

Abstract

The charged particle induced nuclear reactions on various targets ^{158}Gd , ^{160}Gd , ^{162}Dy , ^{163}Dy and ^{164}Dy were considered to investigate the production of ^{161}Tb which is a therapeutic radionuclide, and one of the most important recipes for theranostic pair $^{161}\text{Tb}/^{155}\text{Tb}$. The experimental results of available literature data were analyzed, normalized and compared with the evaluated theoretical predictions by means of nuclear model codes of TALYS 1.9 and optimum conditions for the production are predicted. The evaluated excitation functions have importance in various practical applications including nuclear medicine and improvement of nuclear model calculations.