

## Abstract

$^{89}\text{Sr}$  is an important bone-seeking element. Radionuclides of Strontium have the potential to be used in nuclear medicines for the study of bone. Being  $\beta^-$  emitter,  $^{89}\text{Sr}$  is one of the most primitive radionuclide for the treatment of metastases in bone. Assessment of nuclear reaction cross section data was performed for the production of therapeutic radionuclide of strontium-89 ( $^{89}\text{Sr}$ ) for medical applications via neutron and charged particle induced reactions on different targets i.e.  $^{89}\text{Y}$ ,  $^{92}\text{Zr}$ . The experimental results obtained from different neutron and charged particle induced reaction were compared with the results of nuclear model calculations using the nuclear model code EMPIRE 3.2, TALYS 1.9 and ALICE-IPPE to check the reliability and discrepancy in the experimental data. Recommended cross sections are generated based on our established procedures.