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Editorial Open Access

Patho-Phyisology of Urease: Urease Inhibiters as a Significant Therapeutic Goal

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Editorial

Urease (urea amidohydrolase) is usually found in different bacteria, fungi, algae and plants. It is accountable for the hydrolysis of urea and thus, forming ammonia and carbamate, which is the final step of nitrogen metabolism in living organisms [1,2]. The carbamate intern quickly and spontaneously decomposes, yielding a second molecule of ammonia. These reactions may cause significant increase in pH and are therefore, responsible for negative effects of urease activity in human health and agriculture [3,4].

The experimental findings suggested that infections produced by bacteria such as *Helicobacter pylori* and *Proteus mirabilis* usually have a high urease activity. Urease is central toH. pylorimetabolism and virulence, necessary for its colonization in gastric mucosa [5,6]. It is a potent immunogen that elicits a strong immune response. Urease represents an interesting model for metalloenzyme studies. Before the discovery of*H. pylori*, urease production was limited to human physiology. But now the contribution of this bacterium in urease production is well established. It contributes in urinary tract and gastrointestinal infections, probably augmenting the severity of several pathological conditions like peptic ulcers and stomach cancer etc. Ureases are also involved in the development of different human and animal pathogenicity such as urolithiasis, pyelonephritis, hepatic encephalopathy, hepatic coma and urinary catheter encrustation [7-9]. Over urease production is also contributing in environmental hazards.

The enzyme has been recognized that it is one of the key agents in the pathophysiology of multiple human and animal disorders, targeting urease for treating pathogenic disorders caused by urease-producing-bacteria has already open a new line of treatment for infections caused by such bacteria. In reality more effective and potent compounds are mandatory with a complete new level of safety and specificity. Urease inhibitors for this purpose have gained incredible attention in recent times and therefore resulted into the discovery of numerous inhibitors [8,10-13].

To summarize, urease inhibitors are highly potential target for different pathological conditions induced urease hyperactivity.

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