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## Gingerol inhibits cisplatin-induced vomiting by down regulating 5-hydroxytryptamine, dopamine and substance P expression in minks.

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### Abstract

**OBJECTIVE:** To investigate the antiemetic effect of gingerol and its multi-targets effective mechanism on 5-hydroxytryptamine (5-HT), dopamine (DA) and substance P (SP). The antiemetic effect of gingerol was investigated on a vomiting model of mink induced by cisplatin (7.5 mg . kg(-1), i.p.) in 6 h observation. The levels of 5-HT, DA and distribution of substance P in the area postrema and ileum were measured by high performance liquid chromatography (HPLC) and immunohistochemistry respectively. The frequency of cisplatin induced retching and vomiting was significantly reduced by pretreatment with gingerol in a dose-dependent manner ( $P < 0.05$ ). Cisplatin produced a significant increase in 5-HT and DA levels in the area postrema and ileum of minks ( $P < 0.05$ ), and this increase was significantly inhibited by gingerol in a dose-dependent manner ( $P < 0.05$ ). Substance P-immunoreactive was mainly situated in the mucosa and submucosa of ileum as well as in the neurons of area postrema, and gingerol markedly suppressed the increase immunoreactivity of substance P induced by cisplatin in a dose-dependent manner ( $P < 0.05$ ). Gingerol has good activity against cisplatin-induced emesis in minks possibly by inhibiting central or peripheral increase of 5-HT, DA and substance P.

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