

## Neuroprotective and MMP-9 inhibitory activity of hydroethanolic extract of *Arbutus unedo* leaves

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*Arbutus unedo* L., the strawberry tree (Ericaceae family), is an endemic Mediterranean species. Its leaves have been employed for a long time in traditional and popular medicine as an astringent, diuretic, urinary anti-septic, and more recently, in the therapy of hypertension and diabetes [1]. The aim of this work is to evaluate the antioxidant properties of a hydroethanolic extract of *A. unedo* leaves in a neurodegeneration cell model and the inhibitory activity to human matrix metalloprotease (MMP-9), an enzyme involved in cancer invasion.

The intracellular radical scavenging activity of the plant extracts in an oxidative stress-induced model of neurodegeneration in SK-N-MC cells was evaluated to the nontoxic range of concentrations. The pre-treatments with the extract protects the cells from the oxidative stress injury as detected by an increase in cell viability up to 42% with 15 µg GAE.mL<sup>-1</sup> and 86 % with 30 µg GAE.mL<sup>-1</sup>.

An enriched polyphenolic fraction, obtained by a SPE, presents an IC<sub>50</sub> of 2.88 µg.mL<sup>-1</sup> for the MMP-9 inhibitory activity, a very interesting result when compared with the value obtained for green tea extract, with already described significant inhibition [2], in the same assay conditions (4.28 µg.mL<sup>-1</sup>). The HPLC-MS analysis of the leaves reveals several gallic acid derivatives that could be responsible for the observed effects, further analysis should be done to correlate the compounds with the detected bioactivities.

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*References:* [1] Bnouham, M., et al. (2007). *Pharmazie*, 62:630-2. [2] Adhami VM, et al. (2003). *J Nutr* ;133:2417S-2424S.