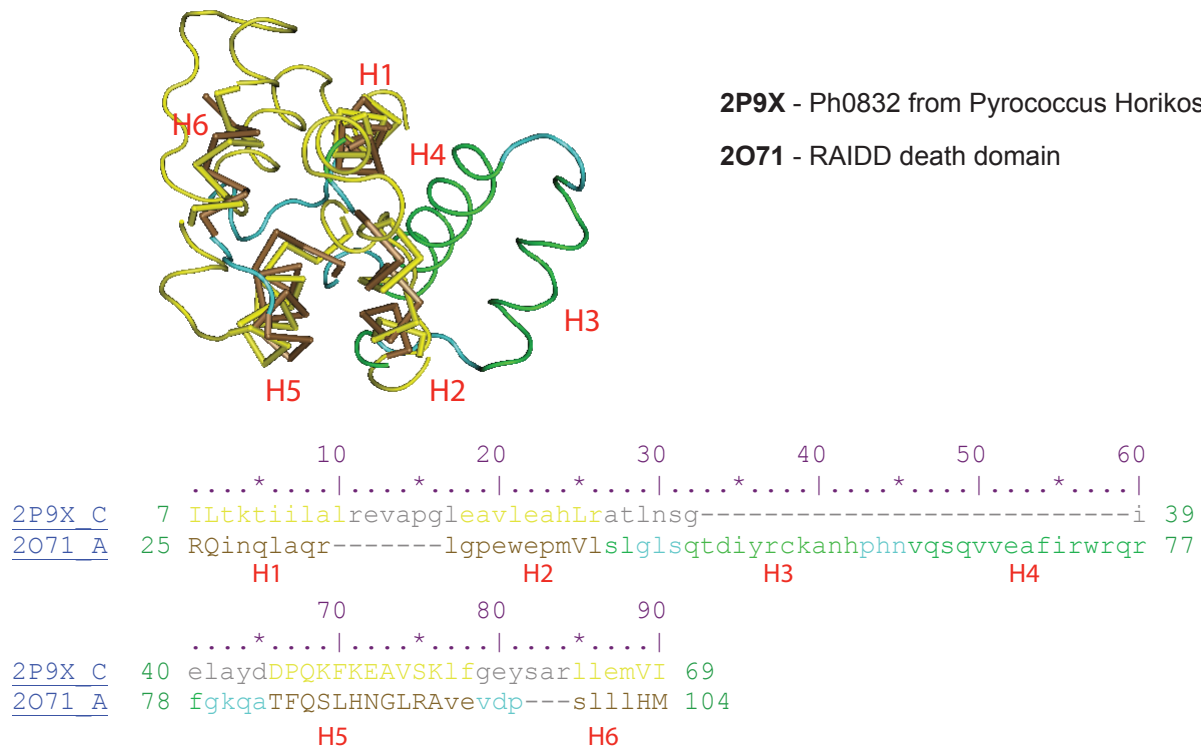
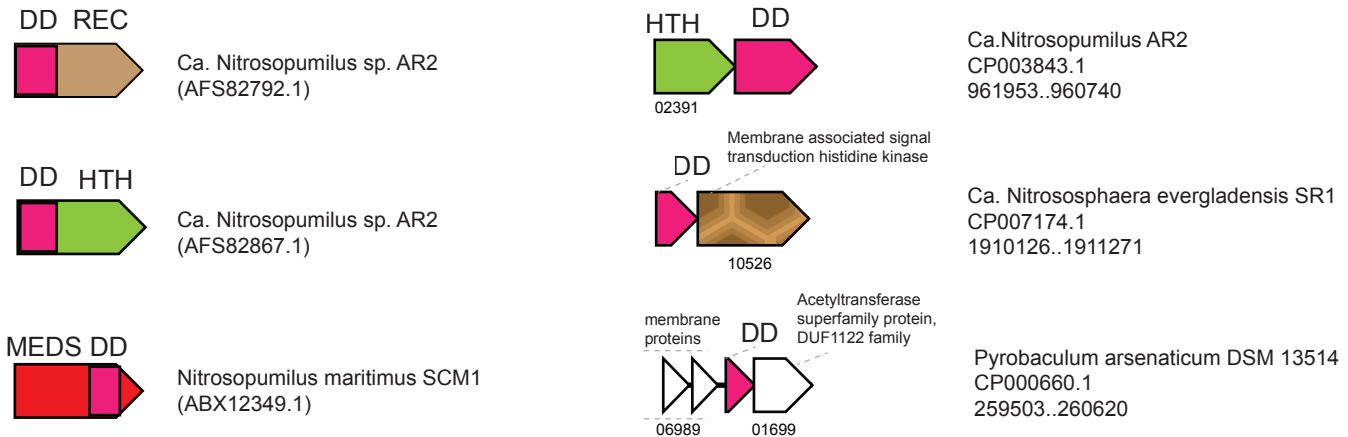


**A****B**

**Supplementary Figure S1. Structural superposition, domain fusions and conserved neighborhoods for archaeal DEATH domain (DD) like family.**

A. Structural superposition was based on VAST pairwise alignment shown below the structures. Six alpha helices (H1-H6) characteristic for typical eukaryotic DEATH domain are shown. Structures are colored according the alignment.

B. DD fusions are shown on the left and conserved neighborhoods are shown on the right. Genes are shown by arrows; domains as rectangles. arCOG numbers are given underneath the arrows. Homologous genes are color-coded as follows: KaiC family proteins - colored red; DD - magenta; HTH - helix turn helix DNA binding proteins - green; REC - receiver domain solid brown; two component signal transduction related genes - brown pattern. Other abbreviations: MEDS - Methanogen/methylotroph, DcmR Sensory domain.