

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Microrheology study of human mucins varying in *Helicobacter pylori* binding affinity¹ CLOVER SU, Boston University, SINAN SHARBA, SARA LINDEN, University of Gothenburg, RAMA BANSIL, Boston University — *Helicobacter pylori* is the pathogen that colonizes the human stomach and causes gastric ulcers and cancer. One of the key mechanisms by which *H. pylori* establishes an infection on the gastric mucosa is by expressing adhesins that facilitate the binding of the bacterium to the host epithelial cell. We present the motility and microrheology study of a clinical isolate strain of *H. pylori*, J99, and its mutant with and without particular adhesins that bind to mucins with specific alterations in their glycans coat. Our microrheology experiments show that mucin viscosity depends on the glycans coat and decreases in the presence of bacteria. We found no significant changes in bacterial motility between J99 wild type and mutant in culture broth. Unlike previous observations made with other *H. pylori* strains, we did not see reversals in J99 strains. Bacteria tracking measurements are underway to examine the motility in these altered mucin solutions.

¹Supported by NSF PHY 1410798

Clover Ting-Yi Su
Boston University

Date submitted: 11 Nov 2016

Electronic form version 1.4