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ABSTRACTS

P15- *Pieris brassicae* excrements: cytological effects

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Attention has been focused on identifying naturally occurring compounds with anticarcinogenic activity. Epidemiological data evidence the protective role of *Brassica* species, especially due to their phenolics and glucosinolates.

Pieris brassicae, an insect whose larvae constitutes a frequent pest of *Brassica* species, has the capacity to uptake, metabolize and excrete these phytochemicals by the faeces. Phenolics composition of excrements from *P. brassicae* reared on *Brassica oleracea* var. *acephala* presents flavonoids (sulfated and glycosylated), some of them not detected in host plant [1]. Their volatiles profile shows compounds belonging to different classes, with especial attention to terpenes and glucosinolates breakdown products (sulfur and nitrogen compounds) [2]. Furthermore, this matrix already revealed to have antioxidative properties [1].

However, prospective antioxidant effects observed *in vitro*, using non cellular systems, are not always confirmed in cellular models, in which the concentrations required to scavenge pro-oxidant species may be highly detrimental to the cells. The effect of the excrements produced by *P. brassicae*, fed with *B. oleracea* var. *acephala*, on V79 cells' viability and proliferation was evaluated by lactate dehydrogenase (LDH) leakage and 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT) reduction assays. Moreover, their genotoxicity and effectiveness of chemoprevention were also evaluated, using single cell gel electrophoresis assay (comet assay).

Hydrogen peroxide induced genotoxicity in V79 cells. Excrements have genotoxic effects by themselves. Furthermore, they potentiate the genotoxic effects of hydrogen peroxide.

1. Ferreres, F., Fernandes F., Oliveira, J., Valentão, P., Pereira, J. A., Seabra, R. M., Andrade, P. B. (2009), *Metabolic profiling and biological capacity of Pieris brassicae fed with kale (Brassica oleracea L. var. acephala)*, Food and Chemical Toxicology, 47, 1209-1220.
2. Fernandes F., Pereira, D. M., Guedes de Pinho, P., Valentão, P., Pereira, J. A., Bento, A., Andrade, P. B. *Metabolic fate of dietary volatile compounds in Pieris brassicae*, Microchemical Journal, doi:10.1016/j.microc.2009.05.006