

Trace Elements in Rats Lanthanum Administration

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Abstract

In order to elucidate effects of lanthanum (La) in rats, distribution and concentration of La and trace elements were studied by INAA, PIXE and electron microscopic EDX analysis. Rats received ten intraperitoneal injections of La-nitrilotriacetate (NTA), 5mg La/kg body weight/a week. No significant changes in body weight were observed between La-administrated animals and normal controls. Accumulation of La was determined in the liver, kidney and bones, but not brain by INAA analysis. Ca accumulation in the liver after administration of La-NTA was determined, whereas Fe and Zn were not increase in concentration. By analytical electron microscopy, La was localized in the Kupffer cells and hepatocytes. In hepatocytes, La was detected in lysosomes distributed in the cytoplasm surrounding the bile canaliculus. La may be excreted into the bile. In the kidney, La was localized in the basal laminae of the convoluted tubules in the kidney. Toxic effects of the accumulation of La in the kidney are undertaken.