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Biofactors. 2000;13(1-4):231-7.

Antidiabetogenic activity of oleanolic acid glycosides from medicinal foodstuffs.

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Abstract

Oleanolic acid glycosides from several medicinal foodstuffs were found to show potent inhibitory activity on the increase of serum glucose levels in oral glucose-loaded rats. By examination of the structure-activity relationships, the 3-O-glucuronide moiety and the 28-carboxyl group in oleanolic acid glycosides were required to exert the hypoglycemic activity. Oleanolic acid glycosides were found to have neither insulin-like nor insulin-releasing activity, but they inhibited gastric emptying and glucose-uptake in the small intestine. Investigation of the mode of action revealed that the inhibition of gastric emptying was mediated by capsaicin-sensitive sensory nerves and the central nervous system. Furthermore, oleanolic acid glycosides were suggested to suppress the gastric emptying by stimulating the release and/or production of dopamine to act through dopamine2 receptors, which in turn causes the release of prostaglandins.

PMID: 11237187 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances



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