

Biodistribution of gyroxin using ¹²⁵I-iodine as radiotracer

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The advantages of using radiotracers are widely known in medicine for diagnosis and therapy. The use of radiotracers in animal venom's research has been very slight although it allows an important approach to follow the process of bioavailability, biodistribution and kinetics of toxins. The crude animal venom and specifically its isolated toxins are current used as an important tool in biological, physiological and pathological studies as well as in the development of new drugs. The isolated toxins' biological activities are selective and specific. Gyroxin is a thrombin-like enzyme isolated from Brazilian rattlesnake (*Crotalus durissus terrificus*) venom. Some thrombin-like enzymes are used as a therapeutic agent and/or laboratorial reagent. The gyroxin is also responsible for a neurotoxic syndrome characterized by opisthotonos and rotation around the long axis of the body (barrel rotation). The purpose of this study is to get knowledge about the action mechanism, transport, compartments and gyroxin action sites. Gyroxin was isolated by affinity chromatography and gel filtration. A method, which uses mild conditions at low temperature with chloramines T was chosen for labeling. The ¹²⁵I-gyroxin was purified with gel filtration and analyzed in SDS-PAGE 15%. The kinetics assay was carried out in B10.PL mice. The injected dose was $8,3 \times 10^5$ Bq intravenous via and mice were sacrificed at different time intervals. Blood samples and organs were collected, weighted and analyzed in gamma counter. The results were expressed as percentage of injected dose per gram of tissue (%D/g) and allowed to differentiate the organs into three groups. The first group (lung, heart and brain) followed the blood kinetics. The second group (liver, kidney and intestine) comprises the metabolisms and elimination organs. In the third group (spleen, skeletal muscle and stomach) the gyroxin concentration increased during the observation period. The radioactivity found in plasma and total blood was similar. The low radioactivity in the thyroid confirmed the purity of the radiotracer.

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