758. DELTAMETHRIN ACTIVATES TRANSCRIPTIONAL FACTORS NRF2 BUT DOES NOT INCREASE GCSH PROTEIN EXPRESSION IN PRIMARY ASTROCYTES WITH LASER SCANNING CONFOCAL MICROSCOPE

Li Huangyuan*[,1], Shi Nian[1], Dai Zhonghua, Zhong Yufang[1], and Ma Qiang*[,2]
[1]Department of Health Toxicology, MOE Key Laboratory of Enviorment and Health, School of Public Health, Huazhong University of Science and Technology, Wuhan, China 430030; [2]Receptor Biology Laboratory, Toxicology and Molecular Biology Branch, NIOSH/CDC, Morgantown, WV 26505, USA

Recent studies show that activation of transcriptional factors Nrf2 is a key initiation step in the cellular response against chemical stress and Nrf2 involves in regulation of expression of gamma-glutamylcysteine synthetase heavy (GCSh) and light subunit (GCSl). To our knowledge, however, there is no study reported whether disruptions in Nrf2 and GCS occur in neurotoxicity induced by Deltamethrin (DM). The cultured astrocytes were incubated with 10^{-5} mol/L DM or/and 40 μmol/L tert-butylhydroquinone (tBHQ) for 1 or 6h, respectively. Both subcellular localization of Nrf2 and expression of GCSh was immunocytochemically detected by laser scanning confocal microscope. We found that DM can activate transcriptional activator Nrf2 in astrocytes. tBHQ not only induces Nrf2 expression but activates Nrf2. DM or/and tBHQ have no effect on the protein expression of GCSh in astrocytes. [Supported by National Natural Science Foundation in China (30371225).]

759. LOW DOSE EFFECTS OF PESTICIDES IN PERIPHERAL BLOOD SAMPLES FROM HEALTHY DONORS: IN-VITRO STUDIES

Kaiser Jamil
Genetics Department, Mahavir Hospital and Research Centre, Hyderabad–500004, A.P. India

Hormesis presents a good model for toxicological risk assessment—and it's not homeopathy as reported Calabrese (2005). The truth in this statement drove us to relook at our data on toxicity of various pesticides used in our studies. At low doses we have traced the effect of pesticides at molecular level. In almost all experiments we could determine chromosomal aberrations and DNA damage at 1/10th of LC50 dosage of the pesticides like monocrotophos, chlorpyriphos, endosulfan, dimethoate, profenofos, and carbofuran. The aim of the present study was to determine the dosage levels at which pesticides can induce cytotoxic and genotoxic effects on lymphocyte cultures from peripheral blood of healthy volunteers in-vitro. The invitro model system as described by Kaiser Jamil et al. (2004), has been used in this investigation, and the main aim was to determine dose dependent effects of pesticides and to identify biomarkers of pesticide toxicity. Acceptance of the possibility of hormesis has the potential to profoundly affect the practice of toxicology and risk assessment; especially with respect to carcinogen assessment (Calabrese, 2005). Several important points have emerged out of this investigation. The degree of toxicity depended upon the chemical nature of the pesticides and their concentrations. Malignancies linked to pesticides in case reports or case control studies include various types of cancers, leukemia, soft tissue sarcoma and non-Hodgkin's lymphoma.

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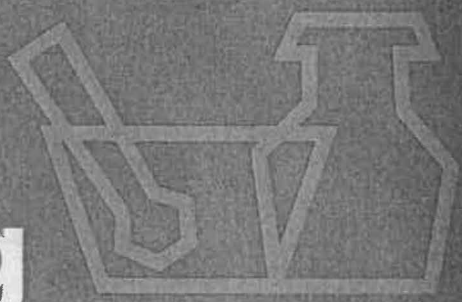

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