

Radioactivity standard for nuclear medicine

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Recently, novel radiopharmaceuticals have been actively developed for scanning and therapy in the field of nuclear medicine. Clearer images and better therapeutic effects are obtained by administering nuclear pharmaceuticals that specifically accumulate in tumors. Thus, accurate measurement of radioactivity is necessary for the safe and effective use of radiopharmaceuticals. However, nuclides that are not currently in use are utilized as novel radiopharmaceuticals.

We researched and developed measurement and calculation methods for each radionuclide because these nuclides decay in various ways, such as through the emission of beta, alpha, and annihilation radiation, or coexistence with many radioactive progenies. Moreover, an international comparison was conducted to ensure the equivalence of radioactivity measurements. The transfer instrument is used for international comparison of short-half-life radiopharmaceuticals, and currently, only one transfer instrument is available in the world. Thus, research institutes in several countries have developed new transfer instruments to conduct international comparisons more frequently and accurately. In this direction, we have also initiated research and development of this transfer instrument. Thus, the NMIJ has made progress in the research and development of nuclear medicine.



The equipment for standardization of radionuclides.