

Ge-68/Ga-68 generator

Ge-68/Ga-68 generator is a device used to provide the investigators in nuclear medicine with the positron-emitting radionuclide ^{68}Ga . The parent isotope ^{68}Ge has a half-life of 270.95 days and can be easily delivered to hospitals as the generator, where it can be used as the source of Ga-68 within not less than one year. Gallium-68 (with a half-life of only 67.71 minutes, difficult for transport) can be easily eluted from the generator any time at the place of the application and used for different purposes.

The ^{68}Ga – generator of a chromatographic type represents a glass column with a sorbent based on modified titanium dioxide. The parent radionuclide ^{68}Ge is fixed on this sorbent. The column is placed into the lead shielding container and provided with eluent and eluate lines. ^{68}Ga , which is formed as a result of ^{68}Ge decay, is eluted from the column by 0.1 M HCl.



The generator is certified in the system of certification of equipment, products and technologies for nuclear installations, radiation sources and storage (OIT-certification system).

Technical characteristics:

- ^{68}Ga – yield in 5 ml of eluent is not less than 75 % at the first time of the operation and not less than 45% in 3 years or after 400 elutions.
- The breakthrough of ^{68}Ge is not more than 0.005 %.
- The ^{68}Ga – generator is produced with a nominal activity of ^{68}Ge – 10 mCi (370 MBq), 20 mCi (740 MBq), 30 mCi (1110 MBq), 40 mCi (1480 MBq), 50 mCi (1850 MBq) and 100 mCi (3700 MBq).
- The admissible deviation from nominal activity ranges from 0 to + 10%.

Dimensions of generator:

Diameter	90 mm
Height	188 mm
G/weight	11,7 kg