B159 Efect of erysodine on the acquisition and retention of elevated T maze task

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Autoradiographic and histochemical studies on brain tissue of patients have shown that a selective and substantial loss of acetylcholine-nicotine receptors is associated with loss of memory and learning (1). *In vivo* studies have shown that erysodine (alkaloid obtained from seeds of *Erytrina herbacea*) is a potent competitive ligand of subtype $\alpha_4\,2_2$ brain nicotine-acetylcholine receptors, making erysodine a useful tool for the functional characterization of these receptors (2,3).
With the aim to get information on the participation of the neuronal nicotine receptors on mnemonic processes, Wistar rats were randomly assigned to independent groups (n=10) to receive intraperitoneally: a) erysodine (30 µmol/kg), b) nicotine (0.62 µmol/ kg) or c) 0.9% saline solution (1 ml/kg). The treatments were administered before the training of an avoidance T maze task.
The Friedman non parametric test showed significant differences on the retention latency of the base line (BL) and the latency of two first avoidance trials (EV_1 and EV_2) when the drugs were administered before the training. On EV_2 and EV_3 (EV_3 evaluated 24 h after the training) the differences were evident only with erysodine. The results indicate that nicotine and erysodine have not effect on the learning of avoidance, but there was an evident the loss of memory provoked by the nicotinic antagonist. Also with this T maze model was possible to show an anxiolytic effect of nicotine.

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References: 1. Maelicke, A. et al. (2000) Eur. J. Pharmacol. 393: 165-170. **2.** Decker, M.W. et al. (1995) Eur. J. Pharmacol. 280: 79-89. **3.** Flores, C.M. et al. (1992) Mol. Pharmacol. 41: 31-36.

B160 Inhibition of ^{3}H-LSD binding to 5-HT$_7$ receptors by flavones from *Scutellaria lateriflora* L.

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The aqueous extract of the flowering parts of *Scutellaria lateriflora* L. has been traditionally used by Native Americans as a nerve tonic and for its sedative and diuretic properties (1). Due to the lack of scientific studies on the plant, however, the use of skullcap has been very controversial. Recent studies on the widely used Baikal skullcap, *Scutellaria baicalensis*, have evaluated the ability of some of its flavones to bind to the benzodiazepine site of the $GABA_A$ receptor. Baicalein, baicalin and scutellarein are weak ligands of this receptor. The binding capacity of wogonin was contradictory in two studies (2,3).
In this study, a hot water extract and a 70% ethanol extract of *S. lateriflora* aerial parts were tested in a 5-HT$_7$-receptor binding assay. Both extracts were active at 100 µg/mL, showing 87.21 ± 6.20 % and 56.65 ± 1.33 % inhibition of the binding of a known ligand, ^{3}H-LSD, to the receptor. Consequently, several flavones occurring in the water extract have been identified and evaluated in the assay as well. Interestingly, the flavone-glucuronides scutellarin and ikonnoside A, showed the strongest affinity for the 5-HT$_7$-receptor with 87.16 ± 5.18 % respectively 76.59 ± 5.27 % inhibition of ^{3}H-LSD binding at 100 µg/mL. Wogonin, baicalin and baicalein were less active (69.53 ± 5.44 %, 49.89 ± 10.05 % and 46.60 ± 4.77 % inhibition).
These data are consistent with the traditional use of the plant, and suggest that *S. lateriflora* may be a promising nerve tonic and sedative plant. Further studies need to be carried out to confirm these initial findings.

References: 1. Millspaugh C.F. (1974) Scutellaria, in: American Medicinal Plants. Dover Publications, New York, pp. 469-472. **2.** Liao J.F. et al. (1998) Planta Med. 64: 571-572. **3.** Hui K.M. et al. (2000) Planta Med. 66: 91-93.