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4-(4-羟基苯基)乙基儿茶酚作为尿素酶抑制剂的机理

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Study on the Inhibition Mechanism of 4-(4-Hydroxyphenethyl)Benzene-1,2-Diol on Urease

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摘要 4-(4-羟基苯基)乙基儿茶酚是一种新型幽门螺旋杆菌尿素酶抑制剂, 运用酶动力学研究方法, 对它的抑制机理、抑制类型进行探讨. 实验结果表明, 4-(4-羟基苯基)乙基儿茶酚是尿素酶的竞争性抑制剂, 抑制常数 K_i 为 $1.48 \mu\text{mol/L}$, 为其在抗胃炎、胃溃疡方面的应用以及进一步的结构优化奠定了理论基础.

关键词: 幽门螺旋杆菌尿素酶 4-(4-羟基苯基)乙基儿茶酚 酶动力学 竞争性抑制

Abstract: 4-(4-Hydroxyphenethyl)benzene-1,2-diol is a new inhibitor against *Helicobacter Pylori* urease. The inhibition mechanism was herein investigated through enzyme kinetics methods, and the results revealed that 4-(4-hydroxyphenethyl)benzene-1,2-diol was competitive inhibitor of urease with a K_i value of $1.48 \mu\text{mol/L}$. The chemical stability and the competitive mechanism of 4-(4-hydroxyphenethyl)-benzene-1,2-diol strongly suggested that it could be used as a lead compound for rational drug design to find active compound and as a potential urease inhibitor for treatment of gastritis and peptic ulcer.

Key words: *Helicobacter Pylori* urease 4-(4-hydroxyphenethyl)benzene-1,2-diol enzyme kinetics competitive inhibition

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