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3-Arylpropionylhydroxamic acid derivatives as *Helicobacter pylori* urease inhibitors: Synthesis, molecular docking and biological evaluation

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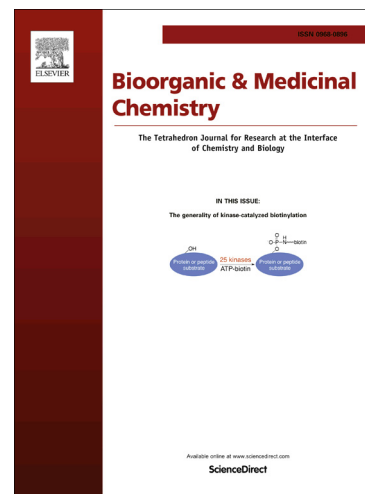
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### 3-Arylpropionylhydroxamic acid derivatives as *Helicobacter pylori* urease inhibitors: Synthesis, molecular docking and biological evaluation

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**Abstract:** *Helicobacter pylori* urease is involved in several physiologic responses such as stomach and duodenal ulcers, adenocarcinomas and stomach lymphomas. Thus, inhibition of urease is taken for a good chance to treat *H. pylori*-caused infections, we have therefore focused our efforts on seeking novel urease inhibitors. Here, a series of arylpropionylhydroxamic acids were synthesized and evaluated for urease inhibition. Out of these compounds, 3-(2-benzyloxy-5-chlorophenyl)-3-hydroxypropionylhydroxamic acid (**d24**) was the most active inhibitor with IC<sub>50</sub> of 0.15±0.05 μM, showing a mixed inhibition with both competitive and uncompetitive aspects. Non-linear fitting of kinetic data gives kinetics parameters of 0.13 and 0.12 μg·mL<sup>-1</sup> for Ki and Ki', respectively. The plasma protein binding assays suggested that **d24** exhibited moderate binding to human and rabbit plasma proteins.

**Keywords:** 3-Arylpropionylhydroxamic acid; *H. pylori* urease inhibitor; Plasma protein binding; Kinetics study; Non-linear fitting

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