Small molecule inhibition of *Helicobacter pylori* glycosylation
Daniel Williams, 2019

Helicobacter pylori (*H. pylori*) is a bacterial pathogen in the human digestive tract that produces chronic stomach inflammation. It has been associated with both stomach ulcers and stomach cancer, which is the second most common cause of death from cancer in humans worldwide [1,2]. Currently, the recommended treatment of *H. pylori*
However, the efficacy of this treatment method has been found to be suboptimal in eradicating the bacteria due to the development of antimicrobial resistance [4] and deleterious effects on the host microbiome [5]. Therefore, new innovative alternative treatment methods are needed.

Previous work has identified certain *H. pylori* cell surface sugar-modified proteins, termed glycoproteins, as therapeutic targets due in part to the fact that they differ markedly from those found in human cells and certain of these glycoproteins have been found to be unique to *H. pylori*. The Dube lab

natural biosynthetic pathways, to incorporate unnatural sugars into *H. pylori* cellular glycoproteins, while

Figure 1. Effects of small molecule inhibitors on *Helicobacter pylori* glycosylation assembly. A) Normal lipid carrier-mediated glycosylation assembly pathway. Glycosyltransferases (GTs) sequentially transfer nucleotide-activated monosaccharides one sugar at a time onto a lipid

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