

Targets for studies of the medical radioisotopes production with α and p/d beams

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The studies on the production of the medically interested radioisotopes are carried at the HIL UW with alpha beam provided by the heavy ion cyclotron U200P K=160, and with proton beams provided by the medical p/d high current 16/8 MeV PETtrace cyclotron, both located at HIL UW and by the cyclotron C-30 at Świerk, National Centre for Nuclear Research.

The research quantities of the medical radioisotopes are produced by irradiation of the targets made of ^{100}Mo , natural and isotopically enriched Ca, ^{nat}Ge , ^{nat}Bi .

The ^{nat}Bi targets are used for the production of ^{211}At in reaction with α -particle internal beam. The alpha beam is used as well for the production of medically attractive ^{43}Ca , ^{44}Ca isotopes in reaction with Ca, using mainly targets in form of calcium carbonate.

Samples irradiation by the internal α -particle beam delivered by U200P requires special shape of the targets. The procedure used for their preparation will be presented.

The irradiations with proton beam are performed using external lines. Preliminary studies of the thermal aspects related to the calcium carbonate targets irradiated at PETtrace proton machine will be discussed as well.

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