**Table S1 Information related to sequences in the gene bank**

| **No.** | **Strain name** | **Collection node** | **Living environment** | **Breed** | **Gender** | **Age** | **Sample source** | **Detection of FCoV based on 3’UTR gene** | **Genotyping of FCoVs based on partial S gene** | | **Genbank accession No. of partial S genes of FCoVs** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Type Ⅰ of FCoV** | **Type Ⅱ of FCoV** |
| 1 | FIPV/HB/WH/2020/74/f2 | Oct-20 | / |  |  |  | ascites | + | + |  | OK236259 |
| 2 | FCoV/HB/WH/2019/10/Zhuangzhuang | Nov-19 | Multi-cat environment | BSH | M | 12M | feces | + |  | + | OK236260 |
| 3 | FCoV/HB/WH/2019/12/Xiaosongshu | Nov-19 | Multi-cat environment | DSH | M | 24M | feces | + | + |  | OK236261 |
| 4 | FCoV/HB/WH/2019/15/Qinqin | Nov-19 | Multi-cat environment | DSH | M | 24M | feces | + | + |  | OK236262 |
| 5 | FCoV/HB/WH/2019/16/Yuanliuliu | Nov-19 | Multi-cat environment | DSH | M | 8M | feces | + | + |  | OK236263 |
| 6 | FCoV/HB/WH/2019/17/Xiaoxiao | May-19 | Multi-cat environment | DSH | M | 24M | feces | + | + |  | OK236264 |
| 7 | FCoV/HB/WH/2019/19/Doudou | Oct-19 | Multi-cat environment | DSH | M | 8M | feces | + | + |  | OK236265 |
| 8 | FCoV/HB/WH/2019/2/Ali | Mar-19 | Multi-cat environment | DSH | F | 36M | feces | + | + |  | OK236266 |
| 9 | FCoV/HB/WH/2019/20/Huli | Apr-19 | Multi-cat environment | DSH | F | 24M | feces | + |  | + | OK236267 |
| 10 | FCoV/HB/WH/2019/24/Wawa | May-19 | Multi-cat environment | BSH | F | 10M | feces | + |  | + | OK236268 |
| 11 | FCoV/HB/WH/2019/31/Aobai | May-19 | Single cat household | ELH | F | 7M | feces | + | + |  | OK236269 |
| 12 | FCoV/HB/WH/2019/33/Erhao | Jun-19 | Multi-cat environment | ESH | M | 3M | feces | + | + |  | OK236270 |
| 13 | FCoV/HB/WH/2019/34/Sanhao | Jun-19 | Multi-cat environment | ESH | F | 3M | feces | + | + |  | OK236271 |
| 14 | FCoV/HB/WH/2019/38/Xiaoliu | Jul-19 | Multi-cat environment | BSH | F | 10M | feces | + | + |  | OK236272 |
| 15 | FCoV/HB/WH/2019/4/Lugouqiao | Mar-19 | Multi-cat environment | DSH | F | 24M | feces | + | + |  | OK236273 |
| 16 | FCoV/HB/WH/2019/43/Miantuan | Jul-19 | Multi-cat environment | DSH | M | 60M | feces | + | + |  | OK236274 |
| 17 | FCoV/HB/WH/2019/5/Jianjian | Mar-19 | Multi-cat environment | DSH | F | 36M | feces | + | + |  | OK236275 |
| 18 | FCoV/HB/WH/2019/50/Dahong | Jul-19 | Multi-cat environment | BSH | F | 33M | feces | + | + |  | OK236276 |
| 19 | FCoV/HB/WH/2019/51/Meimei | Jun-19 | Multi-cat environment | BSH | F | 33M | feces | + | + |  | OK236277 |
| 20 | FCoV/HB/WH/2019/52/Momo | Jul-19 | Multi-cat environment | BSH | F | 3M | feces | + | + |  | OK236278 |
| 21 | FCoV/HB/WH/2019/53/Danxiaogui | Aug-19 | Multi-cat environment | BSH | M | 8M | feces | + | + |  | OK236279 |
| 22 | FCoV/HB/WH/2019/54/Dada | Aug-19 | Multi-cat environment | BSH | M | 8M | feces | + | + |  | OK236280 |
| 23 | FCoV/HB/WH/2019/55/Pangpang | Sep-19 | Multi-cat environment | BSH | M | 7M | feces | + | + |  | OK236281 |
| 24 | FCoV/HB/WH/2019/56/Taotao | Sep-19 | Multi-cat environment | BSH | F | 7M | feces | + | + |  | OK236282 |
| 25 | FCoV/HB/WH/2019/57/Zhuangzhuang2 | Sep-19 | Multi-cat environment | BSH | F | 7M | feces | + | + |  | OK236283 |
| 26 | FCoV/HB/WH/2019/58/Wawa2 | Oct-19 | Multi-cat environment | BSH | F | 7M | feces | + | + |  | OK236284 |
| 27 | FCoV/HB/WH/2019/59/Hei | Oct-19 | Multi-cat environment | DSH | M | 6M | feces | + | + |  | OK236285 |
| 28 | FCoV/HB/WH/2019/6/Xiaohong | Mar-19 | Multi-cat environment | BSH | F | 10M | feces | + | + |  | OK236286 |
| 29 | FCoV/HB/WH/2019/64/Dazhuang | Nov-19 | Multi-cat environment | BSH | M | 24M | feces | + |  | + | OK236287 |
| 30 | FCoV/HB/WH/2019/66/Shan | Nov-19 | Multi-cat environment | ESH | F | 24M | feces | + | + |  | OK236288 |
| 31 | FCoV/HB/WH/2019/7/Lvyan | Apr-19 | Multi-cat environment | DSH | M | 24M | feces | + | + |  | OK236289 |
| 32 | FCoV/HB/WH/2019/8/Xiaohui | Apr-19 | Multi-cat environment | BSH | M | 10M | feces | + |  | + | OK236290 |
| 33 | FIPV/HB/WH/2019/1/Chami | Mar-19 | / | ELH | M | 7M | ascites | + | + |  | OK236291 |
| 34 | FIPV/HB/WH/2019/11/Runtu | Mar-19 | Multi-cat environment | BSH | M | 6M | ascites | + | + |  | OK236292 |
| 35 | FIPV/HB/WH/2019/15/Latiao | May-19 | Multi-cat environment | BSH | M | 7M | ascites | + | + |  | OK236293 |
| 36 | FIPV/HB/WH/2019/16/Baozi | May-19 | Multi-cat environment | BSH | F | 4M | ascites | + | + |  | OK236294 |
| 37 | FIPV/HB/WH/2019/18/Jiujiu | May-19 | Single cat household | BSH | F | 3M | ascites | + | + |  | OK236295 |
| 38 | FIPV/HB/WH/2019/20/Shiqi | May-19 | Single cat household | ESH | M | 6M | ascites | + | + |  | OK236296 |
| 39 | FIPV/HB/WH/2019/21/Zhanan | Jun-19 | Single cat household | BSH | M | 9M | ascites | + | + |  | OK236297 |
| 40 | FIPV/HB/WH/2019/25/Heiya | Sep-19 | / | DSH | F | 4M | ascites | + | + |  | OK236298 |
| 41 | FIPV/HB/WH/2019/28/Kele | Nov-19 | Single cat household | ASH | M | 7M | ascites | + | + |  | OK236299 |
| 42 | FIPV/HB/WH/2019/3/Maodou | Feb-19 | Multi-cat environment | ESH | M | 8M | ascites | + | + |  | OK236300 |
| 43 | FIPV/HB/WH/2019/38/Wanwan | Dec-19 | / | BSH | F | 6M | ascites | + | + |  | OK236301 |
| 44 | FIPV/HB/WH/2019/41/Nini | Aug-19 | Single cat household | BSH | M | 5M | ascites | + | + |  | OK236302 |
| 45 | FIPV/HB/WH/2019/47/Luna | Dec-19 | Multi-cat environment | DSH | F | 18M | ascites | + | + |  | OK236303 |
| 46 | FIPV/HB/WH/2019/48/Wubai | Dec-19 | Multi-cat environment | BSH | F | 4M | ascites | + | + |  | OK236304 |
| 47 | FIPV/HB/WH/2019/8/Hanhan | Dec-19 | / | ELH | F | 14M | ascites | + | + |  | OK236305 |
| 48 | FCoV/HB/WH/2020/107/Wanzi | Sep-20 | Single cat household | DSH | F | 5M | feces | + | + |  | OK236306 |
| 49 | FCoV/HB/WH/2020/108/107 | Sep-20 | Single cat household | DSH | F | 5M | feces | + | + |  | OK236307 |
| 50 | FCoV/HB/WH/2020/126/Nomi | Oct-20 | Single cat household | BSH | M | 12M | feces | + | + |  | OK236308 |
| 51 | FCoV/HB/WH/2020/134/Naiqiu | Oct-20 | Single cat household | ELH | M | 5M | feces | + | + |  | OK236309 |
| 52 | FCoV/HB/WH/2020/136/Babao | Oct-20 | Single cat household | ESH | M | 12M | feces | + | + |  | OK236310 |
| 53 | FCoV/HB/WH/2020/141/Tiantian | Oct-20 | Single cat household | BSH | F | 2M | feces | + | + |  | OK236311 |
| 54 | FCoV/HB/WH/2020/143/youzi | Oct-20 | Single cat household | ELH | F | 3M | feces | + | + |  | OK236312 |
| 55 | FCoV/HB/WH/2020/145/Rourou | Oct-20 | Single cat household | BSH | F | 29M | feces | + | + |  | OK236313 |
| 56 | FCoV/HB/WH/2020/147/Libai | Oct-20 | Single cat household | ESH | M | 48M | feces | + | + |  | OK236314 |
| 57 | FCoV/HB/WH/2020/149/Huasheng | Oct-20 | Single cat household | BSH | F | 16M | feces | + | + |  | OK236315 |
| 58 | FCoV/HB/WH/2020/151/Anni | Nov-20 | Single cat household | ESH | F | 36M | feces | + | + |  | OK236316 |
| 59 | FCoV/HB/WH/2020/153/Dali | Nov-20 | Multi-cat environment | BSH | M | 2M | feces | + | + |  | OK236317 |
| 60 | FCoV/HB/WH/2020/154/Sifeng | Nov-20 | Single cat household | / | M | 3M | feces | + | + |  | OK236318 |
| 61 | FCoV/HB/WH/2020/156/Dagou | Nov-20 | Single cat household | BSH | M | 6M | feces | + | + |  | OK236319 |
| 62 | FCoV/HB/WH/2020/164/Paofu | Nov-20 | Single cat household | ELH | F | 4M | feces | + | + |  | OK236320 |
| 63 | FCoV/HB/WH/2020/188/Chuchu | Dec-20 | Single cat household | DSH | M | 3M | feces | + | + |  | OK236321 |
| 64 | FCoV/HB/WH/2020/193/Mengmeng | Sep-20 | Multi-cat environment | DSH | F | 2M | feces | + | + |  | OK236322 |
| 65 | FCoV/HB/WH/2020/195/Susu | Sep-20 | Multi-cat environment | ESH | F | 16M | feces | + | + |  | OK236323 |
| 66 | FCoV/HB/WH/2020/198/lucky | Sep-20 | Multi-cat environment | ESH | M | 12M | feces | + | + |  | OK236324 |
| 67 | FCoV/HB/WH/2020/200/Kafei | Sep-20 | Multi-cat environment | ESH | M | 32M | feces | + | + |  | OK236325 |
| 68 | FCoV/HB/WH/2020/201/kaka | Sep-20 | Multi-cat environment | ESH | M | 28M | feces | + | + |  | OK236326 |
| 69 | FCoV/HB/WH/2020/205/Xiangxiang | Sep-20 | Multi-cat environment | ESH | F | 12M | feces | + | + |  | OK236327 |
| 70 | FCoV/HB/WH/2020/206/xueshang | Sep-20 | Multi-cat environment | ESH | M | 28M | feces | + | + |  | OK236328 |
| 71 | FCoV/HB/WH/2020/212/Niangao | Sep-20 | Multi-cat environment |  |  |  | feces | + | + |  | OK236329 |
| 72 | FCoV/HB/WH/2020/224/Mimi | Nov-20 | Multi-cat environment | ESH | F | 7M | feces | + | + |  | OK236330 |
| 73 | FCoV/HB/WH/2020/226/qiuqiu | Dec-20 | Single cat household |  | M | 3M | feces | + | + |  | OK236331 |
| 74 | FCoV/HB/WH/2020/230/changshou | Sep-20 | Single cat household | ELH | F | 4W | feces | + | + |  | OK236332 |
| 75 | FCoV/HB/WH/2020/232/Baixiaobai | Sep-20 | Single cat household | DSH | M | 3M | feces | + | + |  | OK236333 |
| 76 | FCoV/HB/WH/2020/235/Fugui | Oct-20 | Single cat household | DSH | F | 7M | feces | + | + |  | OK236334 |
| 77 | FCoV/HB/WH/2020/238/Tuanzi | Nov-20 | Single cat household | BSH | M | 6M | feces | + | + |  | OK236335 |
| 78 | FCoV/HB/WH/2020/242/Doubao | Jan-20 | Single cat household | ESH | F | 4M | feces | + | + |  | OK236336 |
| 79 | FCoV/HB/WH/2020/249/Daliu | Dec-20 | Multi-cat environment | DSH |  |  | feces | + | + |  | OK236337 |
| 80 | FCoV/HB/WH/2020/250/Juzi | Dec-20 | / | DSH | M | 24M | feces | + | + |  | OK236338 |
| 81 | FCoV/HB/WH/2020/77/16 | Aug-20 | / | ESH | M | 8M | feces | + | + |  | OK236339 |
| 82 | FCoV/HB/WH/2020/78/18 | Aug-20 | / | ELH | M | 9M | feces | + | + |  | OK236340 |
| 83 | FCoV/HB/WH/2020/82/28 | Dec-20 | / |  |  |  | feces | + | + |  | OK236341 |
| 84 | FIPV/HB/WH/2020/51/huahua | Dec-20 | Single cat household | ASH | M | 17M | ascites | + | + |  | OK236342 |
| 85 | FIPV/HB/WH/2020/73/Xiaoba | Oct-20 | / |  |  |  | ascites | + | + |  | OK236343 |

### Notes：For breed, ASH: American Shorthair; BSH: British Shorthair; DSH: Domestic Shorthair; ESH: Exotic Shorthair; ELH: Exotic Longhair. For gender, F: female, and M: male. For age, M: month. NA: not available. For sample source, CHC: clinically healthy cat; FSC: FIP-suspected cat. “+” represents positive results of viral detection; “–”represents negative results of viral detection

**Table S2 The relationship between FCoV and diarrhea in Non-FIP cat**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **symptom** | **Total number of sample** | **FCoV positive** | **FCoV negative** | **χ2** | ***p*** | **OR** | **95%CI** |
|  | n=290 |  |  | 0.395 | 0.530 |  |  |
| Diarrhea | 116 | 53（42.1%） | 63（38.4%） |  |  | 1.095 | 0.826-1.452 |
| Non-diarrhea | 174 | 73（57.9%） | 101（61.6%） |  |  | 0.941 | 0.777-1.140 |

**Table S3 The reference sequence involved and its related information**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NCBI No.** | **Country** | **Collection time** | **Where the reference sequence is used in the text** | | | **Virus** |
| NC045512.2 | China | 2019 | / | Phylogenetics | / | 2019-nCoV |
| NC004718 | Canada | 2003 | / | Phylogenetics | / | SARS-CoV |
| MZ724506.1 | India | 2021 | / | Phylogenetics | / | SARS-CoV-2 |
| KC164505.2 | UK | 2012 | / | Phylogenetics | / | MERS-CoV |
| KP981644 | Italy | 2005 | / | Phylogenetics | / | CCoV |
| NC038861 | USA | 2000 | / | Phylogenetics | / | TEGV |
| NC002306.3 | USA | 2005 | Mutation | Phylogenetics | / | FIPV |
| MW030110.1 | USA | 2002 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| MW030109.1 | USA | 2018 | Mutation | / | / | FIPV |
| MW030108.1 | China | 2021 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| MT444152.1 | China | 2019 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| MT239440.1 | China | 2017 | Mutation | Phylogenetics | / | FCoV |
| MT239439.1 | China | 2016 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| MN165107.1 | China | 2018 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| MG893511.1 | Germany | 2012 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KY566211.1 | China | 2016 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KY566210.1 | China | 2016 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KY566209.1 | China | 2016 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KY292377.1 | China | 2016 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KX722530.1 | Denmark | 2015 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KX722529.1 | Belgium | 2015 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| KU215419.1 | Belgium | 2013 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KP143512.1 | UK | 2013 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KP143511.1 | UK | 2013 | Mutation | / | Furin cleavage | FCoV |
| KP143510.1 | UK | 2013 | Mutation | / | Furin cleavage | FCoV |
| KP143509.1 | UK | 2013 | Mutation | / | Furin cleavage | FCoV |
| KP143508.1 | UK | 2013 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KP143507.1 | UK | 2013 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| KF530123.1 | NLD | 2010 | Mutation | Phylogenetics | / | FCoV |
| JN634064.1 | USA | 2011 | Mutation | Phylogenetics | / | FCoV |
| JN183883.1 | NLD | 2010 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| JN183882.1 | NLD | 2010 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| HQ392472.1 | NLD | 2010 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| HQ392471.1 | NLD | 2007 | Mutation |  | Furin cleavage | FCoV |
| HQ392470.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| HQ392469.1 | NLD | 2008 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| HQ012372.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| HQ012371.1 | NLD | 2008 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| HQ012370.1 | NLD | 2008 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| HQ012369.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| HQ012368.1 | NLD | 2007 | Mutation | Phylogenetics | / | FCoV |
| HQ012367.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| GU553362.1 | NLD | 2007 | / | Phylogenetics | Furin cleavage | FCoV |
| GU553361.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| GQ152141.1 | China/Taiwan | 2007 | Mutation | Phylogenetics | / | FCoV |
| FJ938062.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| FJ938061.1 | USA | 1998 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| FJ938060.1 | USA | 1993 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| FJ938059.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| FJ938058.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| FJ938057.1 | NLD | 2007 | / | Phylogenetics | Furin cleavage | FIPV |
| FJ938056.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| FJ938055.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| FJ938054.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| FJ938053.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| FJ938052.1 | NLD | 2007 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| FJ938051.1 | USA | 2002 | Mutation | Phylogenetics | Furin cleavage | FCoV |
| EU186072.1 | USA | 1970s | Mutation | Phylogenetics | Furin cleavage | FIPV |
| DQ848678.1 | UK | 2006 | Mutation | Phylogenetics | Furin cleavage | FIPV |
| DQ286389.1 | USA | 2005 | Mutation | Phylogenetics | / | FIPV |
| DQ010921.1 | USA | 2005 | / | Phylogenetics | / | FIPV |
| AY994055.1 | USA | 2008 | Mutation | / | / | FIPV |