52gMn production route for multi-modal imaging applications

^{52g}Mn production routes for multi-modal imaging applications

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The radionuclide ^{52g}Mn is of significant medical interest for the innovative PET-MRI multi-modal imaging technique. In this study we compare its standard cyclotron production route ^{nat}Cr(p,x)^{52g}Mn with the alternative reaction ^{nat}V(α,x)^{52g}Mn. The theoretical calculations are performed by a suitable tuning of the nuclear level density parameters of the TALYS reaction code, with the aim to obtain a good agreement with the experimental cross sections. The production route with ^{nat}V results in a more favorable radionuclidic purity than with ^{nat}Cr. Dosimetric studies are performed to establish the time frame in which 52*g*Mn can be used with an acceptable dose to the patient.

Sezione 5

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