

Abstract Submitted
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Effects of number and configuration of flagella on motility of *Helicobacter* species.¹ MAIRA A. CONSTANTINO, Boston University, SINAN SHARBA, University of Gothenburg, ZELI SHEN, JAMES G. FOX, Massachusetts Institute of Technology, FREDDY HAESBROUCK, Ghent University, SARA LINDEN, University of Gothenburg, RAMA BANSIL, Boston University — *Helicobacters* are ulcer-causing bacteria that colonize the viscoelastic gastric mucus layer of mammals. Previous studies have shown that motility and colonization are affected by helical body shape, number and configuration of flagella. In a recent study², using fast time-resolution and high-magnification 2-D phase-contrast microscopy to image individual helical and rod-shaped *H. pylori* we measured the rotation rate of the cell body and flagella and found that helical shape produces less than 15% changes in swimming speeds as compared to the rod-shaped cell. Motility of *H. pylori* was strongly influenced by its multiple unipolar flagella. Here we compare rotational and translational speeds of *H. cetorum* and *H. suis* which have bipolar flagella, with *H. cetorum* having single bipolar flagella and *H. suis* having multiple flagella. Preliminary results show that *H. suis* bacteria swim slower but rotate at the same rate as *H. pylori* and present two swimming modes. It can swim as a pusher, with one active rotating bundle and one inactive bundle, wrapped around the body or with both bundles active. Similar work on *H. cetorum* is ongoing and will also be presented.

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