

Supplementary Table 1: List of reference IBV sequences used in the S1 sequence analysis.

Reference sequence	GenBank Accession #	Country of origin
N1/08	JN176213	Australia
V18/91	U29521	Australia
N4/02	DQ059618	Australia
N5/03	DQ059619	Australia
N1/62	U29522	Australia
V2-02	DQ490215	Australia
B1648	X87238	Belgium
IBV/Brasil/351/1984	GU393339	Brazil
UFMG/1141	JX182783	Brazil
Qu_mv	AF349621	Canada
Qu16	AF349620	Canada
48SD-96VI	KC577388	China
QXIBV	AF193423	China
CK/CH/LLN/111169	KF411040	China
Connecticut vaccine	KF696629	China
QS	JQ250818	China
SDW	DQ070840	China
SDIB781/2012	KF007209	China
TC07-2	GQ265948	China
SAIBK	DQ288927	China
CK/CH/JX/JA09-1	HQ018890	China
ck/CH/LHLJ/110664	JQ739299	China
GX2-98	AY251816	China
ck/CH/LSD/110857	JQ739375	China
4/91 vaccine	KF377577	China
ck/CH/LSD/110712	JQ739363	China
CK/CH/LDL/97I	EF030995	China
Q1	AF286302	China
Eg/1265B/2012	KC533682	Egypt
FR-85131-85	AJ618985	France
It/497/02	DQ901377	Italy
IZO 28/86	KJ941019	Italy
IBV422	KF809791	India
V25	KF757451	India
Variant 1	AF093795	Israel
IS/1201	DQ400359	Israel
Variant 2	AF093796	Israel
JP8443	AY296745	Japan
K620/02	FJ807944	Korea
SNU8067	JQ977697	Korea
A	AF151953	New Zealand
D	AF151956	New Zealand
K43	AF151958	New Zealand

H120	FJ888351	The Netherlands
D274	X15832	The Netherlands
V1397	M21968	The Netherlands
D1466	M21971	The Netherlands
BL-56	AF352831	Mexico
Moroccan-G/83	EU914938	Morocco
NGA/N544/2006	FN182269	Nigeria
NGA/324/2006	FN182277	Nigeria
NGA/295/2006	FN182276	Nigeria
NER/28/2007	FN182272	Niger
RF/01/02	AJ441314	Russia
Spain/00/336	DQ386098	Spain
Spain/98/313	DQ064808	Spain
TP/64	AY606320	Taiwan
UK/L-633/04	DQ901376	United Kingdom
UK/7/91	Z83975	United Kingdom
6/82	X04723	United Kingdom
Beaudette	M95169	USA
M41	AY561711	USA
Conn46 1996	FJ904716	USA
Iowa97	GU393337	USA
Gray	L14069	USA
JMK	L14070	USA
PA/5344/98	AY789947	USA
Holte	L18988	USA
L905	JQ964070	USA
SE17	M99484	USA
ARK99	M99482	USA
ArkDPI	AF006624	USA
Arkansas Vaccine	GQ504721	USA
CAL99	DQ912831	USA
PA/Wolgemuth/98	AF305595	USA
AL/6609/98	AF510656	USA
MDL_DMV1639	KX529720	USA
CA/1737/04	EU925393	USA
DMV/5642/06	EU694402	USA
GA/13485/2013	KP085597	USA
GA/13384/2013	KM660635	USA
GA08	GU301925	USA
DE/072/92	U77298	USA
GA/13055/00	AF338719	USA
CU82792	AF317214	USA
PA/1220/98	AY789942	USA

Supplementary Table 2: The positions^a for nonstructural proteins in open reading frames 1a and 1ab.

	IBV/Ck/Can/1	IBV/Ck/Can/17	IBV/Ck/Can/18	IBV/Ck/Can/18	IBV/Ck/Can/18
	7-035614	-036989	-048192T	-048430	-049707
Nsp2	1M-673G	1M-673G	1M-673G	1M-673G	1M-673G
Nsp3	674G-2275G	674G-2275G	674G-2267G	674G-2267G	674G-2275G
Nsp4	2276G-2789Q	2276G-2789Q	2268G-2781Q	2268G-2781Q	2276G-2789Q
Nsp5	2790A-3096Q	2790A-3096Q	2782A-3088Q	2782A-3088Q	2790A-3096Q
Nsp6	3097S-3390Q	3097S-3390Q	3089S-3382Q	3089S-3382Q	3097S-3390Q
Nsp7	3391S-3473Q	3391S-3473Q	3383S-3465Q	3383S-3465Q	3391S-3473Q
Nsp8	3474S-3683Q	3474S-3683Q	3466S-3675Q	3466S-3675Q	3474S-3683Q
Nsp9	3684N-3794Q	3684N-3794Q	3676N-3789Q	3676N-3789Q	3684N-3794Q
Nsp10	3795S-3939Q	3795S-3939Q	3790S-3934Q	3790S-3934Q	3795S-3939Q
Nsp11	3940S-3962G	3940S-3962G	3935S-3957G	3935S-3957G	3940S-3962G
Nsp12	3954R-4879Q	3954R-4879Q	3949R-4874Q	3949R-4874Q	3954R-4879Q
Nsp13	4880S-5479Q	4880S-5479Q	4875S-5474Q	4875S-5474Q	4880S-5479Q
Nsp14	5480G-6000-Q	5480G-6000-Q	5475G-5995-Q	5475G-5995-Q	5480G-6000-Q
Nsp15	6001S-6338Q	6001S-6338Q	5996S-6333Q	5996S-6333Q	6001S-6338Q
Nsp16	6339S-6640M	6339S-6640M	6334S-6635M	6334S-6635M	6339S-6640M
Nsp2	1M-673G	1M-673G	1M-673G	1M-673G	1M-673G
Nsp3	674G-2275G	674G-2275G	674G-2267G	674G-2267G	674G-2275G

^a: Positions were based on 1ab from IBV Beaudette strain (accession number NC_001451), and modified according to 1ab from TCoV (accession number YP_001941164) and presented as the residue position with 1 being the methionine at the beginning of ORF 1a and 1ab followed by the single letter code for the amino acid at that position.