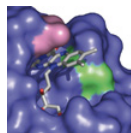
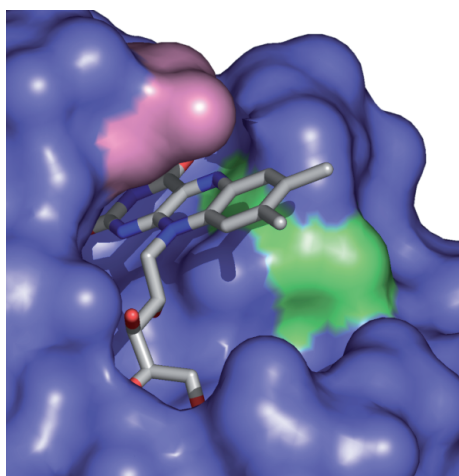


Partnering Opportunity



Condition

Helicobacter pylori is a spiral-shaped, gram-negative organism that has adapted to thrive in acid. *H. pylori* is a common gastric pathogen that causes gastritis, peptic ulcer disease, gastric adenocarcinoma, and low-grade gastric lymphoma. Infection may be asymptomatic or result in varying degrees of dyspepsia. Diagnosis is by urea breath test and testing of endoscopic biopsy samples. Current treatments options include a proton pump inhibitor plus two antibiotics. Treatment is successful in less than 80% of the population and it is diminishing due to increasing resistances. Hence, new approaches to treat these infections pose a compelling need

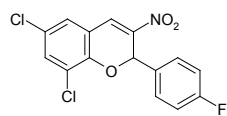


Technology/Approach

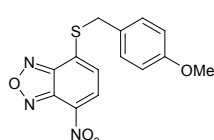
Newly improved small molecules that inhibits *H. pylori*'s flavodoxin have been synthesised. Flavodoxin is a redox enzyme that transfers electrons in metabolic routes in Helicobacter pylori and it is therefore essential for the survival of the bacteria. It holds a flavin mononucleotide (FMN) environment that differs from that of other species making it suitable for inhibitor binding. Furthermore, flavodoxin is absent in humans, therefore minimum toxicity side effects are expected from their use. By altering redox potential, electron transfer is abrogated and thus *H. pylori* dies.

Advantages

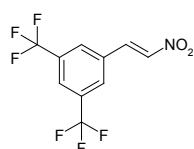
- Low cost synthesis.
- New antibiotics without known resistances.
- No toxicity at their active concentrations.
- Bactericidal activity at low concentrations.
- Strong IP.



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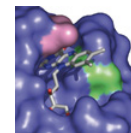


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Partnering Opportunity



Patents

- Patents of composition of matter and its use: P20070645, P20070566 and P200700646. They have already been granted in Spain and are pending in USA, Japan and Europe after PCT filing in 2008.

Current Status/PoC

- Biochemistry/Biophysics:
 - A high number of derivatives have been synthesised.
 - MIC, MCC (between 1-5 μ M.), affinity and bacterio-toxicity determined.
 - Biophysics parameters determined: RMN, ITC and Crystallography.
- Pre-clinical proof-of-principle:
 - *In vitro* toxicity in HeLa cells and healthy mice.
 - *In vivo* tests: infected rodents are currently undergoing compound treatment to assess efficacy.

Commercial Opportunity

- Seeking to out-license the technology to a strategic partner in order to:
 - Complete pre-clinical regulatory essays.
 - Start clinical trials in humans.

Product Profile

Attribute	Base case	Upside
Compound	Small molecules	Synthesis of analogues
Efficacy	Defined MoA with no resistances	Complete trials for registration.
Indication	<i>Helicobacter pylori</i> infection	Other bacterial/fungal infections
Safety	No toxicity, it doesn't address human flavodoxin	
Drugability	Defined physical properties	Full PK package
CoG	Compound synthesis	
Patent Expiry	2027	+ Extensions

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