

# Development of a pair-isotope labeled CCK analogue peptide

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Targeted radio therapy is a very important technique for diagnosing and treating cancer in the field of anticancer therapy. In general, radioisotopes are combined with chelators, so a compound for labeling is developed by combining chelators with substances that are active in the body, such as peptides and antibodies. One of the most studied medical isotopes in recent years is Lu-177. Lu-177 emits beta ray and gamma ray simultaneously, so treatment and diagnosis can be performed simultaneously. However, the production of non-carrier-added Lu-177 is difficult because it is not easy to refine. Sc-47 can be used as an alternative nuclide for Lu-177 because it is easy to refine and has similar chemical property to the emitted energy. Sc-47 is not a radioisotope optimized for diagnosis, so it is difficult to expect a diagnostic effect, but it can be used as a complement to Sc-44, a pair-isotope that is very efficient for diagnosis. In this research, we have developed CCK analogue, Sc-DOTA-[Nle]-cCCK. This peptide was stable in mouse blood by cyclic structure. Moreover, When injected into the body, it was excreted quickly without unnecessary accumulation, so it was confirmed that the possibility of utilization as a radiopharmaceutical is high. In the next study, the peptide should be applied to in vivo biological evaluation.

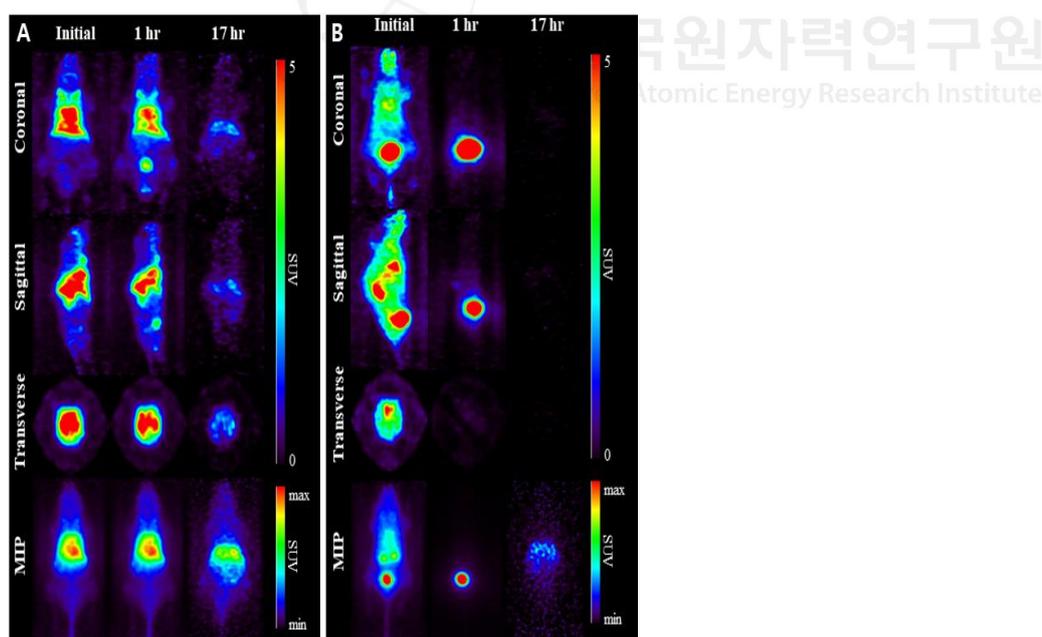


Fig. 1. Bio-distribution of Free Scandium (A) and Scandium labeled compound (B) by PET.

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