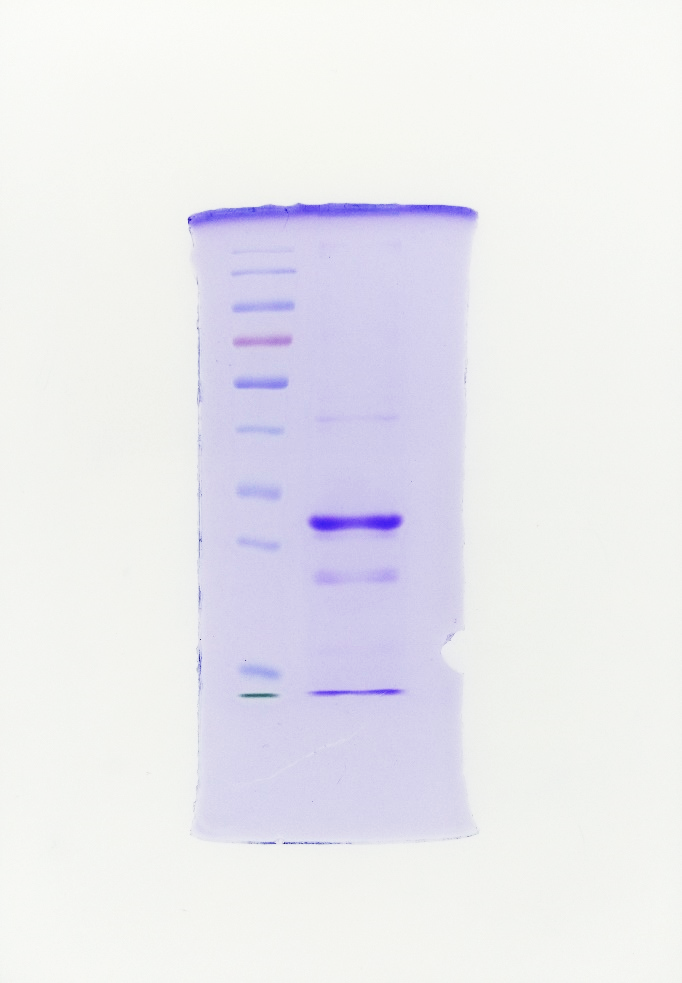
**Supplemental Table S1.** Geographical distribution of 283 clinical samples from Zhejiang province of China and PCV3 prevalence as detected by qPCR

|  |  |  |  |
| --- | --- | --- | --- |
| Areas | No. of samples | No. of positive samples | Positive rate (%) |
| Hangzhou | 129 | 81 | 62.8 |
| Huzhou | 8 | 3 | 37.5 |
| Jinhua | 50 | 40 | 80.0 |
| Jiaxing | 12 | 10 | 83.3 |
| Lishui | 8 | 3 | 37.5 |
| Ningbo | 19 | 12 | 63.2 |
| Quzhou | 29 | 21 | 72.4 |
| Shaoxing | 21 | 14 | 66.7 |
| Zhoushan | 7 | 6 | 85.7 |
|  |  |  |  |
| Total | 283 | 190 | 67.1 |

70



Cap

M

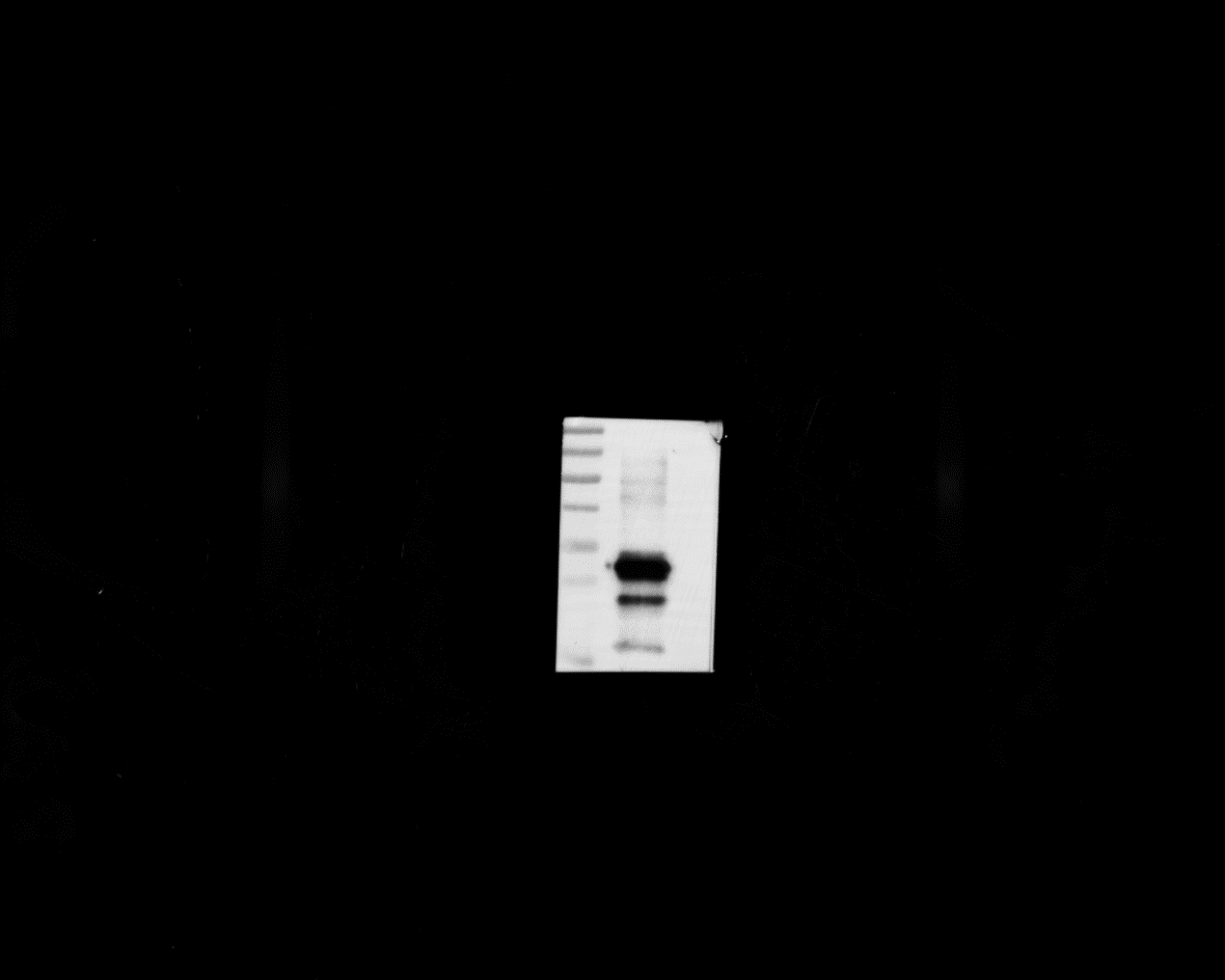
55

40

35

25

**A**



70

Cap

M

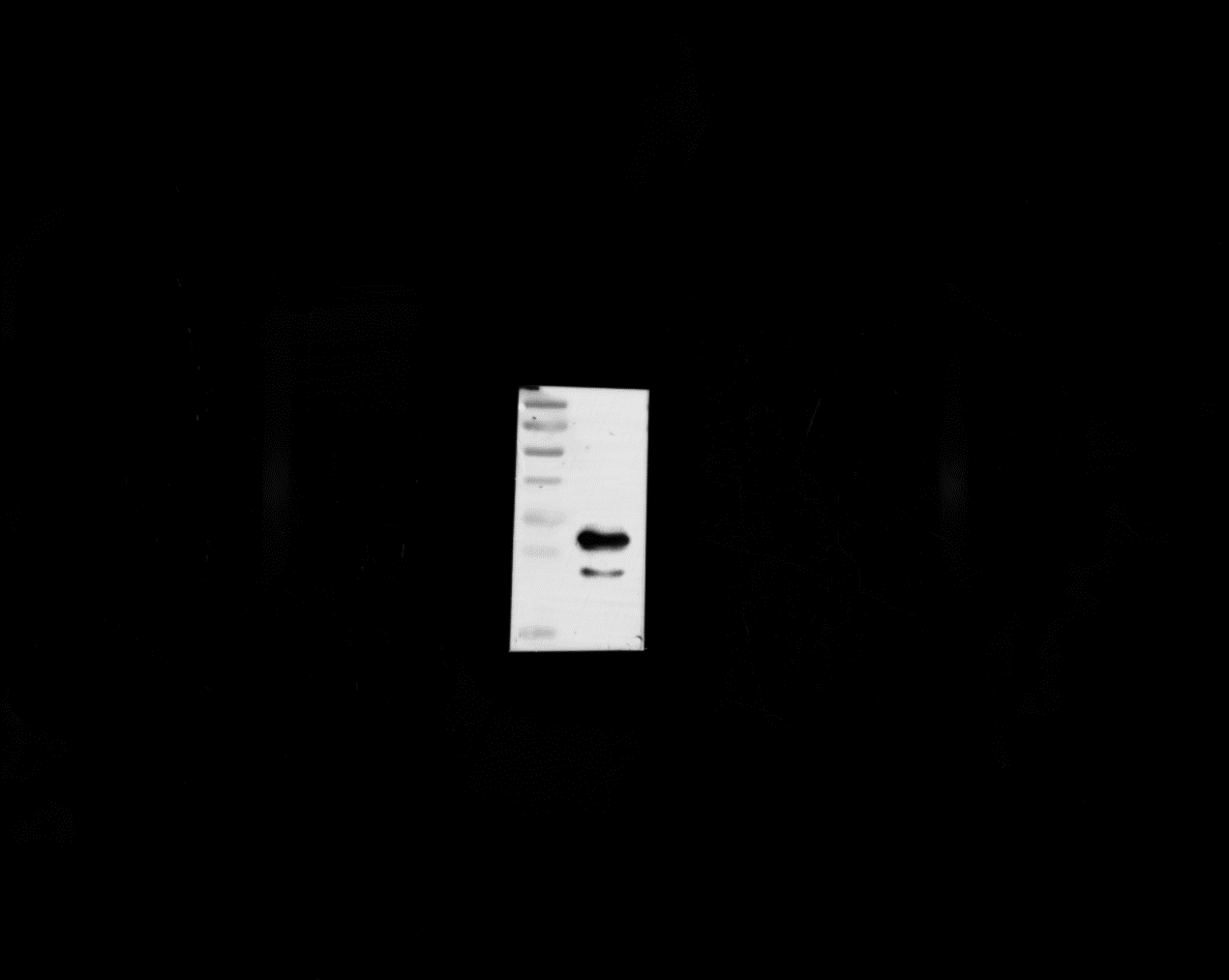
55

40

35

25

**B**



70

Cap

M

55

40

35

25

**C**

**Supplemental Figure S1**: Identification of PCV3 capsid protein in *E. coli* by SDS-PAGE (A) and Western blotting using rabbit anti-PCV3-capsid serum (B) and mouse anti-His monoclonal antibody (C).

M: protein marker in KDa. Cap: PCV3-capsid protein purified by Ni2+-NTA affinity column.

**Supplemental Table S2**. Evaluation of the in-house specificity of the indirect ELISA using PCV3 capsid protein as the coating antigen for differential detection of PCV3 and PCV2 antibodies in 30 PCV2-positive and 30 PCV3 positive serum samples.

|  |  |  |  |
| --- | --- | --- | --- |
| Serum samples | OD450nm | | |
| PCV2-Cap |  | PCV3 Cap |
| PCV2-positive (n=30) | 1.43 ± 0.05 |  | 0.18 ± 0.01 |
| PCV3-positive (n=30) | 0.203 ± 0.01 |  | 0.75 ± 0.03 |

**Supplemental Table S3.** Geographical distribution of pig serum samples from Zhejiang province of China and sero-prevalence of PCV3 infection as determined by indirect ELISA.

|  |  |  |  |
| --- | --- | --- | --- |
| Areas | No. of samples | No. of positive samples | Positive rate (%) |
| Hangzhou | 872 | 531 | 60.9 |
| Huzhou | 111 | 56 | 50.5 |
| Lishui | 49 | 26 | 53.1 |
| Ningbo | 1036 | 515 | 49.7 |
| Quzhou | 222 | 76 | 34.2 |
| Wenzhou | 55 | 30 | 54.5 |
|  |  |  |  |
| Total | 2345 | 1234 | 52.6 |

**Supplemental Table S4**: PCV3 strains used for sequence alignment and phylogenetic analysis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Strain Name** | **GenBank**  **Accession No.** | **Country** | **Collection Date** |
| 1 | PCV3-BR/RS/6 | MF079253 | Brazil | 2016 |
| 2 | PCV3-BR/RS/8 | MF079254 | Brazil | 2016 |
| 3 | PCV3/CN/Anhui-14/201611 | MF084994 | China | 2016 |
| 4 | PCV3/CN/Chongqing-147/2016 | KY075990 | China | 2016 |
| 5 | PCV3/CN/Chongqing-148/2016 | KY075991 | China | 2016 |
| 6 | PCV3/CN/Chongqing-150/2016 | KY075992 | China | 2016 |
| 7 | PCV3/CN/Chongqing-155/2016 | KY075993 | China | 2016 |
| 8 | PCV3/CN/Chongqing-156/2016 | KY075994 | China | 2016 |
| 9 | PCV3/CN/Chongqing-16/2016 | KY354050 | China | 2016 |
| 10 | PCV3/CN/Chongqing-17/2016 | KY354051 | China | 2016 |
| 11 | PCV3/CN/Chongqing-18/2016 | KY354052 | China | 2016 |
| 12 | PCV3/CN/Chongqing-20/2016 | KY354053 | China | 2016 |
| 13 | PCV3/CN/Fujian-5/2016 | KY075986 | China | 2016 |
| 14 | PCV3/CN/Fujian-12/2016 | KY075987 | China | 2016 |
| 15 | PCV3/CN/Fujian-1/2016 | KY354043 | China | 2016 |
| 16 | PCV3/CN/Fujian-2/2016 | KY354044 | China | 2016 |
| 17 | PCV3/CN/Fujian-FZ/2015 | MF589108 | China | 2015 |
| 18 | PCV3/CN/Fujian-HWK1/2016 | MF589109 | China | 2016 |
| 19 | PCV3/CN/Fujian-HWK2/2016 | MF589110 | China | 2016 |
| 20 | PCV3/CN/Fujian-KP1/2016 | MF589111 | China | 2016 |
| 21 | PCV3/CN/Guangdong-52/2016 | KY354067 | China | 2016 |
| 22 | PCV3-China/GD2016 | KY418606 | China | 2016 |
| 23 | PCV3/CN/GDLC1/2016 | MF069115 | China | 2016 |
| 24 | PCV3/CN/GDHE2/2016 | MF069116 | China | 2016 |
| 25 | PCV3/CN/GDBL1/2017 | MF405272 | China | 2017 |
| 26 | PCV3/CN/Guangdong-HY1/2016 | MF589102 | China | 2016 |
| 27 | PCV3/CN/Guangdong-HZ4/2015 | MF589103 | China | 2015 |
| 28 | PCV3/CN/Guangdong-MX3/2015 | MF589104 | China | 2015 |
| 29 | PCV3/CN/Guangdong-CH/2016 | MF589112 | China | 2016 |
| 30 | PCV3/CN/Guangdong-GZ/2017 | MF589113 | China | 2017 |
| 31 | PCV3/CN/Guangdong-HY/2016 | MF589114 | China | 2016 |
| 32 | PCV3/CN/Guangdong-JM1/2016 | MF589115 | China | 2017 |
| 33 | PCV3/CN/Guangdong-MX1/2016 | MF589116 | China | 2016 |
| 34 | PCV3/CN/Guangdong-SG/2016 | MF589117 | China | 2016 |
| 35 | PCV3/CN/Guangdong-X1/2016 | MF589118 | China | 2016 |
| 36 | PCV3-China/GX2016-1 | MF155641 | China | 2016 |
| 37 | PCV3/CN/Guangxi002/2017 | MF374971 | China | 2017 |
| 38 | PCV3/CN/Guangxi003/2017 | MF374972 | China | 2017 |
| 39 | PCV3/CN/Guangxi004/2017 | MF374973 | China | 2017 |
| 40 | PCV3/CN/Guangxi005/2017 | MF374974 | China | 2017 |
| 41 | PCV3/CN/GuangxiBB01/2017 | MF374975 | China | 2017 |
| 42 | PCV3/CN/GuangxiBB02/2017 | MF374976 | China | 2017 |
| 43 | PCV3/CN/GuangxiNNLQ/2017 | MF374977 | China | 2017 |
| 44 | PCV3/CN/GuangxiNNWM/2017 | MF374978 | China | 2017 |
| 45 | PCV3/CN/GuangxiWM03/2017 | MF374980 | China | 2017 |
| 46 | PCV3/CN/Guangxi001/2017 | MF383379 | China | 2017 |
| 47 | PCV3/CN/GXHJ1/2017 | MF405273 | China | 2017 |
| 48 | PCV3/CN/GXLJ2/2017 | MF405274 | China | 2017 |
| 49 | PCV3/CN/GXLJ1/2017 | MF405276 | China | 2017 |
| 50 | PCV3/CN/GXHJ2/2017 | MF405277 | China | 2017 |
| 51 | PCV3/CN/Guangxi-L2/2017 | MF589119 | China | 2017 |
| 52 | PCV3/CN/Guangxi-LD4/2016 | MF589120 | China | 2016 |
| 53 | PCV3/CN/Guangxi-LD5/2016 | MF589121 | China | 2016 |
| 54 | PCV3/CN/Guangxi-NK/2015 | MF589122 | China | 2015 |
| 55 | PCV3/CN/Guangxi-WZ/2016 | MF589123 | China | 2016 |
| 56 | PCV3/CN/Hainan001/2017 | MF496982 | China | 2017 |
| 57 | PCV3/CN/Hebei-33/2016 | KY354060 | China | 2016 |
| 58 | PCV3/CN/Hebei-34/2016 | KY354061 | China | 2016 |
| 59 | PCV3/CN/Henan-13/2016 | KY075988 | China | 2016 |
| 60 | PCV3/CN/Henan-3/2016 | KY354045 | China | 2016 |
| 61 | PCV3/CN/Henan-32/2016 | KY354059 | China | 2016 |
| 62 | CN/Hubei-618/2016 | KY354039 | China | 2016 |
| 63 | PCV3/CN/Hubei-39/2016 | KY354062 | China | 2016 |
| 64 | PCV3/CN/Hubei-41/2016 | KY354063 | China | 2016 |
| 65 | PCV3/CN/Hubei-57/2016 | KY354068 | China | 2016 |
| 66 | PCV3/CN/Hubei-58/2016 | KY354069 | China | 2016 |
| 67 | PCV3/CN/Hubei-59/2016 | KY354070 | China | 2016 |
| 68 | PCV3/CN/Hubei-60/2016 | KY354071 | China | 2016 |
| 69 | PCV3/CN/Hubei-61/2016 | KY354072 | China | 2016 |
| 70 | PCV3/CN/Hunan-22/2016 | KY354054 | China | 2016 |
| 71 | PCV3/CN/Hunan-B8/2016 | MF589124 | China | 2016 |
| 72 | PCV3/CN/Hunan-CD33/2016 | MF589125 | China | 2016 |
| 73 | PCV3/CN/Hunan-CZ/2017 | MF589126 | China | 2017 |
| 74 | PCV3/CN/Hunan-HWF2/2017 | MF589127 | China | 2017 |
| 75 | PCV3/CN/Hunan-HWF3/2017 | MF589128 | China | 2017 |
| 76 | PCV3/CN/Hunan-XHD2/2016 | MF589129 | China | 2016 |
| 77 | PCV3/CN/Jiangxi-62/2016 | KY075989 | China | 2016 |
| 78 | PCV3/CN/Jiangxi-13/2016 | KY354048 | China | 2016 |
| 79 | PCV3/CN/Jiangxi-15/2016 | KY354049 | China | 2016 |
| 80 | PCV3/CN/Jiangxi-28/2016 | KY354057 | China | 2016 |
| 81 | PCV3/CN/Jiangxi-29/2016 | KY354058 | China | 2016 |
| 82 | PCV3/CN/Jiangxi-49/2016 | KY354065 | China | 2016 |
| 83 | PCV3/CN/Jiangxi-50/2016 | KY354066 | China | 2016 |
| 84 | PCV3/CN/Jiangxi-3/2016 | MF589106 | China | 2016 |
| 85 | PCV3/CN/Jiangxi-B1/2017 | MF589107 | China | 2017 |
| 86 | PCV3/CN/Jiangxi-1/2016 | MF589130 | China | 2016 |
| 87 | PCV3/CN/Jiangxi-G1/2016 | MF589131 | China | 2016 |
| 88 | PCV3/CN/Jiangxi-QN3/2016 | MF589132 | China | 2016 |
| 89 | PCV3/CN/Jiangxi-S1/2017 | MF589133 | China | 2017 |
| 90 | PCV3/CN/Jiangxi-XY/2017 | MF589134 | China | 2017 |
| 91 | PCV3/CN/Liaoning-12/2016 | KY354047 | China | 2016 |
| 92 | PCV3/CN/Liaoning-23/2016 | KY354055 | China | 2016 |
| 93 | PCV3/CN/Liaoning-24/2016 | KY354056 | China | 2016 |
| 94 | PCV3/CN/Shandong-1/201703 | KY778776 | China | 2017 |
| 95 | PCV3/CN/Shandong-2/201703 | KY778777 | China | 2017 |
| 96 | CHN\_Shanghai\_0706\_2016 | KY865242 | China | 2016 |
| 97 | CHN\_Shanghai\_0708\_2016 | KY865243 | China | 2016 |
| 98 | Porcine circovirus 3 isolate JL11-1996 | MG650179 | China | 1996 |
| 99 | Porcine circovirus 3 isolate HuN3-1998 | MG650178 | China | 1998 |
| 100 | Porcine circovirus 3 isolate GX13-1999 | MG650177 | China | 1999 |
| 101 | Porcine circovirus 3 isolate QH1-1998 | MG650180 | China | 1998 |
| 102 | Porcine circovirus 3 isolate 4332-7\_Denmark\_2017 | MF805724 | Denmark | 2017 |
| 103 | Porcine circovirus 3 isolate 4332-5\_Denmark\_2017 | MF805723 | Denmark | 2017 |
| 104 | DE3.7 | MG014362 | Germany | 2015 |
| 105 | DE4.3 | MG014363 | Germany | 2015 |
| 106 | DE7.3 | MG014364 | Germany | 2015 |
| 107 | DE13.20 | MG014365 | Germany | 2015 |
| 108 | DE18.2 | MG014366 | Germany | 2015 |
| 109 | DE19.15 | MG014367 | Germany | 2015 |
| 110 | DE23.17 | MG014368 | Germany | 2015 |
| 111 | DE26.17 | MG014369 | Germany | 2015 |
| 112 | DE27.16 | MG014370 | Germany | 2015 |
| 113 | DE34.5 | MG014371 | Germany | 2015 |
| 114 | DE41.16 | MG014372 | Germany | 2015 |
| 115 | DE48.7 | MG014373 | Germany | 2015 |
| 116 | DE52.18 | MG014374 | Germany | 2015 |
| 117 | DE53.8 | MG014375 | Germany | 2015 |
| 118 | DE55.1 | MG014376 | Germany | 2015 |
| 119 | DE2.8 | MG014377 | Germany | 2015 |
| 120 | DE5.15 | MG014378 | Germany | 2015 |
| 121 | DE6.1 | MG014379 | Germany | 2015 |
| 122 | DE12.19 | MG014380 | Germany | 2015 |
| 123 | DE14.15 | MG014381 | Germany | 2015 |
| 124 | DE15.19 | MG014382 | Germany | 2015 |
| 125 | DE17.20 | MG014383 | Germany | 2015 |
| 126 | DE28.12 | MG014384 | Germany | 2015 |
| 127 | DE31.17 | MG014385 | Germany | 2015 |
| 128 | Porcine circovirus 3 strain PCV3-RU/SM17 | MG679917 | Russia | 2017 |
| 129 | Porcine circovirus 3 strain PCV3-RU/TY17 | MG679916 | Russia | 2017 |
| 130 | PCV3/KU-1601 | KY996337 | South Korea | 2016 |
| 131 | PCV3/KU-1602 | KY996338 | South Korea | 2016 |
| 132 | PCV3/KU-1603 | KY996339 | South Korea | 2016 |
| 133 | PCV3/KU-1604 | KY996340 | South Korea | 2016 |
| 134 | PCV3/KU-1605 | KY996341 | South Korea | 2016 |
| 135 | PCV3/KU-1606 | KY996342 | South Korea | 2016 |
| 136 | PCV3/KU-1607 | KY996343 | South Korea | 2016 |
| 137 | PCV3/KU-1608 | KY996344 | South Korea | 2016 |
| 138 | PCV3/KU-1609 | KY996345 | South Korea | 2016 |
| 139 | Porcine circovirus 3 strain 16R927/2016 | MF063071 | South Korea | 2016 |
| 140 | Porcine circovirus 3 strain P1705SCYC/2017 | MF063070 | South Korea | 2017 |
| 141 | Porcine circovirus 3 isolate CBNU-VDC160714 | MF631813 | South Korea | 2017 |
| 142 | Porcine circovirus 3 isolate CBNU-VDC160753 | MF631811 | South Korea | 2017 |
| 143 | Porcine circovirus 3 isolate CBNU-VDC160924 | MF631807 | South Korea | 2017 |
| 144 | Porcine circovirus 3 isolate CBNU-VDC160984 | MF631804 | South Korea | 2017 |
| 145 | Porcine circovirus 3 isolate CBNU-VDC170046 | MF631803 | South Korea | 2017 |
| 146 | Porcine circovirus 3 isolate SJ | MF448446 | South Korea | 2017 |
| 147 | Porcine circovirus 3 isolate IH | MF448445 | South Korea | 2017 |
| 148 | Porcine circovirus 3 strain PCK3-1703 | MF611878 | South Korea | 2017 |
| 149 | Porcine circovirus 3 strain PCK3-1702 | MF611877 | South Korea | 2017 |
| 150 | Porcine circovirus 3 strain PCK3-1701 | MF611876 | South Korea | 2017 |
| 151 | Porcine circovirus 3 isolate 737-8 | MF805720 | Spain | 2017 |
| 152 | PCV3-IT/CO2017 | MF162298 | Ttaly | 2017 |
| 153 | PCV3-IT/MN2017 | MF162299 | Ttaly | 2017 |
| 154 | Porcine circovirus 3 isolate 4289 | MF805722 | Italy | 2016 |
| 155 | Porcine circovirus 3 isolate 32941 | MF805721 | Italy | 2016 |
| 156 | Porcine circovirus 3 isolate 1621 | MF805719 | Italy | 2017 |
| 157 | PCV3/Thailand/PB01/17 | MG310152 | Thailand | 2017 |
| 158 | 2164 | KX458235 | USA | 2015 |
| 159 | 29160 | KT869077 | USA | 2015 |
| 160 | PCV3-US/MN2016 | KX898030 | USA | 2016 |
| 161 | PCV3-US/MO2015 | KX778720 | USA | 2015 |
| 162 | PCV3-US/SD2016 | KX966193 | USA | 2016 |