

Abstract Submitted
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High quality ^{99m}Tc obtained from ^{99}Mo produced by $^{100}\text{Mo}(n,2n)$ using accelerator neutrons YASUKI NAGAI, MASAKO KAWABATA, NOZOMI SATO, KAZUYUKI HASHIMOTO, HIDEYA SAEKI, SHOJI MOTOISHI, YUICHI HATSUKAWA, Japan Atomic Energy Agency, AKIO OHTA, TAKAYUKI SHIINA, YUKIMASA KAWAUCHI, Chiyoda Technol Corporation, SPECIAL GROUP FOR GENERATION TECHNOLOGY USING ACCELERATOR NEUTRONS COLLABORATION — ^{99m}Tc , the daughter nuclide of ^{99}Mo , is widely used for medical diagnosis. In Japan, about 0.9 million diagnostic procedures are carried out using ^{99m}Tc . ^{99}Mo has been mostly produced using ^{235}U in research reactors. Because of recent shortages of ^{99}Mo , a variety of alternative production methods of ^{99}Mo or ^{99m}Tc were proposed. We proposed to produce ^{99}Mo by $^{100}\text{Mo}(n,2n)$ using neutrons from an accelerator. The route is characterized to produce a large quantity of high-quality ^{99}Mo with a minimum level of radioactive wastes, since the cross section of the $^{100}\text{Mo}(n,2n)^{99}\text{Mo}$ reaction at $11 < E_n < 18$ MeV is large, and the cross sections of the $(n\alpha)$, $(nn'p)$, and (np) reactions on ^{100}Mo are quite small. Intense neutrons are available because of recent progresses of accelerator and target technologies. In the talk, we show our recent experimental results to obtain ^{99m}Tc with high-quality using ^{99}Mo produced by $^{100}\text{Mo}(n,2n)$

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