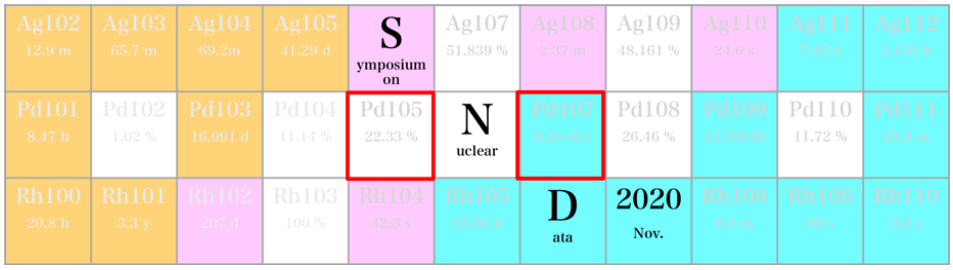

Contribution ID: **57** Type: **Oral Presentation**

Development of Radioisotopes Production Method by Accelerator-based Neutron: Activity at Kyushu University 2020

Radioisotopes (RIs) production using deuteron accelerator-based neutrons has been studying at Kyushu University. We especially focus on neutrons generated via the C or Be(d, n) reactions in a target whose thickness is thicker than the deuteron range. These reactions are selected because, (1) high intense neutrons having high kinetic energy are possible to be generated by the elastic and non-elastic break-up reaction of deuterons, and (2) neutron energy spectrum has maximum around a half incident deuteron energy, i.e. the spectrum shape can be adjusted by varying deuteron energy. The study has been conducted by the two approaches: proposal of new production routes or new RIs with the accelerator-based neutron method and systematic measurements of double-differential thick-target neutron yields (DDTTNYs) up to 40 MeV. Present paper shows some example of past works (high purity 64Cu production starting from ⊠⊠⊠Zn which includes multiple stable isotopes), present status (chemistry, systematic DDTTNY measurement results), and future prospects (covariance application for neutron spectrum unfolding to take nuclear data uncertainty into account) of our project.

Primary author: KIN, Tadahiro (Kyushu Unversity)

Presenter: KIN, Tadahiro (Kyushu Unversity)

Session Classification: NuclearMedicine