|  |  |  |
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| **Gene****Appendix**: Accession numbers and Strains used in this analysis.STRAINS USED IN THIS STUDY | **Strain name** | **Accession number** |
| NSP1 | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | L18943 |
|  | RVA/Cow-tc/THA/A5-13/XXXX/G8P[1] | D38148 |
|  | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | D45244 |
|  | RVA/Cow-wt/ARG/B383/1998/G15P[11] | FJ347117 |
|  | RVA/Human-wt/BEL/B4106/2000/G3P[14] | AY740735 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | L18945 |
|  | RVA/Horse-wt/ARG/E30/1993/G3P[12] | JF712572 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479951 |
|  | RVA/Horse-tc/GBR/H1/1975/G5P[7] | JQ309141 |
|  | RVA/Human-wt/HUN/Hun5/1997/G6P[14] | EF554110 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712561 |
|  | RVA/Human-tc/ITA/PA260-97/1997/G3P[3] | HQ661118 |
|  | RVA/Simian/ZAF/SA-11-H96/1958/G3P5B[2] | DQ838599 |
|  | RVA/Human-tc/THA/T152/1998/G12P[9] | AB097459 |
|  |  |  |
| NSP2 | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | DQ490534 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | L04529 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479954 |
|  | RVA/bat-wt/KEN/Ke4852/07/2007/G25P[6] | GU983677 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712562 |
|  | RVA/Simian-tc/ZAF/SA11-H96/1958/G3P5B[2] | DQ838615 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | L04534 |
|  |  |  |
| NSP3 | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | DQ490535 |
|  | RVA/Cow-wt/JPN/AzuK-1/2006/G21P[29] | AB513838 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | EF136660 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479953 |
|  | RVA/Bat-wt/KEN/Ke4852/07/2007/G25P[6] | GU983678 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712563 |
|  | RVA/Human-tc/CHN/R479/2004/G4P[6] | GU189557 |
|  | RVA/Simian-tc/ZAF/SA11-H96/1958/G3P5B[2] | DQ838610 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | X81434 |
|  | RVA/Cow-tc/USA/WC3/1981/G6P[5] | EF990701 |
|  |  |  |
| NSP4 | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | K02032 |
|  | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | D89873 |
|  | RVA/Human-wt/BEL/B4106/2000/G3P[14] | AY740732 |
|  | RVA/Guanaco-wt/ARG/Chubut/1999/G8P[14] | FJ347109 |
|  | RVA/Pig-wt/THA/CMP034/2000/G2P[27] | DQ534017 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P[4] | AF174305 |
|  | RVA/Horse-wt/ARG/E30/1993/G3P[12] | JF712575 |
|  | RVA/Mouse-wt/USA/ETD\_8222/XXXX/G16P[16] | GQ479956 |
|  | RVA/Cat-wt/JPN/FRV1/1985/G3P3[9] | D89874 |
|  | RVA/Human-tc/USA/KC814/1998/G3P3[9] | AJ311729 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712564 |
|  | RVA/Human-wt/BGD/N26/2000/G12P[6] | DQ146691 |
|  | RVA/Cow-lab/GBR/PP-1/1976/G3P[7] | AF427521 |
|  | RVA/Human-tc/USA/WI61/1983/G9P1A[8] | EF672624 |
|  | RVA/Human-wt/BGD/Dhaka6/2001/G11P[25] | EF560711 |
|  | RVA/Human-wt/BGD/Dhaka16/2003/G1P[8] | DQ492678 |
|  | RVA/Human-wt/BGD/Dhaka12/2003/G12P[6] | DQ146669 |
|  | RVA/Human-wt/BGD/Dhaka25/2002/G12P[8] | DQ146658 |
|  | RVA/Human-tc/XXX/KU/XXXX/G1P[8] | AB022772 |
|  | RVA/Human-tc/GBR/ST3/1975/G4P2A[6] | EF672617 |
|  | RVA/Horse-tc/GBR/H1/1975/G5P[7] | AF144800 |
|  | RVA/Pig-tc/USA/OSU/1977/G5P9[7] | D88831 |
|  | RVA/Human-wt/IND/RMC321/1990/G9P[19] | AF541921 |
|  | RVA/Pig-tc/MEX/YM/1983/G11P9[7] | X69485 |
|  | RVA/Cow-tc/KOR/KJ75/2004/G5P[5] | DQ494398 |
|  | RVA/Human-wt/CMR/6787/2000/ARN/2000/G8P[8] | FJ425131 |
|  | RVA/Human-wt/ETH/6810/2004/ARN/2000/G8P[6] | FJ425133 |
|  | RVA/Human-wt/TUN/6862/2000/ARN/2000/G8P[6] | FJ425135 |
|  | RVA/Human-wt/BGD/RV161/2000/G12P[6] | DQ490543 |
|  | RVA/Human-wt/CMR/6782/2000/ARN/2000/G8P[6] | FJ425130 |
|  | RVA/Human-wt/CMR/6780/2000/ARN/2000/G8P[8] | FJ425129 |
|  | RVA/Human-wt/COD/DRC86/2003/G8P[6] | DQ005116 |
|  | RVA/Human-wt/COD/DRC88/2003/G8P[8] | DQ005105 |
|  | RVA/Bat-wt/KEN/KE4852/07/2007/G25P[6] | GU983679 |
|  | RVA/Human-tc/THA/T152/1998/G12P[9] | DQ146705 |
|  | RVA/Human-wt/BGD/RV176-00/2000/G12P[6] | DQ490560 |
|  | RVA/Mouse-tc/USA/EW/XXXX/G16P[16] | AB003805 |
|  |  |  |
| NSP5 | RVA/Bat-wt/KEN/KE4852/07/2007/G25P[6] | GU983680 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712565 |
|  | RVA/Horse-wt/ARG/E30/1993/G3P[12] | JF712575 |
|  | RVA/Human-tc/JPN/AU-1/1982/G3P39 | AB008656 |
|  | RVA/Human-tc/THA/T152/1998/G12P[9] | DQ146706 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | M33608 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | AF306494 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479957 |
|  | RVA/Simian-tc/ZAF/SA11-H96/1958/G3P5B[2] | DQ838630 |
|  |  |  |
| VP1 | RVA/Human-tc/JPN/AU-1/1982/G3P[9] | DQ490533 |
|  | RVA/Human-tc/ken/B10/1987/G3P[2] | HM627553 |
|  | RVA/Guanaco-wt/ARG/Chubut/1999/G8P[14] | FJ347100 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | DQ870505 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479947 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712555 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | DQ490539 |
|  |  |  |
| VP2 | RVA/Chicken-tc/DEU/02V0002G3/2002/G19P[30] | FJ169854 |
|  | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | DQ490536 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | DQ870506 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479948 |
|  | RVA/Bat-wt/KEN/KE4852/07/2007/G25P[6] | GU983673 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712556 |
|  | RVA/Simian/ZAF/SA-11-H96/1958/G3P5B[2] | DQ838635 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | X14942 |
|  |  |  |
| VP3 | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | DQ490537 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | AY277914 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479949 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712557 |
|  | RVA/Simian-tc/ZAF/SA11-H96/1958/G3P5B[2] | DQ838645 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | AY267335 |
|  |  |  |
| VP4 | RVA/Human-wt/TUN/6854/2002/ARN/2002/G8P[8] | FJ425174 |
|  | RVA/Human-wt/CMR/6780/2000/ARN/2000/G8P[8] | FJ425169 |
|  | RVA/Human-wt/CIV/6736/2004/ARN/2004/G8P[8] | FJ425168 |
|  | RVA/Human-wt/COD/DRC88/2003/G8P[8] | DQ005111 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P1B[4] | DQ141310 |
|  | RVA/Human-wt/JPN/F45/1987/G9P[8] | U30716 |
|  | RVA/Human-tc/JP/Hochi/1983/G4P[4] | AB008295 |
|  | RVA/Human-wt/HUN/Hun9/1998-2001/G9P[8] | AJ605320 |
|  | RVA/Human-tc/JPN/ITO/1981/G3P[8] | AB008280 |
|  | RVA/Human-tc/XXX/KU/XXXX/G1P[8] | AB222784 |
|  | RVA/Human-wt/MWI/OP351/1998/G1P[8] | AJ302147 |
|  | RVA/Human-wt/MWI/OP354/1998/G4P[8] | AJ302148 |
|  | RVA/Human-wt/MWI/OP498/1999/G3P[8] | AJ302150 |
|  | RVA/Human-wt/MWI/OP530/1999/G4P[8] | AJ302152 |
|  | RVA/Human-wt/MWI/OP601/1999/G1P[8] | AJ302153 |
|  | RVA/Human-wt/BRA/rj11772/2005/G9P[8] | FN179472 |
|  | RVA/Human-wt/USA/2007719825/2007/G1P[8] | HM773747 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | K02033 |
|  | RVA/Human-tc/USA/WI61/1983/G9P1A[8] | EF672619 |
|  |  |  |
| VP6 | RVA/Human-wt/THA/CMH222/2001/G3P[3] | DQ288659 |
|  | RVA/Human-tc/JPN/AU-1/1982/G3P3[9] | DQ490538 |
|  | RVA/Human-tc/KEN/B10/1987/G3P[2] | HM627557 |
|  | RVA/Pig-wt/CAN/CE-M-06-0003//2006/G2P[27] | GU183245 |
|  | RVA/Human-tc/USA/DS-1/1976/G2P[4] | DQ870507 |
|  | RVA/Human-wt/ECU/Ecu534/2006/G20P[28] | EU805774 |
|  | RVA/Mouse-tc/USA/ETD\_822/XXXX/G16P[16] | GQ479952 |
|  | RVA/Bat-wt/KEN/KE4852/07/2007/G25P[6] | GU983675 |
|  | RVA/Human-wt/NPL/KTM368/2004/G11P[25] | GU199496 |
|  | RVA/Horse-tc/GBR/L338/1991/G13P[18] | JF712559 |
|  | RVA/Rhesus-tc/USA/TUCH/2002/G3P[24] | AY594670 |
|  | RVA/Human-tc/USA/Wa/1974/G1P1A[8] | K02086 |
|  | RVA/Pig-tc/MEX/YM/1983/G11P[7] | X69487 |
|  |  |  |
| VP7 | RVA/Human-tc/IND/116E/1985/G9P[11] | FJ361209 |
|  | RVA/Human-wt/VMN/608VN/XXXX/G9PX | AB091777 |
|  | RVA/Human-wt/CMR/3298CM/1999/G9P[8] | DQ647423 |
|  | RVA/Human-wt/CHN/97’SZ37/XX/G9PX | AF260959 |
|  | RVA/Human-wt/BRA/ac11824/06/2006/G9P[8] | FJ794004 |
|  | RVA/Human-wt/JPN/AU32/1986/G9P[8] | AB045372 |
|  | RVA/Human-wt/NGA/Bulumkutu/XXXX/G9PX | AF359358 |
|  | RVA/Human-wt/THA/CMH214/2001/G9PX | AY699298 |
|  | RVA/Human-wt/THA/CMP003/XXXX/G9P[19] | AY707787 |
|  | RVA/Human-wt/JPN/F45/1987/G9P[8] | AB180970 |
|  | RVA/Human-wt/GHA/GH3574/2000/G9PX | AY211068 |
|  | RVA/Pig-wt/JPN/Hokkaido-14/2001/G9P[23] | AB176677 |
|  | RVA/Human-wt/IND/ISO-3/2001/G9PX | AF501580 |
|  | RVA/Pig-wt/JPN/JP35-7/2000/G9P[6] | AB176683 |
|  | RVA/Human-wt/JPN/K-1/1995/G9PX | AB045374 |
|  | RVA/Human-wt/KEN/KY6923/02/2002/G9PX | DQ822604 |
|  | RVA/Human-tc/THA/Mc345/1989/G9P[19] | D38055 |
|  | RVA/Human-wt/MUS/MR4710/00/2000/G9P[8] | AY262747 |
|  | RVA/Human-wt/SA/MR4730/2000/G9P[4] | AY262749 |
|  | RVA/Human-wt/MAW/MW69/1997/G9P[6] | AJ250545 |
|  | RVA/Human-wt/USA/OM67/2000/G9P[8] | AJ491179 |
|  | RVA/Human-wt/BRA/rj1528/98/1998/G9P[8] | FJ793993 |
|  | RVA/Human-wt/BRA/rj1609/98/1998/G9P[8] | FJ793995 |
|  | RVA/Human-wt/ZAF/6610LC/98/1998/G9P[6] | AF529867 |
|  | RVA/Human-tc/GBR/ST3/1975/G4P[6] | EF672616 |
|  | RVA/Human-wt/USA/US1205/1997/G9P[6] | AF060487 |
|  | RVA/Human-tc/USA/WI61/1983/G9P[8] | AB180969 |
|  | RVA/Human-wt/CHN/XJ99-468/1999/G9P[6] | DQ321497 |
|  | RVA/Human-wt/IRL/CIT-254RV/1997-99/G9P[8] | AF281044 |