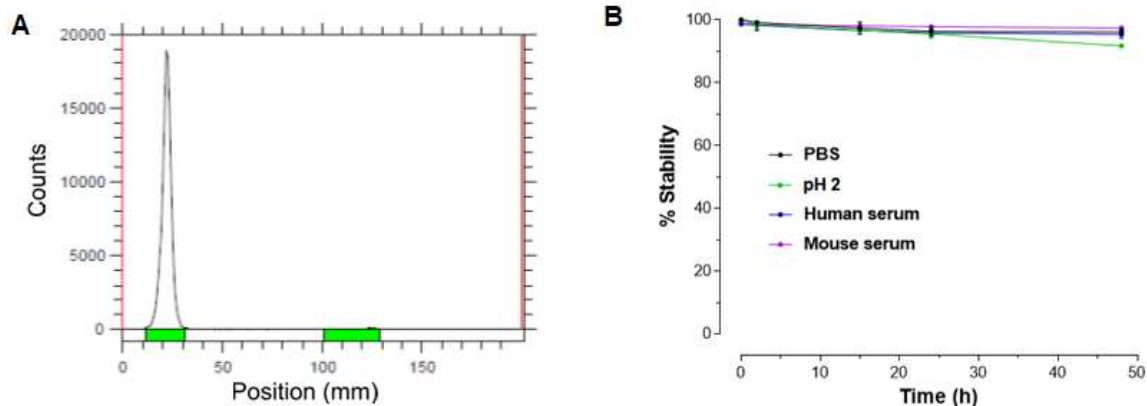
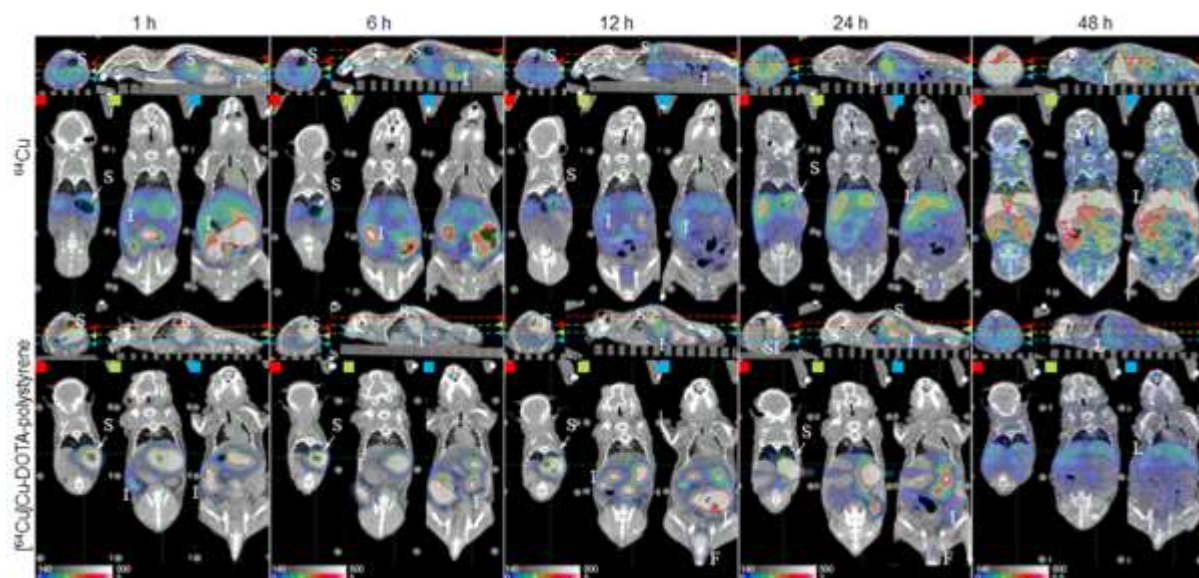


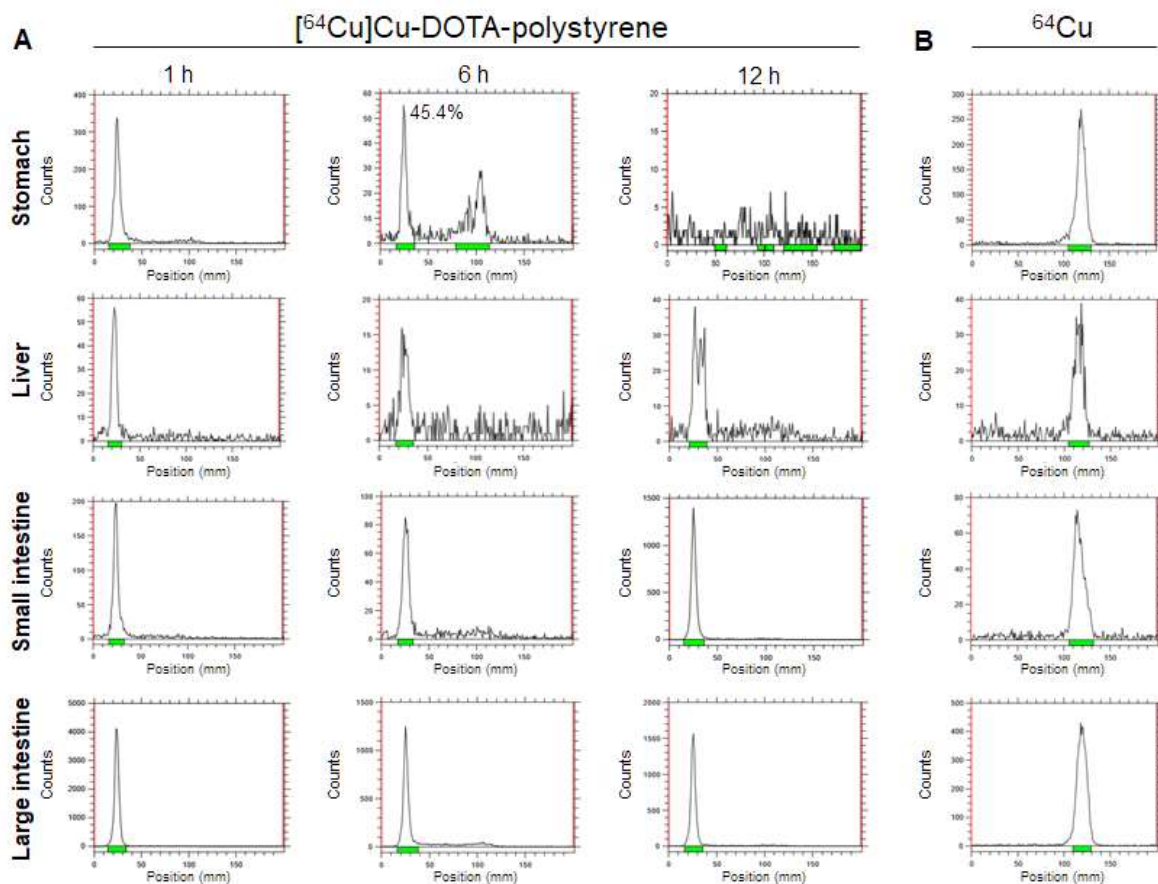
Supplemental Fig. 1. Chemical analysis of DOTA-polystyrene for confirmation of DOTA-conjugation. (A) Standard area curve of three different concentration of *p*-SCN-Bn-DOTA using high performance liquid chromatography ($n=3$) and moles of DOTA per polystyrene (mg) was determined using a standard curve. (B) Fourier-transform infrared spectrum, (i) *p*-SCN-Bn-DOTA, at 3335 cm^{-1} the presence of amine groups was observed and the isothiocyanate motif vibration was shown at 2098 cm^{-1} . At 1724 cm^{-1} the C=O stretch and at 1500 cm^{-1} the aromatic C-C stretch was identified. The C-H stretch at 1400 cm^{-1} and at C-N were identified (ii) amino-polystyrene, the C-H stretch was assigned at $3000\text{-}2800\text{ cm}^{-1}$ and the N-H bend was observed at 1601 cm^{-1} and the C-C stretch was observed at $1600\text{-}1400\text{ cm}^{-1}$. At $720\text{-}685\text{ cm}^{-1}$ the aromatic bend was shown. (iii) DOTA-polystyrene, the isothiocyanate region (2098 cm^{-1}) from *p*-SCN-Bn-DOTA was disappeared. At $3000\text{-}2800\text{ cm}^{-1}$ the C-H stretch and at $1600\text{-}1400\text{ cm}^{-1}$ the C-C stretch were observed. At $720\text{-}685\text{ cm}^{-1}$ the aromatic bend was shown.



Supplemental Fig. 2. Radiochemical yield and stability of $[^{64}\text{Cu}]\text{Cu-DOTA-polystyrene}$. (A) Standard area curve of three different concentration of $p\text{-SCN-Bn-DOTA}$ using HPLC ($n=3$) and moles of DOTA per polystyrene (mg) was determined using a standard curve. (B) Radiochemical yield was analyzed using radioTLC developed in 0.1 M citric acid (left peak is $[^{64}\text{Cu}]\text{Cu-DOTA-polystyrene}$ and right peak is ^{64}Cu). (C) Relative stability results of $[^{64}\text{Cu}]\text{Cu-DOTA-polystyrene}$ in PBS, pH 2 buffer, human serum, or mouse serum ($n=3$).



Supplemental Fig. 3. The representative coronal, sagittal, and transverse image of PET/CT at 1, 6, 12, 24, and 48 h post administration of $[^{64}\text{Cu}]\text{Cu}$ -DOTA-polystyrene or ^{64}Cu . The image color map shows SUV value. Red, green, and blue lines indicate the same slice at different location (S, stomach; I, Intestine; L, liver; F, feces).



Supplemental Fig. 4. *Ex vivo*-radioTLC analysis of homogenized tissues at 1, 6, and 12 h after oral administration of $[^{64}\text{Cu}]\text{Cu-DOTA-polystyrene}$ (A) and $[^{64}\text{Cu}]\text{CuCl}_2$ (B). Instant TLCs were developed in 0.1 M citric acid (left peak is $[^{64}\text{Cu}]\text{Cu-DOTA-polystyrene}$ and right peak is ^{64}Cu).