
**Abstract**

This study was planned to look for a more rational mechanism(s) that could explain the anti-ulcer activity of copper nicotinate complex, since the mechanism whereby it prevents ulceration still to be investigated. Ulcer and the preventive indexes were scored, mucin, juice volume, total acidity, luminal haemoglobin, total peroxide and total antioxidant as an oxidative stress index (OSI), as well as total DNA fragmentation (as an apoptotic marker) and its percentage ratio in the juice were evaluated. Results confirmed the antisecretory ability of copper nicotinate, as reflected from the significant reduction of gastric juice volume and acid output. Data confirmed also copper nicotinate has a gastrocytoprotective action against ulcer pathogenesis through; enhancement of mucin secretion, reduction each of ulcer index and the mucosal bleeding rate into the gastric lumen; antioxidant activity through scavenging reactive oxygen species (ROS); anti-apoptotic activity through attenuation of the DNA fragmentation in the ulcerous treated group when compared with each of control and aspirin ulcerous untreated groups. This study hypothesized; at least in part, aspirin in the acidic environment of gastric juice become un-ionized and freely penetrate the mucosal barrier reaching to gastric wall. Due to the weak basic nature of cytoplasm of gastric mucosal cells, it accumulates in high concentrations into mucosal cells, and yields a negatively charged anion that is unable to exit the cell. Thus, superficial or deeper erosions are produced and bleeding takes place, within minutes.