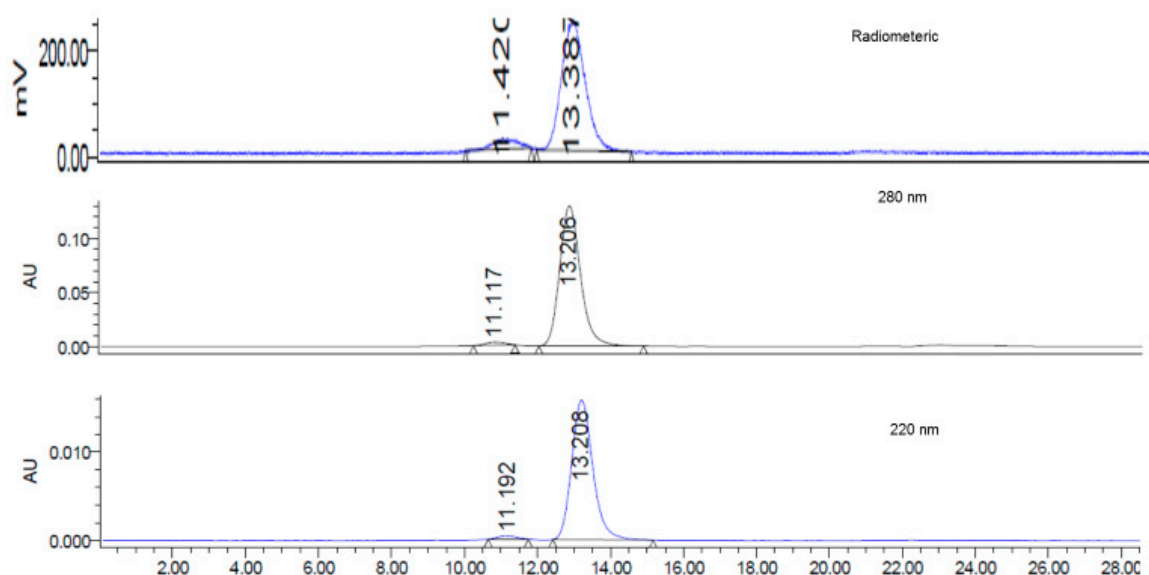
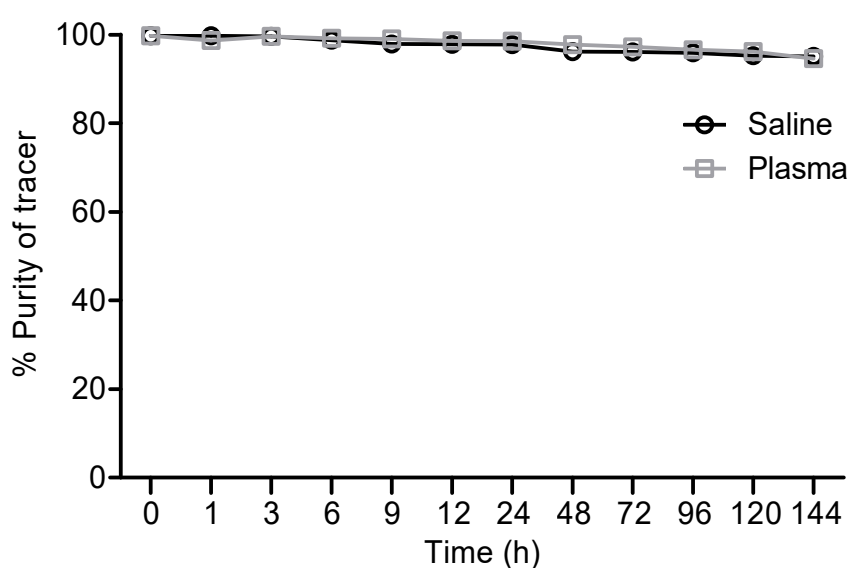


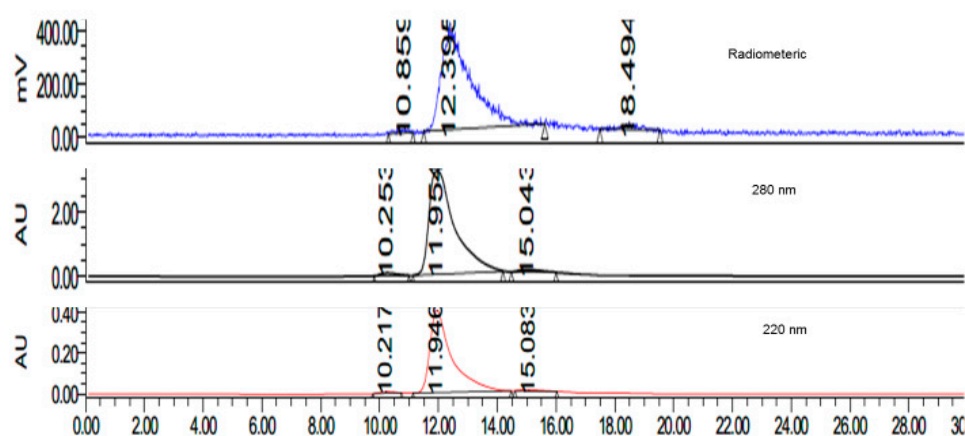
# Supplementary Materials: Nimotuzumab Site-Specifically Labeled with $^{89}\text{Zr}$ and $^{225}\text{Ac}$ Using SpyTag/SpyCatcher for PET Imaging and Alpha Particle Radioimmunotherapy of Epidermal Growth Factor Receptor Positive Cancers



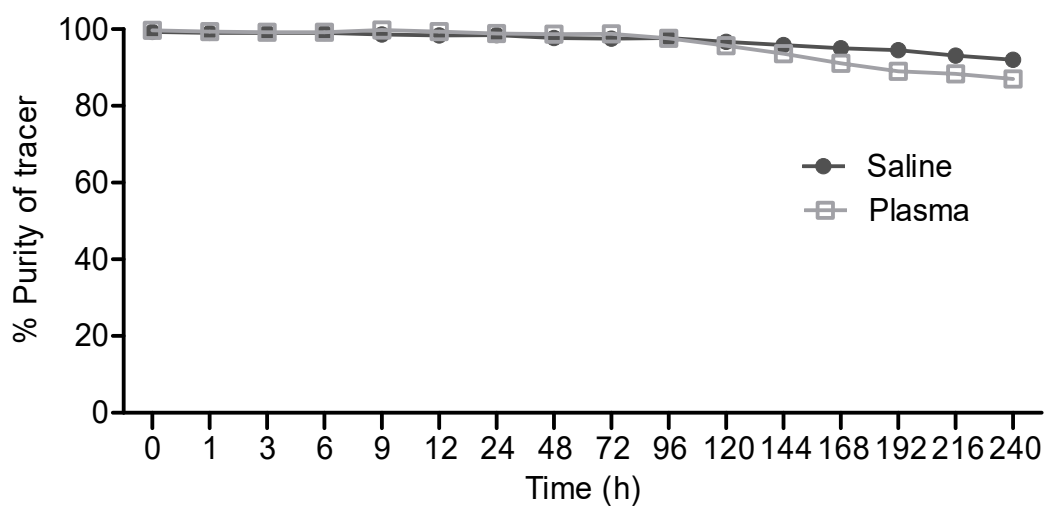
**Figure S1.** Representative size exclusion (SEC) HPLC profile of  $^{89}\text{Zr}$ -nimotuzumab-SpyTag- $\Delta\text{N}$ -SpyCatcher. UV channels at 220 and 280 nm show “cold” antibody and radiometric channel shows the radiolabeled antibody with a purity > 95%.



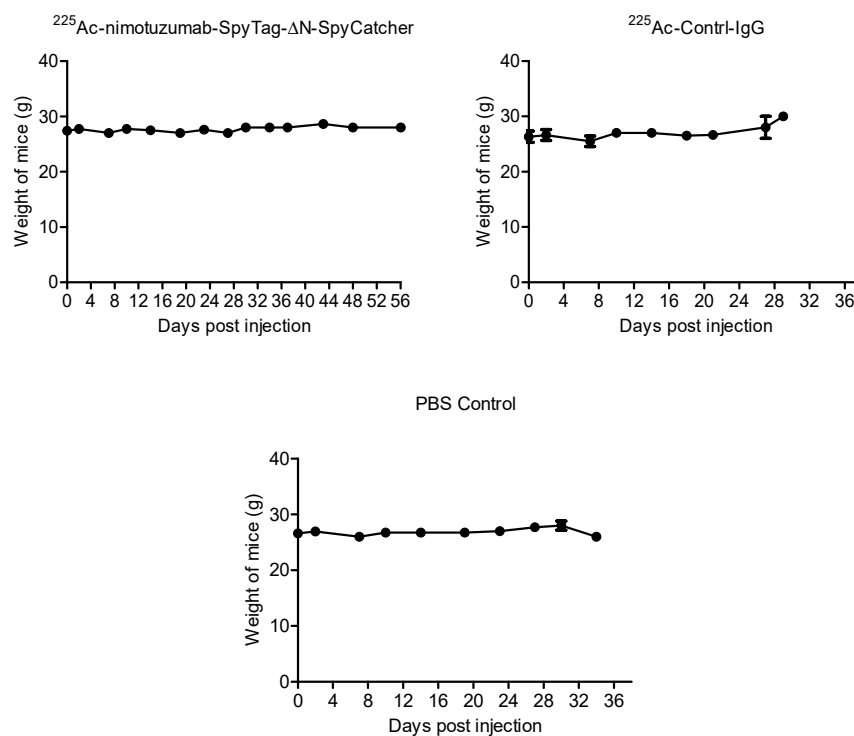
**Figure S2.** Stability of  $^{89}\text{Zr}$ -nimotuzumab-SpyTag- $\Delta\text{N}$ -SpyCatcher in saline and human plasma at 37 °C for different time points.



**Figure S3.** Representative size exclusion (SEC) HPLC profile of  $^{225}\text{Ac}$ -nimotuzumab-SpyTag- $\Delta\text{N}$ -SpyCatcher. UV channels at 220 and 280 nm show “cold” antibody and radiometric channel shows the radiolabeled antibody with a purity > 95%.



**Figure S4.** Stability of  $^{225}\text{Ac}$ -nimotuzumab-SpyTag- $\Delta\text{N}$ -SpyCatcher in saline and human plasma at 37 °C at different times post incubation.



**Figure S5.** Average body weight of mice during treatment for the different groups.



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