

Study of Plasma Protein Binding of Radiopharmaceuticals

Summary

The purpose of this work is the study of binding of substances (^{177}Lu -DOTA-[Lys3]bombesin, ^{177}Lu -NOTA-[Lys3]bombesin, ^{177}Lu -PCTA-[Lys3]bombesin, and ^{177}Lu -DOTA-MG47) to plasma proteins by equilibrium dialysis in 37°C , particularly using plasma samples of beef, rabbit, rat and human. Within this group, these substances were compared interspecifically.

The substances ^{177}Lu -DOTA-[Lys3]bombesin, ^{177}Lu -NOTA-[Lys3]bombesin, ^{177}Lu -PCTA-[Lys3]bombesin, and ^{177}Lu -DOTA-MG47 are the newly developed receptor-specific radiolabeled peptides.

For all the newly collected data, the interspecific comparison and subsequent statistical evaluation was performed. The indicated bombesin derivatives were compared and statistically analyzed even between themselves.

During the interspecies comparisons and the determination of the statistical significance of the data, there were found statistically significant and statistically highly significant differences between some of the examined samples.

A highly significant difference was found during comparing with samples of ^{177}Lu -NOTA-[Lys3]bombesin and statistical evaluation, there was found a statistically highly significant difference.

Despite the differences found, it is clear that the plasma binding concerning all the examined substances of this work was so insignificant that it will not affect the pharmacokinetics.