The Lethal Weapon of Marine Flatworm-Breaking Findings of Autonomic Pharynges

Su, Ying-Jung (School: National Experimental High School At Hsinchu Science Park)
Yeh, Chih-Yu (School: National Experimental High School At Hsinchu Science Park)
Teng, Ching-Jung (School: National Experimental High School At Hsinchu Science Park)

Soft oyster leech can cause severe damage to the oyster farming industry worldwide by breaking through oyster's robust defense mechanism effortlessly. So, what is its unique attacking method? In this study, the oyster leech, Stylochus orientalis splendida, is observed to release newly-found autonomic pharynges during the attacking period. Autonomic pharynges break off from oyster leech and move independently toward the dark shell interior with negative phototaxis ($P<0.01^{**}$). They would decompose muscle tissue into thinner fibers under histological sections. Afterwards, clam's shell-opening range widens and its shell-closing frequency increases. Autonomic pharynges significantly affect clam mortality ($P <0.01^{**}$). A group of proteins uniquely existing in autonomic pharynges is considered to be active components by SDS-PAGE. The target proteins can be obtained by homogenization and ammonium sulfate precipitation and their molecular weights are approximately 10 kDa by MALDI-TOF mass spectrometer. The target proteins result in increasing shell-closing frequency of clam, which is similar to the function of autonomic pharynges observed previously. The findings of autonomic pharynges are first reported on animal behavior.

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