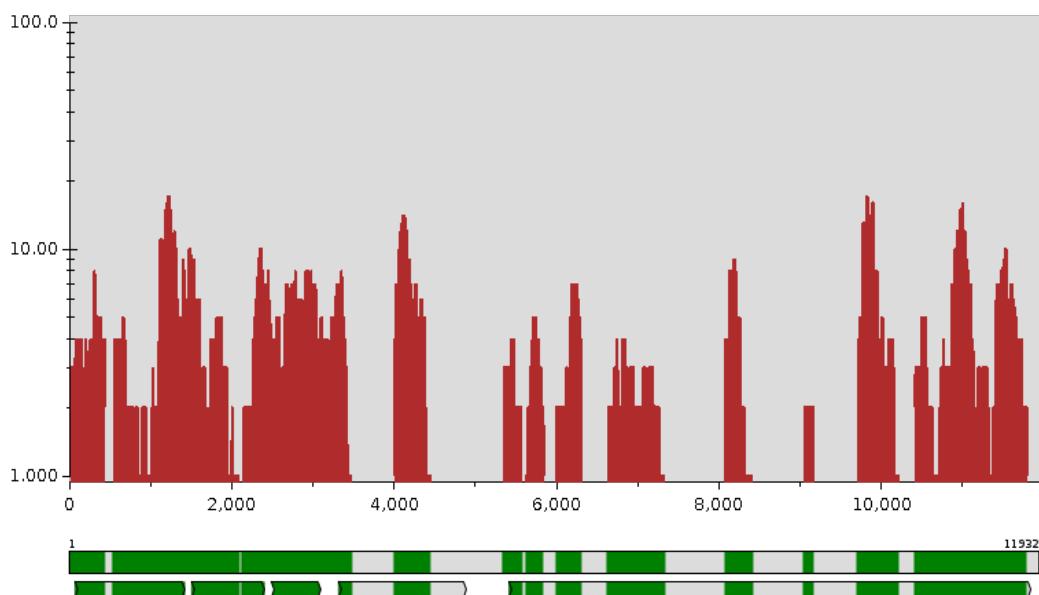


NGS Details (MG-13-RNASeq021-ZymoSeq): Lyssavirus rabies

Assembly

Coverage Length	7755 (12 contig(s))
Depth Of Coverage	4.3
Number Of Reads	248
Reads Per Million	2.01 rpm (after QC)
Ambiguities	2
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 (%)	81.7454
AA Identity (%)	91.5628
Number Of Stop Codons	4
Number Of CDS	5

Alignment

Alignment Score	9768.0 (NT) + 15008.0 (AA) = 24776.0
Concordance (%)	78.1208

Genome Region

Sequence starts at position 15 and ends at position 11794 relative to NC_001542.1 reference sequence.

Alignment Detailed Statistics

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	15	11794	65.0%	9768	63.3%	7743 (99.8%)	6332 (81.6%)	3/12	
Mutations:									
51G>A, 20A>G, 25A>G, 28A>G, 29C>T, 36C>T, 40A>G, 41A>T, 42T>C, 43G>T, 44G>A, 51A>C, 65T>C, 109G>A, 115C>T, 119T>C, 130G>A, 136C>T, 139G>A, 142T>C, 157G>A, 163T>A, 166C>T, 175T>C, 181A>G, 188T>A, 195C>T, 197C>A, 211C>G, 214T>C, 226A>T, 223G>A, 241A>G, 244A>C, 245T>G, 247C>A, 252G>A, 253C>T, 256C>A, 262A>G, 268T>C, 274C>T, 283T>C, 286C>T, 290T>C, 292G>A, 298G>C, 310T>C, 319G>A, 320A>G, 321C>T, 325T>C, 328G>C, 331A>T, 353G>T, 358T>A, 366A>G, 367A>G, 382C>A, 385A>C, 387G>A, 394G>T, 400G>C, 405A>G, 409T>A, 413G>A, 415T>G, 421A>G, 436G>A, 445C>T, 538A>G, 540G>A, 544T>C, 547T>C, 550C>T, 553T>C, 565T>C, 568A>T, 571C>T, 574G>A, 589T>C, 601T>C, 607T>A, 610A>G, 614G>A, 616G>A, 622C>T, 628T>C, 629C>T, 631A>G, 640T>C, 652T>C, 655T>C, 658T>C, 667T>C, 688G>A, 691C>A, 694A>G, 700T>C, 703C>T, 718G>A, 739A>G, 742C>T, 748G>A, 778T>C, 784A>G, 785C>T, 793A>G, 799T>A, 805C>T, 811A>G, 817C>A, 826C>T, 829T>G, 835G>A, 839A>C, 844A>G, 859G>A, 865T>C, 874G>A, 883A>G, 895A>G, 907A>T, 910A>G, 913T>C, 922T>C, 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	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	15	11794	65.0%	9768	63.3%	7743 (99.8%)	6332 (81.6%)	3/12	
CAG13CAA (109G>A), GTC15GTT (115C>T), TTG17CTG (119T>C), GAG20GAA (130G>A), ATC22ATT (136C>T), GTG23GTA (139G>A), GAT24GAC (142T>C), AAG29AAA (157G>A), CCT31CCA (163T>A), GCC32GCT (166C>T), GAT35GAC (175T>C), AAA37AAG (181A>G), TGT40AGT (188T>A), ACT42ATC (195C>T 196T>C), CT443TTA (197C>T), CCC47CCG (211C>G), GAT48GAC (214T>C), TTA49TTG (217A>G), AAT50AAC (220T>C), GCA52GCT (226A>T), AAG54AAA (232G>A), GTT56ATT (236G>A), TTAA57TTG (241A>G), TCA58TCC (244A>C), TGC59GGA (245T>G 247C>A), AGC61AAT (252G>A 253C>T), GCC62GCA (256C>A), AAA64AAG (262A>G), GAT66GAC (268T>C), GAC68GAT (274C>T), TG771TGC (283T>C), TCC72CT (286C>T), TTG74CTA (290T>C 292G>A), GCG75GCA (295G>A), GCG76GCC (298G>C), TT80TTC (310T>C), GGG83GGA (319G>A), AC84GTA (320A>G 321C>T), TGT85TGC (325T>C), CGC886CC (328G>C), GAA87GAT (331A>T), GTG95TTC (335G>T), ATT96ATA (358T>A), AAA99AGG (366A>G 367A>G), ACC104AAC (382C>A), CCA105CCC (385A>C), GGT106GAT (387G>A), CTG108CTT (394G>T), GAG110GAC (400G>C), AAA112AGA (405A>G), CGT113CGA (409T>A), GAT115AAC (413G>A 415T>C), GTA116GTC (418A>G), AA117GAG (421A>G), CTG122CTA (436G>A), GAA124GGA (442A>G), GGC125GTT (445C>T), AAC116AAC (500C>T), ATT165ATC (565T>C), GCA166GCT (568A>T), GAC167GAT (571C>T), AGG168AGA (574G>A), TT173TGC (589T>C), CCT177CC (601T>C), GTT179GTG (607T>A), AAA180AA (610A>G), GTC182ATA (614G>A 616G>A), CAC184CAT (622C>T), ACT186ACC (628T>C), CTA187TTC (629C>T 631A>G), ACT190ACC (640T>C), TGT194TGC (652T>C), GCT195GCC (655T>C), AAT196AAC (658T>C), ACT199AAC (667T>C), TTT205TTC (685T>C), TTG206TTA (688G>A), GCC207GCA (691A>G), ATG208GGG (694A>G), TAT210TAC (700T>C), GAC211GAT (703C>T), CGG216GGA (718G>A), CTA220CTG (730A>G), GCA223GGG (739A>G), ATC224ATT (742C>T), GTG226GTA (748G>A), TGT236TGC (778T>C), GGA238GGG (784A>G), CTG239TTG (785C>T), TCA241TCG (793A>G), ACT243AAC (799T>A), TTC251TT (805C>T), AAA247AAG (811A>G), ATC249AAT (817C>A), ACC252ACT (826C>T), GCT253GCC (829T>G), GAG255GAA (835G>A), ATA257CTA (839A>C), CTA258CTG (844A>G), AAC263AAA (850A>A), TTT265TTC (865T>C), GAG268GAA (874A>G), AGA271AGG (883A>G), GCA275GCC (895A>G), ACA279AAC (907A>C), GCT280CCA (910T>A), GTT281GTC (913T>C), TCT284TCC (922T>C), TCA288CAT (934C>T), TCT289TTT (937C>T), CTA292TGC (944C>T 946A>G), TTG294CTG (950T>C), AGT295AGC (955T>C), GGG296GGA (958G>A), AAA297AAG (961A>G), CCT299CGC (967T>G), TAT300TCT (970T>C), GCT304GCA (982T>A), ATT310AAC (1000T>C), TT314TTC (1012T>C), GTA315CTT (1015A>T), TGC317TGT (1021C>T), GTC322GTC (1036C>A), AGA323AGG (1039A>G), CCT324TCT (1042C>T), AGC328CA (1054G>A), GTT329GAT (1056T>A), ATT330ATC (1060T>C), GCA332ACA (1064G>A), GCT334GC (1072T>C), CCT335CCG (1075T>G), GAA337GAG (1081A>G), CTA341CTT (1093A>T), GGC343GGT (1099C>T), CTG345T (1103C>A), GAA346GGG (1108A>G), GAA348GAG (1114A>G), TCT349T (1117C>A), ITC350TTI (1203C>A), GGG351TGA (1123G>A), ACA354ACT (1132A>T), GAA356GAG (1138A>G), AGA361AGG (1153A>G), CA363TAAA (1169C>A), GAA368GAA (1174A>G), TAC369TAT (1177C>T), GAG370GAA (1180G>A), GCG371GCA (1183G>A), CTG374T (1190C>A), GAG378GAG (1204C>G), ATG379GTC (1206T>C), GCA380GCT (1210A>G), TCA381TTC (1211C>T), GAT384GAC (1222T>C), AAC388AAT (1234C>T), CAG390GAT (1240C>T), TCA396TCT (1258A>T), GGT397AGT (1259G>A), GAA398GAG (1264A>G), AGA400AGG (1270A>G), CCG402CT (1276G>T), GAA403GAG (1279A>G), GCT404GCC (1282T>G), TAT406TAC (1288T>C), CGA408AGG (1292C>A 1294A>G), AT410ATG (1300A>G), GG413GGG (1309A>G), CGA415AGA (1313C>A), TCG419TCA (1327G>A), CGG422AGG (1334C>A), TCA426TCG (1348A>G), GTC427GTA (1351C>A), CGT434CCG (1372T>C), CCA435CC (1375A>T), AAC436AAT (1378C>T), GGC439GCT (1387C>T), CTA442TTG (1394C>A), AAC443AAT (1399C>T), TAT446TAC (1408T>C), TCA450TCG (1420A>G)									
RABVgp2	1	298	97.3%	1585	82.6%	290 (100%)	240 (82.8%)	0/0/0/0	1
N29S (1598A>T 1599A>C), E42D (1639A>T), N48S (1656A>G), G54K (1673G>A 1674G>A), H57Q (1684C>A), D60N (1691G>A), G61E (1695G>A), K62R (1698A>G), S63P (1700T>C 1702G>A), P64S (1703C>T 1705C>T), N65S (1706A>G 1707A>G), P66L (1710C>T 1711T>C), V72A (1728T>C 1729G>A), G75S (1736G>A), Y77C (1743A>G), R78Q (1746G>A) 1747A>G), G68A (1770G>C 1771A>G), S90A (1781A>G 1782G>C 1783C>T), H104M (1825A>G), Q107R (1833A>G), I108M (1837A>G), T121A (1874A>G), T140T (1901G>A), V131A (1905T>C), NI135S (1917A>G 1918C>T), P137S (1922C>T 1924A>G), S140P (1931T>C 1933T>C), E142K (1937G>A 1939G>A), S145A (1946T>G 1948A>C), T149A (1958A>G), G150T (1961G>A 1962G>C), T158V (1985A>G 1986C>T), P159S (1988C>T), I160A (1991A>G 1993T>C), S162Y (1998C>A), K170R (2022A>G), T177A (2024A>G), L223F (2180C>T), A241S (2234G>T), G246S (2249G>A 2251T>C), T248I (2256C>T 2257C>T), R252H (2268G>A 2269T>C), K256R (2280A>G), S280P (2351T>C 2353C>T), N281D (2354A>G), S284N (2364G>A), T295S (2396A>T), S296F (2400C>T 2401T>C), C297L (2402T>C 2403G>T)									
N29S (1598A>T 1599A>C), E42D (1639A>T), N48S (1656A>G), G54K (1673G>A 1674G>A), H57Q (1684C>A), D60N (1691G>A), G61E (1695G>A), K62R (1698A>G), S63P (1700T>C 1702G>A), P64S (1703C>T 1705C>T), N65S (1706A>G 1707A>G), P66L (1710C>T 1711T>C), V72A (1728T>C 1729G>A), G75S (1736G>A), Y77C (1743A>G), R78Q (1746G>A) 1747A>G), G68A (1770G>C 1771A>G), ATC287AT (1795T>C), AAC297TCT (1801C>T), GAC300GAT (1803A>G), GAA301GAA (1805A>G), GCA302GAT (1807A>G), GAA303GAT (1809A>G), GAA304GAT (1811A>G), GAA305GAT (1813A>G), GAA306GAT (1815A>G), GAA307GAT (1817A>G), GAA308GAT (1819A>G), GAA309GAT (1821A>G), GAA310GAT (1823A>G), GAA311GAT (1825A>G), GAA312GAT (1827A>G), GAA313GAT (1829A>G), GAA314GAT (1831A>G), GAA315GAT (1833A>G), GAA316GAT (1835A>G), GAA317GAT (1837A>G), GAA318GAT (1839A>G), GAA319GAT (1841A>G), GAA320GAT (1843A>G), GAA321GAT (1845A>G), GAA322GAT (1847A>G), GAA323GAT (1849A>G), GAA324GAT (1851A>G), GAA325GAT (1853A>G), GAA326GAT (1855A>G), GAA327GAT (1857A>G), GAA328GAT (1859A>G), GAA329GAT (1861A>G), GAA330GAT (1863A>G), GAA331GAT (1865A>G), GAA332GAT (1867A>G), GAA333GAT (1869A>G), GAA334GAT (1871A>G), GAA335GAT (1873A>G), GAA336GAT (1875A>G), GAA337GAT (1877A>G), GAA338GAT (1879A>G), GAA339GAT (1881A>G), GAA340GAT (1883A>G), GAA341GAT (1885A>G), GAA342GAT (1887A>G), GTC129GTT (1900C>T), GGC130AAG (1901G>A), GTC131GCC (1905T>C), AAC132AAT (1909C>T), TTT133TT (1912T>C), AAC135AGT (1917A>G 1918C>T), CCT136GCC (1919T>C), CCA137GTC (1922C>T 1924A>G), GGA138GGG (1927A>G), TCT140CCC (1931T>C 1933T>C), GAG142AAA (1937G>A 1939G>A), GAT143GAC (1942T>C), TCA145GCC (1946T>G 1948A>C), ACC149GCC (1958A>G), GGC150AAC (1961G>A 1962G>C), CGA151GCC (1964G>A 1966G>A), GAG152GAA (1969G>A), AAC158GTA (1985A>G 1986C>T), CCA159TCC (1988C>T), ACC160GCC (1991A>G 1993T>C), TCT162TAT (1998C>A), CAG163CAA (2002G>A), AAC170AGA (2022A>G), ACT177GCT (2042A>C), GCT178GCC (2047T>C), GGC180GGT (2053C>T), GAA185GAG (2068A>G), GTC187TCT (2074G>T), GCC188GGT (2077C>T), AAC190AAC (2083T>C), CTAC195CTG (2098A>G), TCA196TCT (2101A>C), GTC197GTC (2104G>A), GCA206T (2131A>T), AGT208AGC (2137T>C), AAC211AAG (2146A>G), AAC212AAG (2149A>G), TAT213TAC (2152T>C), AAG214AAA (2155G>A), TCC219TCA (2170C>A), CTC223TTC (2180C>A), CAA229CAG (2200A>G), TTG230TTA (2203G>A), GAT236GAC (2221T>C), GTT238GTC (2227T>C), GCA241TCA (2234G>A), GTC244GTC (2245A>G), GTT246AGC (2249G>A 2251T>C), GTG247GTA (2254G>A), ACC248ATT (2256C>T 2257C>T), CGT249GCC (2260T>C), TTA250TTG (2263A>G), CGT252CAC (2268G>A 2269A>G), GAC253GAT (2272C>T), AAC256GAA (2280A>G), CCG258CT (2287C>T), CTAG259TG (2290A>G), GTC262GTC (2299A>G), GTC266GTT (2311C>T), GCC267GCT (2314C>T), TTG268TCA (2315T>C 2317G>A), AAC270AAT (2323C>T), TCT271TCC (2326T>C), AAC272AAA (2329G>A), AAC273AAG (2332A>G), TTG276TGT (2339T>C), TTA277TGT (2344A>G), GTC278GTT (2347C>T), GAA279GAG (2350A>G), CCT280CCT (2351T>C 2353C>T), AAC281GAC (2354A>G), AAG282AA (2359G>A), CTG283CTA (2362G>A), AGT284AAT (2364G>A), ATC286ATA (2371C>A), TTG291CTG (2384T>C), AAC292AAC (2389T>C), CGC293CGT (2392C>T), ACA295TCT (2396A>T), TCT296TTC (2400C>T 2401T>C), GTC297CTC (2402T>C 2403G>T), TAA298TGA (2406A>G)									
RABVgp3	1	203	100%	1355	91.8%	203 (100%)	185 (91.1%)	0/0/0/0	1
P21F (2556C>T 2557C>T), L26P (2572T>C 2573G>A), R50M (2644G>T), I55V (2658A>G, 2668G>A), G58E (2668G>A 2669G>A), G70R (2703G>A), R77K (2756T>A), V90I (2763G>A), I197 (2784A>G 2786T>C), N147D (2934A>G 2936T>C), V1511 (2946G>A 2948C>A), Q154E (2955C>G), K160R (2974A>G), R165Q (2989G>A), G178C (3027G>T), Q187K (3054C>A 3056G>A), L119V (3090C>G 3092G>A)									
CGT5CGC (2510T>C), GTG86TGA (2519G>A), AAA9AG (2522A>G), AAT10AAC (2525T>C), TGC11TGT (2528C>T), AAG12AGA (2531G>A), GAC13GAT (2534C>T), GAG14GAA (2537G>A), AAA18AAG (2549A>G), TCT20TC (2555T>C), CCC21TTC (2556C>T 2557C>T), TCA23TCG (2564A>G), GCC24GCT (2567C>T), CGT26CCA (2572T>C 2573G>A), GAC28GAT (2579C>T), TTG31CTG (2586T>C), CTT33TTA (2592C>T 2594T>A), CCA34CCC (2597A>C), CCC35CCT (2600C>T), CCT36CCA (2603T>A), TAC38TAT (2609C>T), GTC39GTT (2612C>T), AAA42AAG (2621A>G), GAA43GAC (2624A>G), CTC44CTC (2627T>C), AAC44GAA (2639G>A), AGG50PATG (2646G>T), ATG51AGA (2648G>A), ATC55GTC (2658A>G), AAC56AAT (2663C>T), GGG56GAA (2668G>A 2669G>A), GTC55GTC (2672T>C), AAC60AAG (2675A>G), TGT62TGC (2681T>C), AGC63AGT (2684C>T), CGC64CCA (2687C>T), AAC65GAC (2696G>A), GTC69GTC (2696G>A 2699T>C), TTE699TGT (2702C>T), AAC720AAT (2323C>T), TCT271TCC (2326T>C), AAC272AAA (2329G>A), AAC273AAG (2332A>G), TTG276TGT (2339T>C), TTA277TGT (2344A>G), GTC278GTT (2347C>T), GAA279GAG (2350A>G), CCT280CCT (2351C>T), AAC281GAC (2354A>G), AAC282GAT (2356A>G), AAC283GAT (2358A>G), AAC284GAT (2359A>G), AAC285GAT (2360A>G), AAC286GAT (2361A>G), AAC287GAT (2362A>G), AAC288GAT (2363A>G), AAC289GAT (2364A>G), AAC290GAT (2365A>G), AAC291GAA (2366A>G), AAC292GAT (2367A>G), AAC293GAT (2368A>G), AAC294GAT (2369A>G), AAC295GAT (2370A>G), AAC296GAT (2371A>G), AAC297GAT (2372A>G), AAC298GAT (2373A>G), AAC299GAT (2374A>G), AAC300GAT (2375A>G), AAC301GAA (2376A>G), AAC302GAT (2377A>G), AAC303GAT (2378A>G), AAC304GAT (2379A>G), AAC305GAT (2380A>G), AAC306GAT (2381A>G), AAC307GAT (2382A>G), AAC308GAT (2383A>G), AAC309GAT (2384A>G), AAC310GAT (2385A>G), AAC311GAT (2386A>G), AAC312GAT (2387A>G), AAC313GAT (2388A>G), AAC314GAT (2389A>G), AAC315GAT (2390A>G), AAC316GAT (2391A>G), AAC317GAT (2392A>G), AAC318GAT (2393A>G), AAC319GAT (2394A>G), AAC320GAT (2395A>G), AAC321GAT (2396A>G), AAC322GAT (2397A>G), AAC323GAT (2398A>G), AAC324GAT (2399A>G), AAC325GAT (2400A>G), AAC326GAT (2401A>G), AAC327GAT (2402A>G), AAC328GAT (2403A>G), AAC329GAT (2404A>G), AAC330GAT (2405A>G), AAC331GAT (2406A>G), AAC332GAT (2407A>G), AAC333GAT (2408A>G), AAC334GAT (2409A>G), AAC335GAT (2410A>G), AAC336GAT (2411A>G), AAC337GAT (2412A>G), AAC338GAT (2413A>G), AAC339GAT (2414A>G), AAC340GAT (2415A>G), AAC341GAT (2416A>G), AAC342GAT (2417A>G), AAC343GAT (2418A>G), AAC344GAT (2419A>G), AAC345GAT (2420A>G), AAC346GAT (2421A>G), AAC347GAT (2422A>G), AAC348GAT (2423A>G), AAC349GAT (2424A>G), AAC350GAT (2425A>G), AAC351GAT (2426A>G), AAC352GAT (2427A>G), AAC353GAT (2428A>G), AAC354GAT (2429A>G), AAC355GAT (2430A>G), AAC356GAT (2431A>G), AAC357GAT (2432A>G), AAC358GAT (2433A>G), AAC359GAT (2434A>G), AAC360GAT (2435A>G), AAC361GAT (2436A>G), AAC362GAT (2437A>G), AAC363GAT (2438A>G), AAC364GAT (2439A>G), AAC365GAT (2440A>G), AAC366GAT (2441A>G), AAC367GAT (2442A>G), AAC368GAT (2443A>G), AAC369GAT (2444A>G), AAC370GAT (2445A>G), AAC371GAT (2446A>G), AAC372GAT (2447A>G), AAC373GAT (2448A>G), AAC374GAT (2449A>G), AAC375GAT (2450A>G), AAC376GAT (2451A>G), AAC377GAT (2452A>G), AAC378GAT (2453A>G), AAC379GAT (2454A>G), AAC380GAT (2455A>G), AAC381GAT (2456A>G), AAC382GAT (2457A>G), AAC383GAT (2458A>G), AAC384GAT (2459A>G), AAC385GAT (2460A>G), AAC386GAT (2461A>G), AAC387GAT (2462A>G), AAC388GAT (2463A>G), AAC389GAT (2464A>G), AAC390GAT (2465A>G), AAC391GAT (2466A>G), AAC392GAT (2467A>G), AAC393GAT (2468A>G), AAC394GAT (2469A>G), AAC395GAT (2470A>G), AAC396GAT (2471A>G), AAC397GAT (2472A>G), AAC398GAT (2473A>G), AAC399GAT (2474A>G), AAC400GAT (2475A>G), AAC401GAT (2476A>G), AAC402GAT (2477A>G), AAC403GAT (2478A>G), AAC404GAT (2479A>G), AAC405GAT (2480A>G), AAC406GAT (2481A>G), AAC407GAT (2482A>G), AAC408GAT (2483A>G), AAC409GAT (2484A>G), AAC410GAT (2485A>G), AAC411GAT (2486A>G), AAC412GAT (2487A>G), AAC413GAT (2488A>G), AAC414GAT (2489A>G), AAC415GAT (2490A>G), AAC416GAT (2491A>G), AAC417GAT (2492A>G), AAC418GAT (2493A>G), AAC419GAT (2494A>G), AAC420GAT (2495A>G), AAC421GAT (2496A>G), AAC422GAT (2497A>G), AAC423GAT (2498A>G), AAC424GAT (2499A>G), AAC425GAT (2500A>G), AAC426GAT (2501A>G), AAC427GAT (2502A>G), AAC428GAT (2503A>G), AAC429GAT (2504A>G), AAC430GAT (2505A>G), AAC431GAT (2506A>G), AAC432GAT (2507A>G), AAC433GAT (2508A>G), AAC434GAT (2509A>G), AAC435GAT (2510A>G), AAC436GAT (2511A>G), AAC437GAT (2512A>G), AAC438GAT (2513A>G), AAC439GAT (2514A>G), AAC440GAT (2515A>G), AAC441GAT (2516A>G), AAC442GAT (2517A>G), AAC443GAT (2518A>G), AAC444GAT (2519A>G), AAC445GAT (2520A>G), AAC446GAT (2521A>G), AAC447GAT (2522A>G), AAC448GAT (2523A>G), AAC449GAT (2524A>G), AAC450GAT (2525A>G), AAC451GAT (2526A>G), AAC452GAT (2527A>G), AAC453GAT (2528A									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	15	11794	65.0%	9768	63.3%	7743 (99.8%)	6332 (81.6%)	3/12	
L21 (5421C>A), E6D (5435G>T), L17S (5467T>C), A19T (5472G>A), P21T (5478C>A), V27I (5496G>A 5498C>T), P46S (5553C>T 5555T>A), R48K (5560G>A), F73Y (5635T>A 5636C>T), R74K (5638G>A), Y79C (5653A>G 5654T>C), F80L (5655T>C), M93A (5694A>G 5695T>C 5696G>A), L103I (5724T>A), R115K (5761G>A 5762A>G), I117M (5768A>G), T118I (5770C>T 5771A>C), H122Q (5783T>G), L136C (5823C>T 5824T>G), N140K (5837T>G), K193R (5995A>G), K200R (6016A>G 6017A>G), V205T (6030G>A 6031T>C 6032G>A), I207V (6036A>G 6038C>T), L221S (6078C>T 6079T>C), L222M (6081C>A), S233R (6114A>C), S234del (6117_6120delTC), V259I (6192G>A 6194C>T), Q285H (6272A>T), F428L (6697T>C), A430S (6705G>T 6707C>G), R431K (6708C>A 6709G>A), T436I (6724C>T), I449V (6762A>G 6764T>A), L605H (7231T>A), H933N (8214C>A), I937V (8226A>G), R507K (8326G>A), E1001* (8418T>G 8420G>A), S1219A (9072T>G), F1476L (9843T>C 9845T>G), E1478G (9850A>G), I1487V (9876A>G), V1516A (9964T>C), A1535S (10020G>T 10022C>T), R1556K (10084G>A), N1557S (10087A>G 10088C>T), S1561G (10098A>G), D1564T (10107G>A 10108A>G 10109T>C), L1569M (10127T>A), D1589R (10184C>A), N1590D (10185A>G), F1665L (10401T>C 10412C>T), N1716H (10563A>C), T1749S (10664G>A), V1755I (10680G>A), I1759V (10692A>G 10694A>T), R1772K (10732G>A), A1775T (10740G>A 10742T>C), K1778R (10750A>G 10751A>G), K1785E (10770A>G 10772G>A), Q1786R (10774A>G 10775G>T), A1817V (10867C>A), L1818M (10869T>A), N1839P (10932A>G), K1841R (10939A>G 10940G>A), V1860T (10995G>A 10996T>C 10997A>G), E1924D (11189A>G), A1966S (11313G>T), P1985H (11371C>A 11372C>T), L1986del (1137_11377delCTAAC), P2021S (11478C>T 11480T>C), V2042I (11541G>A), I2043T (11545T>C), L2044Q (11548T>A 11549A>G), N2046S (11564A>G 11565C>T), N2055D (11580A>G 11582C>T), S2091N (11689A>G), K2093E (11694A>G 11696G>A), G2097R (11706G>A), R2101K (11719G>A 11720A>G), H2104R (11728A>G 11729T>A), R2105E (11730A>G), E2113D (11756G>T), N2114D (11755A>G 11759T>C)	Protein mutations:								
CTC2ATC (5421C>A), CCT4CCA (5429T>A), GAG66GAT (5435G>T), GTC7GTG (5438C>T), CCT11CCG (5450T>C), GAC13GAT (5456C>T), CCA14CC (5459A>T), ATC15ATT (5462C>T), TTA17TCA (5467T>C), GCT19ACT (5472G>A), GAA20AG (5477A>G), CCC21ACG (5478C>A 5480C>G), GGA23GGG (5486A>G), ACC24AAC (5488C>A), CCC25CCT (5492C>T), ACT26ACC (5495T>C), GTC27ATT (5496G>A 5498C>T), TTG31TCA (5510G>A), AGG32AGA (5513G>A), TCT40TC (5537T>C), TTG42CTA (5541T>C 5543G>A), GAA44GAG (5549A>C), CCTC46TCA (5553C>T 5555T>A), AGA48AAA (5560G>A), TTAT51TG (5570A>G), TTAT54TTG (5579A>G), CTCA65 (5612A>G), TCC70TCT (5627C>T), TCT72TCC (5633T>C), TCT73TCA (5635T>C 5636C>T), AGA744AA (5638G>A), GTT78GTC (5642T>C), TAT79TGC (5653A>G 5654T>C), TCT80CTC (5655T>C), AGA22AAA (5663G>A), TTG865CTT (5670T>C 5672G>T), GTC876GGG (5675T>C), TCC877TC (5678T>C), GGAA292GGG (5693A>G), ATG93GCT (5694A>G 5695T>C), GTC94GCA (5699T>A), CAG96CAA (5705G>A), TCA79TCT (5708A>T), TCT100TCC (5717T>C), CTC101CTT (5720C>T), TTA103ATA (5724T>A), TAT104TAC (5729T>C), GAA109GAG (5744A>G), TCC110TGC (5747C>C), AGA115AA (5761G>A 5762A>G), ATA117ATG (5768A>G), ACA118ATC (5770C>T 5771A>C), GAC119GAT (5774C>A), GCTC121GCT (5780C>T), CAT122CAG (5783T>G), TCG127TCT (5798G>T), GAG131TCA (5810G>A), AGA132AA (5813G>A), ATT135AAC (5822T>C), CTIC136TCG (5823C>T 5824T>G), AGC137ACA (5828G>A), CTIA138CTG (5831A>C), GAA139GGG (5834A>G), ATT140AAC (5837T>C), GAA191GAG (5990A>G), GAA192GAG (5993A>G), ATC195ATT (6002C>T), TTA198CTA (6009T>C), AA200AAG (6016A>G 6017A>C), GTG205ACA (6030G>A 6031T>C), ATC207GTT (6036A>G 6038C>T), GTA212CTC (6053A>C), TCT214TTT (6059C>T), GAC216GAT (6065C>T), CTG217CTG (6078C>T 6079T>C), CTG223ATG (6081C>A), ATC223AT (6086C>A), ACA225ACC (6092A>C), AGA226AAA (6095G>A), GAC227GAT (6098C>T), GTT229GTA (6104A>C), AGT233CGT (6114A>C), TCC234del (6117_6120delTC), ATT235-TC (6117_6120delTC), GTC237CTC (6128T>C), GAC239GAT (6134C>T), TAC242TAT (6143C>T), CTT244CTC (6149T>C), CTT249CTC (6164T>C), CGC253CGG (6176C>G), TCC256TCT 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	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	15	11794	65.0%	9768	63.3%	7743 (99.8%)	6332 (81.6%)	3/12	
Proteins									
nucleoprotein N (NP_056793.1)	1	451	93.6%	2788	95.1%	422 (100%)	399 (94.5%)	0/0/0/0	1
Protein mutations:									
C40S (188T>A), T42I (195C>T 196T>C), V56I (236G>A), C59G (245T>G 247C>A), S61N (252G>A 253C>T), T84V (320A>G 321C>T), E87D (331A>T), V95L (353G>T), K99R (366A>G 367A>G), G106D (387G>A), E110D (400G>C), K112R (405A>G), D115N (413G>A 415T>C), S157N (560G>A), V182I (614G>A 616G>A), I257L (839A>C), V329D (1056T>A), A332T (1064G>A), Q367K (1169C>A), D378E (1204C>G), V379A (1206T>C 1207A>T), G397S (1259G>A), I410M (1300A>G)									
Codon mutations:									
CAG13CAA (109G>A), GTC15GGT (115C>T), TTG17CTG (119T>C), GAG20GAA (130G>A), ATCC22ATT (136C>T), GTG23GTA (139G>A), GAT24GAC (142T>C), AAC29AAA (157G>A), CCT31CCA (163T>A), GCC32GCT (166C>T), GAT35GAC (175T>C), AAA37AAC (181A>G), TG740AGT (188T>A), ACT42ATC (195C>T 196T>C), CT433TTA (197C>T), CCC47CCG (211C>G), GAT48GAC (214T>C), TTA49TTG (217A>G), AAT50AAC (220T>C), GCA52GCT (226A>T), AAG54AAA (232G>A), GTT56ATT (236G>A), TTA57TTG (241A>G), TCA58TCC (244A>C), TGC59GGA (245T>G 247C>A), AGC61AAT (252G>A 253C>T), GCC62GCA (256C>A), AAA64AAG (262A>G), GAT66GAC (268T>C), GAC68GAT (274C>T), TGT71TGC (283T>C), TCC72TCT (286C>T), TTG78OTTC (310T>C), GCG76GCC (298G>A), CTT80TTT (310T>C), GGG83GGA (319G>A), AAC84GTC (320A>G 321C>T), TGT85TGC (325T>C), CCG86CCC (328G>C), GAA87GAT (331A>T), GTG95TTG (353G>T), ATT96ATA (358T>A), AAA99AGG (366A>G 367A>G), ACC104ACA (382C>A), CCA105CCC (385A>C), GGT106GAT (387G>A), CTG108CTT (394G>T), GCG110GAC (400G>C), AAA112AGA (405A>G), CGT113CGA (409T>A), GAT115AA (413G>A 415T>C), GTA116GTC (418A>G), GAA117GAG (421A>G), CTG122CA (436G>A), GGA124GGG (442A>G), GGC125GGT (445C>T), CAA115CAC (538A>G), AGC157AAC (540G>A), ACT158AAC (544T>C), GGT159GGC (547T>C), AAC160AA (550C>T), ATT161TAC (553T>C), GCA166GTC (568A>T), GAC167GAT (571C>T), AGG168AGA (574G>A), TTT173TCT (589T>C), CCT177CTG (607T>C), AAA180AG (610A>G), GTG182ATA (614G>A 616G>A), CAC184CAT (622C>T), ACT186ACC (628T>C), CTAA187TTG (629C>T 631A>G), ACT190ACC (640T>C), TGT194TGC (652T>C), GCT195GCC (655T>C), AAT196AAC (658T>C), ACT199AAC (667T>C), TTT205TTC (685T>C), TTG206TTC (688G>A), GCT207GCA (691C>A), GGA208GGG (694A>G), TAT210TAC (700T>C), GCG211GCA (718G>A), CTAA220TG (730A>G), GCA223GCG (739A>G), ATC224ATT (742C>T), GTG226GTA (748G>A), TGT236TGC (778T>C), GGA238GGG (784G>A), CTG239TTC (785C>T), TCA241TCA (793A>G), ACT243ACA (799T>C), TTC245TTT (805C>T), AAA227AAG (811A>G), ATC249TA (817C>A), ACC252AAC (826A>G), PCT253GCG (829T>C), GAG255GA (835G>A), ATA257CTA (839A>C), CTA258CTG (844A>G), AAC263AAA (859G>A), TTT265TTC (865T>C), GAG268GAA (874G>A), AGA271AGG (883A>G), CCA275CCG (895A>G), ACT279AAC (907A>T), GCT280GCA (910T>A), GTT281GTC (913T>C), TCT284TCC (922T>C), TCC286TTT (928C>T), CAC288CAT (934C>T), TTC289TTT (937C>T), CTA292TTG (944C>T 946A>G), ATT310AAC (1000T>C), AGT295AGC (955T>C), GGG296GGG (958G>A), AAA297AAC (961A>G), CTC299CGC (967T>C), GAT300TAC (970T>C), GCT304GCA (982T>A), ATT314TTC (974T>C), TGT314TCC (975T>C), GTC298GAT (1012T>C), GTAA15GTT (1015A>C), TGC317TGT (1021C>T), GTC322GTC (1036C>C), AGA323AAC (1039A>G), CCT324TCT (1042C>T), AGC328ACA (1054G>A), GTT329GAT (1056T>A), ATT330ATC (1060T>C), GCA332ACA (1064G>A), GCT334GCC (1072T>C), CCT335CCG (1073T>C), GAA337TAG (1081A>G), CTC341CTT (1093A>T), GGC343GGT (1099C>T), CTG345TTC (1103C>T), GGA346GGG (1108A>G), GAA348GAG (1114A>G), CTC349TTT (1117C>T), TTC350TT (1120C>T), GGG351GGA (1123G>A), ACA354ACT (1132A>T), GAA356GAG (1138A>G), AGA361AGG (1153A>G), CAA367AA (1169C>A), GAA368GAG (1174A>G), TAC369TAT (1177C>T), GAG370GAA (1180G>A), GCG371GCA (1183G>A), CTG374TTC (1190C>T), GAC378GAG (1204C>G), GTA379GCT (1206T>C 1207A>T), GCA380GCT (1210A>T), CTG381TTG (1211C>T), GAT384GAC (1222T>C), AAC388AAT (1234C>T), GAC390GAT (1240C>T), TCA396TCT (1258A>T), GGT397AGT (1259G>A), GAA398GAG (1264A>G), AGA400AGG (1270A>G), CCG402CT (1276G>T), GAA403GAG (1274A>G), GCT404GGC (1282T>C), TAT406AT (1288T>C), CGA408AGG (1292C>A 1294A>G), AT410ATG (1300A>G), CGA413GGG (1309A>G), CGA415AGA (1313C>A), TCG419TCA (1327G>A), CGG422AGG (1334C>A), TCA426TGC (1348A>G), GTC427GTA (1351C>A), CGT434CGC (1372T>C), CCA435CC (1375A>T), AAC436AAT (1378C>T), GCC439GCT (1387C>T), CTA442TTG (1394C>T 1396A>G), AAC443AAT (1399C>T), TAT446TAC (1408T>C), TCA450TCG (1420A>G)									
phosphoprotein M1 (NP_056794.1)	1	298	97.3%	1585	82.6%	290 (100%)	240 (82.8%)	0/0/0/0	1
Protein mutations:									
N29S (1598A>T 1599A>C), E42D (1639A>T), N48S (1656A>G), G54K (1673G>A 1674G>A 1675G>A), H57Q (1684C>A), D60N (1691G>A), G61E (1695G>A), K62R (1698A>G), S63P (1700T>C 1702G>A), P64S (1703C>T 1705C>T), N65G (1706A>G 1707A>G), P66L (1710C>T 1711T>C), V72A (1728T>C 1729G>A), G75S (1736G>A), Y77C (1743A>G), R78Q (1746A>A 1747A>G), G86A (1770G>C 1771A>G), S90A (1781A>G 1782G>C 1783C>T), I104M (1825A>G), Q107R (1833A>G), I110M (1837A>G), T121A (1874A>G 1876C>A), A130T (1901G>A), V131A (1901T>A), N135S (1917A>G 1918C>T), P137S (1922C>T 1924A>C), S140P (1931T>C 1933T>C), E142K (1937G>A 1939G>A), S145A (1946T>C 1948A>C), T149A (1958A>G), G150T (1961G>A 1962G>C), T151V (1985A>G 1986C>T), P159S (1988C>T), T160A (1991A>G 1993T>C), S162Y (1992Y>C), K170R (2022A>G), T177A (2042A>G), L223F (2180C>T), A214S (2234G>T), G246S (2249G>A 2251T>C), T248I (2256C>T 2257C>T), R252H (2268G>A 2269T>C), K256R (2280A>G), S280P (2351T>C 2353C>T), N281D (2354A>G), S284N (2364G>A), T295S (2396A>T), S296F (2400C>T 2401T>C), C297L (2402T>C 2403G>T)									
Codon mutations:									
AGC2AGT (1519C>T), ATC4ATT (1525C>T), GTC6GTT (1531C>T), AAT7AAC (1534T>C), CCT8CTTCA (1537T>A), GCT10GCA (1543T>A), ATT11ATC (1546T>C), AGA12AGG (1549A>G), GCC13GCA (1552C>A), CTG15TTG (1556C>T), GGC16GCA (1561C>A), CTC18CTA (1567T>A), GTC21GCA (1561T>A), GAA22AGG (1579A>G), GTT25GTC (1587T>G), CTC27CTA (1594G>A), ATC28ATT (1597C>T), AAT29TCT (1598A>T 1599A>C), AGA30AAG (1603A>C), AAT31AAC (1606T>C), GAA33GAG (1612A>G), GAC34GAT (1615C>T), GCT37GCG (1624T>G), GGG41GGA (1636G>A), GAA42GAT (1639A>T), GAA45GAG (1648A>G), AAT48AGT (1656A>G), CTC49CTT (1660C>T), GAG51GAA (1666G>A), GGG54AAA (1673G>A), CAC57CAT (1675G>A), AGC57ACA (1684C>A), CTG58TAA (1685T>C), GAT59GAC (1690T>A), GAT60GTC (1691G>A), GAA61GAA (1695G>A), AAC62AGA (1698A>G), TCG63CCA (1700T>C 1702G>A), CCG64CTC (1703C>T 1705C>T), AAC65GGC (1706A>G 1707A>G), CTC66CTC (1710C>T 1711T>C), GGT67GGG (1714T>C), AGA71AAA (1726G>A), CTG72GCA (1728T>C 1729G>A), GG73GGG (1732A>G), GGT74GAG (1735A>G), GCA78CAG (1746G>A 1747A>G), GAG79GAA (1750G>A), CAG82CAA (1759G>A), GAA85GAG (1768A>G), GGA86GGC (1770G>C 1771A>G), GAT88GAC (1777T>C), CCT89CCC (1780T>C), AGC90GCT (1781A>G 1782G>A), CTC915TCA (1783A>G), GAC98GAT (1807C>T), GTT100GTC (1813T>C), GTC102GTT (1819C>T), ATT104ATG (1825A>G), CAA107CGA (1833A>G), ATA108ATG (1837A>G), TTT114TTC (1855T>C), TCA119TCT (1870A>T), CAG120CAA (1873G>A), ACC121GCA (1874A>G 1876C>A), GTC122GTT (1879A>T), GAA123GAG (1882A>G), GAG124GAA (1885G>A), ATT125ATC (1888T>C), CTC129GTT (1900C>T), CCG130AGC (1901G>A), GTC131GCC (1905T>C), AAC132AAT (1909C>T), TTT133TTC (1912T>C), AAC135AGT (1912A>G 1918C>T), CCT136CCG (1918C>T), CCA137TCG (1922C>T 1924A>G), GGA138GGG (1927A>G), TCT140CCC (1931T>C 1933T>C), GAG142AAA (1937G>A 1939G>A), GAT143GAC (1942T>C), TCA145GCC (1946T>G 1948A>C), ACC149GCC (1958A>G), GGC150AAC (1961G>A 1962G>C), CGA151CGG (1966A>G), GAG152GAA (1969G>A), ACA158GTA (1985A>G 1986C>T), CCC159TCC (1988C>T), ACT160GCA (1991A>G 1993T>C), TCT162TAT (1998C>A), CAG163CAA (2002G>A), AAC170AGA (2023T>A), ACT177GCT (2042A>G), CTC178GTC (2047T>C), GGC180GGT (2053C>T), AGA185GAG (2068A>G), TCG187GTC (2074T>C), GGC188GCT (2077C>T), ATT190AAC (2083T>C), CTG195CTG (2089A>C), TCA196TCC (2101A>C), GTG197GTA (2104G>A), GCA206T (2131A>T), AGT208AGC (2137T>C), AAC211AG (2146A>G), AAA212AG (2149A>G), TAT213ATC (2152T>C), AAC221AAA (2155G>A), CTC219TCA (2170C>A), CTC223TC (2180C>A), GAT236GAC (2221T>C), GCA241ITCA (2234G>T), GTC244GTT (2245A>G), GGT246AGC (2249G>A 2251T>C), GTG247GTA (2254G>A), ACC248ATT (2256G>C 2257C>T), CGT249GCC (2260T>C), TCA250TTC (2263A>G), CGT252CAC (2268G>A 2269T>C), GAC253GAT (2272C>T), AAC256AGA (2280A>G), CCG258CT (2287C>T), CTA259CTG (2290A>G), GTA262GTC (2294A>G), GTC266GTT (2311C>T), CGC267GCT (2314C>T), TTG268CTA (2315T>C 2317G>A), AAC270AAT (2323C>T), TCT271TCC (2326T>C), AAC272AAG (2329G>A), AAC273AG (2332A>G), TTG276TGC (2339T>C), TTA277TTG (2344A>G), GTC278GTT (2347C>T), GAA279GAG (2350A>G), CCG280CT (2351T>C 2353C>T), AAC281GAC (2354A>G), AAG282AA (2359G>A), ATG284AAT (2364G>A), ATC286ATA (2371C>A), TTG291CTG (2384T>C), AAC292AAC (2389T>C), CGC293CGT (2392C>T), ACA295TCA (2396A>T), TCT296TTC (2400C>T 2401T>C), TGC297CTC (2402T>C 2403G>T), TAA298TGA (2406A>G)									
M2 protein (NP_056795.1)	1	203	100%	1355	91.8%	203 (100%)	185 (91.1%)	0/0/0/0	1
Protein mutations:									
P21F (2556C>T 2557C>T), L26P (2572T>C 2573G>A), R50M (2644G>T), I55V (2658A>G), G58E (2668G>A 2669G>A), G70R (2703G>A), R77K (2725G>A), H87Q (2756T>A), V90I (2763G>A), I97V (2784A>G 2786T>C), N147D (2934A>G 2936T>C), V151I (2946G>A 2948C>T), Q154E (2955C>G), K160R (2974A>G), R165Q (2989G>A), G178C (3027G>T), Q187K (3045C>A 3056G>A), L199V (3090C>G 3092G>A)									
Codon mutations:									
CGT5CGC (2510T>C), GTG8GTA (2519G>A), AAA9AAG (2522A>G), AAT10AAC (2525T>C), TGC11TGT (2528C>T), AGG12AGA (2531G>A), GAC13GAT (2534C>T), GAG14GAA (2537G>A), AAA18AGG (2549A>G), TCT20TCC (2555T>C), CCC21TTC (2556C>T 2557C>T), TCA23CTG (2562C>G), GGC24GTC (2567C>T), CGT26CCA (2572T>C 2573G>A), GAC28GAT (2579C>T), TTG31CTG (2586T>C), CTT33TTA (2592C>T 2594T>A), CCA34CCC (2597A>C), CCC35CCT (2600C>T), CCT36CCA (2603T>A), TAC38TAT (2609C>T), GTC39GTT (2612C>T), AAA42AAC (2621A>G), GAA43GAG (2624A>G), CTT44CTC (2627T>C), AAG48AAA (2639G>A), AGG50ATG (2644G>T), AGG51AGA (2648G>A), ATC55GTC (2658A>G), AAC56AAT (2663C>T), GGG58GAA (2668G>A 2669G>A), GTT59GTC (2672T>C), AAA60AAG (2675A>G), TGT62TGC (2681T>A), GAC63AGT (2684C>A), GCG64CCA (2687G>A), AAC67AAC (2690T>C), GGG66G (2693T>C), TCG67TCA (2696G>T), TCG68TCA (2699G>A), AGA77AAA (2725G>A), ATA82ATC (2741A>C), CGG685G (2750G>A), CAT87CAG (2756T>A), AGG88AGA (2759G>A), GCG90ATC (2763G>A), GGG91GGA (2768G>A), TTA92TTG (2771A>G), GTAG59GTC (2774A>G), TAA92TTG (2774A>G), TGT996GTC (2783T>C), AT797GTC (2784A>G 2786T>C), CGT997GTC (2790C>T), GCT100GCA (2795T>A), GGA103GGG (2804A>G), GCT104GCC (2807T>C), CCT107CCA (2816T>A), AAC111AAT (2828C>T), TCC122TCT (2861C>T), TCC131CTA (2887T>A), CAG140CAA (2915G>A), GAG141GAA (2918G>A), ATC142ATT (2921C>T), ACT143AAC (2924T>C), AAT147GAC (2934A>G 2936T>C), ACT148ACA (2939T>A), GAG149GAA (2942G>A), TTC150TTT (2945C>T), GTC151ATT (2946G>A 2948C>T), CAA154GAA (2955C>G), AGA156CGA (2961A>C), AAA160AGA (2974A>G), CAG161CAA (2978G>A), TGT162TGC (2981T>C), ATC164ATT (2987C>T), CGG165CAG (2989G>A), AGA167AGG (2996A>G), ATC168ATT (2999C>T), ATC171ATT (3008C>T), AAC174AAT (3017C>T), TCG175TCT (3020G>A), AGA176CGG (3021A>C 3023A>G), GCA177GGC (3026A>G), GGT178TGT (3027G>T), CTA201TTG (3033C>T 3035A>G), TCT185TCC (3050T>C), CTT186CTC (3053T>C), CAG187AAA (3054C>A 3056G>A), TCC191TCT (3068C>T), GAA192GAG (3071A>G), GAC194GAT (3077C>T), AAA195AG (3080A>G), GAT196GAC (3083T>C), TCC197TCT (3086C>T), TCT198TCA (3089T>A), CTG199GTA (3090C>G 3092G>A), CTT200CTC (3095T>C), CTA201CTT (3098A>T), TAA203TAG (3104A>G)									
transmembrane glycoprotein G (NP_056796.1)	1	380	39.6%	1411	91.1%	208 (100%)	190 (91.3%)	0/0/0/0	0
Protein mutations:									
V2I (3321G>A 3323T>C), F8L (3339T>C 3341T>G), L12V (3351C>G), V13I (3354G>A 3356T>C), F14S (3358T>C 3359T>C), P15S (3360C>T), F18L (3369T>C 3371T>C), K243R (4045A>G 4046A>G), L250S (4065C>T 4066T>C 4067A>T), M262I (4103G>T), N266E (4113A>G 4115T>G), P273S (4134C>T 4136C>T), G274D (4138G>A), H280R (4156A>G), R283H (4165G>A), K349S (4363A>G 4364G>C), R365K (4411G>A), N375D (4440A>G)									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	15	11794	65.0%	9768	63.3%	7743 (99.8%)	6332 (81.6%)	3/12	
GTT2ATC (3321G>A 3323T>C), CTC6CTT (3335C>T), CTG7CTA (3338G>A), TTT8CTG (3339T>C 3341T>G), GTA9GTG (3344A>G), CCC10CCT (3347C>T), CTG12GTG (3351C>G), GTT13ATC (3354G>A 3356T>C), TTT14TCC (3358T>C 3359T>C), CCA15TCA (3360C>T), TTT18CTC (3369T>C 3371T>C), CCT22CCC (3383T>C), ATT23ATC (3386T>C), CCT30CTC (3407T>C), GGT31GCC (3410T>C), CCC32CCT (3413C>T), AGC34AGT (3419C>T), CGC35CCC (3422G>C), ATT36ATC (3425T>C), GAC37GAT (3428C>T), CAC40CAT (3437C>T), TGC43TGT (3446C>T), CCA44CCT (3449A>T), AAC45AAT (3452C>T), GTA48GTT (3461A>T), GAA52GAG (3473A>G), GGA53GGG (3476A>G), GGC227_A (3398C>A), TTT228TTC (4001T>C), GTC229GTG (4004A>G), AGA232AGG (4016C>G), GGC233GGA (4016G>A), CTA234TGT (4017C>T 4019A>G), TTA238CTA (4029T>C), AAA239AAG (4034A>G), TGC242TGT (4043C>T), AAA243ACC (4045A>G 4046A>G), CTC244CTT (4049C>T), TTA246TTG (4055A>G), TGT247TCC (4058T>C), CTA250TCT (4065C>T 4066T>A), ACA258ACC (4091A>C), GCG261GCA (4100G>A), ATG262ATT (4103G>T), CAA263CAG (4106A>G), ACA264AAC (4109A>G), AAT266GAG (4113A>G 4115T>G), GAA267GAG (4118A>G), CCC273TCT (4134C>T 4136C>T), GGT274GAT (4136G>A), CAG275CAA (4142G>A), TTG279CTA (4152T>A 4154G>A), CAC280GCC (4156A>G), CGC283CAC (4165G>A), GAC285GAT (4172C>T), GAA286GAG (4175A>G), ATT287ATA (4178T>A), GAG288GAA (4181G>A), CAC289CTA (4184C>T), GTT291GTC (4190T>C), GTA292GTG (4193A>G), AGA299AGG (4214A>G), GAG300GAA (4217G>A), GAG301GAA (4220G>A), CTG303TT (4224C>T), GAT304GAC (4229T>C), CTG306CTG (4235A>G), ATC309ATT (4244C>T), AAG313AAA (4256G>A), AGT321AGC (4280T>C), CAT322CAC (4283T>C), LTA323TTG (4286A>G), GTC327GTT (4298C>T), CCT328CCA (4301T>A), GGG329GGA (4304G>A), GGA331GGG (4310A>G), AAA332AAG (4313A>G), GCA333GCT (4316A>T), ACC335ACT (4322C>T), ACC340ACT (4327C>T), TTG341TTA (4340G>A), GCC344GCT (4349C>T), CAC347CAT (4358C>T), TAC348TAT (4361C>T), AAG349AGC (4363A>G 4364G>C), GTC351GTT (4370C>T), AGA352CGA (4371A>C), CCT359CCA (4394T>A), TTA364CTA (4407T>C), AGA365AAA (4411G>A), GTT366GTC (4415T>C), GGG367GGA (4418G>A), AGG369AGA (4424G>A), AAC375GAC (4440A>G), GGG376GGA (4445G>A), GTA377GTC (4448A>G)									
Codon mutations:									
L protein (NP_056797.1)									
1	2126	60.0%	7869	88.8%	1283 (99.8%)	1189 (92.5%)	0/2/5/3	1	
L2I (5421C>A), E6D (5435G>T), L17S (5467T>C), A19T (5472G>A), P21T (5478C>A 5480C>G), T24N (5488C>A), V27I (5496G>A 5498C>T), P46S (5553C>T 5555T>A), R48K (5560G>A), F73Y (5635T>A 5636C>T), R74K (5638G>A), Y79C (5653A>G 5654T>C), F80L (5655T>C), M93A (5694A>G 5695T>C 5696G>T), L103I (5724T>A), R115K (5761G>A 5762A>G), I117M (5768A>G), T118I (5770C>T 5771T>A), H122Q (5783T>G), L136G (5823C>T 5824T>G), N140K (5837T>G), K193R (5995A>G), K200R (6016A>G 6017A>G), V205T (6030G>A 6031T>C 6032G>A), I207V (6036A>G 6038C>T), L221S (6078C>T 6079T>C), L222M (6081C>A), S234del (6117_6120delTC), V259I (6192G>A 6194C>T), Q285H (6272A>T), F428L (6699T>C), A430S (6705G>T 6707C>G), R431K (6708C>A 6709G>A), T436I (6724C>T), I449V (6762A>G 6764T>A), L605H (7231T>A), H933N (8214C>A), I937V (8226A>G), R970K (8326G>A), E1001* (8418G>T 8420G>A), S1219A (9072T>G), F1476L (9843T>C 9845T>G), E1478G (9850A>G), I1487V (9876A>G), V1516A (9964T>C), A1535S (10020G>T 10022C>T), R1556K (10084G>A), N1557S (10087A>G 10088C>T), S1561G (10098A>G), D1564T (10107G>A 10108A>C), L1569M (10122T>A), D1589E (10184C>A), N1590D (10185A>G), F1665L (10410T>C 10412C>T), N1716H (10563A>C), R1749S (10664G>T), N1752D (10671A>G), V1755I (10680G>A), I1759V (10692A>G 10694A>T), R1772K (10732G>A), A1775T (10740G>A 10742T>C), K1778R (10750A>G 10751A>G), K1785E (10770A>G 10772G>A), Q1786R (10774A>G 10775G>T), A1817V (10867C>T 10868A>G), L1818M (10869T>A), N1839D (10932A>G), K1841R (10939A>G 10940G>A), V1860T (10995G>A 10996T>C 10997A>G), E1924D (11189A>T), A1966S (11313G>T), P1985H (11371C>A 11372C>T), L1986del (11373_11377delCTAAC), P2021S (11478C>T 11480T>C), V2042I (11541G>A), I2043T (11545T>C), L2044Q (11548T>A 11549A>G), N2046S (11554A>G 11555C>T), N2055D (11580A>G 11582C>T), S2091N (11689G>A), K2093E (11694A>G 11696G>A), G2097R (11706G>A), R2101K (11719G>A 11720A>G), H2104R (11728A>G 11729T>A), R2105G (11730A>G), E2113D (11756G>T), N2114D (11757A>G 11759T>C)									
Protein mutations:									

	Begin	End	Coverage	Score	Concordance	Matches	Identities	I/D/M/F*	Stop Codons
NT	15	11794	65.0%	9768	63.3%	7743 (99.8%)	6332 (81.6%)	3/12	
CTC2ATC (5421C>A), CCT4CCA (5429T>A), GAG6GAT (5435G>T), GTC7GTT (5438C>T), CCT11CCC (5450T>C), GAC13GAT (5456C>T), CCA14CC (5459A>T), ATC15ATT (5462C>T), TTA17TCA (5467T>C), GCT19ACT (5472G>A), GAA20GAG (5477A>G), CCC21ACG (5478C>A 5480C>G), GGA23GGG (5486A>G), ACC24AAC (5488C>A), CCC25CCCT (5492C>T), ACT26AAC (5495T>C), GTC27ATT (5496G>A 5498C>T), TTG31TTA (5510G>A), AGG32AGA (5513G>A), TCT40TC (5537T>C), TTG42CTA (5541T>C), GCA44GAG (5549A>G), CTC46CTA (5553C>T) S 5555T>A), AGA48AAA (5560G>A), TTAT15TG (5570A>G), TTAT45TG (5579A>G), CTAT6...G (5612A>G), TCC72TCC (5633T>C), TCT73T (5635T>A), GAG74AA (5638G>A), GTT75GTC (5642T>C), TAT79TGC (5653A>G 5654T>C), TTCC80CTC (5655T>C), AGA822AA (5663G>A), TTG85CTT (5670T>C) S 5672G>T), GTT86GGG (5675T>C), TCC87TCT (5678C>T), GGA92GGG (5693A>G), ATG93GCT (5694A>G 5695T>C), GCT94GCA (5697T>A), CAG96CAA (5705G>A), TCA97TCT (5708A>T), TCT100TCC (5711T>C), CTC101CTT (5720C>T), TTA103ATA (5724T>A), TAT104TAC (5729T>C), GAA109GAG (5744A>G), TCC110TCC (5747C>C), AGA115AGA (5761G>A 5762A>G), TAA117ATG (5768A>G), ACA118ATC (5770C>T) S 5771A>C), GAC119GAT (5774C>A), GTC122CAG (5783T>G), TCG127TCT (5798G>T), GAG131GAA (5810G>A), AGA132AAA (5813G>A), AAT135AAC (5822T>C), CTC136GTC (5823C>T) S 5824T>G), ACG137ACA (5828G>A), CTAA13PC (5831A>C), GGA139GGG (5834A>G), AGA140AAG (5837T>G), GAA191GAA (5909A>G), GAA192GAG (5993A>G), AAC193AGG (5995A>G), ATC195ATT (6002C>T), TTA198CTA (6009T>C), AA200AAG (6016A>G 6017A>G), GTG205ACA (6030G>A 6031T>C), ATC207GTT (6036A>G 6038C>T), GTA212GTC (6053A>C), TTC214TTT (6059C>T), GAC216GAT (6065C>T), CTG221TCT (6078C>T) S 6079T>C), CTG222ATG (6081C>A), ACA225AC (6092A>C), AGA226AAA (6095G>A), GAC227GAT (6098C>T), GTT229GTA (6104A>T), AGT233CGT (6114A>C), TCC234del (6116...L 6120delTC), ATA235TC (6117A>C), GTC225TCT (6117C>T), CTT237CTC (6128T>C), GAC239GAT (6134C>T), TAC242TAT (6143C>T), CTT244CTC (6149T>C), CGC253CGG (6176C>G), TCC256TCT (6185C>T), TTA257CTA (6186T>C), GTC259AT (6192G>A 6194C>T), TTA260CTT (6195T>C) S 6197A>C), CCC263CC (6206C>T), GAG265GAA (6212G>A), CGA267AGG (6216C>A 6218A>G), TAC268AT (6221C>T), TTG272CTC (6231T>C), CAT276CTG (6245A>G), TGC277TGT (6248C>A), CGT278CA (6251G>A), ATC280AT (6257C>T), ATT281ATC (6260T>C), GTC282GGC (6263T>G), CAA285CAT (6272A>T), TTG287TTA (6278G>A), TCT288TC (6281T>C), GCA291GGG (6290A>G), TCC293CT (6296C>T), CGC294GG (6299C>T), TGC4027T (6623C>T), TA403TGT (6626A>G), AGC405AGT (6632C>T), CTAA407CTC (6638A>G), GGC408GCT (6641C>T), AGG409AGA (6644G>A), AGG410AGA (6647G>A), CTA412CTC (6653T>C), AGA413AGG (6656A>G), GGT415GGA (6662G>A), CTG424CTC (6689G>C), TTC428CTC (6697C>C), CTA429CTT (6704A>T), GCA430CTC (6708C>T), AGT430GTC (6709C>T), GTC435CT (6720T>C), ACT436ATA (6724C>T), AAC440AA (6737A>G), ACA443ACG (6746A>G), CCA445CCT (6752A>T), ATT449GTA (6762A>G 6764T>A), TTG452TTA (6773G>A), GTG453GTA (6776G>A), GGG454GGT (6779G>T), ACA456ACC (6785A>C), CAC458CAT (6791C>T), ACG463AC (6806G>C), CAA464ACG (6809A>G), ATC465ATT (6812C>T), TTG466TTC (6815T>C), ATC468ATC (6821T>C), AAC470AGG (6827A>G), GAT473GCA (6836T>C), TCA475CT (6842A>T), TTG478CTA (6849T>C) S 6851G>A), CAT482TC (6863A>C), TCT484CTC (6866T>C), TCT484CTC (6869T>A), AAC486ACT (6875C>T), AGC488ACA (6881G>A), CTA491GCA (6890T>A), TCT492CTA (6893T>A), CTG494TTG (6897C>A), GAA496GAC (6905A>G), CGA498AGA (6909C>A), GGG499GGA (6914G>A), CTC501CA (6920T>A), GTT502GTC (6923T>C), CTC503CC (6926T>C), AAA506AA (6935G>A), TCT507GTC (6938T>C), AC5105ACA (6947G>A), CGC511GCT (6950C>T), CTG512CTC (6953G>C), TCT513CTA (6956T>A), AAG514AA (6959G>A), CC5151CC (6962G>T), AT518AAC (6971T>C), CGA520AGA (6975G>A), GA521GAA (6980G>A), CTG523CTA (6986G>A), CTG528CTT (7001C>T), GGA530GG (7007A>G), CCA532CCG (7013A>T), GAT533GAC (7016T>C), GAC535GAT (7022C>T), ATT538ATC (7031T>C), AAG541AAA (7040G>A), CCA542CCT (7043A>T), CCG545AGG (7050C>A), GAA546GAG (7055A>G), TTG547TTA (7058G>A), TCT553TTT (7076C>T), AT556TTG (7083C>T) S 7085A>G), TCA558TCC (7091A>C), ATC561CTG (7100A>G), AGA562AGG (7103A>G), ATC568ACA (7121T>A), GAA569GAG (7124A>G), AAA570AA (7127A>G), TTG572TTA (7136G>A), AAC574AT (7139C>T), TCA575TAT (7142C>T), ATC576ATT (7145C>T), AAC581GAT (7160C>T), CGC558GCA (7163G>A), CTG583TTT (7164C>T), AAC591AA (7190G>A), TTT593TC (7196T>C), AAS594AAG (7199A>G), AGG599AGA (7214G>A), AAC601AT (7220C>T), AAC603AC (7226A>G), CTC605CAT (7231T>A), CTG606TTA (7233C>T) S 7235G>A), GAC607AT (7238C>T), TAT608ATC (7241T>C), TCA609TCT (7244D>T), AGG610AGA (7247G>A), GTC611TT (7250C>T), TAT613TAC (7256T>C), GCA614GCT (7259A>C), CAC161CT (7265C>T), GAA620AG (7277A>G), AAC624AT (7289C>T), CAT625CAC (7292T>C), AGA627TAGG (7298G>A), TCA628CTG (7297T>C) S 7301A>G), GAG629GAA (7304G>A), TCA630CT (7307A>T), CTG637CTG (7328C>C), CTAD638CTT (7331A>T), GAT638CTT (7331A>T), GTC885CTT (8027C>T), CTA886CTC (8075A>C), CGC887GCT (8078C>T), CAT889TCT (8084A>T), CTAG894TA (8097C>T), GAT895GAC (8102T>C), TCT897TCA (8108T>A), GGG900GGA (8117G>A), TCT902TGC (8123T>C), 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AGG1215AGA (9062G>A), ATT1217ATA (9068T>A), GTG1218AKA (9069G>A 9070T>C), TCT1219GTC (9072T>C), CTC1223CA (9086T>A), ATG1224GAC (9089T>A), TCT1225T (9092C>T), GAG1228GAA (9101A>G), GAG1229GAA (9104G>A), CCT1231CCT (9110T>C), AAC1234AA (9119A>G), AGC1236GAA (9125G>A), TCA1238TCT (9131A>T), TTG1240CTA (9135T>C) S 9137G>A), AGG1242AGA (9143G>A), TCT1243TCT (9146C>T), CCT1245CTA (9152T>C), AGA1247AGT (9158A>G), AGC1249AG (9164C>T), GGA1251GG (9188C>T), GGT1247CTG (9697G>A), CGA1249GGG (9704A>G), CCT1430TCT (9707C>T), ACC1436ACA (9725G>A), AT1440AAC (9737T>C), ATC1441ATT (9740C>T), AAC1442AAC (9743T>C), ATT1443ATC (9746T>C), AT1444AAC (9749T>C), TTG1449CTG (9762T>C), GCG1452GGA (9773G>C), ATG1453GTT (9776A>C), ATG1454ATT (9797C>T), TAT1456TAC (9785T>C), ATT1457ATC (9788T>C), CTG1459TGT (9792C>T), AGG1460AGA (9797G>A), CTA1461CTG (9800A>G), GAT1462GAC (9803T>C), AAC1463ATT (9806C>A), GTC1467CTG (9807C>T), CAT1464CAC (9809T>C), CCC1465CCA (9812C>A), TCT1466CT (9815C>T), CTC1471CTA (9830C>T), 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*: Inserts / Deletes / Misaligned / Frameshifts

Analysis details

This analysis was performed with Pan-viral (2.14.6)