



Welcome to the iplBA seminar series 2022

Short informal talks given by **young researches of Aragón** with the aim to promote 2 main goals:

1. **Networking** between young researchers of Aragón.
2. Improve our **communication skills**.

“Use of 1,4-Dihydropyridines as promising antimicrobials against H. pylori.”

Tuesday, April 5th 2022

From 9:30 to 10:30

Summary:

Antimicrobial resistance is one of the main challenges for public health. The emergence and spread of multidrug-resistant strains of most clinically relevant pathogens, including the carcinogenic bacterium *Helicobacter pylori*, puts the efficacy of current therapies at risk. In previous work, we found that several anti-hypertensives belonging to the DHP family showed potent bactericidal activity against *H. pylori* through inhibition of the essential response regulator HsrA. To further evaluate the potential of 1,4-DHPs as novel antimicrobials against *H. pylori*, the bactericidal effect of twelve new 1,4-DHPs derivatives was determined, which showed a considerable reduction in their ability to block L- and T-type calcium channels. Six of these molecules showed potent antimicrobial activity ($MIC \leq 8$ mg/L) against three strains with different *H. pylori* resistance, while at least one of the compounds was as effective as metronidazole. These antimicrobial activities appear to be specific for the Epsilonproteobacteria class, since no deleterious effects were observed in *Escherichia coli* and *Staphylococcus epidermidis*. The new 1,4-DHPs derivatives acted on the HsrA response regulator of *H. pylori* and inhibited its DNA binding capacity according to in vivo and in vitro assays. Molecular docking predicts a pocket of the C-terminal domain as a potential binding site with its target HsrA, which opens the possibility for rational drug design against *H. pylori*.

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Organizes: iplBA and Institute for Health Research Aragón

Link to join the seminar:

<https://us02web.zoom.us/j/84461234567>



 CIBA, main meeting room, and online via zoom

 Tuesday, March 5th 2022 From 9:30 to 10:30