World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Production Radionuclide Therapy 161-Terbium Using by Talys1.6 and Empire 3.2 Codes in Reactions Cyclotron

Authors : Shohreh Rahimi Lascokalayeh, Hasan Yousefnia, Mojtaba Tajik, Samaneh Zolghadri, Bentehoda Abdolhosseini

Abstract : In this study, the production of terbium-161 as new therapeutic radionuclide was investigated using TALYS1.6& EMPIRE 3.2 codes. For this purpose, cross section for the reactions reactor to produce 161Tb were extracted by mean of this code In the following step, stopping power of the reactions reactor was calculated by SRIM code. The best reaction in the production of 161Tb is160 Gd(d,n)161Tb Production yield of the 161Tb was obtained by utilization of MATLAB calculation code and based on the charged particle reaction formalism.The results showed that Production yield of the 161Tb was obtained 0.8 (mci/ A*h).

Keywords : terbium161, TALYS1.6, EMPIRE3.2, yield, cross-section
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020