Roberto et al. also showed that these implants can emit 130 Gy of β-ray dose, considering a flux of $2 \times 10^7\,\mathrm{n\,cm^{-2}\,s^{-1}}$ of activation, and 1 g of bioactive glass implant, being the values suitable for prostate cancer treatment (Roberto et al., 2003). In 2008, Campos et al. evaluated the degradation of ^{153}Sm seeds implanted in a rabbit's liver, using X-ray radiography images to monitor the glass durability in vivo (Campos et al., 2008). Seven months later, after radiological exploration, the seeds were shown to be absorbed in the liver.

In another study, Nogueira et al. investigated the incorporation of Zr, Ba, and Ho into the BGs structure by sol-gel (Nogueira and Campos, 2011). Zr and Ba were used as contrast agents to improve the visibility of bioglass seeds by radiography, once these elements are suitable contrast agents. Radiography is the most used clinical technique to evaluate the radioactive seeds degradation. ^{166}Ho was added because it emits a higher energy than ^{153}Sm, being able to diminish the amount of doping elements in the bioactive glass structure, or developing a material that emits higher energy, being able to treat small cancers in a shorter time. Chemical and nuclear characterizations demonstrate that ^{166}Ho radionuclides are homogeneously distributed in the seeds. Neutron activation causes deformation in the surface structure of the seeds, assisting in the biodegradation process. The results show the promising practicality of the biodegradable bioglass seeds. In a recent study, Nogueira et al. showed that the Zr nuclide significantly increases the mass attenuation coefficient of the HoZr seeds (Nogueira and Campos, 2016). Therefore, the radiological response of the HoZr bioglass seeds was superior to that of Ho bioglass seeds, increasing the radiological contrast.

In 2010, Sadeghi et al. presented the results of the Monte Carlo radiation transport code (MCNP) calculation to evaluate the dose rate in function of distance for a bioceramic material doped with ^{153}Sm (Sadeghi et al., 2010). It also included data from other materials based on the ^{32}P, ^{90}Sr/^{90}Y, ^{142}Pr β emitter for comparison purposes. The results indicate that β doses using ^{153}Sm have a shorter distance effectiveness when compared to the other materials, as well as a higher initial dose rate. Such results suggest that ^{153}Sm would enable a lower radiation effect on healthy tissues, diminishing the side effects of radiotherapy, and also decrease the treatment time due to the higher initial dose.

In 2011, Christie et al. employed molecular dynamics simulations to evaluate how yttrium in the high-silica bioactive glass structure can affect the surface reactivity of BGs .(Christie et al., 2011) Their aim was to find a bioactive glass with high bioactivity and a low release rate of yttrium, in order to avoid release of radionuclides into the bloodstream. Their results showed that a low rate of yttrium leaching is associated with high site-selectivity and clustering, which are expected to reduce the rate of yttrium migration and release from the glass surface. Meanwhile, the reduced network connectivity of the bioactive glass enhances the dissolution of the soluble species and favors the glass network degradation. For instance, a suitable strategy may involve incorporating yttrium not in the most bioactive, low-silica BGs like 45S5 or 13-93B3, but in some of the less bioactive, higher-silica compositions. The high network fragmentation produced by Y_2O_3 incorporation could balance the strong association between