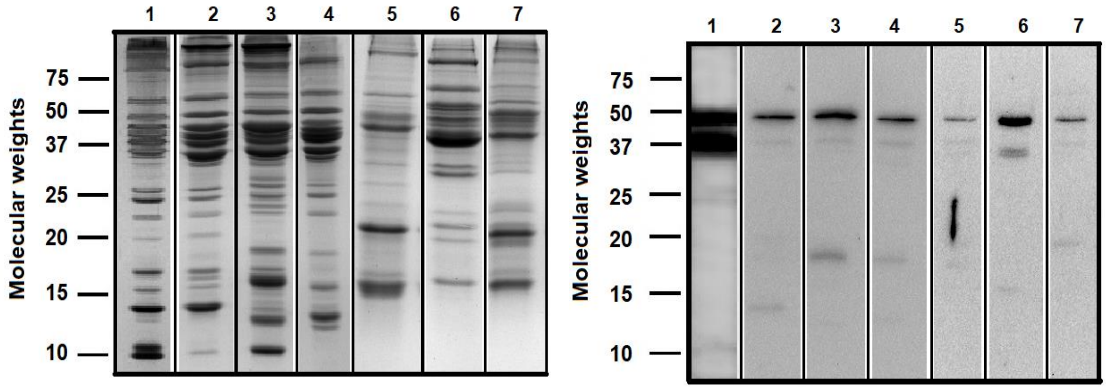
SUPPLEMENTARY MATERIAL

Supplementary Figure 1. SDS-PAGE and IgE Western Blot performed under reducing conditions with the following raw extracts: Lanes 1, *Dicologlossa spp.*; 2, *Sole spp.*; 3, *Lepidorhombus spp.*; 4, *Scophthalmus spp.*; 5. *Merluccius spp.*; 6. *Salmo spp.*; 7. *Gadus spp.*.



Left, SDS-PAGE shows multiple bands of proteins in all of them, ranging from 10 kDa to more than 75 kDa. Right Western Blot shows a detection of protein bands, including:

1. Low weight molecular bands (10-14kDa): showing a weak recognition in Lanes 1, *Dicologlossa spp.*; 2, *Sole spp.*, but did not appear in the other lanes.

2. High weight molecular bands (ranging from 37 to 50 kDa): clearly recognized in all the lanes, but with a higher intensity in Lane 1 *Dicologlossa spp.*.

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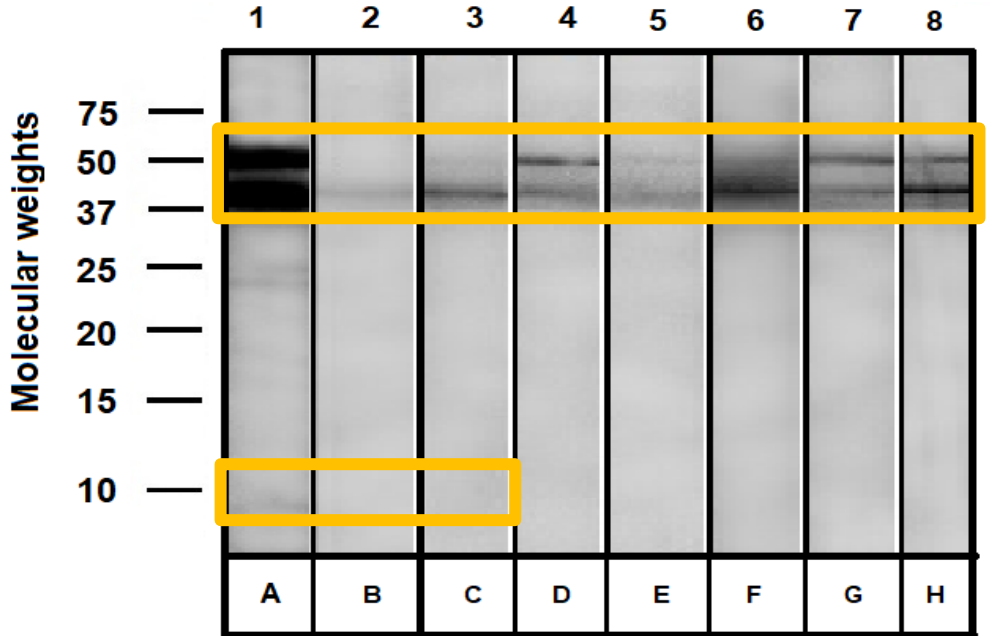
Supplementary Figure 2. IgE Western Blot inhibition performed under reducing conditions with raw *Dicologlossa spp*. in solid phase and the patient serum was preincubated with the following fish extracts at 1 μ g/ml before the IgE-immunodetection: Lanes 1, without inhibition (negative control); 2, *Dicologlossa spp.* (positive control); 3. *Solea spp.*; 4, *Lepidorhombus spp.*; 5, *Scophthalmus spp.*; 6. *Merluccius spp.*; 7. *Salmo spp.*; 8. *Gadus spp.*.



It can be highlighted that in the IgE Western Blot inhibition, the patient serum recognized several protein bands, including the following:

1. Low weight molecular bands (10-14kDa): weak recognition in Lane 1, Dicologlossa spp. without inhibition (negative control); but it is completely inhibited in Lane 2 Dicologlossa spp (positive control) and Lane 3 Solea.

2. High weight molecular bands (ranging from 37 to 50 kDa): strong recognition in lane 1, Dicologlossa spp. without inhibition, partially inhibited in the rest.

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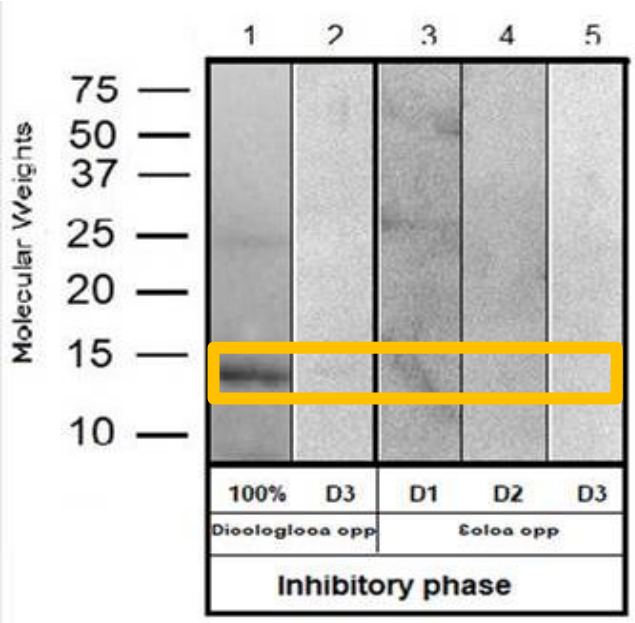
Supplementary Figure 3. IgE Western Blot inhibition performed under reducing conditions with *Dicologlossa spp*. in solid phase and preincubating patient serum before IgE immunodetection with: Lane 1, without inhibition (negative control); 2, *Dicologlossa spp. 1 mg/ml* (positive control); 3. *Sole spp. 0.032 mg/ml*; 4, *Sole spp. 0.125 mg/ml*; 5, *Sole spp. 0.5 mg/ml.*



Patient serum recognized low weight molecular bands (10-14kDa) in Lane 1, without inhibition, which complete disappeared in Lane 2. This same band, was completely inhibited by *Sole spp*. at all concentrations tested, demonstrating that *Sole spp.* and *Dicologlossa spp.* share a protein with similar epitopes.

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Supplementary Figure 4. Mass spectrometry sequencing revealed the identity of a parvalbumin beta-2-like, with a monoisotopic mass of 12185 Da, a calculated pI of 4.81, and a peptide sequence of 109 amino acids (Swissprot, NCBI database). This new protein has a protein sequence coverage of 28% with another parvalbumin beta-2-like of *Hippoglossus stenolepis*, a subspecies of *Solea*, included in the order pleuronectiformes.

MATRIX SCIENCE **MASCOT Search Results**

Protein View: XP_035036110.1

parvalbumin beta-2-like [Hippoglossus stenolepis]

Database:	NCBI-Pleuronectiformes
Score:	78
Expect:	0.0046
Monoisotopic mass (M_r):	12185
Calculated pI:	4.81

Sequence similarity is available as an NCBI BLAST search of XP_035036110.1 against nr.

Search parameters

Enzyme:	Trypsin: cuts C-term side of KR unless next residue is P.
Fixed modifications:	Carbamidomethyl (C)
Variable modifications:	Oxidation (M)

Protein sequence coverage: 28%

Matched peptides shown in ***bold red***.

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  1 MAFKNILEDA KIAAALVECK DAGTFCHKKF FTTCGLAGKS AVDIKKAFNI
 51 IDQDKSCYIE EDELKLFLQN FKDSARALTD AETKAFLKAG DTDNDGKIGD
101 DEFVVMVNA
```


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