Table S1. List of GII.P6-GII.6 and GII.P7-GII.6 strains used in this study.

| GenBank Accesion No. | strain | Isolated/collected year | country | polymerase type |
| --- | --- | --- | --- | --- |
| JX846927 | JX846927.1\_Norovirus\_HuGII.6CH | 1984 | USA | GII.P7 |
| AB039778 | AB039778.1\_Norwalk-like\_virus\_ | 1997 | Saitama U16 | GII.P6 |
| AB039779 | AB039779.1\_Norwalk-like\_virus\_ | 1997 | Saitama U17 | GII.P6 |
| AB039776 | AB039776.1\_Norwalk-like\_virus\_ | 1997 | Saitama U3 | GII.P7 |
| AB039777 | AB039777.1\_Norwalk-like\_virus\_ | 1997 | Saitama U4 | GII.P7 |
| GU930737 | GU930737.1\_Norwalk-like\_virus\_ | 1997 | USA: Texas | GII.P7 |
| LC122923 | GII.6-GII.P6HI-1Nov2004\_2004 | 2004 | Japan: Hiroshima | GII.P6 |
| LC122924 | GII.6-GII.P6TO-59Nov2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122928 | GII.6-GII.P6TO-60Sep2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122925 | GII.6-GII.P6TO-61Oct2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122933 | GII.6-GII.P6TO-62Oct2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122926 | GII.6-GII.P6TO-63Oct2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122931 | GII.6-GII.P6TO-64Oct2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122929 | GII.6-GII.P6TO-65Oct2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122930 | GII.6-GII.P6TO-66Nov2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122932 | GII.6-GII.P6TO-68Dec2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC760142 | GII.6-GII.P6TO-71Dec2003\_2003 | 2003 | Japan: Tochigi | GII.P6 |
| LC122921 | GII.6-GII.P7TO-52Apr2003\_2003 | 2003 | Japan: Tochigi | GII.P7 |
| LC122922 | GII.6-GII.P7TO-53Apr2003\_2003 | 2003 | Japan: Tochigi | GII.P7 |
| LC122919 | GII.6-GII.P7HO-33Mar2004\_2004 | 2004 | Japan: Hokkaido | GII.P7 |
| LC122920 | GII.6-GII.P7HO-34Nov2004\_2004 | 2004 | Japan: Hokkaido | GII.P7 |
| LC122917 | GII.6-GII.P7HO-35Dec2005\_2005 | 2005 | Japan: Hokkaido | GII.P7 |
| LC760178 | GII.6-GII.P7TO-1022005\_2005 | 2005 | Japan: Tochigi | GII.P7 |
| LC760177 | GII.6-GII.P7TO-1072005\_2005 | 2005 | Japan: Tochigi | GII.P7 |
| LC760176 | GII.6-GII.P7TO-1152005\_2005 | 2005 | Japan: Tochigi | GII.P7 |
| LC122918 | GII.6-GII.P7YA-017Feb2005\_2005 | 2005 | Japan: Yamaguchi | GII.P7 |
| LC760179 | GII.6-GII.P7HI-142008\_2008 | 2008 | Japan: Hiroshima | GII.P7 |
| LC122893 | GII.6-GII.P7HO-37Dec2008\_2008 | 2008 | Japan: Hokkaido | GII.P7 |
| LC122894 | GII.6-GII.P7SA-74Dec2008\_2008 | 2008 | Japan: Saitama | GII.P7 |
| LC122895 | GII.6-GII.P7SA-75Dec2008\_2008 | 2008 | Japan: Saitama | GII.P7 |
| LC760144 | GII.6-GII.P7EH-532009\_2009 | 2009 | Japan: Ehime | GII.P7 |
| LC122892 | GII.6-GII.P7EH-54June2009\_2009 | 2009 | Japan: Ehime | GII.P7 |
| LC122896 | GII.6-GII.P7HO-38Oct2009\_2009 | 2009 | Japan: Hokkaido | GII.P7 |
| LC760174 | GII.6-GII.P7KA-562009\_2009 | 2009 | Japan: Kanagawa | GII.P7 |
| KM198498 | KM198498.1\_Norovirus\_HuGII2008 | 2009 | Viet Nam | GII.P7 |
| KM198531 | KM198531.1\_Norovirus\_HuGII3011 | 2009 | Viet Nam | GII.P7 |
| KX752057 | KX752057.1\_Norovirus\_GIIHuChin | 2009 | China | GII.P7 |
| KJ407072 | KJ407072.2\_Norovirus\_HuGII.6HS | 2010 | USA | GII.P7 |
| KM198530 | KM198530.1\_Norovirus\_HuGII2048 | 2010 | Viet Nam | GII.P7 |
| KM198534 | KM198534.1\_Norovirus\_HuGII3044 | 2010 | Viet Nam | GII.P7 |
| KM198549 | KM198549.1\_Norovirus\_HuGII3047 | 2010 | Viet Nam | GII.P7 |
| LC122897 | GII.6-GII.P7YA-5Nov2011\_2011 | 2011 | Japan: Yamaguchi | GII.P7 |
| LC760145 | GII.6-GII.P7KA-52012\_2012 | 2012 | Japan: Kanagawa | GII.P7 |
| LC760175 | GII.6-GII.P7SA-1382012\_2012 | 2012 | Japan: Saitama | GII.P7 |
| KY424341 | KY424341.1\_Norovirus\_GII.6\_iso | 2012 | USA | GII.P7 |
| KY424342 | KY424342.1\_Norovirus\_GII.6\_iso | 2012 | USA | GII.P7 |
| KY424343 | KY424343.1\_Norovirus\_GII.6\_iso | 2012 | USA | GII.P7 |
| KY424344 | KY424344.1\_Norovirus\_GII.6\_iso | 2012 | USA | GII.P7 |
| LC122891 | GII.6-GII.7MI-27Jul2013\_2013 | 2013 | Japan: Miyagi | GII.P7 |
| LC122901 | GII.6-GII.7MI-28Dec2013\_2013 | 2013 | Japan: Miyagi | GII.P7 |
| LC760143 | GII.6-GII.P7EH-172013\_2013 | 2013 | Japan: Ehime | GII.P7 |
| LC122916 | GII.6-GII.P7EH-55Jan2013\_2013 | 2013 | Japan: Ehime | GII.P7 |
| LC122915 | GII.6-GII.P7HI-28Nov2013\_2013 | 2013 | Japan: Hiroshima | GII.P7 |
| LC122898 | GII.6-GII.P7HI-29Dec2013\_2013 | 2013 | Japan: Hiroshima | GII.P7 |
| LC760146 | GII.6-GII.P7KA-572013\_2013 | 2013 | Japan: Kanagawa | GII.P7 |
| LC760147 | GII.6-GII.P7KA-582013\_2013 | 2013 | Japan: Kanagawa | GII.P7 |
| LC760171 | GII.6-GII.P7KA-62013\_2013 | 2013 | Japan: Kanagawa | GII.P7 |
| LC760172 | GII.6-GII.P7KA-72013\_2013 | 2013 | Japan: Kanagawa | GII.P7 |
| LC760157 | GII.6-GII.P7OS-1082013\_2013 | 2013 | Japan | GII.P7 |
| LC760158 | GII.6-GII.P7OS-1102013\_2013 | 2013 | Japan | GII.P7 |
| LC760165 | GII.6-GII.P7SA-1402013\_2013 | 2013 | Japan: Saitama | GII.P7 |
| LC760168 | GII.6-GII.P7YA-122013\_2013 | 2013 | Japan: Yamaguchi | GII.P7 |
| KM267740 | KM267740.1\_Norovirus\_GII\_isola | 2013 | Taiwan | GII.P7 |
| KM267742 | KM267742.1\_Norovirus\_GII\_isola | 2013 | Taiwan | GII.P7 |
| KM267743 | KM267743.1\_Norovirus\_GII\_isola | 2013 | Taiwan | GII.P7 |
| MF140676 | MF140676.1\_Norovirus\_GII\_strai | 2013 | Netherlands | GII.P7 |
| MF140677 | MF140677.1\_Norovirus\_GII\_strai | 2013 | Netherlands | GII.P7 |
| LC122908 | GII.6-GII.7MI-29Jan2014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| LC122909 | GII.6-GII.P7EH-18Jan2014\_2014 | 2014 | Japan: Ehime | GII.P7 |
| LC122910 | GII.6-GII.P7EH-19Apr2014\_2014 | 2014 | Japan: Ehime | GII.P7 |
| LC122900 | GII.6-GII.P7HI-33Mar2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122899 | GII.6-GII.P7HI-34Mar2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122903 | GII.6-GII.P7HI-35Apr2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122912 | GII.6-GII.P7HI-36Apr2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122904 | GII.6-GII.P7HI-37May2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122905 | GII.6-GII.P7HI-38May2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122906 | GII.6-GII.P7HI-39Jun2014\_2014 | 2014 | Japan: Hiroshima | GII.P7 |
| LC122911 | GII.6-GII.P7HO-39Jun2014\_2014 | 2014 | Japan: Hokkaido | GII.P7 |
| LC122902 | GII.6-GII.P7KA-16Jan2014\_2014 | 2014 | Japan: Kanagawa | GII.P7 |
| LC122907 | GII.6-GII.P7KA-17Feb2014\_2014 | 2014 | Japan: Kanagawa | GII.P7 |
| LC760148 | GII.6-GII.P7KA-592014\_2014 | 2014 | Japan: Kanagawa | GII.P7 |
| LC760149 | GII.6-GII.P7KA-812014\_2014 | 2014 | Japan: Kanagawa | GII.P7 |
| LC760150 | GII.6-GII.P7MI-672014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| LC670151 | GII.6-GII.P7MI-682014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| HQ169542 | HQ169542.2\_Norovirus\_HuGII.618 | 2005 | USA | GII.P6 |
| LC670152 | GII.6-GII.P7MI-692014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| JX989075 | JX989075.1\_Norovirus\_HuGII.6GZ | 2011 | China | GII.P6 |
| LC670153 | GII.6-GII.P7MI-702014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| LC670154 | GII.6-GII.P7MI-712014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| LC670155 | GII.6-GII.P7MI-732014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| LC670156 | GII.6-GII.P7MI-742014\_2014 | 2014 | Japan: Miyagi | GII.P7 |
| LC670159 | GII.6-GII.P7OS-1112014\_2014 | 2014 | Japan | GII.P7 |
| LC670160 | GII.6-GII.P7OS-1132014\_2014 | 2014 | Japan | GII.P7 |
| LC670161 | GII.6-GII.P7OS-1142014\_2014 | 2014 | Japan | GII.P7 |
| LC670162 | GII.6-GII.P7OS-1322014\_2014 | 2014 | Japan | GII.P7 |
| LC670163 | GII.6-GII.P7OS-2282014\_2014 | 2014 | Japan | GII.P7 |
| LC670164 | GII.6-GII.P7OS-2482014\_2014 | 2014 | Japan | GII.P7 |
| LC760166 | GII.6-GII.P7SA-1412014\_2014 | 2014 | Japan: Saitama | GII.P7 |
| LC122914 | GII.6-GII.P7SH-5Jan2014\_2014 | 2014 | Japan: Shizuoka | GII.P7 |
| LC122913 | GII.6-GII.P7SH-6Feb2014\_2014 | 2014 | Japan: Shizuoka | GII.P7 |
| LC760169 | GII.6-GII.P7TO-1252014\_2014 | 2014 | Japan: Tochigi | GII.P7 |
| LC760170 | GII.6-GII.P7TO-1272014\_2014 | 2014 | Japan: Tochigi | GII.P7 |
| KM036373 | KM036373.1\_Norovirus\_HuGII.P7G | 2014 | Taiwan | GII.P7 |
| KX268709 | KX268709.1\_Norovirus\_HuGII.P7\_ | 2014 | USA | GII.P7 |
| MF140678 | MF140678.1\_Norovirus\_GII\_strai | 2014 | Netherlands | GII.P7 |
| MF140679 | MF140679.1\_Norovirus\_GII\_strai | 2014 | Netherlands | GII.P7 |
| MF140680 | MF140680.1\_Norovirus\_GII\_strai | 2014 | Netherlands | GII.P7 |
| MH218639 | MH218639.1\_Norovirus\_GII\_isola | 2014 | United Kingdom | GII.P7 |
| MH702288 | MH702288.1\_Norovirus\_GII\_strai | 2014 | Bhutan | GII.P7 |
| MK907786 | MK907786.1\_Norovirus\_GII\_isola | 2014 | France: Nantes | GII.P7 |
| MK907789 | MK907789.1\_Norovirus\_GII\_isola | 2014 | France: Nantes | GII.P7 |
| LC760173 | GII.6-GII.P7MI-752015\_2015 | 2015 | Japan: Miyagi | GII.P7 |
| LC760167 | GII.6-GII.P7SA-1422015\_2015 | 2015 | Japan: Saitama | GII.P7 |
| KU935739 | KU935739.1\_Norovirus\_GII\_isola | 2015 | China | GII.P7 |
| KX158281 | KX158281.1\_Norovirus\_GII\_strai | 2015 | Canada | GII.P7 |
| MG571778 | MG571778.1\_Norovirus\_GII.6\_clo | 2015 | Venezuela | GII.P7 |
| MH218640 | MH218640.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218641 | MH218641.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218642 | MH218642.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218643 | MH218643.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218644 | MH218644.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218645 | MH218645.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218650 | MH218650.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218666 | MH218666.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218667 | MH218667.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218673 | MH218673.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MH218719 | MH218719.1\_Norovirus\_GII\_isola | 2015 | United Kingdom | GII.P7 |
| MN248514 | MN248514.1\_Norovirus\_GII\_isola | 2015 | Belgium | GII.P7 |
| NC\_040876 | NC\_040876.1\_Norovirus\_GII.P7\_G | 2015 | United Kingdom | GII.P7 |
| MF802550 | MF802550.1\_Norovirus\_GII\_isola | 2016 | China: Nanjing | GII.P7 |
| MG557654 | MG557654.1\_Norovirus\_GII\_isola | 2016 | Ethiopia | GII.P7 |
| MH218687 | MH218687.1\_Norovirus\_GII\_isola | 2016 | United Kingdom | GII.P7 |
| MH702284 | MH702284.1\_Norovirus\_GII\_strai | 2016 | Cambodia | GII.P7 |
| MH702286 | MH702286.1\_Norovirus\_GII\_strai | 2016 | Cambodia | GII.P7 |
| MH260487 | MH260487.1\_Norovirus\_GII\_isola | 2017 | USA | GII.P7 |
| MH260510 | MH260510.1\_Norovirus\_GII\_isola | 2017 | USA | GII.P7 |
| MH279824 | MH279824.1\_Norovirus\_GII\_strai | 2017 | USA | GII.P7 |
| MH791993 | MH791993.1\_Norovirus\_GII\_isola | 2017 | USA | GII.P7 |
| MK301293 | MK301293.1\_Norovirus\_GII\_isola | 2018 | USA | GII.P7 |
| MK956198 | MK956198.1\_Norovirus\_GII\_isola | 2018 | France: Nantes | GII.P7 |
| MK956199 | MK956199.1\_Norovirus\_GII\_isola | 2018 | France: Nantes | GII.P7 |