HP-04: The beneficial effect of gallic acid against lung and and liver toxicity induced *in vivo* by carcinogenic benzopyrene.

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Subject description: Polycyclic aromatic hydrocarbons are pollutants, the most dangerous of which is benzo(a)pyrene, a known carcinogen to humans. Among the bioactive substances, gallic acid has anti-oxidant, anti-inflammatory and anti-cancer properties.

Objectives: The aim of our study is to evaluate acute, sub-acute and chronic toxicity induced by benzo(a)pyrene in lungs and liver of mice and rats, as well as the protective effect of gallic acid.

Methods: Benzo(a)pyrene is administered to animals at doses of 50 mg / kg and 100 mg / kg IP; From each toxicity model, the biochemical parameters relating to oxidative stress, serum transaminase assay, histopathological analysis are evaluated on the one hand and the study of the expression of galectin 3 and 8 in the liver and lungs on the other hand.

Results and discussion: The results reveal the modification of the cellular antioxidant potential in favor of oxidative stress, the increase of lipid peroxidation, the appearance of necroses and hepatocellular lesions as well as the modulation of the genetic expression of galectins.

Conclusion: Gallic acid manages to reverse the aforementioned effects offering a protective effect against the toxic effects induced by benzo(a)pyrene, as well as galectin 3 can constitute a means of diagnosis if supported by other tests including clinical ones.

Keywords: Benzo(a)pyrene, Gallic acid, Toxicity, Galectins, Oxidative stress.