

## Supplementary materials

**Table S1.** Referenced viruses strains used in this study.

No	Virus	GenBank N°	Year	Host	Location
1	BAGV	LC730845	2021	Red-legged partridge	Portugal
2	BAGV	HQ644144	2010	Red-legged partridge	Spain
3	BAGV	KR108245	2010	Red-legged partridge	Spain
4	BAGV	KR108246	2010	Red-legged partridge	Spain
5	BAGV	KR108244	2010	Red-legged partridge	Spain
6	BAGV	HQ644143	2010	Red-legged partridge	Spain
7	BAGV	LC318701	2013	Culex quinquefasciatus	Zambia
8	BAGV	MW672101	2018	Culex univittatus	Namibia
9	BAGV	MF380429	1988	Culex poicilipes	Cote d'Ivoire
10	BAGV	MF380430	1989	Culex poicilipes	Senegal
11	BAGV	MF380434	2014	Culex neavei	Senegal
12	BAGV	MF380433	2001	Culex poicilipes	Senegal
13	BAGV	MF380428	2004	Culex poicilipes	Senegal
14	BAGV	MF380426	2000	Culex poicilipes	Senegal
15	BAGV	MF380432	2001	Culex poicilipes	Senegal
16	BAGV	MF380431	1994	Culex neavei	Senegal
17	BAGV	MF380427	2004	Culex poicilipes	Senegal
18	BAGV	MF380425	2000	Culex poicilipes	Senegal
19	BAGV	MF380424	1989	Culex poicilipes	Senegal
20	BAGV	NC012534	NA	Mosquito	Central African Republic
21	BAGV	EU684972	1996	Culex tritaeniorhynchus	India

22	ITMV	KC734552	2010	Turkey	Israel
23	ITMV	KC734550	1995	Turkey	Israel
24	ITMV	KC734549	1985	Turkey	Israel
25	ITMV	KF917537	1959	Turkey	Israel
26	TMUV	JX477685	1955	NA	Malaysia
27	TMUV*	JX477686	2000	NA	Malaysia
28	TMUV	MW821486	2020	Goose	Taiwan
29	TMUV	MW922032	2019	Mallard	Taiwan
30	TMUV	MH748542	2014	Mallard	China
31	TMUV	KT607936	2012	Culex tritaeniorhynchus	China
32	TMUV	KT607935	2012	Culex tritaeniorhynchus	China
33	TMUV	KX097990	2012	Pekin duck	Malaysia
34	TMUV	MF621927	2007	Duck	Thailand
35	TMUV	KR061333	2013	Duck	Thailand
36	TMUV	MH460536	2015	Mosquito	Thailand
37	TMUV	MT708901	2019	Goose	China
38	TMUV	MN966679	2019	Duck	China
39	TMUV	MT951413	2020	Goose	China
40	TMUV	MT951412	2020	Duck	China
41	TMUV	KY623436	2015	Duck	China
42	TMUV	KX686579	2015	layer duck	China
43	TMUV	KM275941	2013	Duckling	China
44	TMUV	KJ782380	2012	Chicken	China
45	TMUV*	JF926699	2010	Layer duck	China
46	TMUV	KP096415	2014	Duck	China
47	TMUV	MT447092	2018	Duck	China
48	TMUV	KF826767	2012	House Sparrow	China
49	TMUV	MZ574097	2019	Duck	China
50	TMUV	KY810818	2015	Duck	China
51	TMUV	KX452096	2014	Duck	China
52	TMUV	KJ740745	2013	Layer Duck	China

53	TMUV	MH764607	2017	Meat Ducks	China
54	TMUV	MH764606	2016	Meat Ducks	China
55	TMUV	JQ289550	2010	Duck	China
56	TMUV*	JQ920425	2010	Pigeon	China
57	TMUV	MN649267	2014	Duck	China
58	TMUV	KC990540	2010	Duck	China
59	TMUV	KC990541	2012	Duck	China
60	NTAV	KF917539	1943	Mosquito	Uganda
61	NTAV	NC018705	1966	NA	Cameroon
62	Rocio	NC040776	NA	NA	NA
63	ILHV	MH932545	1994	Anopheles triannulatus	Brazil
64	ILHV	NC009028	NA	NA	NA
65	ILHV	KC481679	2010	Aedes scapularis	Brazil
66	Entebbe bat	KP233893	2011	Little free-tailed bat	Uganda
67	Sokoluk	KF917541	1970	Pipistrellus	Kyrgyzstan
68	Yokose	MH051229	2013	Daubenton's bat	China
69	Montana myotis leukoencephalitis	AJ299445	NA	NA	USA
70	Rio Bravo	AF144692	NA	NA	USA
71	Jutiaba	KJ469371	1969	Hispid cotton rat	Guatemala
72	Modoc	AJ242982	NA	NA	USA
73	Cell fusing agent	NC001564	2012	Aedes aegypti	USA
74	Aedes flavivirus	AB488408	2003	Aedes albopictus	Japan
75	Palm Creek	KC505248	2010	Coquillettidia xanthogaster	Australia
76	Culex flavivirus	GQ165808	2008	Culex quinquefasciatus	Uganda
77	Culex theileri flavivirus	HE574573	2011	Culex theileri	Portugal
78	Tyuleniy	KT224356	1986	Seabird Tick	Russia
79	Karshi	DQ462443	1978	Ornithodoros tick	Turkmenistan
80	Royal Farm	NC039219	NA	NA	Afghanistan

81	Meaban	DQ235144	NA	NA	France
82	Langat	MK680893	1973	Haemaphysalis tick	Thailand
83	Powassan	MZ576219	2020	Hard-bodied tick	USA
84	Alkhumra	NC004355	1995	Human	Saudi Arabia
85	Tick borne encephalitis	JN003208	2002	Human	Russia
86	Louping ill	MN844186	1991	Sheep	UK
87	Bouboui	DQ859057	NA	NA	Central African Republic
88	Banzi	DQ859056	NA	NA	South Africa
89	Potiskum	DQ859067	NA	NA	Papua New Guinea
90	Wesselsbron	JN226796	1997	Human	South Africa
91	Yellow Fever	MF370533	2017	Human	Brazil
92	Lammi	FJ606789	2004	Mosquito	Finland
93	Chaoyang	FJ883471	2008	Mosquito	China
94	Ilomantsi	KC692067	2007	Mosquito	Finland
95	Donggang	NC016997	2009	Aedes sp.	China
96	Zika	KX893855	2016	Human	Venezuela
97	Dengue	AY618991	1977	NA	Thailand
98	Dengue	EU056812	1977	Human	Puerto Rico
99	Dengue	EF105385	1974	Aedes luteocephalus	Senegal
100	Dengue	AY099336	2000	NA	Sri Lanka
101	Dengue	EU482822	2006	Human	Vietnam
102	Iguape	MK332105	1994	Anopheles cruzii	Brazil
103	Usutu	AY453411	2001	Bird	Austria
104	Japanese encephalitis	LC705012	2012	Cattle	Japan
105	Koutango	MN057643	2016	Sandfly	Niger
106	Kunjin	KX394405	1963	Culex annulirostris	Australia
107	WNV	DQ786572	2004	House Sparrow	France
108	Baiyangdian	JF312912	2010	Duck	China

\*Sitiawan virus, Baiyangdian virus and Duck egg-drop syndrome virus (DEDSV) are currently considered to be subtypes of TMUV.