

SUPPLEMENTARY TABLE S1. Coronaviruses used for phylogenetic analyses

CoV group ^a	Virus ID ^b	Accession No	Host	Collection year	Literature reference ^c
α	BtCoV/512/Scokuh/China/2005	DQ648858	Asiatic lesser yellow bat (<i>Scotophilus kuhlii</i>)	2005	(1)
α	BtCoV/HKU6-1/Myoric/China/2005	DQ249224	Rickett's big-footed bat (<i>Myotis ricketti</i>)	2005	(2)
α	BtCoV/HKU8/Minpus/China/2008	EU420139	Small bent-winged bat (<i>Miniopterus pusillus</i>)	2008	(3)
α	BtCoV/1A/AFCD62/Minmag/China/2005	EU420138	Western Bent-Winged Bat (<i>Miniopterus magnater</i>)	2005	(3)
α	BtCoV/1B/AFCD307/Minpus/China/2006	EU420137	Small Bent-winged Bat (<i>Miniopterus pusillus</i>)	2006	(3)
α	PEDV/CV777/Susscr/Belgium/1977	AF353511	Pig (<i>Sus scrofa</i>)	1977	(4)
α	HCoV/229E/Hom sap/UK/1963	AF304460	Human (<i>Homo sapiens</i>)	1963	(5)
α	BtCoV/HKU2/HK46/Rhisin/China/2006	EF203065	Chinese horseshoe bats (<i>Rhinolophus sinicus</i>)	2006	(6)
α	BtCoV/HKU2/HK33/Rhisin/China/2006	EF203067	Chinese horseshoe bats (<i>Rhinolophus sinicus</i>)	2006	(6)
α	BtCoV/HKU2/GD430/Rhisin/China/2006	EF203064	Chinese horseshoe bats (<i>Rhinolophus sinicus</i>)	2006	(6)
α	BtCoV/HKU2/HK298/Rhisin/China/2006	EF203066	Chinese horseshoe bats (<i>Rhinolophus sinicus</i>)	2006	(6)
α	BtCoV/Trinidad/1FY2BA/C ar per/TTO/2007	EU769557	Seba's short-tailed bat (<i>Carollia perspicillata</i>)	2007	(7)
α	BtCoV/HKU7/1/Mintri/China/2005	DQ249226	Greater bent-winged bat (<i>Miniopterus tristis</i>)	2005	(2)
α	HCoV/NL63/496/Hom sap/Netherlands/2003	DQ445912	Human (<i>Homo sapiens</i>)	2003	(8)
α	HCoV/NL63/1/Hom sap/Netherlands/2003	AY567487	Human (<i>Homo sapiens</i>)	2003	(9)
α	HCoV/NL63/Hom sap/Netherlands/1988	AY518894	Human (<i>Homo sapiens</i>)	1988	(10)
α	HCoV/NL63/057/Hom sap/Netherlands/2004	DQ445911	Human (<i>Homo sapiens</i>)	2004	(8)
α	BtCoV/GhanaKwam8/Hip sp/Ghana/2008	FJ710045	Hipposideros sp.	2008	(11)
α	BtCoV/GhanaKwam19/Hip sp/Ghana/2008	FJ710046	Hipposideros sp.	2008	(11)
α	BtCoV/GhanaBoo344/Hip sp/Ghana/2008	FJ710044	Hipposideros sp.	2008	(11)
α	TGEV/Purdue/Susscr/USA/1946	DQ811789	Pig (<i>Sus scrofa</i>)	1946	(12)
α	FCoV/FIPV79-1146/Fel sil/USA/1980	DQ010921	Cat (<i>Felis silvestris</i>)	1980	(13)
α	CaCoV/341/Can lup/Italy/2005	EU856361	Dog (<i>Canis lupus familiaris</i>)	2005	(14)
α	PRCoV/ISU-1/Susscr/USA/1990	DQ811787	Pig (<i>Sus scrofa</i>)	1990	(12)
β	BCoV/ENT/Bos pri/USA/1998	AF391541	Cattle (<i>Bos primigenius</i>)	1998	(15)
β	BCoV/Mebus/Bos pri/1972	U00735	Cattle (<i>Bos primigenius</i>)	1972	(16)
β	WtbkCoV/OH-	FJ425186	Waterbuck	1994	(17)

	WD358/USA/1994		<i>(Kobus ellipsiprymnus)</i>		
β	GiCoV/OH3/WD1421/Gir cam/USA/2003	EF424623	Giraffe <i>(Giraffa camelopardalis)</i>	2003	(18)
β	AnCoV/OH1/WD1418/Hip nig/USA/2003	EF424621	Sable antelope <i>(Hippotragus niger)</i>	2003	(19)
β	MHV/A59/Mus mus/USA/1949	FJ647225	Mouse <i>(Mus musculus)</i>	1949	(20)
β	HCoV/HKU1/A/Hom sap/China/2004	DQ415914	Human <i>(Homo sapiens)</i>	2004	(21)
β	HCoV/HKU1/B/Hom sap/China/2004	DQ415911	Human <i>(Homo sapiens)</i>	2004	(21)
β	HCoV/HKU1/C/Hom sap/China/2004	DQ415899	Human <i>(Homo sapiens)</i>	2004	(21)
β	HCoV/OC43/VR759/Hom sap/UK/1967	AY585228	Human <i>(Homo sapiens)</i>	1967	(22)
β	HCoV/OC43/Paris/Hom sap/France/2001	AY585229	Human <i>(Homo sapiens)</i>	2001	(22)
β	ECoV/NC99/Equ fer/USA/1999	EF446615	Horse <i>(Equus ferus)</i>	1999	(23)
β	HCoV/SARS/Tor2/Hom sap/Canada/2003	AY274119	Human <i>(Homo sapiens)</i>	2003	(24)
β	HCoV/SARS/Urbani/Hom sap/China/2003	AY278741	Human <i>(Homo sapiens)</i>	2003	(25)
β	HCoV/CUHK-W1/Hom sap/China/2003	AY278554	Human <i>(Homo sapiens)</i>	2003	(26)
β	HCoV/Frankfurt1/Hom sap/Germany/2003	AY291315	Human <i>(Homo sapiens)</i>	2003	(27)
β	HCoV/SARS/GZ0204/Hom sap/China/2004	AY613947	Human <i>(Homo sapiens)</i>	2004	(28)
β	CivCoV/SZ03/Pag lar/China/2003	AY304486	Himalayan palm civets <i>(Paguma larvata)</i>	2003	(29)
β	CivCoV/SARS/SZ16/Pag lar/China/2003	AY304488	Himalayan palm civets <i>(Paguma larvata)</i>	2003	(29)
β	BtCoV/Rp3/Rhi pea/China/2004	DQ071615	Pearson's horseshoe bat <i>(Rhinolophus pearsoni)</i>	2004	(30)
β	BtCoV/HKU3/1/Rhi sin/China/2005	DQ022305	Chinese horseshoe bats <i>(Rhinolophus sinicus)</i>	2005	(31)
β	BtCoV/Rf1/Rhi fer/China/2004	DQ412042	Greater horseshoe bat <i>(Rhinolophus ferrumequinum)</i>	2004	(30)
β	BtCoV/Rm1/Rhi mac/China/2004	DQ412043	Big-eared horseshoe bat <i>(Rhinolophus macrotis)</i>	2004	(30)
β	BtCoV/273/Rhi fer/China/2005	DQ648856	Greater horseshoe bat <i>(Rhinolophus ferrumequinum)</i>	2005	(1)
β	BtCoV/GhanaKwam348/Hip sp/Ghana/2008	FJ710043	Hipposideros sp.	2008	(11)
β	BtCoV/GhanaKwam20/Hip sp/Ghana/2008	FJ710047	Hipposideros sp.	2008	(11)
β	BtCoV/HKU4-1/Tyl pac/China/2007	EF065505	Lesser bamboo bats <i>(Tylonycteris pachypus)</i>	2007	(2)
β	BtCoV/HKU5-1/Pip abr/China/2007	EF065509	Japanese pipistrelles <i>(Pipistrellus abramus)</i>	2007	(2)
β	BtCoV/HKU5-2/Pip abr/China/2007	EF065510	Japanese pipistrelles <i>(Pipistrellus abramus)</i>	2007	(2)
β	BtCoV/HKU9-2/Rou	EF065514	Leschenault's rousette	2007	(32)

	les/China/2007		(<i>Rousettus lechenaulti</i>)		
β	BtCoV/133/Tylpac/China/2005	DQ648794	Lesser bamboo bat (<i>Tylonycteris pachypus</i>)	2005	(1)
β	BtCoV/HKU9-1/Roules/China/2007	EF065513	Leschenault's rousette (<i>Rousettus lechenaulti</i>)	2007	(32)
β	BtCoV/HKU9-4/Roules/China/2007	EF065516	Leschenault's rousette (<i>Rousettus lechenaulti</i>)	2007	(2)
β	BtCoV/HKU9-3/Roules/China/2007	EF065515	Leschenault's rousette (<i>Rousettus lechenaulti</i>)	2007	(2)
γ	AvCoV/HKU11/796/PycSin/China/2007	FJ376620	Chinese bulbul (<i>Pycnonotus sinensis</i>)	2007	(33)
γ	AvCoV/HKU13/3514/Lonstr/China/2007	FJ376622	White-rumped munia (<i>Lonchura striata</i>)	2007	(33)
γ	AvCoV/HKU12/600/Turhor/China/2007	FJ376621	Grey-backed thrush (<i>Turdus hortulorum</i>)	2007	(33)
γ	AvCoV/IBV/Beaudette/Galgal/USA/1941	AJ311317	Chicken (<i>Gallus gallus</i>)	1941	(34)
γ	AvCoV/TCoV/MG10/Melgal/Canada/2007	EU095850	Turkey (<i>Meleagris gallopavo</i>)	2007	(35)
γ	LeoCoV/F230/Priben/China/2006	EF584908	Asian leopard cat (<i>Prionailurus bengalensis</i>)	2006	(36)
γ	WhaleCoV/SW1/Del leu/USA/2006	EU111742	Beluga whale (<i>Delphinapterus leucas</i>)	2006	(37)

^aCoV = Coronavirus

^bIdentification code/strain/isolate/typical host/country/collection year. Host species abbreviations are short forms of hosts listed in the fourth column of this table.

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Supplementary Table S2. Bat Coronaviruses identified in this study

CoV genus ^a	Virus ID ^b	Host	RGU	Accession No
α	BtCoV/NM98-62/Myo dau/Germany/2008	Daubenton's bat (<i>Myotis daubentonii</i>)	HKU6-related	GU190216
α	BtCoV/BR98-53/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU8-related	GU190248
α	BtCoV/BR98-14/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU8-related	GU190241
α	BtCoV/BR98-37/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU8-related	GU190245
α	BtCoV/BR98-40/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU8-related	GU190246
α	BtCoV/BR98-52/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU8-related	GU190247
α	BtCoV/BR98-18/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU8-related	GU190242
α	BtCoV/BR98-55/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	BtCoV1A-related	GU190240
α	BtCoV/BR98-30/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU7-related	GU190243
α	BtCoV/BR98-31/Min sch/Bulgaria/2008	Large bent-winged bat (<i>Miniopterus schreibersii</i>)	HKU7-related	GU190244
α	BtCoV/BNM98-30/Nyc lei/Bulgaria/2008	Leisler's bat (<i>Nyctalus leisleri</i>)	BNM98-30-related	GU190239
α	BtCoV/BB98-15/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	BB98-15-related	GU190232
α	BtCoV/BM48-39/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	BB98-15-related	GU190234
α	BtCoV/BR98-12/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	BB98-15-related	GU190236
α	BtCoV/BM98-05/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	BB98-15-related	GU190235
α	BtCoV/BM48-28/Rhi fer/Bulgaria/2008	Greater horseshoe bat (<i>Rhinolophus ferrumequinum</i>)	BB98-15-related	GU190233
α	BtCoV/BB98-41/Rhi bla/Bulgaria/2008	Blasius's horseshoe Bat (<i>Rhinolophus blasii</i>)	HKU2-related	GU190238
α	BtCoV/ α /BR98-19/Rhi eur/Bulgaria/2008	Mediterranean horseshoe Bat (<i>Rhinolophus euryale</i>)	HKU2-related	GU190237
β	BtCoV/BB98-16/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	SARS-related	GU190217
β	BtCoV/BB98-18/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	SARS-related	GU190218
β	BtCoV/BM98-65/Rhi bla/Bulgaria/2008	Blasius's horseshoe bat (<i>Rhinolophus blasii</i>)	SARS-related	GU190219
β	BtCoV/BM48-34/Rhi fer/Bulgaria/2008	Greater horseshoe bat (<i>Rhinolophus ferrumequinum</i>)	SARS-related	GU190229
β	BtCoV/BM48-48/Rhi bla/Bulgaria/2008	Blasius's horseshoe Bat (<i>Rhinolophus blasii</i>)	SARS-related	GU190220
β	BtCoV/BM48-32/Rhi meh/Bulgaria/2008	Mehely's horseshoe bat	SARS-	GU190228

		<i>(Rhinolophus mehelyi)</i>	related	
β	BtCoV/BM48-31/Rhi bla/Bulgaria/2008	Blasius's horseshoe Bat <i>(Rhinolophus blasii)</i>	SARS-related	GU190215
β	BtCoV/BNM98-29/Rhi fer/Bulgaria/2008	Greater horseshoe bat <i>(Rhinolophus ferrum-equinum)</i>	SARS-related	GU190231
β	BtCoV/BM48-35/Rhi fer/Bulgaria/2008	Greater horseshoe bat <i>(Rhinolophus ferrum-equinum)</i>	SARS-related	GU190230
β	BtCoV/β/BR98-19/Rhi eur/Bulgaria/2008	Mediterranean horseshoe bat <i>(Rhinolophus euryale)</i>	SARS-related	GU190221
β	BtCoV/BM98-07/Rhi meh/Bulgaria/2008	Mehely's horseshoe bat <i>(Rhinolophus mehelyi)</i>	SARS-related	GU190227
β	BtCoV/BM98-13/Rhi eur/Bulgaria/2008	Mediterranean horseshoe bat <i>(Rhinolophus euryale)</i>	SARS-related	GU190223
β	BtCoV/BM98-05/Rhi eur/Bulgaria/2008	Mediterranean horseshoe bat <i>(Rhinolophus euryale)</i>	SARS-related	GU190225
β	BtCoV/BM98-01/Rhi eur/Bulgaria/2008	Mediterranean horseshoe bat <i>(Rhinolophus euryale)</i>	SARS-related	GU190222
β	BtCoV/BB98-43/Rhi eur/Bulgaria/2008	Mediterranean horseshoe bat <i>(Rhinolophus euryale)</i>	SARS-related	GU190226
β	BtCoV/BM48-12/Rhi eur/Bulgaria/2008	Mediterranean horseshoe bat <i>(Rhinolophus euryale)</i>	SARS-related	GU190224

^aCoV = Coronavirus

^bIdentification code/strain/typical host/country/collection year. Bat species abbreviations are short forms of host species names listed in the fourth column of this table.

Supplementary Figure 1 (next page). Phylogenetic relationships of the Bulgarian SARS-like virus to Coronavirus prototype strains along selected genomic regions

Neighbor-joining phylogenies were generated with MEGA, using the Jukes-Cantor substitution model, complete deletion option and 1000 bootstrap reiterations. The scale represents the number of base substitutions per site. Bootstrap values are shown next to the branches; values below 65 and those overlapping with taxon labels or internal nodes were removed for graphical reasons.

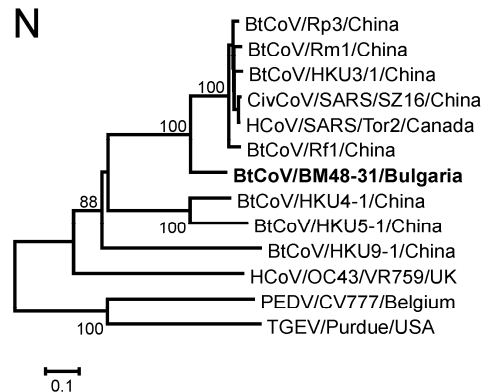
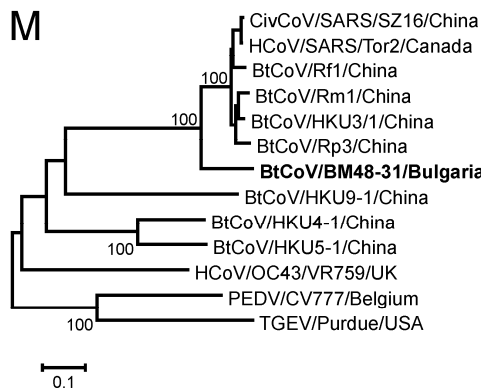
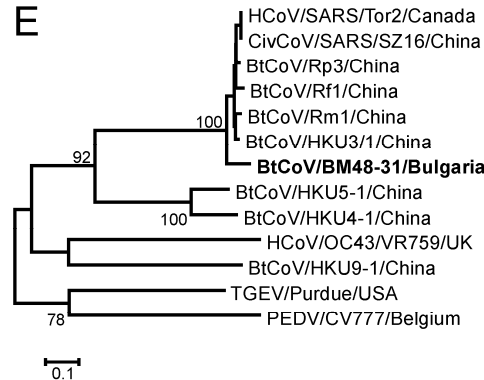
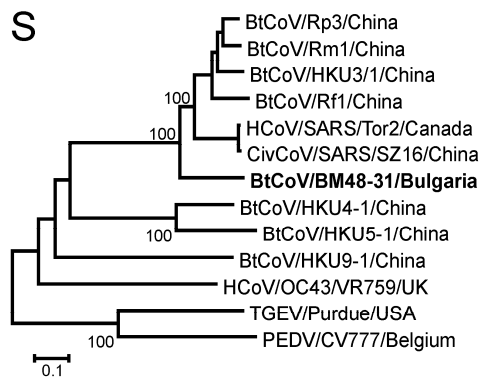
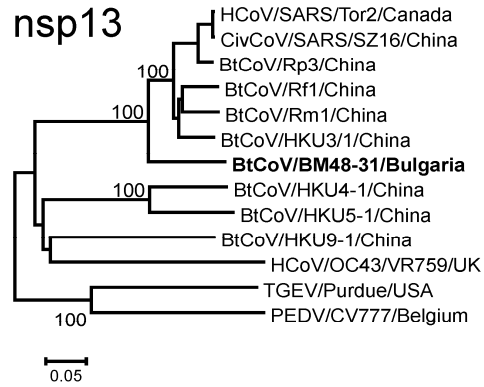
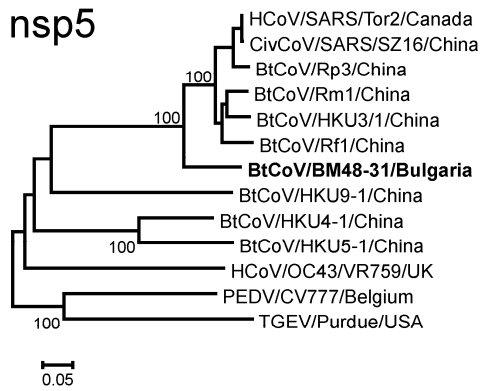
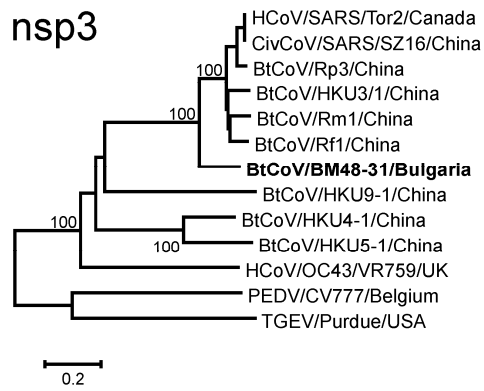
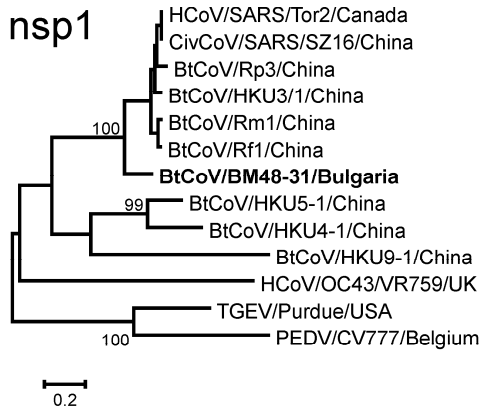
The panel shows selected regions from 5' - towards 3' -end of the Coronavirus genome. Genomic

localization of analyzed fragments in comparison to SARS prototype strain TOR2 (GenBank accession number AY274119) were: nsp1=Non-structural protein 1, nucleotides (nt) 265-519;

10 nsp3=non-structural protein 3, nt 2,719-8,484; nsp5=non-structural protein 5, nt 9,985-10,902;

nsp13=non-structural protein 13 (Helicase), nt 16,167-17,960; S=Spike, nt 21,492-25,259;

E=Envelope, nt 26,117-26,347; M=Membrane, nt 26,398-27,063; N=Nucleocapsid, nt 28,120-29,388



Supplementary Figure 2. The Open Reading Frame 8 deletion is present in SARS-like viruses from all sampled European Rhinolophid bat species

PCR primers were designed to amplify a 1,213 base pair amplicon encompassing the Open reading frame 8 genomic region in SARS Coronavirus (CoV) Tor2 (nucleotides 27,468 – 28,681) and European SARS-like viruses. Viruses from bats of the genus *Rhinolophus* were selected to represent all species sampled, containing representatives of each of the two monophyletic clades of SARS-related CoV (six per clade, see Figure 3). Rhi fer = *Rhinolophus ferrumequinum*, Rhi bla = *Rhinolophus blasii*, Rhi meh = *Rhinolophus mehelyi*, Rhi eur = *Rhinolophus euryale*.

