

Production of High Quality Molecular Probe for PET

○Kazutoshi Suzuki

(Molecular Imaging Center, National Institute of Radiological Sciences)

Molecular probes for PET have played important roles in brain research, cancer diagnosis and so on. A wide variety of molecular probes for PET have been developed and used in PET facilities in the world. But, there are not so many facilities where many different kinds of PET probes are available at high frequency. Too short half-lives of PET probes (2 min. ~ 110 min.) and high-energy γ ray emission by the β^+ annihilations seems to be the main reasons. Therefore, production methods for each PET probe should be developed and automated synthesis apparatus should be available in the facility, even if the PET probes are already widely used in the world.

We have developed an automated multi-purpose apparatus to enable a wide variety of PET probes, such as ^{11}C -, ^{13}N , ^{18}F -labeled probes with one apparatus, which was very useful to save time and cost for practical implementation of the known-PET probes and also to save space to install in hot cells.

At the symposium, an integrated automated system including some GMP issues will be also presented.