

Contributions to the evaluation of antioxidant activity of a polyphenolic complex isolated from *Vitis vinifera* seeds and peels

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The particularities of liver cells, which are rich in oxidative pathways, such as those derived of cytochrome P450, glutathione-peroxidase etc, may result in formation of free-radical species leading to cell injuries and cell death, especially when some imbalances in antioxidant protection occur. The decay of endogenous antioxidant and anti-free radical protection may be compensated by some natural antioxidants, while other products may act as factors that indirectly rise cell resistance or stimulate recovery of the normal status of the cells.

The "in vitro" and "in vivo" experimental models used by us were able to elicit reproducible responses, based on hepatotoxic compounds which can induce cell injuries, by measuring protective effects exerted by the polyphenolic complex isolated from seeds and peels of *Vitis vinifera*.

The "in vitro" model uses liver homogenates (in phosphate buffer saline) from Wistar rats treated with CCl₄ (2 ml/kg) or acetaminophen (3,5 g/kg) respectively and untreated animals (as control). Homogenate samples (2 ml) "per se" or treated with tested product were processed for TBARS (thiobarbituric acid reactive species) determination (measured as malonedialdehyde-MDA levels).

The experiments for "in vivo" evaluation of antioxidant action of the polyphenolic complex isolated from *Vitis vinifera* seeds and peels were carried out on male Wistar rats of 200-250 g.

The experimental groups were the followings:

- I. untreated group
- II. animals treated "per os" with different doses of polyphenolic complex (during 14 days)
- III. intoxicated group – by administration of 500 mg/kg paracetamol

After 14 days, the animals from the group treated with polyphenolic complex received "per os" a dose of 500 mg/kg paracetamol. The animals were sacrificed after 6 hours. Blood and liver aliquots were collected. The following biochemical parameters were determined: transaminases GOT and GPT and phosphatase alkaline from blood- and cellular reduced glutathione (GSH) and malonedialdehyde (MDA) – from liver.

The interpretation of the experimental data pointed the antioxidant action of the polyphenolic complex isolated from seeds and peels of *Vitis vinifera*, as well as the good correlation between the results obtained in "in vitro" and "in vivo" experiments.