

Apple peel polyphenols protect against gastrointestinal mucosa alterations induced by indomethacin in rats

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The stability of an apple peel polyphenol extract (APPE) with powerful antioxidant activity was evaluated under acidic conditions *in vitro*, and its protective effect against gastrointestinal damage was investigated in rats treated with indomethacin. The antioxidant activity of APPE remained stable at pH 2.0 for 4 h. In rats treated with indomethacin (40 mg/kg *ig*), the previous administration of APPE protected the gastric, intestinal, and colonic mucosa from oxidative stress by preventing increased malondialdehyde concentrations and decreasing the GSH/GSSG ratio. APPE also displayed anti-inflammatory effects by preventing neutrophil infiltration in the mucosa, as evidenced by the lower myeloperoxidase activity. These protective effects of APPE resulted in the prevention of macro- and microscopic damage and of barrier dysfunction along the gastrointestinal tract of the indomethacin-treated animals. This study supports the concept that apple peel polyphenols may be useful in the preventio