

1 **Genetic drift of human coronavirus OC43 spike gene during**

2 **adaptive evolution**

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10 **Figure S2.** The alignment of NTD amino acids sequences of BCoV-Mebus strains
 11 with representative OC43 strains isolated in different years. The critical sugar-binding
 12 amino acids in BCoV, 171Y, 191E, 193W and 194H (numbering refer to 87309BE03)
 13 labeled with asterisk.

	160	170	180	190	200	210	220	
	
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BCoV-Mebus	D	--NK	LQGLLEISVCQ	YTMCEYPHTICH	PNLGNKRVELWH	WDTGVV	SCLYKRNFTYD	VNADYLYFHFYQE
ATCC-VR759	.GYVNQH.KL
87309BE03	.GVVNKHFKLT
HK04-02	.GVVNKHFKLT
229/05	.GVVNKHFKLT
HK06-01	.GVVNKHFKLT
5240/07	.GVVNKHFKLT
1034A/08	.GVVNKHFKST
1357A/09	.GVVNKHFKST
HK10-02	.GVVNKHFKST
HK11-01	.GVVNHFKST
12689/12	.GVVNHFKLT

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Table S1. Background information for the OC43 S gene sequences

Strain name	Accession No.	Sampling Year	Isolation sites	Genotype
87309 Belgium 2003	AY903459	2003	Belgium	B
19572 Belgium 2004	AY903460	2004	Belgium	D
HK04-01	JN129834	2004	Hong Kong, China	C
HK04-02	JN129835	2004	Hong Kong, China	D
HK04-03	NA ^a	2004	Hong Kong, China	C
HK04-04	NA	2004	Hong Kong, China	B
HK04-05	NA	2004	Hong Kong, China	C
HK04-06	NA	2004	Hong Kong, China	C
HK04-07	NA	2004	Hong Kong, China	B
HK04-08	NA	2004	Hong Kong, China	B
HK04-09	NA	2004	Hong Kong, China	C
HK04-10	NA	2004	Hong Kong, China	B
HK04-11	NA	2004	Hong Kong, China	C
HK04-12	NA	2004	Hong Kong, China	C
HK04-13	NA	2004	Hong Kong, China	C
HK04-14	NA	2004	Hong Kong, China	C
HK04-15	NA	2004	Hong Kong, China	C
HK04-16	NA	2004	Hong Kong, China	C
HK04-17	NA	2004	Hong Kong, China	B
HK04-18	NA	2004	Hong Kong, China	C
HK05-01	NA	2005	Hong Kong, China	C
HK05-02	NA	2005	Hong Kong, China	C
229/05	KF572816	2005	Beijing, China	C
1926/06	KF572807	2006	Beijing, China	B
3582/06	KF572817	2006	Beijing, China	C
3647/06	KF572818	2006	Beijing, China	C
HK06-01	NA	2006	Hong Kong, China	C
039A/07	KF572819	2007	Beijing, China	D
069A/07	KF572864	2007	Shandong, China	D
079A/07	KF572820	2007	Beijing, China	D
4795/07	KF572842	2007	Beijing, China	D
4954/07	KF572843	2007	Beijing, China	D
5240/07	KF572844	2007	Beijing, China	D
5331/07	KF572845	2007	Beijing, China	D
5345/07	KF572846	2007	Beijing, China	D
5352/07	KF572847	2007	Beijing, China	D
5370/07	KF572848	2007	Beijing, China	D
5414/07	KF572849	2007	Beijing, China	D
5442/07	KF572850	2007	Beijing, China	D
5445/07	KF572851	2007	Beijing, China	D
5472/07	KF572852	2007	Beijing, China	D
5479/07	KF572853	2007	Beijing, China	D
5484/07	KF572854	2007	Beijing, China	D
5485/07	KF572855	2007	Beijing, China	D
5508/07	KF572856	2007	Beijing, China	D
5517/07	KF572857	2007	Beijing, China	D
5519/07	KF572858	2007	Beijing, China	D
5566/07	KF572859	2007	Beijing, China	D
5595/07	KF572860	2007	Beijing, China	D
5617/07	KF572861	2007	Beijing, China	D

5625/07	KF572862	2007	Beijing, China	D
5656/07	KF572863	2007	Beijing, China	D
1034A/08	KF572824	2008	Beijing, China	D
1081A/08	KF572826	2008	Hebei, China	D
1135A/08	KF572827	2008	Hebei, China	D
1157A/08	KF572828	2008	Guangxi, China	D
1216A/08	KF572830	2008	Beijing, China	D
892A/08	KF572868	2008	Henan, China	D
978A/08	KF572872	2008	Shandong, China	D
HK08-01	NA	2008	Hong Kong, China	D
HK08-02	NA	2008	Hong Kong, China	D
HK09-01	NA	2009	Hong Kong, China	D
HK09-02	NA	2009	Hong Kong, China	D
8099/09	KF572865	2009	Beijing, China	D
8164/09	KF572866	2009	Beijing, China	D
8375/09	KF572867	2009	Beijing, China	D
9001/09	KF572870	2009	Beijing, China	D
9138/09	KF572871	2009	Beijing, China	D
1357A/09	KF572834	2009	Hebei, China	D
1382A/09	KF572835	2009	Henan, China	D
1591A/09	KF572836	2009	Sichuan, China	D
1593A/09	KF572837	2009	Hebei, China	D
10108/10	KF572821	2010	Beijing, China	D
10285/10	KF572822	2010	Beijing, China	D
10290/10	KF572823	2010	Beijing, China	D
10574/10	KF572825	2010	Beijing, China	D
1783A/10	KF572804	2010	Beijing, China	E
1908A/10	KF572805	2010	Beijing, China	B
1919A/10	KF572806	2010	Shanxi, China	B
1997A/10	KF572808	2010	Neimenggu, China	B
2058A/10	KF572809	2010	Beijing, China	E
2134A/10	KF572838	2010	Beijing, China	D
2145A/10	KF572810	2010	Shandong, China	B
2151A/10	KF572839	2010	Henan, China	D
HK10-01	NA	2010	Hong Kong, China	D
HK10-02	NA	2010	Hong Kong, China	D
HK11-01	NA	2011	Hong Kong, China	D
HK11-02	NA	2011	Hong Kong, China	D
2941A/11	KF572811	2011	Beijing, China	E
3074A/12	KF572812	2012	Hebei, China	E
3184A/12	KF572813	2012	Beijing, China	B
3194A/12	KF572814	2012	Henan, China	E
3269A/12	KF572841	2012	Beijing, China	D
12689/12	KF572831	2012	Beijing, China	D
12691/12	KF572832	2012	Beijing, China	D
12694/12	KF572833	2012	Beijing, China	D

- 17 ^aNA, not available, sequences were supported from the author published the paper (Lau *et al.*, 2011).
- 18 Lau, S.K. *et al.* Molecular epidemiology of human coronavirus OC43 reveals
- 19 evolution of different genotypes over time and recent emergence of a novel genotype
- 20 due to natural recombination. *J Virol* **85**, 11325-11337 (2011)