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Beneficial effects of natural compounds: Studies in vitro and in vivo

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In recent years, several studies have shown that plant and food extracts play a protective role in the etiology of various diseases. We have performed studies on Lisosan G a fermented form of *Triticum aestivum in vivo*. Lisosan G protects against the cisplatin induced toxicity, and a recent paper showed that Lisosan G helps prevent microcirculatory dysfunction. We also showed, by using primary cultures of rat hepatocytes, that this powder of wheat is an effective inducer of ARE/Nrf2-regulated antioxidant/detoxifying genes and has the potential to inhibit the translocation of NF-kB into the nucleus. We obtained similar resultsusing an extract of afermented powder of bean named Lady Joy (*Phaseolus vulgaris L*.). Over the past twenty years, glucosinolates (GLs), abundant in cruciferous vegetables, and their hydrolysis products, isothiocyanates (ITCs), have received much attention by scientists thanks to their anticancer and antioxidant properties. We used primary cultures of rat hepatocytes to investigate whether and how eight ITCs were able to modulate cytochrome P450 (CYP), antioxidant/detoxifying enzymes and to activate the Nrf2 transcription factor. Taken together, these results show that these ITCs are effective inducers of ARE/Nrf2-regulated antioxidant/detoxifying genes and have the potential to inhibit the bioactivation of carcinogens dependent on CYP3A2 catalysis.

Biography

Vincenzo Longo has done his degree in Biological Science at University of Pisa, in the year 1983 and specialized in Pharmacological and Physiological Sciences in the year 1989. He is responsible of the Pisa Section of Institute of Agricultural Biology and Biotechnology, National Research Council, Pisa, Italy. He has published 80 full papers and 100 short communication, abstracts and others in National Journals and he has been serving as an Editorial activity and evaluator expertise. His main research interests are, Xenobiotic metabolizing enzyme system; Nutraceutical studies of natural chemicals found in plants and foods, and Measurement of total antioxidant capacityand of the contentof bioactive molecules on the food.

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