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" تغذية وعلوم الأطعمة"

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Effect of galangal (*Alpinia galangal*) as consumption as antioxidants on hyperlipidemic and hyperglycemic (In experimental rats)

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Abstract

Effect of galangal (Alpinia galangal) as consumption as antioxidants on hyperlipidimic and hyperglycemic (in experimental rats)

Galangal (*Alpinia galanga*) is a member of the ginger family is used in traditional medicine to treat stomach ache, cold, eczemaotitis, ulcers and each other. The rhizomes possessed many pharmacological effects including antibacterial, antifungal,antioxidant effects, antidiabetic and many other nutritional effects. The aim of this study includeseffect of feeding with Galangal on total lipids, total cholesterol, triglycerides and serum blood sugar in the serum blood for hypercholestmic, and hyper glycimic rats. Galangal includes chemical analysis antioxidant contents as polyphenols, flavonoids, carotenoids, saponins and tannins. Phenolic compounds such as falvonoids and polyphenols were include galangin, quercetin, kaemferol, kaemferide and syringic, the study includes fourty eight rats were devided into eight while the first group stay normal and the seven group were injected by alloxan, one group was as a positive control and the other alloxan rats fed on basal diet content different concentration of (100ppm,200ppm water extracts),(100ppm,200ppm ethanol extracts) and (5% and 10% powder rhizome). The best concentration is 10% rhizome powder which decrease in serum glucose to (88.20±7.19mg/100ml) compared with the diabetic control (332.60±5.13 mg/100ml), also decrease STC, HDL, LDL and TG compared with diabetic control (55.80±2.59 mg/ml), (21.60±2.30 mg/ml),(5.21 ±2.78 mg/ml) and (77.00±10.17mg/ml), respectively. In this study has demonstrated an anticancer effect of the galangal, as liver cancer (HEPG2-H), breast cancer (MCF-7) and blood cancer cells (HCT). Anticancer activity of ethanolic extract of galangal

has been examined against two cancer cell lines represents blood cancer,breast cancer and hepatic cancer (HCT, MCF7-H and HEPG2-H, respectively). The extract was applied at concentrations ranged from 0.0 to 50µg/ml. The anticancer effect was varied according to the type of cell line as well as LC50. As for the cytotoxic effect of galangal on breast cancer (in the form of (MCF7-H) data revealed that with increasing the extract concentration, the cytotoxic effect was increased and it recorded LC50 64µg/ml. The hepatic cancer in the form of HEPG2-H cell line exhibited more resistance for extract and this was appeared clearly in the value of LC50 which recorded 117µg/ml. The blood cancer in the form of (HCT) cell line exhibited more resistance for extract and this was appeared clearly in the value of LC50 which recorded 85 µg/ml. Conclusively, galangal may reduce serum glucose and total lipids profiles and we can use in Egyptian traditional food as ketchup, potato puree and eggplant puree.

Key words: Galangal, *Alpiniagalanga*, Antioxidants,Macrocomponent contents, polyphenols and flavonoids, Hypoglycemic, Hypocholesterolimic, Anticancer (Hepatic, breast, blood), application in Egyptian traditional food (ketchup, potato puree and eggplant puree).

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