

Detection of infectious spleen and kidney necrosis virus (ISKNV) and turbot reddish body iridovirus (TRBIV) from archival ornamental fish samples

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Table S1. General primers used in this study

Primer name or number	Target region	Primer sequence (5' to 3')	Expected amplicon size (nt)	Reference
MegaloPlusF2	<i>Megalocytivirus</i> MCP gene	TCCAGTGCTGCTGAAGGGTG	1800	This study
MegaloPlusR2	<i>Megalocytivirus</i> MCP gene	GAGAGACCCCAACACGACCG		This study
C1330	<i>Megalocytivirus</i> MCP gene	CGTGCGTAGTTCCTGGTACA	228 (C1330/C1331)	This study
C1403	<i>Megalocytivirus</i> MCP gene	GCGTGTTAAGATCCCCTCCA	102	This study
C1331	<i>Megalocytivirus</i> MCP gene	AATGACACCGACACCTCCTC		This study
C500	<i>Megalocytivirus</i> MCP gene	TTGCTGAGTGCAGGTTTCC	762	Go et al. (2006)
C47	<i>Megalocytivirus</i> MCP gene	TGCTACATTGCCAATGTTAGCC		Go et al. (2006)
C80	<i>Megalocytivirus</i> MCP gene	TCATCAGCCAGAGCAACCAG	906	Go et al. (2006)
C499	<i>Megalocytivirus</i> MCP gene	ATTCCAGCATGGTACGTAAC		Go et al. (2006)
C38	<i>Megalocytivirus</i> ATPase gene	TACGCAGCAGTTGTACCAGG	750	Go et al. (2006)
C55	<i>Megalocytivirus</i> ATPase gene	TCGTCAAAGATCAACATGAGCC		Go et al. (2006)
C86	<i>Megalocytivirus</i> ATPase gene	GACGCCGACATTATCACAC	638	Go et al. (2006)
C59	<i>Megalocytivirus</i> ATPase gene	GATGATCAAACCTGATTACGG		Go et al. (2006)
C84	<i>Megalocytivirus</i> ATPase gene	GGATCACACATGCTTATACATTGAC	796	Go et al. (2006)
C61	<i>Megalocytivirus</i> ATPase gene	ATGAACCCGCTGCACTATGC		Go et al. (2006)
C72	<i>Megalocytivirus</i> DNA Polymerase gene	CAAGGCTGTTGGATTTTGAG	802	Go et al. (2006)
C75	<i>Megalocytivirus</i> DNA Polymerase gene	TGCCTACATACTTCAACCC		Go (2004)
C62	<i>Megalocytivirus</i> IRB6 genomic region	AAGTAGTGAGGGCAGAAG	815	Go et al. (2006)
C67	<i>Megalocytivirus</i> IRB6 genomic region	ATCGTAGTCGTCCATTCC		Go et al. (2006)
C76	<i>Megalocytivirus</i> RNA polymerase gene	TGCCATACTTCCTTGCTAC	797	Go et al. (2006)
C79	<i>Megalocytivirus</i> RNA polymerase gene	ACAGATGACGCGCAGAAAG		Go (2004)
C44	<i>Megalocytivirus</i> CY15 region	CCTACTTATGCAGACGCTGTATC	841	Go (2004)
C45	<i>Megalocytivirus</i> CY15 region	CGTCCACCATAGTCAGTTTTATATC		Go (2004)
C70	<i>Megalocytivirus</i> CY15 region	TGATGAGGCTGGAGAGGAAG	539	Go et al. (2006)
C43	<i>Megalocytivirus</i> CY15 region	TCTTCTCGTCCTTAACAAC		Go (2004)
TeleostF	16S mitochondrial rDNA of fish host	CAACGGACCGAGTTACCCTA	121	This study
TeleostR	16S mitochondrial rDNA of fish host	ACCCTTAATAGCGGCTGCAC		This study

Table S2. *Megalocytivirus* MCP sequences included in this study

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
AY633987	–	KFIV FLIV-EJ	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
EU276417	–	OFIV OFLIV-1	<i>Paralichthys olivaceus</i>	South Korea	≤2007	Kim et al. (unpubl.)
AY633984	–	KFIV FLIV-YG	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
AB666344		ISKNV DGA4/6K	<i>Trichogaster lalius</i>	Singapore	2004	Kurita & Nakajima (2012)
	JX649065	ISKNV D.erio/Senai/2012/1	<i>Danio rerio</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649066	ISKNV D.erio/Senai/2012/2	<i>Danio rerio</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649067	ISKNV Mram/Layang-layang/2012/1	<i>Mikrogeophagus ramirezi</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649068	ISKNV Mram/Layang-layang/2012/2	<i>Mikrogeophagus ramirezi</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649070	ISKNV Tleer/Kulai/2012/2	<i>Trichopodus leeri</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649072	ISKNV Xhell/Tg.Rambutan/2012/2	<i>Xiphophorus helleri</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649073	ISKNV X.maculatus/Senai/2012/1	<i>Xiphophorus maculatus</i>	Malaysia	2011	Subramaniam et al. (2014)
	JX649074	ISKNV X.maculatus/Senai/2012/2	<i>Xiphophorus maculatus</i>	Malaysia	2011	Subramaniam et al. (2014)
KX354221	–	South American cichlid iridovirus	<i>Astronotus ocellatus</i> <i>Cleithcara maronii</i>	USA	1992	This study
AY285745	–	ALIV	<i>Aplocheilichthys normani</i>	Indonesia	1998	Sudthongkong et al. (2002a,b)
HQ317458	–	ISKNV XQ MCP	<i>Siniperca chuatsi</i>	China	2006	Fu et al. (2011)
AY936203	–	MCIV	<i>Maccullochella peelii</i>	Australia	2003	Go et al. (2006), Lancaster et al. (2003)
	AB666346	ISKNV DGA10/8 Cola MCP Kurita	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
GQ273492	–	TRBIV	<i>Scophthalmus maximus</i>	China	2006	Shi et al. (2010)
AY310917	–	SBIV	<i>Lateolabrax japonicus</i>	Japan (S China Sea)	1993	Jung et al. (1997), Sudthongkong et al. (2002b)
	AB109372 –	SBIV	<i>Lateolabrax japonicus</i>	Japan (S China Sea)	1993	Jung et al. (1997), Sudthongkong et al. (2002b)
AY590687	–	TRBIV	<i>Scophthalmus maximus</i>	China	2002	Shi et al. (2004)
HQ317460	–	ISKNV QY MCP	<i>Siniperca chuatsi</i>	China	2009	Fu et al. (2011)
AY633983	–	KFIV FLIV-SS	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
AB669096		PKIV Kurita	<i>Pterapogon kaudneri</i>	Southeast Asia	2006	Kurita & Nakajima (2012)
	EU753255	BCIV MCP Weber	<i>Pterapogon kaudneri</i>	USA (Indonesia)	2004	Weber et al. (2009)
	KC424426	OBIV Sriwanayos	<i>Platax orbicularis</i>	Belgium (Indonesia)	2010	Sriwanayos et al. (2013)
JQ253366	–	Megalocytivirus Sabah/RAA/2012 GGIV4	<i>Epinephelus lanceolatus</i>	Malaysia	2011	Azrazitah et al. (2014)
TLMV1988 B	–	<i>Trichogaster lalius</i> megalocytivirus 1988B	<i>Trichogaster lalius</i>	Singapore/Australia	1988	This study
JQ253367	–	Megalocytivirus HGIV65 Sabah	<i>Cromileptes altivelis</i>	Malaysia	2006	Azrazitah et al. (2014)
AY661546	–	OFIV	<i>Paralichthys olivaceus</i>	South Korea	≤2004	Kim et al. (unpubl.)

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
AY633986	–	KFIV FLIV-WD1	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
AY633992		KFLIV-PH MCP	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
	AY633990	KFIV FLIV-JJY	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
EU847414		KGIV-05	<i>Epinephelus lanceolatus</i>	Taiwan	2005	Wang et al. (2009)
	GQ202216	SKIV-ZJ07 MCP	<i>Oplegnathus punctatus</i>	China	2007	Dong et al. (2010)
	JX131614	OSGIV-HN11	<i>Epinephelus coioides</i>	China	2011	Ma et al. (2012)
	KC775382	ISKNV NH060831	<i>Siniperca chuatsi</i>	China	2006	Dong et al. (2008)
EU847417	–	BPIV-07	<i>Lates calcarifer</i>	Taiwan	2007	Wang et al. (2009)
JQ253369	–	Megalocytivirus Sabah/RAA/2012 HGIV67 Sabah/	<i>Cromileptes altivelis</i>	Malaysia	2006	Azrazitah et al. (2014)
JF264355	–	KGIV Pt 96 06	<i>Epinephelus lanceolatus</i>	Taiwan	2006	Huang et al. (2011)
AF371960		ISKNV	<i>Siniperca chuatsi</i>	China	1998	He et al. (2001)
	AY989901	DGIV-2004	<i>Trichogaster lalius</i>	Australia (SE Asia)	2004	Go et al. (2006)
	AY989906	DGIV-1996	<i>Trichogaster lalius</i>	Australia	1996	Go et al. (2006)
	KX354218	DGIV-10	<i>Trichopodus lalius</i>	Australia	2010	Rimmer et al. (2012), this study
	Rimmer					
	KX354220	<i>Pterophyllum scalare</i> megalocytivirus 2002	<i>Pterophyllum scalare</i>	Australia	2002	This study
	KX354219	<i>Astronotus ocellatus</i> megalocytivirus 2006	<i>Astronotus ocellatus</i>	Australia (SE Asia)	2006	This study
	AB666338	ISKNV Seabass	<i>Late calcarifer</i>	Malaysia	2000	Kurita & Nakajima (2012)
	AB666339	ISKNV lapulapu	<i>Epinephelus coioides</i>	Phillipines	2000	Kurita & Nakajima (2012)
	AB666337	ISKNV Reddrum	<i>Sciaenops ocellatus</i>	Malaysia	2000	Kurita & Nakajima (2012)
	AB666341	ISKNV 9GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666340	ISKNV 1GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666342	ISKNV MA1/6	<i>Mugil cephalus</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666343	ISKNV MA5/5	<i>Mugil cephalus</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666345	ISKNV DGA13/6	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666347	ISKNV DG8/10	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666348	ISKNV DG12/8	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
	HQ317462	ISKNV HZhm	<i>Siniperca chuatsi</i>	China	2007	Fu et al. (2011)
	HQ317461	ISKNV NZh	<i>Siniperca chuatsi</i>	China	2006	Fu et al. (2011)
	HQ317459	ISKNV XH	<i>Siniperca chuatsi</i>	China	2002	Fu et al. (2011)
	HQ317465	ISKNV-DW	<i>Siniperca chuatsi</i>	China	2006	Fu et al. (2011)
	JQ253372	Megalocytivirus Sabah/RAA/2012 OSGIV75	<i>Epinephelus coioides</i>	Malaysia	2004	Azrazitah et al. (2014)
	AB930172	Anabas testudineus iridovirus	<i>Anabas testudineus</i>	Vietnam	≤2014	Dang et al. (unpubl.)
	KP292956	ISKNV A2 12-01558-02	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292957	ISKNV B23 12-01790-03	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)

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	KP292958	ISKNV B152 12-01798-04	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292959	ISKNV B182 12-01799-16	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292960	ISKNV B221 12-01802-05	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
AY633985 KFIV FLIV-WD2	–	KFIV FLIV-WD2	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
AY849393	–	RBIV CNU-1	<i>Oplegnathus fasciatus</i>	South Korea	≤2004	Kim et al. (2007)
AY532608	–	RBIV-KOR-TY4	<i>Oplegnathus fasciatus</i>	South Korea	2000– 2002	Do et al. (2005b)
HQ857785	–	TSIV	<i>Gasterosteus aculeatus</i>	Canada	2007	Waltzek et al. (2012)
JQ253370	–	Megalocytivirus Sabah/RAA/2012	<i>Cromileptes altivelis</i>	Malaysia	2006	Azrazitah et al. (2014)
KC775381	–	ISKNV LJ2012	<i>Siniperca chuatsi</i>	China	2012	Dong et al. (2013)
AY633980	–	KFIV FLIV-DS1	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
DQ198145	–	OFIV	<i>Paralichthys olivaceus</i>	South Korea	2005	Kim et al. (2006)
AB109369		DGIV	<i>Trichogaster lalius</i>	Japan (Malaysia)	2000	Sudthongkong et al. (2002a,b)
	AY285744	DGIV	<i>Trichogaster lalius</i>	Japan (Malaysia)	2000	Sudthongkong et al. (2002a,b)
JF264350	–	GSIV_Pt_836_05	<i>Lates calcarifer</i>	Taiwan	2005	Huang et al. (2011)
JQ253371	–	Megalocytivirus Sabah/RAA/2012 HGIV73	<i>Cromileptes altivelis</i>	Malaysia	2006	Azrazitah et al. (2014)
AY533035	–	RBIV-KOR-TY2	<i>Oplegnathus fasciatus</i>	South Korea	2000– 2002	Do et al. (2005a)
AY532611	–	RBIV RBIV-KOR-CS	<i>Oplegnathus fasciatus</i>	South Korea	2000– 2002	Do et al. (2005a)
AY532612	–	RBIV RSIV-KOR-TY	<i>Pagrus major</i>	South Korea	2000– 2002	Do et al. (2005b)
HQ263620	–	SFIV 724/China	<i>Kareius bicoloratus</i>	China	2008– 2010	Zhao et al. (2011)
AB080362		RSIV-Ehime	<i>Pagrus major</i>	Japan	1992	Inouye et al. (1992)
	AB666318	RSIV 2HSB	<i>Morone saxatilis</i> × <i>Micropterus salmoides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666319	RSIV TGA12	<i>Epinephelus fuscoguttatus</i>	Singapore	2000	Kurita & Nakajima (2012)
	EU847419	SSIV-05 MCP Wang,	<i>Rhabdosargus sarba</i>	Taiwan	2005	Wang et al. (2009)
	JF264348	MGIV Nt 546 09	<i>Oxyloetris marmoratus</i>	Taiwan	2009	Huang et al. (2011)
AY633991	–	KFIV FLIV-JHJ	<i>Paralichthys olivaceus</i>	Korea	2003	Do et al. (2005a)
AY285746		GSIV	<i>Epinephelus malabaricus</i>	Thailand	1993	Jung et al. (1997), Sudthongkong et al. (2002b)
	AB109370	GSIV	<i>Epinephelus malabaricus</i>	Thailand	1993	Jung et al. (1997), Sudthongkong et al. (2002b)
	JN815056	RSIV 02JPNRedSb MCP Kwon,	<i>Pagrus major</i>	Japan	2006	Kwon et al. (2011)
	JN815059	RSIV 06JPN-RockBr MCP Kwon,	<i>Oplegnathus fasciatus</i>	Japan	2008	Kwon et al. (2011)

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
	JN815062	RSIV 07JPN-YelTail MCP Kwon,	<i>Seriola quinqueradiata</i>	Japan	2008	Kwon et al. (2011)
	JN815065	RSIV 09JPNAmJ MCP Kwon,	<i>Seriola dumerili</i>	Japan	2008	Kwon et al. (2011)
	JN815068	RSIV 10JPN-BfTuna MCP Kwon,	<i>Thunnus thynnus</i>	Japan	2008	Kwon et al. (2011)
	JN815071	RSIV 24KOR-RockBr MCP Kwon,	<i>Oplegnathus fasciatus</i>	Japan	2004	Kwon et al. (2011)
	JN815074	RSIV 25KORRockBr MCP Kwon	<i>Oplegnathus fasciatus</i>	Japan	2009	Kwon et al. (2011)
AY633988		KFIV FLIV-JJ	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
	AB166788	TIV MCP	<i>Scophthalmus maximus</i>	South Korea	2003	Kim et al. (2005)
HQ317457	–	ISKNV XT	<i>Siniperca chuatsi</i>	China	2006	Fu et al. (2011)
AY532606	–	RBIV KOR-TY1	<i>Oplegnathus fasciatus</i>	South Korea	2000	Do et al. (2004)
AY849394	–	RBIV-CNU-2 MC	<i>Oplegnathus fasciatus</i>	South Korea	≤2004	Kim et al. (2007)
AY532613	–	RBIV SBIV-KOR-TY	<i>Lateolabrax japonicus</i>	South Korea	2000–2002	Do et al. (2005b)
AY779031	–	LYCIV	<i>Larimichthys crocea</i>	China	2001	Chen et al. (2003a), Ao & Chen (2006)
AY633989	–	KFIV FLIV-JSY	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a,b)
AB109368	–	ALIV MCP Sudt	<i>Aplocheilichthys normani</i>	Japan (Indonesia)	1998	Sudthongkong et al. (2002a,b)
HM067835	–	MSGIV	<i>Oxyeleotris marmoratus</i>	China	2009	Wang et al. (2011)
JF264354	–	GSIV_Pt_843_05	<i>Lates calcarifer</i>	Taiwan	2005	Huang et al. (2011)
JF264353	–	GSIV_Pt_113_06	<i>Lates calcarifer</i>	Taiwan	2006	Huang et al. (2011)
KX354223		<i>Pterophyllum scalare</i> megalocytivirus 1986	<i>Pterophyllum scalare</i>	Canada	1986	Schuh & Shirley (1990), this study
	KX354221	<i>Trichogaster lalius</i> megalocytivirus 1988	<i>Trichogaster lalius</i>	Australia (Singapore)	1988	Anderson et al. (1993), this study,
	TTMV1992	<i>Trichopodus trichopterus</i> megalocytivirus 1992	<i>Trichopodus trichopterus</i>	USA	1992–1993	Fraser et al. (1993), Gias et al. (2011)
HM596017		TIV R-603 MCP	<i>Scophthalmus maximus</i>	China	2009	Zhao et al. (2011)
	HQ263621 PIV 603	Perch iridovirus 603-2/China	<i>Perca fluviatilis</i>	China	2008–2010	Zhao et al. (2011)
	HQ263622 SFIV 603	Stone flounder iridovirus 603-3/	<i>Kareius bicoloratus</i>	China	2008–2010	Zhao et al. (2011)
AY532609	–	RBIV RBIV-KOR-GJ	<i>Oplegnathus fasciatus</i>	South Korea	2000–2002	Do et al. (2005b)
AY532614	–	RBIV RFIV-KOR-TY	<i>Sebastes schlegeli</i>	South Korea	2000–2002	Do et al. (2005b)
JQ253373	–	Megalocytivirus Sabah/RAA/2012 BMGIV46	<i>Epinephelus fuscoguttatus</i>	Malaysia	2007	Azrazitah et al. (2014)
JF264356		SSBIV_Pt_703_05	<i>Rhabdosargus sarba</i>	Taiwan	2005	Huang et al. (2011)
	JF264345	GIV_Pt_141_06	<i>Epinephelus coioides</i>	Taiwan	2006	Huang et al. (2011)
	JF264349	GIV Pt 308 08	<i>Epinephelus coioides</i>	Taiwan	2008	Huang et al. (2011)
	JQ253368	Megalocytivirus Sabah/RAA/2012	<i>Cromileptes ailtivelis</i>	Malaysia	2006	Azrazitah et al. (2014)

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
AY532607	–	HGIV66 RBIV RBIV-KOR-TY3	<i>Oplegnathus fasciatus</i>	South Korea	2000– 2002	Do et al. (2005b)
JF264352	–	RBIV Tp 45 08	<i>Oplegnathus fasciatus</i>	Taiwan (Korea)	2008	Huang et al. (2011)
EU847420	–	CPIV-05	<i>Leiognathus equulus</i>	Taiwan	2005	Wang et al. (2009)
	AB178944	RSIV-K	<i>Pagrus major</i>	South Korea	≤2004	Kim et al. (unpubl.)
	AB178943	RBIV-K	<i>Oplegnathus fasciatus</i>	South Korea	≤2004	Kim et al. (unpubl.)
	AB666327	RSIV 6SB	<i>Acanthopagrus latus</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666328	RSIV RSIV-1	<i>Oplegnathus fasciatus</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666331	RSIV RSIV-4	<i>Pseudocaranx dentex</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666334	RSIV RSIV-7	<i>Pagrus major</i>	Japan	1996	Kurita & Nakajima (2012)
JF264346		GSIV_Pt_327_08	<i>Lates calcarifer</i>	Taiwan	2008	Huang et al. (2011)
JQ253374		Megalocytivirus Sabah/RAA/2012 BMGIV48	<i>Epinephelus fuscoguttatus</i>	Malaysia	2007	Azrazitah et al. (2014)
EU315313		GSIV-K1	<i>Lates calcarifer</i>	Taiwan	≤2007	Wen et al. (2008)
JF264347		KGIV Pt 36 06	<i>Epinephelus lanceolatus</i>	Taiwan	2006	Huang et al. (2011)
	JF264351	KGIV Pt 48 06	<i>Epinephelus lanceolatus</i>	Taiwan	2006	Huang et al. (2011)
HQ317463	–	ISKNV HZhj	<i>Seriola quinqueradiata</i>	China	2007	Fu et al. (2011)
AB461856		RSIV U-6	<i>Pagrus major</i>	Japan	2005	Shinmoto et al. (2009)
	AB461855	RSIV KST-Y-1 MCP Shin	<i>Seriola quinqueradiata</i>	Japan	2004	Shinmoto et al. (2009)
HQ317464	–	ISKNV HT	<i>Siniperca chuatsi</i>	China	2006	Fu et al. (2011)
HM067603	–	SPIV CH-1	<i>Lateolabrax japonicus</i>	Korea (China)	2000	Jeong et al. (2006)
JQ253365	–	Megalocytivirus Sabah/RAA/2012 GGIV3	<i>Epinephelus lanceolatus</i>	Malaysia	2011	Azrazitah et al. (2014)
AY633982	–	KFIV FLIV-MI	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
AY532610	–	RBIV RBIV-KOR-YS	<i>Oplegnathus fasciatus</i>	South Korea	2000– 2002	Do et al. (2005b)
AY633981	–	KFIV FLIV-DS2	<i>Paralichthys olivaceus</i>	South Korea	2003	Do et al. (2005a)
EU847418	–	BPIV	<i>Lates calcarifer</i>	Taiwan	2008	Wang et al. (2009)
AB109371		RSIV MCP	<i>Pagrus major</i>	Japan	1994	Jung et al. (1997), Sudthongkong et al. (2002b)
	AY310918	RSIV MCP Sudth	<i>Pagrus major</i>	Japan	1994	Jung et al. (1997), Sudthongkong et al. (2002b)
AY894343		OSGIV	<i>Epinephelus coioides</i>	China	2002	Lu et al. (2005)
	EU847416	BPIV-05	<i>Lates calcarifer</i>	Taiwan	2005	Wang et al. (2009)
	AB178942	SBIV-K	<i>Pagrus major</i>	South Korea	≤2004	Kim et al. (unpubl.)
	AB263097	RSIV U-1	<i>Pagrus major</i>	Japan	2001	Imajoh et al. (2007)
	HQ105005	RBIV-C1	<i>Oplegnathus fasciatus</i>	China	2009	Zhang et al. (2012)
	EU847415	KGIV-07	<i>Epinephelus lanceolatus</i>	Taiwan	2007	Wang et al. (2009)

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
AB666320		RSIV TGA14	<i>Epinephelus fuscoguttatus</i>	Singapore	2002	Kurita & Nakajima (2012)
AB666321		RSIV 8Pe	<i>Latelolabrax japonicus</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
AB666322		RSIV 7GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
AB666323		RSIV GIG42	<i>Epinephelus lanceolatus</i>	China [Hong Kong]	2002	Kurita & Nakajima (2012)
AB666324		RSIV 10GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2002	Kurita & Nakajima (2012)
AB666325		RSIV GIG45	<i>Epinephelus lanceolatus</i>	China [Hong Kong]	2002	Kurita & Nakajima (2012)
AB666326		RSIV 3GG1	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
AB666329		RSIV RSIV-2 Sedu MCP Kurita,	<i>Seriola dumerili</i>	Japan	1996	Kurita & Nakajima (2012)
AB666330		RSIV RSIV-3 Thor MCP Kurita,	<i>Thunnus orientalis</i>	Japan	1996	Kurita & Nakajima (2012)
AB666332		RSIV RSIV-5 Lasp MCP Kurita,	<i>Lateolabrax sp.</i>	Japan	1996	Kurita & Nakajima (2012)
AB666333		RSIV RSIV-6 Sequ MCP Kurita,	<i>Seriola quinqueradiata</i>	Japan	1996	Kurita & Nakajima (2012)
AB666335		RSIV RSIV-8 Pama MCP Kurita,	<i>Pagrus major</i>	Japan	2001	Kurita & Nakajima (2012)
AB666336		RSIV RSIV-9 Sedu MCP Kurita,	<i>Seriola dumerili</i>	Japan	1998	Kurita & Nakajima (2012)
KC775380		ISKNV LJ2011	<i>Siniperca chuatsi</i>	China	2011	Dong et al. (2013)

^a Duplicate has been defined to include subsequences shorter than the defining sequence, as per default parameters of Elimdupes (<http://www.hiv.lanl.gov/cgi-bin/ELIMDUPES/elimdupes.cgi>)

Table S3. *Megalocytivirus* ATPase sequences included in this study

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
KC244182	–	RBIV-C1	<i>Oplegnathus fasciatus</i>	China	2009	Zhang et al. (2012, 2013)
	AY894343	OSGIV	<i>Epinephelus coioides</i>	China	2002	Lu et al. (2005)
	AB043978	GSIV	<i>Epinephelus malabaricus</i>	Thailand	1993	Jung et al. (1997), Sudthongkong et al. (2002b)
	AF462344	GSPIV	<i>Lates calcarifer</i>	Taiwan	≤2001	Chao et al. (2002)
	AF462345	LMBIV	<i>Micropterus salmoides</i>	Taiwan	≤2001	Chao et al. (2002)
	GQ202217	SKIV-ZJ07	<i>Oplegnathus punctatus</i>	China	2007	Dong et al. (2010)
	AB263098	RSIV-U-1	<i>Pagrus major</i>	Japan	2001	Imajoh et al. (2007)
	AB666368	RSIV-9	<i>Seriola dumerili</i>	Japan	1998	Kurita & Nakajima (2012)
	AB666367	RSIV-8	<i>Pagrus major</i>	Japan	2001	Kurita & Nakajima (2012)
	AB666366	RSIV-7	<i>Pagrus major</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666365	RSIV-6	<i>Seriola quinqueradiata</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666364	RSIV-5	<i>Lateolabrax sp.</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666363	RSIV-4	<i>Pseudocaranx dentex</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666362	RSIV-3	<i>Thunnus orientalis</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666361	RSIV-2	<i>Seriola dumerili</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666360	RSIV-1	<i>Oplegnathus fasciatus</i>	Japan	1996	Kurita & Nakajima (2012)
	AB666359	RSIV 6SB	<i>Acanthopagrus latus</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666358	RSIV 3GG1	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666357	RSIV GIG45	<i>Epinephelus lanceolatus</i>	China [Hong Kong]	2002	Kurita & Nakajima (2012)
	AB666356	RSIV 10GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2002	Kurita & Nakajima (2012)
	AB666355	RSIV GIG42	<i>Epinephelus lanceolatus</i>	China [Hong Kong]	2002	Kurita & Nakajima (2012)
	AB666354	RSIV 7GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666353	RSIV 8Pe	<i>Latelolabrax japonicus</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666352	RSIV TGA14	<i>Epinephelus fuscoguttatus</i>	Singapore	2002	Kurita & Nakajima (2012)
	JN815075	RSIV 25KORRockBr	<i>Oplegnathus fasciatus</i>	Japan	2009	Kwon et al. (2011)
	JN815072	RSIV 24KOR-RockBr	<i>Oplegnathus fasciatus</i>	Japan	2004	Kwon et al. (2011)
	JN815069	RSIV 10JPN-BfTuna	<i>Thunnus thynnus</i>	Japan	2008	Kwon et al. (2011)
	JN815066	RSIV 09JPNAMJ	<i>Seriola dumerili</i>	Japan	2008	Kwon et al. (2011)

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
	JN815063	RSIV 07JPN-YelTail	<i>Seriola quinqueradiata</i>	Japan	2008	Kwon et al. (2011)
	JN815060	RSIV 06JPN-RockBr	<i>Oplegnathus fasciatus</i>	Japan	2008	Kwon et al. (2011)
	JN815057	RSIV 02JPNRedSb	<i>Pagrus major</i>	Japan	2006	Kwon et al. (2011)
KF669914	–	ISKNV_IRVATP1	<i>Epinephelus lanceolatus</i>	Malaysia	2011	Azrazitah et al. (2014)
KX354229	–	<i>Pterophyllum scalare</i> megalocytivirus 1986	<i>Pterophyllum scalare</i>	Canada	1986	This study
HQ105006	–	RBIV-C1	<i>Oplegnathus fasciatus</i>	China	2009	Zhang et al. (2012)
AB666351	–	RSIV TGA12	<i>Ephinephelus fuscoguttatus</i>	Singapore	2000	Kurita & Nakajima (2012)
JF264206	–	GSIV_Pt_327_08	<i>Lates calcarifer</i>	Taiwan	2008	Huang et al. (2011)
AY779031		LYCIV	<i>Larimichthys crocea</i>	China	2001	Ao & Chen (2006), Chen et al. (2003b)
	AB104413	RSIV	<i>Pagrus major</i>	Japan	1992	Inouye et al. (1992)
	AB043977	SBIV	<i>Lateolabrax japonicus</i>	Japan (S. China Sea)	1993	Jung et al. (1997), Sudthongkong et al. (2002b)
	AB007367	RSIV-Ehime-1	<i>Pagrus major</i>	Japan	1992	Inouye et al. (1992)
	AB666350	RSIV 2HSB	<i>Morone saxatilis X Micropterus salmoides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
AF371960		ISKNV	<i>Siniperca chuatsi</i>	China	1998	He et al. (2001)
	AY936204	MCIV	<i>Maccullochella peelii</i>	Australia	2003	Go et al. (2006), Lancaster et al. (2003)
	KX354224	DGIV-10	<i>Trichopodus lalius</i>	Australia	2010	Rimmer et al. (2012), this study
	AF462343	TGIV	<i>E. malabaricus X akaara</i>	Taiwan	≤2001	Chao et al. (2002)
	AY989902	DGIV-04	<i>Trichogaster lalius</i>	Australia (SE Asia)	2004	Go et al. (2006)
	AY989907	DGIV-1996	<i>Trichogaster lalius</i>	Australia	1996	Go et al. (2006)
	KX354226	<i>Pterophyllum scalare</i> megalocytivirus 2002	<i>Pterophyllum scalare</i>	Australia	2002	This study
	KX354225	<i>Astronotus ocellatus</i> megalocytivirus 2006	<i>Astronotus ocellatus</i>	Australia (SE Asia)	2006	This study
	JF264216	SSBIV Pt 703 05	<i>Rhabdosargus sarba</i>	Taiwan	2005	Huang et al. (2011)
	JF264214	GSIV Pt 843 05	<i>Lates calcarifer</i>	Taiwan	2005	Huang et al. (2011)
	JF264213	GSIV Pt 113 06	<i>Lates calcarifer</i>	Taiwan	2006	Huang et al. (2011)
	JF264210	GSIV Pt 836 05	<i>Lates calcarifer</i>	Taiwan	2005	Huang et al. (2011)
	JF264209	GIV Pt 308 08	<i>Epinephelus coioides</i>	Taiwan	2008	Huang et al. (2011)
	JF264205	GIV Pt 141 06	<i>Epinephelus coioides</i>	Taiwan	2006	Huang et al. (2011)
	AB666380	ISKNV DG12/8	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)

Genbank acc. no.	Duplicate ^a sequence(s)	Isolate name	Host fish	Location	Year	Reference
	AB666379	ISKNV DG8/10	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666378	ISKNV DGA 10/8	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666377	ISKNV DGA13/6	<i>Trichogaster lalius</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666376	ISKNV DGA4/6K	<i>Trichogaster lalius</i>	Singapore	2004	Kurita & Nakajima (2012)
	AB666375	ISKNV MA5/5	<i>Mugil cephalus</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666374	ISKNV MA1/6	<i>Mugil cephalus</i>	Singapore	2000	Kurita & Nakajima (2012)
	AB666373	ISKNV 9GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666372	ISKNV 1GG	<i>Epinephelus coioides</i>	China [Hong Kong]	2004	Kurita & Nakajima (2012)
	AB666371	ISKNV Lapulapu	<i>Epinephelus coioides</i>	Phillipines	2000	Kurita & Nakajima (2012)
	AB666370	ISKNV seabass	<i>Late calcarifer</i>	Malaysia	2000	Kurita & Nakajima (2012)
	AB666369	ISKNV reddrum	<i>Sciaenops ocellatus</i>	Malaysia	2000	Kurita & Nakajima (2012)
	KP292961	ISKNV A2 12-01558-02	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292962	ISKNV B23 12-01790-03	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292963	ISKNV B152 12-01798-04	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292964	ISKNV B182 12-01799-16	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
	KP292965	ISKNV B221 12-01802-05	<i>Xiphophorus maculatus</i>	Australia	2012	Mohr et al. (2015)
KX354228	–	<i>Trichogaster lalius</i> megalocytivirus (A and B)	<i>Trichogaster lalius</i>	Australia (Singapore)	1988	Anderson et al. (1993), this study
	KX354227	South American cichlid iridovirus	<i>Astronotus ocellatus</i>	USA	1992	This study
			<i>Cleithcara maronii</i>			
AY532606	–	RBIV-KOR-TY1	<i>Oplegnathus fasciatus</i>	South Korea	2000	Do et al. (2004)
JF264215		KGIV Pt 96 06	<i>Epinephelus lanceolatus</i>	Taiwan	2006	Huang et al. (2011)
	JF264211	KGIV Pt 48 06	<i>Epinephelus lanceolatus</i>	Taiwan	2006	Huang et al. (2011)
	JF264207	KGIV Pt 36 06	<i>Epinephelus lanceolatus</i>	Taiwan	2006	Huang et al. (2011)
AY319288	–	DGIV	<i>Trichogaster lalius</i>	Japan (Malaysia)	2000	Sudthongkong et al. (2002a,b)
EU753256		BCIV	<i>Pterapogon kaudneri</i>	USA (Indonesia)	2004	Weber et al. (2009)
	AB669097	ISKNV PtKIV	<i>Pterapogon kaudneri</i>	Southeast Asia	2006	Kurita & Nakajima (2012)
GQ273492		TRBIV	<i>Scophthalmus maximus</i>	China	2006	Shi et al. (2010)
	AY608684	TRBIV	<i>Scophthalmus maximus</i>	China	2002	Shi et al. (2004)
AB043979	–	ALIV	<i>Aplocheilichthys normani</i>	Japan (Indonesia)	1998	Sudthongkong et al. (2002a,b)
JF264208	–	MGIV Nt 546	<i>Oxyelotris marmoratus</i>	Taiwan	2009	Huang et al. (2011)
JF264212	–	RBIV Tp 45 08	<i>Oplegnathus fasciatus</i>	Taiwan (Korea)	2008	Huang et al. (2011)

Table S4. Primers for the MCP gene developed in this study to target RBIV-like and megalocytiviruses in formalin-fixed paraffin-embedded tissues

Primer name	Primer sequence	Primer number	Target region of MCP	Amplicon size (nt)
RBIV-59F	GTGCAGGTTTCCAGAAGAAAA	C1446	-59-75	132
RBIV-59R	GTGGGTCTCCATCGCATC	C1447		
RBIV37F	TTCATCGACATCTCCGCTTT	C1412	37-152	116
RBIV37R	ACGGGCAGTTTGCTGTACC	C1413		
RBIV87F	CGACAATGCCGTGACATATT	C1414	87-202	116
RBIV87R	CACTAAACTCCTGGCCGAAAT	C1415		
RBIV150F	CGTCACCCTGTCAAACAGA	C1416	150-258	109
RBIV150R	GATCTTAACACGCAGCCACA	C1417		
RBIV183F	TTTCGGCCAGGAGTTTAGTG	C1418	183-289	107
RBIV183R	AGCTGTTCTCCTTGCTGGAC	C1419		
UnivMegalof	GCGTGTTAAGATCCCCTCCA	C1403	246-347	102
UnivMegalor	AATGACACCGACACCTCCTC	C1331		
RBIV292F	ATCCGCTGGTGTGACAATCT	C1420	292-401	110
RBIV292R	GCATTCCAAAAGTCGAGGAA	C1421		
RBIV368F	CCCTGACCAGTGAGTTCCTC	C1422	368-483	116
RBIV368R	GTTGGTGATGCCGGAGAC	C1423		
RBIV415F	GGCAGCAAACAGTCTGGCTA	C1424	415-528	114
RBIV415R	GAGAGGAATGGGCAAGTTGA	C1425		
RBIV487F	CAGACTATGCCTGCCACCTT	C1426	487-589	103
RBIV487R	GCACCTCATTGTATGGCAGA	C1427		
RBIV541F	GACACAGGCCTTGCGTTG	C1428	541-645	105
RBIV541R	CTGGGTGCTCTGGCTGAT	C1429		
RBIV587F	TGCGCATCCACTTCAAGC	C1430	587-705	119
RBIV587R	CAGCGCGGGTTCTACATT	C1431		
RBIV669F	CGCCCTGGCCAACATTAG	C1432	669-787	119
RBIV669R	GCATGCTACGGCTGGACT	C1433		
RBIV744F	AAGTGAGGAGCGCGAGGT	C1434	744-855	112
RBIV744R	CAGATGCACCAGGGAATTGT	C1435		
RBIV787F	CTCATTGAGCAGTGCCAGGT	C1436	787-886	100
RBIV787R	AGGCCTTGACGGGATGACT	C1437		
RBIV845F	TGGTGCATCTGGACCTGAG	C1438	845-962	118
RBIV845R	TTGACGTACACGGGACTGG	C1439		
RBIV946F	AGTCCCGTGTACGTCAACAA	C1442	946-1057 ^a	112
RBIV946R	CTACTCCCATCTGGTGGAGAC	C1443		
RBIV1022F	ACGAGAACACCCCTCGTCTC	C1466	1022-1127 ^b	106
RBIV1022R	TAGGTCATAACGCCGTCCAT	C1467		
RBIV1106F	AGATGGACGGCGTTATGACC	C1468	1106-1225	120
RBIV1106R	CGTTGTCCGACACCTTACAT	C1469		
RBIV1184F	GCCTGTCCAACGTCACC	C1470	1184-1291 ^c	108
RBIV1184R	GTTCAAACCTTTGGGCGACT	C1471		
RBIV1259F	GCAGCGGCTACACAGTCG	C1472	1259-1365 ^d	107
RBIV1259R	TGCTTACAGGATAGGGAAGC	C1473		

^a5 nt primer overlap between C1442/C1443 and C1466/C1467 contigs

^b18 nt primer overlap between C1466/C1467 and C1468/C1469 contigs

^c5 nt primer overlap between C1470/C1471 and C1472/C1473 contigs

^d17 nt primer overlap between C1472/C1472 and C1474/C1475 contigs

Table S5. Primers for the ATPase gene developed in this study to target RBIV-like megalocytiviruses in formalin-fixed paraffin-embedded tissues

Primer name	Primer sequence	Primer number	Target region of ATPase	Amplicon size (nt)
RBIV-30F	CCGCTTGACGTACTCTGACA	C1486	-30-82	112
RBIV-30R	GCACAATGAGCTTCATTCCA	C1487		
RBIV37F	CCCGTGAAACCAGACGATG	C1488	37-152	116
RBIV37R	GGAATTACGTGCCGCTTG	C1489		
RBIV106F	TCGGTGCTAATCAAATCTATCA	C1490	106-225	120
RBIV106R	CACAAAGCAGTTGGGCAATA	C1491		
RBIV184F	GCCAACCACTTCTACAGCAA	C1492	184-300	117
RBIV184R	CTCGGGGTCCACGTTCTTTA	C1493		
RBIV250F	ATCACACGCGTCAAGCAG	C1494	250-368	119
RBIV250R	ACGGCCTCGTGATTAACATCT	C1495		
RBIV317F	TGATCTTTGACGACTGCATGG	C1496	317-425	109
RBIV317R	TGTGAAGCTATTATGACCAGGA	C1497		
RBIV385F	AACGGGCGTCACTGGAAC	C1498	385-500	116
RBIV385R	GTCTGGCTTGTCTGTGAATA	C1499		
RBIV446F	CCAGCCTGAGGTGTTGTATAG	C1500	446-558	113
RBIV446R	GTGAAATGTCTGCTTTGGTATG	C1501		
RBIV497F	AGACATGTGTGGACAAGATTTACAA	C1502	497-604	108
RBIV497R	CAATGTATAAGCATGTGTGATCCTG	C1503		
RBIV552F	ATTTACACGCTGATGGAGAAG	C1504	552-662	111
RBIV552R	AGCGGCGCCTTGTAGTAGC	C1505		
RBIV621F	GCAGAAGTGGGAAGACATGGT	C1506	621-738	118
RBIV621R	CGGGTGCTGTGCACTTG	C1507		

	ISKNV	DGIV04	PSMV02	AOMV06	DGIV10	PKIV	OSGIV	RSIV_E	TRBIV	RBIV	TLMV 1988	PSMV 1986	SACIV	TSIV	SDDV
ISKNV	*	100.0	100.0 ^d	100.0	100.0	99.8	98.7	98.2	97.8	98.0	98.0	98.0	98.0	85.5 ^f	68.7 ^g
DGIV04	100.0	*	100.0 ^d	100.0	100.0	99.8	98.7	98.2	97.8	98.0	98.0	98.0	98.0	85.5 ^f	68.7 ^g
PSMV02	100.0 ^a	100.0 ^a	*	100.0 ^c	100.0 ^c	99.8 ^c	98.7 ^c	98.2 ^c	97.8 ^c	98.0 ^c	98.0 ^c	98.0 ^c	98.0 ^c	85.5 ^e	68.7 ^g
AOMV06	100.0	100.0	100.0 ^a	*	100.0	99.8	98.7	98.2	97.8	98.0	98.0	98.0	98.0	85.5 ^f	68.7 ^g
DGIV10	100.0	100.0	100.0 ^a		*	99.6	98.7	98.2	97.4	97.8	97.8	97.8	97.8	83.7 ^f	68.7 ^g
PKIV	98.5	98.5	98.5 ^a	100.0	98.7	*	98.7	98.2	97.8	98.0	98.0	98.0	98.0	85.5 ^f	68.7 ^g
OSGIV	95.1	95.1	95.1 ^a	98.5	95.2	95.0	*	99.6	97.8	97.6	97.6	97.6	97.6	85.2 ^f	69.1 ^g
RSIV-E	94.2	94.2	94.2 ^a	95.1	94.6	94.0	97.9	*	97.4	97.4	97.4	97.4	97.4	85.2 ^f	69.4 ^g
TRBIV	93.8	93.8	93.8 ^a	94.2	93.7	93.6	94.6	94.1	*	98.5	98.5	98.5	98.5	84.8 ^f	68.5 ^g
RBIV	92.9	92.9	92.9 ^a	93.8	93.4	92.8	93.3	93.1	96.5	*	100.0	100.0	100.0	85.2 ^f	68.5 ^g
TLMV1988	93.0	93.0	93.0 ^a	92.9	93.5	92.9	93.4	93.0	96.5	99.9	*	100.0	100.0	85.2 ^f	68.5 ^g
PSMV1986	93.0	93.0	93.0 ^a	93.0	93.5	92.9	93.4	93.0	96.5	99.9	100.0	*	100.0	85.2 ^f	68.5 ^g
SACIV	93.0	93.0	93.0 ^a	93.0	93.5	92.9	93.4	93.0	96.5	99.9	100.0	100.0 ^b	*	85.2 ^f	68.5 ^g
TSIV	80.0 ^c	80.0 ^c	80.0 ^a	81.5 ^c	81.2 ^c	80.0 ^c	78.9 ^c	78.8 ^c	79.6 ^c	79.7 ^c	79.7 ^c	79.7 ^c	79.7 ^c	*	67.1 ^g
SDDV	63.0 ^d	63.0 ^d	62.9 ^a	63.0 ^d	63.0 ^d	62.8 ^d	63.4 ^d	63.5 ^d	62.7 ^d	62.9 ^d	62.9 ^d	62.9 ^d	62.9 ^d	60.9 ^d	*

Fig. S1. Nucleic acid identities (% shown left of the asterisks) and Amino acid identities (% right of the asterisks) for the *MCP* gene. Identities determined over 1362 nucleotides (nt) and 453 amino acid (aa) residues with the exception of (a) 682 nt, (b) 1359 nt, (c) 1342 nt, (d) 1348 nt; and (e) 227 aa residues, (f) 447 aa residues, (g) 449 aa residues. ISKNV: *Infectious spleen and kidney necrosis virus* (Genbank accession AF371960); DGIV04: Dwarf gourami iridovirus 2004 (Genbank accession AY989901); PKIV: *Pterapogon kauderni* iridovirus (Genbank accession AB669096); OSGIV: Orange spotted grouper iridovirus (Genbank accession AY894343); RSIV: Red sea bream iridovirus – Ehime (Genbank Accession AB104413); TRBIV: Turbot reddish body iridovirus (Genbank Accession GQ273492); RBIV: Rock bream iridovirus (Genbank Accession JF264352); TSIV: Threespine stickleback iridovirus (Genbank accession HQ857785); SDDV: Scale drop disease virus (Genbank accession NC_027778); PSMV1986: *Pterophyllum scalare Megalocytivirus* 1986 (Case 1: Genbank accession KX354223); TLMV1988: *Trichogaster lalius Megalocytivirus* 1988 (Case 2: Genbank accession KX354222); SACIV: South American cichlid iridovirus (Cases 3 and 4 Genbank Accession KX354221); PSMV02: *Pterophyllum scalare Megalocytivirus* 2002 (Case 5: Genbank accession KX354220); AOMV06: *Astronotus ocellatus Megalocytivirus* 2006 (Case 6: Genbank accession KX354219); DGIV10: Dwarf gourami iridovirus 2010 (Case 7: Genbank accession KX354218)

	ISKNV	DGIV04	PSMV02	AOMV06	DGIV10	BCIV	OSGIV	RSIV	TRBIV	RBIV	TLMV 1988	PSMV 1986	SACIV	TSIV	SDDV
ISKNV	*	100.0 ⁱ	100.0 ^j	100.0 ⁱ	100.0 ^j	100.0 ⁱ	98.8 ⁱ	98.8 ⁱ	98.3 ⁱ	98.8 ⁱ	98.3 ⁱ	97.9 ⁱ	98.3 ⁱ	90.2 ^k	72.3
DGIV04	99.9 ^a	*	100.0 ^j	100.0 ⁱ	100.0 ⁱ	100.0 ⁱ	98.8 ⁱ	98.8 ⁱ	98.3 ⁱ	98.8 ⁱ	98.3 ⁱ	97.9 ⁱ	98.3 ⁱ	90.2 ^k	72.3
PSMV02	100.0 ^b	100.0 ^b	*	100.0 ^j	100.0 ^j	100.0 ^j	98.6 ^j	98.6 ^j	98.6 ^j	99.3 ^j	98.6 ^j	97.9 ^j	98.6 ^j	88.9 ^j	72.3
AOMV06	99.9 ^a	100.0 ^a	100.0 ^b	*	100.0 ⁱ	100.0 ⁱ	98.8 ⁱ	98.8 ⁱ	98.3 ⁱ	98.8 ⁱ	98.3 ⁱ	97.9 ⁱ	98.3 ⁱ	90.2 ^k	72.3
DGIV10	99.9 ^a	99.9 ^a	99.8 ^b	99.9 ^a	*	100.0 ⁱ	98.8 ⁱ	98.8 ⁱ	98.3 ⁱ	98.8 ⁱ	98.3 ⁱ	97.9 ⁱ	98.3 ⁱ	90.2 ^k	72.3
BCIV	98.2 ^e	98.3 ^e	98.7 ^b	98.3 ^e	98.2 ^e	*	98.8 ⁱ	98.8 ⁱ	98.3 ⁱ	98.8 ⁱ	98.3 ⁱ	97.9 ⁱ	98.3 ⁱ	90.2 ^k	72.3
OSGIV	92.7 ^a	92.7 ^a	96.6 ^b	92.7 ^a	92.7 ^a	94.4 ^e	*	100.0 ⁱ	98.8 ⁱ	99.2 ⁱ	99.6 ⁱ	99.2 ⁱ	99.6 ⁱ	90.2 ^k	71.9
RSIV	92.8 ^a	92.8 ^a	96.2 ^b	92.8 ^a	92.8 ^a	94.5 ^e	98.1 ^h	*	98.8 ⁱ	99.2 ⁱ	99.6 ⁱ	99.2 ⁱ	99.6 ⁱ	90.2 ^k	71.9
TRBIV	91.2 ^a	91.3 ^a	96.1 ^b	91.3 ^a	91.2 ^a	93.0 ^e	93.3 ^h	93.2 ^h	*	97.9 ⁱ	98.3 ⁱ	97.9 ⁱ	98.3 ⁱ	88.7 ^k	71.5
RBIV	95.4 ^f	95.4 ^f	95.9 ^c	95.4 ^f	95.4 ^f	95.7 ^f	95.4 ^f	95.4 ^f	97.4 ^f	*	99.6 ⁱ	99.2 ⁱ	99.6 ⁱ	90.2 ^k	71.9
TLMV1988	95.0 ^f	95.0 ^f	95.6 ^c	95.0 ^f	95.0 ^f	95.3 ^f	95.6 ^f	95.6 ^f	97.8 ^f	99.6 ^f	*	99.6 ⁱ	100.0 ⁱ	89.7 ^k	71.9
PSMV1986	94.7 ^f	94.7 ^f	95.4 ^c	94.7 ^f	94.7 ^f	95.0 ^f	95.3 ^f	95.3 ^f	97.5 ^f	99.3 ^f	99.7 ^f	*	99.7 ⁱ	89.7 ^k	71.9
SACIV	95.0 ^f	95.0 ^f	95.6 ^c	95.0 ^f	95.0 ^f	95.3 ^f	95.6 ^f	95.6 ^f	97.8 ^f	99.6 ^f	100.0 ^f	99.6 ⁱ	*	89.7 ^k	71.9
TSIV	83.0 ^g	83.0 ^g	82.2 ^d	83.0 ^g	83.0 ^g	82.4 ^g	82.4 ^g	82.5 ^g	82.5 ^g	83.7 ^g	83.5 ^g	83.7 ^g	83.5 ^g	*	72.4
SDDV	65.5	65.5	65.5	65.5	65.5	66.0	65.7	65.4	66.4	66.0	66.2	66.2	66.2	61.7	*

Fig. S2. Nucleic acid identities (% shown left of the asterisks) and Amino acid identities (% right of the asterisks) for the *ATPase gene*. Identities determined over (a) 1701 nucleotides (nt), (b) 610 nt, (c) 434 nt, (d) 432 nt, (e) 1661 nt, (f) 720 nt, (g) 612 nt, (h) 1710 nt; and (i) 239 amino acid residues (aa); (j) 143 aa residues (k) 204 aa residues. ISKNV: *Infectious spleen and kidney necrosis virus* (Genbank accession AF371960); DGIV04: Dwarf gourami iridovirus 2004 (Genbank accession AY989902); PKIV: *Pterapogon kauderni* iridovirus (Genbank accession AB669097); OSGIV: Orange spotted grouper iridovirus (Genbank accession AY894343); RSIV: Red sea bream iridovirus – Ehime (Genbank Accession AB104413); TRBIV: Turbot reddish body iridovirus (Genbank Accession GQ273492); RBIV: Rock bream iridovirus (Genbank Accession JF264212); TSIV: Threespine stickleback iridovirus (Genbank accession HQ857786); SDDV: Scale drop disease virus (Genbank accession NC_027778); PSMV1986: *Pterophyllum scalare Megalocytivirus* 1986 (Case 1: Genbank accession KX354229); TLMV1988: *Trichogaster lalius Megalocytivirus* 1988 (Case 2: Genbank accession KX354228); SACIV: South American cichlid iridovirus (Cases 3 and 4 Genbank Accession KX354227); PSMV02: *Pterophyllum scalare Megalocytivirus* 2002 (Case 5: Genbank accession KX354226); AOMV06: *Astronotus ocellatus Megalocytivirus* 2006 (Case 6: Genbank accession KX354225); DGIV10: Dwarf gourami iridovirus 2010 (Case 7: Genbank accession KX354224)

	ISKNV	DGIV04	PSMV02	AOMV06	DGIV10	OSGIV	RSIV	TRBIV
ISKNV	*	100.0 ^j	100.0 ⁱ	100.0 ⁱ	100.0 ⁱ	98.7 ⁱ	98.7 ⁱ	100.0 ⁱ
DGIV04	100.0 ^b	*	100.0 ^j	100.0 ^j	100.0 ^j	98.4 ^j	98.4 ^j	100.0 ^j
PSMV02	100.0 ^a	100.0 ^b	*	100.0 ⁱ	100.0 ⁱ	98.7 ⁱ	98.7 ⁱ	100.0 ⁱ
AOMV06	100.0 ^a	100.0 ^b	100.0 ^a	*	100.0 ⁱ	98.7 ⁱ	98.7 ⁱ	100.0 ⁱ
DGIV10	100.0 ^a	100.0 ^b	100.0 ^a	100.0 ^a	*	98.7 ⁱ	98.7 ⁱ	100.0 ⁱ
OSGIV	94.8 ^e	94.0 ^f	94.8 ^e	94.8 ^e	94.8 ^e	*	97.5 ⁱ	98.7 ⁱ
RSIV	95.1 ^e	94.3 ^f	95.1 ^e	95.1 ^e	95.1 ^e	97.3 ^g	*	98.7 ⁱ
TRBIV	94.1 ^c	93.0 ^d	94.1 ^c	94.1 ^c	94.1 ^c	92.8 ^h	93.4 ^h	*

Fig. S3. Nucleotide identities (% shown left of the asterisks) and amino acid identities (% shown right of the asterisks) for the RNA polymerase gene and associated genomic sequence. Identities determined over (a) 674 nucleotides (nt), (b) 630 nt, (c) 664 nt, (d) 620 nt, (e) 666 nt, (f) 622 nt, (g) 669 nt (h) 661 nt; and (i) 79 amino acid residues (aa) and (j) 64 aa. ISKNV: Infectious spleen and kidney necrosis virus (Genbank accession AF371960); DGIV04: Dwarf gourami iridovirus 2004 (Genbank accession AY989903); OSGIV: Orange spotted grouper iridovirus (Genbank accession AY894343); RSIV: Red sea bream iridovirus – Ehime (Genbank Accession AB104413); TRBIV: Turbot reddish body iridovirus (Genbank Accession GQ273492); PSMV02: *Pterophyllum scalare Megalocytivirus* 2002 (Case 5: Genbank accession KX354214); AOMV06: *Astronotus ocellatus Megalocytivirus* 2006 (Case 6: Genbank accession KX354213); DGIV10: Dwarf gourami iridovirus 2010 (Case 7: Genbank accession KX354212)

	ISKNV	DGIV04	PSMV02	AOMV06	DGIV10	OSGIV	RSIV	TRBIV
ISKNV	*	100.0	100.0 ^k	100.0 ⁱ	100.0 ⁱ	94.5 ⁱ	92.7 ⁱ	98.2 ⁱ
DGIV04	100.0 ^c	*	100.0 ^j	100.0 ^j	100.0 ^j	94.1 ^j	92.2 ^j	98.0 ^j
PSMV02	100.0 ^b	100.0 ^c	*	100.0 ^k	100.0 ^k	94.2 ^k	92.3 ^k	98.1 ^k
AOMV06	100.0 ^a	100.0 ^c	100.0 ^b	*	100.0 ⁱ	94.5 ⁱ	92.7 ⁱ	98.2 ⁱ
DGIV10	100.0 ^a	100.0 ^c	100.0 ^b	100.0 ^a	*	94.5 ⁱ	92.7 ⁱ	98.2 ⁱ
OSGIV	92.7 ^d	88.6 ^f	92.6 ^e	92.7 ^d	92.7 ^d	*	98.2 ⁱ	96.4 ⁱ
RSIV	91.7 ^d	87.6 ^f	91.6 ^e	91.7 ^d	91.7 ^d	97.8 ^g	*	94.5 ⁱ
TRBIV	91.9 ^d	90.0 ^f	91.7 ^e	91.9 ^d	91.9 ^d	92.9 ^h	92.6 ^h	*

Fig. S4. Nucleotide identities (% shown left of the asterisks) and amino acid identities (% shown right of the asterisks) for the DNA polymerase gene and associated genomic sequence. Identities determined over (a) 708 nucleotides (nt), (b) 701 nt, (c) 290 nt, (d) 702 nt (e) 695 nt, (f) 285 nt, (g) 720 nt, (h) 707 nt; and (i) 54 amino acid residues (aa), (j) 50 aa, (k) 51 aa. ISKNV: Infectious spleen and kidney necrosis virus (Genbank accession AF371960); DGIV04: Dwarf gourami iridovirus 2004 (Genbank accession AY989900); OSGIV: Orange spotted grouper iridovirus (Genbank accession AY894343); RSIV: Red sea bream iridovirus – Ehime (Genbank Accession AB104413); TRBIV: Turbot reddish body iridovirus (Genbank Accession GQ273492); PSMV02: *Pterophyllum scalare Megalocytivirus* 2002 (Case 5: Genbank accession KX354211); AOMV06: *Astronotus ocellatus Megalocytivirus* 2006 (Case 6: Genbank accession KX354210); DGIV10: Dwarf gourami iridovirus 2010 (Case 7: Genbank accession KX354209)

	ISKNV	DGIV04	PSMV02	AOMV06	DGIV10	OSGIV	RSIV	TRBIV
ISKNV	*	–	–	–	–	–	–	–
DGIV04	100.0 ^a	*	–	–	–	–	–	–
PSMV02	100.0 ^a	100.0 ^a	*	–	–	–	–	–
AOMV06	100.0 ^a	100.0 ^a	100.0 ^a	*	–	–	–	–
DGIV10	100.0 ^a	100.0 ^a	100.0 ^a	100.0 ^a	*	–	–	–
OSGIV	93.2 ^a	93.2 ^a	93.2 ^a	93.2 ^a	93.2 ^a	*	–	–
RSIV	92.9 ^a	92.9 ^a	92.9 ^a	92.9 ^a	92.9 ^a	97.5 ^a	*	–
TRBIV	93.8 ^b	93.8 ^b	93.8 ^b	93.8 ^b	93.8 ^b	92.6 ^b	93.0 ^b	*

Fig. S5. Nucleotide identities for IRB6 region over (a) 678 nucleotides (nt) and (b) 675 nt. ISKNV: Infectious spleen and kidney necrosis virus (Genbank accession AF371960); DGIV04: Dwarf gourami iridovirus 2004 (Genbank accession AY989904); OSGIV: Orange spotted grouper iridovirus (Genbank accession AY894343); RSIV: Red sea bream iridovirus – Ehime (Genbank Accession AB104413); TRBIV: Turbot reddish body iridovirus (Genbank Accession GQ273492); PSMV02: *Pterophyllum scalare Megalocytivirus* 2002 (Case 5: Genbank accession KX354217); AOMV06: *Astronotus ocellatus Megalocytivirus* 2006 (Case 6: Genbank accession KX354216); DGIV10: Dwarf gourami iridovirus 2010 (Case 7: Genbank accession KX354215)

	ISKNV	DGIV04	AOMV06	DGIV10	OGIV	RSIV	TRBIV
ISKNV	*	–	–	–	–	–	–
DGIV04	100 ^b	*	–	–	–	–	–
AOMV06	100 ^a	100 ^b	*	–	–	–	–
DGIV10	100 ^a	100 ^b	100 ^a	*	–	–	–
OGIV	91.17 ^a	91.47 ^b	91.17 ^a	91.17 ^a	*	–	–
RSIV	90.93 ^a	92.24 ^b	90.93 ^a	90.93 ^a	93.38 ^a	*	–
TRBIV	90.03 ^a	89.14 ^b	90.03 ^a	90.03 ^a	91.33 ^a	92.07 ^a	*

Fig. S6. Nucleotide identities for CY15 region over (a) 1244 nucleotides (nt) and (b) 129 nt. ISKNV: Infectious spleen and kidney necrosis virus (Genbank accession AF371960); DGIV04: Dwarf gourami iridovirus 2004 (Genbank accession AY989905); OSGIV: Orange spotted grouper iridovirus (Genbank accession AY894343); RSIV: Red sea bream iridovirus – Ehime (Genbank Accession AB104413); TRBIV: Turbot reddish body iridovirus (Genbank Accession GQ273492); AOMV06: *Astronotus ocellatus Megalocytivirus* 2006 (Case 6: Genbank accession KX354208); DGIV10: Dwarf gourami iridovirus 2010 (Case 7: Genbank accession KX354207)

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