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Pumping Mechanism of the Tubular Sea Squirt Heart

Tubular valveless hearts are common in many invertebrates, such as *Drosophila* or *Ciona*, and are also found in the early stages of vertebrate cardiac morphogenesis. This diversity of hearts motivates the question of how scaling affects fluid transport for several mechanisms of valveless pumping. Physical and numerical models are used to quantify pumping efficiency as a function of Womersley number for peristalsis and dynamic suction pumping.