

COMPOUNDS FOR TREATING HELICOBACTER PYLORI AND CAMPYLOBACTER JEJUNI INFECTION

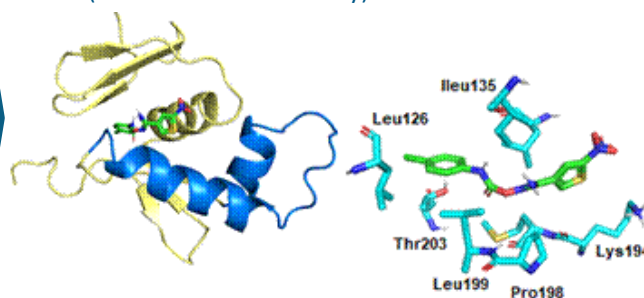
A research group from University of Zaragoza, Institute for Health Research from Aragon, CIBER and Instituto Aragonés de Ciencias de la Salud has developed new bioactive compounds with antimicrobial effect against *H. pylori* and *C. jejuni*.

The Need

H. pylori and *C. jejuni* are considered “high priority” pathogens in the R&D of new antimicrobials by the World Health Organization due to their high risk for human health because of increasing antibiotic resistance worldwide. *H. pylori* infection affects more than 50% of world population. Persistent colonization of human stomach by this pathogen results in gastric inflammation and highly contributes to the pathogenesis of peptic ulceration, gastric adenocarcinoma, and mucosa-associated lymphoid-tissue (MALT) lymphoma. *C. jejuni* constitutes the main cause of bacterial gastroenteritis in humans worldwide. Besides, current antimicrobial therapies against *H. pylori* and *C. jejuni* infection have negative side effects on normal human microbiota, which is a frequent cause of dysbiosis, therapy interruptions and emergence of antibiotic resistance

The Solution

The present invention describes new bioactive compounds with antimicrobial activity against *Helicobacter pylori* (*H. pylori*) and *Campylobacter jejuni* (*C. jejuni*) by acting specifically on the protein HsrA (essential for cell viability).



Model of the molecular interaction between the compounds of the invention and the C-terminal DNA binding domain of the *H. pylori* essential response regulator HsrA. The helix-turn-helix (HTH) DNA binding motif of HsrA has been highlighted in blue. Some interacting residues are indicated.

Innovative Aspects

- The compounds of the invention are as effective as traditional antibiotics against *H. pylori* and *C. jejuni* while not being harmful to normal human microbiota.
- Furthermore, these compounds are not affected by the molecular mechanisms of resistances developed by *H. pylori* and *C. jejuni*.
- Therefore, these antimicrobial compounds may be of special relevance in the eradication of infections caused by strains resistant to conventional antibiotics.

Intellectual Property:

- Priority Spanish patent application filed (February, 2022).
- Suitable for international extension (PCT application).

Aims

Looking for a partner interested in a license and/or a collaboration agreement to develop and exploit this asset.

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