

S1 Table. Camel sample and genera of mammalian viruses detected (from a five animal market in UAE)

| Sample ID | Age       | Sex    | Origin | Pos | MERS-CoV Ct | Total no of reads (million) | Index seq 1 | Index seq 2 | NGS lane no. | NGS results   |  |
|-----------|-----------|--------|--------|-----|-------------|-----------------------------|-------------|-------------|--------------|---|--|
|           |           |        |        |     |             |                             |             |             |              | Viruses* detected (no. of reads, genome coverage)   |  |
| B1        | 1Year     | Male   | UAE    | L42 | 31.22       | 10.19                       | GAGATTC     | TAATCTA     | 1            | Alphacoronavirus (2.05%), MERS-CoV (16.49%)   |  |
| B2        | 1Year     | Male   | UAE    | L42 | 22.12       | 1.54                        | GGGGCC      |             | 1            | Alphacoronavirus (24.1316%), MERS-CoV (512.7559%)   |  |
| B4        | 2-3 Years | Female | UAE    | L49 | 18.88       | 9.44                        | AGCCGATC    | AGCCGATC    | 1            | Alphacoronavirus (6.2248%), MERS-CoV (10768.9928%), Orthohexavirus (4.019%)   |  |
| B5        | 2-3 Years | Male   | UAE    | L49 | 28.85       | 8.02                        | GAGATTC     | GCCTTGA     | 1            | Alphacoronavirus (4.330%), MERS-CoV (47.121%)   |  |
| B6        | 2-3 Years | Male   | UAE    | L50 | 31.26       | 11.19                       | GAGATTC     | CCTATCC     | 1            | MERS-CoV (38.70%), Gemmavirus (13.36%), Orthohexavirus (2.011%)   |  |
| B7        | 2-3 Years | Male   | UAE    | L50 | 30.95       | 8.39                        | GAGATTC     | ATAGAGC     | 1            | Alphacoronavirus (24.634%), MERS-CoV (203.3660%), camel coronavirus HKU2157 (12.68%), Gemmavirus (5.878%), Orthohexavirus (3.017%)  |  |
| B8        | 2-3 Years | Female | UAE    | L50 | 37.07       | 9.00                        | ATTCGA      |             | 1            | MERS-CoV (63.85%)   |  |
| B9        | 1Year     | Female | UAE    | L54 | 32          | 8.43                        | GAGATTC     | TATAGCC     | 1            | Alphacoronavirus (8.589%), MERS-CoV (198.4798%), camel coronavirus HKU213 (0.92%), Gemmavirus (288.5021%)   |  |
| B10       | 1Year     | Female | UAE    | L54 | 18.62       | 8.26                        | GCCTCAT     | GTACTGC     | 1            | MERS-CoV (23369.9985%), Gemmavirus (38.7083%)   |  |
| B11       | 1Year     | Female | UAE    | L55 | 29.11       | 1.44                        | GTGAAA      |             | 1            | MERS-CoV (49.01%)   |  |
| B12       | 3Months   | Female | OMAN   | L56 | 24.99       | 1.78                        | GTTCGG      |             | 1            | Alphacoronavirus (187924.9999%), MERS-CoV (21416.9991%)   |  |
| B13       | 3Months   | Female | OMAN   | L56 | 29.77       | 2.38                        | GCCTGC      |             | 1            | Alphacoronavirus (105.742%), MERS-CoV (1197.9531%), camel coronavirus HKU21 (1705.9306%)  |  |
| B14       | 6-9Months | Female | UAE    | L57 | 29.19       | 8.31                        | CCCTCAT     | CAGGACT     | 1            | Alphacoronavirus (54.1502%), MERS-CoV (89.2202%), Gemmavirus (51.4671%)   |  |
| B15       | 6-9Months | Female | UAE    | L57 | 32.22       | 1.23                        | CCCTCAT     | TAATCTA     | 1            | Alphacoronavirus (4.104%), MERS-CoV (13.452%), camel coronavirus HKU214 (1.72%), Gemmavirus (191.9910%), Orthohexavirus (4.020%), Respirovirus (5.239%)                               |  |
| B16       | 6-9Months | Female | UAE    | L57 | 33.29       | 9.26                        | CCCTCAT     | AGCCGAG     | 1            | Alphacoronavirus (4.113%), MERS-CoV (19.565%), Gemmavirus (519.10010%), Orthohexavirus (2.006%)   |  |
| B17       | 6-9Months | Male   | UAE    | L59 | 31.82       | 11.68                       | CCCTCAT     | GCCTTGA     | 1            | Alphacoronavirus (4.129%), MERS-CoV (8.251%), camel coronavirus HKU21 (1.038%), Bocarivirus (5.387%), Gemmavirus (7.385%)   |  |
| B18       | 6-9Months | Male   | UAE    | L59 | 31.83       | 10.85                       | CCCTCAT     | CCTATCC     | 1            | Alphacoronavirus (2.0271%), MERS-CoV (4.122%), Gemmavirus (5.193%)  |  |
| B19       | 6-9Months | Male   | UAE    | L59 | 31.09       | 7.76                        | CCCTCAT     | ATAGAGC     | 1            | Alphacoronavirus (12.433%), MERS-CoV (10.301%), Bocarivirus (2.330%), Gemmavirus (38.2052%), Orthohexavirus (1.006%)  |  |
| B20       | 4Months   | Male   | OMAN   | L94 | 26.82       | 5.56                        | CCCTCAT     | TATAGCC     | 1            | Alphacoronavirus (11.278%), MERS-CoV (2657.9729%), Dependovirus (2.266%)  |  |
| B21       | 4Months   | Male   | OMAN   | L94 | 27.74       | 11.62                       | TCGCGAGA    | GTACTGC     | 1            | Alphacoronavirus (1.0478%), MERS-CoV (16.858%)  |  |
| B22       | 4Months   | Male   | OMAN   | L94 | 29.47       | 8.42                        | TCGCGAGA    | CAGGACT     | 1            | Alphacoronavirus (21.615%), MERS-CoV (99.2340%), camel coronavirus HKU213 (12.32%), Bocarivirus (13.2054%)  |  |
| B23       | 4Months   | Male   | OMAN   | L94 | 23.55       | 10.24                       | TCGCGAGA    | TAATCTA     | 1            | Alphacoronavirus (18.757%), MERS-CoV (5.170%)   |  |
| B24       | 4Months   | Male   | OMAN   | L94 | 22.29       | 7.77                        | TCGCGAGA    | AGCCGAG     | 1            | Alphacoronavirus (4.149%), MERS-CoV (44.1088%), Respirovirus (5.236%)   |  |
| B25       | 7years    | Male   | UAE    | L91 | 31.4        | 12.32                       | TCGCGAGA    | GCCTTGA     | 1            | Alphacoronavirus (4.095%), MERS-CoV (9.211%), Gemmavirus (3.905%), Respirovirus (1.051%)  |  |
| B26       | 2-6 Years | Male   | UAE    | L90 | 21.75       | 7.64                        | TCGCGAGA    | CCTATCC     | 1            | Alphacoronavirus (1.045%), MERS-CoV (3309.9913%)  |  |
| B27       | 2-6 Years | Male   | UAE    | L90 | 22.54       | 10.69                       | TCGCGAGA    | ATAGAGC     | 1            | Alphacoronavirus (85.2467%), MERS-CoV (11.119%), Bocarivirus (5.746%), Gemmavirus (10.3369%)  |  |
| B28       | 4Years    | Female | UAE    | L86 | 22.23       | 10.99                       | TCGCGAGA    | TATAGCC     | 1            | Alphacoronavirus (5.145%), MERS-CoV (83.2049%)  |  |
| B29       | 1Month    | Male   | UAE    | L85 | 32.2        | 4.90                        | ATATCGG     | GTACTGC     | 1            | Alphacoronavirus (11.399%), MERS-CoV (9.318%), Bocarivirus (23.241%), Dependovirus (44.5779%), Respirovirus (4.209%)  |  |
| B30       | 6Years    | Female | UAE    | L82 | 32.5        | 9.68                        | ATATCGG     | CAGGACT     | 1            | Alphacoronavirus (4357.9672%), MERS-CoV (1108.3144%), Gemmavirus (1407.3425%), Respirovirus (44.1180%)  |  |
| B31       | 1Months   | Male   | UAE    | L80 | 33.24       | 5.06                        | TAATCTA     |             | 1            | Alphacoronavirus (2969.9618%), MERS-CoV (104.17%), Respirovirus (2.382%)  |  |
| B32       | 4Months   | Male   | UAE    | L80 | 33.24       | 5.06                        | ATATCGG     | AGCCGAG     | 1            | Alphacoronavirus (15.438%), MERS-CoV (29.794%), Respirovirus (1302.8641%)   |  |
| B33       | 6Months   | Male   | OMAN   | L78 | 28.5        | 1.40                        | GGGGCC      |             | 1            | Alphacoronavirus (230.9656%), MERS-CoV (660.7537%)  |  |
| B34       | 6Months   | Female | OMAN   | L78 | 31.94       | 5.42                        | ATATCGG     | GCCTTGA     | 1            | Alphacoronavirus (15.1072%), MERS-CoV (13.160%)   |  |
| B35       | 3Months   | Female | OMAN   | L78 | 32.9        | 5.51                        | ATATCGG     | CCCTCAT     | 1            | Alphacoronavirus (105.2923%), MERS-CoV (29.880%), Respirovirus (3.277%)   |  |
| B36       | 4Months   | Male   | UAE    | L74 | 33.29       | 9.38                        | ATATCGG     | ATAGAGC     | 1            | Alphacoronavirus (35.1018%), MERS-CoV (22.573%), Gemmavirus (9.3029%)   |  |
| B37       | <1 year   | Male   | OMAN   | 77  | 19.29       | 4.48                        | ATATCGG     | TATAGCC     | 1            | Alphacoronavirus (63724.9999%), MERS-CoV (2609.9989%), Gemmavirus (2.526%)  |  |
| B38       | <1 year   | Male   | OMAN   | 77  | 22.53       | 8.20                        | GAATTCG     | CCCTCAT     | 1            | Alphacoronavirus (99752.1000%), MERS-CoV (2379.9978%)   |  |
| B39       | <1 year   | Male   | OMAN   | 77  | 24.07       | 13.73                       | GAATTCG     | CCCTCAT     | 2            | Alphacoronavirus (91548.9996%), MERS-CoV (5601.9912%), Mamastrovirus (2.209%)   |  |
| B40       | <1 year   | Male   | OMAN   | 77  | 24.98       | 4.58                        | GAATTCG     | ATAGAGC     | 1            | Alphacoronavirus (3376.9942%), MERS-CoV (119.2469%)   |  |
| B41       | <1 year   | Male   | OMAN   | 77  | 29.27       | 8.79                        | GTTCGG      |             | 1            | Alphacoronavirus (18.659%), camel coronavirus HKU213 (18.659%), Bocarivirus (5888.8729%)  |  |
| B42       | <1 year   | Male   | UAE    | 56  | 27.81       | 2.11                        | GATTCG      |             | 1            | Alphacoronavirus (40.1955%), MERS-CoV (496.9170%), camel coronavirus HKU213 (10.238%)   |  |
| B43       | <1 year   | Male   | UAE    | 90  | 34.14       | 2.20                        | ACTGAT      |             | 1            | Alphacoronavirus (21.066%), MERS-CoV (4207.9885%)   |  |
| B44       | <1 year   | Male   | UAE    | 88  | 31.37       | 3.32                        | GTACTGC     | TATAGCC     | 1            | Alphacoronavirus (4.273%), MERS-CoV (2.237%), Bocarivirus (2.152%)  |  |
| B45       | <1 year   | Male   | OMAN   | 58  | 20.63       | 2.11                        | ATTCGAA     | GTACTGC     | 1            | Alphacoronavirus (2697.9995%), MERS-CoV (11429.9984%)   |  |
| B46       | >1 year   | Male   | UAE    | 54  | 29.93       | 9.11                        | ATTCGAA     | CAGGACT     | 1            | Alphacoronavirus (211.4411%), MERS-CoV (467.5860%), Gemmavirus (519.5421%)  |  |
| B47       | <1 year   | Male   | UAE    | 53  | 25.03       | 8.20                        | ATTCGAA     | TAATCTA     | 1            | Alphacoronavirus (32473.9992%), MERS-CoV (837.9991%), Gemmavirus (14.2480%)   |  |
| B48       | <1 year   | Female | UAE    | 53  | 23.58       | 3.28                        | ATTCGAA     | AGCCGAG     | 1            | Alphacoronavirus (317.9937%), MERS-CoV (1108.9433%)   |  |
| B49       | <1 year   | Female | UAE    | 58  | 30.79       | 4.09                        | ATTCGAA     | GCCTTGA     | 1            | Alphacoronavirus (177.4412%), MERS-CoV (10.1536%), Respirovirus (2853.9502%)  |  |
| B50       | <1 year   | Male   | UAE    | 55  | 24.8        | 9.24                        | ATTCGAA     | CCTATCC     | 1            | Alphacoronavirus (69249.9998%), MERS-CoV (2594.9987%), camel coronavirus HKU213 (1.20.762%)   |  |
| B51       | <1 year   | Male   | UAE    | 53  | 14.72       | 1.50                        | ATTCGAA     |             | 1            | Alphacoronavirus (1.0478%), MERS-CoV (8.609%), Orthohexavirus (2.0108%), Respirovirus (1.063%)  |  |
| B52       | <1 year   | Male   | UAE    | 49  | 32.47       | 11.41                       | ATTCGAA     | ATAGAGC     | 1            | Alphacoronavirus (52.1435%), MERS-CoV (262.5129%), Bocarivirus (23.358%), Gemmavirus (42.277%)  |  |
| B53       | <1 year   | Male   | UAE    | 42  | 23.36       | 6.54                        | ATTCGAA     |             | 1            | MERS-CoV (1160.9983%), Respirovirus (3.364%)  |  |
| B54       | <1 year   | Female | UAE    | 76  | 32.46       | 2.27                        | GTACTGC     |             | 1            | Alphacoronavirus (1.4808%), MERS-CoV (1.264%), Bocarivirus (3.663%)   |  |
| B55       | <1 year   | Female | UAE    | 76  | 31.94       | 6.56                        | AGGATAG     | CAGGACT     | 2            | Alphacoronavirus (23.210%), MERS-CoV (12.324%), Bocarivirus (14116.2191%), Orthohexavirus (4.015%), Parvovirus (1.009%)   |  |
| B56       | <1 year   | Female | OMAN   | 76  | 25.63       | 12.04                       | AGGATAG     | TAATCTA     | 2            | MERS-CoV (298.5700%), Respirovirus (2.136%)   |  |
| B57       | <1 year   | Male   | OMAN   | 76  | 35.1        | 6.13                        | AGCCGAG     | AGCCGAG     | 2            | MERS-CoV (10.209%), Gemmavirus (3.187%)   |  |
| B58       | <1 year   | Male   | OMAN   | 76  | 33.45       | 9.98                        | AGGATAG     | GCCTTGA     | 2            | Alphacoronavirus (61.445%), MERS-CoV (0.509%), Gemmavirus (83.8602%), Bocarivirus (4.273%)  |  |
| B59       | <1 year   | Male   | OMAN   | 76  | 28.73       | 6.18                        | AGGATAG     | CCTATCC     | 2            | Alphacoronavirus (1972.9479%), MERS-CoV (20.688%), Gemmavirus (1.403%)  |  |
| B60       | <1 year   | Female | OMAN   | 76  | 19.51       | 7.00                        | AGGATAG     | ATAGAGC     | 2            | Alphacoronavirus (24.2810%), MERS-CoV (3189.9896%), camel coronavirus HKU213 (21.444%), Bocarivirus (3.500%), Respirovirus (1.080%)   |  |
| B61       | <1 year   | Female | OMAN   | 76  | 29.48       | 7.00                        | AGGATAG     | GTACTGC     | 2            | Alphacoronavirus (1.4699.9991%), MERS-CoV (11.270%), Gemmavirus (4.1230%)   |  |
| B62       | <1 year   | Male   | UAE    | 76  | 18.6        | 5.60                        | TCTCCGC     | GTACTGC     | 2            | Alphacoronavirus (29018.9998%), MERS-CoV (1648.9972%), Bocarivirus (4.665%), Gemmavirus (2.959%)  |  |
| B63       | <1 year   | Male   | OMAN   | 76  | 19.12       | 4.22                        | TCTCCGC     | CAGGACT     | 2            | Alphacoronavirus (49.1726%), MERS-CoV (4642.9989%), Gemmavirus (3.1039%)  |  |
| B64       | <1 year   | Female | OMAN   | 76  | 22.45       | 8.15                        | TCTCCGC     | TAATCTA     | 2            | Alphacoronavirus (2428.9972%), MERS-CoV (11.016%)   |  |
| B65       | <1 year   | Male   | OMAN   | 76  | 22.47       | 4.47                        | TCTCCGC     | AGCCGAG     | 2            | Alphacoronavirus (3759.9913%), MERS-CoV (16943.9990%), Bocarivirus (47.342%), Gemmavirus (36.452%), Respirovirus (47.1875%)   |  |
| B66       | <1 year   | Female | OMAN   | 76  | 29.46       | 4.58                        | TCTCCGC     | GCCTTGA     | 3            | Alphacoronavirus (5028.9997%), MERS-CoV (9.338%)  |  |
| B67       | <1 year   | Male   | OMAN   | 76  | 17.06       | 3.82                        | TCTCCGC     | CCTATCC     | 3            | Alphacoronavirus (18.414%), MERS-CoV (104.9993%), Gemmavirus (3.1214%)  |  |
| B68       | <1 year   | Male   | OMAN   | 77  | 29.97       | 10.21                       | TCTCCGC     | ATAGAGC     | 3            | Alphacoronavirus (66.174%), MERS-CoV (152.312%), camel coronavirus HKU213 (18.659%), Bocarivirus (3.413%), Gemmavirus (23.2885%), Respirovirus (2.079%)                               |  |
| B69       | <1 year   | Male   | OMAN   | 77  | 19.82       | 8.21                        | TCTCCGC     | TATAGCC     | 3            | Alphacoronavirus (100.2164%), MERS-CoV (287059.992%), camel coronavirus HKU213 (1485.8534%), Respirovirus (9.431%)  |  |
| B70       | <1 year   | Male   | UAE    | 77  | 23.54       | 11.38                       | GAGATTC     | GTACTGC     | 1            | Alphacoronavirus (101.2304%), MERS-CoV (23239.9988%), Gemmavirus (2.1022%), Rotavirus (2.169%)  |  |
| B71       | <1 year   | Female | OMAN   | 77  | 25.97       | 6.45                        | GAGATTC     | CAGGACT     | 1            | Alphacoronavirus (563.5815%), MERS-CoV (8870.9976%), camel coronavirus HKU213 (801.7478%), Bocarivirus (2.242%), Gemmavirus (48.1952%), Orthohexavirus (3.013%)                       |  |
| B72       | >1 year   | Male   | UAE    | 77  | 23.14       | 9.97                        | TCGCGAA     | ATAGAGC     | 1            | Alphacoronavirus (76018.997%), MERS-CoV (1222.9974%), Respirovirus (2.143%)   |  |
| B73       | <1 year   | Male   | OMAN   | 77  | 17.76       | 8.92                        | TCGCGAA     | TATAGCC     | 1            | Alphacoronavirus (998.8638%), MERS-CoV (90802.9990%), Gemmavirus (5.1447%)  |  |
| B74       | <1 year   | Female | OMAN   | 77  | 29.26       | 6.75                        | CCGCTATG    | GTACTGC     | 1            | Alphacoronavirus (69.748%), MERS-CoV (187.343%), Gemmavirus (2.955%)  |  |
| B75       | <1 year   | Male   | OMAN   | 77  | 28.99       | 9.55                        | CCGCTATG    | CAGGACT     | 1            | Alphacoronavirus (215.4329%), MERS-CoV (185.6696%), camel coronavirus HKU213 (108.2080%), Bocarivirus (15.723%)   |  |
| B76       | <1 year   | Male   | OMAN   | 77  | 27.74       | 8.67                        | CCGCTATG    | TAATCTA     | 2            | Alphacoronavirus (33.9511%), MERS-CoV (95.2166%), Bocarivirus (14.100%)   |  |
| B77       | <1 year   | Male   | UAE    | 42  | 29.13       | 12.20                       | CCGCTATG    | AGCCGAG     | 2            | Alphacoronavirus (157.3610%), MERS-CoV (299.4610%), camel coronavirus HKU213 (2.051%), Bocarivirus (13.178%), Gemmavirus (167.2300%), Orthohexavirus (22.1121%), Parvovirus (29.164%) |  |
| B78       | <1 year   | Male   | UAE    | 41  | 30.89       | 6.87                        | CCGCTATG    | GCCTTGA     | 2            | Alphacoronavirus (1468.9189%), MERS-CoV (11.358%)   |  |
| B79       | <1 year   | Male   | OMAN   | 77  | 30.07       | 10.86                       | CCGCTATG    | CCTATCC     | 2            | Alphacoronavirus (91.2528%), MERS-CoV (202.3915%), Bocarivirus (4.746%), Gemmavirus (184.5466%), Parvovirus (4.031%), Respirovirus (2.090%)   |  |
| B80       | <1 year   | Female | OMAN   | 77  | 29.71       | 12.42                       | CCGCTATG    | ATAGAGC     | 2            | Alphacoronavirus (48.3434%), MERS-CoV (63.1741%), Deltapapillomavirus (9.107%), Gemmavirus (4.1062%)  |  |
| B81       | <1 year   | Male   | OMAN   | 77  | 30.97       | 9.60                        | CCGCTATG    | TATAGCC     | 2            | Alphacoronavirus (486.6778%), MERS-CoV (71.147%), Bocarivirus (25.46%), Parvovirus (5.078%)   |  |
| B82       | <1 year   | Male   | OMAN   | 77  | 30.78       | 12.42                       | TAATCTA     | GCCTTGA     | 2            | Alphacoronavirus (31.957%), MERS-CoV (147.787%), Bocarivirus (9.107%), Gemmavirus (11.1640%), Parvovirus (4.033%)   |  |
| B83       | <1 year   | Female | UAE    | 77  | 28.6        | 9.47                        | TAATCTA     | CAGGACT     | 2            | Alphacoronavirus (675.7311%), MERS-CoV (217.887%), camel coronavirus HKU213 (1.109%), Bocarivirus (9.1867%), Gemmavirus (225.2150%), unclassified polyomavirus (53.8066%)             |  |
| B84       | <1 year   | Female |        |     |             |                             |             |             |              |   |  |