

FAO World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD)

Genotyping Report

FMDV serotype: O
Country: Hong Kong SAR
Year: 2017
Batch: WRLFMD/2018/00002
No. of sequences: 4
Report date: 6th March 2018
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska

This is a supplementary report containing the additional genotyping results of O/HKN/5/2017



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Virus sample name:	HKN/5/2017
Sender reference:	17-14841
Location of origin:	Sheung Shui Slaughterhouse, Sheung Shui, New Territories
Country of origin:	Hong Kong SAR
Date of collection:	09/10/2017
Host species:	porcine
Serotype:	O
Topotype:	CATHAY
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	LFBK2
Harvest date of material:	27/02/2018
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/03/2018
Created:	06/03/2018
Last updated:	06/03/2018
VIBASys IDs: sample 35916, genome 35917, sequence viba_35918, sequencing info 35919	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_34909	HKN/1/2017	porcine	100.0	0	O	CATHAY		
viba_34913	HKN/3/2017	porcine	100.0	0	O	CATHAY		
viba_35658	HKN/11/2017	porcine	99.4	0	O	CATHAY		
viba_34917	HKN/4/2017	porcine	99.2	0	O	CATHAY		
viba_30080	HKN/5/2016	porcine	98.9	0	O	CATHAY		
viba_30088	HKN/7/2016	porcine	98.9	0	O	CATHAY		
viba_35662	HKN/12/2017	porcine	98.9	0	O	CATHAY		
viba_30084	HKN/6/2016	porcine	98.9	0	O	CATHAY		
viba_30076	HKN/4/2016	porcine	98.9	0	O	CATHAY		
viba_30072	HKN/3/2016	porcine	98.7	0	O	CATHAY		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_480	Yunlin/TAW/97	porcine	88.2	0	O	CATHAY		
viba_418	PHI/7/96	porcine	88.0	0	O	CATHAY		
viba_584	HKN/6/83	bovine	85.2	2	O	CATHAY		
viba_325	HKN/21/70	porcine	82.0	2	O	CATHAY		
viba_617	IND/53/79	bovine	80.0	0	O	ME-SA		
viba_221	MAL/1/98		79.8	0	O	EA-2		
viba_850	NEP/1/2015	cattle	79.7	1	O	ME-SA	PanAsia-2	KAT-15
viba_85	UGA/3/2002		79.4	0	O	EA-2		
viba_50	UGA/17/98		79.4	0	O	EA-4		
viba_263	TAN/2/2004	bovine	79.2	0	O	EA-2		

Virus sample name:	HKN/8/2017
Sender reference:	17-15777
Location of origin:	Sheung Shui Slaughterhouse, Sheung Shui, New Territories
Country of origin:	Hong Kong SAR
Date of collection:	30/10/2017
Host species:	porcine
Serotype:	O
Topotype:	CATHAY
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RS1
Harvest date of material:	24/01/2018
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	31/01/2018
Created:	02/02/2018
Last updated:	02/02/2018
VIBASys IDs: sample 35652, genome 35653, sequence viba_35654, sequencing info 35655	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_35662	HKN/12/2017	porcine	99.4	0	O	CATHAY		
viba_35658	HKN/11/2017	porcine	98.6	0	O	CATHAY		
viba_35918	HKN/5/2017	porcine	98.6	0	O	CATHAY		
viba_34909	HKN/1/2017	porcine	98.6	0	O	CATHAY		
viba_34913	HKN/3/2017	porcine	98.6	0	O	CATHAY		
viba_34917	HKN/4/2017	porcine	98.4	0	O	CATHAY		
viba_30088	HKN/7/2016	porcine	98.1	0	O	CATHAY		
viba_30072	HKN/3/2016	porcine	97.9	0	O	CATHAY		
viba_30080	HKN/5/2016	porcine	97.8	0	O	CATHAY		
viba_30084	HKN/6/2016	porcine	97.8	0	O	CATHAY		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_418	PHI/7/96	porcine	86.9	0	O	CATHAY		
viba_480	Yunlin/TAW/97	porcine	86.9	0	O	CATHAY		
viba_584	HKN/6/83	bovine	84.7	2	O	CATHAY		
viba_325	HKN/21/70	porcine	81.6	2	O	CATHAY		
viba_617	IND/53/79	bovine	79.4	0	O	ME-SA		
viba_50	UGA/17/98		79.2	0	O	EA-4		
viba_850	NEP/1/2015	cattle	78.9	1	O	ME-SA	PanAsia-2	KAT-15
viba_518	ISA/1/62		78.7	0	O	ISA-1		
viba_221	MAL/1/98		78.7	0	O	EA-2		
viba_238	ISA/8/83	bovine	78.6	0	O	ISA-1		

Virus sample name:	HKN/11/2017
Sender reference:	17-16278
Location of origin:	Sheung Shui Slaughterhouse, Sheung Shui, New Territories
Country of origin:	Hong Kong SAR
Date of collection:	09/11/2017
Host species:	porcine
Serotype:	O
Topotype:	CATHAY
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RS1
Harvest date of material:	24/01/2018
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	31/01/2018
Created:	02/02/2018
Last updated:	02/02/2018
VIBASys IDs: sample 35656, genome 35657, sequence viba_35658, sequencing info 35659	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_35918	HKN/5/2017	porcine	99.4	0	O	CATHAY		
viba_34909	HKN/11/2017	porcine	99.4	0	O	CATHAY		
viba_34913	HKN/3/2017	porcine	99.4	0	O	CATHAY		
viba_30088	HKN/7/2016	porcine	99.2	0	O	CATHAY		
viba_34917	HKN/4/2017	porcine	99.2	0	O	CATHAY		
viba_30072	HKN/3/2016	porcine	99.1	0	O	CATHAY		
viba_30080	HKN/5/2016	porcine	98.9	0	O	CATHAY		
viba_35662	HKN/12/2017	porcine	98.9	0	O	CATHAY		
viba_30084	HKN/6/2016	porcine	98.9	0	O	CATHAY		
viba_30076	HKN/4/2016	porcine	98.9	0	O	CATHAY		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_480	Yunlin/TAW/97	porcine	88.2	0	O	CATHAY		
viba_418	PHI/7/96	porcine	88.0	0	O	CATHAY		
viba_584	HKN/6/83	bovine	85.2	2	O	CATHAY		
viba_325	HKN/21/70	porcine	82.3	2	O	CATHAY		
viba_617	IND/53/79	bovine	80.0	0	O	ME-SA		
viba_221	MAL/1/98		79.5	0	O	EA-2		
viba_518	ISA/1/62		79.4	0	O	ISA-1		
viba_85	UGA/3/2002		79.4	0	O	EA-2		
viba_50	UGA/17/98		79.4	0	O	EA-4		
viba_238	ISA/8/83	bovine	79.3	0	O	ISA-1		

Virus sample name:	HKN/12/2017
Sender reference:	17-16424
Location of origin:	Sheung Shui Slaughterhouse, Sheung Shui, New Territories
Country of origin:	Hong Kong SAR
Date of collection:	13/11/2017
Host species:	porcine
Serotype:	O
Topotype:	CATHAY
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RS1 24/01/2018; RS2
Harvest date of material:	26/01/2018
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	31/01/2018
Created:	02/02/2018
Last updated:	02/02/2018
VIBASys IDs: sample 35660, genome 35661, sequence viba_35662, sequencing info 35663	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_35654	HKN/8/2017	porcine	99.4	0	O	CATHAY		
viba_35658	HKN/11/2017	porcine	98.9	0	O	CATHAY		
viba_35918	HKN/5/2017	porcine	98.9	0	O	CATHAY		
viba_34909	HKN/1/2017	porcine	98.9	0	O	CATHAY		
viba_34913	HKN/3/2017	porcine	98.9	0	O	CATHAY		
viba_34917	HKN/4/2017	porcine	98.7	0	O	CATHAY		
viba_30088	HKN/7/2016	porcine	98.4	0	O	CATHAY		
viba_30072	HKN/3/2016	porcine	98.3	0	O	CATHAY		
viba_30080	HKN/5/2016	porcine	98.1	0	O	CATHAY		
viba_30084	HKN/6/2016	porcine	98.1	0	O	CATHAY		

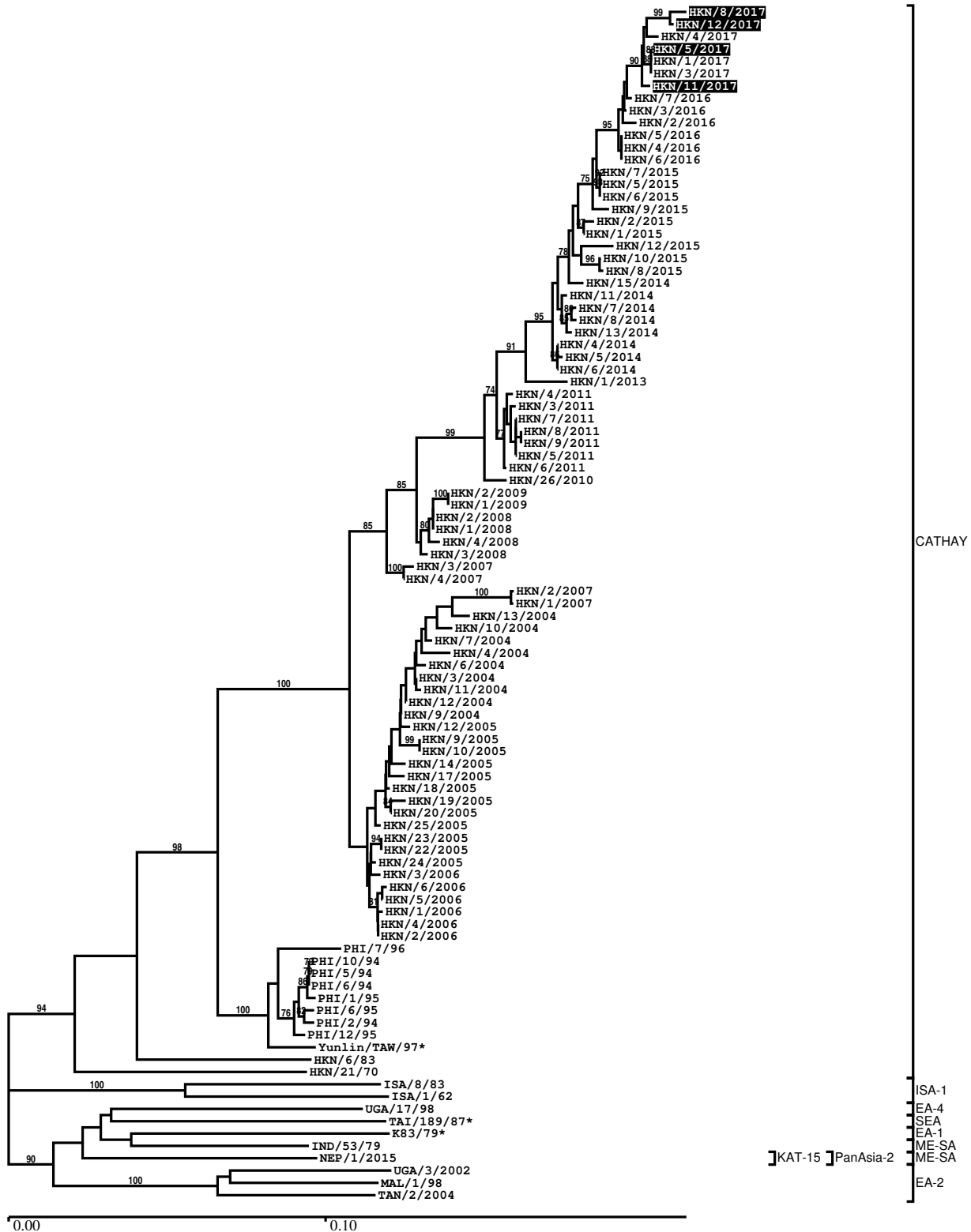
Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_418	PHI/7/96	porcine	87.2	0	O	CATHAY		
viba_480	Yunlin/TAW/97	porcine	87.2	0	O	CATHAY		
viba_584	HKN/6/83	bovine	85.0	2	O	CATHAY		
viba_325	HKN/21/70	porcine	82.2	2	O	CATHAY		
viba_50	UGA/17/98		79.8	0	O	EA-4		
viba_617	IND/53/79	bovine	79.5	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	79.1	1	O	ME-SA	PanAsia-2	KAT-15
viba_518	ISA/1/62		79.0	0	O	ISA-1		
viba_221	MAL/1/98		79.0	0	O	EA-2		
viba_523	K83/79		78.9	0	O	EA-1		

Report on FMDV O in Hong Kong SAR in 2017

Batch: WRLFMD/2018/00002



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor: vp1_O
 Query sequence set: WRLFMD/2018/00002-Hong Kong SAR-O (4 sequences)
 Sequence database set: allseqs_O (3722 sequences)
 Prototype sequence set: !prototypes_O (48 sequences)
 Number of related sequences reported: 10
 Minimal VP1 subsequence match length: 600
 Sequence alignment method: muscle (default parameters)
 Sequence alignment length: 633
 Phylogeny reconstruction method: fdnadist, fneighbor
 Number of bootstrap samples: 1000
 Random seed for bootstrapping: 1
 Displaying bootstrap values above: 70.0%
 Number of sequences in tree capped at: 100
 Number of prototype sequences in tree: 13
 VIBASys version: reflabs-1.1.2

Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/O

label	accession	host(s)	lab	country	taxonomic information
HKN/8/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/12/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/5/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/11/2017	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/7/2016	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2016	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/2/2016	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/5/2016	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2016	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/6/2016	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/7/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/5/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/6/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/9/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/2/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/12/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/10/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/8/2015	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/15/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/11/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/7/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/8/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/13/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/5/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/6/2014	n/a	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2013	KM243172	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2011	KM243166	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2011	KM243165	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/7/2011	KM243169	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/8/2011	KM243170	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/9/2011	KM243171	porcine	WRLFMD	Hong Kong SAR	CATHAY

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label	accession	host(s)	lab	country	taxonomic information
HKN/5/2011	KM243167	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/6/2011	KM243168	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/26/2010	KM243164	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/2/2009	KM243160	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2009	KM243159	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/2/2008	KM243156	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2008	KM243155	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2008	KM243158	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2008	KM243157	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2007	KM243152	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2007	KM243153	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/2/2007	KM243151	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2007	KM243150	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/13/2004	KM243126	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/10/2004	DQ164887	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/7/2004	DQ164884	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2004	DQ164882	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/6/2004	DQ164883	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2004	DQ164881	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/11/2004	DQ164888	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/12/2004	DQ164889	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/9/2004	DQ164886	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/12/2005	KM243132	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/9/2005	KM243129	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/10/2005	KM243130	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/14/2005	KM243133	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/17/2005	KM243135	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/18/2005	KM243136	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/19/2005	KM243137	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/20/2005	KM243138	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/25/2005	KM243143	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/23/2005	KM243141	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/22/2005	KM243140	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/24/2005	KM243142	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/3/2006	KM243146	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/6/2006	KM243149	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/5/2006	KM243148	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/1/2006	KM243144	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/4/2006	KM243147	porcine	WRLFMD	Hong Kong SAR	CATHAY
HKN/2/2006	KM243145	porcine	WRLFMD	Hong Kong SAR	CATHAY
PHI/7/96	AJ294926	porcine	WRLFMD	Philippines	CATHAY
PHI/10/94	KM243038	porcine	WRLFMD	Philippines	CATHAY
PHI/5/94	KM243035	porcine	WRLFMD	Philippines	CATHAY
PHI/6/94	KM243036	porcine	WRLFMD	Philippines	CATHAY
PHI/1/95	KM243041	porcine	WRLFMD	Philippines	CATHAY
PHI/6/95	KM243044	porcine	WRLFMD	Philippines	CATHAY
PHI/2/94	KM243034	porcine	WRLFMD	Philippines	CATHAY
PHI/12/95	KM243048	porcine	WRLFMD	Philippines	CATHAY
Yunlin/TAW/97*	AF308157	porcine	PIADC	Taiwan	CATHAY
HKN/6/83	AJ294919	bovine	WRLFMD	Hong Kong SAR	CATHAY
HKN/21/70	AJ294911	porcine	WRLFMD	Hong Kong SAR	CATHAY
ISA/8/83	AJ303503	bovine	WRLFMD	Indonesia	ISA-1
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1
UGA/17/98	HM211075	n/a	WRLFMD	Uganda	EA-4
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
IND/53/79	AF292107	bovine	PD-FMD	India	ME-SA
NEP/1/2015	n/a	cattle	WRLFMD	Nepal	ME-SA/PanAsia-2/KAT-15
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
MAL/1/98	DQ165074	n/a	WRLFMD	Malawi	EA-2
TAN/2/2004	KF561679	bovine	WRLFMD	Tanzania	EA-2

*, not a WRLFMD Reference Number

n/a, not available