



## Bismuth increases hydroxyl radical-scavenging activity of histamine H<sub>2</sub>-receptor antagonists

Margarita Kirkova, Albena Alexandrova, Neli Yordanova

Institute of Physiology, Bulgarian Academy of Sciences, Acad. G.Bonchev Str., Blvd. 23, 1113 Sofia, Bulgaria

**Correspondence:** Albena Alexandrova, e-mail: a\_alexandrova\_bas@yahoo.com

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### Abstract:

The effects of histamine H<sub>2</sub>-receptor antagonists, alone or in a combination with bismuth, on <sup>•</sup>OH-provoked degradation of deoxyribose were studied. The histamine H<sub>2</sub>-receptor antagonists (cimetidine, ranitidine and roxatidine), themselves decreased the deoxyribose damage in Fenton-type systems. In combinations with bismuth, their inhibitory effect in Fenton system (Fe(III)/ascorbic acid + H<sub>2</sub>O<sub>2</sub>) was stronger. Moreover, unlike Fe(III) and Cu(II), which in the presence of ascorbic acid + H<sub>2</sub>O<sub>2</sub> led to an increase in the <sup>•</sup>OH formation (deoxyribose damage), Bi(III) showed an opposite effect. The present results are interpreted in view of a better <sup>•</sup>OH scavenging activity of bismuth complexes of histamine H<sub>2</sub>-receptor antagonists as compared to that of the corresponding drugs. These findings might be one more explanation why bismuth salts, in combination with acid-reducing agents, are more effective anti-ulcer agents.

### Key words:

<sup>•</sup>OH radicals, bismuth, histamine H<sub>2</sub>-receptor antagonists, bismuth/drug complexes

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