# PRODUCTION AND THERMOCHROMATOGRAPHIC SEPARATION OF NO-CARRIER-ADDED $^{90}$Nb VIA $^{93}$Nb(p,4n)$^{90}$Mo

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In recent years, a lot of research has been performed to expand available radionuclides for immuno-PET diagnostics with $^{64}$Cu, $^{86}$Y, $^{76}$Br, $^{89}$Zr, $^{124}$I. Another one promising radionuclide is $^{90}$Nb because of its suitable characteristics: a half-life of 14.6 hours, a relative fraction of $\beta^+$-radiation of 53%, an average energy of $\beta^+$ radiation of 350 keV [1]. An important task is to develop an express method for obtaining $^{90}$Nb radionuclide without a carrier.

Here we report an original method for isolating $^{90}$Nb ($T_{1/2}$ = 14.6 h) produced in $^{93}$Nb(p,4n)$^{90}$Mo reaction via $\beta^+$-decay of $^{90}$Mo ($T_{1/2}$ = 5.7 h). Niobium target was irradiated with 65 MeV protons. The separation of $^{90}$Mo from the irradiated target was carried out in a high-temperature tubular furnace. The thermochromatographic method provides a high yield of the mother radionuclide $^{90}$Mo for accumulation $^{90}$Nb.

1. V.Radchenko *et al.* // Nuclear Medicine and Biology. 2016. V.43. P.280.