

Abstract Submitted
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Swimming *Vorticella convallaria* in various confined geometries¹

LUZ SOTELO, University of Texas-Pan American, DONGHEE LEE, University of Nebraska-Lincoln, SUNGHWAN JUNG, Virginia Polytechnic Institute and State University, SANGJIN RYU, University of Nebraska-Lincoln — *Vorticella convallaria* is a stalked ciliate observed in the sessile form (trophont) or swimming form (telotroch). Trophonts are mainly composed of an inverted bell-shaped cell body generating vortical feeding currents, and a slender stalk attaching the cell body to a substrate. If the surrounding environment is no longer suitable, the trophont transforms into a telotroch by elongating its cell body into a cylindrical shape, resorbing its oral cilia and producing an aboral cilia wreath. After a series of contractions, the telotroch will completely detach from the stalk and swim away to find a better location. While sessile *Vorticella* has been widely studied because of its stalk contraction and usefulness in waste treatment, *Vorticella*'s swimming has not yet been characterized. The purpose of this study is to describe *V. convallaria*'s swimming modes, both in its trophont and telotroch forms, in different confined geometries. Using video microscopy, we observed *Vorticellae* swimming in semi-infinite field, in Hele-Shaw configurations, and in capillary tubes. Based on measured swimming displacement and velocity, we investigated how *V. convallaria*'s mobility was affected by the geometry constrictions.

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