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ABSTRACTS**

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The effect of *Juglans nigra* L. green husk extracts on the biodistribution of radiopharmaceutical sodium pertechnetate in mice

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Juglans nigra L. (Black walnut) green husk contains a variety of useful chemical compounds with numerous health benefits. However, the biological effects of these compounds are not fully known. The aim of this research was to evaluate the effect of the extracts from *J. nigra* green husks on the biodistribution of the sodium pertechnetate ($\text{Na}^{99\text{m}}\text{TcO}_4$). The extract was orally administered to the healthy Wistar rats (male, 1-month-old, weighing $89.4 \pm 3.4\text{g}$) at single doses of 13.7 mg/kg/day by gavage for 10 days. On the eleventh day, 0.1 ml (approximately 148 kBq) of the $\text{Na}^{99\text{m}}\text{TcO}_4$ was injected into the tail vein. Rats were sacrificed at different time intervals and the radioactivity in the organs of interest was measured in a gamma counter with a NaI (Tl) detector. The percentage of radioactivity per organ (%ID/organ) was calculated. The organ uptake of the $\text{Na}^{99\text{m}}\text{TcO}_4$ in an additional control group of animals was also studied. The results obtained showed an alteration in the organ uptake of $\text{Na}^{99\text{m}}\text{TcO}_4$ in rats treated with extract. The radiopharmaceutical $\text{Na}^{99\text{m}}\text{TcO}_4$ is generally distributed throughout the vasculature and interstitial fluid and is concentrated in the stomach, intestinal tract, thyroid and salivary glands. After treatment of rats with the extract, there was a statistically significant decrease ($p < 0.05$) in the uptake of $\text{Na}^{99\text{m}}\text{TcO}_4$ (%ID/organ) in the thyroid, heart, kidneys, liver and colon, and an increase in intestinal uptake compared to controls. These results are associated with properties of the chemical compounds present in the *J. nigra* extract. We assume that the compounds from the extract *J. nigra* could promote physiological modifications in these organs and alter the biodistribution of $\text{Na}^{99\text{m}}\text{TcO}_4$ in the treated animals. Although these research studies were performed in animals, the findings suggest that caution should be exercised while interpreting the results of $\text{Na}^{99\text{m}}\text{TcO}_4$ based nuclear medicine examinations in patients using *J. nigra* extract from green husk.

