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The Uptake of Dissolved Organic Matter by Juvenile *Nematostella Vectensis*

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Among marine invertebrates, nutrients can be acquired by consumption of particulate forms of food and through the absorption of organic molecules in seawater. We evaluated the ability of juvenile sea anemones (*Nematostella vectensis*) to take up dissolved organic matter (DOM) from seawater. As a cnidarian, the starlet sea anemone is diploblastic, composed of an endoderm, ectoderm, and an intervening mesoglea. Previous research has examined the uptake of DOM by the ectoderm and endoderm by anemone planula larvae. To investigate the mechanisms of DOM uptake, individuals were exposed to fluorescently labeled protein and a polysaccharide (2 mg/mL) for seven hours. Using fluorescence microscopy, we monitored the distribution of fluorescent labels with increasing exposure times. Vesicles containing protein, polysaccharide or both were found only in the endoderm. The distribution of vesicles containing the fluorescent molecules suggests the uptake of larger molecular weight proteins and polysaccharides was non-specific pinocytosis rather than receptor-mediated endocytosis.