

# DISCOVERY OF NOVEL UREASE INHIBITORS FOR TREATMENT OF PEPTIC ULCER

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Ulcer is a sore on the skin or a mucous membrane, accompanied by the disintegration of tissue that obstructs the normal function of an organ. No single cause has been found for ulcers. However, it is now clear that ulcer can be caused by an imbalance between digestive fluids in the stomach and duodenum and by a type of bacteria called *Helicobacter pylori* (*H. pylori*). *Helicobacter pylori* is a Gram-negative, microaerophilic bacterium found in stomach, produce large amounts of urease enzyme which breaks down the urea present in the stomach to carbon dioxide and ammonia. Hyperactivity of enzyme urease is one of the major contributors in different pathologic conditions, like urolithiasis, urinary catheter encrustation, pyelonephritis, hepatic coma, ammonia and hepatic encephalopathy. Hyperactivity of urease brings out considerable economic and environmental tribulations by releasing abnormally large quantity of ammonia into the atmosphere in the process of urea fertilization. To date, only acetohydroxamic acid has been clinically used for the treatment of urinary tract infections by urease inhibition. In the current situation, the increasing resistance of bacterial pathogens to common antibiotics is the alarming situation for researchers working in this field. Therefore, it is foremost task to develop the novel classes of molecules that specifically target urease as enzyme inhibitors.

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