Methiocarb was administered orally at doses 25, 10 and 2 mg/kg of b.w. on the basis of LD_{50} for 1, 5 and 28 days, respectively, in rats. The results show that treatment with methiocarb increased significantly kidney TBARS levels in all groups when compared to control groups. In 1 day period; GSH levels, SOD, CAT and GSH-Px activities increased. In 5 days period; GSH levels, SOD and CAT activities decreased and GSH-Px activities increased. In 28 days period; GSH levels, SOD, CAT and GSH-Px activities decreased and in contrast GSH-Rd activities remained unchanged in all groups. Vitamin E and taurine pretreatment may ameliorate methiocarb-induced oxidative stress by decreasing lipid peroxidation and altering antioxidant defense system in rat kidney.

In histological investigations, kidney damage in the rats treated with methiocarb for 1 and 28 days was more than 5 days. The improvement of kidney damage was the most significant in the group treated with methiocarb for 1 day plus vitamin E or taurine and the least improvement in the group for 28 days plus vitamin E or taurine.

These results suggested that oxidative stress may be involved in the mechanism of methiocarb-induced toxicity in rat kidney.

Keywords: Methiocarb; Lipid peroxidation; Antioxidant enzymes; Histological changes; Vitamin E; Taurine

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C28
A comparative study for different period of time of administration of Cr(VI) in the drinking water and its effects in liver of Wistar rats

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Chromium is a lustrous, hard metal. Human activities have increased Cr(VI) concentrations in water. Cr(VI) is a danger to human health. Cr(VI) compounds can be toxic if orally ingested or inhaled.

The aim of this study was to evaluate the effects of Cr(VI) on the liver when administered to Wistar rats, during different period of time.

Forty male Wistar rats aged 4 months were divided in four groups of ten animals each. Two groups (1 and 3) were the control groups, the other two (groups 2 and 4) were submitted to Cr(VI) in the drinking water in a concentration of 20 mg/l. Food and water were *ad libitum*. After 2 weeks groups 1 and 2 were sacrificed, and 8 weeks later groups 3 and 4. Liver was collected, weighed and divided in two, half was fixed by immersion in 10% buffered formalin and embedded in paraffin, the other half for total RNA extraction by RT-PCR.

The comparative liver histology of the animals submitted for 2 and 10 weeks showed no differences, as well as the results demonstrated that technique RT-PCR is sensitive enough to detect caspases 3 and 8 mRNAs and that caspases 3 and 8 participate in the apoptotic process induced by Cr(VI) in rats.

We could observe that there are no differences in the liver dependent of time of exposition to Cr(VI).

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C29
Cytochrome P450 activation patterns—Differences in amplitude, appearance and magnitude by structural and chemical diverse substances

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One field of life sciences deals with the biotransformation of endogenous and exogenous substances. This metabolism of chemicals proceeds in two phases. Phase I metabolites a nonpolar chemical in a polar/soluble form by cytochrome P450 enzymes and phase II modifies this metabolite to an excretable substance. Cytochromes P450 comprise a large superfamily of individual monooxygenase enzymes that are of central importance in the detoxification or activation of a variety of xenobiotics.

We monitored the impact of 12 environmental relevant pollutants from structural diverse classes on P450-enzymes/enzyme families: heavy metals, pesticides, antibacterial agents and drugs. This was performed by a spectrofluorometric method based on the P450 catalyzed formation of resorufin from two different alkoxyresorufins-substrates: 7-ethoxyresorufin (EROD), 7-methoxyresorufin (MROD) on the human hepatoma cell line HepG2.

We could prove existing results for P450 activation for some of the xenobiotics, e.g. the organophosphate chlorpyrifos. However, we also obtained unexpected outcomes. Structural related pollutants yield different P450 activation patterns, e.g. the organophosphate diazinon;