In this study, production routes of $^{125}$, $^{123}$Xe and $^{133}$, $^{131}$, $^{129}$, $^{128}$Ba medical isotopes produced by $^{127}$I$(p,3n)$$^{125}$Xe, $^{127}$I$(p,5n)$$^{123}$Xe, $^{133}$Cs$(p,n)$$^{133}$mBa, $^{133}$Cs$(p,3n)$$^{133}$mBa, $^{133}$Cs$(p,5n)$$^{129}$Ba and $^{133}$Cs$(p,6n)$$^{128}$Ba reactions have been investigated up to 100 MeV incident proton energy. The pre-equilibrium calculations involve the hybrid model, the geometry dependent hybrid model and the cascade exciton model. The calculated results are compared with the experimental data taken from the literature.