

Alignments were performed using ClustalW included in MEGA 6 with default parameters and were manually checked for alignment gaps and missing data in nucleotide positions. The average length of the 16 SSU gene sequences in the final alignment file was 289 bp.

The alignment of these 16 sequences revealed point nucleotide substitutions, sometimes between clones obtained from the same PCR products. The correspondence between sample code and year and site is mentioned in Table S1.

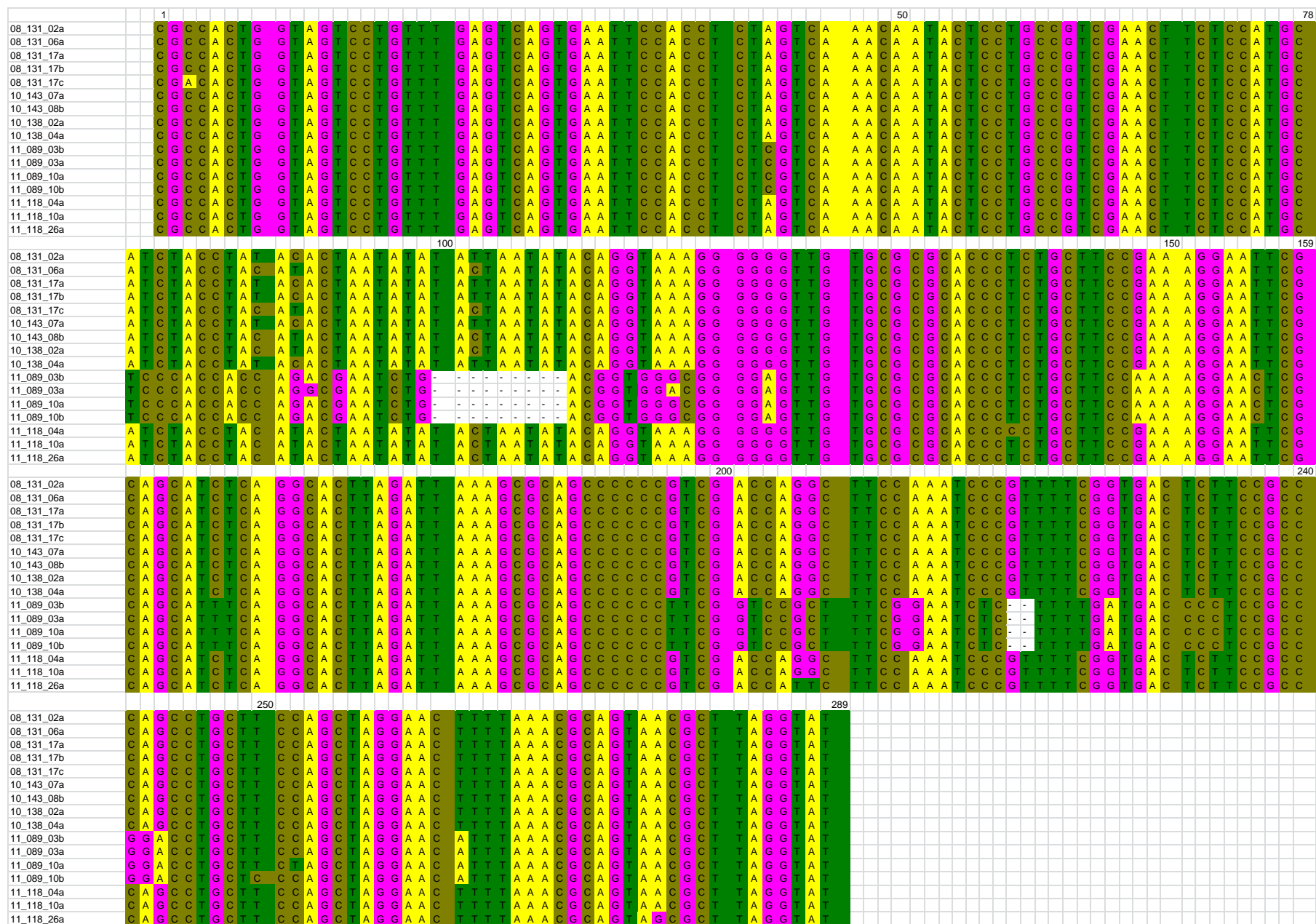
For example, one clone from a wedge clam collected in Quiberon bay in 2008 has A instead of G in position 3 (Figure S1). Some substitutions concerned more than one sequence. For instance, three substitutions (T instead of C in position 88; C instead of T in position 90 and T instead of C in position 102) were observed in 5 distinct sequences obtained from wedge clams collected from Quiberon bay in 2008 and 2010 and from Oléron island (Figure S1). Sequences obtained from the Audierne bay area presented major polymorphic regions in comparison with sequences from other areas and presented a few point substitutions, sometimes between clones obtained from the same animal (Figure S1).

Additional file 1: Table S1. Origin and description of SSU rRNA gene partial sequences obtained.

Parasite Name	Sequence names	Site	Year	Number of individuals (clones per individual)	Similarity between clones	Accession numbers
<i>Mikrocytos veneroides</i>	08_131_02a 08_131_06a 08_131_17a 08_131_17b 08_131_17c	Quiberon	2008	1 (3) 2 (3) 3 (3)	1a = 1b = 1c 2a = 2b = 2c 3a 3b 3c	KY923792 KY923793 KY923794 KY923795 KY923796
<i>Mikrocytos veneroides</i>	10_138_02a 10_138_04a	Quiberon	2010	1 (2) 2 (3) 3 (3)	1a = 1b = 2a = 2b 2c = 3a = 3b = 3c	KY923799 KY923800
<i>Mikrocytos veneroides</i>	10_143_07a 10_143_07b	Oleron Island	2010	1 (3) 2 (3) 3 (3)	1a = 2a = 3a 1b = 1c = 2b = 2c = 3b = 3c	KY923797 KY923798
<i>Mikrocytos</i>	11_089_03a	Audierne	2011	1 (2)	1a	KY923804

<i>donaxi</i>	11_089_10a 11_089_10b 11_089_3b			2 (3) 3 (2)	2a 2b 1b = 2c = 3a = 3b	KY923806 KY923807 KY923805
<i>Mikrocytos veneroides</i>	11_118_04a 11_118_10a 11_118_26a	Douarnenez	2011	1 (1) 2 (1) 3 (1)	1a 2a 3a	KY923801 KY923802 KY923803

Additional file 1: Figure S1. Alignment of *Mikrocytos* small subunit ribosomal gene sequences obtained in the present study (ClustalW in



MEGA6.06).