

SUSCEPTIBILITY OF FISH SPECIES TO INFECTION WITH SPRING VIRAEMIA OF CARP VIRUS (SVCV)

The following table shows the fish species assessed against the criteria for susceptibility to infection with spring viraemia of carp virus and the outcomes of the assessments. For details about the specific assessment please refer to the link included in the source column of the table.

Assessment Table Key:

N: Natural infection	Y: Demonstrates criterion is met	ND: Not determined
E: Experimental (non-invasive)	N: Criterion is not met	NS: Not scored
EI: Experimental invasive	I: Inconclusive	N/A: Not applicable

Family	Scientific name	Common name	Stage 1: Route of transmission	Stage 2: Pathogen identification	Stage 3: Evidence of infection				Outcome	References	Source	Year of adoption
					A	B	C	D				
Assessed as a susceptible species and included in Article 10.9.2. of Chapter 10.9. of the <i>Aquatic Code</i>												
Cyprinidae	<i>Abramis brama</i>	bream	N	PCR/sequencing	NA	Y	NA	Y	1	Basic <i>et al.</i> , 2009	ad hoc Group report: November 2017	2019
	<i>Aristichthys nobilis</i>	bighead carp	N	Serum neutralization test as the strains of Rhabdovirus carpio. Stone <i>et al.</i> (2003) confirmed identification of bighead carp isolates by PCR and sequencing as SVCV	NA	Y	NA	Y	1	Shchelkunov & Shehelkunova, 1989; Stone <i>et al.</i> , 2003	ad hoc Group report: November 2017	2019
	<i>Carassius auratus</i>	goldfish	N	Id1 Type (FN178480)122-02	NA	Y	NA	Y	1	Basic <i>et al.</i> , 2009; Jorgensen <i>et al.</i> , 1989; Miller <i>et al.</i> , 2007	ad hoc Group report: November 2017	2019

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	<i>Ctenopharyngodon idella</i>	grass carp	N	Reference strain from Ahne	N	Y	Y	NA	1	Haenen & Davidsen, 1993; Shchelkunov & Shehelkunova, 1989	ad hoc Group report: November 2017	2019
	<i>Cyprinus carpio</i>	common carp	E/N	Reference strain from Ahne	Y	Y	Y	NA	1	Haenen & Davidsen, 1993; Shchelkunov & Shehelkunova, 1989	ad hoc Group report: November 2017	2019
		ghost carp	N/EI	980619(type 1a/DQ916051(P) AM501515(G))	NA	Y	Y	Y	1	Goodwin, 2002; Miller <i>et al.</i> , 2007		
		koi carp	N	Identified by the OIE ref lab (CEFAS)	Y	Y	Y	Y	1	Goodwin, 2002		
	<i>Danio rerio</i>	zebrafish	E	Ref strain 56/70, RT-PCR	ND	Y	Y	Y	1	Sanders <i>et al.</i> , 2003	Aquatic Animals Commission September 2019 Report	2021
			E	Ref strain ATCCVR-1390; RT-PCR, VI	ND	ND	Y	Y	1	Lopez-Munoz <i>et al.</i> , 2010		
			E	Ref strain 56/70, RT-PCR	Y	Y	Y	Y	1	Martinez-Lopez <i>et al.</i> , 2014		
			E	Ref strain 56/70, RT-PCR	Y	ND	ND	ND	1	Medina-Gali <i>et al.</i> , 2018a		
			E	Ref strain 56/70, RT-PCR	Y	ND	Y	ND	1	Medina-Gali <i>et al.</i> , 2018b		
			E	Ref strain 56/70, RT-PCR	Y	ND	Y	Y	1	Bello-Perez <i>et al.</i> , 2019		
	<i>Notemigonus crysoleucas</i>	golden shiner	E	Culture and RT PCR/sequencing	N	Y	Y	Y	1	Boonthai <i>et al.</i> , 2017	ad hoc Group report: November 2017	2019

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	<i>Pimephales promelas</i>	fathead minnow	E	Culture and RT PCR/sequencing	N	Y	Y	Y	1	Boonthai <i>et al.</i> , 2017	ad hoc Group report: November 2017	2019
	<i>Rutilus kutum</i>	Caspian white fish	E	SVCV reference strain (isolate 56/70, accession no:Z37505.1) (Stone <i>et al.</i> , 2003)	NA	Y	Y	Y	1	Ghasemi <i>et al.</i> , 2014; Zamani <i>et al.</i> , 2014	ad hoc Group report: November 2017	2019
	<i>Rutilus rutilus</i>	roach	E	Reference strain from Ahne	Y	Y	Y	N	1	Haenen & Davidsen, 1993	ad hoc Group report: November 2017	2019
Siluridae	<i>Silurus glanis</i>	wels catfish	N	14286/3(type 1d/Fijan <i>et al.</i> , 1984)	NA	Y	Y	NA	1	Sheppard <i>et al.</i> , 2007; Fijan <i>et al.</i> , 1984; Jorgensen <i>et al.</i> , 1989	ad hoc Group report: November 2017	2019
Assessed as incomplete evidence and listed in Section 2.2.2. of Chapter 2.3.9. in the <i>Aquatic Manual</i>												
Cyprinidae	<i>Carassius carassius</i>	crucian carp	N	Sequencing	NA	Y	NA	NA	2	Miller <i>et al.</i> . 2007	ad hoc Group report: November 2017	2021
Esocidae	<i>Esox lucius</i>	pike	E	Reference strain Fijan <i>et al.</i> , (1971)	Y	Y	N	Y	2	Ahne, 1985	ad hoc Group report: November 2017	2021
Percidae	<i>Perca flavescens</i>	yellow perch	E	The first North American isolate of SVCV (Goodwin, 2002)	Y	Y	N	N	2	Emmenegger <i>et al.</i> , 2016	ad hoc Group report: November 2017	2021

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Salamandridae	<i>Cynops orientalis</i>	firebelly newt	N	Cell culture/sequencing	Y	Y	N	Y	2	Ip <i>et al.</i> , 2016	ad hoc Group report: November 2017	2021
Xenocyprididae	<i>Hypophthalmichthys molitrix</i>	silver carp	N	M2-78 (1d type)	NA	Y	NA	NA	2	Stone <i>et al.</i> , 2003	ad hoc Group report: November 2017	2021
Assessed as having PCR positive results but no active infection and listed in the second paragraph of Section 2.2.2. of Chapter 2.3.9. in the <i>Aquatic Manual</i>												
Catostomidae	<i>Catostomus commersonii</i>	white sucker	EI	HHOcarp06 (Ia; Garver <i>et al.</i> , 2007)	N	Y	N	N	3	Misk <i>et al.</i> , 2016	ad hoc Group report: November 2017	2021
Cichlidae	<i>Oreochromis niloticus</i>	Nile tilapia	N	PCR/histopath EM	NA	NA	NA	NA	3	Soliman <i>et al.</i> , 2008	ad hoc Group report: November 2017	2021
Cyprinidae	<i>Notropis atherinoides</i>	emerald shiner	EI	HHOcarp06 (Ia; Garver <i>et al.</i> , 2007)	Y	NA	Y	NA	3	Misk <i>et al.</i> , 2016	ad hoc Group report: November 2017	2021
	<i>Cirrhinus mrigala</i>	mrigal carp	N	PCR only (cell culture not performed)/sequence do not match with SVCV	NA	N	N	N	3	Haghighi-Khiabani Asl, 2008b	ad hoc Group report: November 2017	2021
	<i>Labeo rohita</i>	rohu	N	PCR only (cell culture not performed)/sequence do not match with SVCV	NA	N	N	N	3	Haghighi-Khiabani Asl, 2008b	ad hoc Group report: November 2017	2021
	<i>Tinca tinca</i>	tench	N	980548(type 1a/DQ916052)	N	Y	NA	NA	3	Miller <i>et al.</i> , 2007	ad hoc Group report:	2021

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				P))SVCV not corroborated							November 2017	
Penaeidae	<i>Litopenaeus vannamei</i>	Pacific white shrimp	N	Sequencing. The identity of the virus as SVCV has not been corroborated.	NA	Y	NA	NA	3	Johnson <i>et al.</i> , 1999	ad hoc Group report: November 2017	2021
Salmonidae	<i>Oncorhynchus tshawytscha</i>	chinook salmon	EI	The first North American isolate of SVCV (Goodwin, 2002)	Y	Y	N	NA	3	Emmenegger <i>et al.</i> , 2016	ad hoc Group report: November 2017	2021
	<i>Oncorhynchus nerka</i>	sockeye salmon	E/EI	The first North American isolate of SVCV (Goodwin, 2002)	N	N	N	N	3	Emmenegger <i>et al.</i> , 2016	ad hoc Group report: November 2017	2021
	<i>Oncorhynchus mykiss</i>	rainbow trout	N	Serum neutralisation	N	Y	N	N	3	Jeremič <i>et al.</i> , 2006	ad hoc Group report: November 2017	2021
			E	Cell cultivation and PCR	N	Y	N	N	3	Emmenegger <i>et al.</i> , 2016; Stone <i>et al.</i> , 2003		
			E	Cell cultivation	N	N	N	N	3	Haenen & Davidsen, c1993		
N			PCR	N	N	N	N	3	Haghighi-Khiabani-Asl, 2008a			
EI	Not detected by cell culture, PCR and sequencing	N	N	N	N	3	Boonthai <i>et al.</i> , 2017					
Assessed as evidence of non-susceptibility (e.g. experimental invasive studies with no evidence of infection)												
Centrarchidae	<i>Micropterus salmoides</i>	largemouth bass	EI	Isolate of SVCV	N	N	N	N	4	Boonthai <i>et al.</i> , 2017	ad hoc Group report:	

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				(Goodwin, 2002) Not detected by cell culture and RT PCR							November 2017	
Esocidae	<i>Esox masquinongy</i>	muskellunge	EI	Isolate of SVCV (Goodwin, 2002) Not detected by cell culture and RT PCR	N	N	N	N	4	Boonthai <i>et al.</i> , 2017	ad hoc Group report: November 2017	
Percidae	<i>Sander vitreus</i>	walleye	EI	Isolate of SVCV (Goodwin, 2002) Not detected by cell culture and RT PCR	N	N	N	N	4	Boonthai <i>et al.</i> , 2017	ad hoc Group report: November 2017	