

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Alignment file for maximum likelihood tree of *Sox* HMG domains.

File Name: Supplementary Movie 1

Description: Discharge of large piercing cells (nematocytes) from the tentacle tips of a wild type polyp using an infrared laser ablation system. Note dust on the lens that appears in the still images in Figure 5d.

File Name: Supplementary Movie 2

Description: Discharge of large piercing cells (nematocytes) from the tentacle tips of an *NvSox2* mutant polyp using an infrared laser ablation system. Note dust on the lens that appears in the still images in Figure 5d.