A137 Protective effect of ginseng root aqueuos extract against toxic damage

M.V. Naval, M.P. Gómez-Serranillos, M.E. Carretero and A.M. Villar
Pharmacology Department, Pharmacy Faculty, Universidad Complutense de Madrid. Av Complutense s/n, 28040 Madrid, Spain.

The ginseng root, *Panax ginseng* C.A. Meyer (Araliaceae), has been widely used as a tonic, a restorative and against senile diseases. Furthermore, ginseng drug has a wellknown reputation as an adaptogen, that is, it is able to regulate the body homeostasis to adapt it to unfavorable psycological and physical conditions (1).

The research around the molecular mechanism utilized for adaptogen drugs has been focused on the central nervous system (CNS), particularly neurons. However, considering the relationship between glial and neuronal cells, numerous studies have been publicated using astrocytic cells (2). The study has been designed to evaluate the protective effect of an aqueous extract of ginseng root against celular damage induced by different toxic agents on astrocytic cell culture. In order to determinate celular viability the following methods have been applied: 3-(4,5-dimetilthyazol-2-il)-2,5-diphenyltetrazolium) bromhide reduction (MTT), lactate dehydrogenase release (LDH) and flow-cytometry. In this assay different ginseng root extract doses ($1x10^3$, $1x10^2$, 10, 1, $1x10^{-1}$ µg/ml) and toxic doses (H_2O_2: 50, 100, 150, 200 µM) were used. The blank was basal medium Eagle (Gibco) supplemented with 1% fetal bovine serum (Gibco).

The MTT reduction method results showed statistically significative differences ($p<0.05$) between ginseng doses $1x10^3$ mg/ml (128.82% viability vs 100%) and 10 mg/ml (81% viability vs 100%) and the blank at 24 h or 6 h treatment exposure, respectively. The LDH release method results did not show statistically significative differences between ginseng doses and the blank, although none of ginseng doses were toxic like H2O2. The flow-cytometry method results showed statistically significative differences ($p<0.05$) between ginseng dose $1x10^3$ mg/ml (70.21% viability vs 100%) and the blank at 24 h treatment exposure.

References: 1. Davydov, M and Krikorian, AD. (2000) J Ethnopharmacol 72(3): 345-93. **2.** Seong, YH et al. (1995) Biol Pharm Bull 18(12): 1776-8.

A138 Comparison of effects of Khat (*Catha edulis*) and its alkaloids on the release of radioactivity from rat striatal tissues prelabelled with [^{3}H] dopamine

Muna Ismail [a], *S. Salvage* [b] *and P.J. Houghton* [a]
[a] Department of Pharmacy, King's College London, Franklin-Wilkins Building, 150 Stamford Street, London SE1 9NN, UK.
[b] Neurodegenerative Disease Research Centre, King's College London, Guy's Campus, London SE1 1UZ, UK.

The fresh young leaves of Khat, *Catha edulis* (Vahl.) Endl. (Celastraceae) have been chewed for their stimulant effect for centuries in North East Africa (1). Khat from different geographical locations is claimed to exhibit different effects but little is known about any scientific basis to this claim. Khat contains both phenylalkylamine and the cathedulin-type alkaloids but the stimulant properties of have been so far attributed to the sympathomimetic effects of phenylalkylamine, cathinone (2), but the effect of cathedulins have not been investigated. Cathinone is known to be dopaminergic but in this report the effect of two aqueous extracts and two constitutents of khat on induction of release of [^{3}H] dopamine (DA) from prelabelled slices of rat caudate nucleus was measured. Basal ^{3}H-DA release was measured by liquid scintillation spectroscopy for a range of concentrations of cathinone, norephedrine and aqueous extracts of two types of Khat (Miraa and Herari) after subtraction of release from cells in Krebb's alone. Results are shown in the Table. The compounds stimulate release of dopamine in a dose-dependent fashion but the extracts do not give such a clear response.

Table. Fractional release of ^{3}H DA (average cpm) by compounds and extracts:

Extract/compound	^{3}H DA released cpm	(concn-compounds µg/ml;	freeze-dried extracts mg/ml)
Cathinone	0.037 (5)	0.674 (10)	1.081 (20)
Norephedrine	0.543 (10)	0.652 (20)	0.832 (40)
Extract Miraa	1.258 (25)	1.712 (50)	1.805 (100)
Extract Herari	1.575 (25)	1.004 (50)	1.634 (100)

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