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#### **P14-32**

##### **Toxic effects of Cr(VI) in liver after administration in the drinking water to Wistar rats**

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Chromium is a lustrous, brittle, hard metal. The main human activities that increase Cr(VI) concentrations are chemical, leather and textile manufacturing, electro painting, and is used to manufacture magnetic tape, and often used as pigments for photography. These applications will mainly increase concentrations of chromium in water. Through coal combustion chromium will also end up in air and through waste disposal chromium will end up in soils. Cr(VI) is a danger to human health. Cr(VI) compounds can be toxic if orally ingested or inhaled. Apoptosis is a selective process for deletion of cells in various biological systems. This event is tightly regulated with processes playing essential roles in the homeostasis of renewable tissues. Diverse groups of molecules are involved in the apoptosis pathway. One set of mediators implicated in apoptosis belong to the aspartate-specific cysteinyl proteases or caspases. Caspase-8 is supposed to be the top of the death-mediated apoptosis pathway, whereas caspase-3 belongs to the “effector” proteases in the apoptosis cascade. The aim of this study was to evaluate the effects of Cr(VI) on the liver. Expression of caspases 3 and 8 in liver rats was analyzed by the reverse transcriptase-polymerase chain reaction (RT-PCR).

Ten male Wistar rats aged 4 months were divided in two groups. One group was the group control, the other one was submitted of Cr(VI) in the drinking water in a concentration of 20 mg/ml. Food and water were at libitum. After 8 weeks, the animals were euthanized. 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 results demonstrated that technique RT-PCR is sensitive enough to detect caspases 3 and 8 mRNAs and

that caspase 3 and 8 participate in the apoptotic process induced by Cr(VI) in rats.

We could observe that Cr(VI) induced liver toxic effects because there is an increase of the expression of the mRNA of caspase 3 and 8.

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##### **Toxic effects on Wistar rat kidney of lead administered in water**

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Lead occurs as expected in the environment. Nevertheless, most lead concentrations that are found in the ecosystem are a result of human performance. Lead is used in building construction, lead-acid batteries, bullets and shot, and is part of solder, pewter, and fusible alloys, in car engines, such as fuel combustion, industrial processes and solid waste combustion. Lead can end up in water and soils through corrosion of leaded pipelines in a water transporting system and through corrosion of leaded paints. It cannot be broken down, it can only be converted to other forms. These will experience health effects from lead poisoning, lead is a particularly dangerous chemical, as it can accumulate in individual organisms. Apoptosis is an important cellular response that is induced by different stimuli among them lead chronic intoxication. The cell death process is irreparable following the activation of cytoplasmic cysteine proteases (caspases). The caspases are responsible for the degradation of cellular structural and repair proteins. The aim of this study was to evaluate the effects of lead chronic intoxication on rat Wistar kidney.

Ten male Wistar rats aged 4 months were divided in two groups. One group was the group control, the other one was submitted of Pb(II) in the drinking water in a concentration of 20 mg/ml. Food and water were at libitum. After 4 weeks, the animals were euthanized. Kidney was collected, weighed and divided a sample was fixed by immersion in 10% buffered formalin and embedded in paraffin and the other half for total RNA extraction.

The results demonstrated that technique RT-PCR is sensitive enough to detect caspases 3 and 8 mRNAs and