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^{188}Re-Lanreotide: Determination of radiopharmacokinetics parameters in rats

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Background: We used 188Re-lanreotide to determine its radiopharmaceutical parameters in a model of Wistar rats with induced hepatocellular carcinoma, after a single intravenous dose. The rat model is useful to determine the pharmacokinetic parameters and the tumor/organ ratios of 188Re-lanreotide to be used for calculating the personal dose following the methodology *MIRDOS*E and later in the diagnosis and therapy of cancer.

Objetive: We used ^{188}Re-lanreotide to determine radiopharmaceutical parameters in a model in rats Wistar.

Methods: 188Re labeled by a modified direct method. AS-30D hepatoma cells were obtained from ascites of a Wistar rat with hepatoma. Healthy and tumor induced hepatocellular carcinoma Wistar rats were used for distribution and radiopharmacokinetic studies. ^{188}Re-lanreotide, ≈1.8 MBq in 0.1 mL was injected in the peritoneal cavity and in the dorsal left side of healthy rats. The rats were sacrificed at 0.083, 0.25, 0.5, 1.16, 3 and 24 h post injection. The activity (%IA/g) of all the blood samples in the following times: 0.25, 0.5, 1.1, 3, 5, 8, 12, 15, 18, and 24 h for healthy rats and 0.25, 0.5, 1.16, 3, and 24 h for hepatoma induced rats.

Results: The radiopharmacokinetic parameters were calculated following a two-compartment, first-order elimination model of ^{188}Re-lanreotide in healthy rats and for rats with induced tumor using the *WinNonlin* program.

Conclusion: A pharmacokinetic profile of ^{188}Re-lanreotide in healthy and hepatoma tumor induced rats follow model two-compartment. With mean residence time and the mean half life we will be calculate the therapeutic dose following *MIRDOSE* methodology.