

A Sequence alignment of *Aiptasia* peroxidasin-related proteins 1 and 2

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Apr2      TKTPESPMSSSKDPGKPYSCSHTKFFIVTFLSHTLLLCAGIVPLYITTNHRLVTVEDRLT 60
Apr1      -----

Apr2      VHDMELNSCCLVKEGYGNFQDHEETKVTLNREKYVQTQFIDRVRRNTPYISRDLNSIRM 120
Apr1      -----

Apr2      EVRNHILNLTASQFCQVPDKICTRGAPGKRGLRGRGRSRRRRGRPGHKGIKGLPGKYGKQ 180
Apr1      -----RCRGPPGPPGLPGKSGPRGSIGPQGPK----- 27
                Box 1 → **.* * * * : * . * * * * *

Apr2      GLRGFPQKQKGDIGNRGPPGLPGPKGERGKEVTEPSVFISPSILTVTENQATFHCNA 240
Apr1      -----GLAGKKGDIGRPGLPCKPLIIN-----YPPKVSLSPVGPIYVKEGDNLILSCHV 75
                * * :*****. * * * Box 2 → * . * : . . : * . * . . : * : .

Apr2      HGYPKPQITWKMGSQKIDFGKTRIDKSAGLLEISNVSEKDTGNYTCSAKSVLGEDANTV 300
Apr1      TGYPKPKVTWSKMDS---LPSKRSFITTNRLKVLSVQKQDSGLYVCAGSNTLGSAVETI 132
                *****:*. . . : . * : . . * : . * : . * : . * : . * : . * : . * : . * : .

Apr2      SLLVKFPFRFTEVQKPFQTILOGSTVNLKCAALGYPPPIITWTKMLGSLPTKRSQQNGGK 360
Apr1      KVIVVSAPKFISTPPQVNKNTCEKLTLDQARGDPPAVITWSKEGRLPTDRTQLINGR 192
                . : * * . * : * . . . . . * . * * * * : * * : * * : * * : * * : * * : * * :

Apr2      LTITRFQSDSGSYQCEAVNSVGKNIFYTTLSFGACDDALGMQSKAIRDSQITASSSYSS 420
Apr1      LTITGMTSDAGKYTCTAVSAGVATSKSVTRVTKETGKLKFSRDSVTDYIVVKR----- 247
                * * * : * * : * . * * * * : . . * Box 3 ← * . * : . . : * : .

Apr2      AYLPYYGRLNIVLGYGGWLAKSNTKGQWIQVDLLQATRITAIATQGTSKYDEWTTSYSLQ 480
Apr1      -KLPAMARLTVCL----WMMTSKKNSVLISYAVPGSINEILLDVG-KRLSVWLGDVSWD 301
                * * . * . : * * : . * : . . * . : : . : * : . * . * :

Apr2      YSDGTSFRDYEGGKTLPGNSDRSTVVKNNLDPAIAARYIRLLPKTYHSYMVIRMELYGC 540
Apr1      SGVHVTDGQWHHICATWDNSAGQTILYKDGVRRAPSSTRSR----- 342
                . . * . : : . * . : . : : * : : * : : *

Apr2      QL 542
Apr1      --
    
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B Comparison of protein domains found in human peroxidasins and the *Aiptasia* peroxidasin-related proteins

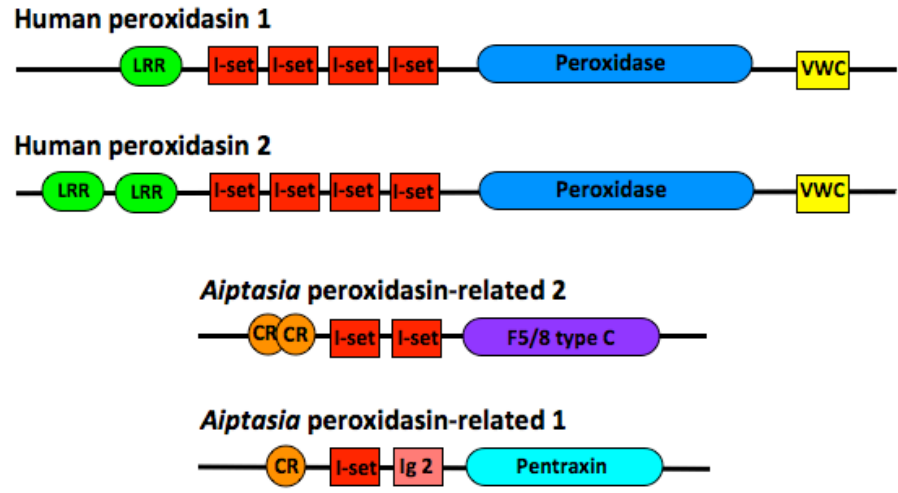




Figure S2 Distinct but related genes whose products may be involved in host tolerance of the symbiont. The transcripts differentially expressed between symbiotic and aposymbiotic anemones included two whose top blastx hit in SwissProt was a human peroxidase and three whose top blastx hit was a mammalian plasma kallikrein (Figure 6; Table S6). (A, B) The two *Aiptasia* peroxidase-related proteins (Apr1 and Apr2) appear to represent distinct gene products with limited domain homology both to each other and to human peroxidases. (A) ClustalW sequence alignment of the two *Aiptasia* proteins shows interspersed identical and different amino acids as expected from distinct gene products rather than from alternative splice products or misassembled contigs. Boxes show regions of sequence similarity between the *Aiptasia* proteins but not the human ones (Box 1) or among all four proteins (Boxes 2 and 3), as diagrammed in B. *, :, and . indicate identical, conserved, and semi-conserved amino acids, respectively. (B) Schematic diagram comparing protein domains found in human peroxidase and the *Aiptasia* peroxidase-related proteins using Pfam. LRR, leucine-rich repeat; I-set, immunoglobulin I-set; Peroxidase, domain with similarity to canonical peroxidases; VWC, von Willebrand factor type-C; CR, collagen triple-helix repeat; Ig 2, immunoglobulin; F5/8 type C domain (or discoidin domain), with cell-adhesion functions; Pentraxin, domain with similarity to pentraxin pattern-recognition receptors displaying Ca²⁺-dependent ligand binding. (C) ClustalW sequence alignment of three *Aiptasia* plasma-kallikrein homologues shows interspersed identical and different amino acids as expected from distinct gene products. The box shows the region of sequence similarity representing the shared trypsin-like domain. Symbols are as in A.