

10 60  
NC\_001563: MSKKPGGPGKNRAVNMLKRGMPRGLSLIGLKRAMLSLIDGKGP IRFVLALLAFFRFTAIA  
GRGP IRFVL (B39)  
VLALLAFFR (A3)  
AIAPTRAVL (B7)  
RFVLALLAF (A24)  
FVLALLAFF (A26)  
VLSLIGLKR (A3)  
GP IRFVLAL (B7)  
70 120  
NC\_001563: PTRAVLDRWRGVNKQTAMKHLLSFKKELGTLTSAINRRSTKQKKRGGTAGFTILLGLIAC  
VMIGLIASV (A2)  
GVNKQTAMK (A3)  
130 180  
NC\_001563: AGAVTILSNFQKGKMMTVNATDVTDVITIPTAAGKNLCIVRAMDVGYLCEDTITYECPVLA  
FLCDDTITY (B62)  
YLCEDTITY (B62)  
IPTAAGKNL (B7)  
190 240  
NC\_001563: AGNDPEDIDCWCTKSSVYVRYGRCTKTRHSRRSRRSLTVQTHGESTLANKKGAWLDSTKA  
HSRRSRRSL (B7)  
RRSRRSLTV (B27)  
250 300  
NC\_001563: TRYLVKTESWILRNPGYALVAAVIGWMLGSNTMQRVVFAILLLLVPAYSFNCLGMSNRD  
ILRNPGYAL (B8)  
LVKTESWIL (B8)  
RYLVKTESW (A24)  
LLVPAYSF (B62)  
LLLLVPAY (B62)  
310 360  
NC\_001563: FLEGVSGATWVDLVLEGDSCVTIMSKDKPTIDVKMMNMEAANLADVRSYCYLASVSDLS  
STKAACPTM (A26)  
370 420  
NC\_001563: RAACPTMGEAHNEKRADPAFVCKQGVVDRGWNGCGLFGKGSIDTCAKFACTTKATGWII  
GWNGCGLF (A24)  
430 480  
NC\_001563: QKENIKYEVAIFVHGPTTVESHGKIGATQAGRFSITPSAPSYTLKLGEYGEVTVDCPEPS  
SYTLKLGEY (A24)  
TVSPSAPTY (B62)  
SGIDTNAYY (A26)  
RSGIDTNAY (A1)  
490 540  
NC\_001563: GIDTSAYYVMSVGEKSFLVHREWFMDLNLPSWAGSTTWRNRETLMEFEFPATKQSVVA  
REWFMDLNL (B44)  
KSFLVHREW (B58)  
VHREWFMDL (B39)  
550 600  
NC\_001563: LGSQEGALHQALAGAIPVEFSSNTVKLTSGHLKCRVKMEKLQKLGTTYGVCSKAFKFART  
KLQKLGTTY (A3)  
KLKLGTTY (A3)  
TYGVCSKAF (A24)  
TYGVCAKAF (A24)  
QEGALHQAL (B44)  
KCRVKMEKL (B8)  
610 660  
NC\_001563: PADTGHGTVVLELQYTGTDGPKVPVISSVASLNDLTPVGRLVTVPNFVSVATANSKVLIE  
GRLVTVPNF (B27)  
VPISVASL (B7)  
GTVVLELQY (A1)  
GHGTVVLEL (B39)  
670 720  
NC\_001563: LEPPFGDSYIVVGRGEQQINHHWHKSGSSIGKAFTTTLRGAQRLAALGDTAWDFGSGVGV  
LAALGDTAW (B58)  
730 780  
NC\_001563: FTSVGKAIHQVFGGAFRSLFGGMSWITQGLLGALLLWMGINARDRSIAMTFLAVGGVLLF  
RSLFGGMSW (B58)  
GMSWITQGL (A2)  
SLFGGMSWI (A2)  
FLAVGGVLL (A2)  
790 840  
NC\_001563: LSVNVHADTICAIDIGRQELRCGSGVFIHNDVEAWMDRYKFYPETPQGLAKIIQKAHAEG  
YHPETPQGL (B39)  
ETPQGLAKI (A26)  
850 900  
NC\_001563: VCGLRSVSRLEHQMWEAIKDELNTLLKENGVDLSVVVEKQNGMYKAAPKRLAATTEKLEM  
GLYKSAPRR (A3)  
RRLAATTEK (B27)  
VVEKQSGLY (A1)  
KENGVDLSV (B44)  
VSRLEHQMW (B58)

910 960  
NC\_001563: GWKAWGKSIIFAPELANNTFVIDGPETEECTANRAWNSMEVEDFGFGLTSTRMFLRIRE  
KAWGKSIIF (B58)  
970 1020  
NC\_001563: TNTTECDSKIIGTAVKNNMAVHSDLSYWIESGLNDTWKLERAVLGEVKSCSWPETHTLWG  
1030 1080  
NC\_001563: DGVLESDLIIPITLAGPRSNHNRRPGYKTQNQGPWDEGRVEIDFYCPGTTVTISDSCEH  
YCPGTTVTIL (B39)  
1090 1140  
NC\_001563: RGPAARTTTESGKLITDWCCRSCITLPLRFQTENGWCYGMETIRPTRHDEKTLVQSRVNAY  
YQTDSGCWY (A1)  
WYGMETIRPL (A24)  
1150 1200  
NC\_001563: NADMIDPFQLGLMVVFLATQEVLRKRWTAKISIPAIMLALLVLVFGGITYTDVLRVILV  
ITYTDVLRV (A1)  
VLRKRWTAK (A3)  
FQLGLLVVF (B27)  
YVILVGAAF (A26)  
1210 1260  
NC\_001563: GAFAEANSGGDVVHLALMATFKIQPVFLVASFLKARWTNQESILLMLAAAFFQMAYYDA  
QPAFMVASF (B7)  
ILLMLAAAF (B62)  
MLAAAFFQM (A2)  
QPVFMVASF (B7)  
1270 1320  
NC\_001563: KNVLSWEVPDVLNSLSVAWMILRAISFTNTSNVVVPLLALLTPGLKCLNLDVYRILLMV  
ILLWEIPDV (A2)  
MVGVGSLVK (A3)  
WMILRAISF (A24)  
EIPDVLNSL (A26)  
1330 1380  
NC\_001563: GVGSLIKEKRSSAAKKKGACLICLALASTGVFNPMILAAGLMACDPNRKRGWPATEVMTA  
TEVMTAVGL (B44)  
EVMTAVGLM (A26)  
AAKKKGASL (B7)  
1390 1440  
NC\_001563: VGLMFAIVGGLAELDIDSMAIPMTIAGLMFAAFVISGKSTDMWIERTADITWESDAEITG  
AIVGGLAEL (A2)  
ISGKSTDMW (B58)  
1450 1500  
NC\_001563: SSERVDVRLDDDGNFQLMNDPGAPWKIWMLRMACLAISAYTPWAILPSVIGFWITLQYTK  
LAVSAYTPW (B58)  
GAPWKIWML (B8)  
LAISAYTPW (B58)  
LMNDPGAPW (B62)  
1510 1560  
NC\_001563: RGGVLWDTPSPKEYKKGDTTTGvyrimtrgllgsyQAGAGVMVEGVFHTLWHTTKGAALM  
VLWDTPSPK (A3)  
YRIMTRGLL (B27)  
MTRGLLGSY (A1)  
WHTTKGAAL (B39)  
HTTKGAALM (A26)  
MTRGILGSY (A1)  
KGDTTTGVY (A1)  
VYRIMTRGL (A24)  
1570 1620  
NC\_001563: SGEGRLDPYWGSVKEDRLCYGGPWKLQHKWNGHDEVQMIIVVEPGKNVKNVQTKPGVFKTP  
RLCYGGPWK (A3)  
1630 1680  
NC\_001563: EGEIGAVTLDYPTGTSGSPIVDKNGDVIGLYGNVIMPNGSYISAIVQGERMEEPAPAGF  
MEEPAPAGF (B44)  
GVIMPNGSY (B62)  
1690 1740  
NC\_001563: EPemLRKKQITVLDLHPGAGKTRKILPQIIKEAINKRLRTAVLAPTRVVAEMSEALRGL  
MLRKKQITV (B8)  
1750 1800  
NC\_001563: PIRYQTSAVHREHSGNEIVDMCHATLTHRLMSPHRVPNYNLFIMDEAHFTDPASIAARG  
REHSGNEIV (B44)  
MSPHRVPNY (A1)  
CHATLTHRL (B39)  
1810 1860  
NC\_001563: YIATKVELGEAAAFMTATPPGTSDPFPE SNAPISDMQTEIPDRAWNTGYEWITEYVGKT  
EYVGKTVWF (A24)  
RAWNSGYEW (B58)  
1870 1920  
NC\_001563: VWFVPSVKMGNEIALCLQRAGKKVIQLNRKSYETEPKCKNDWDVFIITDISEMGANFK  
KSYETEPK (A3)  
VIQLNRKSY (B62)  
1930 1980

NC\_001563: ASRVIDSRKSVKPTIIEEGDGRVILGEPSAITAASAAQRRGRIGRNP SQVGDEYCYGGHT  
TEGEGRVIL (B39) HTNEDDSNF (A26)

RVIDSRKSV (B7) 1990 2040  
NC\_001563: NEDDSNFAHWTEARIMLDNINMPNGLVAQLYQPEREKVYTM DGEYRLRGEERKNFLEFLR  
EERKNFLEL (B44)  
KVYTM DGEY (A3)  
YTMDGEYRL (A2)  
YRLRGEERK (B27)  
YQPEREKVY (B62)

2050 2100  
NC\_001563: TADLPVWLAYKVAAAGISYHDRKWCDFGPRNTILEDNNEVEVITKLGERKILRPWADA  
RPRWADARV (B7)  
KVAAAGVSY (B62)  
NEVEVITKL (B44)  
SYHRRWCF (A24)  
RRWCDFGPR (B27)

2110 2160  
NC\_001563: RVYSDHQALSKDFASGKRSQIGLVEVLGRMPEHFMVKTWEALDTMYVVATAEKG GRAH  
WEALDTMYV (B44)  
GGRAHRMAL (B7)  
RVYSDHQAL (B7)

2170 2220  
NC\_001563: RMALEELPDALQTIIVLIALLSVMSLGVFFLLMQRKIGIGKIGLGGVILGAATFFCWMAEVP  
VMTMGVFFL (A2)  
LGAATFFCW (B58)  
GVFFLLMQR (A3)

2230 2280  
NC\_001563: GTKIAGMLLLSLLLMIVLIPEPEKQRSQTDNQLAVFLICVLTTLVGAVANEMGWLDKTKN  
QTDNQLAVF (A1)

2290 2340  
NC\_001563: DIGSLLGHRPEARETTLGVESFLLDLRPATAWSLYAVTTAVLTPLLKHLITS DYINTSLT  
SLYAVTTAV (A2)  
LYAVTTAVL (A24)  
RESFGVESF (B44)  
TSDYINTSL (B39)

2350 2400  
NC\_001563: SINVQASALFTLARGFFVVDVGVSALLLAVGCWGQVTLTVTVTAAALLFCHYAYMVP GWQ  
SLARGFFV (A2)  
TLARGFFV (A2)  
FVDVGVSAL (B39)

2410 2460  
NC\_001563: AEAMRSAQRRTAAGIMKNVVVDGIVATDVPELERTTPVMQKKVQIILILVSM AAVVNP  
RRTAAGIMK (B27)  
RAAQRRTAA (B7)

2470 2520  
NC\_001563: SVRTVREAGILTAAAVTLWENGASSVWNATTAIGLCHIMRGWL SCLSIMWTLIKNMEK  
ITAAAVTLW (B58)

2530 2580  
NC\_001563: PGLKRGGAKGRTLGEVWKERLNHMTKEEFTRYRKEAITEVDRSAAKHARREGNITGGHPV  
LTKEEFTRY (A1)  
FTRYRKEAI (B8)  
MTKEEFTRY (A1)

2590 2640  
NC\_001563: SRGTAKLRWLVERRFLEPVGKVVDLGCGRGWCYYMATQKRVQEVKG YTKGGPGHEEPQL  
LRWLVERRF (B27)  
RRFLEPVGK (B27)  
KRVQEVRGY (B27)  
KRVQEVKGY (B27)

2650 2700  
NC\_001563: VQSYGWNIVTMKSGVDVFYRPSEASDTLLCDIGESSSSAEVEEHRTV RVLEMVEDWLHRG  
AEVEEHRTV (B44)  
RVLEMVEDW (B58)  
WLHRGPKEF (B8)

2710 2760  
NC\_001563: PKEFCIKVLCPYMPKVIKMETLQRRYGGGLIRNPLSRNSTHEMYWVSHASGNIVHSVMN  
RRYGGGLVR (B27)  
KVLCPYMPK (A3)  
KVIKMEVL (B8)  
VLCPYMPKV (A2)  
FCIKVLCPY (A26)

2770 2820  
NC\_001563: TSQVLLGRMEKKTWKGPQFEEDVNLGSGTRAVGKPLLNSDTSKIKNR IERLKKEYSSTWH  
TRAVGKPLL (B39)  
KIRNRIERL (B8)  
AHYEEDVNL (B39)  
GRMEKKTWK (B27)  
KIKNRIERL (B8)

2830 2880

NC\_001563: QDANHPYRTWNYHGSYEVKPTGSASSLVNGVVRLLSKPWDTITNVTMTAMTDTTPFGQQR  
DTITNVTMT (A26)

RTWNYHGSY (A1)  
SLVNGVVRL (A2)  
KPTGSASSL (B7)

2890 2940  
NC\_001563: VFKEKVDTKAPEPPEGVKYVLNETTNWLWAF LARDKKPRMCSREEFIGKVNSNAALGAMF  
ETTNWLWTF (A26) AMFEEQNQW (B62)

VLNETTNWL (A2)  
ETTNWLWAF (A26)

2950 3000  
NC\_001563: EEQNQWKNAREAVEDPKFWEMVDEERE AHLRGE CNTCIYNNMGKREKKPGEFGKAKGSRA  
SRAIWFMWL (B27)  
GSRAIWFMW (B58)

3010 3060  
NC\_001563: IWF MWLGARFLEFEALGFLNEDHWLGRKNSGGVEGLGLQKLGYILKEVGTKPGGKYAD  
WLGARFLEF (A24)  
VEGLGLQKL (B44)  
WFMWLGARF (A24)  
LEFEALGFL (B44)

3070 3120  
NC\_001563: DTAGWDTRITKADLENEAKVLELLDGEHRLARSIIELTYRHKVVKVMRPAADGKTVMDV  
RPAVGGKTV (B7)  
YRHKVVKVM (B27)  
RPAADGKTV (B7)  
RLARAIIEI (A2)  
NEAKVLELL (B44)  
LTYRHKVVK (A3)

3130 3180  
NC\_001563: ISREDQRGSGQVVTYALNTFTNLAVQLVRMMEGEGVIGPDDVEKLGKGGPKVRTWLFEN  
GPKVRTWLF (B8)  
GVKVRVWLF (B8)

3190 3240  
NC\_001563: GEERLSRMAVSGDDCVVKPLDDR FATSLHFLNAMSKVRKDIQEWKPSTGWYDWQQVPFCS  
WYDWQQVFF (A24)

3250 3300  
NC\_001563: NHFTE LIMKDGRITLVVPCRQDELIGRARISPAGWNVRDTACLAKSYAQMWLLLYFHRR  
YFHRRDLRL (B8)  
DTACLAKSY (A1)  
YAQMWQLLY (A1)  
KSYAQMWLL (B58)  
YAQMWLLLY (A1)

3310 3360  
NC\_001563: DLRLMANAICSAVPANWVPTGR TTWSIHAKGEWMTTEDMLAVWNRVWIEENEWMEDKTPV  
RVWIEENEW (B58)

3370 3420  
NC\_001563: ERWSDVPYSGKREDIWCGSLIGTRTRATWAENIHVA INQVRSVIGEEKYVDYMSSLRRYE  
REDIWCGSL (B44)

3430  
NC\_001563: DTIVVEDTVL