

Table S1: Species and sequence id

species	accession number	protein id
Homo sapiens (human)	NM_001371415.1	NP_001358344.1
Macaca mulatta (Rhesus monkey)	NM_001135696.1	NP_001129168.1
Bos taurus (cattle)	XM_005228428.4	XP_005228485.1
Capra hircus (goat)	NM_001290107.1	NP_001277036.1
Ovis aries (sheep)	XM_012106267.3	XP_011961657.1
Bos mutus (wild yak)	XM_005903111.1	XP_005903173.1
Felis catus (domestic cat)	XM_023248796.1	XP_023104564.1
Panthera tigris altaica (Amur tiger)	XM_007090080.2	XP_007090142.1
Sus scrofa (pig)	NM_001123070.1	NP_001116542.1
Oryctolagus cuniculus (rabbit)	XM_002719845.3	XP_002719891.1
Canis lupus familiaris (dog)	NM_001165260.1	NP_001158732.1
Mustela putorius furo (domestic ferret)	NM_001310190.1	NP_001297119.1
Cricetulus griseus (Chinese hamster)	XM_003503235.4	XP_003503283.1
Mus musculus (house mouse)	NM_027286.4	NP_081562.2
Delphinapterus leucas (beluga whale)	XM_022562652.2	XP_022418360.1
Orcinus orca (killer whale)	XM_004269657.1	XP_004269705.1
Globicephala melas (long-finned pilot whale)	XM_030848131.1	XP_030703991.1
Lagenorhynchus obliquidens (Pacific white-sided dolphin)	XM_027095797.1	XP_026951598.1
Tursiops truncatus (common bottlenose dolphin)	XM_019925618.1	XP_019781177.1
Zalophus californianus (California sea lion)	XM_027609552.1	XP_027465353.1
Eumetopias jubatus (Steller sea lion)	XM_028115021.1	XP_027970822.1
Phoca vitulina (harbor seal)	XM_032389615.1	XP_032245506.1
Callorhinus ursinus (northern fur seal)	XM_025857612.1	XP_025713397.1
Odobenus rosmarus divergens (Pacific walrus)	XM_004415391.1	XP_004415448.1

Table S2: Percent identity matrix of $\alpha 1$ -helix of ACE2 among the 24 species

	human	rhesus monkey	cattle	wild yak	goat	sheep	Chinese hamster	beluga whale	domestic cat	amur tiger	rabbit	common bottlenose dolphin	house mouse	pig	killer whale	long-finned pilot whale	Pacific white-sided dolphin	domestic ferret	harbor seal	Steller sea lion	California sea lion	Pacific walrus	northern fur seal
human	100.0	100.0	91.4	91.4	91.4	88.6	88.6	88.6	85.7	85.7	82.9	82.9	80.0	80.0	80.0	80.0	80.0	77.1	77.1	77.1	77.1	74.3	74.3
rhesus monkey	100.0	100.0	91.4	91.4	91.4	88.6	88.6	88.6	85.7	85.7	82.9	82.9	80.0	80.0	80.0	80.0	80.0	77.1	77.1	77.1	77.1	74.3	74.3
cattle	91.4	91.4	100.0	100.0	100.0	97.1	85.7	94.3	94.3	94.3	85.7	88.6	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	77.1	82.9
wild yak	91.4	91.4	100.0	100.0	100.0	97.1	85.7	94.3	94.3	94.3	85.7	88.6	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	77.1	82.9
goat	91.4	91.4	100.0	100.0	100.0	97.1	85.7	94.3	94.3	94.3	85.7	88.6	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	77.1	82.9
sheep	88.6	88.6	97.1	97.1	97.1	100.0	82.9	91.4	91.4	91.4	82.9	85.7	82.9	82.9	82.9	82.9	82.9	85.7	85.7	85.7	85.7	77.1	82.9
beluga whale	88.6	88.6	94.3	94.3	94.3	91.4	82.9	100.0	88.6	88.6	80.0	94.3	82.9	80.0	91.4	91.4	91.4	80.0	80.0	80.0	80.0	71.4	77.1
Chinese hamster	88.6	88.6	85.7	85.7	85.7	82.9	100.0	82.9	80.0	80.0	88.6	80.0	82.9	74.3	80.0	80.0	80.0	74.3	74.3	74.3	74.3	65.7	71.4
domestic cat	85.7	85.7	94.3	94.3	94.3	91.4	80.0	88.6	100.0	100.0	85.7	85.7	82.9	85.7	82.9	82.9	82.9	91.4	91.4	91.4	91.4	82.9	88.6
amur tiger	85.7	85.7	94.3	94.3	94.3	91.4	80.0	88.6	100.0	100.0	85.7	85.7	82.9	85.7	82.9	82.9	82.9	91.4	91.4	91.4	91.4	82.9	88.6
rabbit	82.9	82.9	85.7	85.7	85.7	82.9	88.6	80.0	85.7	85.7	100.0	80.0	80.0	82.9	77.1	77.1	77.1	80.0	80.0	80.0	80.0	71.4	77.1
common bottlenose dolphin	82.9	82.9	88.6	88.6	88.6	85.7	80.0	94.3	85.7	85.7	80.0	100.0	82.9	80.0	97.1	97.1	97.1	80.0	80.0	80.0	80.0	71.4	77.1
house mouse	80.0	80.0	85.7	85.7	85.7	82.9	82.9	82.9	82.9	82.9	80.0	82.9	100.0	77.1	82.9	82.9	82.9	77.1	77.1	77.1	77.1	68.6	74.3
pig	80.0	80.0	85.7	85.7	85.7	82.9	74.3	80.0	85.7	85.7	82.9	80.0	77.1	100.0	77.1	77.1	77.1	80.0	80.0	80.0	80.0	74.3	77.1
killer whale	80.0	80.0	85.7	85.7	85.7	82.9	80.0	91.4	82.9	82.9	77.1	97.1	82.9	77.1	100.0	100.0	100.0	77.1	77.1	77.1	77.1	68.6	74.3
long-finned pilot whale	80.0	80.0	85.7	85.7	85.7	82.9	80.0	91.4	82.9	82.9	77.1	97.1	82.9	77.1	100.0	100.0	100.0	77.1	77.1	77.1	77.1	68.6	74.3
Pacific white-sided dolphin	80.0	80.0	85.7	85.7	85.7	82.9	80.0	91.4	82.9	82.9	77.1	97.1	82.9	77.1	100.0	100.0	100.0	77.1	77.1	77.1	77.1	68.6	74.3
domestic ferret	77.1	77.1	85.7	85.7	85.7	85.7	74.3	80.0	91.4	91.4	80.0	80.0	77.1	80.0	77.1	77.1	77.1	100.0	94.3	91.4	91.4	85.7	88.6
harbor seal	77.1	77.1	85.7	85.7	85.7	85.7	74.3	80.0	91.4	91.4	80.0	80.0	77.1	80.0	77.1	77.1	77.1	94.3	100.0	97.1	97.1	91.4	94.3
Steller sea lion	77.1	77.1	85.7	85.7	85.7	85.7	74.3	80.0	91.4	91.4	80.0	80.0	77.1	80.0	77.1	77.1	77.1	91.4	97.1	100.0	100.0	88.6	97.1
California sea lion	77.1	77.1	85.7	85.7	85.7	85.7	74.3	80.0	91.4	91.4	80.0	80.0	77.1	80.0	77.1	77.1	77.1	91.4	97.1	100.0	100.0	88.6	97.1
Pacific walrus	74.3	74.3	77.1	77.1	77.1	77.1	65.7	71.4	82.9	82.9	71.4	71.4	68.6	74.3	68.6	68.6	68.6	85.7	91.4	88.6	88.6	100.0	91.4
northern fur seal	74.3	74.3	82.9	82.9	82.9	82.9	71.4	77.1	88.6	88.6	77.1	77.1	74.3	77.1	74.3	74.3	74.3	88.6	94.3	97.1	97.1	91.4	100.0
dog	73.5	73.5	82.4	82.4	82.4	82.4	73.5	76.5	88.2	88.2	76.5	76.5	76.5	76.5	76.5	76.5	76.5	91.2	97.1	94.1	94.1	88.2	91.2