



**Figure S3. Phylogenetic analysis of PRD genes.**  
 Phylogenetic relationships were inferred by NJ method with 1000 bootstrap replicates on the 60 amino acid homeodomains. Bootstrap values >400 are shown. Gene IDs shown in magenta: medusozoans, blue: anthozoans, bold: *Hydra*. Headers in gene ID, Hv; *Hydra viridissima* A99, Sc4wPfr; *Hydra vulgaris* (Hydra2.0), TCONS; *Clytia hemisphaerica*, AUR; *Aurelia aurita*, MOR; *Morbakka virulenta*, EDO; *Nematostella vectensis*, aug; *Acropora digitifera*. Classifications (orange column) are based on the PRD genes previously identified in bilaterians (Human, Fruitfly and Amphioxus).