

Supplementary Table S1. Specificity of primer pairs used for the detection of vibrios. DNA extracted from a diversity of *Vibrio* strains was subjected to PCR using primers designed on *ompU*, *dnaJ* and *R5-2* sequences specific for the oyster pathogen *V. tasmaniensis*, *V. aestuarianus* and *V. crassostreae*, respectively. Primers amplifying 16S rRNA sequences from all vibrios were also used. Positive and negative amplifications are indicated by + and – respectively. NT not tested.

Species	Strain	Virulence in oysters	Reference	<i>ompU</i>	<i>dnaJ</i>	<i>R5-2</i>	16S rRNA
Splendidus clade							
<i>V. tasmaniensis</i>	LGP32	Vir (+)	Gay M. et al. 2004	+	-	-	+
	J5-9	Vir (+)	Lemire et al. 2015	+	-	-	+
	J5-13	Vir (+)	Lemire et al. 2015	+	-	-	+
	J0-13	Vir (+)	Lemire et al. 2015	+	-	-	+
	Med222	NT	Ifremer Institute, France	+	-	-	+
	LMG20012T	Vir (-)	Ifremer Institute, France	-	-	-	+
<i>V. splendidus</i>	J5-1	Vir (+)	Lemire et al. 2015	-	-	-	+
	J2-23	Vir (-)	Lemire et al. 2015	-	-	-	+
<i>V. crassostreae</i>	J5-4	Vir (+)	Lemire et al. 2015	-	-	+	+
	J2-9	Vir (+)	Lemire et al. 2015	-	-	+	+
<i>V. cyclitrophicus</i>	J2-5	Vir (+)	Lemire et al. 2015	-	-	-	+
<i>V. sp.</i>	J2-8	Vir (-)	Lemire et al. 2015	-	-	-	+
Other clades							
<i>V. tapetis</i>	CECT4600	NT	Paillard and Maes, 1990	-	-	-	+
<i>V. fischeri</i>	ES114	NT	Mandel <i>et al.</i> , 2008	-	-	-	+
<i>V. aestuarianus</i>	02_041	Vir (+)	Ifremer Institute, France	-	+	-	+
<i>V. tubiashii</i>	CRL10	NT	Ifremer Institute, France	-	-	-	+
<i>V. penaeicidae</i>	AM101	NT	Ifremer Institute, France	-	-	-	+
<i>V. nigripulchritudo</i>	SFn1	NT	Ifremer Institute, France	-	-	-	+
<i>V. metshnikovii</i>	NCTC8483	NT	Pasteur Institute, France	-	-	-	+
<i>V. harveyi</i>	ATCC14126	NT	Pasteur Institute, France	-	-	-	+
<i>V. anguillarum</i>	ATCC19264	NT	Pasteur Institute, France	-	-	-	+