

**Table S1.** *V. europaeus* strains/genomes used in this study.

Strain:	Source:	Isolation mortalities:	Location:	Date:	Reference:	Assembly
PP-654	Flat oyster larvae ( <i>Ostrea edulis</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2001	Prado et al. [9]	-
PP-660	Flat oyster larvae ( <i>Ostrea edulis</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2001	Prado et al. [9]	-
PP-635	Seawater tank; Flat oyster larvae ( <i>Ostrea edulis</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2001	Prado et al. [9]	-
CECT 8136 (PP-638)	Seawater tank; Flat oyster larvae ( <i>Ostrea edulis</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2001	Saulnier et al. [7] / Travers et al. [8]	GCA_001695575.1
04/002 1T2 (CECT 8427)	Abalone spat ( <i>Haliotis tuberculata</i> )	Y	Hatchery (Cotentin; Normandy, France)	January/2004	Saulnier et al. [7] / Travers et al. [8]	-
07/118 T2 (CECT 8426)	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	June/2007	Saulnier et al. [7] / Travers et al. [8]	GCA_015654285.1
07/038 2T2	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Saulnier et al. [7] / Travers et al. [8]	-
07/108 T1	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Travers et al. [8]	-
07/110 T1	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Saulnier et al. [7] / Travers et al. [8]	-
07/112 T1	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Travers et al. [8]	-
07/115 T2	?	?	?	?/2007	-	-
07/116 T1	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Travers et al. [8]	-
07/117 T1	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Saulnier et al. [7] / Travers et al. [8]	-
07/120 T1	Pacific oyster spat ( <i>Crassostrea gigas</i> )	Y	Hatchery (La Tremblade; Nouvelle-Aquitaine, France)	August/2007	Travers et al. [8]	-
07/121 1T1	?	?	?	?/2007	-	-
PP2-843	Manila clam spat (early spat $\geq 1000 \mu\text{m}$ ) ( <i>Ruditapes philippinarum</i> )	Y	Hatchery Oestreira (Barizo; Galicia, Spain)	November/2008	Prado et al. [9]	-
PP2-978	Manila clam spat (early spat $\geq 1000 \mu\text{m}$ ) ( <i>Ruditapes philippinarum</i> )	Y	Hatchery Oestreira (Barizo; Galicia, Spain)	November/2008	Prado et al. [9]	-
2909	Seawater tank; Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2895	Seawater tank; Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2930	Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2951	Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2945	Seawater tank; Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2967	Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2968	Seawater tank; Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2969	Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2971	Seawater tank; Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-

2974	Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
2975	Seawater tank; Carpet shell clam larvae ( <i>Ruditapes decussatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2011	Dubert et al. [10]	-
3454	Wedge clam larvae ( <i>Donax trunculus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2012	-	-
3492	Seawater tank; Wedge clam larvae ( <i>Donax trunculus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	June/2012	-	-
3610	Carpet shell clam broodstock ( <i>Ruditapes decussatus</i> )	N	Hatchery CIMA (Ribadeo; Galicia, Spain)	July/2012	Dubert et al. [16]	-
3614	Carpet shell clam eggs ( <i>Ruditapes decussatus</i> )	N	Hatchery CIMA (Ribadeo; Galicia, Spain)	July/2012	Dubert et al. [16]	-
NPI1	Peruvian scallop larvae ( <i>Argopecten purpuratus</i> )	Y	Hatchery Invertec Ostimar (Coquimbo, Chile)	February/2015	Rojas et al. [11]	GCA 013154935.1
071316F	Seawater	N	Netarts Bay (Oregon, US)	July/2016	Rojas et al. [11]	GCA 013114045.1
L2	Banded carpet shell larvae ( <i>Polittapes rhomboides</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2018	-	-
L3	Razor shell clam larvae ( <i>Ensis arcuatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2018	-	-
L4	Razor shell clam larvae ( <i>Ensis arcuatus</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	March/2018	-	-
L20	Manila clam larvae ( <i>Ruditapes philippinarum</i> )	Y	Hatchery CIMA (Ribadeo; Galicia, Spain)	May/2018	-	-
EX1	Flat oyster larvae ( <i>Ostrea edulis</i> )	Y	Hatchery Ostreira (Arousa; Galicia, Spain)	July/1985	Lodeiros et al. [15]	-

**Table S2.** Primers used in this study.

Use	Name	Sequence 5'-3'	Reference
Construction of recombinant plasmid pPC1:	F1 PC1 f	agcttgatctcggaattcctgcagcaatcgtagtttagacag	This study
	F1 PC1 r	tcaagcttttagtgcacgccagattggttcattattcttctg	This study
	F2 PC1 f	ggagtttctacaataacaggaaagaataatgaaccaatctgcgctgacactaaag	This study
	F2 PC1 r	cataattggtaacgaatcagacaattcaaaccttcaagtaactgctg	This study
	pSW PC1 for	cagcagttactgaaggttgattgtctgattcgttaccattatg	This study
	pSW PC1 rev	ctgtctaaactaacgattgctgcaggaaattcgatatcaagc	This study
Primers for plasmid sequencing:	seq F1 PC1 f	gcaatcgtagtttagaca	This study
	seq F1 PC1 r	tgggttcattattcttctg	This study
	seq F2 PC1 f	ctggcgtgacactaaag	This study
	seq F2 PC1 r	caaaccttcaagtaactgctg	This study
Verification of the first allelic exchange after conjugation:	Check1 ins pSW for	cgggcaggataggtgaagtag	Hussain et al. [29]
	Check1 ins pSW rev	gagtttcgtgccggttctg	Hussain et al. [29]
Verification of the second allelic exchange:	check mut PC1 f	tcgaacccacctaagatagc	This study
	check mut PC1 r	agaggccaatcggaacagg	This study

**Table S3.** Identities (%) obtained from interspecific homology search.

Protein	Specie	No. Accession	Identity (%)
M4 family metalloproteinase	<i>V. tubiashii</i>	WP 004744606	97.04
M4 family metalloproteinase	<i>V. crassostreae</i>	WP 069597287	83.76
M4 family metalloproteinase	<i>V. gigantis</i>	WP 215408368	79.74
Vsm*	<i>V. splendidus</i>	ABJ90450	79.57
VtpA*	<i>V. coralliilyticus</i>	ACD87449	75.16
VcpA*	<i>V. coralliilyticus</i>	AFK08684	74.84
VnpA*	<i>V. neptunius</i>	MBN3580162	72.95
M4 family metalloproteinase	<i>V. pectenica</i>	WP 125321186	72.46
M4 family metalloproteinase	<i>V. ostreica</i>	WP 076589241	72.37
EmpA*	<i>V. anguillarum</i>	WP 094163326	69.74
HapA*	<i>V. cholerae</i>	WP 000782181	67.38
M4 family metalloproteinase	<i>S. kushneri</i>	WP 077673443	64.43
M4 family metalloproteinase	<i>P. halotolerans</i>	WP 027253425	63.95

Asterisks indicate homologous genes in which its role in virulence was studied and published.

