133GCC (719G>C), GTC134GTC (722C>G), ACA135AGT (724C>G 725A>T), ACC137ACA (731C>A), AGA138AAA (733G>A), ATT139AGC (736A>C 737T>G), GCG140def (738_740delGGG), GCC141GCC (743C>G), GGG143GCC (748G>C), GGG144def (750_752delGGG), AAC145AAT (755C>T), AAG146CCG (756A>C 757A>C), GTG147ATT (759G>A 761G>T), GTG148CGA (762G>C 763T>G 764G>A), GAT149GAC (767T>C), GAG150AAG (768G>A), TGC151GG (771T>G 773C>G), ATT155GCC (783A>C 785T>C), TGT157CTG (789T>C), CTC158CTG (794C>G), AAA160AGG (800A>G), ACC161GCC (801A>C 802C>G), CAG162CAA (806G>C), CCT163CCG (809T>G), CTC165CTG (815C>G), CGC168GCC (824G>C), ACT170ACC (830T>C), AA171AAC (833T>C), GAA173GAG (839A>G), CAG174GAG (840C>G), TTA176ATA (846T>A), AGC177AGG (851C>G), TGT179AGC (855T>A 856G>C 857T>G), TTG180CTC (858T>C 860G>C), ATT181AGC (862A>G 863C>G), CTC182CTG (866C>G), ACG183GAG (867A>G 868C>A), CG185CGC (871T>G 878A>I), TTG188CTC (882T>C 884G>C), GCG190GAG (889C>A), CAG191GAG (891C>G), GAG226GAT (998G>T), GTC228GTA (1004C>A), GGG229AGC (1005G>A 1007G>C), CTC231CTG (1013C>G), GAC233GAG (1019C>G), AAG234CCG (1020A>C 1021A>G), GGG235GGC (1025G>C), ATT236ATC (1028T>C), TCG238CC (1034G>C), AAC240CCG (1038A>C 1039A>G), CAG241GAG (1041C>G), CAG244GCG (1051A>G 1052G>C), CCG248GAC (1063C>A), TCA249CTG (1067A>G), ATC251CTG (1071A>C 1073C>G), TTC253CAC (1077T>C 1078T>A), ATT254AAC (1082T>C), GCG255GCC (1085G>C), GCC256AG (1086G>A 1088C>G), TCC257AGC (1089T>A 1090C>A), AAC258GCC (1092A>G 1093A>C), TCG259GGA (1095T>C 1096C>G 1097G>A), TCC261AGC (1101T>A 1102A>G), CAA262CTG (1104C>T 1105A>C 1106A>G), GTC265GCC (1115T>C), TTG267CTG (1119T>C), GAC268GGA (1123A>G 1124C>A), GCG270GCC (1130G>C), AGA272GTC (1134A>G 1135A>T), ATT273GAG (1137A>G 1138T>G), AGC275CTT (1143A>C 1144G>T 1145C>T), CTG276TTG (1151T>C), AAC278GAA (1152A>G), CGC279TGT (1155A>T 1156C>T), GCG280GCC (1160C>G), CCC281GAA (1161C>G), GCG281GAG (1162C>A 1163C>A), TAC283TGC (1168A>G), CTG284CTA (1172G>A), GTC285ACT (1173G>A 1174T>C 1175G>T), GCG286GGA (1178C>A), CAG287AAC (1179C>A), CAG288CTT (1183A>C 1184C>A), GCG289CCA (1187C>A), GTC289AGC (1197T>C), TCC294AGA (1200T>A 1202C>A), AGC295AG (1204G>A 1205C>G), AAT296GAC (1206A>G 1208T>C), CGG297AAA (1209C>A 1210G>A 1211G>A), ATT298GTC (1212A>G 1214T>G), TAT299TTC (1216A>T 1217T>C), AA300CAG (1218A>C 1220A>G), ATT301CTG (1221A>C 1223T>G), TTG302ATT (1224T>A 1226G>T), GAA303TC (1227G>A 1228A>C 1229A>C), CTAA304ATC (1230C>A 1232A>C), AAC305CAT (1233A>C 1235C>T), GGG306AAA (1236G>A 1237G>A 1238G>A), GAT308ATA (1240G>A), CCT309CCT (1247C>T), CAA310TTG (1248C>T 1249A>T 1250A>G), TAT311CTT (1251T>C 1252A>T), GCG312GCT (1256G>T), GCT313GCC (1259T>C), CCT314AAC (1260T>A 1261C>A), GTC315CTG (1263G>C 1265C>G), TTG316TGG (1267T>G 1268T>G), CTG317GTC (1269C>G), GGA318AGG (1272G>A 1274A>G), GCG320TGT (1278G>T 1279G>C 1280C>T), ACC321CGC (1281A>C 1282C>G 1283G>C), AA322CCG (1284A>C 1285A>G 1286A>G), CGG325AAC (1293G>A 1294G>A), AAG326AAA (1298G>A), AGG327AGA (1301G>A), ACC329CCC (1305C>A), ATC330ATA (1310C>A), TGG331GG (1311T>G), CTG332TTG (1314C>T), ATT333TAC (1318T>A 1319T>C), GGG334AGA (1320G>A 1322G>A), ACT337ACC (1331T>C), GGG339GGA (1337G>A), AAG340AAA (1340G>A), CGC344GCA (1352G>A), GGC346GCT (1358C>T), ATA347ATT (1361A>T), CAC349AAC (1367C>A), ACT350GCT (1368A>G), CCC352CCA (1376C>A), TAC354TAT (1382C>T), GGG355GGC (1385G>C), TGC356TGT (1388C>T), GTA357GTG (1391A>G), ACC360ACT (1400C>T), AAT361AAC (1403T>C), GAG362GAA (1406G>A), TTC366TTT (1418C>T), AAC367ATA (1421C>T), GTC370GTC (1430C>G), AAG372AA (1436G>A), GTG374GTT (1442G>T), ATC375ATT (1445C>T), ACC383ACT (1469C>T), GCG384AT (1470G>A 1471C>A 1472C>T), GTC386GTA (1478C>A), GTG387GTT (1481G>T), CGC389TCT (1487G>T), GGC390GCC (1490C>G), CTC394CTG (1502C>G), GGA395GGG (1505A>G), GGA396GGG (1508A>G), CGC397GTC (1512A>T 1513A>G), GTG399GTC (1517G>C), CGC400CGA (1520C>A), GTG401GTT (1523G>T), GAC402GAT (1525C>T), CAG403CAA (1529G>A), TCC405TGT (1535C>T), AAG406AAA (1538G>A), TCC407GTC (1539T>G 1540C>G), TCG408TCT (1544G>T), GCC409GTA (1546C>T 1547C>A), CAG410CAA (1550G>A), GT418ATA (1568G>A), GTC418ATA (1572G>A 1574C>A), ACC419ACT (1577C>T), CTC420AGT (1578T>A 1579C>G 1580C>T), AAC421ATA (1583C>T), ACC422ATG (1585C>T 1586C>G), AAC423AAC (1589C>T), TGC425TAT (1594G>A 1595C>T), GCG426ATG (1596G>A 1597C>T 1598C>G), GTG427GTA (1601G>A), ATT428TG (1602A>G 1604G>A), GGG429GCC (1605G>A 1607G>A), GGG430GTC (1610G>A), AAC431AAC (1613C>G), AAC432TA (1615C>G), ACC433GCT (1617A>G 1619G>T), ACC434ACT (1620A>C 1621C>T 1622C>A), TTC435TT (1625C>T), AAC436GAG (1628A>G), CAS437CAT (1631C>T), CAG438AAA (1632C>A 1634C>A), CAG439GAA (1635C>A), CCG440CCT (1640G>A), CGG442GAA (1644C>G), AAC443GAA (1649C>A), CGG444GAA (1650C>A 1652G>A), TTC446TT (1658C>T), AAA447ATG (1660A>T 1661A>G), GAA449AG (1665G>A 1667A>G), TCC450AGT (1668C>A 1669T>G 1670C>T), ACC451CT (1671A>T 1673C>T), CGC452GTT (1674C>G 1675G>T 1676C>T), CGT453AAC (1677C>A 1678G>A 1679T>G), GAT455CAT (1683G>C), GGG459GAA (1695G>A 1697G>A), AAC460AAA (1700G>A), GTC461ATA (1701G>A 1703C>A), ACC462CTT (1704A>C 1706C>T), CGA464TGG (1710C>T 1711A>G), AAG467AGA (1720A>G), GAC468TAA (1722G>T 1724C>A), TTC470TT (1730C>T), CGG471AAG (1731C>A 1732G>A), GCA473GCC (1738C>G 1739A>C), AAG474ACC (1741A>C 1742G>C), CAC476AAC (1746C>A)									
Codon mutations:	AAV2gp02	4	479	71.5%	1950	62.4%	442 (99.3%)	276 (62.0%)	0/3/1/1	2
Protein mutations:										

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	TTT4TTC (332T>C), ATT7GTG (339A>G 341T>G), GTG8ATA (342G>A 344G>A), ATT9GTC (345A>G 347T>C), AAG10AGA (349A>G 350G>A), GTC11ATT (351G>A 353C>T), CCC12CCT (356C>T), AGC13CTC (357A-T 358G>C), CTT15ATC (363C>A 365T>C), GAC16GAG (368C>G), CTG19CTA (377G>A), CCC20CCG (380C>G), TCT23CCG (387T>C 389T>G), AGC25ACG (394G>C 395C>G), TTT26TTC (398T>C), AAC28GAC (402A>G), GTG30ATA (408G>A 410G>A), GCC31CGC (413C>G), GAG32GGC (415A>G 416G>C), GAA34GAG (422A>G), TTG37CTG (429T>C), CCG38CCC (434G>C), CCA39GAG (435C>G 436C>A 437A>G), GAT40TGG (438G>T 439A>G 440T>G), TCT41AGC (441T>A 442C>G 443T>C), GAT44AGC (452T>C), CTG45CCG (453C>G 454T>C), AAT46AAC (457A>G 458T>C), ATT48ATC (464T>C), GAG49GAC (467G>C), CAG50CAC (470G>C), GCA51CCG (471G>C 473A>G), CCC52CAG (475C>G 476C>G), ACC54AGC (482C>G), GTG55ATC (483G>A 485C>G), CTG59GTA (495C>G 497G>A), CGC61AGC (501G>A 503C>G), GAC62GAG (506C>G), ACG65AAC (514C>A 515G>C), GAA66GAG (518A>G), CGC68CAG (523G>A 524C>G), CGT76AAC (525C>A 526G>A 527T>G), GTG70ATT (528G>A 530G>T), AGT71GTC (531A>G 532G>T 533T>C), AGA72AAC (536G>A), GGC73AGC (597G>A 598T>C), CTG94CTG (602G>C), GAA66GAG (608A>G), GGG99GGC (617G>C), CTC77CAG (650T>A 551T>G), TCT78TAT (553T>A 554C>T), TTT79TTC (557T>C), GTG80TFT (560G>T), CAAC81CAG (563A>G), GGA85GGG (575A>G), GAG86GAC (578G>C), AGC87AAG (581C>A), TAC88TAT (584C>A), ATG91GTC (591A>C), GTG93AGC (597G>A 598T>C), CTG94CTG (602G>C), GAA66GAG (608A>G), GGG99GGC (617G>C), GTG100ATG (618G>A), AAA101AG (623A>G), TTG105CTG (633T>C), GGA106GGC (638A>C), TTC108ATC (643T>A), AGT110AAC (649G>A 650T>C), ATT112ATC (656T>C), CGC113AG (657C>A 658G>C), GAA114AGC (662A>C), CTG116TTG (666C>T), ATT117TCG (669A>C 670T>G 671T>C), CAG118CCG (672C>G 673A>C), AGA119AGC (675A>C 676G>A 677A>G), ATC124GTC (690A>G 692C>G), CGC126CC (698G>C), ACT127CAG (699A>C 700C>A 701T>G), TTG128ATT (702T>A 704G>T), CCA129CCG (707A>G), AAC130GAT (708A-G 710C>T), TTC132ATG (714T>A 716C>G), GCG133GGC (719G>C), GTC134GTC (722C>G), ACA135AGT (724C>G 725A>T), ACC137ACA (731C>A), AGA138AAA (733G>A), ATA139AGC (736A>C 737T>G), GCG140AT (738>A 740G>G), GGC141GCC (743C>G), GGC143GCC (748G>C), GGG144del (750>T 752del(GGG)), AAC145AT (755C>G), AAC146GGC (756A>C 757A>G), GTG147ATT (759G>A 761G>T), GTG148CGA (762G>C 763T>G 764G>A), GAT149GAC (767T>C), GAG150AGA (768G>A), TGC151GGG (771T>G 773C>G), ATT155GC (783A>G 784A>C 785T>C), TTG157CTG (789T>C), CTC158CTG (794C>G), AAA160AGA (800A>G), ACC161GGC (801A>C 802C>G), CAG162CAA (806G>C), CCT163CCG (809T>G), CTC165CCG (815C>G), CGC168GGC (824G>C), ATC167AAC (830T>C), AA171AAC (833T>C), GAA173GAG (839A>G), CAG174GAG (840C>G), TTA176ATA (846T>A), AGC177AGG (851C>G), TGT179AGC (855T>A 856G>C 857T>G), TTG180CTC (858T>C 860G>C), AT181AGC (862A>G 863C>A), CTC182CTG (866C>G), AGC183GAG (867A>G 868C>A), CG185AGC (871T>A 878A>G), CCA186AG (875A>G 878A>C), GTC188CTC (882T>C 884G>C), GCG190AG (889C>A), CAG191GAG (891C>G), GAG226GAT (898G>T), GTC228GTA (1004C>A), GGC229AGC (1005G>A 1007G>C), CTC231CTG (1013C>G), GAC233GAG (1019C>G), AAC234CCG (1020A>C 1021A>G), GGG235GGC (1025G>C), ATT236ATC (1028T>C), TCG238CTC (1034G>C), AAC240CGC (1038A-C 1039A>G), GAG241GAG (1041C>G), CAG244GCG (1051A>G 1052G>C), CTC248GAC (1063C>A), TCA249CTG (1067A>G), ATC251CTG (1071A>C 1073C>G), TTC253CAC (1077T>C 1078T>A), AT254AAC (1082T>C), GCG255CCG (1085G>C), GCC256AGC (1086G>A 1088C>G), TCC257ATG (1089T>A 1090C>G), AAC258GCC (1092A>G 1093A>C), TCG259GGA (1095T>G 1096G>A), TCC261AGC (1101T>A 1102C>G), CAA262CTG (1104C-T 1105A-C 1106A>G), GTC265GCG (1115T>G), TTG267CTG (1119T>C), GAC268GGA (1123A>G 1124C>A), GCG270GCC (1130G>C), AAC272GTC (1134A>G 1135A>T), ATT273GAG (1137A>G 1138T>G), AGC275CTT (1143A>C 1144G>T 1145C>T), CTG276TTG (1146T>C), AAC278GAA (1152A>G), CGC279TGT (1155A>T 1156C>T), GGC280GCC (1160C>G), CCC281GAA (1161C>G), 1162C-A 1163C>A), TAC283TGC (1168A>G), CTG284CTA (1172G>A), GTC285ACT (1173G>A 1174C>T 1175G>T), GCG286GGA (1178C>A), CAG287AAC (1179C>A), CAG288CTT (1181A>G), CTC289CCA (1183A>C 1184A>G), GAC291AGC (1184G>A 1185C>G), ATT293ATC (1197T>A), GTC294AAC (1200T>A 1202C>A), AGC295AG (1204G>A 1205C>G), AAC296GAC (1206A-G 1208T>C), CGG297AAA (1209C>A 1210G>A 1211G>A), ATT298GTC (1212A>G 1214T>G), TAT299TT (1216A>T 1217T>C), AAC300AG (1218A>C 1220A>G), ATT301CTG (1221A>C 1223T>G), TTG302ATT (1224T>A 1226G>T), GA303TCC (1227G>T 1228A-C 1229A>C), CTA304ATC (1230C>A 1232A>C), AAC305CAT (1233A>C 1235C>T), GGG306AAT (1236G>A 1237G>A 1238G>A), TAC307TGC (1240A>G), GAT308AAT (1242G>A), CCA309CTC (1247C>T), CAA310TTG (1248C>T 1249A>T 1250A>G), TAT311CTT (1251T>C 1252A>T), GCG312GCT (1256G>T), GCT313GCC (1259T>C), CCT314AGC (1260T>A 1261C>A), GTC315CTG (1263G>C 1265C>G), TTT316TGC (1267T>G), CTG317GTC (1268G>C), GGA318AGG (1269A>G 1270C>G 1271A>G), GGC320TGT (1272G>T 1273G>C 1274A>G), ACC321CGC (1281A>C 1282C>G 1283G>C), AAA322CCG (1284A>C 1285A>G 1286A>G), CGC325AAC (1293G>A 1294G>A), AAG326AA (1298G>A), AGG327AGA (1301G>A), ACC329CCC (1305A>C), ATC330ATA (1310C>A), TGG331GAG (1311T>G), CTG332CTG (1314C>T), ATT333ATC (1318T>A 1319T>G), GGG334AGA (1320G>A 1322G>A), ACT337AAC (1331T>C), GGG339GGA (1337G>A), AAC340AAA (1340G>A), CGC344GCA (1352G>A), GGC346GCT (1358C>T), ATA347ATT (1361A>T), CAC349AAC (1367C>A), ACT350GCT (1368A>G), CCC352CCA (1376C>A), TAC354TAT (1382C>T), GGG355GGC (1385G>C), TGC356TGT (1388C>T), GTA357GTC (1391A>G), ACC360ACT (1400C>T), AAT361AAC (1403T>C), GAG362GAA (1406G>A), TTC366TGT (1418C>T), AAC367ATA (1421C>T), GTC370GTC (1430C>G), AAG372AA (1436G>A), GTG374TGT (1442G>T), ATC375ATT (1445C>T), ACC383ACT (1469C>T), GCG384AT (1470G>A 1471C>A 1472C>T), GTC386GTA (1478C>A), GTG387GTC (1481G>T), CGC389TCT (1487G>T), GGC390GCG (1490C>G), CTC394CTG (1502C>G), GGA395GGA (1505A>G), GAG396GAG (1508A>G), CGC397GTC (1510A>T 1513A>G), GTG399GTC (1517G>C), CGC400CGA (1520C>G), ATG401GTT (1523G>T), GAC402GAT (1525C>T), CAG403CAA (1529G>A), TCC405GTT (1535C>T), AAG406AAA (1538G>A), TCC407GTC (1539T>G 1540C>G), TCG408TCT (1544G>T), GCC409GTA (1546C>T 1547C>A), CAG410CAA (1550G>A), CAG411GTT (1551A>G 1553A>T), GAC412GAT (1556C>T), CCG413CC (1559G>C), CCC415CTC (1565C>T), GTG416GA (1568G>A), GTC418ATA (1572G>A 1574C>A), ACC419ACT (1577C>T), CTC420AGT (1578T>A 1579C>G 1580C>T), AAC421AAT (1583C>T), ACC422ATG (1585C-T 1586C>G), AAC423AAT (1589C>T), TGC425TAT (1594G-A 1595C>T), GCG426ATG (1596G-A 1597C>T 1598C>G), GTG427GTA (1601G>A), ATT428GTC (1602A-G 1604G>C), GAC429AAC (1605G>C), GGG430GTC (1610G>C), AAC431AAC (1613G>A), CGC433GCT (1617A>G), ACC434CTA (1620A-G 1621C>T), AAC435CTT (1625C>T), AAC436GAA (1628A>G), AAC437CAT (1631C>T), AAC438AAC (1632A-C 1634G>A), CAG439GAA (1635C>G 1637G>A), Q218E (1644C>G), D2146CT (1645G>T), AAC440CCT (1646G>T), AAC442GAA (1646C>G), CGG443GAA (1649C>A), CGG444GAA (1650C>A 1652G>C), ATTC446TT (1658C>T), AAA447ATG (1660A>T 1661A>G), GAA449AG (1665G>A 1667A>G), CTC450AGT (1668C>A 1669T>G 1670C>T), ACC451CT (1671A>T 1673C>T), CGC452GTT (1674C>G 1675G>T 1676C>T), CGT453AA (1677C>A 1678G>A 1679T>G), GAT455CAT (1683G>C), GGG459GA (1695G>A 1697G>A), AAC460AAA (1700G>A), GTC461ATA (1701G>A 1703C>A), ACC462CT (1704A>C 1706C>T), CAG464TG (1710C-T 1711A>G), AAA467AGA (1720A>G), GAC468TAA (1722G>A 1724C>A), TTC470TT (1730C>T), CGG471AAG (1731C>A 1732G>A), GCA473GGC (1738C>G 1739A>C), AAC474AAC (1741A-C 1742G>C), CAC476AAC (1746C>A)								
Codon mutations:									
AAV2gp03	2	255	81.2%	1034	57.4%	254 (100%)	158 (62.2%)	0/0/1/1	2
	E2D (998G>T), G55 (1005G>A 1007G>C), D9E (1019C>G), K10R (1020A>C 1021A>G), K16R (1038A>C 1039A>G), Q17E (1041C>G), Q20R (1051A>G 1052G>C), A24D (1063C>A), I27L (1071A>C 1073C>G), F29H (1077T>C 1078T>A), A32T (1086G>A 1088C>G), N34A (1092A>G 1093A>C), S35G (1095T>G 1096C>G 1097G>A), Q38S (1104C>T 1105A>C 1106A>G), D44G (1123A>G 1124C>A), K48V (1134A>G 1135A>T), I49E (1137A>G 1138T>A 1139T>G), S51L (1141A>C 1144G>T 1145C>T), K54E (1152A>G), T55L (1155A>T 1156C>T 1157C>G), P57E (1161C>G 1162C>A), Y59C (1168A>G), V61T (1173G>A 1174T>C 1175G>T), Q63K (1179C>A), Q64L (1183A>T 1184G>C), S70T (1200T>A 1202C>A), S71K (1204G>A 1205C>G), N72D (1206A>G 1208T>C), R73K (1209C>A 1210G>A 1211G>A), I74V (1212A>G 1214T>G), Y75F (1216A>T 1217T>C), K76Q (1218A>C 1220A>G), I77L (1221A>C 1223T>G), L78I (1224A>T 1226G>T), E79S (1227G>T 1228A-C 1229A>C), L80I (1230C>A 1232A>C), N81H (1233A>C 1235C>T), G82K (1236G>A 1237G>A 1238G>A), Y83L (1241C>G 1242G>A), Q86L (1248C>G 1249A>T 1250A>G), S90N (1260T>A 1261C>A), V91L (1263G>C 1265C>G), F92W (1267T>G 1268T>G), L93V (1269C>G), G94R (1272G>A 1274A>G), A96C (1278G>T 1279C>G 1280C>T), T97R (1281A>C 1282C>G 1283C>G), K98R (1284A>C 1285C>G), G102A (1286A>G 1287A>G), G103A (1288A>G 1289C>G), G104A (1290A>G 1291C>G), G105A (1292A>G 1293C>G), G106A (1294A>G 1295C>G), G107A (1296A>G 1297C>G), G108A (1298A>G 1299C>G), G109A (1299T>G 1300C>G), G110A (1301A>G 1302C>G), G111A (1303A>G 1304C>G), G112A (1305A>G 1306C>G), W107G (1310A>C), F109Y (1311T>G), F109Y (1318T>A 1319T>C), G110R (1320G>A 1322G>A), H125Q (1367C>A), T126A (1368A>G), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>G 1513A>G), S183G (1539T>G 1540C>G), A185V (1546C>T 1547C>A), S187V (1551A>G 1553A>T), V194I (1559G>C), CCC415CTC (1565C>T), GTG416GA (1568G>A 1569C>G), C201M (1594G>A 1595C>T), A202M (1596G>A 1597C>T), D205N (1605G>A), N207K (1613C>G), S208T (1615C>G), T209A (1617A>G 1619G>T), T210L (1620A>G 1621C>T 1622C>A), Q214K (1632C>A 1634G>A), Q215E (1635C>A 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>T 1661A>G), E225K (1665G>A 1667A>G), L226S (1668G>A 1669G>T 1670C>T), R227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G235R (1695G>A 1697G>A), V237I (1701G>A 1703C>A), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>A), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), AAC474AAC (1741A-C 1742G>C), CAC476AAC (1746C>A)								
Protein mutations:									
Codon mutations:									
AAV2gp04	2	255	63.8%	1034	57.4%	254 (100%)	158 (62.2%)	0/0/1/1	2
	GAG2GAT (998G>T), GTC4GTA (1004C>A), GGG5AGC (1005G>A 1007G>C), CTC7CTG (1013C>G), GAG9AG (1019C>G), AAG10CGG (1020A>C 1021A>G), GGG11GGC (1025G>C), ATT12ATC (1028T>C), TCG147CTG (1034C>G), AAC16GCG (1038A>C 1039A>G), CAG17GAG (1041C>G), CAG20CGC (1051A>G 1052G>C), GGC24AGC (1063C>A), TA252TCG (1067A>G), ATC27CTG (1071A-C 1073C>G), TCC29CAC (1077T>C 1078T>A), ATT30AATC (1082T>C), CGC31GCC (1085G>C), CCT32AGC (1086G>A 1088C>G), TCC33AGC (1089T>A 1090C>G), AAC34GCG (1092A>C 1093A>G), GTC34CTG (1095T>G 1097G>A), GCG35GGC (1097G>A 1098G>C), GTC37AGC (1101T>A 1102C>G), CAA38TGC (1101A>C 1102C>G), CAG38TGC (1101A>C 1102C>G), GAG39GAG (1105A>T 1106C>G), GTC401GTT (1107T>C 1108T>G), TCC402GAT (1109A>C 1110C>G), GTC403CAA (1111A>C 1112C>G), GTC404CTA (1112A>C 1113C>G), GTC405GTT (1113A>C 1114C>G), GTC406GAT (1115A>C 1116C>G), GTC407GTC (1117A>C 1118C>G), GTC408GTC (1119A>C 1120C>G), GTC409GTC (1121A>C 1122C>G), GTC410GTC (1123A>C 1124C>G), GTC411GTC (1125A>C 1126C>G), GTC412GTC (1127A>C 1128C>G), GTC413GTC (1129A>C 1130C>G), GTC414GTC (1131A>C 1132C>G), GTC415GTC (1133A>C 1134C>G), GTC416GTC (1135A>C 1136C>G), GTC417GTC (1137A>C 1138C>G), GTC418GTC (1139A>C 1140C>G), GTC419GTC (1141A>C 1142C>G), GTC420GTC (1143A>C 1144C>G), GTC421GTC (1145A>C 1146C>G), GTC422GTC (1147A>C 1148C>G), GTC423GTC (1149A>C 1150C>G), GTC424GTC (1151A>C 1152C>G), GTC425GTC (1153A>C 1154C>G), GTC426GTC (1155A>C 1156C>G), GTC427GTC (1157A>C 1158C>G), GTC428GTC (1159A>C 1160C>G), GTC429GTC (1161A>C 1162C>G), GTC430GTC (1163A>C 1164C>G), GTC431GTC (1165A>C 1166C>G), GTC432GTC (1167A>C 1168C>G), GTC433GTC (1169A>C 1170C>G), GTC434GTC (1171A>C 1172C>G), GTC435GTC (1173A>C 1174C>G), GTC436GTC (1175A>C 1176C>G), GTC437GTC (1177A>C 1178C>G), GTC438GTC (1179A>C 1180C>G), GTC439GTC (1181A>C 1182C>G), GTC440GTC (1183A>C 1184C>G), GTC441GTC (1185A>C 1186C>G), GTC442GTC (1187A>C 1188C>G), GTC443GTC (1189A>C 1190C>G), GTC444GTC (1191A>C 1192C>G), GTC445GTC (1193A>C 1194C>G), GTC446GTC (1195A>C 1196C>G), GTC447GTC (1197A>C 1198C>G), GTC448GTC (1199A>C 1200C>								

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
E2D (998G>T), G5S (1005G>A 1007G>C), D9E (1019C>G), K10R (1020A>C 1021A>G), K16R (1038A>C 1039A>G), Q17E (1041C>G), Q20R (1051A>G 1052G>C), A24D (1063C>A), I2L7 (1071A>C 1073C>G), F29H (1077T>C 1078T>A), A32T (1086G>A 1088C>G), N34A (1092A>G 1093A>C), S35G (1095T>G 1096C>G 1097G>A), Q38S (1104C>T 1105A>C 1106A>G), D44G (1123A>C 1124C>A), K48V (1134A>G 1135A>T), I49E (1137A>G 1138T>A 1139T>G), S51L (1143A>C 1144G>T 1145C>T), K54E (1152A>G), T55L (1155A>T 1156C>T 1157C>G), P57E (1161C>G 1162C>A 1163C>A), Y59C (1168A>G), V61T (1173G>A 1174T>C 1175G>T), Q63K (1179C>A), Q64L (1183A>T 1184G>T), S70T (1200T>A 1202C>A), S71K (1204A>C 1205C>G), N72D (1206A>C 1208T>C), R73K (1209C>A 1210G>A 1211G>A), I74V (1212A>G 1214T>G), Y75F (1216A>T 1217T>C), K76Q (1218A>C 1220A>G), I77L (1221A>C 1223T>G), L78I (1224T>A 1226G>T), E79S (1227G>T 1228A>C 1229A>C), L80I (1230C>A 1232A>C), N81H (1233A>C 1235C>T), G82K (1236G>A 1237G>A 1238G>A), Y83C (1240A>G), D84N (1242G>A), Q86L (1248C>T 1249A>T 1250A>G), Y87L (1251T>C 1252A>T), S90N (1260T>A 1261C>A), Y91L (1263G>C 1265G>C), F92W (1267T>G 1268T>G), L93I (1269C>G), G94R (1272G>A 1274A>G), A96C (1278G>A 1280C>G), T97R (1281A>C 1282C>A 1283G>C), K98R (1284A>C 1285A>G 1286A>G), G101N (1293G>A 1294G>A), T105P (1305A>C), W107G (1311T>G), F109Y (1318T>A 1319T>C), G110R (1320G>A 1322G>A), H125Q (1367C>A), T126A (1368A>G), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>T 1513A>G), S183G (1539T>G 1540C>A), A185V (1546C>T 1547C>A), I187V (1551A>G 1553A>T), V194I (1572G>A 1574C>A), T198M (1585C>T 1586C>G), C201Y (1594G>A 1595C>T), A202M (1596G>A 1597C>T 1598C>G), L204V (1602A>G 1604T>G), D205N (1605G>A), N207K (1613C>G), S208* (1615C>G), T209A (1617A>G 1619G>T), T210L (1620A>C 1621C>T 1622C>A), Q214K (1632C>A 1643G>A), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>C 1661T>A), E225K (1665G>A 1667A>G), L226S (1668G>A 1669T>G 1670C>T), T227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G232R (1695G>A 1697G>A), V237I (1701G>A 1703C>A), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), K250T (1741A>C 1742G>C), H252N (1746C>A)									
Protein mutations:									
GAG2GAT (998G>T), GTC4GTA (1004C>A), GGG5AGC (1005G>A 1007G>C), CTC7CTG (1013C>G), GAC9GAG (1019C>G), AAG10CGG (1020A>C 1021A>G), GGG11GGC (1025G>C), ATT12ATC (1028T>C), GTC14TCC (1034G>C), AAC16GCC (1041C>G), GAG20GC (1051A>G 1052G>C), GCC24AGC (1063C>A), TCA25TCG (1067A>G), ATC27CTG (1071A>C 1073C>G), TTC29CAC (1077T>C 1078T>A), AAT30AAC (1082T>C), GC331GCC (1085C>C), GCC32AGC (1086G>A 1088C>G), TCC33AGC (1089T>A 1090C>G), AAC34GCC (1092A>G 1093A>C), TCG35GGA (1095T>G 1096C>G 1097G>A), TCC37AGC (1101T>A 1102C>G), CAA38TCG (1104C>T 1105A>C 1106A>G), GTC41GCC (1115T>G), TTG43CTG (1119T>C), GAC44GGA (1123A>G 1124C>A), GCG46GCC (1130G>C), AA48GTTG (1134A>G 1135A>T), ATT49GAG (1137A>G 1138A>C), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>T 1513A>G), S183G (1539T>G 1540C>A), A185V (1546C>T 1547C>A), I187V (1551A>G 1553A>T), V194I (1572G>A 1574C>A), T198M (1585C>T 1586C>G), C201Y (1594G>A 1595C>T), A202M (1596G>A 1597C>T 1598C>G), L204V (1602A>G 1604T>G), D205N (1605G>A), N207K (1613C>G), S208* (1615C>G), T209A (1617A>G 1619G>T), T210L (1620A>C 1621C>T 1622C>A), Q214K (1632C>A 1643G>A), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>C 1661T>A), E225K (1665G>A 1667A>G), L226S (1668G>A 1669T>G 1670C>T), T227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G232R (1695G>A 1697G>A), V237I (1701G>A 1703C>A), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), K250T (1741A>C 1742G>C), H252N (1746C>A)									
Codon mutations:									
GAG2GAT (998G>T), GTC4GTA (1004C>A), GGG5AGC (1005G>A 1007G>C), CTC7CTG (1013C>G), GAC9GAG (1019C>G), AAG10CGG (1020A>C 1021A>G), GGG11GGC (1025G>C), ATT12ATC (1028T>C), GTC14TCC (1034G>C), AAC16GCC (1041C>G), GAG20GC (1051A>G 1052G>C), GCC24AGC (1063C>A), TCA25TCG (1067A>G), ATC27CTG (1071A>C 1073C>G), TTC29CAC (1077T>C 1078T>A), AAT30AAC (1082T>C), GC331GCC (1085C>C), GCC32AGC (1086G>A 1088C>G), TCC33AGC (1089T>A 1090C>G), AAC34GCC (1092A>G 1093A>C), TCG35GGA (1095T>G 1096C>G 1097G>A), TCC37AGC (1101T>A 1102C>G), CAA38TCG (1104C>T 1105A>C 1106A>G), GTC41GCC (1115T>G), TTG43CTG (1119T>C), GAC44GGA (1123A>G 1124C>A), GCG46GCC (1130G>C), AA48GTTG (1134A>G 1135A>T), ATT49GAG (1137A>G 1138A>C), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>T 1513A>G), S183G (1539T>G 1540C>A), A185V (1546C>T 1547C>A), I187V (1551A>G 1553A>T), V194I (1572G>A 1574C>A), T198M (1585C>T 1586C>G), C201Y (1594G>A 1595C>T), A202M (1596G>A 1597C>T 1598C>G), L204V (1602A>G 1604T>G), D205N (1605G>A), N207K (1613C>G), S208* (1615C>G), T209A (1617A>G 1619G>T), T210L (1620A>C 1621C>T 1622C>A), Q214K (1632C>A 1643G>A), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>C 1661T>A), E225K (1665G>A 1667A>G), L226S (1668G>A 1669T>G 1670C>T), T227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G232R (1695G>A 1697G>A), V237I (1701G>A 1703C>A), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), K250T (1741A>C 1742G>C), H252N (1746C>A)									
AAV2gp05									
235 706 64.1% 2434 70.7% 468 (99.2%) 315 (66.7%) 0/4/0/0 0									
M235L (2905A>C), D237N (2911G>A), R238T (2915G>C), Q259A (2978G>C 2978A>C 2979A>C), S261K (2983T>A 2984C>A 2985C>C), Q263del (2989_2991delCAA), S264G (2992T>G 2993C>G), G265S (2995G>A 2997A>C), A266T (2998G>A), S267T (3001T>A 3003G>C), D269N (3007G>A), N270D (3010A>G 3012T>C), F273Y (3020T>A 3021T>C), R310S (3132A>C), Q325T (3175C>A 3176A>C), N326T (3179A>C 3180T>G), V340I (3220G>A 3222T>C), T344A (3232A>G 3234T>C), S346T (3238A>G 3239C>T), G347D (3243G>A 3246C>T), O349H (3249G>C), S356N (3268A>G 3269G>C), H358Y (3274C>A 3275A>G 3276T>C), Q359E (3277C>G), L378K (3343C>T 3335T>G), N382D (3346A>G 3348C>G), S384Y (3353G>C 3354T>A), A386T (3358G>A 3360A>C), V387M (3361G>A 3363A>G), R389K (3367G>A 3368G>A 3369C>A), T410S (3430A>T), T414Q (3442A>C 3444T>D), G417N (3451G>A), Y424F (3473A>G), A425T (3475G>A 3477T>G), S427N (3482G>A), Q428R (3484C>A 3486C>G), C438V (3486G>A), I438Y (3514A>G 3516C>G), Y443W (3530A>G 3531T>G), R447G (3541A>G), J448I (3545C>T 3546A>C), N449_P451del (3547_3555delAACACTCA), S452T (3557G>C), T454N (3563C>A), T455A (3565A>C 3567C>A), T456A (3568A>C), Q457N (3571C>A 3573G>C), S458A (3574G>C 3576A>C), R459I (3578G>T 3579G>T), L460P (3581T>C 3582T>C), Q461K (3583C>A), S463D (3589T>G 3590C>A 3591T>C), Q464K (3592G>C 3594G>A), G466S (3598G>A 3600A>C), A467K (3601G>A 3602G>C), S468D (3604A>G 3605G>A 3606T>C), D469K (3607G>A 3609G>A), I470P (3610A>G 3611T>C), R471S (3613G>T 3614G>C 3615G>A), D472R (3616G>A 3617G>C), S474Y (3623C>A 3624T>C), W477P (3632G>T 3633G>T), L478M (3634G>A 3636T>C), Y483M (3649T>A 3650A>T 3651C>G), R487Y (3661G>A 3662G>T 3663A>C), V488I (3664G>A), K490T (3671A>C 3672G>A), T491I (3674C>T 3676C>G), A493S (3679G>C 3681G>T), D494G (3682G>C 3684G>T), N497L (3691A>T 3692G>C), E504S (3712G>T 3713G>C), T500N (3719C>A), Y508A (3724T>G 3725C>A 3726C>T), H509S (3727C>T 3728A>C 3729C>G), L510I (3730C>A 3732C>G), S346T (3738A>C 3739T>G), S351A (3740A>C 3741T>G), D514S (3742G>T 3743A>C), S515H (3745T>C 3746C>A), L516G (3748C>G 3749T>G 3750G>A), V517I (3751G>A 3753G>C), N518M (3755A>T 3756T>G), M523Q (3769A>C 3770T>A 3771G>A), A524T (3772G>A), H526S (3778C>T 3779A>C 3780C>G), D528V (3785A>T 3786C>G), E530D (3792A>C), E531T (3793G>A 3794A>C 3795A>C), K532N (3798G>C), F533D (3799T>C 3800T>A 3801T>G), Q536L (3809A>T 3810G>T), V539D (3818T>A 3819T>C), I541V (3823A>G), G543P (3829G>A 3830G>C 3831G>C), Q545H (3837A>C), G546N (3838G>A 3839G>A), S547A (3841T>C 3843A>T), E548Q (3844G>C), K549T (3848A>C 3849A>C), N551S (3853A>T 3854A>C), V552A (3857T>C 3858G>C), D553S (3859G>A 3860A>G 3861C>T), I554F (3862A>T 3864T>C), E555N (3865G>A 3867A>C), K556S (3869A>G 3870G>C), D561N (3883G>A 3885C>T), E563N (3889G>A 3891G>T), T567Q (3901A>C 3902C>A 3903A>G), V571I (3913G>A 3915G>C), A572S (3916G>A 3917C>G 3918T>C), T573Y (3919A>T 3920C>A 3921G>C), E574G (3923A>G 3924G>A), Q575S (3925C>T 3926A>C), Y576A (3928T>G 3929A>C 3930T>C), G577Y (3931G>T 3932G>A 3933T>C), S578T (3934T>A 3936T>A), S580A (3940T>G 3942T>G), T581S (3943A>T), L583N (3949C>A 3950T>A 3951C>T), R585S (3955A>T 3956G>C), G586P (3958G>C 3959G>C 3960C>A), N587T (3962A>C 3963C>T), R588N (3965G>A 3966A>C), Q589G (3967C>G 3968A>G 3969A>T), A590T (3970G>C 3972A>C), A591T (3973G>A 3975T>G), A593E (3980C>A), V595L (3985G>T 3987C>G), P597A (3991A>G 3993A>T), Q598L (3995A>T 3996A>G), L601M (4003C>A 4005T>G), P616Q (4049C>A 4050C>G), H623E (4069C>A 4071C>A), H627A (4081C>G 4082A>C 4083T>G), H641N (4123C>A), S658P (4147T>C), A663P (4189G>C 4191G>A), A664N (4192G>A 4193C>A 4194A>T), F666L (4198T>C 4200T>G), A667N (4201G>A 4202C>A), S679T (4238G>C), Q687K (4261C>A), N690S (4270A>T 4271A>C 4272C>T), I698V (4294A>G 4296T>C), Y700F (4301A>T 4302C>T), S702A (4306T>G)									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	ATG235CTG (2905A>C), GGC236GGA (2910C>A), GAC237AAC (2911G>A), AGA238ACA (2915G>C), ATC240ATT (2922C>T), ACC242AAG (2927C>A 2928C>G), AGC243TCC (2929A>T 2930G>C), ACC244ACA (2934C>A), CGA245AGA (2935C>A), GCC248CA (2946C>A), CTG249TTG (2947C>T), CTC256CTT (2970C>T), AAA258AAC (2976A>G), CAA259GCC (2977C>G 2978A>C 2979A>C), ATT260ATC (2982T>C), TCC261AAC (2983T>A 2984C>A 2985C>G), AGC262TCC (2986A>T 2987G>C), CAA263del (2989_2991delCAA), TCA264GGA (2992T>G 2993C>G), GGA265AGC (2995G>A 2997A>C), GCC266ACC (2998G>A), TCG267ACC (3001T>A 3003G>C), GAC269AAC (3007G>A), AAT270GAC (3010A>G 3012T>C), TTT273TAC (3020T>G 3021T>C), GGC274GGA (3024C>A), CCT278CCC (3036T>C), TAT281TAC (3045T>C), GAC283GAT (3051C>T), CTC294AGA (3082C>A 3084T>A), CAAC297CAG (3093A>G), AGA298GCA (3094A>C), CGA307AGA (3121C>A), AGA309AAA (3129G>A), AGA310AGC (3132A>C), TTC213TT (3141C>T), TTT316TTC (3150T>C), CAG325AGC (3175C>A 3176A>C), ATT326AGC (3179A>C 3180T>G), GGT328GGC (3186T>C), ACG329ACA (3189G>A), ACG331ACC (3195G>C), ATT332CAG (3198T>C), TCG339ACC (3219G>C), TGT340ATC (3220G>A 3222T>C), AGC340GCC (3232A>G 3234T>C), CTC350TTA (3250C>T 3252C>A), CCG351CCC (3255G>C), CTC354CTA (3264C>A), TCG356AAC (3268T>C), AAG369GCC (3269C>A), CTC362TCA (3273G>C), CAT358AGC (3274G>C 3276T>C), CGC346AGC (3288C>A), CCG359GAA (3287C>G), TAT443TGG (3530A>G 3531T>G), TTG445CTC (3535T>C), CGC364CCC (3294G>C), TTC365TTT (3297C>T), GCA367GCC (3303A>G), TTC370TTT (3312C>T), CCA373CGC (3321A>G), TAT375TAC (3327T>C), GGA376GGG (3330A>G), TAC377TAT (3333C>T), CTC378TGC (3334C>T 3335T>G), CTG380CTC (3342G>C), AAC382GAT (3346A>G 3348C>T), GG383GGA (3351G>A), AGT384ACA (3353G>C 3354T>A), GCA386AAC (3358G>A 3360A>C), GTA387ATG (3361G>A 3363A>G), CGC389AAA (3367C>A 3368G>A 3369G>A), TCT390AAGC (3370T>A 3371C>G 3372T>C), TCA391TCA (3375A>C), CTG395TTG (3385C>T), GAC396GAA (3390G>A), TTT398TTC (3396T>C), CCT399CCG (3399T>G), TCT400AAGC (3400T>A 3401C>G 3402T>C), CGT404CGA (3417T>A), ACC405ACT (3417C>T), ACC410TCC (3430A>C), ACT414CAC (3432A>C 3443C>A 3444T>G), AGC417AAC (3451G>A), AGC422TCC (3464A>T 3467G>C 3468G>C), TAC424TCC (3473A>C), CCT425ACG (3475G>A 3477T>G), AGC427AAC (3482G>A), CAG428AGA (3484C>A 3485G>A 3486G>A), AGT429AGC (3487T>C), CGT432AGA (3496C>A 3498T>A), CCT436CCC (3510T>C), ATC438CTC (3514A>G 3516C>G), CTG442CTC (3528G>C), TAT443TGG (3530A>G 3531T>G), TTG445CTC (3535T>C), CGC364CCC (3539G>C), AAC446TCT (3538A>T 3539G>C 3540C>T), AGA447GGA (3541A>G), AAC448ATA (3545C>T 3546A>C), AAC449 (3544C>A), CCA451del (3547_3555del) AACACTCCA, AGT452ACT (3557G>C), ACC454AAC (3563C>A), ACC455GCA (3565A>G 3567C>A), AGC456GCG (3568A>G), CAG457AAC (3571C>A 3573G>C), TCA458GCC (3574T>G 3575G>C), TCG459GAC (3581C>A 3582G>C), CAG461AAC (3581G>A 3582A>C), TCA463GAC (3589A>C 3591A>C), CAG464AAA (3592A>C 3594A>C), CAG465GAA (3596A>C 3598A>C), GGA466AGC (3598G>A 3600A>C), GCG467AAA (3601G>A 3602C>A 3603G>A), AGT468GAC (3604A>C 3605G>A 3606T>C), GAC469AAA (3607G>A 3609C>A), ATT470CCT (3610A>G 3611T>C), CGG471TC (3613C>G 3614G>C 3615G>C), TCT474TAC (3623G>C 3624T>C), AGG475GCC (3625A>C 3627T>C), AAC476AAAT (3630C>T), TGG477TT (3632G>T 3633G>T), CTT478ATG (3634C>A 3636T>G), GGA480GGG (3642A>G), CCC481CCG (3645C>G), TAC483ATG (3649T>A), AAC486TCT (3650A>C), AAC487GTA (3651A>G), TCA489AGT (3664G>A), TCA489GAG (3667T>A 3668G>C 3669A>T), AAC490ACA (3671A>G 3672G>A), ACA491ATC (3674C>T 3675A>G), TCT492GTC (3676T>G 3677C>G), CGC493TCT (3679G>T 3681G>T), GAT494CAG (3682G>C 3684T>G), AAC495AAAT (3687C>T), AAC497TTT (3691A>T 3692A>T 3693C>G), AGT498GCA (3694A>G 3695G>A 3696T>A), GAA499GGC (3698A>G 3699A>C), TAC500GGC (3700T>A 3701A>G), TCG501GAC (3703T>G 3704C>A), ACC503GAC (3710C>G 3711T>C), GCA5040TCT (3712G>T 3713G>C 3714A>T), GCT505GCC (3717T>C), ACC506AAC (3719C>A), AAC507AAA (3723G>A), TAC508GCT (3724T>C 3725A>C 3726C>T), CAC509TCG (3727C>T 3728A>C 3729C>G), CTC510ATT (3730C>A 3732C>T), AAT511GCC (3733A>C), AAC512GAA (3734C>A), GAC513CTG (3739A>C 3741A>C), GAC514TAC (3742G>C 3743A>C), TCT515CAT (3745T>C 3746C>A), CTG516GGA (3748C>G 3749T>A), GTC517ATC (3751G>A 3753G>C), ATT518ATC (3755A>T 3756T>G), CCG519CCA (3759G>A), GGC520GGA (3762C>A), CCG521CCT (3765G>T), GCC522GCT (3768C>T), ATG523CAA (3769A>C 3770T>A 3771G>A), GCA524AAC (3772G>A), AGC525AGT (3777C>T), CAC526TCG (3778C>T 3779A>C 3780C>A), GAG527AAA (3783G>A), GAC528GTC (3785A>T 3786C>G), GAA530GAC (3792A>C 3793A>C), AAC532AAC (3798G>C), TTT533CAG (3799T>A 3800T>A 3801T>G), TTT534TTC (3804T>C), CCT535CCG (3807T>G), CAG536CTT (3809A>T 3810G>T), AGC537TCT (3811A>T 3812G>C 3813C>T), GGG538GGA (3818G>A), GTT539GAC (3818T>A 3819T>C), CTC540CTG (3822G>C), ATC541GTC (3823A>G), GGG543GCC (3829G>C 3830G>C 3831G>C), CAA545CAC (3837A>C), CGC546AAC (3838G>A 3839G>A), TCA547GCT (3841T>A 3843A>T), GAG548CAG (3844G>C), AAA549AAC (3848A>C 3849A>C), ACA550AAC (3852A>C), AAAT551TCT (3853A>C 3854A>C), GTT552GCC (3857T>C 3858G>C), GAC553GAT (3859G>A 3860A>C 3861C>T), ATT554TTC (3862A>T 3864T>C), GAA555AAC (3865G>A 3867A>C), AAG556AGC (3869A>C 3870W>C), ATT559ATA (3879T>C), ACA560AAC (3882A>C), GAC561ATA (3883G>A 3885C>T), GAG563AAAT (3889G>A 3891G>T), ATC565ATA (3897C>A), AGG566CGT (3898A>C 3900G>T), ACA567CAG (3901A>C 3902C>A 3903A>G), ACC568ACA (3906C>A), CCC570CCT (3912C>T), GTG571ATC (3913G>A 3915G>C), GCT572GAC (3916G>A 3917C>G), AGG573TAC (3919A>T 3920C>A 3921G>C), GAG574GGA (3923A>C 3924G>A), CAG575TGC (3925C>T 3926A>G), TAT576GCC (3928T>A 3929A>C 3930T>C), GGT577TAC (3931G>T 3932G>A 3933T>C), TCT578ACA (3934T>A 3936T>A), GAT579GTC (3939A>C), TCT580GCC (3940T>G 3942T>G), ACC581TCC (3943A>T), CTC583AAT (3945C>A 3951C>T), CAG584AAC (3954G>A), AGA585TCA (3955A>T 3956G>C), CGC586GCC (3958G>C 3959G>C 3960C>A), AAC587ACT (3962A>C 3963C>T), AGA588AAC (3965G>A 3966A>C), CAA589GCT (3967C>G 3968A>G 3969A>T), CGA590GCC (3970G>C 3972A>C), GCT591AAC (3973G>A 3975T>G), ACC592ACT (3978C>T), GCA593GAA (3980R>C), GTC595TTG (3985G>T 3987C>G), AGC597GCT (3991A>G 3993A>T), CAA598CT (3995A>T 3996A>G), GTT600GTC (4002T>C), CTT601ATG (4003A>G 4005T>G), AGA609GCG (4027A>C 4029A>C), GTG611GTT (4035G>T), CTT613TTA (4039C>T 4041T>A), CAG614CAA (4044G>A), GGG615GGA (4047G>A), CCC616CAG (4049C>A 4050C>G), ATT621ATC (4065T>C), CAC623GAA (4069C>G 4071C>A), GAC625GAT (4077C>T), CAT627GCG (4081C>G 4082A>C 4083T>G), TCT628TTC (4086T>C), CCT629CAT (4089C>T), CCC630CCT (4092C>T), CCC632CCT (4098C>T), GGT635GGG (4107T>G), TTC637TT (4113C>T), CTT639CTG (4119T>G), CAC641AAC (4123C>A), CCT643CA (4131T>A), CCA644CT (4134A>T), CAG645AAC (4137G>A), ATT646ATC (4140T>C), AAC650AAC (4152C>T), ACC651ACG (4155C>G), CGC652CT (4158G>T), TCA653GTT (4161A>T), CGG655GCC (4167G>A), ATT656AAC (4170T>C), CCT657TCA (4173T>C), CGT658GCC (4175G>A 4176G>C), TCT659GAC (4178G>A 4179G>C), TCT660GTC (4188T>C), CGC663CCA (4189G>C 4191G>A), CGA664AAT (4192G>A 4193C>A 4194A>T), TTT666GTC (4198T>C 4200T>G), GCT667AAT (4201G>A 4202C>A), ACA671ACT (4215A>T), CAG672CAA (4218G>A), TCC674TCT (4224C>T), AGC675ACC (4227G>C), GGA676GCC (4230A>C), CAG677CAA (4233G>A), AGC679ACC (4238G>C), ATC682ATT (4248C>T), GAG683GAA (4251G>A), GAG685GAA (4257G>A), CTG686CTC (4260G>C), CAG687AAG (4261C>A), AAC690TCT (4270A>T 4271A>C), AGC691TCC (4273A>T 4274G>C), CCC696CCA (4290C>A), GAA697GAG (4293A>G), ATT698GTC (4294A>G 4296T>C), TAC700TT (4301A>T 4302C>T), ACT701ACC (4305T>C), TCC702GCC (4306T>G)								
AAV2gp06_1	98	569	78.8%	2434	70.7%	468 (99.2%)	315 (66.7%)	0/4/0/0	0
	M98L (2905A>C), D100N (2911G>A), R101T (2915G>C), T105K (2927C>A 2928C>G), Q122A (2977C>G 2978A>C 2979A>C), S124K (2983T>A 2984C>A 2985C>G), Q126del (2989_2991delCAA), S127G (2992T>G 2993C>G), G128S (2995G>A 2997A>C), A129T (2998G>A), S130T (3001T>A 3003G>C), D132N (3007G>A), N133D (3010A>G 3012T>C), F136Y (3020T>A 3021T>C), R173S (3132A>C), Q188T (3175C>A 3176A>C), N189T (3179A>C 3180T>G), V203I (3220G>A 3222T>C), T207A (3232A>G 3234T>G), S209T (3238T>A), E210D (3243G>C), Y211H (3244T>C 3246C>T), Q212H (3249G>C), S219N (3268T>A 3269C>A), H221S (3274C>A 3275A>C 3276T>C), C222E (3277C>G), L241C (3343C>T 3353T>G), N245D (3346A>G 3348C>A), S247T (3353G>A 3354T>A), A249T (3358G>A 3360A>C), S250M (3361G>A 3363A>G), R252K (3367C>A 3368A>G 3369C>A), S329C (3373A>C 3374T>G), T273S (3434A>G 3444T>G), Y278F (3473A>T), A288T (3475G>A 3477T>G), L327G (3482A>G 3484C>A), AAC587ACT (3492C>A 3493C>T), GCA593GAA (3980R>C), GTC595TTG (3985G>T 3987C>G), AGC597GCT (3991A>G 3993A>T), CAA598CT (3995A>T 3996A>G), GTT600GTC (4002T>C), CTT601ATG (4003A>G 4005T>G), AGA609GCG (4027A>C 4029A>C), GTG611GTT (4035G>T), CTT613TTA (4039C>T 4041T>A), CAG614CAA (4044G>A), GGG615GGA (4047G>A), CCC616CAG (4049C>A 4050C>G), ATT621ATC (4065T>C), CAC623GAA (4069C>G 4071C>A), GAC625GAT (4077C>T), CAT627GCG (4081C>G 4082A>C 4083T>G), TCT628TTC (4086T>C), CCT629CAT (4089C>T), CCC630CCT (4092C>T), CCC632CCT (4098C>T), GGT635GGG (4107T>G), TTC637TT (4113C>T), CTT639CTG (4119T>G), CAC641AAC (4123C>A), CCT643CA (4131T>A), CCA644CT (4134A>T), CAG645AAC (4137G>A), ATT646ATC (4140T>C), AAC650AAC (4152C>T), ACC651ACG (4155C>G), CGC652CT (4158G>T), TCA653GTT (4161A>T), CGG655GCC (4167G>A), ATT656AAC (4170T>C), CCT657TCA (4173T>C), CGT658GCC (4175G>A 4176G>C), TCT659GAC (4178G>A 4179G>C), TCT660GTC (4188T>C), CGC663CCA (4189G>C 4191G>A), CGA664AAT (4192G>A 4193C>A 4194A>T), TTT666GTC (4198T>C 4200T>G), GCT667AAT (4201G>A 4202C>A), ACA671ACT (4215A>T), CAG672CAA (4218G>A), TCC674TCT (4224C>T), AGC675ACC (4227G>C), GGA676GCC (4230A>C), CAG677CAA (4233G>A), AGC679ACC (4238G>C), ATC682ATT (4248C>T), GAG683GAA (4251G>A), GAG685GAA (4257G>A), CTG686CTC (4260G>C), CAG687AAG (4261C>A), AAC690TCT (4270A>T 4271A>C), AGC691TCC (4273A>T 4274G>C), CCC696CCA (4290C>A), GAA697GAG (4293A>G), ATT698GTC (4294A>G 4296T>C), TAC700TT (4301A>T 4302C>T), ACT701ACC (4305T>C), TCC702GCC (4306T>G)								
	N374A (3733A>C 3734A>C 3735T>C), D377S (3742G>T 3743A>C 3744A>C), S378H (3745T>C 3746C>A), L379G (3747C>G 3748C>A), P380I (3751G>A 3752G>C), N381M (3755G>C 3756T>G), M386Q (3769A>C 3770T>A 3771G>C), A387T (3772G>A), H388S (3778C>T 3779A>C 3780C>G), D391V (3785G>A 3786C>G), E393D (3792A>C), E394T (3793A>C 3794T>C), Q395L (3795A>C 3796A>C), F396A (3797A>C 3800T>A 3801T>G), V399L (3809A>T 3810G>T), V402P (3818T>A 3819T>C), I404V (3823A>G), G406P (3829G>C 3830G>C 3831G>C), K395N (3798G>C), F396A (3799T>C 3800T>A 3801T>G), Q399L (3809A>T 3810G>T), V402P (3818T>A 3819T>C), I404V (3823A>G), G406P (3829G>C 3830G>C 3831G>C), Q408H (3837A>C), G409N (3838G>A 3839G>A), S410A (3841T>A 3843A>T), E411Q (3844G>A 3845G>A), K412I (3848A>C 3849A>C), N414S (3853A>T 3854A>C 3855A>C), V415A (3857T>C 3858G>C), D416S (3859G>A 3860A>G 3861C>T), I417F (3862A>T 3864T>C), E418N (3865G>A 3867A>C), K419S (3869A>G 3870G>C 3871G>C), S420D (3870T>G 3701A>G), S364D (3870T>G 3704C>A 3705G>C), T366S (3710C>G 3711T>C), G367S (3712G>T 3713G>C 3714A>T), T369N (3719C>A), Y371A (3724T>G 3725A>C 3726C>T), H372S (3727C>T 3728A>C 3729C>G), L373I (3730C>A 3732C>T), N374A (3733A>C 3734A>C 3735T>C), D377S (3742G>T 3743A>C 3744A>C), S378H (3745T>C 3746C>A), L379G (3747C>G 3748C>A), V380I (3751G>A 3752G>C), N381M (3755G>C 3756T>G), M386Q (3769A>C 3770T>A 3771G>C), A387T (3772G>A), H388S (3778C>T 3779A>C 3780C>G), D391V (3785G>A 3786C>G), E393D (3792A>C), E394T (3793A>C 3794T>C), Q395L (3795A>C 3796A>C), F396A (3797A>C 3800T>A 3801T>G), V399L (3809A>T 3810G>T), V402P (3818T>A 3819T>C), I404V (3823A>G), G406P (3829G>C 3830G>C 3831G>C), Q408H (3837A>C), G409N (3838G>A 3839G>A), S410A (3841T>A 3843A>T), E411Q (3844G>A 3845G>A), K412I (3848A>C 3849A>C), N414S (3853A>T 3854A>C 3855A>C), V415A (3857T>C 3858G>C), D416S (3859G>A 3860A>G 3861C>T), I417F (3862A>T 3864T>C), E418N (3865G>A 3867A>C), K419S (3869A>G 3870G>C 3871G>C), T366S (3710C>G 3711T>C), N374A (3733A>C 3734A>C 3735T>C), D377S (3742G>T 3743A>C 3744A>C), S378H (3745T>C 3746C>A), L379G (3747C>G 3748C>A), V380I (3751G>A 3752G>C), N381M (3755G>C 3756T>G), M386Q (3769A>C 3770T>A 3771G>C), A387T (3772G>A), H388S (3778C>T 3779A>C 3780C>G), D391V (3785G>A 3786C>G), E393D (3792A>C), E394T (3793A>C 3794T>C), Q395L (3795A>C 3796A>C), F396A (3797A>C 3800T>A 3801T>G), V399L (3809A>T 3810G>T), V402P (3818T>A 38								

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	ATG98CTG (2905A>C), GGC99GGA (2910C>A), GAC100AAC (2911G>A), AGA101ACA (2915G>C), ATC103ATT (2922C>T), ACC105AAG (2927C>A 2928C>G), AGC106TCC (2929A>T 2930G>C), ACC107ACA (2934C>A), CGA108AGA (2935C>A), GCC111GCA (2946C>A), CTG112TTG (2947C>T), CTC119CTT (2970C>T), AAA121AAAG (2976A>G), CAA122GCC (2977C>G 2978A>C 2979A>C), ATT123ATC (2982T>C), TCC124AAG (2983T>A 2984C>A 2985C>G), AGC125TCC (2986A>T 2987G>C), CAA126del (2989_2991delCAA), TCA127GGA (2992T>G 2993C>G), GGA128AGC (2995G>A 2997A>C), GCC129ACC (2998G>A), TCG130ACC (3001T>A 3003G>C), GAC132AAC (3007G>A), ATT133ACG (3010A>G 3012T>C), TTT136TAC (3020T>A 3021T>C), GGC137GGA (3024C>A), CCT141CC (3036T>C), TAT144TAC (3045T>C), GAC146GAT (3051C>T), CTC157AGA (3082C>A 3084T>A), CAAC160AG (3093A>G), AGA161CGA (3094A>C), CGA170AGA (3121C>A), AAC172AAA (3129G>A), AGA173AGC (3132A>C), TTC176TT (3141C>T), TTT179TTT (3150T>C), CAG188AGC (3175C>A 3176A>C), ATT189AGC (3179A>C 3180T>G), GGT191GGC (3186T>C), ACG192ACA (3189G>A), ACG194ACC (3195G>C), ATT195AGC (3198T>C), AGC202AAC (3219G>C), GTT203ATC (3220G>C 3222T>C), ACT207GG (3234T>C), GTC209AGC (3238T>A), AGG210GAC (3243G>C), TAC211CAT (3244T>C 3246C>T), CAG212CAC (3249G>C), CTC213TTA (3250C>T 3252C>A), CGC214CCC (3255G>C), CTC217CTA (3264C>A), TCG219AAC (3268T>A 3269C>A 3270G>C), CGC220GCC (3273G>C), CAT221AGC (3274C>A 3275A>C), CCT225ACT (3276T>C), AAC222GAA (3277C>C), CCT226CTA (3288C>A), CGG226CCT (3291G>C), CGC227CCC (3294G>C), TTC228TTT (3297C>T), GCA230GCC (3303A>G), TTC233TTT (3312C>T), CCA236CCG (3321A>G), TAT238TAC (3327T>C), GGA239GGG (3330A>G), TAC240AT (3333C>T), CTC241TGC (3334C>T 3335T>C), CTG243CTC (3342G>C), AAC245GAT (3346A>G 3348C>T), GG246GGG (3351G>A), AGT247ACA (3353G>C 3354T>A), GCA249AAC (3358G>A 3360A>C), GT2450ATG (3361G>A 3363A>G), CGC252AAA (3367C>A 3368G>A 3369G>A), TCT253AGC (3370T>A 3371C>G 3372T>C), TCA254TCC (3375A>C), CTG258TTG (3385C>T), GAC259GAA (3390G>A), TTT261TC (3396T>C), CCT262CCG (3399T>C), TCT263AGC (3400T>A 3401C>G 3402T>C), CGT267CGA (3414T>A), AAC268ACT (3417C>T), ACC273TCC (3430A>C), ACT277CAC (3442A>C 3443C>A 3444T>G), GAC280AAC (3451G>A), AGC285TCC (3464A>T 3467G>C 3468C>G), TAC287TCC (3473A>C), CCT288AGC (3475G>A 3477T>G), AGC290AAC (3482G>A), CGC291AGA (3484C>A 3485G>A 3486G>A), AGT292AGC (3487T>C), CGT295AGA (3496C>A 3498T>C), CCT299CCC (3510T>C), ATC301TG (3514A>G 3516C>G), CTG305CTC (3528G>C), TCT306GG (3530A>G 3531T>G), TTG308CTC (3535T>C 3537C>A), AGC309TCT (3538A>T 3539C>C 3540C>T), AGA310GGA (3541A>G), AAC311ATA (3545C>A 3546C>A), AAC312_3CA314del (3547_3555del)AACACTCCA, AGT315ACT (3557G>C), ACC317AAC (3563C>A), ACC318GCA (3565A>G 3567C>A), AGC319GCG (3568A>G), CAG320AAC (3571C>A 3573G>C), TCA321GCC (3574T>G 3575A>C), AGG322ATT (3578G>A 3579G>C), CAG324AAC (3581G>A 3582G>C), CGC325GAA (3589A>G 3590A>C 3591A>C), CAG327AAA (3597G>A 3598G>C 3599G>C), GGA329AGC (3598G>A 3600A>C), GCG330AAA (3601G>A 3602C>A 3603G>C), AGT331GAC (3604A>G 3605G>A 3606T>C), GAC332AAA (3607G>A 3609C>A), ATT333CTC (3610A>C 3611T>C), CGG334TCC (3613C>T 3614G>C 3615G>C), GAC335CCG (3616G>C 3624T>C), AGG338GC (3625G>C 3627T>C), AAC339ATA (3630C>T), TTG340TTT (3632G>T 3633G>C), CCT341ATC (3634C>A 3636T>G), GGA343GCC (3642A>G), CCC344CCG (3645C>G), TAC346ATG (3649T>A 3650A>T 3651C>A), CGC347AGA (3654C>G 3662G>C 3663A>C), TCA351ATA (3664G>A), TCA352ATG (3667T>A 3668G>C 3669A>T), AAG353ACA (3671A>C 3672G>A), ACA354ATC (3674C>T 3675A>C), TCT355GGC (3676T>G 3677G>C), CGC356TCT (3679G>T 3681G>T), GAT357CAT (3682G>C 3684T>G), AAC358AAAT (3687C>T), AAC360TTA (3691A>T 3692A>T 3693C>G), AGT361GCA (3694A>G 3695G>A 3696T>A), GAA362GCG (3698A>G 3699A>C), TAC363GGC (3700T>A 3701A>C), TCG364GAC (3703T>G 3704C>A), TCT366GAC (3705G>C), ACC366GAC (3706A>G 3707C>A), TCG367TCT (3712G>T 3713G>A), CAG367TCT (3712G>T 3714A>C), TCT368GGC (3717T>C), GGA369GAA (3718G>C 3719G>C 3720G>C), AAC370AAC (3721G>C 3722G>C), AAC371GAC (3723G>C 3724G>C), AAC372GTC (3725G>C 3726C>C), TAC373ATT (3730C>A 3732C>T), AAC374GCC (3733A>C 3734G>C), AAC375GAC (3735A>C 3736C>C), AAC376GTC (3737A>C 3738A>C), AAC377GAC (3739A>C 3740C>C), AAC378GTC (3741A>C 3742C>C), AAC379GAA (3742A>C 3743C>C), TCT378CAT (3745T>C 3746C>A), CCG384CCCT (3765G>T), GCC385GCT (3768C>T), ATG386CAA (3769A>C 3770T>A 3771G>A), GCA387ACA (3772G>A), AGC388AGT (3777C>T), CAC389TGC (3778G>T 3779A>C), AAC390AAA (3783G>A), GAC391GTC (3785A>T 3786G>C), GAA393GAC (3792A>C), AAC394AAC (3793G>A 3794A>C), AAC395AAC (3798G>C), TTT396CAG (3799T>C 3800T>A 3801T>G), TTG397TTC (3804A>C), CCT398CAG (3807T>G), CAG399CTT (3809A>T 3810G>T), AGC400TCT (3811A>T 3812G>C 3813C>T), GGG401GGA (3813G>A), GTT402GTC (3818T>A 3819G>C), CTG403CTG (3822G>C), GGG402GEC (3829G>A 3830G>C), GGG403GEC (3832G>C), GGG404GTC (3835G>A), GGG405GEC (3838G>C 3839G>C), AAC408CAC (3838A>C), GGC409AAC (3838G>A 3839G>A), TCA410GCT (3841T>A 3843A>T), GAG411CAC (3844G>C), AAA412AAC (3848A>C 3849A>C), ACA413AAC (3852A>C), AAC414TCA (3857A>C 3858T>C), ATG414GTC (3858G>A 3860A>C), AAC415AAC (3861G>A 3862C>C), AAC416TCA (3862A>C 3863C>C), AAC417AAC (3863A>C 3864C>C), AAC418AAC (3865G>A 3867A>C), AAC419AGC (3869A>C 3870G>C), ATG422ATC (3879T>C), AAC423AAC (3882A>C), GAC424AT (3883G>A 3885C>T), GAG426AAAT (3889G>A 3891G>T), ATC428ATA (3897C>A), AGG429CGT (3898A>C 3900G>T), ACA430AG (3901A>C 3902C>A 3903A>G), ACC431ACA (3906C>A), CCC433CCT (3912C>T), GTG434ATC (3913G>A 3915G>C), GCT435AGC (3916G>A 3917C>G), AAC436TAC (3919A>T 3920C>A 3921C>G), GAG437GGA (3923A>G 3924G>C), AAC438TGC (3925C>T 3926A>C), TAT439GCC (3928T>A 3929A>C 3930T>C), GGT440TAC (3931G>T 3932G>A 3933T>C), TCT441ACA (3934T>A 3936T>A), GTA442GTC (3939A>C), TCT443GCC (3940T>G 3942T>G), ACC444CTC (3943A>T), CTC446ATA (3945C>A 3950T>C), CAG447AAC (3954G>A 3955G>C), CGC449CCA (3958G>C 3959G>C 3960C>A), AAC450ACT (3962A>C 3963C>T), AGA451AAC (3965G>A 3966A>C), CAA452GGT (3967C>G 3968A>G 3969A>T), CGA453CCG (3970G>C 3972A>C), GCT454AAC (3973G>A 3975T>G), ACC455ACT (3978C>T), GCA456GAA (3980R>C), GTC458TTG (3985G>C 3987G>C), AAC460GCT (3991A>C 3993A>T), AAC461CTC (3995A>T 3996A>G), GTT463GTC (4002T>C), CTT464ATG (4003C>A 4005T>G), AGA472CGC (4027A>C 4029A>C), GTG474TGT (4035G>T), CTT476TTA (4039C>T 4041T>A), CAG477CAA (4044G>A), GGG478GGA (4047G>A), CCC479AG (4049C>A 4050C>G), ATT484ATC (4065T>C), CAC486GAA (4069C>G 4071C>A), GAC488GAT (4077C>T), CAT490GCG (4081C>A 4082A>C 4083T>G), CCC491TTC (4086T>C), CAC492ATC (4089C>T), CCC493CT (4092C>T), CCC495CC (4098C>T), GTT498GGG (4107T>G), TCT500TTT (4113C>T), CTT502CTC (4119T>G), CAC504AAC (4123C>A), CCT506CA (4131T>A), CCA507CC (4134A>C), ATT509ATC (4140T>C), AAC513ATT (4152C>T), ACC515AGC (4155C>T), CCG515CT (4158G>T), GT516GGT (4161A>T), CCG518GCA (4167G>A), ATT519AAC (4170T>C), CCT520GCC (4171T>C), CG521CCG (4172G>C 4173G>C), AGT525AGC (4188T>C), CGC526CCA (4189G>C 4191G>A), GCA527ATA (4192G>A 4193C>A 4194A>T), TTT529CTG (4198T>C 4200T>G), GCT530AT (4201G>A 4202C>A), ACA534ACT (4215A>T), CAG535CAA (4218G>A), TCC537CT (4224C>T), ACG538ACC (4227G>C), GGA539GCC (4230A>C), CAG540CAA (4233G>A), AGC542ACC (4238G>C), ATC545ATT (4248C>T), GAG546GAA (4251G>A), GAG548GAA (4257G>A), CTG549CTC (4260G>C), CAG550AAG (4261C>A), AAC553TCT (4270A>T 4271A>C), AGC554TCT (4273A>T 4274G>C), CCC559CCA (4290C>A), GAA560GAG (4293A>G), ATT561GTC (4294A>G 4296T>C), TAC563TCT (4301A>T 4302C>T), ACT564ACC (4305T>C), TCC565GCC (4306T>G)								
AAV2gp06_2	59	205	71.7%	575	58.4%	146 (99.3%)	88 (59.9%)	0/1/0/0	1
	A61E (2910C>A 2911G>A), E63Q (2915G>C), S65L (2922C>T), P67S (2927C>A 2928C>G 2929A>T), A68P (2930G>C), P69Q (2934C>A 2935C>A), P73H (2946C>A 2947C>T), S81F (2970C>T), N83R (2976A>G 2977C>G), K84P (2978A>C 2979A>C), F85S (2982T>C 2983T>A), P86S (2984C>A 2985C>G 2986A>T), A87P (2987G>C 2988_2991delCAA), N88del (2989_2991delCAA 2992T>G), Q89E (2993C>G 2995G>A), E90A (2997A>C 2998G>A), R92P (3003G>C, 195T (3012T>C), L98T (3020T>A 3021T>C), A99D (3024C>A), L103P (3036T>C), I106T (3045C>T), T108I (3051C>T), H118Q (3082C>A), V119E (3084C>A), B122S (3093A>G 3094A>C), R134K (3129G>A), D135A (3132A>C), S138L (3141C>T), L141S (3150T>C), M151R (3179A>C 3180T>G), V151A (3181G>C), R154Q (3189G>A), R156P (3195G>C), L1513 (3198T>C), R164P (3219G>C 3220G>A), F165S (3222T>C), L169R (3234T>C), S172T (3243G>C 3244T>C), T171S (3249G>C 3250C>T), S175Y (3252C>A), R176P (3255G>C), S177W (3256C>A), R178Y (3258G>C), S179Y (3259G>C), S180F (3291G>T), R181P (3294G>C), S190F (3297C>T), Q192R (3303A>G), S195L (3312C>T), H198R (3321A>G), M200T (3327T>C), D201G (3330A>G), T202I (3333C>T 3334C>T), S203A (3335T>G), *205 (3342G>C)								
Protein mutations:									
	GGA59GGC (2905A>C), GCG61GAA (2910C>A 2911G>A), GAG63GAC (2915G>C), TCA65TTA (2922C>T), CCA67AGT (2927C>A 2928C>G 2929A>T), GCA68CCA (2930G>C), CCC69CAA (2934C>A 2935C>A), CCTC7CAT (2946C>A 2947C>T), TCT81TT (2970C>T), AAC83AGG (2976A>C 2977G>C), AAA84CCA (2978A>C 2979A>C), AAC85AGC (2982T>C 2983A>C), CCTC87CCG (2987G>C 2989_2991delCAA), ATT88del (2989_2991delCAA 2992T>G), CAG89GAA (2993C>G 2995G>A), GAG90GCA (2997A>C 2998G>A), GTC99GAT (3024C>A), GCT99GAT (3024C>A), CCT103CTT (3036T>C), ATT106ACT (3045T>C), ACT108ATT (3051C>T), CAC118CAA (3082C>A), GTG119GAG (3084T>C), AAC112AAC (3093A>G 3094A>C), AAC113ATA (3101C>A), ATG151ACA (3176A>C), AAC152GGT (3177C>G 3178C>G), CGA153GCC (3179A>C 3180T>G), GA153GCA (3179A>C 3180T>G), GCA152ATA (3192G>A 3193C>A 3194A>T), TTT529CTG (4198T>C 4200T>G), GCT530AT (4201G>A 4202C>A), ACA534ACT (4215A>T), CAG535CAA (4218G>A), TCC537CT (4224C>T), ACG538ACC (4227G>C), GGA539GCC (4230A>C), CAG540CAA (4233G>A), AGC542ACC (4238G>C), ATC545ATT (4248C>T), GAG546GAA (4251G>A), GAG548GAA (4257G>A), CTG549CTC (4260G>C), CAG550AAG (4261C>A), AAC553TCT (4270A>T 4271A>C), AGC554TCT (4273A>T 4274G>C), CCC559CCA (4290C>A), GAA560GAG (4293A>G), ATT561GTC (4294A>G 4296T>C), TAC563TCT (4301A>T 4302C>T), ACT564ACC (4305T>C), TCC565GCC (4306T>G)								
Codon mutations:									
	GGA59GGC (2905A>C), GCG61GAA (2910C>A 2911G>A), GAG63GAC (2915G>C), TCA65TTA (2922C>T), CCA67AGT (2927C>A 2928C>G 2929A>T), GCA68CCA (2930G>C), CCC69CAA (2934C>A 2935C>A), CCTC7CAT (2946C>A 2947C>T), TCT81TT (2970C>T), AAC83AGG (2976A>C 2977G>C), AAA84CCA (2978A>C 2979A>C), AAC85AGC (2982T>C 2983A>C), CCTC87CCG (2987G>C 2989_2991delCAA), ATT88del (2989_2991delCAA 2992T>G), CAG89GAA (2993C>G 2995G>A), GAG90GCA (2997A>C 2998G>A), GTC99GAT (3024C>A), GCT99GAT (3024C>A), CCT103CTT (3036T>C), ATT106ACT (3045T>C), ACT108ATT (3051C>T), CAC118CAA (3082C>A), GTG119GAG (3084T>C), AAC112AAC (3093A>G 3094A>C), AAC113ATA (3101C>A), ATG151ACA (3176A>C), AAC152GGT (3177C>G 3178C>G), CGA153GCC (3179A>C 3180T>G), GA153GCA (3179A>C 3180T>G), GCA152ATA (3192G>A 3193C>A 3194A>T), TTT529CTG (4198T>C 4200T>G), GCT530AT (4201G>A 4202C>A), ACA534ACT (4215A>T), CAG535CAA (4218G>A), TCC537CT (4224C>T), ACG538ACC (4227G>C), GGA539GCC (4230A>C), CAG540CAA (4233G>A), AGC542ACC (4238G>C), ATC545ATT (4248C>T), GAG546GAA (4251G>A), GAG548GAA (4257G>A), CTG549CTC (4260G>C), CAG550AAG (4261C>A), AAC553TCT (4270A>T 4271A>C), AGC554TCT (4273A>T 4274G>C), CCC559CCA (4290C>A), GAA560GAG (4293A>G), ATT561GTC (4294A>G 4296T>C), TAC563TCT (4301A>T 4302C>T), ACT564ACC (4305T>C), TCC565GCC (4306T>G)								
Protein mutations:									
	M33L (2910A>C), D35N (2911G>A), R36T (2915G>C), T40K (2927C>A 2928C>G), Q57A (2977C>A 2978A>C 2979A>C), S59K (2983T>A 2984C>A 2985C>G), Q61del (2989_2991delCAA), S62G (2992T>C 2993C>G), G63S (2995G>A 2997A>C), A64T (2998G>A), S65T (3001T>A 3003G>C), D67N (3007G>A), N68D (3010A>G 3012T>C), F71Y (3020T>A 3021T>C), R108S (3132A>C 3133T>C), Q123T (3175C>A 3176A>C), N124T (3179A>C 3180T>G), V138I (3220G>A 3222T>C), T142A (3232A>C 3234T>G), S145N (3247A>C 3248C>G), S154N (3268A>C 3269C>A 3270G>C), H156S (3274C>A 3275A>C 3276T>C), Q157E (3277C>A 3278C>G 3279T>C), L176C (3334C>A 3335T>G), N180D (3346A>C 3348C>T), S182T (3353G>C 3354T>A), A184T (3358G>A 3360A>C), D215N (3451G>A), Y222F (3473A>C 3477T>G), A223T (3475G>A 3477T>G), R187K (3367C>A 3368G>A 3369C>A), R187K (3367G>A 3368G>C 3369C>A), T223T (3475G>A 3477T>G), S225N (3482G>A), Q226R (3484C>A 3485A>G 3486G>A), S250T (3557G>C), T252N (3563G>A), T253A (3568G>A), Q255N (3571G>A 3573G>C), S256A (3574G>A 3576A>C), R257I (3575G>A 3576G>C), L258P (3581T>C 3582T>C), Q259K (3583G>A 3591T>C), S261D (3589G>A 3590C>A 35								

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	ATG33CTG (2905A>C), GGC34GGA (2910C>A), GAC35AAC (2911G>A), AGA36ACA (2915G>C), ATC38ATT (2922C>T), ACC40AAG (2927C>A 2928C>G), AGC41TCC (2929A>T 2930G>C), ACC42ACA (2934C>A), CGA43AGA (2935C>A), GCC46GCA (2946C>A), CTG47TTG (2947C>T), CTC54CTT (2970C>T), AAS56AAG (2976A>G), CAA57GCC (2977C>G 2978A>C 2979A>C), ATT58ATC (2982T>C), TCC59AAG (2983T>A 2984C>A 2985C>G), AGC60TCC (2986A>T 2987G>C), CAA61del (2989_2991delCAA), TCA62GG (2992T>G 2993C>G), GGA63AGC (2995G>A 2997A>C), GCC64ACC (2998G>A), TCG65ACC (3001T>A 3003G>C), GAC67AAC (3007G>A), AAT68GAC (3010A>G 3012T>C), TTT71TAC (3020T>A 3021T>C), GGC72GA (3024C>A), CCT76CCC (3036T>C), TAAT79TAC (3045T>C), GAC81GAT (3051C>T), CGT92AGA (3082C>A 3084T>A), CAA95CAG (3093A>G), AGA96CGA (3094A>C), CGA105AGA (3121C>A), AA107AAA (3129G>A), AGA108AGC (3132A>C), TTC114TTT (3141C>T), TTT114TAC (3150T>C), CAG123ACG (3175C>A 3176A>C), AAT124AGC (3179A>C 3180T>G), GGT126GGC (3186T>C), ATT127ACA (3189G>A), ACG129AAC (3195G>C), ATT130ATC (3198T>C), ACG137ACC (3219G>C), GTT138ATC (3220C>A 3222T>C), ACT142GGC (3232A>C), GAG145AAC (3243G>C), AAC146CAT (3244T>C) 3246C>T), CAG147CAC (3249G>C), CTC148TTA (3250C>T 3252C>A), CTC149GCC (3255G>C), CTC152CTA (3264C>A), TCG154AAC (3268T>A 3269C>A 3270G>C), GCG155GCC (3273G>C), CAT156AGC (3274C>A 3275A>G 3276T>C), CTC160CTA (3288B>A), CGC162CCC (3294G>C), TTC163TTT (3297C>T), GCA165GGC (3303A>G), TTC168TTT (3312C>T), CCA171CCG (3321A>G), TAT173TAC (3327T>C), GGA174GGG (3330A>G), TAC175TAT (3333C>T), CTC176TGC (3334C>T 3335T>G), CTG178CTC (3342G>C), AAC180GAT (3346A>G 3348C>T), GGG181GGA (3351G>A), AGT182ACA (3353G>C 3354T>A), GCA184ACC (3358G>A 3360A>C), GTA185ATG (3361G>A 3363A>G), CGC187AAA (3367G>A 3368G>A 3369G>C), TCT188AGC (3370T>A 3371C>G 3372T>C), TCA189TCC (3375A>C), CTG193TCC (3385C>T), GAG194GAA (3390G>A), TT196TTC (3396T>C), CCT197CCG (3397T>C), TCT198AGC (3400T>A 3401C>G 3402T>C), CGT202CGA (3414T>A), ACC203ACT (3417C>T), ACC208TCC (3420A>T), ACT212CAC (3442A>C 3443C>A 3444T>G), GAC220TCC (3451G>A), AGC220TCC (3468C>G), TAC222TTC (3473A>T), GCT223ACG (3475G>A 3477T>C), AGC225AAC (3482G>A), CAG226AGA (3484C>A 3485A>G 3486G>A), AGT227AGC (3489T>C), CGT230AGA (3496C>A 3498T>A), CCT234CCC (3510T>C), ATC236GTG (3513T>C), CTC240CTC (3528G>C), TAT241TGC (3530A>C 3531T>G), AGC244TCT (3538A>T 3539G>C 3540C>T), AGA245GGA (3541A>G), ACA246ATC (3645C>T 3546A>C), AAC247, CCA249del (3547_3555delAACACTCA), AGT250A (3557G>C), ACC252AAC (3563C>A), ACC253GCA (3565A>G 3567C>A), AGC254GCG (3568A>G), CAG255AAC (3571C>A 3573G>C), TCA256GCC (3574T>G 3576A>C), AGG257ATT (3578G>T 3579G>T), CTT258CCC (3581T>C 3582T>C), CAG259AAC (3583C>A), TCA261GAC (35891>G 3590C>A 3591H>C), CAG262AA (3592C>A 3594G>A), GGA264AGC (3598G>A 3600A>C), GCG265AAA (3601G>A 3602C>A 3603G>A), AGT266GAC (3604A>C 3605G>A 3606T>C), GAC267AAA (3607G>A 3609C>A), ATT268CT (3610A>C 3611T>C), CCG269TCC (3613C>T 3614G>C 3615G>C), GAC270CGC (3616G>C), TCT272TAC (3623C>A 3624T>C), AGG273CGC (3625A>C 3627G>C), AAC274ATA (3630C>T), TGG275TT (3632G>T 3633G>T), CTT276ATG (3634C>A 3636T>C), GG278GGG (3642A>C), CCC279CCG (3645C>A), TAC281ATG (3649T>A 3650A>T 3651C>G), CCG282CGT (3654C>T), CGA285GTC (3661C>G 3662G>T 3663A>C), GTA286ATA (3664G>A), TCA287AGT (3667T>A 3668A>T), AAG288ACA (3671A>C 3672G>A), ACA289ATC (3674C>T 3675A>C), TCT290GGC (3676T>G 3677C>G 3678T>C), GCG291TCT (3679G>T 3681G>T), AGT292CAC (3682G>C 3684T>G), AAC293AAAT (3687C>T), AAC295TTG (3691A>T 3692A>T 3693C>G), AGT296GCA (3694A>G 3695G>C 3696T>A), GAA297GGC (3698A>G), TAC298GGC (3700T>G 3701A>G), TCG299GAC (3703T>G 3704A>C 3705G>C), ACT301AGC (3703C>G 3711T>C), GAG302TCT (3712G>T 3713G>C 3714A>T), GCT303GCC (3717T>A), ACC304AAC (3723G>A), TAC306GCT (3724T>G 3725A>C 3726C>G), CAC307TCC (3727C>T 3728A>C 3729C>G), CTC308ATT (3730C>A 3732C>T), AAT309GCC (3733A>C 3734A>C 3735T>C), GGC310GGC (3738C>G), AGA311GCT (3739A>C 3741A>G), TAC312TCC (3742C>T 3743A>C), TCT313CAT (3745T>C 3746C>A), CTG314GGA (3748C>G 3749T>G 3750G>A), TAC315ATC (3751G>A 3753G>C), AAT316ATG (3755A>T 3757G>C), CGC317CCA (3759G>A), GGC318VGA (3762G>C), CCC319CTC (3765G>T), CGC320GCT (3768C>T), ATG321CAA (3769A>C 3770T>A 3771G>A), GCA322ACA (3772G>A), AGC323AGT (3777C>T), CAC324TGC (3778C>T 3779A>C 3780C>G), AAG325AAA (3783G>A), GAC326GTG (3785A>T 3786C>G), GAA328GAC (3792A>C), GAA329ACC (3793G>A 3794A>C), AGG330AAC (3798G>C), TTT331CAG (3799T>C 3800T>A 3801T>G), TTT332TTC (3804T>C), CCT333CCG (3807T>G), GAG334CTT (3809A>C 3810T>G), ACC335TCT (3811A>C 3812G>C 3813C>T), GGG336GGA (3816G>A), GTT337GAC (3818T>A 3819T>G), CTC338CTG (3822C>G), ATC339GTC (3823A>G), GGG341CCTC (3829G>C 3830G>C 3831G>C), CAA343CAC (3837A>C), GGC344AAC (3838G>A 3839G>A), CAC348ACC (3852A>C), AAT349TCT (3853A>T 3854A>C), CTG350GCC (3857T>C 3858G>C), GAC351AGT (3859G>A 3860A>C 3861C>T), ATT352TTC (3862A>T 3864T>C), GAA353AAC (3865G>A 3867A>C), AAC358ACT (3869A>G 3870G>C), ATT357ATC (3879T>C), GAC358ACC (3882A>C), GAC359AAT (3883A>G 3885C>T), GAG361AAT (3889G>A 3891G>T), ATT363ATA (3897C>A), AGG364CGT (3898G>A 3900G>T), ACA365CAG (3901A>C 3902C>A 3903A>G), ACC366ACA (3906C>A), CCC368CCT (3912C>T), GTG369ATC (3913G>A 3915G>C), GCT370AGC (3916G>A 3917C>G 3918T>C), ACG371TAC (3919A>T 3920C>A 3921G>C), GAG372GGA (3923A>G 3924G>A), CAG373TGC (3925C>T 3926A>C), TAT374GTC (3928T>G 3929A>C 3930T>C), GGT375TAC (3931G>A 3932G>A 3933T>C), TCT376ACA (3934T>A 3936T>A), GTA377TGT (3939A>C), TCT378GCC (3940T>G 3942T>G), ACC379TCC (3943A>T), CTC381ATA (3949C>A 3950T>A 3951C>T), CAG382CAA (3954G>A), AGA383TCA (3955A>C 3956G>C), GGC384CCA (3958G>A 3959G>C 3960C>A), AAC385ACT (3962A>C 3963C>T), AGA386AAC (3965G>A 3966A>C), CAA387GTT (3967C>G 3968A>C 3969A>T), GCA388GCC (3970G>C 3972A>C), GCT389AGC (3973G>A 3975T>G), ACC390ACT (3978C>T), GCA391GAA (3980C>A), GTC393TTG (3985G>T 3987C>G), AGC395GCT (3991A>G 3993A>T), CAA396CTG (3995A>T 3996A>G), GTT398GTC (4002C>T), CTT399AGT (4003C>A 4005G>T), AGA407CCG (4027A>C 4029A>C), GTG409GTT (4035G>T), CTT411TA (4039C>T 4041T>A), CAG412CAA (4040G>A), GG413GGA (4047G>A), CCC414CAG (4049C>A 4050C>G), F46S (4065T>C), H47Q (4069C>G), T48K (4071C>A), T50M (4077C>T), D51E (4081C>G), I52R (4082A>C 4083T>G), F53S (4086T>C), T54I (4089C>T), P55L (4092C>T), P57L (4098C>T), V60G (4096T>C), CAC421GAA (4096C>G 4071C>A), GAC423GAT (4077C>T), CAT425GCG (4081C>G 4082A>C 4083T>G), TTT426TCT (4086T>C), CAC427CAT (4089C>T), CCC428CT (4092C>T), CCA430CCT (4098C>T), TGT433GGG (4101T>G), CTC435TTT (4113C>A), CTC437CTG (4114T>G), AAC439AAC (4123C>A), CCT441CCA (4131T>A), CTC442TAC (4131T>A), CTC443AAC (4132C>A), CTC444AAC (4133C>A), CTC445AAC (4134C>A), CTC446AAC (4135C>A), CTC447AAC (4136C>A), CTC448AAC (4137C>A), CTC449AAC (4138C>A), CTC450CCT (4158G>T), GT451GTT (4161A>T), GCG453GCA (4167G>A), AAT454AAC (4170T>C), CCT455GCC (4174T>C), AGT460AGC (4188T>C), GCG461CCA (4189G>C), AGC462AAT (4192G>A), CTC464CTG (4193A>T), TTT464CTG (4198T>C 4200T>G), GCT465AAT (4201G>A 4202C>A), ACA469AAT (4215A>T), CAC470ACA (4218G>A), TCC472TCT (4224C>T), AGC473ACC (4227G>C), GGA474GTC (4230A>C), AGC477ACC (4238G>A), ATC480ATT (4248C>T), GAG481GAA (4251G>A), GAG483GAA (4257G>A), CTG484CTC (4260G>C 4261C>A), S108N (4251G>A), S110N (4257G>A), C111S (4260G>C 4261C>A), K114N (4270A>T), T115L (4271A>C 4272C>T 4273A>T), A116P (4274G>C), P121Q (4290C>A), K122R (4293A>G 4294A>G), F123S (4296T>C), T125L (4301A>T 4302C>T), L126P (4305T>C 4306T>G)								
X_gene	1	131	84.0%	306	32.3%	131 (100%)	53 (40.5%)	0/0/0/0	3
Protein mutations:	M1P (3929A>C 3930T>C 3931G>T), V2T (3932G>A 3933T>C 3934T>A), L3Q (3936T>A), Y4S (3939A>C 3940T>G), L5R (3942T>G 3943A>T), S8I (3950T>A 3951C>T), R9N (3954G>A 3955A>T), E10H (3956G>C 3958G>C), A11Q (3959G>C 3960C>A), T12L (3962A>C 3963C>T), D13T (3965G>A 3966A>C 3967C>G), K14V (3968A>G 3969A>T 3970G>C), Q15P (3972A>C 3973G>A), L16R (3975T>C), P17L (3978C>T), Q18K (3980C>A), M19I (3985G>T, S20* (3987C>G), H22L (3993A>T), K23W (3995A>T 3996A>G), F25S (4002T>C 4003C>A), F26C (4005T>C), E34A (4029A>C), C36F (4035G>C), F38Y (4041T>C), A40D (4044G>A), G40D (4047G>A), P41R (4049C>A 4050C>G), F46S (4065T>C), H47Q (4069C>G), T48K (4071C>A), T50M (4077C>T), D51E (4081C>G), I52R (4082A>C 4083T>G), F53S (4086T>C), T54I (4087C>T), P55L (4092C>T), P57L (4098C>T), V60G (4096T>C), CAC421GAA (4096C>G 4071C>A), GAC423GAT (4077C>T), CAT425GCG (4081C>G 4082A>C 4083T>G), TTT426TCT (4086T>C), CAC427CAT (4089C>T), CCC428CT (4092C>T), CCA430CCT (4098C>T 4099T>C), AGC431AAC (4101C>A 4102C>T), AGC432GAC (4103C>A 4104C>T), AGC433AAC (4105C>A 4106C>T), AGC434AAC (4107C>A 4108C>T), AGC435AAC (4109C>A 4110C>T), AGC436AAC (4111C>A 4112C>T), AGC437AAC (4113C>A 4114C>T), AGC438AAC (4115C>A 4116C>T), AGC439AAC (4117C>A 4118C>T), AGC440AAC (4119C>A 4120C>T), AGC441AAC (4121C>A 4122C>T), AGC442AAC (4123C>A 4124C>T), AGC443AAC (4125C>A 4126C>T), AGC444AAC (4127C>A 4128C>T), AGC445AAC (4129C>A 4130C>T), AGC446AAC (4131C>A 4132C>T), AGC447AAC (4133C>A 4134C>T), AGC448AAC (4135C>A 4136C>T), AGC449AAC (4137C>A 4138C>T), AGC450CCT (4158G>T), CTC451GTT (4161A>T), GCG453GCA (4167G>A), AAT454AAC (4170T>C), CCT455GCC (4174T>C), AGT460AGC (4188T>C), GCG461CCA (4189G>C), AGC462AAT (4192G>A), CTC464CTG (4193A>T), TTT464CTG (4198T>C 4200T>G), GCT465AAT (4201G>A 4202C>A), ACA469AAT (4215A>T), CAC470ACA (4218G>A), TCC472TCT (4224C>T), AGC473ACC (4227G>C), GGA474GTC (4230A>C), ATC477ACC (4238G>A), ATC480ATT (4248C>T), GAG481GAA (4251G>A), GAG483GAA (4257G>A), CTG484CTC (4260G>C 4261C>A), AAA114AAT (4270A>T), ACA115CTT (4271A>C 4272C>T 4273A>T), GCA116CCA (4274G>C), CCG121CAG (4290C>A), AAA122AGG (4293A>G 4294A>G), TTC123TCC (4296T>C), ACA125TTA (4301A>T 4302C>T), CTT126CCG (4305T>C)								
Codon mutations:	ATG1CCT (3929A>C 3930T>C 3931G>T), GGT2ACA (3932G>A 3933T>C 3934T>A), CTG3CAG (3936T>A), L5R (3942T>G 3943A>T), S8I (3950T>A 3951C>T), R9N (3954G>A 3955A>T), E10H (3956G>C 3958G>C), A11Q (3959G>C 3960C>A), T12L (3962A>C 3963C>T), D13T (3965G>A 3966A>C 3967C>G), K14V (3968A>G 3969A>T 3970G>C), Q15P (3972A>C 3973G>A), L16R (3975T>C), P17L (3978C>T), Q18K (3980C>A), M19I (3985G>T, S20* (3987C>G), H22L (3993A>T), K23W (3995A>T 3996A>G), F25S (4002T>C 4003C>A), F26C (4005T>C), E34A (4029A>C), C36F (4035G>C), F38Y (4041T>C), A40D (4044G>A), G40D (4047G>A), P41R (4049C>A 4050C>G), F46S (4065T>C), H47Q (4069C>G), T48K (4071C>A), T50M (4077C>T), D51E (4081C>G), I52R (4082A>C 4083T>G), F53S (4086T>C), T54I (4087C>T), P55L (4092C>T), P57L (4098C>T), V60G (4096T>C), CAC421GAA (4096C>G 4071C>A), GAC423GAT (4077C>T), CAT425GCG (4081C>G 4082A>C 4083T>G), TTT426TCT (4086T>C), CAC427CAT (4089C>T), CCC428CT (4092C>T), CCA430CCT (4098C>T 4099T>C), AGC431AAC (4101C>A 4102C>T), AGC432GAC (4103C>A 4104C>T), AGC433AAC (4105C>A 4106C>T), AGC434AAC (4107C>A 4108C>T), AGC435AAC (4109C>A 4110C>T), AGC436AAC (4111C>A 4112C>T), AGC437AAC (4113C>A 4114C>T), AGC438AAC (4115C>A 4116C>T), AGC439AAC (4117C>A 4118C>T), AGC440AAC (4119C>A 4120C>T), AGC441AAC (4121C>A 4122C>T), AGC442AAC (4123C>A 4124C>T), AGC443AAC (4125C>A 4126C>T), AGC444AAC (4127C>A 4128C>T), AGC445AAC (4129C>A 4130C>T), AGC446AAC (4131C>A 4132C>T), AGC447AAC (4133C>A 4134C>T), AGC448AAC (4135C>A 4136C>T), AGC449AAC (4137C>A 4138C>T), AGC450CCT (4158G>T), CTC451GTT (4161A>T), GCG453GCA (4167G>A), AAT454AAC (4170T>C), CCT455GCC (4174T>C), AGT460AGC (4188T>C), GCG461CCA (4189G>C), AGC462AAT (4192G>A), CTC464CTG (4193A>T), TTT464CTG (4198T>C 4200T>G), GCT465AAT (4201G>A 4202C>A), ACA469AAT (4215A>T), CAC470ACA (4218G>A), TCC472TCT (4224C>T), AGC473ACC (4227G>C), GGA474GTC (4230A>C), ATC477ACC (4238G>A), ATC480ATT (4248C>T), GAG481GAA (4251G>A), GAG483GAA (4257G>A), CTG484CTC (4260G>C 4261C>A), AAA114AAT (4270A>T), ACA115CTT (4271A>C 4272C>T 4273A>T), GCA116CCA (4274G>C), CCG121CAG (4290C>A), AAA122AGG (4293A>G 4294A>G), TTC123TCC (4296T>C), ACA125TTA (4301A>T 4302C>T), CTT126CCG (4305T>C)								
Proteins									
Rep 68 protein (YP_680422.1)	4	479	82.9%	1950	62.4%	442 (99.3%)	276 (62.0%)	0/3/1/1	2

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
Protein mutations:									
	I7V (339A>G 341T>G), V8I (342G>A 344G>A), I9V (345A>G 347T>C), K10R (349A>G 350G>A), V11I (351G>A 353C>T), L15I (363C>A 365T>C), D16E (368C>G), S23P (387T>C), S25T (394G>C 395C>G), N28D (402A>G), V30I (408G>A 410G>A), E32G (415A>G 416G>C), P39E (435C>G 436C>A 437A>C), D40W (438G>T 439A>G 440T>G), L45A (453C>G 454T>C), N46T (457A>C 458T>C), E49D (467G>C), Q50H (470G>C), A51P (471G>C 473A>G), P52Q (475C>A 476C>G), V55I (483G>A 485G>C), L59V (495C>G 497G>A), D62E (506C>G), T65N (514C>A 515G>C), R68Q (523G>A 524C>G), R69K (525C>A 526G>A 527T>G), V70I (528G>A 530G>T), S71V (531A>G 532G>T 533T>C), A73S (537G>T 539C>T), P74del (540_542delICCG), A76P (546G>C 548C>G), L77Q (550T>A 551T>G), F78Y (553T>A 554C>T), E86D (578G>C), S87R (581C>A), M91L (591A>C), V93T (597G>A 598T>C), V100M (618G>A), F108Y (643T>A), S110N (649G>A 650T>C), R113K (657C>A 658G>A 659C>G), E114D (662A>C), I117R (660A>C 670T>G 671T>C), Q118A (672C>G 673A>C), R119Q (675A>C 676G>A 677A>G), I124V (690A>G 692C>G), T127D (699A>C 700C>A 701T>G), L128I (702T>A 704G>T), N130D (708A>G 710C>T), F132M (714T>A 716C>G), I135S (724C>G 725A>T), R138K (733G>A), N139T (736A>G 737T>G), G140del (738_740delICCG), G143A (748G>C), G144del (750_752delICCG), K146R (756A>C 757A>G), V147I (759G>A 761G>T), V148R (762G>C 763T>G 764G>A), E150K (768G>A), C151G (771T>G 773C>G), N155A (783A>G 784A>C 785T>C), T161R (801A>C 802C>G), Q174E (840C>G), L176I (846T>A), S177R (851C>G), C179T (855T>A 856G>C), E226D (867A>G 868T>C), T183E (867A>G 868C>A), K186S (877A>G 878A>T), A190E (889C>A), Q191E (891C>G), E226D (905G>T), G229S (1005G>A 1007G>C), D233E (1019C>G), K234R (1020A>C 1021A>G), K240R (1038A>C 1039A>G), Q241E (1041C>G), Q244R (1051A>G 1052G>C), A248D (1063C>A), I251L (1071A>C 1073C>G), F253H (1077T>C 1078T>A), A256T (1086G>A 1088C>G), N258A (1092A>G 1093A>C), S259G (1095T>G 1096C>G 1097G>A), Q262S (1104C>T 1105A>C 1106A>G), D268G (1123A>G 1124C>A), K272V (1134A>G 1135A>T), I273E (1137A>G 1138T>C), S275L (1143A>C 1144G>T 1145C>T), K278E (1152A>G), T279L (1155A>T 1156C>T 1157C>G), P281E (1161C>G 1162C>A 1163C>A), Y283C (1168A>G), V285T (1173G>A 1174T>C 1175G>T), Q287K (1179C>A), Q288L (1183A>T 1184G>T), S294T (1200T>A 1202C>A), S295K (1204G>A 1205C>G), N296D (1206A>G 1208T>C), R297K (1209C>A 1210G>A 1211G>A), Q298Y (1212A>G 1214T>G), Y299F (1216A>T 1217T>C), K300Q (1218A>C 1220A>G), I301L (1221A>C 1223T>G), L302I (1224T>A 1226G>T), E303S (1227G>T 1228A>C 1229A>C), L304I (1230C>A 1232A>C), N305H (1233A>C 1235C>T), S306K (1236G>A 1237G>A), Y307C (1240A>G), D308N (1242G>A), Q310L (1248C>T 1249A>T 1250A>G), Y311L (1251T>C 1252A>T), S314N (1260T>A 1261C>A), V315L (1263G>C 1265G>C), F316W (1267T>G 1268T>G), L317V (1269C>G), G318R (1272G>A 1274A>G), A320C (1278G>T 1279C>G 1280C>T), T321R (1281A>C 1282C>G 1283G>C), K322R (1284A>C 1285A>G 1286A>G), G325N (1293G>A 1294G>A), T329P (1305A>C), W331G (1311T>G), F333Y (1318T>A 1319T>C), G334R (1320G>A 1322G>A), H349D (1367C>A), S350A (1368A>G), A384N (1470G>A 1471C>A 1472C>T), K398W (1512A>C 1513A>G), S407G (1519T>G 1540C>G), A409Y (1546C>T 1547C>A), I411V (1551A>C 1553A>T), V418I (1572G>A 1574C>A), T422M (1585C>T 1586C>G), C425Y (1594G>A 1595C>T), A426M (1596G>A 1597C>T 1598C>G), I428V (1602A>G 1604T>G), D429N (1605G>A), N431K (1613C>G), S432' (1615C>G), T433A (1649C>A), K447M (1660A>T 1661A>G), E449K (1665G>A 1667A>G), L450S (1668C>A 1669T>G), A461I (1701G>A 1703C>A), R462P (1704A>C 1706C>T), Q464W (1710C>T 1711A>G), V466F (1716G>T), K467R (1720A>G), D468* (1722G>T 1724C>A), R471K (1731C>A 1732G>A), A473G (1738C>G 1739A>C), K474T (1741A>C 1742G>C), H476N (1746C>A)								
	TTT4TTC (332T>C), ATT7GTG (339A>G 341T>G), GTG8ATA (342G>A 344G>A), ATT9GTC (345A>G 347T>C), AAG10AGA (349A>G 350G>A), GTC11ATT (351G>A 353C>T), CCC12CTC (356C>T), AGC13TCC (357A>T 358C>G), CTT15ATC (363C>A 365C>T), GAC16AG (368C>G), CTG19CTA (377G>A), TCT23CCG (380C>G), TCT27CCG (387T>C), AGC25ACG (394G>A 395C>G), TTT26TTC (398T>C), AAC28GAC (402A>G), GTG30ATA (408G>A 410G>A), GGC31GCC (413C>G), GAG32GGC (415A>G 416G>C), GAA34GAG (422A>G), TTG73CTG (429T>G), CCG38CCC (434G>C), CCA39GAG (435C>G 436C>A 437A>G), GAT40TG (438G>T 439A>G 440T>G), TCT41AGC (441T>A 442C>G 443T>C), GAT44GAC (452T>C), CTG45CG (453C>G 454T>C), AAT46AGC (455A>C 457T>C), ATT48ATC (464T>C), GAG49GAC (467G>C), CAG50CAC (470G>C), GC515CCG (471G>C 473A>G), CCG52CAG (475C>A 476C>G), ACC53CAG (480C>G), GAC56AAC (514C>A 515G>C), GAA66GAG (518A>G), CGC68GAC (523G>A 524C>G), CGT59GTA (495C>G 497G>A), CCC61AGG (501A>C 503C>G), GAC62GAG (506C>G), ACC65AAC (514C>A 515G>C), GAA66GAG (518A>G), CGC68GAC (523G>A 524C>G), CGT69AG (525C>A 526G>A 527T>G), GTG70ATT (528G>A 530G>T), AGT71GTC (531A>G 532G>T 533T>C), AAG72AA (536G>A), GGC73CTT (537G>T 539C>T), CCG74del (540_542delICCG), GCC76CCG (546G>C 548C>G), CTT77CAQ (550T>A 551T>G), T77T78AT (553T>A 554C>T), T77T79TQ (557T>A), GTG78ATG (560G>T), CTC78CTG (561G>A), AAC81CAG (563A>G), GAG85GGG (575A>G), GAG86GAC (578G>C), AGC87AGA (581C>A), TAC88TAT (584C>T), ATG91CTG (591A>C), GTG93AGC (597G>A 598T>C), CT94CTG (602C>A), GAG96AG (608A>G), GGG99GGC (617G>C), GTG100ATG (618G>A), AAC101AGA (623A>G), T105CTG (633T>C), GGA106GGC (638A>G), T108TAC (643T>A), AGT110AC (649G>A 650T>C), ATT112ATC (656T>C), CGC113AG (657C>A 658G>A 659G>C), GAA114AGC (662A>G), CTG116TTG (666C>T), ATT117CGC (669A>C 670T>G 671T>C), CAG118CCG (672C>G 673A>C), AGA119AGC (675A>C 676G>A), AAC130AG (708A>G 710C>G), TCC132ATG (714T>A 716C>G), CGC133GCC (719G>C), GTC134TG (722C>G), ACA135AGT (724C>G 725A>T), ACC137ATA (731C>A), AGA138AAA (733G>A), AAC139AGC (736A>C 737T>G), GGC140del (738_740delICCG), GGC141GCC (743C>G), GGC143GCC (748G>C), GGG144del (750_752delICCG), AAC145ACG (755C>T), AAC146CCG (756A>C 757C>G), GTC147AT (759G>A 761G>T), GTG148CGA (762G>A 763T>G 764G>A), GAT149GAC (767T>C), GAG150AG (768G>A), TGC151GGG (771T>G 773C>G), AAT155CC (783A>G 784A>C 785T>C), TTG157CTG (779T>C), CTG158CTG (794C>G), AAA160AG (800A>G), ACC161CGC (801A>C 802C>G), AAC162CA (806G>A), CTC163CTG (807G>C), GTC163CTG (809G>C), AAC164GGC (816G>A), TCC163CTG (816G>C), AAC165GGC (817G>C), AAC166GGC (818G>C), AAC167GGC (819G>C), AAC168GGC (820G>C), AAC169GGC (821G>C), AAC170GGC (822G>C), AAC171GGC (823G>C), AAC172GGC (824G>C), AAC173GGC (825G>C), AAC174GGC (826G>C), AAC175GGC (827G>C), AAC176GGC (828G>C), AAC177GGC (829G>C), AAC178GGC (830G>C), AAC179GGC (831G>C), AAC180GGC (832G>C), AAC181GGC (833G>C), AAC182GGC (834G>C), AAC183GGC (835G>C), AAC184GGC (836G>C), AAC185GGC (837G>C), AAC186GGC (838G>C), AAC187GGC (839G>C), AAC188GGC (840G>C), AAC189GGC (841G>C), AAC190GGC (842G>C), AAC191GGC (843G>C), AAC192GGC (844G>C), AAC193GGC (845G>C), AAC194GGC (846G>C), AAC195GGC (847G>C), AAC196GGC (848G>C), AAC197GGC (849G>C), AAC198GGC (850G>C), AAC199GGC (851G>C), AAC200GGC (852G>C), AAC201GGC (853G>C), AAC202GGC (854G>C), AAC203GGC (855G>C), AAC204GGC (856G>C), AAC205GGC (857G>C), AAC206GGC (858G>C), AAC207GGC (859G>C), AAC208GGC (860G>C), AAC209GGC (861G>C), AAC210GGC (862G>C), AAC211GGC (863G>C), AAC212GGC (864G>C), AAC213GGC (865G>C), AAC214GGC (866G>C), AAC215GGC (867G>C), AAC216GGC (868G>C), AAC217GGC (869G>C), AAC218GGC (870G>C), AAC219GGC (871G>C), AAC220GGC (872G>C), AAC221GGC (873G>C), AAC222GGC (874G>C), AAC223GGC (875G>C), AAC224GGC (876G>C), AAC225GGC (877G>C), AAC226GGC (878G>C), AAC227GGC (879G>C), AAC228GGC (880G>C), AAC229GGC (881G>C), AAC230GGC (882G>C), AAC231GGC (883G>C), AAC232GGC (884G>C), AAC233GGC (885G>C), AAC234GGC (886G>C), AAC235GGC (887G>C), AAC236GGC (888G>C), AAC237GGC (889G>C), AAC238GGC (890G>C), AAC239GGC (891G>C), AAC240GGC (892G>C), AAC241GGC (893G>C), AAC242GGC (894G>C), AAC243GGC (895G>C), AAC244GGC (896G>C), AAC245GGC (897G>C), AAC246GGC (898G>C), AAC247GGC (899G>C), AAC248GGC (900G>C), AAC249GGC (901G>C), AAC250GGC (902G>C), AAC251GGC (903G>C), AAC252GGC (904G>C), AAC253GGC (905G>C), AAC254GGC (906G>C), AAC255GGC (907G>C), AAC256GGC (908G>C), AAC257GGC (909G>C), AAC258GGC (910G>C), AAC259GGC (911G>C), AAC260GGC (912G>C), AAC261GGC (913G>C), AAC262GGC (914G>C), AAC263GGC (915G>C), AAC264GGC (916G>C), AAC265GGC (917G>C), AAC266GGC (918G>C), AAC267GGC (919G>C), AAC268GGC (920G>C), AAC269GGC (921G>C), AAC270GGC (922G>C), AAC271GGC (923G>C), AAC272GGC (924G>C), AAC273GGC (925G>C), AAC274GGC (926G>C), AAC275GGC (927G>C), AAC276GGC (928G>C), AAC277GGC (929G>C), AAC278GGC (930G>C), AAC279GGC (931G>C), AAC280GGC (932G>C), AAC281GGC (933G>C), AAC282GGC (934G>C), AAC283GGC (935G>C), AAC284GGC (936G>C), AAC285GGC (937G>C), AAC286GGC (938G>C), AAC287GGC (939G>C), AAC288GGC (940G>C), AAC289GGC (941G>C), AAC290GGC (942G>C), AAC291GGC (943G>C), AAC292GGC (944G>C), AAC293GGC (945G>C), AAC294GGC (946G>C), AAC295GGC (947G>C), AAC296GGC (948G>C), AAC297GGC (949G>C), AAC298GGC (950G>C), AAC299GGC (951G>C), AAC300GGC (952G>C), AAC301GGC (953G>C), AAC302GGC (954G>C), AAC303GGC (955G>C), AAC304GGC (956G>C), AAC305GGC (957G>C), AAC306GGC (958G>C), AAC307GGC (959G>C), AAC308GGC (960G>C), AAC309GGC (961G>C), AAC310GGC (962G>C), AAC311GGC (963G>C), AAC312GGC (964G>C), AAC313GGC (965G>C), AAC314GGC (966G>C), AAC315GGC (967G>C), AAC316GGC (968G>C), AAC317GGC (969G>C), AAC318GGC (970G>C), AAC319GGC (971G>C), AAC320GGC (972G>C), AAC321GGC (973G>C), AAC322GGC (974G>C), AAC323GGC (975G>C), AAC324GGC (976G>C), AAC325GGC (977G>C), AAC326GGC (978G>C), AAC327GGC (979G>C), AAC328GGC (980G>C), AAC329GGC (981G>C), AAC330GGC (982G>C), AAC331GGC (983G>C), AAC332GGC (984G>C), AAC333GGC (985G>C), AAC334GGC (986G>C), AAC335GGC (987G>C), AAC336GGC (988G>C), AAC337GGC (989G>C), AAC338GGC (990G>C), AAC339GGC (991G>C), AAC340GGC (992G>C), AAC341GGC (993G>C), AAC342GGC (994G>C), AAC343GGC (995G>C), AAC344GGC (996G>C), AAC345GGC (997G>C), AAC346GGC (998G>C), AAC347GGC (999G>C), AAC348GGC (990G>C), AAC349GGC (991G>C), AAC350GGC (992G>C), AAC351GGC (993G>C), AAC352GGC (994G>C), AAC353GGC (995G>C), AAC354GGC (996G>C), AAC355GGC (997G>C), AAC356GGC (998G>C), AAC357GGC (999G>C), AAC358GGC (990G>C), AAC359GGC (991G>C), AAC360GGC (992G>C), AAC361GGC (993G>C), AAC362GGC (994G>C), AAC363GGC (995G>C), AAC364GGC (996G>C), AAC365GGC (997G>C), AAC366GGC (998G>C), AAC367GGC (999G>C), AAC368GGC (990G>C), AAC369GGC (991G>C), AAC370GGC (992G>C), AAC371GGC (993G>C), AAC372GGC (994G>C), AAC373GGC (995G>C), AAC374GGC (996G>C), AAC375GGC (997G>C), AAC376GGC (998G>C), AAC377GGC (999G>C), AAC378GGC (990G>C), AAC379GGC (991G>C), AAC380GGC (992G>C), AAC381GGC (993G>C), AAC382GGC (994G>C), AAC383GGC (995G>C), AAC384GGC (996G>C), AAC385GGC (997G>C), AAC386GGC (998G>C), AAC387GGC (999G>C), AAC388GGC (990G>C), AAC389GGC (991G>C), AAC390GGC (992G>C), AAC391GGC (993G>C), AAC392GGC (994G>C), AAC393GGC (995G>C), AAC394GGC (996G>C), AAC395GGC (997G>C), AAC396GGC (998G>C), AAC397GGC (999G>C), AAC398GGC (990G>C), AAC399GGC (991G>C), AAC400GGC (992G>C), AAC401GGC (993G>C), AAC402GGC (994G>C), AAC403GGC (995G>C), AAC404GGC (996G>C), AAC405GGC (997G>C), AAC406GGC (998G>C), AAC407GGC (999G>C), AAC408GGC (990G>C), AAC409GGC (991G>C), AAC410GGC (992G>C), AAC411GGC (993G>C), AAC412GGC (994G>C), AAC413GGC (995G>C), AAC414GGC (996G>C), AAC415GGC (997G>C), AAC416GGC (998G>C), AAC417GGC (999G>C), AAC418GGC (990G>C), AAC419GGC (991G>C), AAC420GGC (992G>C), AAC421GGC (993G>C), AAC422GGC (994G>C), AAC423GGC (995G>C), AAC424GGC (996G>C), AAC425GGC (997G>C), AAC426GGC (998G>C), AAC427GGC (999G>C), AAC428GGC (990G>C), AAC429GGC (991G>C), AAC430GGC (992G>C), AAC431GGC (993G>C), AAC432GGC (994G>C), AAC433GGC (995G>C), AAC434GGC (996G>C), AAC435GGC (997G>C), AAC436GGC (998G>C), AAC437GGC (999G>C), AAC438GGC (990G>C), AAC439GGC (991G>C), AAC440GGC (992G>C), AAC441GGC (993G>C), AAC442GGC (994G>C), AAC443GGC (995G>C), AAC444GGC (996G>C), AAC445GGC (997G>C), AAC446GGC (998G>C), AAC447GGC (999G>C), AAC448GGC (990G>C), AAC449GGC (991G>C), AAC450GGC (992G>C), AAC451GGC (993G>C), AAC452GGC (994G>C), AAC453GGC (995G>C), AAC454GGC (996G>C), AAC455GGC (997G>C), AAC456GGC (998G>C), AAC457GGC (999G>C), AAC458GGC (990G>C), AAC459GGC (991G>C), AAC460GGC (992G>C), AAC461GGC (993G>C), AAC462GGC (994G>C), AAC463GGC (995G>C), AAC464GGC (996G>C), AAC465GGC (997G>C), AAC466GGC (998G>C), AAC467GGC (999G>C), AAC468GGC (990G>C), AAC469GGC (991G>C), AAC470GGC (992G>C), AAC471GGC (993G>C), AAC472GGC (994G>C), AAC473GGC (995G>C), AAC474GGC (996G>C), AAC475GGC (997G>C), AAC476GGC (998G>C), AAC477GGC (999G>C), AAC478GGC (990G>C), AAC479GGC (991G>C), AAC480GGC (992G>C), AAC481GGC (993G>C), AAC482GGC (994G>C), AAC483GGC (995G>C), AAC484GGC (996G>C), AAC485GGC (997G>C), AAC486GGC (998G>C), AAC487GGC (999G>C), AAC488GGC (990G>C), AAC489GGC (991G>C), AAC490GGC (992G>C), AAC491GGC (993G>C), AAC492GGC (994G>C), AAC493GGC (995G>C), AAC494GGC (996G>C), AAC495GGC (997G>C), AAC496GGC (998G>C), AAC497GGC (999G>C), AAC498GGC (990G>C), AAC499GGC (991G>C), AAC500GGC (992G>C), AAC501GGC (993G>C), AAC502GGC (994G>C), AAC503GGC (9								

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons	
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22		
	TTT4TTC (332T>C), ATT7GTG (339A>G 341T>G), GTG8ATA (342G>A 344G>A), ATT9GTC (345A>G 347T>C), AAG10AGA (349A>G 350G>A), GTC11ATT (351G>A 353C>T), CCC12CCT (356C>T), AGC13TCC (357A>T 358G>C), CTT15ATC (363C>A 365T>C), GAC16GAG (368C>G), CTG19CTA (377G>A), CCC20CCG (380C>G), TCT23CCG (387T>C 389T>G), AGC25ACG (394G>C 395C>G), TTT26TTC (398T>C), AAC28GAC (402A>G), GTG30ATA (408G>A 410G>A), GCC31GCC (413C>G), GAG32GGC (415A>G 416G>C), GAA34GAG (422A>G), TTG37CTG (429T>C), CCG38CCC (434G>C), CCA39GAG (435C>G 436C>A 437A>G), GAT40TGG (438G>T 439A>G 440T>G), TCT41AGC (441T>A 442C>G 443T>C), GAT44GAC (452T>C), CTG45CCG (453C>G 454T>C), AAT46AAC (457A>G 458T>C), ATT48ATC (464T>C), GAG49GAC (467G>C), CAG50CAC (470G>C), GCA51CCG (471G>C 473A>G), CCC52CAG (475C>A 476G>C), ACC54AGC (482C>G), GTG55ATC (483G>A 485G>C), CTG59GTA (495C>G 497G>A), CGC61AGC (501C>A 503C>G), GAC62GAG (506C>G), ACG65AAC (514C>A 515G>C), GAA66GAG (518A>G), CGC68CAG (523G>A 524C>G), CGT69AAG (525C>A 526G>A 527T>G), GTG70ATT (528G>A 530G>T), AGT71GTC (531A>G 532G>T 533T>C), AGA72AAC (536G>A), GCC73CT (536T>G 539C>T), CGT74def (540_542delCCG), GCC76CCG (546G>C 548C>G), CTT77CAG (550T>A 551T>G), TCT78TAT (553T>A 554C>T), TTT79TTC (557T>C), GTG80PTT (560G>T), CAAC81CAG (563A>G), GGA85GGG (575A>G), GAG86GAC (578G>C), AGC87AAG (581C>A), TAC88TAT (584C>T), ATG91TCG (591A>C), GTG93AGC (597G>A), CTC94CTG (602C>T), GAA96GAG (608A>G), GGG99GGC (617G>C), GTG100ATG (618G>A), AAA101AG (623A>G), TTG105CTG (633T>C), GGA106GGC (638A>C), TTC108ATC (643T>A), AGT110AAC (649G>A 650T>C), ATT112ATC (656T>C), CGC13AAG (657C>A 658G>G), GAA11AGC (662A>C), CTG116TG (666C>T), ATT117TCG (699A>C 670T>G), CAG118CCG (672C>G 673A>C), AGA119AGC (675A>C 676G>A 677A>G), ATC124CTG (690A>G 692C>G), CGC126CC (698G>C), ACT127CAG (699A>C 700C>A 701T>G), TTG128ATT (702T>A 704G>T), CCA129CCG (707A>G), AAC130AGT (708A>G 710C>T), TTC132ATG (714T>A 716C>G), GCG133GCC (719G>C), GTC134GTC (724G>C), ACA135AGT (724C>G 725A>T), ACC137ACA (731C>A), AGA138AAA (733G>A), ATA139AGC (736A>C 737T>G), GGC140def (738_740delGGG), GGC141GCC (743C>G), GGC143GCC (748G>C), GGG144def (750_752delGGG), AAC145AT (755C>A), AAC146CGG (756A>C 757A>G), GTG147ATT (759G>A 761G>T), GTG148CGA (762G>C 763T>G 764G>A), GAT149GAC (767T>C), GAG150AGA (768G>A), TGC151GGG (771T>G 773C>G), ATT155GC (783A>G 784A>C 785T>C), TTG157CTG (789T>C), CTC158CTG (794C>G), AAA160AGA (800A>G), ACC161GCC (801A>C 802C>G), CAG162CAA (806G>C), CCT163CCG (809T>G), CTC165CCG (815C>G), CGC168GCC (824G>C), ATC170AAC (830T>C), AA171AAC (833T>C), GAA173GAG (839A>G), CAG174GAG (840C>G), TTA176ATA (846T>A), AGC177AGG (851C>G), TGT179AGC (855T>A 856G>C 857T>G), TTG180CTC (858T>C 860G>C), ATA181AGC (862A>G 863C>G), ATC182CTG (866C>G), AGC183GAG (867A>G 886C>A), CG1185CGC (871T>G 878A>I), TGT188CTC (882T>C 884G>C), GGC190AG (889C>A), CAG191GAG (891C>G), GAG226GAT (989G>T), GTC228GTA (1004C>A), GGC229AGC (1005G>A 1007G>C), CTC231CTG (1013C>G), GAC233GAG (1019C>G), AAC234CGG (1020A>C 1021A>G), GGG235GGC (1025G>C), ATT236ATC (1028T>C), TCG238CTC (1034G>C), AAC240CGG (1038A>C 1039A>G), CAG241GAG (1041C>G), CAG244CGC (1051A>G 1052G>C), CTC248GAC (1063C>A), TCA249CTG (1067A>G), ATC251CTG (1071A>C 1073C>G), TCT253CAC (1077T>C 1078T>A), ATA254AAC (1082T>C), GCG255GCC (1085G>C), GCC256AGC (1086G>A 1088C>G), TCT257AGC (1089T>A 1090C>A), AAC258GCC (1092A>G 1093A>C), TCG259GGA (1095T>G) 1096C>A), TCC261AGC (1101T>A 1102C>G), CAA262CTG (1104C>T 1105A>C 1106A>G), GTC265GCG (1115T>G), TTG267CTG (1119T>C), GAC268GGA (1123A>G 1124C>A), GCG270GCC (1130G>C), AAC272GTC (1134A>G 1135A>T), ATT273GAG (1137A>G 1138T>G), AGC275CTT (1143A>C 1144G>T 1145C>T), CTG276TTG (1146C>T), ACT277AGC (1151T>G), AAC278GAA (1152A>G), CGC279TGT (1155A>T 1156C>T), GCG280GCC (1160C>G), CCG281GAA (1161C>G 1162C>A 1163C>A), TAC283TG (1168A>G), CTG284CTA (1172G>A), GTC285ACT (1173G>A 1174C>G), GTC286GAG (1178C>A), CAG287AAC (1179C>A), CAG288CTT (1181A>G 1184G>T), CCG289CCA (1187C>A), GAC292CZ (1194G>T), ATT293ACT (1197T>C), TCC294ACA (1200T>A 1202C>A), AGC295AG (1204G>A 1205C>G), ATT296GAC (1206A>G 1208T>G), ATT298GTC (1214T>A 1217T>C), AAC300AG (1211A>C 1212A>G), ATT301CTG (1212A>C 1223T>G), TTG302ATT (1224T>A 1226G>T), GAA303TC (1227G>T 1228A>C 1229A>T), CTA304ATC (1230C>A 1232A>C), AAC305CAT (1233A>C 1235C>T), GGG306AAG (1236G>A 1237G>A 1238G>A), TCA307TC (1240A>G), GAT308ATA (1242G>A), CCA309CTC (1247C>T), CAA310TTG (1248C>T 1249A>T 1250A>G), TAT311CTT (1251T>C 1252A>T), GCG312GCT (1256G>T), GCT313GCC (1259T>C), CTC314AGC (1260T>A 1261C>A), GTC315CTG (1263G>C 1265C>G), TTT316TGG (1267B>G), CTG317CTG (1269C>G), GGA318AGC (1270G>A 1272A>G), GGC320TGT (1278G>T 1279C>G 1280C>T), ACC321CGC (1281A>C 1282C>G 1283G>C), AAA322CCG (1284A>C 1285A>G 1286A>G), CGC325AAC (1293G>A 1294G>A), AAG326AAC (1298G>A), AGG327AGA (1301G>A), ACC329CCC (1305A>C), ATC330ATA (1310C>A), TGG331GGG (1311T>G), CTG332TGT (1314C>T), ATT333ACT (1318T>A 1319T>G), Y593AGG (1320G>A 1322G>A), ACT337AAC (1331T>C), GGG339GGA (1337G>A), AAC340AAC (1340G>A), CGC344GCA (1352G>A), GGC346GCT (1358C>T), ATA347ATT (1361A>T), CAC349AAC (1367C>A), ACT350GCT (1368A>G), CCC352CCA (1376C>A), TAC354TAT (1382C>T), GGG355GGC (1385G>C), TGC356TGT (1388C>T), GTA357GTG (1391A>G), ACC360ACT (1400C>T), AAT361AAC (1403T>C), GAG362GAA (1406G>A), TCT366TGT (1418C>T), AAC367ATA (1421C>T), GTC370GTC (1430C>G), AAG372AAAC (1436G>A), GTG374TGT (1442G>T), ATC375ATT (1445C>T), ACC383ACT (1469C>T), GCG384AAC (1470G>A 1471C>A 1472C>T), GTC386GTA (1478C>A), GTG387GTT (1481G>T), CGC389TGT (1487G>T), GGC390GCG (1490C>G), CTC394CTG (1502C>G), GAG395GCC (1505A>G), GAG396GCC (1508A>G), AGC397GTC (1510A>T 1513A>G), GTG399GTC (1517G>C), CGC400CGA (1520C>A), GTG401GTT (1523G>T), GAC402GAT (1525C>T), CAG403CAA (1529G>A), TCC405GTT (1535C>T), AAG406AAC (1538G>A), TCC407GTC (1539T>G 1540C>G), TCG408TCT (1544G>T), GCC409GTA (1546C>T 1547C>A), CAG410CAA (1550G>A), CAG412GAT (1551A>G 1553A>T), CCG413CC (1556C>T), GTC414CTC (1565C>T), GTG416GTA (1568G>A), GTC418ATA (1572G>A 1574C>A), ACC419ACT (1577C>T), CTC420AGT (1578T>A 1579C>G 1580C>T), AAC421AAC (1583C>T), ACC422ATG (1585C>T 1586C>G), AAC423AAC (1589C>T), TGC425TAT (1594G>A 1595C>T), GGC426ATG (1596G>A 1597C>T 1598C>G), GTG427GTA (1601G>A), ATT428GTC (1602A>G 1604G>A), GGG430GCG (1610G>C), AAC431AAC (1613G>C), ACC433GCT (1617A>G), ACC434CTA (1620A>C 1621C>T 1622C>A), TCT435TT (1625C>T), AAC436GAA (1628G>A), CAG437CAT (1631C>T), CAG438AAC (1632C>A 1634G>A), CAG439GAA (1635C>G 1637G>A), CCG440CCT (1640G>A), CAG442AAC (1640G>A), CGG443AAC (1649C>A), CGG444AAC (1650C>A 1652G>C), ATTC446TT (1658C>T), AAA447ATG (1660A>T 1661A>G), GAA449AAC (1665G>A 1667A>G), CTC450AGT (1668C>A 1669T>G 1670C>T), ACC451CT (1671A>T 1673C>T), CGC452GTT (1674C>G 1675G>T 1676C>T), CGT453AAC (1677C>A 1678G>A 1679T>G), GAT455CAT (1683G>C), GGG459GAA (1695G>A 1697G>A), AAC460AAA (1700G>A), GTC461ATA (1701G>A 1703C>A), ACC462CT (1704A>C 1706C>T), CAG464TGT (1710C>T 1711A>G), GTC466TTC (1716G>T), AAA467AGA (1720A>G), GAC468TAA (1722G>A 1724C>A), TTC470TT (1730C>A), CGG471AAC (1731C>A 1732G>A), GCA473GGC (1738C>G 1739A>C), AAG474ACC (1741A>C 1742G>C), CAC476AAC (1746C>A)	Codon mutations:								
Rep 40 protein (YP_680424.1)	2	255	81.2%	1034	57.4%	254 (100%)	158 (62.2%)	0/0/1/1	2	
	E2D (998G>T), G55 (1005G>A 1007G>C), D9E (1019C>G), K10R (1020A>C 1021A>G), K16R (1038A>C 1039A>G), Q17E (1041C>G), Q20R (1051A>G 1052G>C), A24D (1063C>A), I27L (1071A>C 1073C>G), F29H (1077T>C 1087T>A), S35G (1095T>G 1096C>G 1097G>A), Q38S (1104C>T 1105A>C 1106A>G), D44G (1123A>C 1124A>C), K48V (1134A>G 1135A>T), I49E (1137A>G 1138T>A 1139T>G), S51L (1143A>C 1144G>T 1145C>T), K54E (1152A>G), T55L (1155A>T 1156C>T 1157C>G), P57E (1161C>G 1162C>A 1163C>A), Y59C (1168A>G), V61T (1173G>A 1174T>C 1175G>T), Q63K (1179C>A), Q64L (1183A>T 1184G>T), S70T (1200T>A 1202C>A), S71K (1204G>A 1205C>G), N72D (1206A>G 1208T>C), R73K (1209C>A 1210G>A 1211G>A), I74V (1212A>G 1214T>C), Y75F (1216A>T 1217T>C), K76Q (1218A>C 1220A>G), I77L (1221A>C 1223T>G), L78I (1224T>A 1226G>C), E79S (1227G>T 1228A>C 1229A>C), L80I (1230C>A 1232A>C), N81H (1233A>C 1235C>T), G82K (1236G>A 1237G>A), Y83K (1238G>A), Y83C (1240A>G), D84N (1242G>A), Q86L (1248C>T 1249A>G), Y87L (1251T>A 1252A>G), S90N (1260T>A 1261C>A), V91L (1263G>C 1265G>A), F92W (1267T>G 1268T>G), L93V (1269C>G), G94R (1272G>A 1274A>G), A96C (1278G>T 1279C>G 1280C>T), T97R (1281A>C 1282C>G 1283C>G), K98R (1284A>C 1285A>G), G101N (1293G>A 1294G>A), T105P (1305A>C), W107G (1311T>G), F109Y (1318T>A 1319T>G), C110R (1320G>A 1322G>A), H125Q (1367C>A), T126A (1368A>G), A160N (1470G>A 1471C>T), K174W (1512A>T 1513A>G), S183G (1519T>G 1520A>G), C184R (1520G>A 1521A>G), V185Y (1546C>A), A187V (1551A>G 1553A>T), V194I (1572G>A 1574C>A), T198M (1585C>T 1586C>G), C201Y (1594G>A 1595C>T), A202M (1596G>A 1597C>T 1598C>G), I204V (1602A>G 1604T>G), D205N (1605G>A), N207K (1613C>G), S208Y (1617A>G 1619G>T), T210L (1620A>G 1621C>T 1622C>A), Q214K (1632C>A 1634G>C), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), B223M (1660A>T 1661A>G), E225K (1665G>A 1667A>G), L226S (1668C>A 1669T>G 1670C>T), R227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), GAT455CAT (1683G>C), GGG459GAA (1695G>A 1697G>A), AAC460AAA (1700G>A), GTC461ATA (1701G>A 1703C>T), Q240W (1701C>T 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), AAG474ACC (1741A>C 1742G>C), CAC476AAC (1746C>A)	Protein mutations:								
Rep 52 protein (YP_680425.1)	2	255	63.8%	1034	57.4%	254 (100%)	158 (62.2%)	0/0/1/1	2	
	GAG2GAT (998G>T), GTC4GTA (1004C>A), GGG5AGC (1005G>A 1007G>C), CTC7CTG (1013C>G), GAC9GAG (1019G>A 1020G>C), GGC11GGC (1025G>C), ATT124TAC (1028T>C), TCC14TCC (1034G>C), AAC16CGG (1038A>C 1039A>G), CAG17GAG (1041C>G), CAG202GCC (1051A>G 1052G>C), GGC24GAC (1063C>A), TCA25TCG (1067A>G), ATC27CTG (1071A>C 1073C>G), TTC29CAC (1077T>C 1078T>A), AAT30AAC (1082T>C), GCG31GCC (1085G>C), GGC32AGC (1086G>A 1088C>G), TCC33AGC (1089T>C 1090C>G), AAC34GCG (1092A>G 1093A>C), TCG35GCC (1095T>G 1097G>A), GTC37AGC (1101T>A 1102C>G), Q63K (1109C>A), K54E (1115C>A), T124A (1120C>A 1122C>G), I125T (1124C>A 1126C>G), Q126T (1128C>A 1129C>G), S127A (1130C>A 1131C>G), L128T (1132C>A 1133C>G), G130T (1134C>A 1135C>G), T129T (1136C>A 1137C>G), C131T (1138C>A 1139C>G), G132T (1140C>A 1141C>G), T133T (1141C>A 1142C>G), G134T (1143C>A 1144C>G), G135T (1145C>A 1146C>G), G136T (1147C>A 1148C>G), G137T (1148C>A 1149C>G), G138T (1149C>A 1150C>G), G139T (1150C>A 1151C>G), G140T (1152C>A 1153C>G), G141T (1154C>A 1155C>G), G142T (1156C>A 1157C>G), G143T (1158C>A 1159C>G), G144T (1160C>A 1161C>G), G145T (1162C>A 1163C>G), G146T (1164C>A 1165C>G), G147T (1166C>A 1167C>G), G148T (1168C>A 1169C>G), G149T (1170C>A 1171C>G), G150T (1172C>A 1173C>G), G151T (1174C>A 1175C>G), G152T (1176C>A 1177C>G), G153T (1178C>A 1179C>G), G154T (1180C>A 1181C>G), G155T (1182C>A 1183C>G), G156T (1184C>A 1185C>G), G157T (1186C>A 1187C>G), G158T (1188C>A 1189C>G), G159T (1190C>A 1191C>G), G160T (1192C>A 1193C>G), G161T (1194C>A 1195C>G), G162T (1196C>A 1197C>G), G163T (1198C>A 1199C>G), G164T (1200C>A 1201C>G), G165T (1202C>A 1203C>G), G166T (1204C>A 1205C>G), G167T (1206C>A 1207C>G), G168T (1208C>A 1209C>G), G169T (1210C>A 1211C>G), G170T (1212C>A 1213C>G), G171T (1214C>A 1215C>G), G172T (1216C>A 1217C>G), G173T (1218C>A 1219C>G), G174T (1220C>A 1221C>G), G175T (1222C>A 1223C>G), G176T (1224C>A 1225C>G), G177T (1226C>A 1227C>G), G178T (1228C>A 1229C>G), G179T (1230C>A 1232C>G), G180T (1234C>A 1235C>G), G181T (1236C>A 1237C>G), G182T (1238C>A 1239C>G), G183T (1240C>A 1241C>G), G184T (1242C>A 1243C>G), G185T (1244C>A 1245C>G), G186T (1246C>A 1247C>G), G187T (1248C>A 1249C>G), G188T (1250C>A 1251C>G), G189T (1252C>A 1253C>G), G190T (1254C>A 1255C>G), G191T (1256C>A 1257C>G), G192T (1258C>A 1259C>G), G193T (1260C>A 1261C>G), G194T (1262C>A 1263C>G), G195T (1264C>A 1265C>G), G196T (1266C>A 1267C>G), G19									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
E2D (998G>T), G5S (1005G>A 1007G>C), D9E (1019C>G), K10R (1020A>C 1021A>G), K16R (1038A>C 1039A>G), Q17E (1041C>G), Q20R (1051A>G 1052G>C), A24D (1063C>A), I2L7 (1071A>C 1073C>G), F29H (1077T>C 1078T>A), A32T (1086G>A 1088C>G), N34A (1092A>G 1093A>C), S35G (1095T>G 1096C>G 1097G>A), Q38S (1104C>T 1105A>C 1106A>G), D44G (1123A>C 1124C>A), K48V (1134A>G 1135A>T), I49E (1137A>G 1138T>A 1139T>G), S51L (1143A>C 1144G>T 1145C>T), K54E (1152A>G), T55L (1155A>T 1156C>T 1157C>G), P57E (1161C>G 1162C>A 1163C>A), Y59C (1168A>G), V61T (1173G>A 1174T>C 1175G>T), Q63K (1179C>A), Q64L (1183A>T 1184G>T), S70T (1200T>A 1202C>A), S71K (1204G>A 1205C>G), N72D (1206A>G 1208T>C), R73K (1209C>A 1210G>A 1211G>A), I74V (1212A>G 1214T>G), Y75F (1216A>T 1217T>C), K76Q (1218A>C 1220A>G), I77L (1221A>C 1223T>G), L78I (1224T>A 1226G>T), E79S (1227G>T 1228A>C 1229A>C), L80I (1230C>A 1232A>C), N81H (1233A>C 1235C>T), G82K (1236G>A 1237G>A 1238G>A), Y83C (1240A>G), D84N (1242G>A), Q86L (1248C>T 1249A>T 1250A>G), Y87L (1251T>C 1252A>T), S90N (1260T>A 1261C>A), V91L (1263G>C 1265C>G), F92W (1267T>C 1268T>G), L93I (1269C>G), G94R (1272G>A 1274A>G), T97R (1281A>C 1282C>A 1283G>C), K98R (1284A>C 1285A>G 1286A>G), G101N (1293G>A 1294G>A), T105P (1305A>C), W107G (1311T>G), F109Y (1318T>A 1319T>C), G110R (1320G>A 1322G>A), H125Q (1367C>A), T126A (1368A>G), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>T 1513A>G), S183G (1539T>G 1540C>A), V185F (1546C>T 1547C>A), I187V (1551A>G 1553A>T), T194I (1572G>A 1574C>A), T198M (1585C>T 1586C>G), C201Y (1594G>A 1595C>T), A202M (1596G>A 1597C>T 1598C>G), L204V (1602A>G 1604T>G), D205N (1605G>A), N207K (1613C>G), S208* (1615C>G), T209A (1617A>G 1619G>T), T210L (1620A>C 1621C>T 1622C>A), Q214K (1632C>A 1634G>A), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>C 1661T>G), E225K (1665G>A 1667A>G), L226S (1668G>A 1669T>G 1670C>T), T227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G232R (1695G>A 1697G>A), V237I (1701G>A 1703C>C), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), K250T (1741A>C 1742G>C), H252N (1746C>A)									
Protein mutations:									
GAG2GAT (998G>T), GTC4GTA (1004C>A), GGG5AGC (1005G>A 1007G>C), CTC7CTG (1013C>G), GAC9GAG (1019C>G), AAG10CGG (1020A>C 1021A>G), GGG11GGC (1025G>C), ATT12ATC (1028T>C), TCG14TCC (1034G>C), AAC16GC (1041C>G), CAG20CGC (1051A>G 1052G>C), GCC24AGC (1063C>A), TCA25TCG (1067A>G), ATC27CTG (1071A>C 1073C>G), TTC29CAC (1077T>C 1078T>A), AAT30AAC (1082T>C), GC31GCC (1085C>C), GCC32AGC (1086G>A 1088C>G), TCC33AGC (1089T>A 1090C>G), AAC34GCC (1092A>G 1093A>C), TC35GGG (1095T>G 1096C>G 1097G>A), TCC37AGC (1101T>A 1102C>G), CAA38TCG (1104C>T 1105A>C 1106A>G), GCT41GCC (1115T>G), TTG43CTG (1119T>G), GAC44GGA (1123A>G 1124C>G), GCG46GCC (1130G>C), AA48GTTG (1134A>G 1135A>T), ATT49GAG (1137A>G 1138A>G), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>T 1513A>G), S183G (1539T>G 1540C>A), V185F (1546C>T 1547C>A), T209A (1617A>G 1619G>T), T210L (1620A>C 1621C>T 1622C>A), Q214K (1632C>A 1634G>A), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>C 1661T>G), E225K (1665G>A 1667A>G), L226S (1668G>A 1669T>G 1670C>T), T227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G232R (1695G>A 1697G>A), V237I (1701G>A 1703C>C), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), K250T (1741A>C 1742G>C), H252N (1746C>A)									
Codon mutations:									
GAG2GAT (998G>T), GTC4GTA (1004C>A), GGG5AGC (1005G>A 1007G>C), CTC7CTG (1013C>G), GAC9GAG (1019C>G), AAG10CGG (1020A>C 1021A>G), GGG11GGC (1025G>C), ATT12ATC (1028T>C), TCG14TCC (1034G>C), AAC16GC (1041C>G), CAG20CGC (1051A>G 1052G>C), GCC24AGC (1063C>A), TCA25TCG (1067A>G), ATC27CTG (1071A>C 1073C>G), TTC29CAC (1077T>C 1078T>A), AAT30AAC (1082T>C), GC31GCC (1085C>C), GCC32AGC (1086G>A 1088C>G), TCC33AGC (1089T>A 1090C>G), AAC34GCC (1092A>G 1093A>C), TC35GGG (1095T>G 1096C>G 1097G>A), TCC37AGC (1101T>A 1102C>G), CAA38TCG (1104C>T 1105A>C 1106A>G), GCT41GCC (1115T>G), TTG43CTG (1119T>G), GAC44GGA (1123A>G 1124C>G), GCG46GCC (1130G>C), AA48GTTG (1134A>G 1135A>T), ATT49GAG (1137A>G 1138A>G), A160N (1470G>A 1471C>A 1472C>T), K174W (1512A>T 1513A>G), S183G (1539T>G 1540C>A), V185F (1546C>T 1547C>A), T209A (1617A>G 1619G>T), T210L (1620A>C 1621C>T 1622C>A), Q214K (1632C>A 1634G>A), Q215E (1635C>G 1637G>A), Q218E (1644C>G), D219E (1649C>A), K223M (1660A>C 1661T>G), E225K (1665G>A 1667A>G), L226S (1668G>A 1669T>G 1670C>T), T227S (1671A>T 1673C>T), R228V (1674C>G 1675G>T 1676C>T), R229K (1677C>A 1678G>A 1679T>G), D231H (1683G>C), G232R (1695G>A 1697G>A), V237I (1701G>A 1703C>A), T238P (1704A>C 1706C>T), Q240W (1710C>T 1711A>G), V242F (1716G>T), K243R (1720A>G), D244* (1722G>T 1724C>A), R247K (1731C>A 1732G>A), A249G (1738C>G 1739A>C), K250T (1741A>C 1742G>C), H252N (1746C>A)									
major coat protein									
VP1	235	706	64.1%	2434	70.7%	468 (99.2%)	315 (66.7%)	0/4/0/0	0
(YP_680426.1)									
M23L (2905A>C), D237N (2911G>A), R238T (2915G>C), T242K (2927C>A 2928C>G), Q259A (2977C>G 2978A>C 2979A>C), S261K (2983T>A 2984C>A 2985C>G), Q263del (2989 2991delCAA), S264G (2992T>G 2993C>G), G265S (2995G>A 2997A>C), A266T (2998G>A), S267T (3001T>A 3003G>C), D269N (3007G>A), N270D (3010A>G 3012T>C), F273Y (3020T>A 3021T>C), R310S (3132A>C 3137A>C), Q326T (3175C>A 3176A>C), N327T (3179A>C 3180T>G), V340I (3220G>A 3222T>C), T344A (3232A>G 3234T>G), S346T (3238T>A), E347D (3243G>C), Y348H (3244T>C 3246C>T), Q349H (3249G>C), S356N (3268T>A 3269C>A 3270G>C), H358S (3274C>A 3275A>G 3276T>C), Q359E (3277G>C), L378C (3343C>T 3335T>G), N382D (3346A>G 3348C>T), S384T (3353G>C 3354T>A), A386T (3358G>A 3360A>C), V387M (3361G>A 3363A>G), R389K (3367G>A 3368G>A 3369C>A), T410S (3430A>T), T414Q (3442A>C 3443C>A 3444T>G), D417N (3451G>A), Y424F (3473A>G), D427R (3475G>A 3477T>G), S427N (3482G>A 3484G>A), AAC197AAT (1583C>T), AAC198ATG (1585C>T 1586C>G), AAC199AT (1589C>T), TGC201AT (1594G>A 1595C>T), GGC202ATG (1596G>A 1597C>T 1598C>G), GTG203GT (1601G>A), ATT204GTC (1602A>C 1604T>G), GAC205AAC (1605G>A), GGG206GGG (1610G>C), AAC207AAG (1613C>G), ACG209GTC (1617A>G 1619G>C), ACC210CTA (1620A>C 1621C>T 1622C>A), TTC211TT (1625C>T), GAA212GAG (1628A>G), CAC213CAT (1631C>T), C2227TT (1638C>T), GTC217GTT (1641G>T), GTC218GTT (1648G>T), GTC219GAA (1649G>A), GCA217GGG (1650A>G), GCA217TCC (1650A>G 1651G>C), AAC217TGG (1652A>T 1653A>G), GTC217GTC (1651G>C), CGC217CGA (1652C>A), TCG184TCT (1543G>T), GAC178GAT (1546C>T), GAG179CAA (1529G>A), TGC181GTC (1540G>A 1541G>C), AAC181GAT (1545G>A 1546G>C), AAC182GAT (1546G>A 1547C>A), GAG183CAA (1550G>A), AAC184GAT (1551G>A 1552C>A), AAC185GAT (1554G>A 1555C>A), AAC186GAA (1556G>A 1557C>A), AAC187GTT (1551G>A 1553A>T), AAC188GAT (1556C>A), CCG189CC (1559G>C), AAC191CT (1565C>A), TGC192GTA (1568G>A), GTC194ATA (1572G>A 1574C>A), AAC195ACT (1575C>T), TCC196AGT (1578T>A 1579C>G 1580C>T), AAC197AAT (1583C>T), AAC198ATG (1585C>T 1586C>G), AAC199AT (1589C>T), TGC201AT (1594G>A 1595C>T), GGC202ATG (1596G>A 1597C>T 1598C>G), GTG203GT (1601G>A), ATT204GTC (1602A>C 1604T>G), GAC205AAC (1605G>A), GGG206GGG (1610G>C), AAC207AAG (1613C>G), ACG209GTC (1617A>G 1619G>C), ACC210CTA (1620A>C 1621C>T 1622C>A), TTC211TT (1625C>T), GAA212GAG (1628A>G), CAC213CAT (1631C>T), C2227TT (1638C>T), GTC217GTT (1641G>T), GTC218GTT (1648G>T), GTC219GAA (1649G>A), GCA217GGG (1650A>G), GCA217TCC (1650A>G 1651G>C), AAC217TGG (1652A>T 1653A>G), GTC217GTC (1651G>C), CGC217CGA (1652C>A), TCG184TCT (1543G>T), GAC178GAT (1546C>T), GAG179CAA (1529G>A), TGC181GTC (1540G>A 1541G>C), AAC181GAT (1545G>A 1546G>C), AAC182GAT (1546G>A 1547C>A), GAG183CAA (1550G>A), AAC184GAT (1551G>A 1552C>A), AAC185GAT (1554G>A 1555C>A), AAC186GAA (1556G>A 1557C>A), AAC187GTT (1551G>A 1553A>T), AAC188GAT (1556C>A), CCG189CC (1559G>C), AAC191CT (1565C>A), TGC192GTA (1568G>A), GTC194ATA (1572G>A 1574C>A), AAC195ACT (1575C>T), TCC196AGT (1578T>A 1579C>G 1580C>T), AAC197AAT (1583C>T), AAC198ATG (1585C>T 1586C>G), AAC199AT (1589C>T), TGC201AT (1594G>A 1595C>T), GGC202ATG (1596G>A 1597C>T 1598C>G), GTG203GT (1601G>A), ATT204GTC (1602A>C 1604T>G), GAC205AAC (1605G>A), GGG206GGG (1610G>C), AAC207AAG (1613C>G), ACG209GTC (1617A>G 1619G>C), ACC210CTA (1620A>C 1621C>T 1622C>A), TTC211TT (1625C>T), GAA212GAG (1628A>G), CAC213CAT (1631C>T), C2227TT (1638C>T), GTC217GTT (1641G>T), GTC218GTT (1648G>T), GTC219GAA (1649G>A), GCA217GGG (1650A>G), GCA217TCC (1650A>G 1651G>C), AAC217TGG (1652A>T 1653A>G), GTC217GTC (1651G>C), CGC217CGA (1652C>A), TCG184TCT (1543G>T), GAC178GAT (1546C>T), GAG179CAA (1529G>A), TGC181GTC (1540G>A 1541G>C), AAC181GAT (1545G>A 1546G>C), AAC182GAT (1546G>A 1547C>A), GAG183CAA (1550G>A), AAC184GAT (1551G>A 1552C>A), AAC185GAT (1554G>A 1555C>A), AAC186GAA (1556G>A 1557C>A), AAC187GTT (1551G>A 1553A>T), AAC188GAT (1556C>A), CCG189CC (1559G>C), AAC191CT (1565C>A), TGC192GTA (1568G>A), GTC194ATA (1572G>A 1574C>A), AAC195ACT (1575C>T), TCC196AGT (1578T>A 1579C>G 1580C>T), AAC197AAT (1583C>T), AAC198ATG (1585C>T 1586C>G), AAC199AT (1589C>T), TGC201AT (1594G>A 1595C>T), GGC202ATG (1596G>A 1597C>T 1598C>G), GTG203GT (1601G>A), ATT204GTC (1602A>C 1604T>G), GAC205AAC (1605G>A), GGG206GGG (1610G>C), AAC207AAG (1613C>G), ACG209GTC (1617A>G 1619G>C), ACC210CTA (1620A>C 1621C>T 1622C>A), TTC211TT (1625C>T), GAA212GAG (1628A>G), CAC213CAT (1631C>T), C2227TT (1638C>T), GTC217GTT (1641G>T), GTC218GTT (1648G>T), GTC219GAA (1649G>A), GCA217GGG (1650A>G), GCA217TCC (1650A>G 1651G>C), AAC217TGG (1652A>T 1653A>G), GTC217GTC (1651G>C), CGC217CGA (1652C>A), TCG184TCT (1543G>T), GAC178GAT (1546C>T), GAG179CAA (1529G>A), TGC181GTC (1540G>A 1541G>C), AAC181GAT (1545G>A 1546G>C), AAC182GAT (1546G>A 1547C>A), GAG183CAA (1550G>A), AAC184GAT (1551G>A 1552C>A), AAC185GAT (1554G>A 1555C>A), AAC186GAA (1556G>A 1557C>A), AAC187GTT (1551G>A 1553A>T), AAC188GAT (1556C>A), CCG189CC (1559G>C), AAC191CT (1565C>A), TGC192GTA (1568G>A), GTC194ATA (1572G>A 1574C>A), AAC195ACT (1575C>T), TCC196AGT (1578T>A 1579C>G 1580C>T), AAC197AAT (1583C>T), AAC198ATG (1585C>T 1586C>G), AAC199AT (1589C>T), TGC201AT (1594G>A 1595C>T), GGC202ATG (1596G>A 1597C>T 1598C>G), GTG203GT (1601G>A), ATT204GTC (1602A>C 1604T>G), GAC205AAC (1605G>A), GGG206GGG (1610G>C), AAC207AAG (1613C>G), ACG209GTC (1617A>G 1619G>C), ACC210CTA (1620A>C 1621C>T 1622C>A), TTC211TT (1625C>T), GAA212GAG (1628A>G), CAC213CAT (1631C>T), C2227TT (1638C>T), GTC217GTT (1641G>T), GTC218GTT (1648G>T), GTC219GAA (1649G>A), GCA217GGG (1650A>G), GCA217TCC (1650A>G 1651G>C), AAC217TGG (1652A>T 1653A>G), GTC217GTC (1651G>C), CGC217CGA (1652C>A), TCG184TCT (1543G>T), GAC178GAT (1546C>T), GAG179CAA (1529G>A), TGC181GTC (1540G>A 1541G>C), AAC181GAT (1545G>A 1546G>C), AAC182GAT (1546G>A 1547C>A), GAG183CAA (1550G>A), AAC184GAT (1551G>A 1552C>A), AAC185GAT (1554G>A 1555C>A), AAC186GAA (1556G>A 1557C>A), AAC187GTT (1551G>A 1553A>T), AAC188GAT (1556C>A), CCG189CC (1559G>C), AAC191CT (1565C>A), TGC192GTA (1568G>A), GTC194ATA (1572G>A 1574C>A), AAC195ACT (1575C>T), TCC196AGT (1578T>A 1579C>G 1580C>T), AAC197AAT (1583C>T), AAC198ATG (1585C>T 1586C>G), AAC199AT (1589C>T), TGC201AT (1594G>A 1595C>T), GGC202ATG (1596G>A 1597C>T 1598C>G), GTG203GT (1601G>A), ATT204GTC (1602A>C 1604T>G), GAC205AAC (1605G>A), GGG206GGG (1610G>C), AAC207AAG (1613C>G), ACG209GTC (1617A>G 1619G>C), ACC210CTA (1620A>C 1621C>T 1622C>A), TTC211TT (1625C>T), GAA212GAG (1628A>G), CAC213CAT (1631C>T), C2227TT (1638C>T), GTC217GTT (1641G>T), GTC218GTT (1648G>T), GTC219GAA (1649G>A), GCA217GGG (1650A>G), GCA217TCC (1650A>G 1651G>C), AAC217TGG (1652A>T 1653A>G), GTC217GTC (1651G>C), CGC217CGA (1652C>A									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	ATG235CTG (2905A>C), GGC236GGA (2910C>A), GAC237AAC (2911G>A), AGA238ACA (2915G>C), ATC240ATT (2922C>T), ACC242AAG (2927C>A 2928C>G), AGC243TCC (2929A>T 2930G>C), ACC244ACA (2934C>A), CGA245AGA (2935C>A), GCC248CA (2946C>A), CTG249TTG (2947C>T), CTC256CTT (2970C>T), AAA258AAC (2976A>G), CAA259GCC (2977C>G 2978A>C 2979A>C), ATT260ATC (2982T>C), TCC261AAC (2983T>A 2984C>A 2985C>G), AGC262TCC (2986A>T 2987G>C), CAA263del (2989_2991delCAA), TCA264GGA (2992T>G 2993C>G), GGA265AGC (2995G>A 2997A>C), GCC266ACC (2998G>A), TCG267ACC (3001T>A 3003G>C), GAC269AAC (3007G>A), AAT270AGC (3010A>G 3012T>C), TTT273TAC (3020T>A 3021T>C), GCG274GGA (3024C>A), CCT278CCC (3036T>C), TAT281TAC (3045T>C), GAC283GAT (3051C>T), CTC294AGA (3082C>A 3084T>A), CAAC297CAC (3093A>G), AGA298GCA (3094A>C), CGA309TAAA (3121C>A), AGA309AAA (3129G>A), AGA310AGC (3132A>C), TTC213TTC (3141C>T), TTT316TTC (3150T>C), CAG325AGC (3175C>A 3176A>C), ATT326AGC (3179A>C 3180T>G), GGT328GGC (3186T>C), ACG329ACA (3189G>A), ACG331ACC (3195G>C), ATT332ATC (3198T>C), TCG339AGC (3219G>C), ACT340ATT (3220G>A 3222T>C), ACT344GCA (3232A>G 3234T>C), TCG346AGC (3238T>A), GAG347GAC (3243G>C), TAC348CAT (3244T>C 3246C>T), CAG349CAC (3249G>C), CTC350TTA (3250C>T 3252C>A), CCG351CCC (3255G>C), CTC354CTA (3264C>A), TCG356AAC (3268T>A 3269C>C), CGC357GCC (3273G>C), CAT358AGC (3274G>C 3275A>G 3276T>C), CTC362CTA (3288C>A), CCG359GAA (3277C>G), CTC363CCT (3288C>A), CCG363CCT (3291G>T), CGC364CCC (3294G>C), TTC365TTT (3297C>T), GCA367GCC (3303A>G), TTC370TTT (3312C>T), CCA373CGC (3321A>G), TAT375TAC (3327T>C), GGA376GGG (3330A>G), TAC377TAT (3333C>T), CTC378TGC (3334C>T 3335T>G), CTG380CTC (3342G>C), AAC382GAT (3346A>G 3348C>T), GG383GCA (3351G>A), AGT384ACA (3353G>C 3354T>A), GCA386AAC (3358G>A 3360A>C), GT387ATG (3361G>A 3363A>G), CGC389AAA (3367C>A 3368G>A 3369G>C), TCT390AGC (3370T>A 3371C>G 3372T>C), TCA391TCA (3375A>C), CTG395TTG (3385C>T), GAC396GAA (3390G>A), TTT398TTC (3396T>C), CCT399CCG (3399T>G), TCT400AGC (3400T>A 3401C>G 3402T>C), CGT404CGA (3414T>A), ACC405ACT (3417C>T), ACC410TCC (3430A>T), ACT414CAC (3442A>C 3447T>G), GAC417AAC (3451G>A), AGC422TCC (3466A>T 3467G>C 3468C>G), TAC424TTC (3473A>T), CTC425ACG (3475G>A 3477T>G), AGC427AAC (3482G>A), CAG428AGA (3484C>A 3485G>A 3486G>A), AGT429AGC (3489T>C), CGT432AGA (3496C>A 3498T>A), CCT436CCC (3501T>C), ATC438TG (3514A>G 3516C>G), CTG442TCG (3528G>C), TAT443TAC (3530A>G 3531T>G), TTY445CTC (3535T>C 3537G>C), AGC446TCT (3538A>T 3539G>C 3540C>T), AGA447GGA (3541A>G), AAC448ATA (3545C>T 3546A>C), AAC449 (3545C>T 3546A>C), CCA451del (3547_3555del)AACACTCCA, AGT452ACT (3557G>C), ACC454AAC (3563C>A), ACC455GCA (3565A>G 3567C>A), AGC456GCG (3568A>G), CAG457AAC (3571C>A 3573G>C), TCA458GCC (3574T>G 3575G>C), AGC459AAC (3578G>A 3580A>C), GT387ATG (3581G>A 3583A>G), CGC389AAA (3587C>A 3589A>C), TCT390AGC (3589T>A 3590C>A 3591T>C), CAG464AAA (3592C>A 3594G>A), GGA466AGC (3598G>A 3600A>C), GCG467AAA (3601G>A 3602C>A 3603G>A), AGT468GAC (3604A>C 3605G>A 3606T>C), GAC469AAA (3607G>A 3609C>A), ATT470CTC (3610A>G 3611T>C), CGG471TCC (3613C>T 3614G>C 3615G>C), GAC473CG (3616G>A 3621G>C), TCT474TAC (3623C>A 3624T>C), AGG475GCG (3625A>C 3627G>C), AAC476AAAT (3630C>T), TGG477TTT (3632G>T 3633G>T), CTT478ATG (3634C>A 3636T>G), GGA480GGG (3642A>G), CCC481CCG (3645C>G), TAC483ATG (3649T>A 3650A>T 3651C>G), CGC484TGC (3654C>T), CGA487GTC (3661C>G 3662G>T 3663A>C), GCA488ATA (3664G>A), TCA489AGT (3667T>A 3668G>C 3669A>T), AAG490ACA (3671A>C 3672G>A), ACA491ATC (3674C>T 3675A>G), CTC492TAC (3676T>G 3677C>G), CGC493TCT (3679G>T 3681G>T), GAT494CAG (3682G>C 3684T>G), AAC495AAAT (3687C>A), AAC497TTC (3691A>T 3692A>T 3693C>G), AGT498GCA (3694A>G 3695G>A 3696T>A), GAA499GGC (3698A>G 3699A>C), TAC500GGC (3700T>A 3701A>G), TCG501GAC (3703T>G 3704C>A 3705G>C), ATC503AGC (3710C>G 3711T>C), GCA5040TCT (3712G>T 3713G>C 3714A>T), GCT505GCC (3717T>C), ACC506AAC (3719C>A), AAC507AAA (3723G>A), TAC508GCT (3724T>C 3725A>T 3726C>T), CAC509TGC (3726C>T 3727C>T 3728A>C), AAC511GCC (3733A>C), GAC512GGG (3738C>G), GAC513CGT (3739A>C 3741A>G), GAC514TCC (3742G>T 3743A>C), TCT515CAT (3745T>C 3746C>A), CTG516GGA (3748C>G 3749T>A), CTG517ATC (3751G>A 3753G>C), ATT518ATC (3755A>T 3756G>T), CCG519CCA (3759G>A), GGC520GGA (3762C>A), CCG521CTC (3765G>T), GCC522GCT (3768C>T), ATG523CAA (3769A>C 3770T>A 3771G>A), GCA524AAC (3772G>A), AGC525AGT (3777C>T), CAC526TCG (3778C>T 3779A>C), AAC527AAA (3783G>A 3785G>C), GAC528GTC (3785A>T 3786G>C), GAA530GAC (3792A>C 3793A>C), GAA531ACC (3793G>A 3795A>C), AAC532AAC (3798G>C), TTT533CAG (3799T>A 3800T>A 3801T>G), TTT534TTC (3804T>C), CCT535CCG (3807T>G), CAG536CTT (3809A>T 3810G>T), AGC537TCT (3811A>T 3812G>C 3813C>T), GGG538GGA (3818G>A), GTC539GAC (3818T>A 3819C>T), CTG540CTG (3822G>C), ATC541GTC (3823A>G), GGG543GCC (3829G>C 3830G>C), CGA545CAC (3832G>C 3833G>C), AAC546CAC (3834G>C), AAC549AAC (3838A>C 3849A>C), ACA550ACC (3852A>C), AAAT551TCT (3853A>C 3854A>C), GTG552GCC (3857T>C 3858G>C), GAC553AGT (3859G>A 3860A>C 3861C>T), ATT554TCT (3862A>T 3864T>C), GAA555AAC (3865G>A 3867A>C), AAG556AGC (3869A>C 3870W>C), ATT559ATC (3879T>C), ACA560AAC (3882A>C), GAC561ATC (3883G>A 3885C>T), GAG563AAAT (3889G>A 3891G>T), ATC565ATA (3897C>A), AGG566CGT (3898A>C 3900G>T), ACA567CAG (3901A>C 3902C>A 3903A>G), ACC568ACA (3906C>A), CCC570CCT (3912C>T), GTG571ATC (3913G>A 3915G>C), GCT572AGC (3916G>A 3917C>G), CGC573TAC (3919A>T 3920C>A 3921G>C), GAG574GGA (3923A>G 3924G>A), CAG575TCTG (3925C>T 3926A>G), TAT576GCC (3928T>A 3929A>C 3930T>C), GCG577TAC (3931G>T 3932G>A 3933T>C), TCT578ACA (3934T>A 3936T>A), GAT579GTC (3939A>C), TCT580GCC (3940T>G 3942T>G), ACC581TCC (3943A>T), CCT583ATA (3949C>A 3950T>C), GAC584AAC (3954G>A 3955C>T), AAC585TCA (3956G>C 3957C>T), AAC587ACT (3962A>C 3963C>T), AGA588AAC (3965G>A 3966A>C), CAA589GGT (3967C>G 3968A>G 3969A>T), CGA590GCC (3970G>C 3972A>C), GCT591ACG (3973G>A 3975T>G), ACC592ACT (3978C>T), GCA593GAA (3980R>C), GTG595TTG (3985G>T 3987C>G), AAC597GCT (3991A>G 3993A>T), CAA598CTG (3995A>T 3996A>G), GTT600GTC (4002T>C), CTT601ATG (4003T>A 4005T>G), AGA609GCG (4027A>C 4029A>G), GTG611GTT (4035G>T), CTT613TTA (4039C>T 4041T>A), CAG614CAA (4044G>A), GGG615GGA (4047G>A), CCC616CAG (4049C>A 4050C>G), ATT621ATC (4065T>C), CAC623GAA (4069C>G 4071C>A), GAC625GAT (4077C>T), CAT627GCG (4081C>G 4082A>C 4083T>G), TCT628TTC (4086T>C), CCT629CAT (4089C>T), CCT630CC (4092C>T), CTC632CC (4098C>T), GGT635GGG (4107T>G), TTC637TT (4113C>T), CTT639CTG (4119T>G), CAC641AC (4123C>A), CCT643CA (4131T>A), CCA644CT (4134A>T), CAG645AAC (4137G>A), ATT646ATC (4140T>C), AAC650AAT (4152C>T), ACC651ACG (4155C>G), CGC652CT (4158G>T), GTA653GTT (4161G>T), CGG655GCC (4167G>A), AAT656AAC (4170T>C), CCT657CCA (4173T>C), CG658GCC (4176G>A 4177C>G), S315T								
Codon mutations:									
major coat protein									
VP2	98	569	78.8%	2434	70.7%	468 (99.2%)	315 (66.7%)	0/4/0/0	0
(YP_680427.1)									
	M98L (2905A>C), D100N (2911G>A), R101T (2915G>C), T105K (2927C>A 2928C>G), Q122A (2977C>G 2978A>C 2979A>C), S124K (2983T>A 2984C>A 2985C>G), Q126del (2989_2991delCAA), S127G (2992T>G 2993C>G), G128S (2995G>A 2997A>C), A129T (2998G>A), S130T (3001T>A 3003G>C), D132N (3007G>A), N133D (3010A>G 3012T>C), F136Y (3020T>A 3021T>C), R173S (3132A>C), Q187T (3175C>A 3176A>C), N189T (3179A>C 3180T>G), V203I (3202G>A 3222T>C), T207A (3232A>G 3234T>G), S209T (3238T>A), E210D (3243G>C), Y211H (3244T>C 3246C>T), Q212H (3249G>C), S219N (3268T>A 3269C>G 3270S>C), H221S (3274C>A 3275A>G 3276T>C), C222E (3277C>G), L241C (3343C>T 3335T>G), N245D (3346A>G 3348C>T), S247T (3353G>C 3354T>A), A249T (3358G>A 3360A>C), B250M (3361G>A 3363A>G), R252K (3367C>A 3368G>A), S369C (3373A>C 3375A>G), T273S (3374A>C 3376A>G), A273T (3377A>C 3379A>G), Y287T (3473A>G), S288T (3475G>A 3477T>G), S290N (3482G>A), Q291R (3484C>A), AAC558ACT (3932A>C 3935C>T), AAC559AAC (3935G>A 3936A>C), AAC560ACC (3938A>C 3939A>C), AAC561ATC (3940A>C 3941C>T), AAC562GG (3942A>C 3943C>T), AAC563GCT (3943A>C 3951C>T), AAC564AAC (3954G>A 3955C>T), AAC565GCC (3958G>C 3959G>C), AAC566CCA (3970G>C 3972A>C), GCT591ACG (3973G>A 3975T>G), AAC592ACT (3978C>T 3979C>G), AAC593GAA (3980R>C 3981C>G), AAC594GG (3982A>C 3983C>G), AAC595CTG (3985C>T 3987C>G), AAC596CTG (3989C>T 3991C>G), AAC597GCT (3993A>T 3995A>G), AAC598CTG (3995A>T 3996A>G), AAC599GAA (3997A>C 3999C>G), AAC600GCC (3999A>T 3999C>G), AAC601GTC (4003T>A 4005T>G), AAC602GCG (4027A>C 4029A>G), GTG611GTT (4035G>T), CTT613TTA (4039C>T 4041T>A), CAG614CAA (4044G>A), GGG615GGA (4047G>A), CCC616CAG (4049C>A 4050C>G), ATT621ATC (4065T>C), CAC623GAA (4069C>G 4071C>A), GAC625GAT (4077C>T), CAT627GCG (4081C>G 4082A>C 4083T>G), TCT628TTC (4086T>C), CCT629CAT (4089C>T), CCT630CC (4092C>T), CTC632CC (4098C>T), GGT635GGG (4107T>G), TTC637TT (4113C>T), CTT639CTG (4119T>G), CAC641AC (4123C>A), CCT643CA (4131T>A), CCA644CT (4134A>T), CAG645AAC (4137G>A), ATT646ATC (4140T>C), AAC650AAT (4152C>T), ACC651ACG (4155C>G), CGC652CT (4158G>T), GTA653GTT (4161G>T), CGG655GCC (4167G>A), AAT656AAC (4170T>C), CCT657CCA (4173T>C), CG658GCC (4176G>A 4177C>G), S315T								
Protein mutations:									
	M98L (2905A>C), D100N (2911G>A), R101T (2915G>C), T105K (2927C>A 2928C>G), Q122A (2977C>G 2978A>C 2979A>C), S124K (2983T>A 2984C>A 2985C>G), Q126del (2989_2991delCAA), S127G (2992T>G 2993C>G), G128S (2995G>A 2997A>C), A129T (2998G>A), S130T (3001T>A 3003G>C), D132N (3007G>A), N133D (3010A>G 3012T>C), F136Y (3020T>A 3021T>C), R173S (3132A>C), Q187T (3175C>A 3176A>C), N189T (3179A>C 3180T>G), V203I (3202G>A 3222T>C), T207A (3232A>G 3234T>G), S209T (3238T>A), E210D (3243G>C), Y211H (3244T>C 3246C>T), Q212H (3249G>C), S219N (3268T>A 3269C>G 3270S>C), H221S (3274C>A 3275A>G 3276T>C), C222E (3277C>G), L241C (3343C>T 3335T>G), N245D (3346A>G 3348C>T), S247T (3353G>C 3354T>A), A249T (3358G>A 3360A>C), B250M (3361G>A 3363A>G), R252K (3367C>A 3368G>A), S369C (3373A>C 3375A>G), T273S (3374A>C 3376A>G), A273T (3377A>C 3379A>G), Y287T (3473A>G), S288T (3475G>A 3477T>G), S290N (3482G>A), Q291R (3484C>A), AAC558ACT (3932A>C 3935C>T), AAC559AAC (3935G>A 3936A>C), AAC560ACC (3938A>C 3939A>C), AAC561ATC (3940A>C 3941C>T), AAC562GG (3942A>C 3943C>T), AAC563GCT (3943A>C 3951C>T), AAC564AAC (3954G>A 3955C>T), AAC565GCC (3958G>C 3959G>C), AAC566CCA (3970G>C 3972A>C), GCT591ACG (3973G>A 3975T>G), AAC592ACT (3978C>T 3979C>G), AAC593GAA (3980R>C 3981C>G), AAC594GG (3982A>C 3983C>G), AAC595CTG (3985C>T 3987C>G), AAC596CTG (3989C>T 3991C>G), AAC597GCT (3993A>T 3995A>G), AAC598CTG (3995A>T 3996A>G), AAC599GAA (3997A>C 3999C>G), AAC600GCC (3999A>T 3999C>G), AAC601GTC (4003T>A 4005T>G), AAC602GCG (4027A>C 4029A>G), GTG611GTT (4035G>T), CTT613TTA (4039C>T 4041T>A), CAG614CAA (4044G>A), GGG615GGA (4047G>A), CCC616CAG (4049C>A 4050C>G), ATT621ATC (4065T>C), CAC623GAA (4069C>G 4071C>A), GAC625GAT (4077C>T), CAT627GCG (4081C>G 4082A>C 4083T>G), TCT628TTC (4086T>C), CCT629CAT (4089C>T), CCT630CC (4092C>T), CTC632CC (4098C>T), GGT635GGG (4107T>G), TTC637TT (4113C>T), CTT639CTG (4119T>G), CAC641AC (4123C>A), CCT643CA (4131T>A), CCA644CT (4134A>T), CAG645AAC (4137G>A), ATT646ATC (4140T>C), AAC650AAT (4152C>T), ACC651ACG (4155C>G), CGC652CT (4158G>T), GTA653GTT (4161G>T), CGG655GCC (4167G>A), AAT656AAC (4170T>C), CCT657CCA (4173T>C), CG658GCC (4176G>A 4177C>G), S315T								

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
	ATG98CTG (2905A>C), GGC99GGA (2910C>A), GAC100AAC (2911G>A), AGA101ACA (2915G>C), ATC103ATT (2922C>T), ACC105AAG (2927C>A 2928C>G), AGC106TCC (2929A>T 2930G>C), ACC107ACA (2934C>A), CGA108AGA (2935C>A), GCC111GCA (2946C>A), CTG112TTG (2947C>T), CTC119CTT (2970C>T), AAA121AAAG (2976A>G), CAA122GCC (2977C>G 2978A>C 2979A>C), ATT123ATC (2982T>C), TCC124AAG (2983T>A 2984C>A 2985C>G), AGC125TCC (2986A>T 2987G>C), CAA126del (2989_2991delCAA), TCA127GGA (2992T>G 2993C>G), GGA128AGC (2995G>A 2997A>C), GCC129ACC (2998G>A), TCG130ACC (3001T>A 3003G>C), GAC132AAC (3007G>A), ATT133AGA (3010A>G 3012T>C), TTT136TAC (3020T>C), AAT137TAC (3021T>C), GGC137GGA (3024C>A), CCT141CCC (3036T>C), TAT144TAC (3045T>C), GAC146GAT (3051C>T), CTC157AGA (3082C>A 3084T>A), CAA160AGA (3093A>G), AGA161AGA (3094A>C), CGA170AGA (3121C>A), AAC172AAA (3129G>A), AGA173AGC (3132A>C), TTC176TT (3141C>T), TTT179TTT (3150T>C), CAG188AGC (3175C>A 3176A>C), ATT189AGC (3179A>C 3180T>G), GGT191GGC (3186T>C), ACG192ACA (3189G>A), ACG194ACC (3195G>C), ATT195ATC (3198T>C), CGC202AAC (3219G>C), ATC203ATC (3220G>A 3222T>C), TCG209AGC (3232A>G 3234T>G), CGC225TCC (3238T>A), AGG210GAC (3243G>C), TAC211CAT (3244T>C 3246C>T), CAG212CAC (3249G>C), CTC213TTA (3250C>T 3252C>A), CCG214CCC (3255G>C), CTC217CTA (3264C>A), TCG219AAC (3268T>A 3269C>G), CGC220GCC (3273G>C), CAT221AGC (3274C>G 3275A>G 3276T>C), CGC225TCC (3288C>A), CCG222GAA (3277C>G), TCG226TAC (3288C>A), CGG226CCT (3291G>T), CGC227CCC (3294G>C), TTC228TTT (3297C>T), GCA230GCC (3303A>G), TTC233TTT (3312C>T), CCA236GCC (3321A>G), TAT238TAC (3327T>C), GGA239GGG (3330A>G), TAC240TAT (3333C>T), CTC241TGC (3334C>T 3335T>G), CTG243CTC (3342G>C), AAC245GAT (3346A>G 3348G>C), AGT247ACA (3353G>C 3354T>A), GCA249AAC (3358G>A 3360A>C), GTA250ATG (3361G>A 3363A>G), CGC252AAA (3367C>A 3368G>A 3369G>A), TCT253AGC (3370T>A 3371C>G 3372T>C), TCA254TCC (3375A>C), CTG258TTG (3385C>A), GAC259GAA (3390G>A), ATT261TC (3396T>C), CCT262CCG (3399T>G), TCT263AGC (3400T>A 3401C>G 3402T>C), CGT267CGA (3414T>A), ACC268ACT (3417C>T), ACC273TCC (3430A>T), ACT277CAC (3442A>C 3443C>A 3444T>G), AGC280AAC (3451G>A), AGC285TCC (3464A>T 3467G>C 3468C>G), TAC287TCC (3473A>C), GCT288AGC (3475G>A 3477T>G), AGC290AAC (3482G>A), CAG291AGA (3484C>A 3485G>A 3486G>A), AGT292AGC (3487T>C), CGT295AGA (3496G>A), TCG299CCC (3501T>C), ATC301GTG (3514A>G 3516C>G), CTG305CTC (3528G>C), TCG306TGG (3530A>G 3531T>G), TGT308CTC (3535T>C 3537G>C), AGC309TCT (3538A>T 3539G>C 3540C>T), AGA310GGA (3541A>G), AAC311ATC (3545C>T 3546A>C), AAC312_CCA314del (3547_3555delAACACTCCA), AGT315ACT (3557G>C), ACC317AAC (3563C>A), ACC318GCA (3565A>G 3567C>A), AGC319GCG (3568A>G), CAG320AAC (3571C>A 3573G>C), TCA321GCC (3574T>G 3575A>C), AGG322AAC (3576A>C), TCG323AAC (3579G>A 3580A>C), GAG324AAC (3581A>C 3582A>C), CGA325AAC (3583A>C 3584A>C), TCG326AAC (3585A>C 3586A>C), GAG327AAC (3587A>C 3588A>C), TCG328AAC (3589A>C 3590A>C), GAG329AAC (3589G>A 3600A>C), GCG330AAA (3601G>A 3602C>A 3603G>A), AGT331GAC (3604A>G 3605G>A 3606T>C), GAC332AAA (3607G>A 3609C>A), ATT333ACT (3610A>G 3611T>C), CGG334TCC (3613C>T 3614G>C 3615G>C), GAC335CCG (3616G>C 3617A>G), TCT337TAC (3623C>A 3624T>C), AGG338GCC (3625C>A 3627G>C), AAC339ATA (3630C>A), TCG340TTT (3632G>T 3633G>T), CTCT341TAC (3634C>A 3636T>G), TGC343GGG (3642A>G), CCC344CCG (3645C>G), TAC346ATG (3649T>A 3650A>T 3651C>G), CGC347CTG (3654C>T), CGA350GTC (3661C>G 3662G>T 3663A>C), TCA351ATA (3664G>A), TCA352ATG (3667T>A 3668G>C 3669A>T), AAG353ACA (3671A>C 3672G>A), ACA354ATC (3674C>T 3675A>C), TCT355GGC (3676T>G 3677C>T), CGC356TCT (3679G>T 3681G>T), GAT357CAG (3682G>C 3684T>G), AGC358AAAT (3687C>A), AAC360TTA (3691A>T 3692A>T 3693C>G), AGT361GCA (3694A>G 3695G>A), GAA362GCG (3698A>G 3699A>C), TAC363GGC (3700T>A 3701A>C), TCG364GAC (3703T>G 3704C>A), TCT366AGC (3710C>G 3711T>C), CGA367TCT (3712G>T 3713G>C 3714A>T), GCT368GCC (3717T>C), ACC369AAC (3719C>A), AAG370AAA (3723G>A), TAC371GCT (3724T>G 3725A>T 3726C>T), CAC372TCC (3727C>T 3728A>C 3729C>G), CTC373ATT (3730C>A 3732C>T), ATT374GCC (3733A>C 3734A>C), GAG375GGG (3738C>G), AGA376CGT (3739A>C 3741A>C), TCT377TAC (3742G>C 3743A>C), AGG377TCC (3745T>C 3746C>A), CTG379GGA (3748C>G 3749T>G) 3750G>A), GTG380ATC (3751G>A 3753G>A), AAT381ATG (3755A>T 3756T>G), CCG382CCA (3759G>A), GGC383GGG (3762C>A), CCG384CCCT (3765G>T), GCC385GCT (3768C>T), ATG386CAA (3769A>C 3770T>A) 3771G>A), GCA387ACA (3772G>A), AGC388AGT (3777C>T), CAC389TCCG (3778C>T 3779A>C 3780C>G), AAG390AAA (3783G>A), GAC391GTG (3785A>T 3786C>G), GAA393GAC (3792A>C 3793A>C 3795A>C), AAG395AAC (3798G>C), TTT396CAG (3799T>A 3800T>A 3801T>G), TTG397TTC (3804T>C), CCT398CCG (3807T>G), CAG399CTT (3809A>T 3810G>T), AGC400TCT (3811A>T 3812G>C 3813C>T), GGG401GGA (3818G>A), GGT402GAC (3819T>A 3820T>C), CTC403CTG (3822G>C), GGT404CTT (3823G>C), GGG406CC (3829G>A 3830G>C 3831G>C), CAA408AC (3838A>C), CGC409AAC (3838G>A 3839G>A), TCA410GCT (3841T>A 3843A>T), GAG411CAG (3844G>C), AAA412AAC (3848A>C 3849A>C), ACA413AAC (3852A>C), AAT414TCT (3853A>C 3854A>C), GTG415GCC (3857T>C 3858G>C), GAC416ATG (3859A>C 3860A>C), ATT417TTC (3862A>C 3863C>T), ATT417TTC (3862A>C 3865C>T), ATT417TTC (3862A>C 3867C>T), ATT417TTC (3862A>C 3869C>T), AAC418AAC (3865G>A 3867A>C), AAC419AAC (3869A>C 3870W>C), GTG414TAC (3872T>C), AAC423AAC (3882A>C), GAC424AT (3883G>A 3885C>T), GAG426AAAT (3889G>A 3891G>T), ATC428ATA (3897C>A), AGG429CGT (3898A>C 3900G>T), ACA430CAG (3901A>C 3902C>A 3903A>G), ACC431ACA (3906C>A), CCC433CCT (3912C>T), GTG434ATC (3913G>A 3915G>C), GCT435AGC (3916G>A 3917C>G 3918T>C), AGC436TAC (3919A>T 3920C>A 3921G>C), GAG437GGA (3923A>G 3924G>A), CAG438TCC (3925C>T 3926A>C), TAT439GCC (3928T>A 3929A>C 3930T>C), GGT440TAC (3931G>T 3932G>A 3933T>C), TCT441ACA (3934T>A 3936T>A), GTA442GTC (3939A>C), TCT443GCC (3940T>G 3942T>G), ACC444ATC (3943A>T), CTC446AAC (3949A>C 3950T>A 3951C>T), CAG447CAA (3955A>C 3956G>C), GGC449CCA (3958G>C 3959G>C 3960C>A), AAC450ACT (3962A>C 3963C>T), AGA451AAC (3965G>A 3966A>C), CAA452GGT (3967C>G 3968G>A 3969A>T), GAC453GCC (3970G>C 3972A>C), GCT454ACG (3973G>A 3975T>G), ACC455ACT (3978C>T), GCA456GAA (3980R>A), GTC458TTG (3985G>C 3987C>G), AGA460GCT (3991A>C 3993A>T), AAC461CTG (3995A>T 3996A>G), GTT463GTC (4002T>C), CTT464ATG (4003C>A 4005T>G), AGA472CGC (4027A>C 4029A>C), GTG474TGT (4035G>T), CTT476TTA (4039C>T 4041T>A), CAG477CAA (4044G>A), GGG478GGA (4047G>A), CCC479CAG (4049C>A 4050C>G), ATT484ATC (4065T>C), CAC486GAA (4069C>G 4071C>A), GAC488GAT (4077C>T), CAT490GCG (4081C>A 4082A>C 4083T>G), TTT491TTC (4086T>C), CCT493CCT (4092C>T), CCC495CCT (4098C>T), GGT498GGG (4107T>G), TCT500TTT (4113C>T), CTT502CTG (4119T>G), CAC504AAC (4123C>A), CCT506CA (4131T>A), CCA507CTT (4134A>T), CAG508CA (4137G>A), ATT509ATC (4140T>C), AAC513ATA (4152C>T), ACC514AGC (4155C>G), CGC515CT (4158G>C), ATG516GTT (4167G>A), AAT519ACA (4170T>C), CCT520CCA (4173T>C), CG521CCG (4174T>C), AGT525AGC (4188T>C), GCG526CCA (4189G>C 4191G>A), GCA527AAT (4192G>A 4193C>A 4194T>A), TTT529CTG (4198T>C 4200T>G), GCT530AAAT (4201G>A 4202C>A), ACA534ACT (4215A>T), CAG535CAA (4218G>A), TCC537TCT (4224C>T), AGC538ACC (4227G>C), GGA539GCC (4230A>C), CAG540CAA (4233G>A), AGC542ACC (4238G>C), ATC545ATT (4248C>T), GAG546GAA (4251G>A), GAG548GAA (4257G>A), CTG549CTC (4260G>C), CAG550AAG (4261C>A), AAC553TCT (4270A>T 4271A>C), AGC554TCC (4273A>T 4274G>C), CCC559CCA (4290C>A), GAA560GAG (4293A>G), ATT561GTC (4294A>G 4296T>C), TAC563TTT (4301A>T 4302C>T), ACT564ACC (4305T>C), TCC565GCC (4306T>G)								
Codon mutations:									
assembly									
activating protein AAP	59	205	71.7%	575	58.4%	146 (99.3%)	88 (59.9%)	0/1/0/0	1
(YP_004030758.1)									
Protein mutations:									
Codon mutations:									
major coat protein VP3	33	504	88.4%	2434	70.7%	468 (99.2%)	315 (66.7%)	0/4/0/0	0
(YP_680428.1)									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	328	4319	58.8%	1676	31.1%	2730 (99.2%)	1803 (65.5%)	0/22	
Protein mutations:	M33L (2905A>C), D35N (2911G>A), R36T (2915G>C), T40K (2927C>A 2928C>G), Q57A (2977C>G 2978A>C 2979A>C), S59K (2983T>A 2984C>A 2985C>G), Q61del (2989...2991delCAA), S62G (2992T>C 2993C>G), G63S (2995G>A 2997A>C), A64T (2998G>A), S65T (3001T>A 3003G>C), D67N (3007G>A), N68D (3010A>G 3012T>C), F71Y (3020T>A 3021T>C), R108S (3132A>C), Q123T (3175C>A 3176A>C), N124T (3179A>C 3180T>G), V138I (3220G>A 3222T>C), T142A (3232A>G 3234T>G), S144T (3238T>A), E145D (3243G>C), Y146H (3244T>C 3246C>T), Q147H (3249G>C), S154N (3268T>A 3269C>A 3270G>C), H156S (3274C>A 3275A>G 3276T>C), Q157E (3277C>G), L176C (3334C>T 3335T>G), N180D (3346A>G 3348C>T), S182T (3353G>A 3354T>A), A184T (3358G>A 3360A>C), V185M (3361G>A 3363A>G), R187K (3367C>A 3368G>A 3369C>A), T208S (3430A>T), T121Q (3442A>C 3443C>A 3444T>C), D215N (3451G>A), Y222P (3473A>T), A223T (3475G>A 3477T>G), S225N (3482G>A), Q226R (3484C>A 3485A>G 3486G>C), I236V (3514A>G 3516C>G), Y241W (3530A>G 3531T>G), R245G (3541A>G), T246I (3545T>C 3546A>C), N247...P249del (3547...3555del)AACACTCCAA, S250T (3557G>C), T252N (3563C>A), T253A (3565A>G 3567C>A), D254A (3568A>G 3569C>A), Q255N (3571C>A 3574C>G), S256A (3574T>G 3576A>C), R257I (3578G>T 3579G>T), L258P (3581T>A 3582T>C), P259K (3583C>A), S261D (3589T>C 3590C>A 3591T>C), D262K (3592C>A 3594G>A), G264S (3598G>A 3600A>C), A265I (3601G>A 3602C>A 3603G>A), S266D (3604A>G 3605G>A 3606T>A), D267K (3607G>A 3609C>A), I268P (3610A>G 3611C>T), D269S (3613C>T 3614G>C), D270R (3616G>C 3617A>G), S272Y (3623C>A 3624T>C), W275F (3632G>T 3636G>T), L276M (3634C>A 3636T>C), Y281M (3649T>A 3650A>C 3651C>G), R285V (3661C>G 3662G>T 3663A>C), V286I (3664G>A), K288T (3671A>C 3672G>A), T289I (3674C>T 3675A>C), S290G (3676T>C 3677G>C 3678T>C), A291S (3679G>T 3681G>T), D292Q (3682G>C 3684T>G), N295L (3691A>T 3692A>T 3693G>C), S296A (3694A>G 3695G>C 3698T>A), E297G (3698A>G 3699A>C), Y298G (3700T>G 3701A>G), S299D (3703T>G 3704C>A 3705G>C), T301S (3710C>G 3711T>C), G302S (3712G>T 3713G>C 3714A>T), T304N (3719C>A), Y306A (3724T>A 3725C>A 3726C>T), H307S (3727C>T 3728A>C 3729C>G), L308I (3730C>A 3732C>T), N309A (3733A>G 3734A>C 3735T>C), D312S (3742G>T 3743A>C), S313H (3745T>A 3746C>A), L314C (3748C>T 3749T>G 3750C>A), V315I (3751G>A 3753G>C), N316M (3755A>T 3756T>G), M321O (3769A>C 3770T>A 3771G>A), A322T (3772G>C), H324S (3778C>T 3779C>G), D326V (3785A>T 3786C>G), E328D (3792A>C), E329T (3793G>A 3794A>C), K330N (3798G>C), F331Q (3799T>C 3800T>A 3801T>G), Q334L (3809A>T 3810G>T), V337D (3818T>A 3819T>C), I339V (3823A>G), G341P (3828G>C 3830G>C 3831G>C), Q343H (3837A>C), S345A (3841T>C 3843A>C), E346Q (3844G>C 3846A>C), K347T (3848A>C 3849A>C), S349S (3853A>T 3854A>C), V350A (3857T>C 3858G>C), D351S (3859G>A 3860A>G 3861C>T), I352F (3862A>T 3864T>C), E353N (3865G>A 3867A>C), K354S (3869A>G 3870G>C), D359N (3883G>A 3885C>T), E361N (3889G>A 3891G>T), T365G (3901A>C 3903A>G), V369I (3913G>A 3915G>C), A370S (3916G>A 3917C>G), T371Y (3919A>T 3920C>A 3921G>C), E372G (3923A>G 3924G>A), Q373S (3925C>T 3926A>C), Y374A (3928T>A 3929A>C 3930T>C), G375I (3931G>T 3932G>A 3933T>C), S376T (3934T>A 3935T>A), S378A (3940T>G 3942T>G), T379S (3943A>T), L381V (3949C>A 3950A>C 3951C>T), R383S (3955A>T 3956G>C), G384P (3958G>C 3959G>C 3960C>A), N385T (3962A>C 3963C>T), R386N (3965G>A 3966A>C), Q387G (3967G>C 3968A>C 3969A>T), A388P (3970G>C 3972A>C), A389T (3973G>A 3975T>G), A391E (3980A>C 3982A>C), S393L (3985G>C 3987G>C), T393L (3986A>C 3988G>C), G394P (3989G>C 3991G>C), A395S (3992G>C 3994G>C), T396A (3997G>C 3999G>C), R397T (3999G>C 3999A>C), A401C (4018G>C 4019A>T), F426L (4198T>C 4200T>G), A465N (4201G>A 4202C>A), S477T (4238G>C), Q485K (4261C>A), N488S (4270A>T 4271A>C 4272C>T), Y498F (4294A>G 4296T>A), S500A (4306T>G)								
Codon mutations:	ATG33CTG (2905A>C), GGC34GGA (2910C>A), GAC35AAC (2911G>A), AGA36ACA (2915G>C), ATC38ATT (2922C>T), ACC40AAG (2927C>A 2928C>G), AGC41TCC (2929A>T 2930G>C), ACC44ACA (2934C>A), CGA43AGA (2935C>A), GCG46GCA (2946C>A), CTG47TTG (2947C>T), CTC45CTT (2970C>T), AAA56AAG (2976A>G), CA57GCC (2977C>G 2978A>C 2979A>C), ATT58ATC (2982T>C), Q375MAA (2983T>A 2984C>A 2985C>G), AGC60TCC (2986A>T 2987G>C), CA61del (2989...2991delCAA), TCA62GCA (2992T>G 2993C>G), GGA63AGC (2995G>A 2997A>C), CCC64ACC (2998G>A), TCC65MAG (3001T>A 3003G>C), GAC67AAG (3007G>A), AA68GAC (3010A>G 3012T>C), T771TAC (3020T>A 3021T>C), CCT76CGA (3024C>A), CTC776CC (3036T>C), TAT79TAC (3045C>T), GAC81GAT (3051C>T), CGT92AGA (3082C>A 3084T>A), CAA95CAC (3093A>G), AGA96GCA (3094A>C), CGA105AGA (3121C>A), AGA107AA (3129G>A), AGA108AGC (3132A>C), TTC111TT (3141C>T), TTT114TTC (3150T>C), CAG123ACG (3175C>A 3176A>C), AAT124AGC (3176A>C 3180T>G), GGT126GG (3187C>C), AGC127AGA (3189G>A), AGC129AC (3195G>C), ATT130ATC (3198T>C), AGC137AAC (3219G>C), GTT138ATC (3220G>A 3222T>C), ACT142GCG (3232G>A 3234T>C), TCG144AGC (3238T>C), AGAG15GAC (3243G>C), TAC146CAT (3244T>C 3246C>T), CAG147CAC (3249G>C), CTC148TTA (3250C>T 3252C>A), CCG149CC (3255G>C), CTC152CTA (3264C>A), TCG154AAC (3268T>A 3269C>A 3270G>C), GCG155GOC (3273G>C), CAT156AGC (3274C>A 3275A>C 3276T>C), CAA157GA (3277C>G), CTC160CTA (3288C>A), CCG161CTC (3291G>C), TCG162CC (3294G>C), TTC163TT (3297C>T), GCA165GCG (3303A>G), TCT168TAT (3312C>T), CCA171CCG (3321A>C), TAT173ATC (3327T>C), GGA174GGC (3330A>G), TAC175STAT (3333C>T), CTC176TGC (3334C>T 3335T>C), CGT178CTC (3342G>C), AAC180GAT (3364A>G 3348C>T), GGG181GG (3351G>A), AGT182AAC (3353G>C 3354T>A), GCA184AAC (3358G>A 3360A>C), GTA185ATG (3361G>A 3363A>G), CTC187AAC (3367C>A 3368G>A 3369A>C), TCA189TCC (3375A>C), CGT193TTG (3385C>T), GAG194GAA (3380G>A), CTC196TTC (3396T>C), CCT197CCG (3399T>C), TCT198AGC (3400T>A 3401C>G 3402T>C), CGT202CGA (3414T>A), ACC203ACT (3417C>T), ACC208TC (3430A>T), ACT212CAG (3442A>C 3443C>A 3444T>G), GAC215AAC (3451G>A), AGC220TGC (3466A>T 3467G>C 3468C>G), TAC222TT (3473A>T), GCT223ACG (3475G>C 3477T>C), AGC225AAC (3482G>A), CAG226AGA (3484C>A 3485G>C 3486G>A), B227AGA (3489T>A), CGT230AGA (3496C>A 3498T>A), CCT234CC (3510T>C), ATC236GTC (3514A>G 3516C>G), CTG240CTC (3528G>C), TAT241TGC (3530A>G 3531T>G), TTG243CTC (3535T>C 3537G>C), AGC244TCT (3538A>T 3539G>C 3540C>T), AGA245GGA (3541A>G), AAC246ATC (3545C>T 3546A>C), AAC247AAC (3546C>T 3547A>C), AGC252AAC (3563C>A 3564C>C), ACC253GCC (3565A>G 3567C>A), AGC254GCG (3568A>G), CAG255AAC (3571C>A 3573G>C), TCA256GCC (3574T>G 3576A>C), AGG257ATT (3578G>C 3579G>T), CTT258CC (3581T>C 3582T>C), CAG259AAG (3583C>A), TCT261GAC (3589T>G 3590C>A 3591T>C), CAG262AAA (3592C>A 3594G>A), GGA264AGC (3598G>A 3600A>C), GCG265AA (3601G>A 3602C>A 3603G>A), AG266GAC (3604A>G 3605G>A 3606A>C), ATT268CT (3610A>C 3611G>C), CGC2691T (3613C>A 3614G>C), G372AC (3616G>C 3617G>C), G372CT (3621C>A 3622G>C), ATT272TA (3623C>A 3624T>C), AGC273CCG (3625A>C 3627G>C), AAC274TAT (3630C>T), TGG275TT (3632G>T 3633G>T), CTT276ATG (3634C>A 3636T>G), GGA278GGG (3642A>G), CCC279CCG (3645C>G), TCA281ATG (3649T>A 3650A>G), AAC282GGT (3654C>T 3655G>C), CGC282GGT (3654C>T 3655G>C), TCT290GGC (3676T>G 3677C>G), GCG291TCT (3679G>T 3681G>T), GAT292CAG (3682G>C 3684T>G), AAC293AAAT (3687C>T), AAC298GGC (3698A>C 3700G>C), AAC299GAC (3701T>G 3702G>C), AAC299GAC (3703T>G 3704C>A 3705G>C), ACT301AGC (3710C>G 3711T>C), GGA302CT (3712G>T 3713G>C 3714A>T), GCA303GCC (3717T>C), AGC304AAC (3719C>A), TAC306GCC (3724T>C), GAG315TCA (3728C>G), AGA315GTC (3739A>C 3741A>T), GAC312TC (3742C>T 3743A>C), TCT313CAT (3745T>C 3746C>A), CTG314GGA (3748C>G 3749T>G 3750G>A), GTG315TAC (3751G>A 3753G>C), AG316GCA (3752C>A 3754G>C), TCT317CA (3755G>C 3757G>C), AG318GTC (3758G>C 3759G>C), TGG319T (3761G>C 3762G>C), GCA321CAA (3763G>C 3764G>C), TGT327T (3765G>C 3766G>C), AGC328T (3767G>C 3768G>C), ATT327ATC (3769G>C 3770G>C), AAC329T (3771G>C 3772G>C), GCA330AT (3773G>C 3774G>C), TGT331CAT (3775G>C 3776G>C), AGC332T (3777G>C 3778G>C), AAG333AAC (3779G>C 3780G>C), TGT334T (3781G>C 3782G>C), AAC335T (3783G>C 3784G>C), AAC336T (3785G>C 3786G>C), AAC337T (3787G>C 3788G>C), AAC338T (3789G>C 3790G>C), AAC339T (3791G>C 3792G>C), AAC340T (3793G>C 3794G>C), AAC341T (3795G>C 3796G>C), AAC342T (3797G>C 3798G>C), AAC343T (3799G>C 3799A>C), AAC344T (3800G>C 3801G>C), AAC345T (3801G>C 3802G>C), AAC346T (3802G>C 3803G>C), AAC347T (3803G>C 3804G>C), AAC348T (3804G>C 3805G>C), AAC349T (3805G>C 3806G>C), AAC350T (3806G>C 3807G>C), AAC351T (3807G>C 3808G>C), AAC352T (3808G>C 3809G>C), AAC353T (3809G>C 3810G>C), AAC354T (3810G>C 3811G>C), AAC355T (3811G>C 3812G>C), AAC356T (3812G>C 3813G>C), AAC357T (3813G>C 3814G>C), AAC358T (3814G>C 3815G>C), AAC359T (3815G>C 3816G>C), AAC360T (3816G>C 3817G>C), AAC361T (3817G>C 3818G>C), AAC362T (3818G>C 3819G>C), AAC363T (3819G>C 3820G>C), AAC364T (3820G>C 3821G>C), AAC365T (3821G>C 3822G>C), 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AAC440T (3839G>C 3839F>D), AAC441T (3839G>C 3839G>E), AAC442T (3839G>C 3839H>F), AAC443T (3839G>C 3839I>G), AAC444T (3839G>C 3839J>H), AAC445T (3839G>C 3839K>I), AAC446T (3839G>C 3839L>J), AAC447T (3839G>C 3839M>K), AAC448T (3839G>C 3839N>L), AAC449T (3839G>C 3839O>M), AAC450T (3839G>C 3839P>N), AAC451T (3839G>C 3839Q>O), AAC452T (3839G>C 3839R>P), AAC453T (3839G>C 3839S>Q), AAC454T (3839G>C 3839T>R), AAC455T (3839G>C 3839U>S), AAC456T (3839G>C 3839V>T), AAC457T (3839G>C 3839W>U), AAC458T (3839G>C 3839X>V), AAC459T (3839G>C 3839Y>W), AAC460T (3839G>C 3839Z>X), AAC461T (3839G>C 3839A>Y), AAC462T (3839G>C 3839B>Z), AAC463T (3839G>C 3839C>A), AAC464T (3839G>C 3839D>B), AAC465T (3839G>C 3839E>C), AAC466T (3839G>C 3839F>D), AAC467T (3839G>C 3839G>E), AAC468T (3839G>C 3839H>F), AAC469T (3839G>C 3839I>G), AAC470T (3839G>C 3839J>H), AAC471T (3839G>C 3839K>I), AAC472T (3839G>C 3839L>J), AAC473T (3839G>C 3839M>K), AAC474T (3839G>C 3839N>L), AAC475T (3839G>C 3839O>M), AAC476T (3839G>C 3839P>N), AAC477T (3839G>C 3839Q>O), AAC478T (3839G>C 3839R>P), AAC479T (3839G>C 3839S>Q), AAC480T (3839G>C 3839T								

Analysis details

This analysis was performed with Pan-viral (2.14.6)

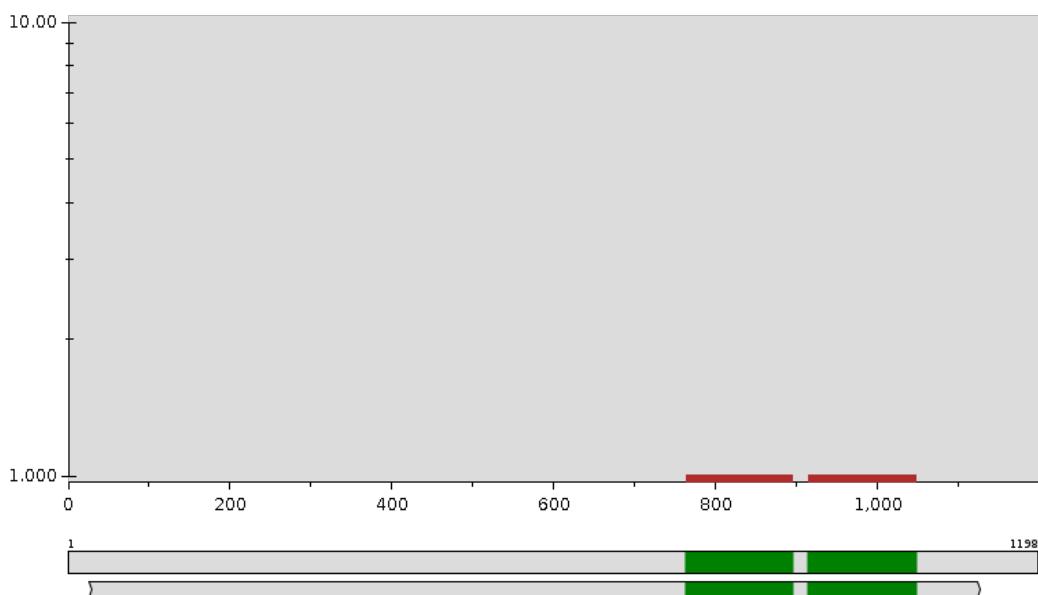


NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment S3)

Assembly

Coverage Length	269 (2 contig(s))
Depth Of Coverage	1.0
Number Of Reads	2
Reads Per Million	0.02 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013233.1
NT Identity (%)	82.1561
AA Identity (%)	94.382
Number Of Stop Codons	0
Number Of CDS	1

Alignment

Alignment Score	346.0 (NT) + 594.0 (AA) = 940.0
Concordance (%)	81.8815

Genome Region

Sequence starts at position 764 and ends at position 1049 relative to NC_013233.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	764	1049	22.5%	346	64.3%	269 (100%)	221 (82.2%)	0/0	
Mutations:									
780T>C, 786A>G, 789C>T, 798A>C, 804C>T, 810G>A, 813T>C, 819C>T, 822G>A, 832C>T, 843C>T, 846A>T, 855G>T, 858C>T, 876C>A, 879T>A, 882C>T, 885T>C, 892G>A, 918G>T, 921T>C, 924T>C, 927C>T, 933G>A, 948C>T, 960A>G, 966A>G, 970C>T, 972A>G, 975A>G, 990G>A, 993A>G, 999A>G, 1006A>G, 1007T>C, 1011T>A, 1017G>A, 1018G>T, 1019C>T, 1020A>G, 1023T>C, 1026C>T, 1029C>A, 1034T>C, 1038G>A, 1044T>C, 1045C>T, 1047T>G									
CDS									
S3	247	341	24.3%	594	94.3%	89 (100%)	84 (94.4%)	0/0/0/0	0
Protein mutations:									
V289I (892G>A), I327A (1006A>G 1007T>C), A331L (1018G>T 1019C>T 1020A>G), V336A (1034T>C)									
CTT251CTC (780T>C), ACA253ACG (786A>G), TGC254TGT (789C>T), CTA257CTC (798A>C), TGC259TGT (804C>T), CAG261CAA (810G>A), TTT262TTC (813T>C), CTC264CTT (819C>T), GAG265GAA (822G>A), CTG269TTG (832C>T), AAC272AAT (843C>T), GCA273GCT (846A>T), CTG276CTT (855G>T), GAC277GAT (858C>T), ATC283ATA (876C>A), CCT284CCA (879T>A), TTC285TTT (882C>T), AGT286AGC (885T>C), GTT289ATT (892G>A), GCG297GCT (918G>T), ACT298ACC (921T>C), ATT299ATC (924T>C), GAC300GAT (927C>T), CAG302CAA (933G>A), TGC307TGT (948C>T), AAA311AAG (960A>G), AAA313AAG (966A>G), CTA315TTG (970C>T 972A>G), AAA316AAG (975A>G), GAG321GAA (990G>A), ACA322ACG (993A>G), AGA324AGG (999A>G), ATT327GCT (1006A>G 1007T>C), CGT328CGA (1011T>A), GCG330GCA (1017G>A), GCA331TTG (1018G>T 1019C>T 1020A>G), GAT332GAC (1023T>C), GAC333GAT (1026C>T), TCC334TCA (1029C>A), GTT336GCT (1034T>C), ACG337ACA (1038G>A), TCT339TCC (1044T>C), CTT340TTG (1045C>T 1047T>G)									
Codon mutations:									
*: Inserts / Deletes / Misaligned / Frameshifts									

Proteins

sigma-NS protein (YP_003199426.1)	247	341	24.3%	594	94.3%	89 (100%)	84 (94.4%)	0/0/0/0	0
Protein mutations:									
V289I (892G>A), I327A (1006A>G 1007T>C), A331L (1018G>T 1019C>T 1020A>G), V336A (1034T>C)									
CTT251CTC (780T>C), ACA253ACG (786A>G), TGC254TGT (789C>T), CTA257CTC (798A>C), TGC259TGT (804C>T), CAG261CAA (810G>A), TTT262TTC (813T>C), CTC264CTT (819C>T), GAG265GAA (822G>A), CTG269TTG (832C>T), AAC272AAT (843C>T), GCA273GCT (846A>T), CTG276CTT (855G>T), GAC277GAT (858C>T), ATC283ATA (876C>A), CCT284CCA (879T>A), TTC285TTT (882C>T), AGT286AGC (885T>C), GTT289ATT (892G>A), GCG297GCT (918G>T), ACT298ACC (921T>C), ATT299ATC (924T>C), GAC300GAT (927C>T), CAG302CAA (933G>A), TGC307TGT (948C>T), AAA311AAG (960A>G), AAA313AAG (966A>G), CTA315TTG (970C>T 972A>G), AAA316AAG (975A>G), GAG321GAA (990G>A), ACA322ACG (993A>G), AGA324AGG (999A>G), ATT327GCT (1006A>G 1007T>C), CGT328CGA (1011T>A), GCG330GCA (1017G>A), GCA331TTG (1018G>T 1019C>T 1020A>G), GAT332GAC (1023T>C), GAC333GAT (1026C>T), TCC334TCA (1029C>A), GTT336GCT (1034T>C), ACG337ACA (1038G>A), TCT339TCC (1044T>C), CTT340TTG (1045C>T 1047T>G)									
Codon mutations:									

*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

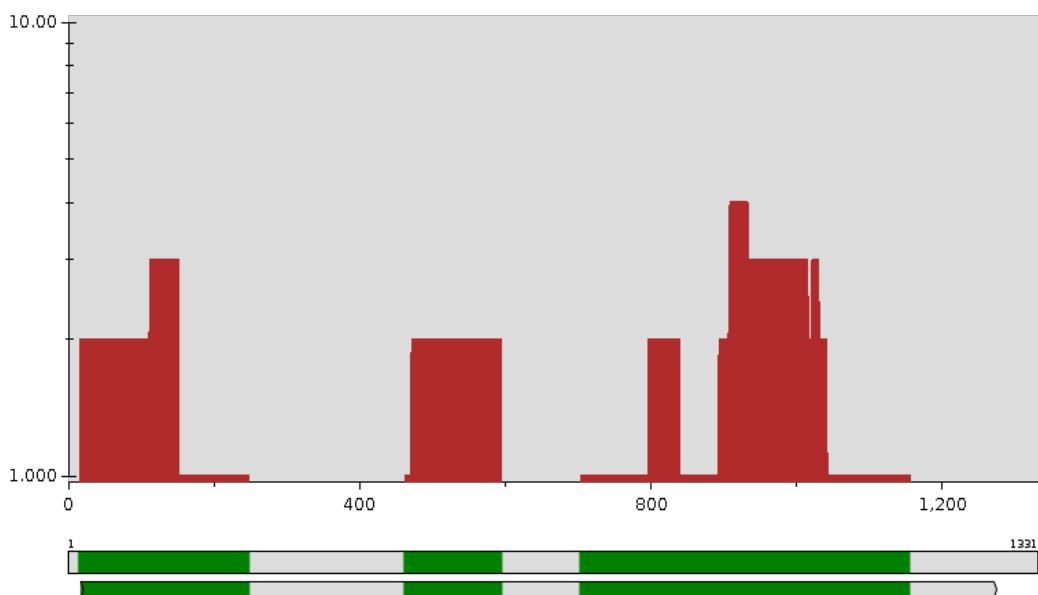
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment S2)

Assembly

Coverage Length	823 (3 contig(s))
Depth Of Coverage	1.8
Number Of Reads	11
Reads Per Million	0.10 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013232.1
NT Identity (%)	84.4471
AA Identity (%)	95.9707
Number Of Stop Codons	0
Number Of CDS	1

Alignment

Alignment Score	1134.0 (NT) + 1887.0 (AA) = 3021.0
Concordance (%)	83.8934

Genome Region

Sequence starts at position 16 and ends at position 1157 relative to NC_013232.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	16	1157	61.8%	1134	68.9%	823 (100%)	695 (84.4%)	0/0	
Mutations:									
30C-T, 54G-A, 57T-A, 71A-G, 72T-C, 78G>A, 90A>G, 93G-A, 96T>G, 102C-T, 105T-A, 109C>A, 114T>C, 117C-T, 123T-G, 144C-T, 145C>T, 165G>A, 172C>T, 183A>G, 186A>C, 195T>A, 213T>C, 216C>T, 225T>C, 229C>T, 231T>A, 234A>G, 240C>T, 243T>C, 246T>C, 462T>C, 468G>A, 471T>G, 472C>T, 477C>T, 480C>T, 489A>G, 491T>G, 495C>T, 498G>A, 504G>C, 507C>T, 513G>A, 516G>A, 519T>C, 522A>G, 537A>G, 540T>C, 552T>A, 561T>G, 567T>C, 570A>G, 573C>T, 576A>G, 582A>G, 585G>A, 587T>G, 705T>C, 708A>G, 717A>G, 723A>G, 726A>G, 729T>C, 744C>T, 750A>T, 768A>G, 780C>T, 783T>C, 789G>A, 793C>T, 795G>C, 801A>G, 807C>T, 822C>T, 826T>C, 846C>T, 852T>C, 864T>C, 867T>C, 870C>T, 871C>T, 876C>T, 877T>C, 882C>T, 891G>A, 897A>G, 900T>C, 903A>G, 909T>C, 912T>G, 915A>T, 918A>G, 924C>G, 933T>C, 942G>A, 948C>T, 954A>C, 966T>C, 984A>G, 990T>C, 999A>G, 1005C>T, 1014A>G, 1015A>C, 1017G>A, 1020A>G, 1032G>A, 1038C>T, 1041T>C, 1044G>A, 1045C>T, 1053T>C, 1056C>T, 1059T>G, 1070G>A, 1071G>A, 1080G>A, 1089G>T, 1098A>G, 1102G>A, 1113G>A, 1137A>G, 1140G>A, 1146G>T, 1155C>T									

CDS

S2	1	380	65.2%	1887	94.9%	273 (100%)	262 (96.0%)	0/0/0/0	0
Protein mutations:									
F13L (57T>A), N18S (71A>G 72T>C), F158C (491T>G), N181K (561T>G), I190S (587T>G), Q259Y (793C>T 795G>C), R351Q (1070G>A 1071G>A), I357V (1087A>G 1089C>T), D362N (1102G>A)									
Codon mutations:									
GCC4GCT (30C>T), GGG12GGA (54G>A), TTT13TTA (57T>A), AAT18AGC (71A>G 72T>C), CCG20CCA (78G>A), GAA24GAG (90A>G), CTG25CTA (93G>A), TCT26TCG (96T>G), CAC28CAT (102C>T), CTT29CTA (105T>A), CGA31AGA (109C>A), GCT32GCC (114T>C), GGC33GGT (117C>T), TCT35TCG (123T>G), TTC42TTT (144C>T), CTA43TTA (145C>T), GGG49GGA (165G>A), CTA52TTA (172C>T), TCA55TCG (183A>G), GCA56GCC (186A>C), CCT59CCA (195T>A), TAT65TAC (213T>C), TAC66TAT (216C>T), AGT69AGC (225T>C), CTT71TTA (229C>T 231T>A), TTA72TTG (234A>G), GGC74GGT (240C>T), ACT75ACC (243T>C), CTT76CTC (246T>C), AGT148.C (462T>C), GTG150GTA (468G>A), ACT151ACG (471T>G), CTG152TTG (472C>T), AAC154AA (480C>T), GGA157GGG (489A>G), TTT158TGT (491T>G), GGC159GGT (495C>T), CCG160CCA (498G>A), TCG162TCC (504G>C), TAC163TAT (507C>T), CCG165CGA (513G>A), GTG166GTA (516G>A), GAT167GAC (519T>C), GAA168GAG (522A>G), GGA173GGG (537A>G), GAT174GAC (540T>C), CTT178CTA (552T>A), AAT181AAG (561T>G), TTT183TTC (567T>C), GGA184GGG (570A>G), CAC185CAT (573C>T), ACA186ACG (576A>G), GCA188GCG (582A>G), GAG189GAA (585G>A), ATT190AGT (587T>G), CAT229.AC (705T>C), CAA230CAG (708A>G), ACA233ACG (717A>G), CGA235CGG (723A>G), ACA236ACG (726A>G), TTT237TTC (729T>C), AAC242ATT (744C>T), CGA244CGT (750A>T), GTA250GTTG (768A>G), TCC254TCT (780C>T), TGT255TGC (783T>C), TTG257TTA (789G>A), CAG259TAC (793C-T 795G>C), GCA261GCC (801A>C), ATC263ATT (807C>T), CGC268CGT (822C>T), TTA270CTA (826T>C), AGC276AGT (846C>T), GAT278GAC (852T>C), GAT282GAC (864T>C), GTT283GTC (867T>C), AAC284AA (870C>T), CTG285TTG (871C>T), ATC286ATT (876C>T), TTA287CTA (877T>C), AGC288AGT (882C>T), TTG291TTA (891G>A), GGA293GG (897A>G), TGT294TGC (900T>C), TTA295TTG (903A>G), TCT297TCG (909T>G), GGT298GGG (912T>G), TCA299TCT (915A>T), CAA300CAG (918A>G), CCC302CCG (924C>G), GAT305GAC (933T>C), AAC306AA (936C-T), TCG308TCA (942G>A), CCC310CCT (948C>T), GTA312GTC (954A>C), ATT316ATC (966T>C), AGA322AGG (984A>G), GGT324GGC (990T>C), TTA327TTG (999A>G), GGC329GGT (1005C>T), GTA332GTG (1014A>G), AGG333CGA (1015A>C 1017G>A), CGA334CGG (1020A>G), GAG338GAA (1032G>A), TGC340TGT (1038C>T), GAT341GAC (1041T>C), AGG342AGA (1044G>A), CTA343TTA (1045C>T), CGT345CGC (1053T>C), GAC346GAT (1056C>T), GGT347GGG (1059T>G), CGG351CAA (1070G>A 1071G>A), CAG354CAA (1080G>A), ATC357GTT (1087A>G 1089C>T), TTA360TTG (1098A>G), GAC362AAC (1102G>A), CAG365CAA (1113G>A), GAA373GAG (1137A>G), GCG374GCA (1140G>A), GCG376GCT (1146G>T), GAC379GAT (1155C>T)									

Proteins

sigma-2 protein (YP_003199425.1)	1	380	65.2%	1887	94.9%	273 (100%)	262 (96.0%)	0/0/0/0	0
Protein mutations:									
F13L (57T>A), N18S (71A>G 72T>C), F158C (491T>G), N181K (561T>G), I190S (587T>G), Q259Y (793C>T 795G>C), R351Q (1070G>A 1071G>A), I357V (1087A>G 1089C>T), D362N (1102G>A)									
Codon mutations:									
GCC4GCT (30C>T), GGG12GGA (54G>A), TTT13TTA (57T>A), AAT18AGC (71A>G 72T>C), CCG20CCA (78G>A), GAA24GAG (90A>G), CTG25CTA (93G>A), TCT26TCG (96T>G), CAC28CAT (102C>T), CTT29CTA (105T>A), CGA31AGA (109C>A), GCT32GCC (114T>C), GGC33GGT (117C>T), TCT35TCG (123T>G), TTC42TTT (144C>T), CTA43TTA (145C>T), GGG49GGA (165G>A), CTA52TTA (172C>T), TCA55TCG (183A>G), GCA56GCC (186A>C), CCT59CCA (195T>A), TAT65TAC (213T>C), TAC66TAT (216C>T), AGT69AGC (225T>C), CTT71TTA (229C>T 231T>A), TTA72TTG (234A>G), GGC74GGT (240C>T), ACT75ACC (243T>C), CTT76CTC (246T>C), AGT148.C (462T>C), GTG150GTA (468G>A), ACT151ACG (471T>G), CTG152TTG (472C>T), AAC154AA (480C>T), GGA157GGG (489A>G), TTT158TGT (491T>G), GGC159GGT (495C>T), CCG160CCA (498G>A), TCG162TCC (504G>C), TAC163TAT (507C>T), CCG165CGA (513G>A), GTG166GTA (516G>A), GAT167GAC (519T>C), GAA168GAG (522A>G), GGA173GGG (537A>G), GAT174GAC (540T>C), CTT178CTA (552T>A), AAT181AAG (561T>G), TTT183TTC (567T>C), GGA184GGG (570A>G), CAC185CAT (573C>T), ACA186ACG (576A>G), GCA188GCG (582A>G), GAG189GAA (585G>A), ATT190AGT (587T>G), CAT229.AC (705T>C), CAA230CAG (708A>G), ACA233ACG (717A>G), CGA235CGG (723A>G), ACA236ACG (726A>G), TTT237TTC (729T>C), AAC242ATT (744C>T), CGA244CGT (750A>T), GTA250GTTG (768A>G), TCC254TCT (780C>T), TGT255TGC (783T>C), TTG257TTA (789G>A), CAG259TAC (793C-T 795G>C), GCA261GCC (801A>C), ATC263ATT (807C>T), CGC268CGT (822C>T), TTA270CTA (826T>C), AGC276AGT (846C>T), GAT278GAC (852T>C), GAT282GAC (864T>C), GTT283GTC (867T>C), AAC284AA (870C>T), CTG285TTG (871C>T), ATC286ATT (876C>T), TTA287CTA (877T>C), AGC288AGT (882C>T), TTG291TTA (891G>A), GGA293GG (897A>G), TGT294TGC (900T>C), TTA295TTG (903A>G), TCT297TCG (909T>G), GGT298GGG (912T>G), TCA299TCT (915A>T), CAA300CAG (918A>G), CCC302CCG (924C>G), GAT305GAC (933T>C), AAC306AA (936C-T), TCG308TCA (942G>A), CCC310CCT (948C>T), GTA312GTC (954A>C), ATT316ATC (966T>C), AGA322AGG (984A>G), GGT324GGC (990T>C), TTA327TTG (999A>G), GGC329GGT (1005C>T), GTA332GTG (1014A>G), AGG333CGA (1015A>C 1017G>A), CGA334CGG (1020A>G), GAG338GAA (1032G>A), TGC340TGT (1038C>T), GAT341GAC (1041T>C), AGG342AGA (1044G>A), CTA343TTA (1045C>T), CGT345CGC (1053T>C), GAC346GAT (1056C>T), GGT347GGG (1059T>G), CGG351CAA (1070G>A 1071G>A), CAG354CAA (1080G>A), ATC357GTT (1087A>G 1089C>T), TTA360TTG (1098A>G), GAC362AAC (1102G>A), CAG365CAA (1113G>A), GAA373GAG (1137A>G), GCG374GCA (1140G>A), GCG376GCT (1146G>T), GAC379GAT (1155C>T)									

*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

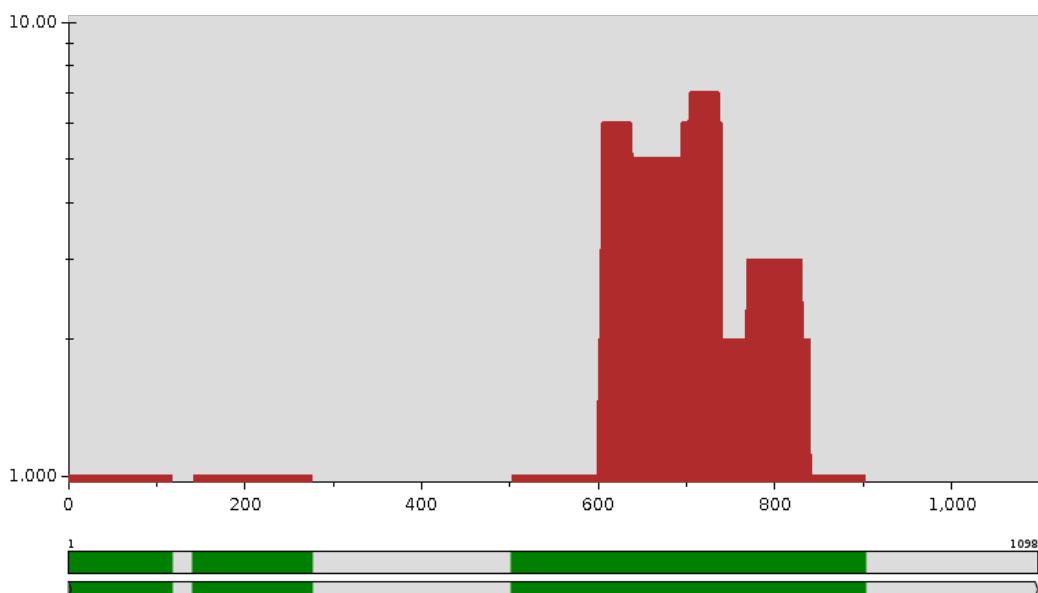
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment S4)

Assembly

Coverage Length	657 (3 contig(s))
Depth Of Coverage	2.2
Number Of Reads	11
Reads Per Million	0.10 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013234.1
NT Identity (%)	92.0852
AA Identity (%)	95.4545
Number Of Stop Codons	0
Number Of CDS	1

Alignment

Alignment Score	1106.0 (NT) + 1520.0 (AA) = 2626.0
Concordance (%)	91.0541

Genome Region

Sequence starts at position 1 and ends at position 904 relative to NC_013234.1 reference sequence.

Alignment Detailed Statistics

NT	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
S4	1	904	59.8%	1106	84.2%	657 (100%)	605 (92.1%)	0/0	0
Mutations:									
48C>T, 69A>G, 72G>A, 73G>A, 81C>T, 117A>G, 150C>T, 168T>C, 193T>C, 198G>A, 225A>G, 234C>T, 243C>T, 261T>C, 267C>T, 270T>G, 273T>C, 510G>T, 522T>C, 546T>C, 550G>A, 567A>C, 587G>A, 589C>T, 600C>T, 618T>C, 621C>T, 624A>G, 630C>T, 634C>T, 636A>G, 642G>A, 645C>T, 669T>C, 692G>A, 720A>G, 761C>T, 762T>A, 765C>T, 768C>T, 774T>G, 777G>A, 780G>A, 786C>T, 789T>G, 801A>G, 807G>A, 816T>C, 822A>G, 879A>G, 885A>G, 891G>A									
CDS									
V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)									
Protein mutations:									
AAC16AAT (48C>T), GTA23GTG (69A>G), TCG24TCA (72G>A), GTT25ATT (73G>A), AGC27AGT (81C>T), CAA39CAG (117A>G), GTC50GTT (150C>T), GGT56GGC (168T>C), TTG66CTG (193T>C), AAG66AAA (198G>A), CAA75CAG (225A>G), CGC78CGT (234C>T), GAC81GAT (243C>T), TTT87TTC (261T>C), GAC89GAT (267C>T), CGT90CGG (270T>G), GTT91GTC (273T>C), TTG170TTT (510G>T), ATT174ATC (522T>C), ATT182AAC (546T>C), GTG184ATG (550G>A), TCA189TCC (567A>C), AGG196AAG (587G>A), CTG197TTG (589C>T), GAC200GAT (600C>T), TTT206TTC (618T>C), TCC207TCT (621C>T), AGA208AGG (624A>G), TTC210TTT (630C>T), CCA212TCG (634C>T 636A>G), TCG214TCA (642G>A), AAC215AAT (645C>T), TAT223TAC (669T>C), GGT231GAT (692G>A), AAA240AAG (720A>G), CCT254CTA (761C>T 762T>A), TCC255TCT (765C>T), CAC256CAT (768C>T), TCT258TCG (774T>G), AGG259AGA (777G>A), GCG260GCA (780G>A), ACC262ACT (786C>T), CCT263CCG (789T>G), AAA267AAG (801A>G), CCG269CCA (807G>A), TTT272TTC (816T>C), GGA274GGG (822A>G), AAA293AAG (879A>G), GTA295GTG (885A>G), AAG297AAA (891G>A)									
Codon mutations:									
*: Inserts / Deletes / Misaligned / Frameshifts									

Proteins

sigma-3 protein (YP_003199427.1)	1	302	60.1%	1520	95.2%	220 (100%)	210 (95.5%)	0/0/0	0
Protein mutations:									
V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)									
Protein mutations:									

AAC16AAT (48C>T), GTA23GTG (69A>G), TCG24TCA (72G>A), GTT25ATT (73G>A), AGC27AGT (81C>T), CAA39CAG (117A>G), GTC50GTT (150C>T), GGT56GGC (168T>C), TTG66CTG (193T>C), AAG66AAA (198G>A), CAA75CAG (225A>G), CGC78CGT (234C>T), GAC81GAT (243C>T), TTT87TTC (261T>C), GAC89GAT (267C>T), CGT90CGG (270T>G), GTT91GTC (273T>C), TTG170TTT (510G>T), ATT174ATC (522T>C), ATT182AAC (546T>C), GTG184ATG (550G>A), TCA189TCC (567A>C), AGG196AAG (587G>A), CTG197TTG (589C>T), GAC200GAT (600C>T), TTT206TTC (618T>C), TCC207TCT (621C>T), AGA208AGG (624A>G), TTC210TTT (630C>T), CCA212TCG (634C>T 636A>G), TCG214TCA (642G>A), AAC215AAT (645C>T), TAT223TAC (669T>C), GGT231GAT (692G>A), AAA240AAG (720A>G), CCT254CTA (761C>T 762T>A), TCC255TCT (765C>T), CAC256CAT (768C>T), TCT258TCG (774T>G), AGG259AGA (777G>A), GCG260GCA (780G>A), ACC262ACT (786C>T), CCT263CCG (789T>G), AAA267AAG (801A>G), CCG269CCA (807G>A), TTT272TTC (816T>C), GGA274GGG (822A>G), AAA293AAG (879A>G), GTA295GTG (885A>G), AAG297AAA (891G>A)

Codon mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
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Protein mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
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Protein mutations:

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Protein mutations:

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Protein mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
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Protein mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
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Protein mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
--

Protein mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
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Protein mutations:

V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>A), P254L (761C>T 762T>A)
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Protein mutations:

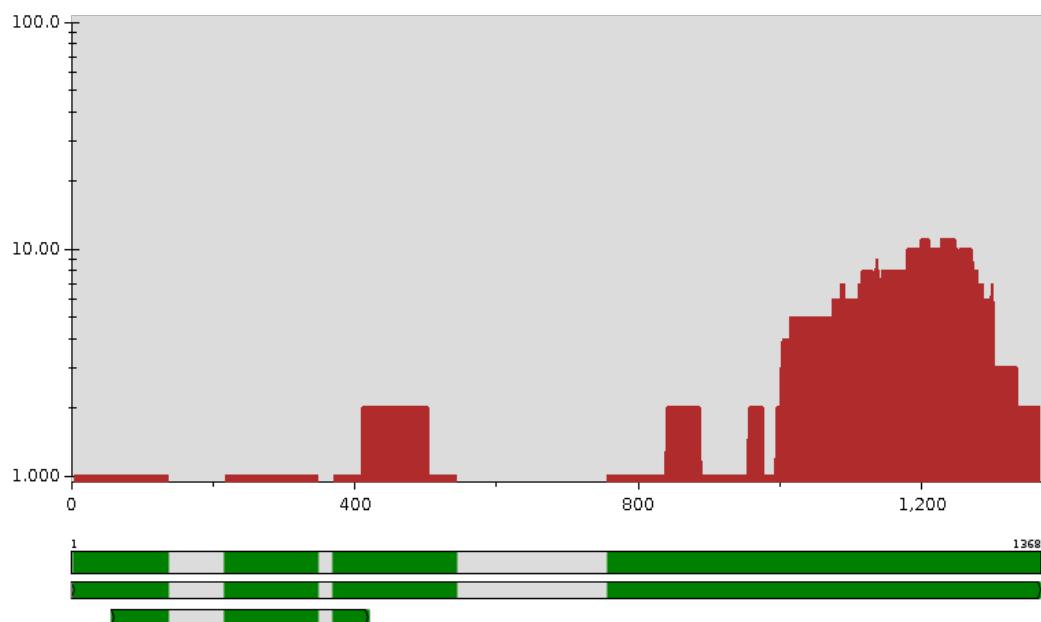
V25I (73G>A), L170F (510G>T), V184M (550G>A), R196K (587G>A), P212S (634C>T 636A>G), G231D (692G>

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment S1)

Assembly

Coverage Length	1059 (4 contig(s))
Depth Of Coverage	3.1
Number Of Reads	26
Reads Per Million	0.24 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013231.1
NT Identity (%)	93.2956
AA Identity (%)	92.7765
Number Of Stop Codons	2
Number Of CDS	2

Alignment

Alignment Score	1834.0 (NT) + 2759.0 (AA) = 4593.0
Concordance (%)	91.5487

Genome Region

Sequence starts at position 4 and ends at position 1368 relative to NC_013231.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	4	1368	77.4%	1834	86.6%	1059 (100%)	988 (93.3%)	0/0	
Mutations:									
36A>G, 52G>A, 57T>C, 88T>C, 105C>T, 108A>G, 117C>G, 231A>G, 246C>T, 255A>G, 258C>T, 271C>A, 280G>A, 283A>G, 313C>T, 333G>A, 379G>A, 393T>C, 409A>G, 445T>C, 456C>A, 489C>T, 507G>A, 534G>A, 540C>T, 760G>T, 762G>A, 764T>C, 770C>T, 786G>A, 795C>T, 801C>T, 813C>T, 831G>A, 846C>T, 874A>G, 902C>T, 925G>A, 967A>G, 972T>C, 975A>C, 995G>A, 1003A>G, 1026C>T, 1047C>T, 1065T>C, 1074C>T, 1075A>G, 1086C>T, 1098A>G, 1102T>C, 1119A>G, 1120T>C, 1125G>A, 1140C>T, 1146T>C, 1155G>T, 1171G>A, 1185G>C, 1188A>G, 1215A>G, 1236A>G, 1242G>A, 1287T>C, 1302C>T, 1304T>C, 1317G>A, 1335C>T, 1341C>T, 1356C>T									

CDS

S1	2	456	77.6%	2196	96.5%	354 (100%)	332 (93.8%)	0/0/0/0	1
Protein mutations:									
G18S (52G>A), S30P (88T>C), L91I (271C>A), A94T (280G>A), I95V (283A>G), A127T (379G>A), I137V (409A>G), V254L (760G>T 762G>A), V255A (764T>C), A257V (770C>T), T292A (874A>G), A301V (902C>T), V309M (925G>A), I323V (967A>G), S332N (995G>A), I335V (1003A>G), T359A (1075A>G), V391I (1171G>A), I412M (1236A>G), L435S (1304T>C)									
Codon mutations:									
TTA12TTG (36A>G), GGC18AGC (52G>A), GAT19GAC (57T>C), TCA30CCA (88T>C), CTC35CTT (105C>T), GAA36GAG (108A>G), TCC39TCG (117C>G), GCA77GCG (231A>G), TCC82TCT (246C>T), GAA85GAG (255A>G), AAC86AAT (258C>T), CTC91ATC (271C>A), GCT94ACT (280G>A), ATC95GTC (283A>G), CTG105TTG (313C>T), CAG111CAA (333G>A), GCT127ACT (379G>A), GAT131GAC (393T>C), ATT137GTT (409A>G), TTA149CTA (445T>C), ACC152ACA (456C>A), GCC163GCT (489C>T), GCG169GCA (507G>A), TCG178TCA (534G>A), AGC180AGT (540C>T), GTG254TTA (760G>T 762G>A), GTA255GCA (764T>C), GCA257GTA (770C>T), AGG262AGA (786G>A), AGC265AGT (795C>T), ACC267ACT (801C>T), GAC271GAT (813C>T), AAC282AA (846C>T), ACA292GCA (874A>G), GCT301GTT (902C>T), GTG309ATG (925G>A), ATA323GTA (967A>G), GTT324GTC (972T>C), TCA325TCC (975A>C), AGT332AA (995G>A), ATA335GTA (1003A>G), TTC342TTT (1026C>T), CAC349CAT (1047C>T), TTG355TTC (1065T>C), TTG358TTT (1074C>T), ACA359GCA (1075A>G), GAC362GAT (1086C>T), CTA366CTG (1098A>G), TTA368CTA (1102T>C), GGA373GGG (1119A>G), TTG374CTG (1120T>C), TTG375TTA (1125G>A), ACC380ACT (1140C>T), GAT382GAC (1146T>C), CGG385CCT (1155G>T), GTA391ATA (1171G>A), GGG395GGC (1185G>C), GCA396GCG (1188A>G), TCA405TCG (1215A>G), ATA412ATG (1236A>G), AAG414AAA (1242G>A), GTG418GTA (1254G>A), CGT429GCG (1287T>C), GGC434GGT (1302C>T), TTG435TCG (1304T>C), TCG439TCA (1317G>A), GCC445GCT (1335C>T), ACC447ACT (1341C>T), CGC452CGT (1356C>T)									
MoV-3mpc04sS1_gp2	1	121	73.6%	563	85.6%	89 (100%)	79 (88.8%)	0/0/0/0	1
Protein mutations:									
S16L (105C>T), K17R (108A>G), P20R (117C>G), H58R (231A>G), P63L (246C>T), K66R (255A>G), T67I (258C>T), S92N (333G>A), I112T (393T>C)									
Codon mutations:									
AAT10AAC (88T>C), TCG16TTG (105C>T), AAA17AGA (108A>G), CCC20CGC (117C>G), CAC58CCG (231A>G), CCA63CTA (246C>T), AAA66AGA (255A>G), ACT67ATT (258C>T), CCC71CCA (271C>A), CAG74CAA (280G>A), CTAT75CTG (283A>G), AGC85AGT (313C>T), AGC92AAC (333G>A), TCG107TCA (379G>A), ATA112ACA (393T>C), ACA117ACG (409A>G)									

Proteins

sigma-1 protein (YP_003199424.1)	2	456	77.6%	2196	96.5%	354 (100%)	332 (93.8%)	0/0/0/0	1
Protein mutations:									
G18S (52G>A), S30P (88T>C), L91I (271C>A), A94T (280G>A), I95V (283A>G), A127T (379G>A), I137V (409A>G), V254L (760G>T 762G>A), V255A (764T>C), A257V (770C>T), T292A (874A>G), A301V (902C>T), V309M (925G>A), I323V (967A>G), S332N (995G>A), I335V (1003A>G), T359A (1075A>G), V391I (1171G>A), I412M (1236A>G), L435S (1304T>C)									
Codon mutations:									
TTA12TTG (36A>G), GGC18AGC (52G>A), GAT19GAC (57T>C), TCA30CCA (88T>C), CTC35CTT (105C>T), GAA36GAG (108A>G), TCC39TCG (117C>G), GCA77GCG (231A>G), TCC82TCT (246C>T), GAA85GAG (255A>G), AAC86AAT (258C>T), CTC91ATC (271C>A), GCT94ACT (280G>A), ATC95GTC (283A>G), CTG105TTG (313C>T), CAG111CAA (333G>A), GCT127ACT (379G>A), GAT131GAC (393T>C), ATT137GTT (409A>G), TTA149CTA (445T>C), ACC152ACA (456C>A), GCC163GCT (489C>T), GCG169GCA (507G>A), TCG178TCA (534G>A), AGC180AGT (540C>T), GTG254TTA (760G>T 762G>A), GTA255GCA (764T>C), GCA257GTA (770C>T), AGG262AGA (786G>A), AGC265AGT (795C>T), ACC267ACT (801C>T), GAC271GAT (813C>T), AAC282AA (846C>T), ACA292GCA (874A>G), GCT301GTT (902C>T), GTG309ATG (925G>A), ATA323GTA (967A>G), GTT324GTC (972T>C), TCA325TCC (975A>C), AGT332AA (995G>A), ATA335GTA (1003A>G), TTC342TTT (1026C>T), CAC349CAT (1047C>T), TTG355TTC (1065T>C), TTG358TTT (1074C>T), ACA359GCA (1075A>G), GAC362GAT (1086C>T), CTA366CTG (1098A>G), TTA368CTA (1102T>C), GGA373GGG (1119A>G), TTG374CTG (1120T>C), TTG375TTA (1125G>A), ACC380ACT (1140C>T), GAT382GAC (1146T>C), CGG385CCT (1155G>T), GTA391ATA (1171G>A), GGG395GGC (1185G>C), GCA396GCG (1188A>G), TCA405TCG (1215A>G), ATA412ATG (1236A>G), AAG414AAA (1242G>A), GTG418GTA (1254G>A), CGT429GCG (1287T>C), GGC434GGT (1302C>T), TTG435TCG (1304T>C), TCG439TCA (1317G>A), GCC445GCT (1335C>T), ACC447ACT (1341C>T), CGC452CGT (1356C>T)									

minor capsid cell attachment protein sigma1s (YP_009344826.1)

minor capsid cell attachment protein sigma1s (YP_009344826.1)	1	121	73.6%	563	85.6%	89 (100%)	79 (88.8%)	0/0/0/0	1
Protein mutations:									
S16L (105C>T), K17R (108A>G), P20R (117C>G), H58R (231A>G), P63L (246C>T), K66R (255A>G), T67I (258C>T), S92N (333G>A), I112T (393T>C)									

*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

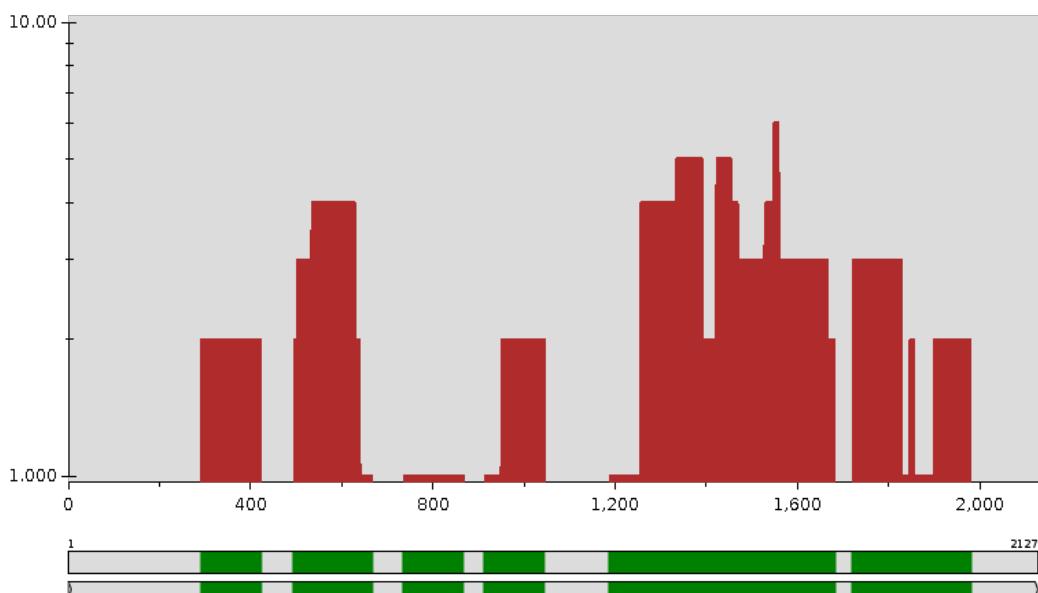
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment M2)

Assembly

Coverage Length	1348 (6 contig(s))
Depth Of Coverage	2.5
Number Of Reads	26
Reads Per Million	0.24 rpm (after QC)
Ambiguities	12
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013228.1
NT Identity (%)	94.362
AA Identity (%)	97.3274
Number Of Stop Codons	0
Number Of CDS	1

Alignment

Alignment Score	2416.0 (NT) + 2674.0 (AA) = 5090.0
Concordance (%)	91.6952

Genome Region

Sequence starts at position 291 and ends at position 1983 relative to NC_013228.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons									
NT	291	1983	63.4%	2416	89.6%	1348 (100%)	1272 (94.4%)	0/0										
Mutations:																		
297A>G, 330C>T, 336T>K, 342T>C, 402A>C, 405A>G, 421C>T, 522T>C, 544C>T, 558A>G, 582G>A, 642A>G, 652T>C, 654G>A, 663T>C, 762G>A, 786T>C, 815T>C, 825A>G, 834T>C, 840G>A, 924T>C, 933T>G, 937G>S, 940A>W, 942A>W, 945A>W, 946C>Y, 948T>Y, 949A>M, 951A>R, 953C>S, 956C>S, 957A>K, 972A>G, 975T>A, 984T>C, 990A>G, 1000T>C, 1002A>G, 1035C>T, 1203C>T, 1206C>T, 1209C>A, 1230T>C, 1233A>G, 1234C>A, 1275T>G, 1296C>T, 1320G>A, 1335T>C, 1365A>G, 1422T>C, 1455G>A, 1470T>C, 1509A>G, 1515G>A, 1533T>C, 1539A>G, 1542C>T, 1545T>C, 1572C>G, 1591C>T, 1593T>G, 1596G>A, 1641T>C, 1681T>C, 1683T>A, 1761C>T, 1797G>A, 1866T>C, 1869C>T, 1893C>T, 1905A>G, 1920A>G, 1926G>A																		
CDS																		
M2	98	661	63.3%	2674	92.1%	449 (100%)	437 (97.3%)	0/0/6/0	0									
Protein mutations:	L272P (815T>C), L412I (1234C>A), Y561Q (1681T>C 1683T>A)																	
Codon mutations:																		
CCA99CCG (297A>G), AAC110AAT (330C>T), ACT112ACK (336T>K), GCT114GCC (342T>C), TCA134TCC (402A>C), CCA135CCG (405A>G), CTG141TTG (421C>T), TAT174TAC (522T>C), CTA182TTA (544C>T), GAA186GAG (558A>G), GTG194GTA (582G>A), TCA214TCG (642A>G), TTG218CTA (652T>C 654G>A), GAT221GAC (663T>C), GAG254GAA (762G>A), GTT262GTC (786T>C), CCT272CCT (815T>C), TCA275TCG (825A>G), CCT278CCC (834T>C), GAG280GAA (840G>A), CCT308CCC (924T>C), GTT311GTG (933T>G), GCC313SCC (937G>S), ATA314WTW (940A>W 942A>W), CCA315CCW (945A>W), CCT316VCY (946C>Y 948T>Y), AAA317MAR (949A>M 951A>R), CCA318CMA (953C>M), GCA319GSK (956C>S 957A>K), CGA324CGG (972A>G), ACT325ACA (975T>A), ATT328ATC (984T>C), GAA330GAG (990A>G), TTA334CTG (1000T>C 1002A>G), TTC345TTT (1035C>T), TTC401TTT (1203C>T), ATC402ATT (1206C>T), GTCA03GTA (1209C>A), TTT410TTC (1230T>C), GAA411GAG (1233A>G), CTC412ATC (1234C>A), GTT425GTG (1275T>G), GCC432GCT (1296C>T), CAG440CAA (1320G>A), ACT445ACC (1335T>C), GAA455GAG (1365A>G), GAT474GAC (1422T>C), CAG485CAA (1455G>A), GAT490GAC (1470T>C), GTA503GTG (1509A>G), GTG505GTA (1515G>A), AGT511AGC (1533T>C), GTA513GTG (1539A>G), GTC514GTT (1542C>T), CCT515CC (1545T>C), CCC524CCG (1572C>G), CCT531TTG (1591C>T 1593T>G), CCG532CCA (1596G>A), GCT547GCC (1641T>C), TAT561CAA (1681T>C 1683T>A), AAC587AAT (1761C>T), GCG599GCA (1797G>A), AAT622AAC (1866T>C), AAC623AAT (1869C>T), GTC631GTT (1893C>T), CTA635CTG (1905A>G), CTA640CTG (1920A>G), GCG642GCA (1926G>A)																		

*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

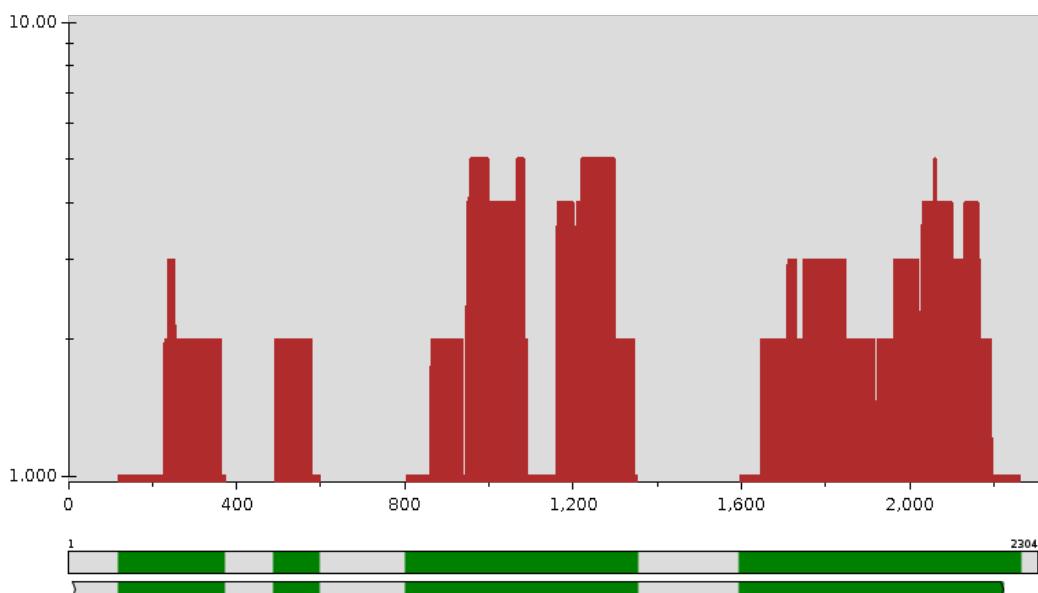
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment M1)

Assembly

Coverage Length	1594 (4 contig(s))
Depth Of Coverage	2.4
Number Of Reads	29
Reads Per Million	0.27 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_077841.1
NT Identity (%)	93.2246
AA Identity (%)	96.139
Number Of Stop Codons	1
Number Of CDS	1

Alignment

Alignment Score	2756.0 (NT) + 3548.0 (AA) = 6304.0
Concordance (%)	92.2987

Genome Region

Sequence starts at position 119 and ends at position 2266 relative to NC_077841.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	119	2266	69.2%	2756	86.4%	1594 (100%)	1486 (93.2%)	0/0	
Mutations:									
121A>G, 136C>T, 154A>G, 178G>A, 181T>A, 193C>T, 238C>T, 239T>C, 263T>C, 265A>G, 271T>C, 286T>C, 289A>T, 290G>A, 310T>C, 313T>C, 329C>T, 352G>A, 499A>T, 512T>G, 515T>C, 538T>C, 550G>A, 559T>C, 568G>A, 583T>C, 809C>A, 821G>T, 824C>A, 860G>A, 876C>A, 880C>A, 898G>A, 911A>G, 914T>C, 928G>A, 958T>C, 979C>A, 1004T>C, 1006G>A, 1009T>C, 1027T>C, 1042G>T, 1052C>T, 1054C>T, 1067C>T, 1094T>C, 1196A>G, 1201C>T, 1228T>C, 1237C>A, 1279T>C, 1313A>T, 1315C>T, 1318A>G, 1330C>T, 1333G>A, 1336T>C, 1342T>C, 1630C>T, 1616C>T, 1627T>C, 1642G>A, 1649C>T, 1645V (1946A>G), 1660A>T, 1699T>G, 1720G>A, 1741T>C, 1753T>G, 1759C>T, 1793T>C, 1807C>T, 1834A>G, 1840A>T, 1864A>G, 1870G>A, 1915A>G, 1924C>T, 1927A>G, 1945C>T, 1946A>G, 1948A>G, 1972G>A, 1975G>A, 2011A>G, 2014T>C, 2035C>T, 2068T>G, 2083C>T, 2099T>C, 2101A>G, 2116A>G, 2148G>A, 2167C>T, 2176T>G, 2179A>G, 2182T>A, 2190G>A, 2191T>C, 2212T>C, 2253T>C, 2257A>G, 2264T>C									
CDS									
M1	36	737	70.3%	3548	96.6%	518 (100%)	498 (96.1%)	0/0/0/0	1
Protein mutations:									
A93T (290G>A), V98I (305G>A), L167V (512T>G), H266N (809C>A), D270Y (821G>T), R271S (824C>A), V283I (860G>A), S288Y (876C>A), H289Q (880C>A), M300V (911A>G), E343D (1042G>T), L347F (1052C>T) 1054C>T), T395A (1196A>G), I434V (1313A>G 1315C>T), I645V (1946A>G 1948A>G), R712K (2148G>A), S726N (2190G>A 2191T>C)									
Codon mutations:									
TCA367CG (121A>G), GAC41GAT (136C>T), TTA47TTG (154A>G), GAG55GAA (178G>A), GCT56GCA (181T>A), ATC60ATT (193C>T), TGC75TGT (238C>T), TTG76CTG (239T>C), CCC79CCT (250C>T), TTA84CTG (263T>C 265A>G), TAT86TAC (271T>C), CCT91CCC (286T>C), TCA92TCT (289A>T), GCG93ACG (290G>A), GTT98ATT (305G>A), GAT99GAC (310T>C), CGT100CGC (313T>C), CTA1061TA (329C>T), AGG113AGA (352G>A), ATA162ATT (499A>T), TTG167GTG (512T>G), TTA168CTA (515T>C), TA175TAC (538T>C), CTG179CTA (550G>A), ACT182ACC (559T>C), AAG185AAA (568G>A), TTT190TTT (583T>C), GGT191GGC (586T>C), CAT266AAT (809C>A), GAT270TAT (821G>T), CGT271AGT (824C>A), GTT283ATT (860G>A), TCT288TAT (876C>A), AAC289CAA (880C>A), GTG295GTA (898G>A), ATG300GTG (911A>G), TTG301CTG (914T>C), GTG305GTA (928G>A), TCT315TCC (958T>C), ACC322ACA (979C>A), TTG331CTA (1004T>C 1006G>A), GGT332GGC (1009T>C), TAT338TAC (1027T>C), GAG343GAT (1042G>T), CTC347TTT (1052C>T) 1054C>T), CTAA352TTA (1067C>T), TTG361CTG (1094T>C), ACA395GCA (1196A>G), ATC396ATT (1201C>T), TTG405TTC (1228T>C), CCC408CCA (1237C>A), ATT422ATC (1279T>C), ATC434GTT (1313A>G 1315C>T), CAA435CAC (1318A>G), CGC439CGT (1330C>T), GCG440GCA (1333G>A), CAT441CAC (1336T>C), CTT443GTC (1342T>C), GAC531GAT (1606C>T), CTG535TTG (1616C>T), AAT538AAC (1627T>C), TAT539TAC (1630T>C), TTA543TTG (1642A>G), CTAA546TTA (1649C>T), CCA549CCT (1660A>T), CGT562CGG (1699T>G), CAG569CAA (1720G>A), ATA645GTG (1945C>T), ATA645GTG (1946A>G 1948A>G), GAG653GAA (1972G>A), GAG654GAA (1975G>A), CAA666CAG (2011A>G), GTT667GTC (2014T>C), GTC674GTT (2035C>T), GCT685GCG (2068T>G), AAC690AAT (2083C>T), TTA696CTG (2099T>C 2101A>G), GCA701GCG (2116A>G), AGG712AAG (2148G>A), AGC718AGT (2167C>T), CGT721CGG (2176T>G), GGA722GGG (2179A>G), GCT723GCA (2182T>A), AGT726AAC (2190G>A 2191T>C), TCT733TCC (2212T>C)									

Proteins

mu-2 protein (YP_010839453.1)	36	737	70.3%	3548	96.6%	518 (100%)	498 (96.1%)	0/0/0/0	1
Protein mutations:									
A93T (290G>A), V98I (305G>A), L167V (512T>G), H266N (809C>A), D270Y (821G>T), R271S (824C>A), V283I (860G>A), S288Y (876C>A), H289Q (880C>A), M300V (911A>G), E343D (1042G>T), L347F (1052C>T) 1054C>T), T395A (1196A>G), I434V (1313A>G 1315C>T), I645V (1946A>G 1948A>G), R712K (2148G>A), S726N (2190G>A 2191T>C)									
Codon mutations:									
TCA367CG (121A>G), GAC41GAT (136C>T), TTA47TTG (154A>G), GAG55GAA (178G>A), GCT56GCA (181T>A), ATC60ATT (193C>T), TGC75TGT (238C>T), TTG76CTG (239T>C), CCC79CCT (250C>T), TTA84CTG (263T>C 265A>G), TAT86TAC (271T>C), CCT91CCC (286T>C), TCA92TCT (289A>T), GCG93ACG (290G>A), GAT99GAC (310T>C), CGT100CGC (313T>C), CTA1061TA (329C>T), AGG113AGA (352G>A), ATA162ATT (499A>T), TTG167GTG (512T>G), TTA168CTA (515T>C), TA175TAC (538T>C), CTG179CTA (550G>A), ACT182ACC (559T>C), AAG185AAA (568G>A), TTT190TTT (583T>C), GGT191GGC (586T>C), CAT266AAT (809C>A), GAT270TAT (821G>T), CGT271AGT (824C>A), GTT283ATT (860G>A), TCT288TAT (876C>A), AAC289CAA (880C>A), GTG295GTA (898G>A), ATG300GTG (911A>G), TTG301CTG (914T>C), GTG305GTA (928G>A), TCT315TCC (958T>C), ACC322ACA (979C>A), TTG331CTA (1004T>C 1006G>A), GGT332GGC (1009T>C), TAT338TAC (1027T>C), GAG343GAT (1042G>T), CTC347TTT (1052C>T) 1054C>T), CTAA352TTA (1067C>T), TTG361CTG (1094T>C), ACA395GCA (1196A>G), ATC396ATT (1201C>T), TTG405TTC (1228T>C), CCC408CCA (1237C>A), ATT422ATC (1279T>C), ATC434GTT (1313A>G 1315C>T), CAA435CAC (1318A>G), CGC439CGT (1330C>T), GCG440GCA (1333G>A), CAT441CAC (1336T>C), CTT443GTC (1342T>C), GAC531GAT (1606C>T), CTG535TTG (1616C>T), AAT538AAC (1627T>C), TAT539TAC (1630T>C), TTA543TTG (1642A>G), CTAA546TTA (1649C>T), CCA549CCT (1660A>T), CGT562CGG (1699T>G), CAG569CAA (1720G>A), ATA645GTG (1945C>T), ATA645GTG (1946A>G 1948A>G), GAG653GAA (1972G>A), GAG654GAA (1975G>A), CAA666CAG (2011A>G), GTT667GTC (2014T>C), GTC674GTT (2035C>T), GCT685GCG (2068T>G), AAC690AAT (2083C>T), TTA696CTG (2099T>C 2101A>G), GCA701GCG (2116A>G), AGG712AAG (2148G>A), AGC718AGT (2167C>T), CGT721CGG (2176T>G), GGA722GGG (2179A>G), GCT723GCA (2182T>A), AGT726AAC (2190G>A 2191T>C), TCT733TCC (2212T>C)									

*: Inserts / Deletes / Misaligned / FrameShifts

Analysis details

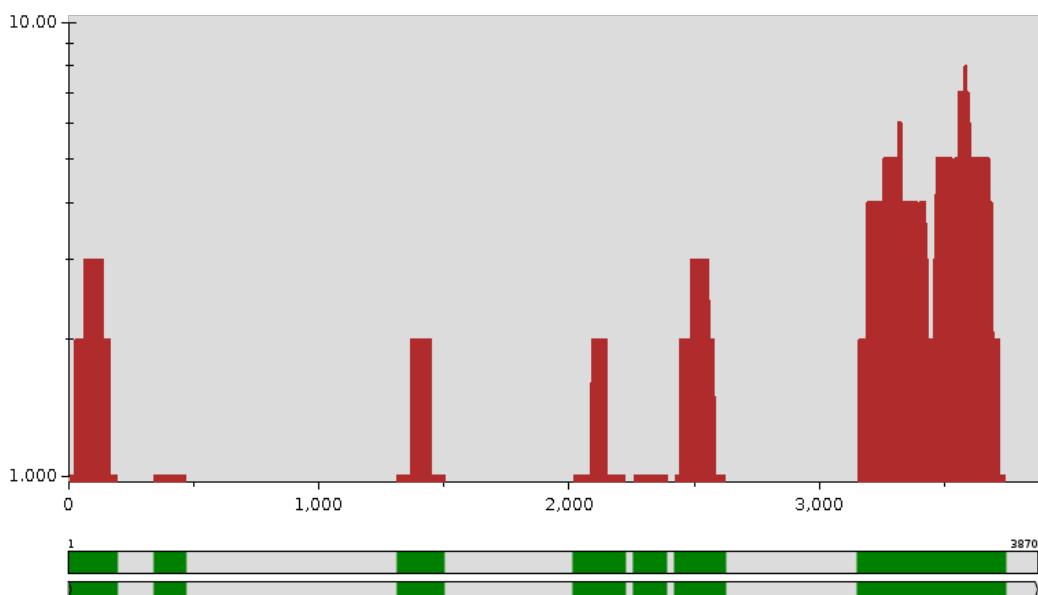
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment L2)

Assembly

Coverage Length	1673 (7 contig(s))
Depth Of Coverage	2.4
Number Of Reads	30
Reads Per Million	0.28 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013226.1
NT Identity (%)	82.0681
AA Identity (%)	96.2298
Number Of Stop Codons	0
Number Of CDS	1

Alignment

Alignment Score	2146.0 (NT) + 3719.0 (AA) = 5865.0
Concordance (%)	81.9363

Alignment Method

Global, seeded, nucleotide + amino acids (AGA)

Genome Region

Sequence starts at position 4 and ends at position 3744 relative to NC_013226.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	4	3744	43.2%	2146	64.1%	1673 (100%)	1373 (82.1%)	0/0	
Mutations:									
36A>C, 37C>T, 39G>A, 57G>A, 60G>A, 63A>G, 72C>A, 78G>A, 81A>G, 84C>T, 90T>C, 92A>G, 93C>T, 96A>T, 102A>G, 109T>G, 120A>G, 131G>A, 135C>T, 138A>G, 141T>A, 147A>G, 150G>A, 153C>G, 159G>C, 160A>G, 165C>T, 187T>C, 192A>G, 195T>C, 196C>T, 198A>G, 342C>T, 357T>C, 360T>C, 363T>C, 366T>G, 369T>C, 370C>T, 372A>G, 378C>T, 384C>T, 393C>T, 394T>C, 396A>G, 403C>T, 408G>A, 411T>A, 412G>A, 414G>A, 417C>T, 420T>C, 431G>A, 432C>T, 435T>C, 436C>T, 441T>C, 444A>G, 452C>T, 453A>T, 471T>C, 1320T>C, 1326T>C, 1332T>C, 1336G>A, 1341G>T, 1344G>A, 1345C>T, 1359G>A, 1366T>C, 1368A>G, 1371G>A, 1383T>C, 1386T>C, 1410T>C, 1411C>T, 1425G>A, 1431A>G, 1432G>A, 1440T>C, 1446C>T, 1449G>A, 1450G>A, 1458C>T, 1461G>A, 1464A>G, 1467A>G, 1470G>T, 1473A>G, 1482T>C, 1485G>A, 1488T>C, 1494T>C, 2019C>T, 2020T>C, 2022A>G, 2025G>C, 2037C>T, 2049A>C, 2055C>T, 2058T>G, 2061A>C, 2071C>T, 2076A>G, 2079A>G, 2085T>A, 2088C>T, 2091T>G, 2094T>C, 2097C>T, 2100G>A, 2106T>C, 2115A>T, 2124A>G, 2127T>C, 2130C>T, 2136G>A, 2148T>C, 2154T>C, 2160A>G, 2166T>C, 2169T>A, 2175T>C, 2178G>T, 2188T>A, 2190A>G, 2202G>T, 2205A>T, 2217A>G, 2220C>T, 2226C>T, 2259T>A, 2262T>C, 2265G>A, 2268G>A, 2271G>A, 2280T>G, 2289A>T, 2292A>G, 2293A>C, 2295G>T, 2298G>A, 2304C>T, 2310T>C, 2313G>A, 2328T>C, 2332A>T, 2338C>T, 2343A>G, 2346C>G, 2349G>A, 2355T>A, 2364T>A, 2367G>A, 2373T>C, 2376T>A, 2379C>A, 2380C>T, 2382A>G, 2388T>C, 2433C>T, 2454C>G, 2457G>A, 2475A>C, 2476T>C, 2478A>T, 2484C>T, 2490T>C, 2493A>T, 2496A>G, 2509T>C, 2511G>A, 2517A>G, 2520A>G, 2523G>A, 2532C>T, 2535A>G, 2550C>T, 2562T>G, 2568A>G, 2573A>G, 2580C>T, 2592C>T, 2595G>A, 2601G>A, 2610T>C, 2622C>T, 3153T>C, 3159T>C, 3162C>T, 3165C>T, 3168C>T, 3174T>C, 3177A>T, 3180G>A, 3186T>C, 3189T>A, 3192A>T, 3201T>C, 3207T>C, 3213A>G, 3219C>A, 3225G>A, 3234C>T, 3237G>A, 3246G>A, 3249T>C, 3252G>A, 3267G>A, 3279T>C, 3285C>T, 3288C>T, 3315C>T, 3318T>C, 3330T>C, 3336G>A, 3339A>T, 3342A>G, 3345A>T, 3348G>A, 3360C>T, 3369T>C, 3372T>C, 3375C>T, 3378T>A, 3384T>C, 3387G>A, 3393G>T, 3396C>T, 3400T>C, 3405T>C, 3408C>T, 3411C>T, 3429A>T, 3435T>C, 3450T>C, 3453C>T, 3456C>T, 3465C>T, 3474G>A, 3477C>T, 3483T>G, 3495A>G, 3501C>T, 3504C>T, 3513C>T, 3530A>G, 3531C>T, 3534G>A, 3537G>A, 3543G>A, 3546G>A, 3552C>T, 3555G>A, 3561G>A, 3564T>C, 3570G>T, 3573T>C, 3575G>A, 3579C>T, 3583T>C, 3597C>T, 3603A>G, 3615C>T, 3624T>C, 3627C>T, 3636T>C, 3640C>T, 3645A>G, 3646C>T, 3648T>A, 3651G>A, 3654C>T, 3664C>T, 3672T>A, 3681C>T, 3684A>G, 3687C>T, 3693C>T, 3696C>T, 3702T>C, 3708C>T, 3717A>C, 3720C>G, 3729T>C, 3732C>T, 3738T>C, 3741C>T									
CDS									
L2	2	1248	43.2%	3719	96.2%	557 (100%)	536 (96.2%)	0/0/0/0	0
Protein mutations:									
H24Q (72C>A), Y31C (92A>G 93C>T), S37A (109T>G), R44K (131G>A), E53D (159G>C), I54V (160A>G), V138I (412G>A 414G>A), S144N (431G>A 432C>T), A151V (452C>T 453A>T), V478I (1432G>A), V484I (1450G>A), A686T (2056G>A 2058T>G), I708M (2124A>G), M719L (2155A>C), L730M (2188T>A 2190A>G), N858S (2573A>G), N117S (3530A>G 3531C>T), R1192K (3575G>A)									
Codon mutations:									
TC121TCC (36A>C), CTG13TAA (37C>T 39G>A), GAG19GAA (57G>A), ACG20ACA (60G>A), AGA21AGG (63A>G), CAC24CAA (72C>A), ACG26ACA (78G>A), TTA27TTG (81A>G), CAC28CAT (84C>T), TTT30TC (90T>C), TAC31TGT (92A>G 93C>T), TCA32TCT (96A>T), TTA34TTG (102A>G), TCA37CCA (109T>G), AAA40AAG (120A>G), AGA44AAA (131G>A), CCC45CCCT (135C>A), CTA46CTG (138A>G), CGT47TCGA (141T>A), CAAG49CAG (147A>G), ACC51ACG (153C>G), GAG53GAC (159G>C), ATT54GTT (160A>G), GTCT55GTT (165C>T), TTG63CTG (187T>C), CAAG64CAG (192A>G), GTG65GGC (195T>C), CTAG66TTG (196C>T 198A>G), TTC114.TT (342C>T), CTT119CTC (357T>C), GTT120GTC (360T>C), GTT122GGC (363T>C), GTT123TTC (369T>C), CTA124TTT (370C>T 372A>G), AAC126AAT (378C>T), GCC128GCT (384C>T), GAC131GAT (393C>T), ATA132CTG (394T>C 396A>G), CTA135TTA (403C>T), TTG136TTA (408G>A), ATT137ATA (411T>A), GTG138ATA (412G>A 414G>A), AAC139AAT (417C>T), GAT140GAC (420T>C), AGC144AT (431G>A 432C>T), GAT145GAC (435T>C), CTA146TTA (436C>T), CGA148GGG (444A>G), GCA151GTT (452C>T 453A>T), TTT157TTC (471T>C), GAT40GAC (1320T>C), ATT442AC (1326T>C), AGT444AGC (1332T>C), CGG446AGA (1336C>A 1338G>A), GTG447GTT (1341G>T), GTG448GTA (1344G>A), CTA449TTA (1345C>T), TCC451TCT (1353C>T), CTG453CTA (1359G>A), TTA456CTG (1366T>C 1368A>G), CCG457CCA (1371G>A), TTT461TTC (1383T>C), AGT462GAC (1401T>C), AGT474GAC (1407C>T), CAG475GCA (1425G>A), AAC477AAG (1431A>G), GTT478ATT (1432G>A), CAT480GAC (1440T>C), TCC482TCT (1446C>T), CTG483CTC (1449G>C), GTC484ATC (1450G>A), GAC486GAT (1458C>T), AGC487ACA (1461G>A), GCA488GCG (1464G>G), GTA489TG (1467A>G), CTG490CTT (1471G>A), AA4491AAG (1473A>G), TAT494TAC (1482C>T), CAG495CAA (1485G>A), GCT496GCC (1488T>C), GAT498GAC (1494T>C), TTC673TTT (2019C>T), TTA674CTG (2020T>C 2022A>G), TTG675GTC (2025G>C), TAC679TAT (2037C>T), ACA683AAC (2049A>C), TCC685TCT (2055C>T), GCT686AACG (2056G>A 2058T>G), ATA687ATC (2061A>C), CTG691TTC (2071C>T), CCA692CCG (2076A>G), TCA693TGC (2079A>G), GGT695GGA (2085T>A), TAC696TAT (2088C>T), GTT697GTC (2091T>G), GAT698GAC (2094T>C), GAG699GAT (2097C>T), GGG700GGA (2100G>A), TCT702TCC (2106T>C), GGA705GTT (2115A>T), ATA708ATG (2124A>G), ATT709ATC (2127T>C), AGC710AGT (2130C>T), GAG712GA (2136G>A), TTT716TTC (2148T>C), AAT718AAC (2154T>C), ATG719CTG (2155A>C), ACA720ACG (2160A>G), GCT722GC (2166T>C), GCT723GCA (2169T>A), GTT725GTC (2175T>C), GGG726GTT (2178G>T), TTA730ATG (2188T>A 2190A>G), GTG734GTT (2202G>T), GGA735GGT (2205A>T), AAA739AAG (2217A>G), TCC740TCT (2220C>T), GGC742GCT (2226C>T), ACT753.A (2259T>A), ATT754ATA (2262T>C), AGC755ACA (2265G>A), TCG756TCA (2268G>A), AGG757AAG (2271G>A), CCT760CCG (2280T>G), GCA763GCT (2283A>G), AGG765CGT (2293A>C 2295G>A), AAC766AAA (2298G>A), CGC768GG (2304C>G), CGT770GGA (2310T>A), TAC771TAT (2313C>T), CCG773CCA (2319G>A), CTT778CTA (2364T>A), CGC778CCA (2367G>A), ATT791AAC (2373T>C), CCT779CCA (2376T>A), GTC793GTA (2379C>A), CT794TTC (2380C>T 2382A>G), GTG796GAC (2388T>C), TAC811TAT (2433C>T), GCG818GTC (2454C>G), GTC819GTC (2457G>A), GTC820GTC (2458C>G), AGT821GTC (2475A>C), TTA826CTT (2476T>C), CTG828CTT (2484C>T), ACT830AAC (2490T>C), GGA831GGT (2493A>T), CCA832CCG (2496A>G), TTG837CTA (2509T>C 2511G>A), TTA839TTC (2517A>C), GTC841CCA (2523G>A), TCC844TCT (2532C>T), CCA845CCG (2535A>G), TGT848TGC (2544T>C), GAC850GAT (2550C>T), ACT854ACG (2562G>C), CAA856CAG (2568A>G), AAT858AGT (2573A>G), TGC860TGT (2580C>T), CGC864CGT (2592C>T), ACG865ACA (2595G>A), TTC867TT (2601C>T), GAA869GAG (2607A>G), CTT870CTC (2610T>C), AGC874AGT (2622C>T), GAT1051AC (2153T>C), TTT1053TTC (3159T>C), AAC1054AAT (3162C>T), TAC1056TAT (3168C>T), TCA1059TCT (3174T>C), TCA1069TAT (3177A>C), TCG1060GCA (3180G>A), GCT1062GCC (3181G>A), TTT1063TTC (3189T>C), TCA1064TCT (3192A>T), GAT1067GAC (3201T>C), AAT1069AAC (3207T>C), GCA1071GCG (3213A>G), ATC1073ATA (3219C>A), GAG1075CAA (3225G>A), GCT1078GCT (3234C>T), CAG1079CAA (3237G>A), GCG1082GCA (3246G>A), AAT1083AAC (3249T>C), AAG1084AAA (3252G>A), TTG1089TTA (3267G>A), GTA1092GTC (3276A>G), TTT1093TTC (3279T>C), GAC1095GAT (3285C>T), GCC1096GCT (3288C>T), TAT1099TAC (3297T>C), GTC1105GTT (3315C>T), GGT1106GG (3318T>A), AAT1110AAC (3330T>C), GTG1112GTA (3336G>A), TCA1113TCT (3339A>G), TTA1114TTG (3342A>G), GGA1115GGT (3345A>T), TCG1116TCA (3348G>A), GAC1120GAT (3360C>T), GAT1123GAC (3369T>C), GTG11124GTC (3367T>G), GAC1125GAT (3367T>A), ATT1126ATA (3378T>A), GAT1128GAC (3384T>C), GCG1129GCA (3387G>A), CCG1131CCT (3393G>T), GCC1132CT (3396C>T), TTG1134CTG (3400T>C), GAT1135GAC (3405T>C), TTC1136TTT (3408C>T), ACC1137ACT (3411C>T), GTA1143GTT (3429A>T), ATT1145ATC (3435T>C), TAT1150TAC (3450T>C), TAC1151TAT (3453C>T), CGC1152GTC (3456C>T), GCC1155GCT (3465C>T), AAG1158AAA (3474G>A), ATC1159ATT (3477C>T), GGT1161GTC (3483T>G), ATA1165ATA (3495A>T), GCA1166GGC (3498A>G), AAC1167AAT (3501C>T), CCG1168CT (3504C>T), TTC1171TTT (3513C>T), GAC1171GAT (3530A>G 3531C>T), AGC1178ACA (3534G>A), GGG1179GGA (3537G>A), GTG1181TTA (3543G>A), GTG1182GTA (3546G>A), AAC1184AAT (3552C>T), GTG1185GTA (3556G>A), TGT1187TTA (3561G>A), GAT1188GAC (3564T>C), GCG1190GCT (3570G>T), GAT1191GAC (3573T>C), AGG1192AAG (3575G>A), TGT1193TAT (3579G>C), ATT1198ATA (3583T>C), AGT1201GTC (3603A>G), TCA1201GTT (3604C>T), CTC1214TGT (3640C>T), CA1215CAG (3645A>G), CTC1216TTA (3646C>T 3648T>A), CTG1217CTA (3651G>A), AAC1218AAT (3654C>T), CTG1222TTG (3664C>T), ACT1224ACA (3672T>A), GAC1227GAT (3681C>T), TTA1228TTG (3684A>G), TTC1229TTT (3687C>T), CTG1230TTG (3688C>T), AGC1231AGT (3693C>T), GCC1232GCT (3696C>T), GAT1234GAC (3702T>C), CGC1236GTC (3708C>T), GCA1239GCC (3717A>C), GTC1240GTC (3720C>G), AGT1243AGC (3729T>C), GGC1244GGT (3732C>T), ACT1246ACC (3738T>C), ATC1247ATT (3741C>T)									
Proteins									
lambda-2 protein (YP_003199419.1)									
H24Q (72C>A), Y31C (92A>G 93C>T), S37A (109T>G), R44K (131G>A), E53D (159G>C), I54V (160A>G), V138I (412G>A 414G>A), S144N (431G>A 432C>T), A151V (452C>T 453A>T), V478I (1432G>A), V484I (1450G>A), A686T (2056G>A 2058T>G), I708M (2124A>G), M719L (2155A>C), L730M (2188T>A 2190A>G), N858S (2573A>G), N117S (3530A>G 3531C>T), R1192K (3575G>A)									



	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	4	3744	43.2%	2146	64.1%	1673 (100%)	1373 (82.1%)	0/0	
TCA12TCC (36A>C), CTG13TTA (37C>T 39G>A), GAG19GAA (57G>A), ACG20ACA (60G>A), AGA21AGG (63A>G), CAC24CAA (72C>A), ACG26ACA (78G>A), TTA27TTG (81A>G), CAC28CAT (84C>T), TTT30TTC (90T>C), TAC31TGT (92A>G 93C>T), TCA32TCT (96A>T), TTA34TTG (102A>G), TCA37GCA (109T>G), AAA40AAG (120A>G), AGA44AA (131G>A), CCC45CC (135C>T), CTA46CTG (138A>G), CGT47CGA (141T>A), CAA49CAG (147A>G), CGG50CGA (150G>A), ACC51ACG (153C>G), GAG53GAC (159G>C), ATT54GTT (160A>G), GTG55GTT (165C>T), TTG63CTG (187T>C), CAA64CAG (192A>G), GGT65GGC (195T>C), CTA66TTG (196C>T 198A>G), TTC114.TT (342C>T), CTT119CTC (357T>C), GTT120GTC (360T>C), GGT121GGC (363T>C), GCT122GGC (366T>G), TTT123TTG (369T>C), CTA124TTG (370C>T 372A>G), AAC126AAAT (378C>T), GCC128GCT (384C>T), GAC131GAT (393C>T), TTA132CTG (394T>C 396A>G), CTA135TTA (403C>T), TTG136TTA (408G>A), ATT137ATA (411T>A), GTG138ATA (412G>A 414G>A), AAC139AAT (417C>T), GAT140GAC (420T>C), AGC144AAT (431G>A 432C>T), GAT145GAC (435T>C), CTA146TTA (436C>T), CTT147CTC (441T>C), GGA148GGG (444A>G), GCA151GTT (452C>T 453A>T), TTT157TTG (471T>C), GAT40GAC (1320T>C), AGT442AAC (1326T>C), AGT444AGC (1332T>C), CGG446AGA (1336C>A 1338G>A), GTG447GTT (1341G>T), GTG448GTA (1344G>A), CTA449TTA (1345C>T), TCC451TCT (1353C>T), CTG453CTA (1359G>A), TTAA456CT (1366T>C 1368A>G), CGG457CCA (1371G>A), TTT461TTT (1383T>C), GAT462GA (1386T>C), AGT470AGC (1410T>C), CTC471TTG (1411T>C), GCG475GCA (1425G>C), AAC477AAAG (1431A>G), GTT478ATT (1432G>A), GAT480GAC (1440T>C), CTC482CT (1446C>C), CTG483CTC (1449G>C), GTC484ATC (1450G>A), GAC486GAT (1458C>T), ACG487ACA (1461G>A), GCA488GCG (1464A>G), GTC489GTG (1467A>G), CTG490CTT (1470G>T), AAA491AAG (1473A>G), TAT494TAC (1482T>C), GAC495CAA (1485G>A), GCT496GCC (1488T>C), GAT498GAC (1494T>C), TTG673TTT (2019C>T), TTG674CTG (2020T>C 2022A>G), GTG675GTC (2025G>C), TCA679TAT (2037C>T), AAC683ACC (2049A>C), TCC689TCT (2055C>T), GCT686ACG (2056G>A 2058T>G), ATA687ATC (2061A>C), CTGG691TTG (2071C>T), CCA692CCG (2076A>G), TCA693CTG (2079A>G), GGT695GGA (2085T>A), TAC696TAT (2088C>T), GTT697GTC (2091T>G), GAT698GAC (2094T>C), GAC699GAT (2097C>T), GGG700GG (2100G>A), TCT702TCC (2106T>C), ATA708AT (2115A>T), ATA708AT (2124A>G), ATT709ATC (2127T>C), AGC710AGT (2130C>T), GAG712GAA (2136G>A), TTT716TTC (2148T>C), AAT718AAC (2154T>C), ATG719CTG (2155A>C), ACA720ACG (2160A>G), GCT722GTC (2166T>C), GCT723GCA (2169T>A), GTT725GTC (2175T>C), GGG726GGT (2178G>T), TTA730ATG (2188T>A 2190A>G), GTG734GTT (2202G>T), GGA735GGT (2205A>T), AAA739AAG (2217A>G), TCC730TCT (2220C>T), GGC742GCT (2226C>T), ACT753.A (2259T>A), ATT754ATC (2262T>C), ACG755ACA (2265G>A), TCG756TCA (2268G>A), AGG757AGA (2271G>A), CCT760CCG (2280T>G), GCA763GCT (2289A>T), AGA764AGG (2292A>G), AGG765CGT (2293A>C 2295G>T), AAG766AA (2298G>A), CGC768CGG (2304C>G), CGT770CGG (2310T>A), TAC771ATA (2313C>I), CCG773CCG (2319G>A), GA776GAC (2328T>C), AGA778CGA (2332A>C), CTA780T (2343C>G), GTT782GTC (2343G>C), GAT783CAA (2349G>A), CGT785CCG (2355T>C), CTT788CTA (2364T>A), CGC789CCA (2367G>A), AAT791AAC (2373T>C), CCT792CCA (2376T>A), GTC793GTA (2379C>A), TCA794TTG (2380C>T 2382A>G), GAT796GAC (2388T>C), TAC811TAT (2433C>T), GGC818GCG (2454C>G), GTG819GTA (2457G>A), GTA825GTC (2475A>C), TTA826CTT (2476T>C 2478A>T), CTC828CTT (2484C>T), ACT830ACC (2490T>C), GGA831GGT (2493A>T), CCA832CCG (2496A>G), TTG837CTA (2509T>C 2511G>A), TTA839TTG (2517A>G), ATA840ATT (2520A>T), CCG841CCA (2523G>A), CCT844CTT (2532C>T), CCA845CCG (2535A>G), TGT848TGC (2544T>C), GAC850GAT (2550C>T), ACT854AGC (2562T>G), CAA856CAG (2568A>G), ATT858AGT (2573A>G), TGC860TGT (2580C>T), CGC864CGT (2592C>T), ACG865ACA (2595G>A), TTC867TTT (2601C>T), GAA869GAG (2607A>G), CTT870CTC (2610T>C), AGC874AGT (2622C>T), GAT1051.AC (3153T>C), TTT1053TTT (3159T>C), AAC1054AT (3162C>T), TGC1055TGT (3165C>T), TAC1056TAT (3168C>T), ATT1057ATT (3174T>C), TCA1059TCT (3177A>T), GCG1060GCA (3180G>A), GCG1060GCA (3180G>A), GCG1062GCC (3186T>C), TTT1063TTT (3189T>C), TCA1064TCT (3192A>T), GAT1067GAC (3201T>C), ATT1069AAC (3207T>C), GAC1071GAC (3213A>G), ATC1073ATA (3219C>A), CAG1075CAA (3225G>A), GCC1078GCT (3234C>T), CAG1079CAA (3237G>A), GCG1082GCA (3246G>A), ATT1083AAC (3249T>C), AAG1084AAA (3252G>A), TTG1089TTA (3267G>A), GTA1092GTC (3276A>G), TTT1093TTC (3279T>C), GAC1095GAT (3285C>T), GCC1096GCT (3288C>T), ATT1099TAC (3297T>C), GTC1105GTT (3315C>T), GGT1106GGG (3318T>G), ATT110AAC (3330T>C), GTG1112GTA (3336G>A), TCA1113TCT (3339A>T), TTA1114TTG (3342A>G), GGA1115GGT (3345A>T), TCG1116TCA (3348G>A), GAC1120GAT (3360C>T), GAT1123GAC (3369T>C), GTT1124GTC (3372T>G), GAC1125GAT (3375C>T), ATT1126ATA (3378T>A), GAT1128GAC (3384T>C), CGC1129GCA (3387G>A), CCG1131CTC (3393G>T), GCC1132GCT (3396C>T), TTG1134CTG (3400T>C), GAT1135GAC (3405T>C), TTC1136TTT (3408C>T), ACC1137ACT (3411C>T), GTC1143GTT (3429A>T), ATT1150TAC (3435T>C), TAT1151TAT (3453C>T), TAC1151TAT (3453C>T), CGC1152GCT (3456C>T), GCC1155GCT (3465C>T), AAC1158AAA (3474G>A), ATC1159ATT (3477C>T), GGT1161GGG (3483T>G), ATA1165ATT (3495A>T), GCA1166GGG (3498A>G), AAC1167AAT (3501C>T), CCC1168CT (3504C>T), TTC1171TTT (3513C>T), AAC1177AGT (3530A>G 3531C>T), ACG1178ACA (3534G>A), GGG1179GGA (3537G>A), TTG1181TTA (3543G>A), GTG1182GTA (3546G>A), AAC1184AAT (3552C>T), GTG1185GTA (3555G>A), TTG1187TTA (3561G>A), GAT1188GAC (3564T>C), GCG1190GCT (3570G>T), GAT1191GAC (3573T>C), AGG1192AAG (3575G>A), TAC1193TAT (3579C>T), TTA1195CTA (3583T>C), ATT1198ATC (3594T>C), CGC1199GTT (3597C>T), GTC1201GTC (3603A>G), GAC1205GAT (3615C>T), TTG1208TT (3624T>C), TAC1209TAT (3627C>T), CAT1212CAC (3636T>C), CTG1214TTG (3640C>T), AAC1215CAG (3645A>G), CTT1216TTA (3646C>T 3648T>A), CTG1217CTA (3651G>A), AAC1218AAT (3654C>T), CTG1222TT (3664C>T), ACT1224ATA (3672T>A), GAC1227GAT (3681C>T), TTA1228TT (3684A>G), TTC1229TT (3687C>T), CTG1230TTG (3688C>T), AGC1231AGT (3693C>T), GCC1232GCT (3696C>T), GAT1234GAC (3702T>C), CGC1236CGT (3708C>T), GCA1239GCC (3717A>C), GTC1240GTC (3720C>G), AGT1243AGC (3729T>C), GGC1244GGT (3732C>T), ACT1246ACC (3738T>C), ATC1247ATT (3741C>T)	Codon mutations: * : Inserts / Deletes / Misaligned / Frameshifts								
This analysis was performed with Pan-viral (2.14.6)									

Analysis details

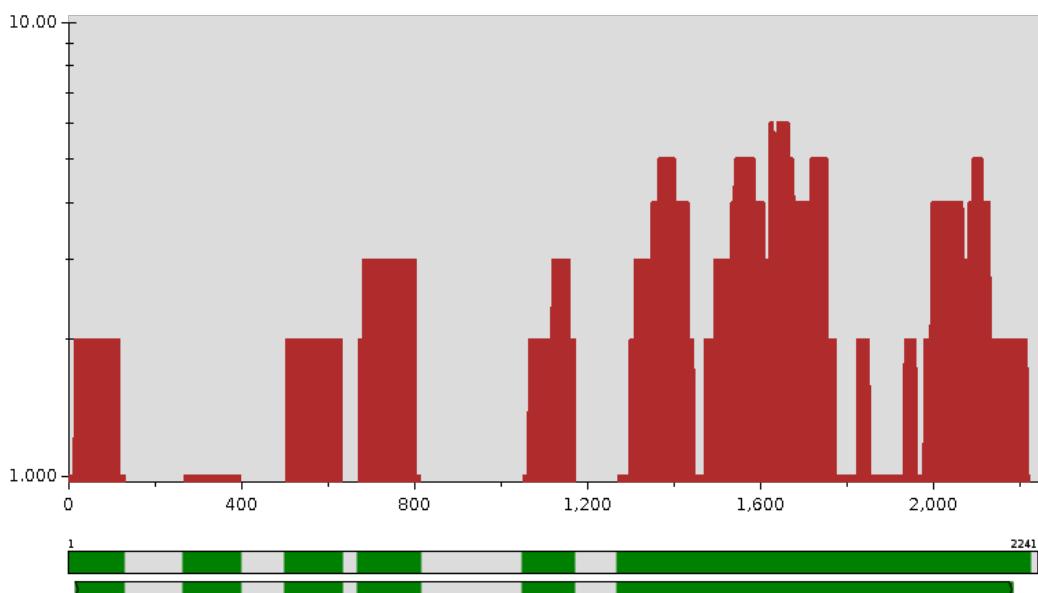
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment M3)

Assembly

Coverage Length	1636 (6 contig(s))
Depth Of Coverage	2.6
Number Of Reads	33
Reads Per Million	0.30 rpm (after QC)
Ambiguities	4
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013230.1
NT Identity (%)	90.2693
AA Identity (%)	95.0664
Number Of Stop Codons	3
Number Of CDS	1

Alignment

Alignment Score	2629.0 (NT) + 3071.0 (AA) = 5700.0
Concordance (%)	87.0081

Genome Region

Sequence starts at position 1 and ends at position 2226 relative to NC_013230.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	1	2226	73.0%	2629	80.7%	1634 (99.9%)	1475 (90.2%)	0/2	
Mutations:									
81A>T, 90T>C, 99T>C, 105G>A, 111T>C, 114G>A, 270C>T, 276C>T, 279A>T, 282C>T, 291G>T, 309T>C, 321C>T, 345G>T, 354T>C, 360C>T, 366G>A, 372C>T, 378G>A, 393A>G, 396G>T, 507T>C, 516A>G, 528A>T, 531T>C, 537T>C, 564G>A, 570C>T, 582A>G, 583T>C, 585A>G, 589C>T, 606C>T, 608G>K, 612A>G, 624G>K, 632C>M, 672A>G, 677A>W, 679A>G, 687C>T, 699T>C, 702G>A, 714T>C, 735A>G, 741T>C, 783C>T, 795A>G, 804T>C, 807C>T, 816T>C, 1080T>C, 1083G>A, 1089T>C, 1110T>C, 1131A>G, 1115A>T, 1116G>A, 1134T>C, 1140T>C, 1166T>G, 1269C>T, 1275T>C, 1293G>A, 1314C>T, 1359C>A, 1366C>T, 1377T>C, 1380T>C, 1383T>C, 1390C>A, 1396C>T, 1413G>A, 1425A>T, 1433C>A, 1446C>T, 1450<_1451delAT, 1452T>A, 1485T>C, 1488G>A, 1500A>G, 1519C>T, 1521A>G, 1537G>A, 1548A>G, 1551C>T, 1563C>T, 1573G>A, 1590A>G, 1599G>A, 1611T>C, 1620C>T, 1627C>T, 1629A>G, 1632A>G, 1641G>A, 1659A>G, 1662T>C, 1665T>C, 1674A>G, 1680T>C, 1707A>G, 1725C>T, 1731C>T, 1737T>C, 1743T>C, 1773T>C, 1779C>T, 1785T>C, 1791T>C, 1806T>C, 1811A>G, 1827A>G, 1834G>A, 1848C>T, 1857A>G, 1863G>A, 1866C>T, 1875C>T, 1881T>C, 1888G>T, 1891G>T, 1895T>A, 1909G>T, 1911T>A, 1914G>A, 1918G>T, 1921C>A, 1932A>G, 1953G>A, 1955A>G, 1974A>G, 2001T>C, 2010G>A, 2023T>C, 2028G>A, 2049G>A, 2053T>C, 2058C>T, 2067C>T, 2070A>G, 2088A>G, 2094C>T, 2103C>T, 2109A>G, 2124T>A, 2127T>C, 2140G>T, 2154A>T, 2157C>T, 2169G>A, 2172T>C, 2183A>G, 2189C>T, 2191C>T, 2204T>C									

CDS

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
M3	1	722	73.0%	3071	88.3%	527 (100%)	501 (95.1%)	0/0/5/1	3
Protein mutations:									
K126N (396G>T), N221D (679A>G), K366R (1115A>G 1116G>A), V383G (1166T>G), E469D (1425A>T), T472N (1433C>A), V507M (1537G>A), A519T (1573G>A), E598G (1811A>G), G606S (1834G>A), D624Y (1888G>T), D625Y (1891G>T), L626* (1895T>A), G631* (1909G>T 1911T>A), A634S (1918G>T), N646S (1955A>G), A708S (2140G>T)									
Codon mutations:									
ATA21ATT (81A>T), CTT24CTC (90T>C), ACT27ACC (99T>C), GGG29GGA (105G>A), CGT31CGC (111T>C), TCG32TCA (114G>A), GGC84GGT (270C>T), TTC86TTT (276C>T), TCA87TCT (279A>T), ATC88ATT (282C>T), ATC91GTT (291G>T), GCT97GCC (309T>C), GAC101GAT (321C>T), GCG109GCT (345G>T), TTT112TTC (354T>C), GGC114GCT (360C>T), CCG116CCA (366G>A), TCC118TCT (372C>T), CAG120CAA (378G>C), GCA125GCC (393A>G), AAG126AAT (396G>T), ATT163ATC (507T>C), GAA166GAG (516A>G), CTA170CTT (528A>T), GCT171GCC (531T>C), ACT173ACC (537T>C), GCG182GCA (564G>A), GTC184GTT (570C>T), GAA188GAG (582A>G), TTA189CTG (583T>C) 585A>G>, CTA191TTA (589C>T), CAC196CAT (606C>T), AGA197AKA (608G>K), GGA198GGG (612A>G), TTG202TTC (624G>T), TCT205MT (632C>G), ACA218ACG (672A>G), CAT220CWT (677A>W), AAC221GAC (679A>G), CAC223CAT (687C>T), GGT227GGC (699T>C), GTG228GTA (702G>A), GAT232GAC (714T>C), GGA239GGG (735A>G), TTT241TTC (741T>C), TAC255AT (783C>T), ACC257ACT (789C>T), GAA259GAG (795A>G), GAT262GAC (804T>C), TAC263TAT (807C>T), ATT266ATC (816T>C), AAT354AAC (1080T>C), ACG355ACA (1083G>A), GTT357GTC (1089T>C), GCT364GCC (1110T>C), CTAA365CTG (1113A>G), AAC366AGA (1115A>G 1116G>A), AAG370AAA (1128G>A), GGT372GGC (1134T>C), TCT374TCC (1140T>C), GTT383GGT (1166T>C), AGC417.T (1269C>T), TGT419TGC (1275T>C), TCG425TCA (1293G>A), GAC432GAT (1314C>T), TAC447TAT (1359C>T), TCA449TCG (1365A>G), CTG450TTG (1366C>T), TAT453TAC (1377T>C), TAT454TAC (1380T>C), CAT455CAC (1383T>C), CCG458AGG (1390C>A), CTG460TTG (1396C>T), GTG465GTA (1413G>A), GAA469GAT (1425A>T), ACT472AAT (1433C>A), GAC476GAT (1446C>T), ATT478-A (1450_1451delAT 1452T>A), CAT489CAC (1485T>C), GAG490GAA (1488G>A), CTAA494CTG (1500A>G), CTAA501TTG (1519C>T 1521A>G), GTG507ATG (1537G>A), TCA510TCG (1548A>G), ATC511ATT (1551C>T), CCC515CCCT (1563C>T), GCG519ACG (1573G>A), CTAA524CTG (1590A>G), TTG527TTA (1599G>A), TCT531TCC (1611T>C), GTC534GTT (1620C>T), CTAA537TTG (1627C>T), GCA553ACG (1632A>G), TTG541TTA (1641G>A), CTAA547CTG (1659A>G), AAT548AAC (1662T>C), GCA552GAG (1674A>G), GAT554GAC (1680T>C), CTAA563CTG (1707A>G), CAC569CAT (1725C>T), ACC571ACT (1731C>T), ATT573ATC (1737T>C), GGT575GCC (1743T>C), CAT576CAC (1746T>C), GCT585GCC (1773T>C), CGC587CGT (1779C>T), GCT589GCC (1785T>C), GAT591GAC (1791T>C), ATT596ATC (1806T>C), GAA598GGA (1811A>G), GTG603GTC (1827A>G), GGC606AGC (1834G>A), CCG610CTG (1848C>T), AAA613AAG (1857A>G), TCG615TCA (1863G>A), GGC616GCT (1866C>T), TGC619TGT (1875C>T), ACT621ACC (1881T>C), GAT624TAT (1888G>T), GAC625TAC (1891G>T), TTG626TAG (1895T>A), GGT631TGA (1909G>T 1911T>A), AAG632AAA (1914G>A), GCA634TCA (1918G>A), CGA635AGA (1921C>A), ACA638ACG (1932A>G), GAG645GAA (1953G>A), AAT646AGT (1955A>G), GCA652GCG (1974A>G), AAT661AAC (2001T>C), ACG664ACA (2010G>A), TTG669CTG (2023T>C), CGA670CAA (2028G>A), GTG677GTA (2049G>A), TTG679CTG (2053T>C), GAC680GAT (2058C>T), AAC683AAT (2067C>T), CAA684CAG (2070A>G), CTA690CTC (2088A>G), ATC692ATT (2094C>T), TCC695TCT (2103C>T), CTA697CTG (2109A>G), ATT702ATA (2124T>A), GAT703GAC (2127T>C), GCT708TCT (2140G>T), ATA712ATT (2154A>T), GAC713GAT (2157C>T), CCG717CCA (2169G>A), ACT718ACC (2172T>C), TAA722TGA (2183A>G)									

Proteins

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
mu-NS protein (YP_003199423.1)	1	722	73.0%	3071	88.3%	527 (100%)	501 (95.1%)	0/0/5/1	3
Protein mutations:									
K126N (396G>T), N221D (679A>G), K366R (1115A>G 1116G>A), V383G (1166T>G), E469D (1425A>T), T472N (1433C>A), V507M (1537G>A), A519T (1573G>A), E598G (1811A>G), G606S (1834G>A), D624Y (1888G>T), D625Y (1891G>T), L626* (1895T>A), G631* (1909G>T 1911T>A), A634S (1918G>T), N646S (1955A>G), A708S (2140G>T)									
Codon mutations:									
ATA21ATT (81A>T), CTT24CTC (90T>C), ACT27ACC (99T>C), GGG29GGA (105G>A), CGT31CGC (111T>C), TCG32TCA (114G>A), GGC84GGT (270C>T), TTC86TTT (276C>T), TCA87TCT (279A>T), ATC88ATT (282C>T), ATC91GTT (291G>T), GCT97GCC (309T>C), GAC101GAT (321C>T), GCG109GCT (345G>T), TTT112TTC (354T>C), GCC114GCT (360C>T), CCG116CCA (366G>A), TCC118TCT (372C>T), CAG120CAA (378G>C), GCA125GCC (393A>G), AAG126AAT (396G>T), ATT163ATC (507T>C), GAA166GAG (516A>G), CTA170CTT (528A>T), GCT171GCC (531T>C), ACT173ACC (537T>C), GCG182GCA (564G>A), GTC184GTT (570C>T), GAA188GAG (582A>G), TTA189CTG (583T>C) 585A>G>, CTA191TTA (589C>T), CAC196CAT (606C>T), AGA197AKA (608G>K), GGA198GGG (612A>G), TTG202TTC (624G>T), TCT205MT (632C>G), ACA218ACG (672A>G), CAT220CWT (677A>W), AAC221GAC (679A>G), CAC223CAT (687C>T), GGT227GGC (699T>C), GTG228GTA (702G>A), GAT232GAC (714T>C), GGA239GGG (735A>G), TTT241TTC (741T>C), TAC255AT (783C>T), ACC257ACT (789C>T), GAA259GAG (795A>G), GAT262GAC (804T>C), TAC263TAT (807C>T), ATT266ATC (816T>C), AAT354AAC (1080T>C), ACG355ACA (1083G>A), GTT357GTC (1089T>C), GCT364GCC (1101T>C), AAC366AGA (1115A>G 1116G>A), AAG370AAA (1128G>A), GGT372GGC (1134T>C), TCT374TCC (1140T>C), GTT383GGT (1166T>C), AGC417.T (1269C>T), TGT419TGC (1275T>C), TCG425TCA (1293G>A), GAC432GAT (1314C>T), TAC447TAT (1359C>T), TCA449TCG (1365A>G), CTG450TTG (1366C>T), TAT453TAC (1377T>C), TAT454TAC (1380T>C), CAT455CAC (1383T>C), CCG458AGG (1390C>A), CTG460TTG (1396C>T), GTG465GTA (1413G>A), GAA469GAT (1425A>T), ACT472AAT (1433C>A), GAC476GAT (1446C>T), ATT478-A (1450_1451delAT 1452T>A), CAT489CAC (1485T>C), GAG490GAA (1488G>A), CTAA494CTG (1500A>G), CTAA501TTG (1519C>T 1521A>G), GTG507ATG (1537G>A), TCA510TCG (1548A>G), ATC511ATT (1551C>T), CCC515CCCT (1563C>T), GCG519ACG (1573G>A), CTAA524CTG (1590A>G), TTG527TTA (1599G>A), TCT531TCC (1611T>C), GTC534GTT (1620C>T), CTAA537TTG (1627C>T), GCA553ACG (1632A>G), TTG541TTA (1641G>A), CTAA547CTG (1659A>G), AAT548AAC (1662T>C), GCA552GAG (1674A>G), GAT554GAC (1680T>C), CTAA563CTG (1707A>G), CAC569CAT (1725C>T), ACC571ACT (1731C>T), ATT573ATC (1737T>C), GCT575GCC (1743T>C), CAT576CAC (1746T>C), GCT585GCC (1773T>C), CGC587CGT (1779C>T), GCT589GCC (1785T>C), GAT591GAC (1791T>C), ATT596ATC (1806T>C), GAA598GGA (1811A>G), GTG603GTC (1827A>G), GGC606AGC (1834G>A), CCG610CTG (1848C>T), AAA613AAG (1857A>G), TCG615TCA (1863G>A), GGC616GCT (1866C>T), TGC619TGT (1875C>T), ACT621ACC (1881T>C), GAT624TAT (1888G>T), GAC625TAC (1891G>T), TTG626TAG (1895T>A), GGT631TGA (1909G>T 1911T>A), AAG632AAA (1914G>A), GCA634TCA (1918G>A), CGA635AGA (1921C>A), ACA638ACG (1932A>G), GAG645GAA (1953G>A), AAT646AGT (1955A>G), GCA652GCG (1974A>G), AAT661AAC (2001T>C), ACG664ACA (2010G>A), TTG669CTG (2023T>C), CGA670CAA (2028G>A), GTG677GTA (2049G>A), TTG679CTG (2053T>C), GAC680GAT (2058C>T), AAC683AAT (2067C>T), CAA684CAG (2070A>G), CTA690CTC (2088A>G), ATC692ATT (2094C>T), TCC695TCT (2103C>T), CTA697CTG (2109A>G), ATT702ATA (2124T>A), GAT703GAC (2127T>C), GCT708TCT (2140G>T), ATA712ATT (2154A>T), GAC713GAT (2157C>T), CCG717CCA (2169G>A), ACT718ACC (2172T>C), TAA722TGA (2183A>G)									

*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

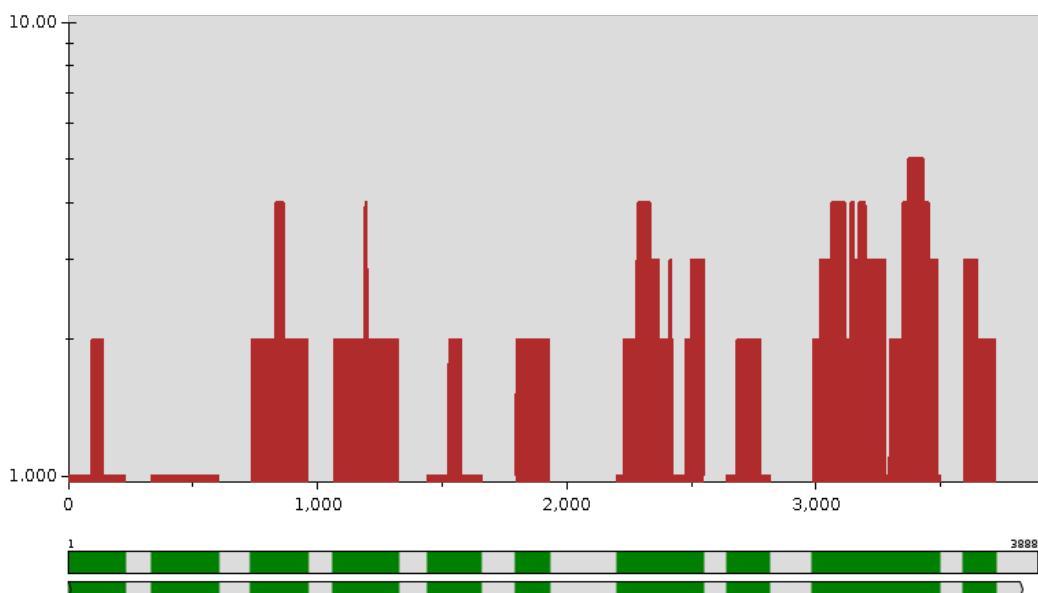
This analysis was performed with Pan-viral (2.14.6)

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment L3)

Assembly

Coverage Length	2558 (10 contig(s))
Depth Of Coverage	2.0
Number Of Reads	40
Reads Per Million	0.37 rpm (after QC)
Ambiguities	1
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_013229.1
NT Identity (%)	86.9616
AA Identity (%)	96.0
Number Of Stop Codons	1
Number Of CDS	1

Alignment

Alignment Score	3765.0 (NT) + 5658.0 (AA) = 9423.0
Concordance (%)	86.0705

Genome Region

Sequence starts at position 2 and ends at position 3725 relative to NC_013229.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons	
NT	2	3725	65.8%	3765	73.9%	2554 (99.8%)	2221 (86.8%)	0/4		
Mutations:										
	21A>G, 27G>A, 30T>C, 45A>G, 62C>T, 63A>G, 78A>C, 81C>A, 84C>T, 88C>T, 96C>T, 105T>C, 116A>G, 120T>G, 121G>T, 123C>A, 127G>A, 128C>T, 132A>G, 135G>T, 143C>T, 146A>G, 148T>C, 153A>G, 156C>A, 171G>A, 174T>A, 195C>T, 201A>G, 207C>A, 213G>A, 216C>T, 222G>A, 225T>C, 231C>T, 336C>T, 339A>G, 342G>C, 345G>A, 346G>A, 348T>C, 352G>T, 357G>A, 363C>A, 370G>T, 372T>C, 378G>C, 384C>T, 387T>C, 390A>G, 393T>A, 397T>C, 399A>C, 404G>T, 407C>A, 408T>A, 411G>A, 414C>T, 417G>A, 426A>G, 432C>T, 444G>T, 450G>T, 453T>G, 459A>G, 464C>A, 466_469delGAAG, 470C>G, 471A>G, 477C>T, 495C>T, 498C>T, 511C>T, 513C>G, 520A>G, 525T>C, 526A>G, 528C>T, 534T>C, 537C>T, 540G>A, 543C>T, 558T>C, 567C>T, 580C>T, 601G>A, 735T>C, 739C>T, 741A>G, 744T>G, 747T>C, 753T>C, 762G>A, 765C>T, 789T>C, 792T>C, 798T>C, 804C>T, 813T>C, 841T>C, 861T>C, 870C>T, 876C>T, 879A>C, 885G>A, 891C>G, 936C>T, 939T>C, 945C>T, 951T>C, 963T>C, 1086G>A, 1087C>T, 1092G>A, 1101A>G, 1108C>T, 1110A>G, 1113C>T, 1116G>A, 1125T>C, 1134C>T, 1140G>A, 1149A>G, 1171C>T, 1173G>A, 1194T>C, 1197G>T, 1203G>A, 1224G>A, 1230C>T, 1236G>T, 1242A>G, 1245T>C, 1251G>A, 1260T>C, 1272T>G, 1275G>T, 1290G>A, 1299G>C, 1302T>C, 1311G>A, 1446G>A, 1467G>A, 1473C>A, 1476C>T, 1479T>C, 1503T>G, 1507C>A, 1513A>G, 1521C>T, 1527T>C, 1533T>C, 1548C>T, 1551T>C, 1564G>A, 1572C>T, 1587G>C, 1581T>C, 1602T>C, 1605C>G, 1608G>A, 1611G>A, 1626T>C, 1641G>A, 1659G>A, 1797C>T, 1800C>T, 1806G>A, 1815C>T, 1827T>C, 1830C>T, 1833C>T, 1836A>G, 1839T>C, 1842A>C, 1893C>T, 1896C>A, 1902C>T, 1905C>T, 1911G>A, 1912C>T, 2212T>C, 2226A>T, 2235C>T, 2244T>C, 2256C>T, 2263T>C, 2274C>T, 2286C>T, 2289C>T, 2307T>C, 2322C>T, 2404C>T, 2409T>C, 2421G>A, 2424G>A, 2430T>C, 2436G>A, 2448G>A, 2451C>A, 2463A>G, 2467G>T, 2469C>A, 2472C>A, 2481C>T, 2487T>A, 2490T>C, 2493C>T, 2508T>C, 2535G>A, 2544A>C, 2547T>C, 2643T>C, 2664T>G, 2694T>A, 2656C>T, 2659C>T, 2661G>A, 2691G>A, 2703C>T, 2742A>G, 2751T>C, 2758A>C, 2762A>W, 2764G>A, 2772T>C, 2781T>G, 2790G>A, 2793A>G, 2799A>C, 2800C>T, 2802G>A, 2805G>A, 2817G>A, 2898G>T, 3006A>G, 3009A>G, 3021A>G, 3024A>G, 3030C>A, 3042G>A, 3051G>A, 3054G>A, 3057C>T, 3060T>C, 3072C>T, 3081G>A, 3087G>A, 3090C>T, 3105T>C, 3111A>G, 3132T>C, 3135G>A, 3159A>G, 3175C>T, 3183A>T, 3192C>T, 3198G>C, 3207T>C, 3210T>C, 3213A>G, 3216G>A, 3234C>G, 3258A>C, 3264T>C, 3270T>C, 3273G>C, 3306G>C, 3309T>C, 3315G>A, 3321T>C, 3327T>C, 3330C>A, 3333G>A, 3334T>C, 3336G>A, 3339G>A, 3348A>G, 3354T>C, 3357A>G, 3369T>C, 3375G>A, 3390C>T, 3396A>G, 3405G>A, 3411C>A, 3417C>T, 3444G>C, 3456C>T, 3462C>T, 3468C>T, 3471T>C, 3474C>T, 3477A>G, 3483C>T, 3489A>G, 3492C>T, 3495C>T, 3591G>A, 3597T>C, 3615T>C, 3621G>A, 3630T>C, 3633C>T, 3642G>T, 3651C>T, 3657T>C, 3660G>A, 3662G>C, 3672C>T, 3675G>A, 3684T>C, 3702C>T, 3703T>C, 3711T>C, 3717T>C, 3723A>G									
CDS	L3	2	1242	66.7%	5658	92.8%	850 (99.9%)	816 (95.9%)	0/1/2/1	1
Protein mutations:										
	S21L (62C>T 63A>G), N39S (116A>G), A41S (121G>T 123C>A), A43M (127G>A 128C>T), S48F (143C>T), N49S (146A>G), C50R (148T>C), H52Q (156C>A), E114D (342G>C), A116T (346G>A 348T>C), A118S (352G>T), D124Y (370G>T 372T>C), N131K (393T>A), R135I (404G>T), S136* (407C>A 408T>A), K148N (444G>T), M150I (450G>T), A155D (464C>A), E156del (466_469delGAAG), T174A (520A>G), S176G (526A>G 528C>T), A201T (601G>A), M505V (1513A>G), V522I (1564G>A), G798D (2393G>A 2394C>T), A2467G>T 2469C>T), V922M (2764G>A)									
Codon mutations:										
	AAA7AAAG (21A>G), AAG9AAA (27G>A), GGT10GGC (30T>C), AAA15AAG (45A>G), TCA21TTG (62C>T 63A>G), GGA26GGC (78A>C), TCC27TCA (81C>A), AGC28AGT (84C>T), CTG30TTG (88C>T), GAC32GAT (96C>T), AGT35AGC (105T>C), AAT39AGT (116A>G), CCT40CCG (120T>G), GCC41CTA (121G>T 123C>A), GCG43ATG (127G>A 128C>T), GAA44GAG (132A>G), CGG45CCCT (135G>T), TCC48TTC (143C>T), AAT49AGT (146A>G), TG50CGT (148T>C), GAA51GAG (153A>G), CAC52CAA (156C>A), CCG57CCA (171G>A), GGT58GGA (174T>A), CGC65GCT (195C>T), GAA67GAG (201A>G), GCC69GCA (207C>A), CTG71CTA (212G>A), CCC72CT (216C>T), AAG74AAA (222G>A), AAT75AAC (225T>A), GAC77GAT (231C>T), GAC112GAT (336C>T), ACC113AGC (339A>G), GAG114GAC (342G>C), AAC115AA (345G>A), GCT116AC (346G>A 348T>C), GCA118TCA (352G>T), CAG119CAA (357G>A), ACC121ACA (363C>A), GAT124TAC (370G>T 372T>C), GGG126GGC (378G>C), AAC128AA (384C>T), ATT129AA (387G>C 388T>C), GCA130GCG (390A>G), AAT131AAA (393T>A), TTA133CTC (397T>C 399A>C), AGA135ATA (404G>T), TCT136TAA (407C>A 408T>A), GGG137GGA (411G>A), AAC138ATA (414C>T), GTG139GTA (417G>A), GAA142GAG (426A>G), GGC144GAG (432C>T), ATG150ATT (450G>T), TCT151TCG (453T>G), AGA153AAG (459A>G), GCT155GAT (464C>A), GAA156del (466_469delGAAG), GCA157-GG (466_469delGAAG 470C>G 471A>G), TCA159CAT (537C>T), CCC168CT (495C>T), CCC168CC (498C>T), CTG171TTG (511C>T 513C>G), ACA174GCA (520A>G), GCT175GGC (525T>C), AGC176GGT (526A>G 528C>T), GGT178GG (534T>C), CAC179CAT (537C>T), GGG180WGA (540G>A), TAC181AT (543C>T), TGT186TGC (558T>C), GTC189GTT (567C>T), CTAC194TTA (580C>T), GCT201ACT (601G>A), GCT245GCC (735T>C), CT247TTC (739C>T 741A>G), CTT248CTG (744T>G), CAT249CAC (747T>C), GAT251GAC (753T>C), CGG254CGA (762G>A), CTC255CTT (765C>T), GTC256GTT (768C>T), ACT264ACC (792T>C), TAT266TTC (798T>C), ATC268ATT (804C>T), ATT271TC (813T>C), CCT272CCC (813T>C), TTG281CTG (841T>C), ACT287AAC (861T>C), TCT290TAC (870C>T), ATC292ATT (876C>T), CA293CAC (879A>G), CGC295CCA (885G>A), CCC297CTT (891C>T), TA306GTG (918A>G), TCC312CT (936C>T), AAT313AAC (939T>C), GAC315GAG (945C>T), TCT321TCC (963T>C), AGT362CTA (1086G>A), CTA363TAA (1087C>T), AGT364GAA (1092G>A), TTA367TTG (1101A>G), CT370TTA (1108C>T 1110A>G), TAC371TAT (1113C>T), CTG372CTA (1116G>A), CAT375CAC (1125T>C), TCT378TTT (1134C>T), CAG380CAA (1140G>A), ACA383ACG (1149A>G), CTG391TTA (1171C>T 1173G>A), GCT398GAC (1194T>C), GCG399GCT (1197G>T), AAG401AAA (1203G>A), CCG408CCA (1204G>A), CGC410GCT (1203C>T), GGG412GGT (1236G>T), CCA414CCG (1242A>G), AAT415AC (1245T>C), TCG417TCA (1251G>A), TGT420TGC (1260T>C), GCT424GCG (1272T>C), TCG425TCT (1275G>T), AGG430AGA (1290G>A), GGG432GGA (1296G>A), CGG433CGA (1299G>A), TTT434TTC (1302T>C), GCG437GCT (1311G>T), CAA438CAG (1314A>G), GCG482GCA (1446G>A), GGG449GGA (1467G>A), GTC491ACT (1473C>A), ACC492ACT (432C>T), GTT497CTG (1479T>C), GTT501GTG (1503T>C), CGA503AGA (1507C>A), ATG505GTG (1513A>G), TAC507TAT (1521C>T), ATT509ATC (1527T>C), AAT511AAC (1533T>C), ATC516ATT (1548C>T), TCT517TCC (1551T>C), GTC522ATC (1564G>A), AAC524AA (1572C>T), GGG526GGC (1578G>C), AAT527AAC (1581T>C), CCT534CC (1602T>C), GCG535GTC (1605C>G), CGT536GCTA (1608G>A), CAG537CAA (1611G>A), CTT542CTC (1626T>C), TCG547TCA (1641G>A), CGG553CCA (1659G>A), CTG559CTT (1797C>T), TAC600TAT (1800C>T), GGG602GA (1806G>A), ACC605ACT (1815C>T), GAT609GAC (1827T>C), GAC610GAT (1830C>T), AGC611GCA (1834C>T), TAC613TAC (1839T>C), CCA614TCA (1842A>G), ATC613TCT (1853C>T), GTC612CT (1893C>T), CTC632TCT (1896C>T), GCA633GCG (1899A>G), CTC634CTT (1902C>T), GCG635GCT (1905C>T), CCC637CCA (1911G>A), CTG638TTC (1912C>T), CTG739TTC (2215C>T), TTA741CTA (2221C>T), CCA742CT (2226A>T), CAC745CAT (2235C>T), GCT748GTC (2244T>C), TTG755CTG (2263T>C), ACC758ACT (2274C>T), TTG761CTG (2281T>C), ACC762ACT (2286C>T), AAC763AA (2289C>T), TGT769TCT (2307T>C), AAC774ATA (2322C>T), CGC774CGG (2340C>G), TAC971TAT (2343C>T), CTG789TGT (2340C>G), GGC789GAT (2348C>G), GCG798GAT (2393G>A 2394C>T), TTG802CTG (2404C>T), ATT803ATC (2409T>C), ACC807ACA (2421G>A), CCG808CCA (2424G>A), TAT810TAC (2430T>C), CAS812CA (2436G>A), CGC816CCA (2448G>A), GTC812TGTG (2451C>G), GTC821GTC (2463A>G), GGC823TCT (2467G>T 2469C>A), CCT824CCA (2472C>A), TTG826CTG (2476T>C), CCC827CTT (2481C>T), CCT829CA (2487T>A), CCT830CCC (2490T>C), TCT831TTT (2493C>T), GTA833TG (2494G>A), CCC836EC (2508T>C), ACG845ACA (2535G>A), GGAA848GGC (2544A>C), GTT849GTC (2547T>C), GCT881GCC (2643T>C), ACT883ACG (2649T>C), GTC884GTT (2652C>T), CTAA886TTA (2656C>T), CTG887TTA (2659C>T), 2661G>A), ACG897ACA (2691G>A), TAT901TAC (2703T>C), GTA914GTG (2742A>G), AAT917AAC (2751T>C), AGA920CGA (2758A>C), GAT921GWT (2762A>W), GTG922AT (2764G>A), ACT924ACC (2772T>C), GCT927GTC (2781T>G), ACG930ACA (2790G>A), TA931CTG (2793A>G), ACA933ACG (2799A>C), CTG934TTA (2800C>T 2802G>A), GTG935GTA (2805G>A), CGC939TCA (2817G>A), CA939GCA (2888G>A), CTAA997TTA (2898C>T), CAA1002CAG (3006A>G), CAA1003CAG (3009A>G), CGA1007CGG (3021A>G), ACA1008AAC (3024A>G), AAC1010ATA (3030C>T), GAG1014GAA (3042G>A), GGG1017GGA (3051G>A), TCG1019GTT (3057C>T), ATT1020ATC (3060T>C), GTC1024GTT (3062T>C), AGC1027AAT (3081G>A), GAG1029GAA (3087G>A), GTC1030GTT (3090C>T), TAT1035TAC (3105T>C), TAT1037TTG (3111A>G), GAT1044GAC (3132T>C), CAG1051CAA (3153G>A), ACA1053ACG (3159A>G), CTG1059TTG (3175C>T), CCA1061CTT (3183A>G), GAC1064GAT (3192C>T), GTG1066GTC (3198G>C), CGT1069CGC (3207T>C), GAT1070GAC (3210T>C), ACA1071ACG (3213A>G), CCG1072CCA (3216G>A), GGC1078GGG (3234C>G), GGA1086GGC (3258A>C), AAT1088AAC (3264T>C), GCT1090GCC (3270T>C), GCG1091GCC (3273G>C), GTG1092GTC (3306G>C), CTC1103CC (3309T>C), GAG1105GAA (3315G>A), AAT1107AAC (3321T>C), ATT1109ATC (3327T>C), CTC1110TTT (3330C>A), TTG1112CTA (3334T>C 3336G>A), GCG1113GCC (3339G>C), CAA1116CAG (3348A>C), ATT1118AAC (3354T>A), ACA1119ACG (3367G>A), CAG1125CAA (3375G>A), CTC1119ATT (3390C>T), ACA1132ACG (3396A>G), CTC1115TCT (3405A>G), ATC1113ATA (3411C>A), ATC1119ATT (3417C>T), CGT1148CTC (3444G>C), GAC1152GAT (3456C>T), CGC1154GCT (3462C>T), TAC1156TAT (3468C>T), GCT1157GCC (3471T>C), AAC1158AT (3484T>A), GCA1159GCC (3477A>G), AAC1161AAT (3483C>T), ACA1163ACG (3489A>G), GTC1164TCT (3492C>T), GCG1165GCT (3495C>T), CAG1167AA (3591G>A), ATC1199ATT (3597C>T), AAT1205AAC (3615C>A), CCG1207GCA (3621G>A), TTT1210TTC (3630T>C), TGC1211TGT (3633C>T), TCG1214TCT (3642G>T), CCC1217CCT (3651C>T), ACT1219ACC (3657T>C), ATT1220ATC (3660T>C), GGG1222GGA (3666G>A), GAC1224GAT (3672C>T), AAG1225AAA (3675G>A), CCT1228CCC (3684T>C), GTT1229GTC (3687T>C), ATC1234ATT (3702C>T), TTG1235CTG (3703T>C), AAT1237AAC (3711T>C), GAT1239GAC (3717T>C), CCA1241CCG (3723A>G)									
Proteins	lambda-1 protein (YP_003199422.1)	2	1242	66.7%	5658	92.8%	850 (99.9%)	816 (95.9%)	0/1/2/1	1
Protein mutations:										
	S21L (62C>T 63A>G), N39S (116A>G), A41S (121G>T 123C>A), A43M (127G>A 128C>T), S48F (143C>T), N49S (146A>G), C50R (148T>C), H52Q (156C>A), E114D (342G>C), A116T (346G>A 348T>C), A118S (352G>T), D124Y (370G>T 372T>C), N131K (393T>A), R135I (404G>T), S136* (407C>A 408T>A), K148N (444G>T), M150I (450G>T), A155D (464C>A), E156del (466_469delGAAG), T174A (520A>G), S176G (526A>G 528C>T), A201T (601G>A), M505V (1513A>G), V522I (1564G>A), G798D (2393G>A 2394C>T), A2467G>T 2469C>T), V922M (2764G>A)									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	2	3725	65.8%	3765	73.9%	2554 (99.8%)	2221 (86.8%)	0/4	
AAA7AAG (21A>G), AAG9AAA (27G>A), GGT10GGC (30T>C), AAA15AAG (45A>G), TCA21TTG (62C>T 63A>G), GGA26GGC (78A>C), TCC27TCA (81C>A), AGC28AGT (84C>T), CTG30TTG (88C>T), GAC32GAT (96C>T), ACT35AGC (105T>C), AAT39AGT (116A>G), CCT40CCG (120T>G), GCC41TCA (121G>T 123C>A), GCG43AATG (127G>A 128C>T), GAA44GAG (132A>G), CCG45CC (135G>T), TCC48TTC (143C>T), AAC49AGT (146A>G), TG50CGT (148T>C), GAA51GAG (153A>G), CAC52CAA (156C>A), CGG57CCA (171G>A), GGT58GGA (174T>A), GCC65GC (195C>T), GAA67GAG (201A>G), GCC69GCA (207C>A), CTG71CTA (213G>A), CCC72CCT (216C>T), AAC74AAA (222G>A), AAC75AAC (225T>C), GAC77GAT (231C>T), GAC112GAT (336C>T), ACA113AGC (339A>G), GAG114GAC (342G>C), AAC128AAA (345G>A), GCT116ACC (346G>C), AAC128AAT (384C>T), GCA118TCA (352G>T), CAG119CAA (357G>A), ACC21ACA (363C>A), GAT124TAC (370G>T 372T>C), GCG126GCC (378G>C), AAC128AAT (384C>T), ATT129AAC (387T>C), GCA130GGC (390A>G), AAT131AAA (393T>A), ATA133CTC (397T>C 399A>C), AGA135ATA (404G>T), TCT136TAA (407C>A 408T>A), GGG137GGA (411G>A), AAC138AAT (414C>T), GTG139GTA (417G>A), GAA142GAG (426A>G), GGC144GGT (432C>T), AAC148AAT (444G>T), ATG150ATT (450G>T), TCT151TCG (453T>G), AGA151TCG (459A>G), GCT155GAT (464C>A), GAA156del (466_469delGAAG), GCA157-G (466_469delGAAG 470C>G 471A>G), CTC159TCT (477C>T), AAC165CAT (495C>T), CCC166CCT (498C>T), CTC171TTG (511C>T 513C>G), AAC174GCA (520A>G), GCT175GCC (525T>C), AGC176GGT (526A>G 528C>T), GCT178GG (534T>C), AAC179CAT (537C>T), GGG180GGA (540G>A), TAC181TAT (543C>T), TGT186TGC (558T>C), GTC189GTT (567C>T), CTA194TTA (580G>T), GCT201ACT (601G>A), GCT245GCC (735T>C), CT247TTG (739C>T 741A>G), CTT248CTG (744T>G), CAT249GAC (747T>C), GAT251GAC (753T>C), CCG254GCA (762G>A), CTC255TCC (765C>T), GTC256GTT (768C>T), TGT263GTC (789T>C), ACT264ACC (792T>C), TTT266TTC (798T>C), ATC268ATT (804C>T), ATT271ATC (813T>C), CCT277CCC (831T>C), TTG281CTG (841T>C), ACT287ACC (861T>C), TAC290TAT (870C>T), ATC292ATT (876C>T), CA293CAC (879A>G), CCG295CCA (885G>A), CCC297CTT (891C>T), TCC312CT (936C>T), AAC313AAC (939T>C), GAC315GAT (945C>T), GAT317GAC (951T>C), TCT321TCC (963T>C), CTG362CTA (1086G>A), ATA363TTA (1087C>T), AGA364GAA (1092G>A), TTA367TTG (1101A>G), CT4370TTA (1108C>T 1110A>G), TAC371TAT (1113C>T), CTG372CTA (1116G>T), CAT375CAC (1125T>C), TCT378TTT (1134C>T), CAG380CAA (1140G>A), ACA383ACG (1149A>G), CTG391TTA (1171C>T 1173G>A), GAT398GAC (1194T>C), GCG399GCT (1197G>T), AAC401AAA (1203G>A), CCG408CCA (1224G>A), CGC410GCT (1230C>T), GGG412GGT (1236G>T), CCA414CCG (1242A>G), AAC415AAC (1245T>C), TGT421TCA (1251G>A), TGT420TGC (1260T>C), GCT424GCG (1272T>G), TCG425TCT (1275G>T), AGG430AGA (1290G>A), GGG432GGA (1296G>A), CCG433CGA (1299G>A), TTT434TT (1302T>C), GCG437GCT (1311G>T), CAA438CAG (1314A>G), GCG482GCA (1446G>A), GGG489GGA (1467G>A), GTC491GTC (1473C>A), ACC492AC (1476G>T), GTC493GTC (1479T>C), GTC494GTC (1503T>G), CGA503AAG (1507C>A), ATG505GTG (1513A>G), TAC507TAT (1521C>T), ATT509ATC (1527T>C), AAT511AAC (1533T>C), ATC516ATT (1548C>T), TCT517TCC (1551T>C), GTC522ATC (1564G>A), AAC524AAT (1572C>T), GGG526GGC (1578G>C), AAT527AAC (1581T>C), CCT534CC (1602T>C), GTC535GTC (1605C>G), CTG536GTA (1608G>A), CAG537CAA (1611G>A), CTC542CTC (1626T>C), TCG547TCA (1641G>A), CCG553CCA (1659G>A), CTCS599CTT (1797C>T), TAC600TAT (1800C>T), GGG602GGA (1808G>A), ACC605ACT (1815C>T), GAT609GAC (1827T>C), GAC610GAT (1830C>T), AGC611AGT (1833C>T), TCA612TCG (1836A>G), TAT613TAC (1839T>C), CCA614CCC (1842A>C), ATC613ATT (1893C>T), CTC632CTT (1896C>T), CCA633CGC (1899A>G), CTC634CTT (1902C>T), GCG635GCT (1905C>T), CCG637CCA (1911G>A), CTG638TTG (1912C>T), CTG739TT (2215C>T), ACC742CTT (2226A>T), CAC745CAT (2238C>T), GCT748GCC (2244T>C), TTG755CTG (2263T>C), ACC758ACT (2274C>T), TTG761CTG (2281T>C), ACC762ACT (2221T>C), AAC763AAT (2289C>T), TGT769TGC (2307T>C), AAC774AAT (2322C>T), CGC780CGG (2340C>T), ACT781TAT (2343C>T), CTG789TTG (2365C>T), ACT796AAC (2388A>G), CGC798GAT (2393G>A 2394C>T), TTG802CTG (2404T>C), ATT803ATC (2409T>C), ACC807ACA (2421G>A), CCG808CCA (2424G>A), TAT810TAC (2430T>C), CGA812CAA (2436G>A), CCG816CCA (2448G>A), GTC817GTC (2451C>G), GTC821GTC (2463A>G), GTC823CT (2467G>T 2469C>T), CCC827CTT (2481C>T), CCT829CA (2487T>A), CCT830CCC (2490T>C), TCT831TTT (2493C>T), TCA833TGT (2499A>G), GTT836GTC (2508T>C), ACC845ACA (2535G>A), GGA848GGC (2544A>C), GTT849GTC (2547T>C), GCT881GCC (2643T>C), ACT883ACG (2649T>G), GTC884GTT (2652C>T), CTA886TTA (2656C>T), CTG887TTA (2659C>T), GAA861G>A), ACC897ACA (2691G>A), TAT901TAC (2703T>C), GTC914GTC (2742A>G), AAC917AAC (2751T>C), AGA920CGA (2758A>C), GAT921GWT (2762A>W), GTG922ATG (2764G>A), ACT924AAC (2772T>C), GCT927GCC (2781T>G), ACG930ACA (2790G>A), CT931CTG (2793A>G), ACA933ACC (2799A>C), CTG934TTA (2800C>T 2802G>A), GTG935GTA (2805G>A), TCG939TCA (2817G>A), CAG996CAA (2988G>A), CTA997TTA (2989C>T), CAA1002CAG (3006A>G), CAA1003CAG (3009A>G), CGA1007GG (3021A>G), ACA1008ACG (3024A>G), AAC1010AAT (3030C>T), GAG1014GAA (3042G>A), GGG1017GGA (3051G>A), TCG1018TCA (3054G>A), GTC1019GTT (3057C>T), ATT1020ATC (3060T>C), GTC1024GTT (3072C>T), ACG1027ACA (3081G>A), GAG1029GAA (3087G>A), GTC1030GTT (3090C>T), TAT1035TAC (3105T>C), TTA1037TTG (3111A>G), GAT1044GAC (3132T>C), CAG1051CAA (3153G>A), ACA1053AAC (3159G>A), CTG1059TTG (3175C>T), CCA1061CTT (3183A>T), GAC1064GAT (3192C>T), GTG1066GTC (3198G>C), CGT1069CGC (3207T>C), GAT1070GAC (3210T>C), ACA1071ACG (3213A>G), CCG1072CCA (3216G>A), GGC1078GGG (3234C>G), GGA1086GGC (3258A>C), AAC1088AAC (3264T>C), GCT1090GCC (3270T>C), GCG1091GCC (3273G>C), GTG1102GTC (3306G>C), CCT1103CCC (3309T>C), GAG1105GAA (3315G>A), AAC1107AAC (3321T>C), ATT1109ATC (3327T>C), TCT1110TTT (3330C>T), CCG1111CCA (3333G>A), TTG1112CTA (3334T>C 3336G>A), CGC1113GCC (3339G>C), CAA1116CAC (3348A>G), AAC1118AAC (3354T>C), ACA1119ACG (3357A>G), AAC1123AAC (3369T>C), CAG1125CAA (3375G>A), ATC1130ATT (3390C>T), ACA1132ACG (3396A>G), CTA1135CTG (3405A>G), ATC1137ATA (3411C>A), ATC1139ATT (3417C>T), CTG1148CTC (3444G>C), GAC1152GAT (3456C>T), CGC1154CGT (3462C>T), TAC1156TAT (3468C>T), GCT1157GCC (3471T>C), AAC1158AAT (3474C>T), GCA1159CGG (3477A>G), AAC1161AAT (3483C>T), ACA1163ACG (3489A>G), TCC1164TCT (3492C>T), GCC1165GCT (3495C>T), CAG1197_AA (3591G>A), ATC1199ATT (3597C>T), AAC1205AAC (3615T>C), CGG1207CGA (3621G>A), TTT1210TTC (3630T>C), TGC1211TGT (3633C>T), TCG1214TCT (3642G>T), CCC1217CCT (3651C>T), ACT1219AAC (3657T>C), ATT1220ATC (3660T>C), GGG1222GGA (3666G>A), GAC1224GAT (3672C>T), AAC1225AAA (3675G>A), CCT1228CCC (3684T>C), GTT1229GTC (3687T>C), ATC1234ATT (3702C>T), TTG1235CTG (3703T>C), AAC1237AAC (3711T>C), GAT1239GAC (3717T>C), CCA1241CCG (3723A>G)									
Codon mutations:									

*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

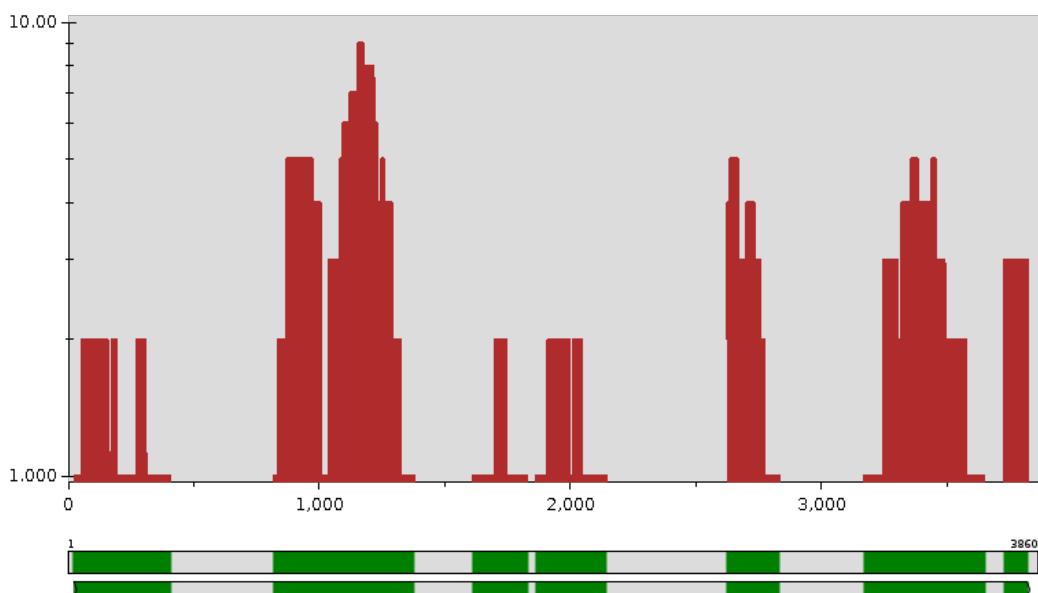
This analysis was performed with Pan-viral (2.14.6).

NGS Details (MG-2-RNASeq021-ZymoSeq): Mammalian orthoreovirus (segment L1)

Assembly

Coverage Length	2267 (7 contig(s))
Depth Of Coverage	2.5
Number Of Reads	44
Reads Per Million	0.40 rpm (after QC)
Ambiguities	0
Assembly Method	de novo + reference guided assembly
Consensus Caller	Bcf Tools

Coverage Map



Assignment

Type	Mammalian orthoreovirus (Taxonomy ID: 351073)
Reference Genome	NC_077839.1
NT Identity (%)	89.4574
AA Identity (%)	97.2185
Number Of Stop Codons	0
Number Of CDS	1

Alignment

Alignment Score	3578.0 (NT) + 5146.0 (AA) = 8724.0
Concordance (%)	89.3852

Genome Region

Sequence starts at position 22 and ends at position 3825 relative to NC_077839.1 reference sequence.

Alignment Detailed Statistics

Proteins

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	22	3825	58.7%	3578	78.9%	2267 (100%)	2028 (89.5%)	0/0	
GAG14GAA (66G>A), GAT21GAC (87T>C), CAA22CAG (90A>G), TCG23TCA (93G>A), GAC25GAT (99C>T), GTG26ATA (100G>A 102G>A), GAT29AAT (109G>A), TTT37TTC (135T>C), ACT38ACC (138T>C), CTG46CTA (162G>A), GAT54GAC (186T>C), CCA58CCC (198A>C), ACG65AAC (219G>C), CCA67CCG (225A>C), TCT68TCC (228T>C), TAT72TAC (240T>C), GAT76GAC (252T>C), AAC79AAAT (261C>T), CCT89TCT (289C>T), GAC91GAT (297C>T), TAC93TAT (303C>T), GTA94GTG (306A>G), TTG102CTG (328T>C), CCA105CCG (339A>G), ACT108ACA (348T>A), CTG109TTG (349C>T), ACA110ACG (354A>G), GGG113GGA (363G>A), CGG114CGT (366G>T), TTG115TTA (369G>A), TCC116TCT (372C>T), GCC118GCA (378C>A), AAC123GCT (393C>T), AAC124AAA (396G>A), GGG126GGA (402G>A), GCA267GCG (825A>G), ATC270ATA (834C>A), TTA271CAT (835T>C), TCT275TCC (849T>C), ATT278ATC (852T>C), AAC279CAC (861A>C), AAC283CAT (873C>T), CTAG289CTG (891A>C), GGC291GGA (897G>A), TAC293TAT (903C>T), CCT302CC (930T>C), GAC305GAT (939C>T), AAG307AAA (945G>A), GTC313ATT (961G>A 963C>T), CCA315CCC (969A>C), GCT318TCC (976G>T 978T>C), AGG322AAG (990G>A), TCG323TTC (992C>T), TCC326TCA (1002C>A), CGG331GCA (1017G>A), CGG332CAT (1019G>A 1020G>T), GAG336GAA (1032G>A), AAA337AAG (1035A>G), CTG340CTA (1044G>A), TCA342GCC (1048T>G 1050A>G), GGT354AG (1057G>A 1059T>C), CTT347CTC (1065T>C), AAA349AGA (1070A>G), ACAC351ACG (1077A>G), ACG353ACT (1083G>T), TAT354TAC (1086T>C), GTT355GTC (1089T>C), AAA356AAG (1092A>G), GCT360GCC (1104T>C), ATT365GTT (1117A>G), AGC373AGT (1143C>T), TTG377TTA (1155G>A), GTA378GTC (1158A>G), ACA380ACG (1164A>G), ACC382ACT (1170C>T), AGC384ACA (1176G>A), TTG386CTG (1180T>C), CGC383CCA (1203G>A), TTG397GTA (1215T>A), CCC398CCT (1218C>T), GAC403GAT (1233C>T), GTG409GCG (1261T>C), ATT413GTT (1261A>G), CTA414TTG (1264C>T 1266A>G), AAA415AAG (1269A>G), ACA417ACG (1275A>G), ACA418ACG (1278A>G), AGT419AGC (1281T>C), ATC421ATT (1287C>T), CGT423GCG (1293T>C), TAC424TAT (1296C>T), GCG434GCA (1326G>A), GCG437GCA (1335G>A), CAA439CAC (1341A>G), CGT441CGC (1347T>C), ACG442AAC (1350G>A), TTG446TTA (1362G>A), TTT447TTC (1365T>C), ATT450ATC (1374T>C), CAG535CAA (1629G>A), CCC541CCT (1647C>T), GAT547GAC (1665T>C), TCA555CTG (1689A>G), TCT559TCC (1701T>C), AGT561AGC (1707T>C), CGCG562GCA (1710G>A), GTC563GTA (1713C>A), GTG567GTA (1725G>A), TTA570TTG (1734A>G), GTA572GTT (1740A>T), TCG597TCA (1749G>A), AGC576AGT (1752C>T), GCG582GCA (1788G>A), ATT593ATC (1803T>C), ACT594ACC (1806T>C), GAT596GAC (1812T>C), CTG599CTC (1821G>A), TCA600TCT (1824A>T), AGC613.GT (1863C>T), ATT615ATC (1869T>C), AA616AAG (1875A>G), CCA618CCG (1878A>G), TTG619TTC (1881T>C), GTT622GTC (1890T>C), ATT626ATC (1902T>C), GTC632GTT (1920C>T), GTT633GTC (1923T>C), AGG639AGA (1941G>A), CCG640CCA (1944G>A), TCG642TCA (1950G>A), ATT648ATC (1968T>C), CTA651CTC (1977A>C), AAA653AAG (1983A>G), CTA6541TA (1984C>I), AAA656AAC (1992A>G), GTA663GIG (2013A>G), TTT667TTC (2025I>C), AAC671AAT (2037C>I), ACT674AAC (2046I>C), CCG681CCA (2067G>A), CGC686GCT (2082C>T), CAT691CAC (2097T>C), ACT692AAC (2100T>C), AAT695AAC (2109T>C), ACT701AAC (2127T>C), ATC6867.T (2265G>T), TAC872TAT (2640C>T), CTG877CCG (2654T>C), AAA879AAG (2661A>G), GCG880GTC (2663C>T), TTT881TTC (2667T>C), TCA883TCT (2673A>T), TCT889TCC (2691T>C), GGA895GG (2709A>G), AGC904AGT (2736C>T), TTG905CTA (2737T>C 2739G>A), CGC907CGT (2745C>T), CCT908CCC (2748T>C), CTG909TTA (2749C-T 2751G>A), CCT916GCC (2772T>C), GGT918GGA (2778T>A), GAC922GAT (2790C>T), TCA925TCG (2799A>G), CCC926CT (2802C>T), AGG935AGA (2829G>A), TTC937TTT (2835C>T), TTI1049TTC (3171T>C), TCA1050TCG (3174A>G), TTA1052TTG (3180A>G), GCG1055GCA (3189G>A), GAA1068GAG (3228A>G), CCG1069CCA (3231G>A), GTT1071GTC (3237T>C), TTG1073TTA (3243G>A), CGA1074AGA (3244C>A), TTA1075CTA (3247T>C), TTA1077TTC (3255A>G), GCG1079GCA (3261G>A), ATT1081ATC (3267T>C), GAT1087GAC (3285I>C), GTA1093GTT (3303A>T), AGC1094AGT (3306C>T), ACG1102ACT (3330G>T), AGA1103AGG (3333A>G), TAC1105TAT (3339C>I), ACA1109ACG (3351A>G), GCA1113CGC (3363A>G), GGT1118GGG (3378T>G), CTT1119CTG (3381T>C), GAT1125GAC (3399T>C), CTG1131TTG (3415C>T), TTA1134CTG (3424T>C 3426A>G), GAT1137GAC (3435T>C), ACG1142ACA (3450G>A), TTA1145TTG (3459A>G), TTA1146TTG (3462A>G), GGG1149GGA (3471G>A), AAC1161AAA (3507G>A), CTA1164TTA (3514C>T), CAG1165CAA (3519G>A), AAT1168AAC (3528T>C), CAA1171CAG (3537A>G), GTG1175GTA (3549G>A), CCA1181CCG (3567A>G), GAT1182GAC (3570T>C), ACT1183ACC (3573T>C), TTA1187TTG (3585A>G), GAC1188GAT (3588C>T), GAC1190GAT (3594C>T), TCT1191ACC (3595T>A 3597T>C), TTC1193TTT (3603C>T), AAA1194AAG (3606A>G), CAC1196CAT (3612C>T), GTC1197GTT (3615C>T), CTT1200CTC (3624T>C), GAT1203GAC (3633T>C), GGA1204GGG (3636A>G), CTA1207TTA (3643C>T), GAT1210GAC (3654T>C), GGA1235GAA (3728G>A), GTC1238GTT (3738C>T), ATC1240ATA (3744C>A), CTG1242TTC (3748C>T), GGC1247GGT (3765C>T), GGT1248GGC (3768T>C), CGG1250CGA (3774G>A), TTC1256TTT (3792C>T), CAG1262CAA (3810G>A)	Codon mutations: *: Inserts / Deletions / Misaligned / Frameshifts								

*: Inserts / Deletions / Misaligned / Frameshifts

Analysis details

This analysis was performed with Pan-viral (2.14.6)