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Sri Lankan low grown Orange Pekoe (O.P.) grade black tea (*Camellia sinensis* L.) exhibits gastroprotective activity in rats

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According to traditional medicine in Sri Lanka, drinking black tea brew (BTB) of *Camellia sinensis* L. provides protection against the development of gastritis and peptic ulcer diseases. However, the grade of tea is not specified. In this connection our previous studies have shown that, BTB of high grown Dust grade No.1 possesses gastroprotective action. However, the phytoconstituents and the bioactivities of tea depend on several factors such as particle size (grade of tea) and agroclimatic elevation amongst other things. Orange Pekoe (O.P.) tea is a whole leaf grade type of tea, which has a high export market, while Dust grade No.1 is a broken grade tea. Therefore, it is worthwhile to investigate whether Sri Lankan low grown O.P. tea also exhibits gastroprotective action. Gastroprotective action of BTB of O.P. tea was examined in ethanol induced acute gastric lesions model in wistar rats (N = 6/group) using three oral doses (223 mg/kg, 446 mg/kg and 1339 mg/kg doses) or 3 ml of water (control) or cimetidine (20 mg/kg), the reference drug, which was given to separate groups before 30 min to the induction of lesions. Mid and high doses of BTB significantly ($P < 0.05$) reduced the number (mid dose by 47% and high dose by 88%), length (mid dose by 42% and high dose by 95%) and the area of haemorrhagic lesions (mid dose by 50% and high dose by 96%) in the glandular portion of the stomach while the low dose had no significant ($P > 0.05$) effect on any of the parameters. The gastroprotective action of the high dose was superior to cimetidine and it was used to evaluate the mode of action. The high dose also showed a gastroprotection in indomethacin induced gastric lesion model indicating the involvement of prostaglandin secretion. O.P. induced gastroprotective action was mediated *via* multiple mechanisms: Reduction of peristalsis (by charcoal plug test), gastric volume and basal acid output and increase in mucus secretion (by Alcian blue technique), pH, carbohydrate content, mucosal blood flow, and due to antihistamine activity (by wheal test), antioxidant activity of BTB [by 1-1-diphenyl-2-picrylhydrazil (DPPH) assay] and high conductivity of O.P. However, O.P. did not significantly alter pepsin and protein content of the gastric juice. It is concluded that, BTB of O.P. (whole leaf grade tea) also possesses gastroprotective action in rats.

Keywords: Gastroprotection, black tea, *Camellia sinensis*, wistar rats

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