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PII: S1050-4648(18)30198-0

DOI: 10.1016/j.fsi.2018.04.013

Reference: YFSIM 5229

To appear in: *Fish and Shellfish Immunology*

Received Date: 15 January 2018

Revised Date: 27 March 2018

Accepted Date: 4 April 2018

Please cite this article as: Wang Y, Xue Z, Yi Q, Wang H, Wang L, Lu G, Liu Y, Qu C, Li Y, Song L, A novel fucolectin from *Apostichopus japonicus* with broad PAMP recognition pattern, *Fish and Shellfish Immunology* (2018), doi: 10.1016/j.fsi.2018.04.013.

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A novel fucolectin from *Apostichopus japonicus* with broad PAMP recognition pattern

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Abstract

F-type lectin (also known as fucolectin) is a newly identified family of fucose binding lectins with the sequence characters of a fucose binding motif and a unique lectin fold (the "F-type" fold). In the present study, a fucolectin was identified from sea cucumber *Apostichopus japonicus* (designated *Aj*FL-1). The open reading frame (ORF) of *Aj*FL-1 was of 546 bp, encoding a polypeptide of 181 amino acids with a predicted molecular mass of about 20 kDa. The deduced amino acid sequence of *Aj*FL-1 shared 30%-40% similarity with the fucolectins from other animals. There were a typical F-type lectin domain (FLD) (residues 39-180) and a signal peptide (residues 1-24) in *Aj*FL-1. The mRNA transcript of *Aj*FL-1 could be detected by qRT-PCR in various tissues, such as intestinum, coelomocytes, respiratory tree, tentacle, and body wall, while undetectable in the gonads and longitudinal muscle. The mRNA expression level of *Aj*FL-1 in coelomocytes was significantly

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