SUPPLEMENTARY DATA

Evaluation of Organo[^{18}F]fluorosilicon Tetrazine as a Prosthetic Group for Synthesis of PET Radiotracers

Sofia Otaru[†], *Surachet Imlimthan*[†], *Mirkka Sarparanta*[†],

Kerttuli Helariutta[†], *Kristiina Wähälä*[†,§], *Anu J. Airaksinen*[†,¤,*]

[†]Department of Chemistry, Radiochemistry, University of Helsinki, Finland

[§]Department of Biochemistry and Developmental Biology, Faculty of Medicine, University of Helsinki, Finland

[¤]Present address: Turku PET Centre, Department of Chemistry, University of Turku, Finland

*Corresponding author: Anu J. Airaksinen

Department of Chemistry, Radiochemistry, P.O. Box 55, FI-00014 University of Helsinki, Finland. E-mail: anu.airaksinen@helsinki.fi. Present address: Turku PET Centre, University of Turku, Kiinamyllynkatu 4-8, FI-20520 Turku

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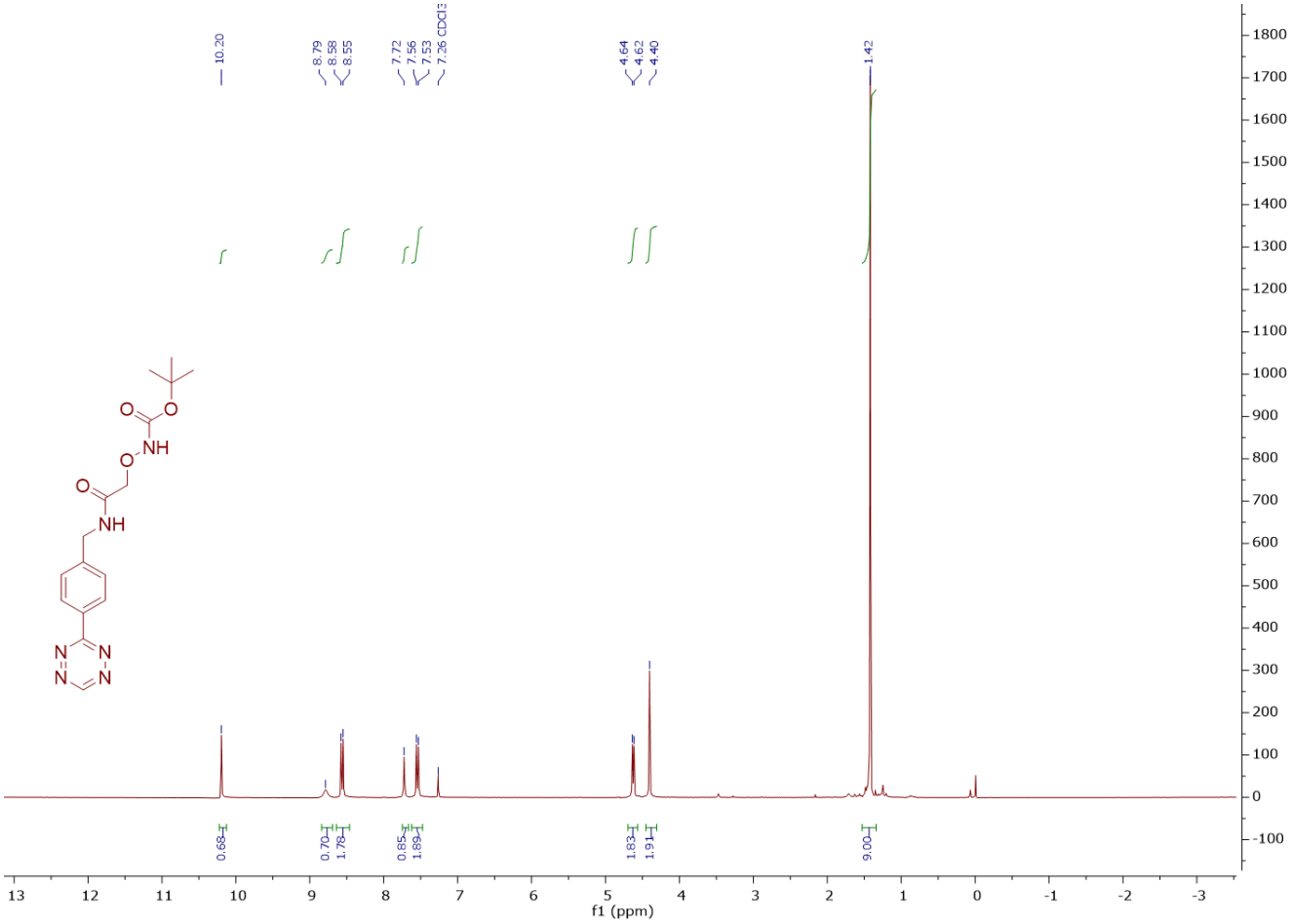

Figure S1. ^{1}H-NMR (300 MHz, $CDCl_3$) of compound **3**.

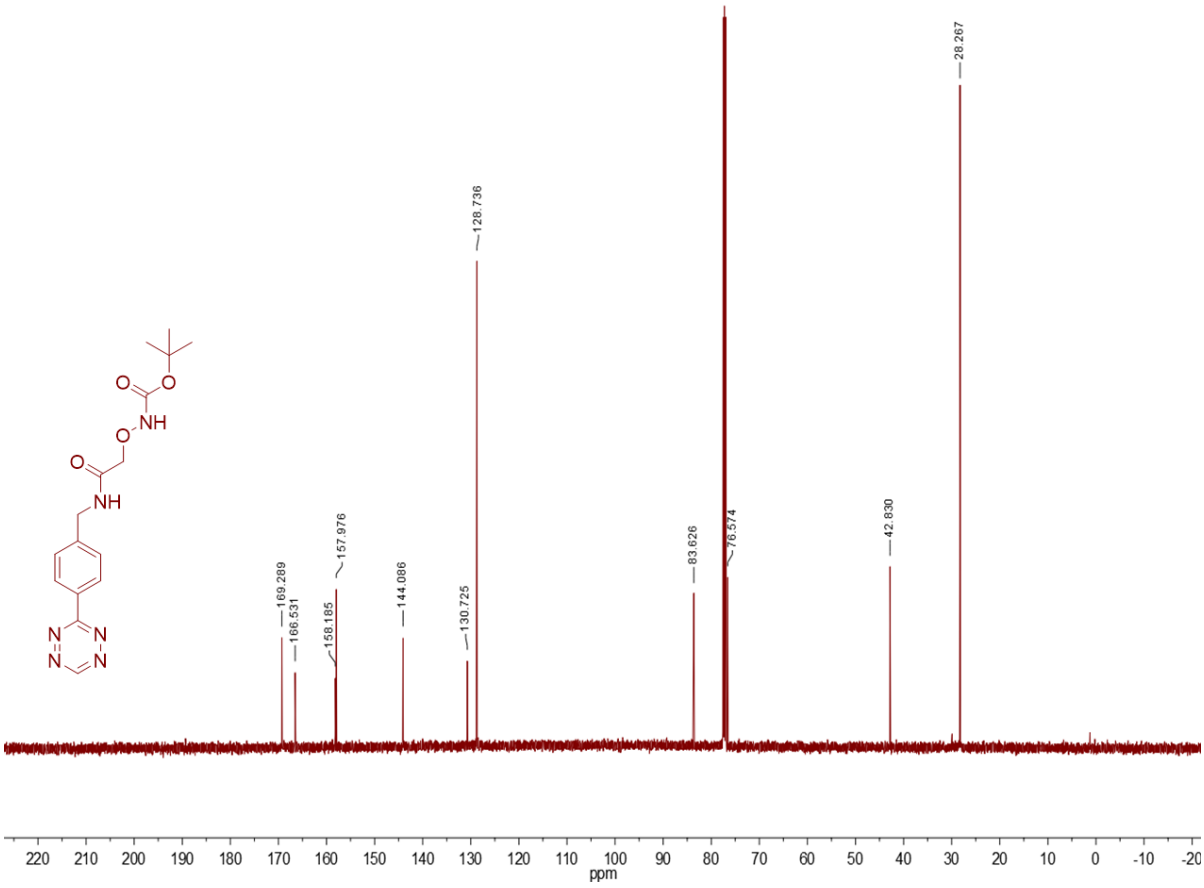

Figure S2. ^{13}C-NMR (75 MHz, $CDCl_3$) of compound **3**.

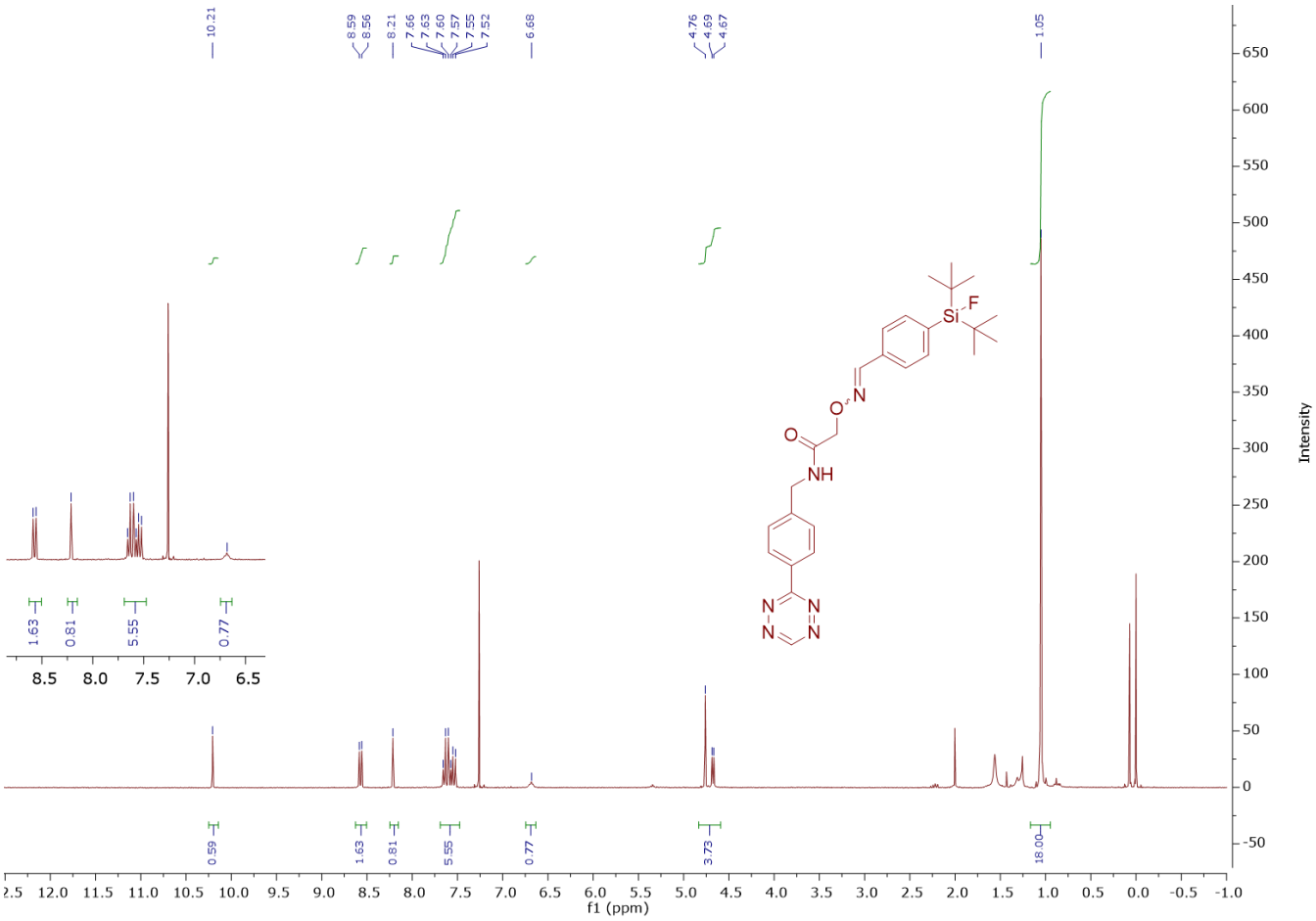

Figure S3. ^{1}H-NMR (500 MHz, $CDCl_3$) of SiFA-Tz (**6**).

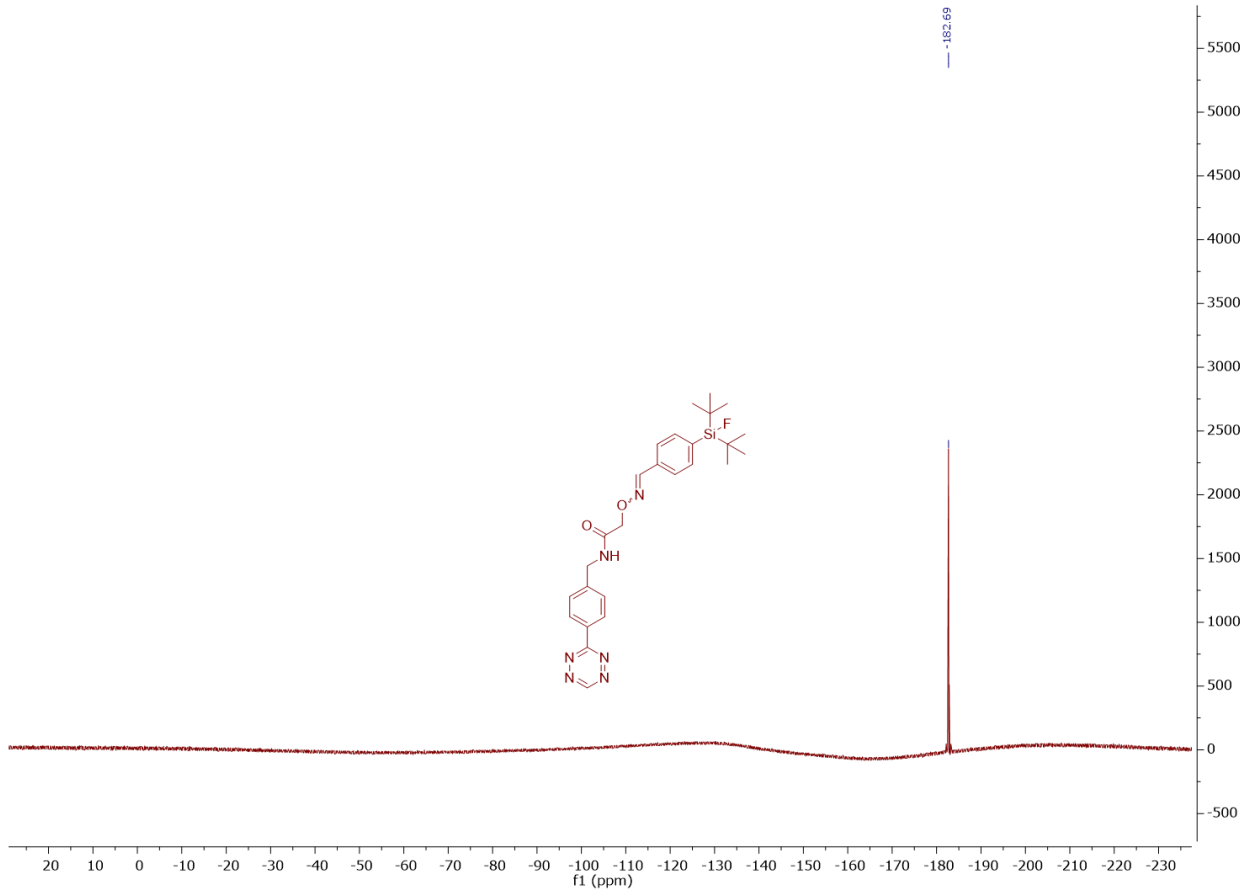

Figure S4. ^{19}F-NMR (282 MHz, $CDCl_3$) of SiFA-Tz (**6**).

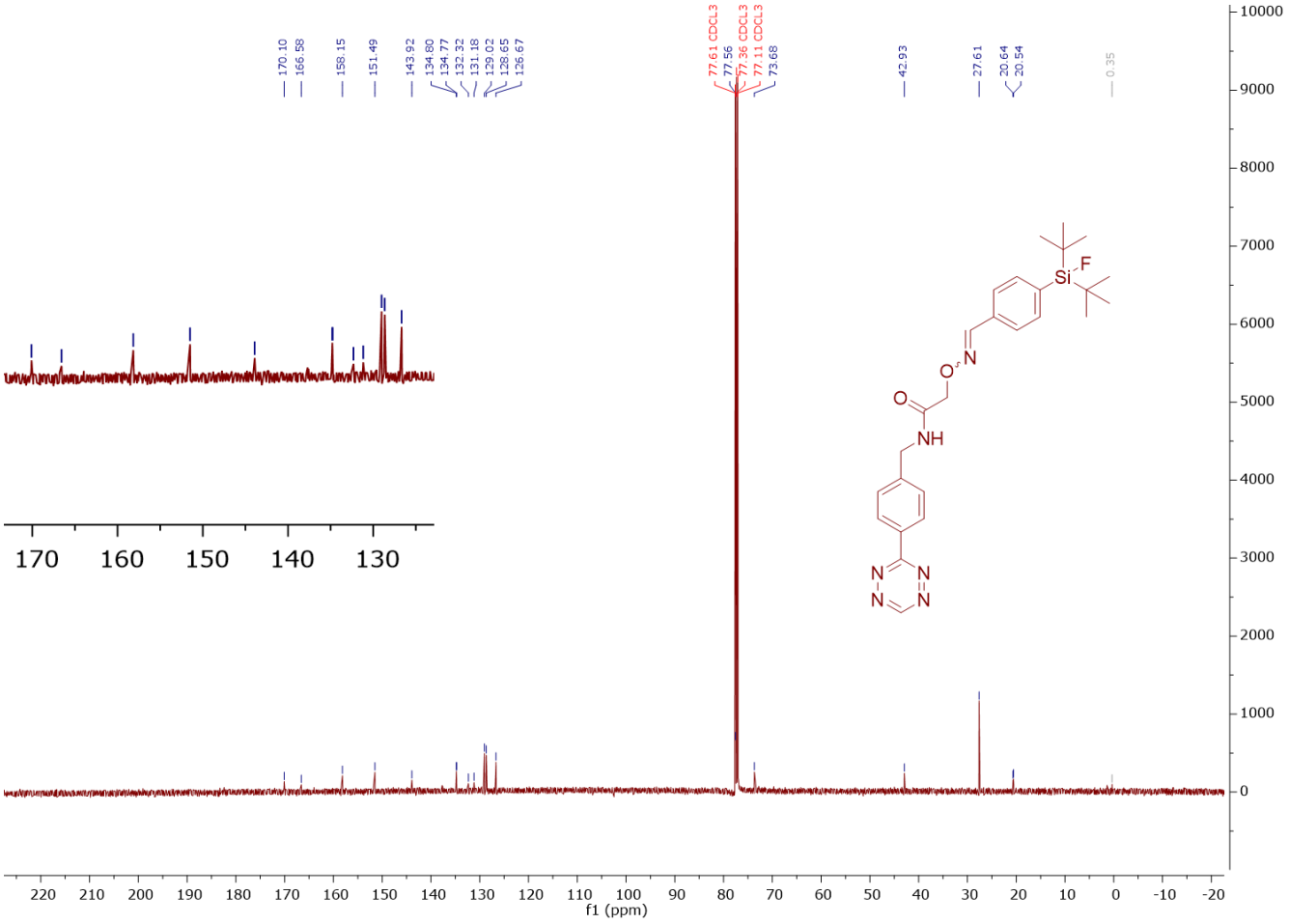

Figure S5. ^{13}C-NMR (126 MHz, $CDCl_3$) of SiFA-Tz (**6**).

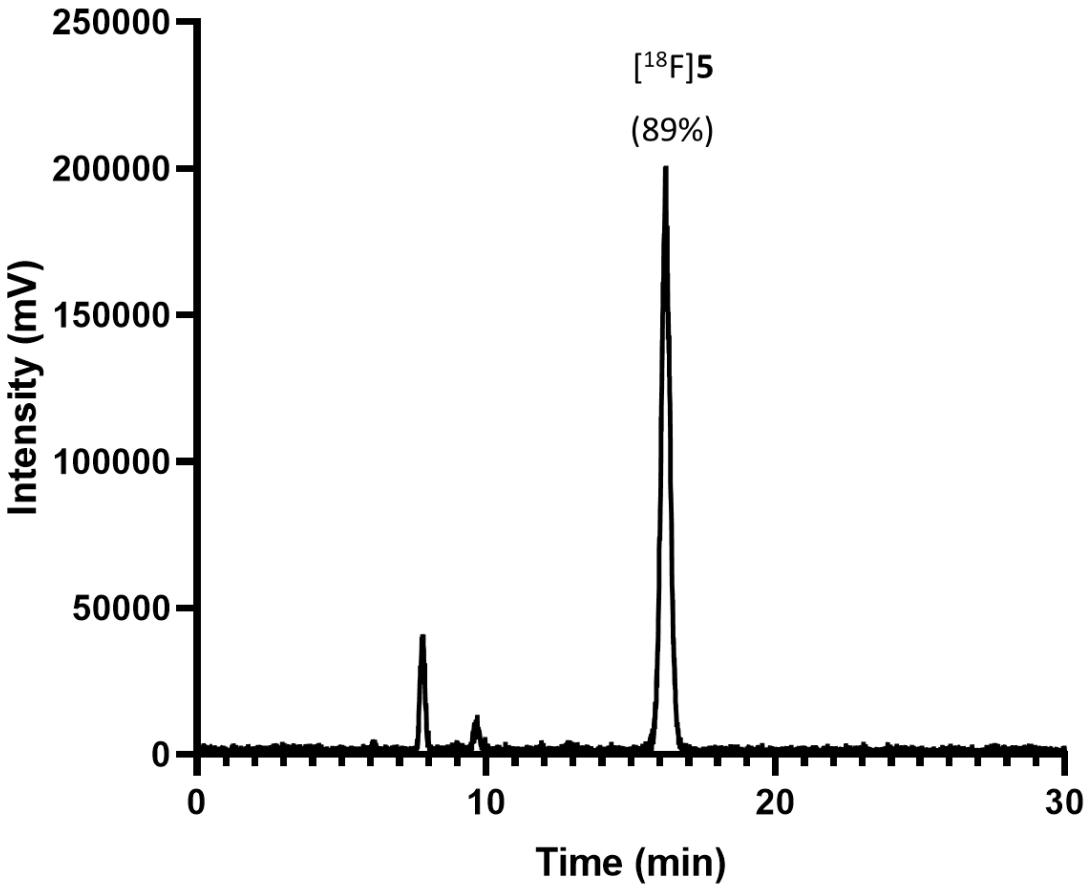

Figure S6. Radio-HPLC chromatogram of crude [^{18}F]SiFA ([^{18}F]**5**) (Radiodetector).

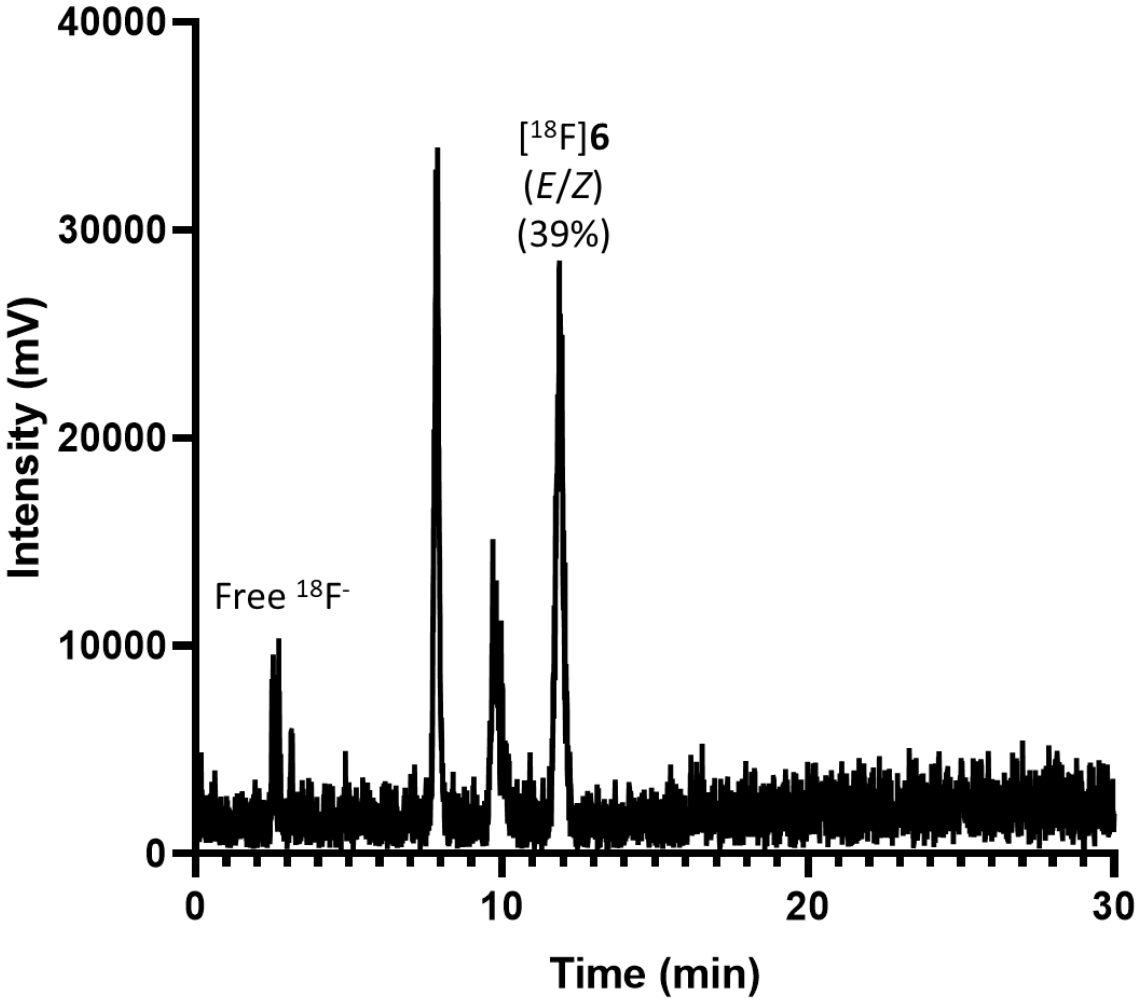

Figure S7. Radio-HPLC chromatogram of oxime formation (two-step method) for [^{18}F]SiFA-Tz ([^{18}F]**6**) crude (radiodetector).

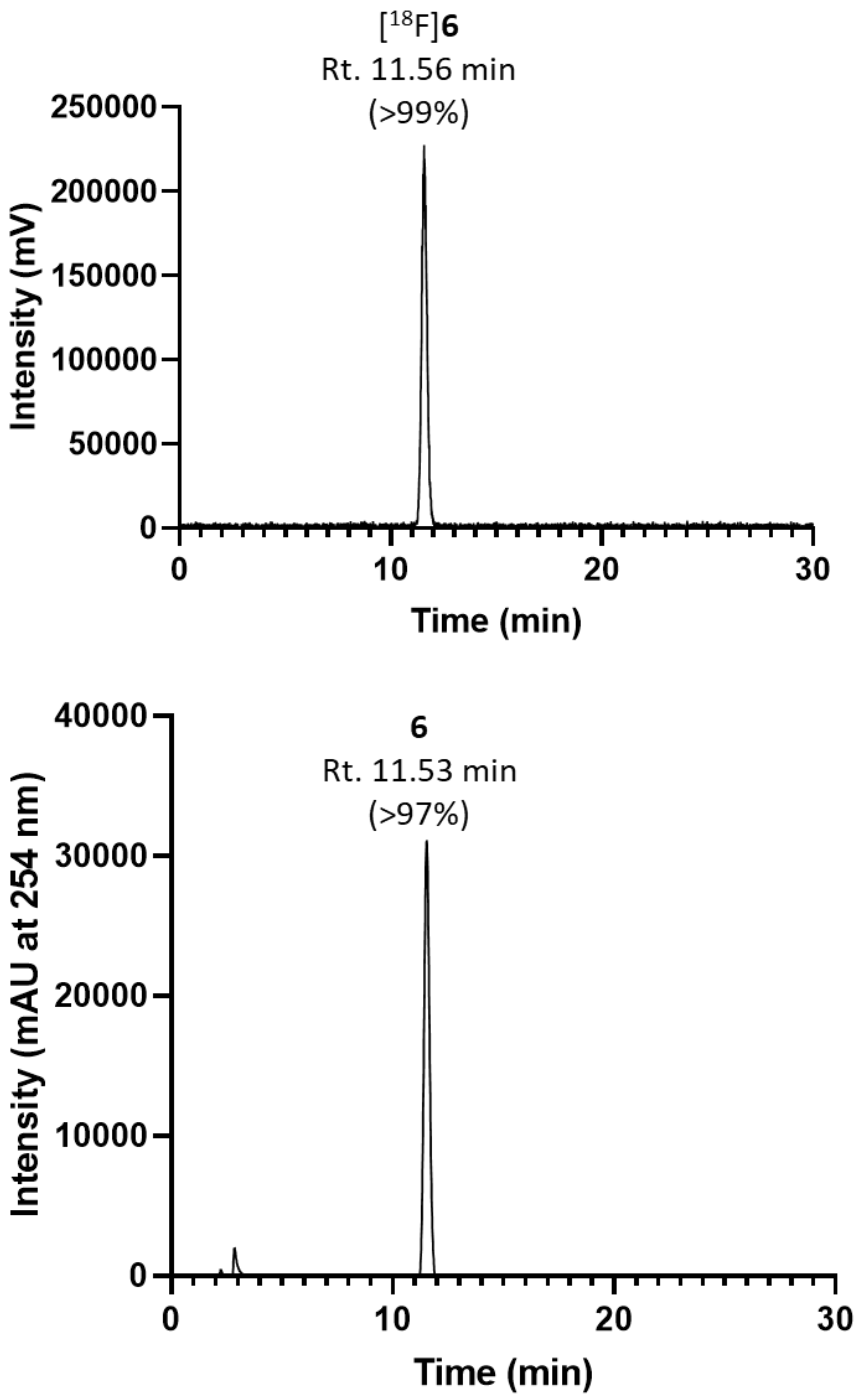

Figure S8. HPLC chromatograms of formulated [^{18}F]SiFA-Tz ([^{18}F]**6**) analyzed by radiodetector (top) and PDA -detector (bottom).

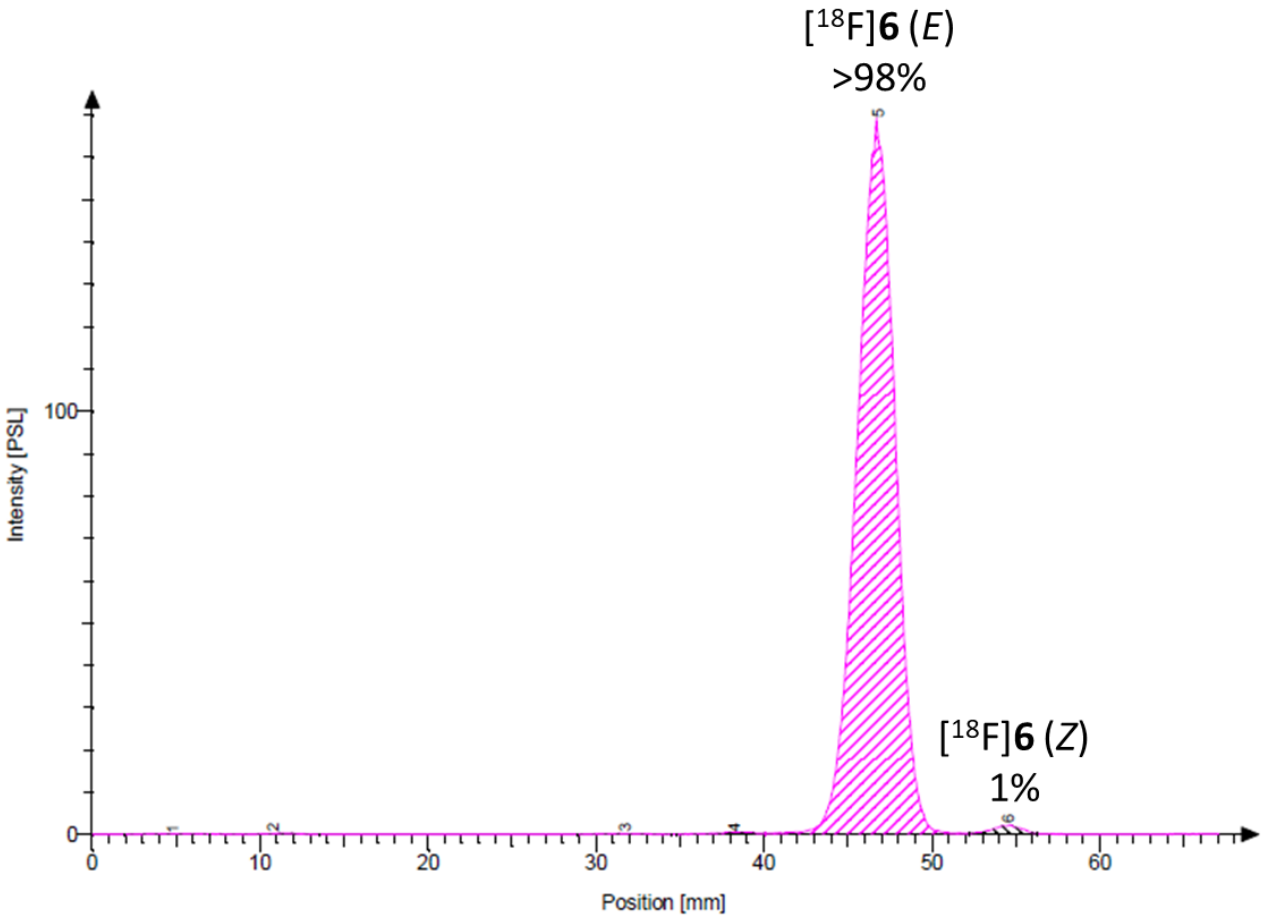

Figure S9. Radio-TLC chromatogram (digital autoradiography) of [^{18}F]SiFA-Tz ([^{18}F]**6**).

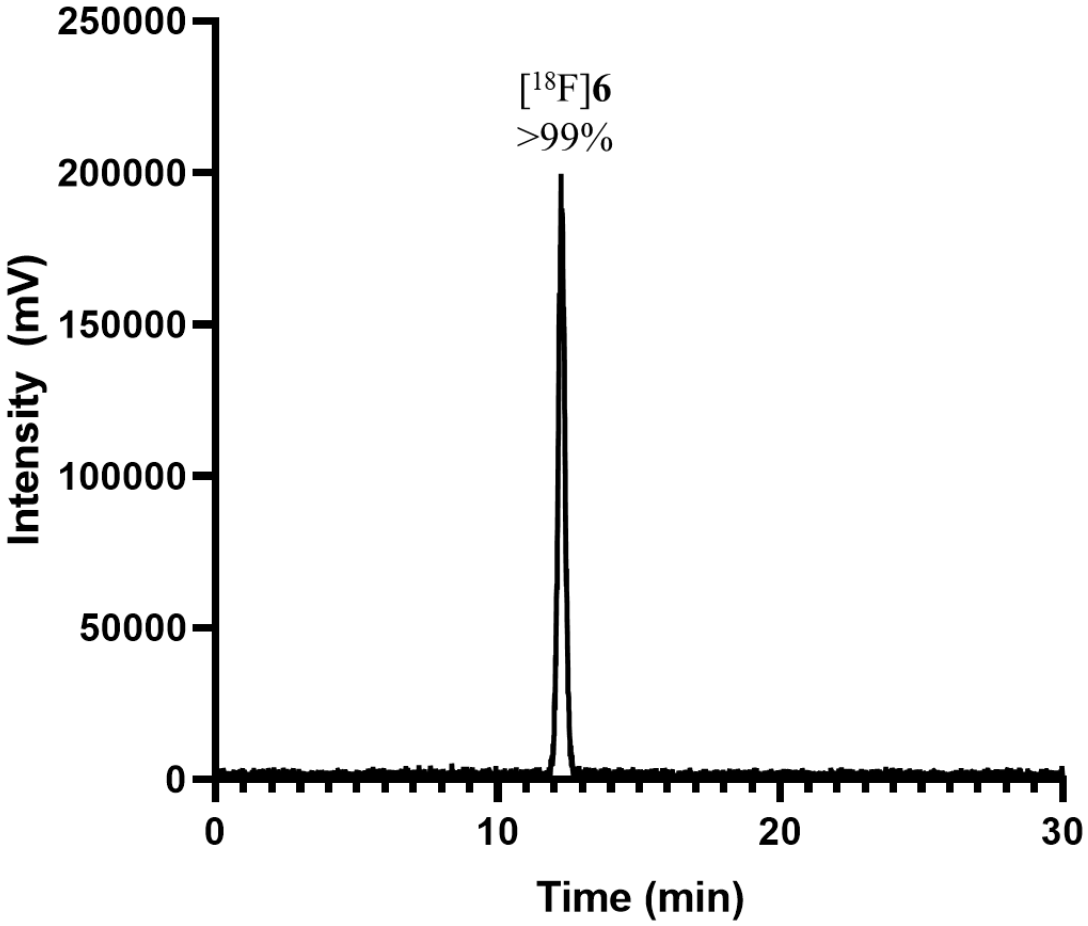

Figure S10. Radio-HPLC chromatogram of [^{18}F]SiFA-Tz ([^{18}F]**6**) stability at 90 minutes in 1×PBS (radiodetector).

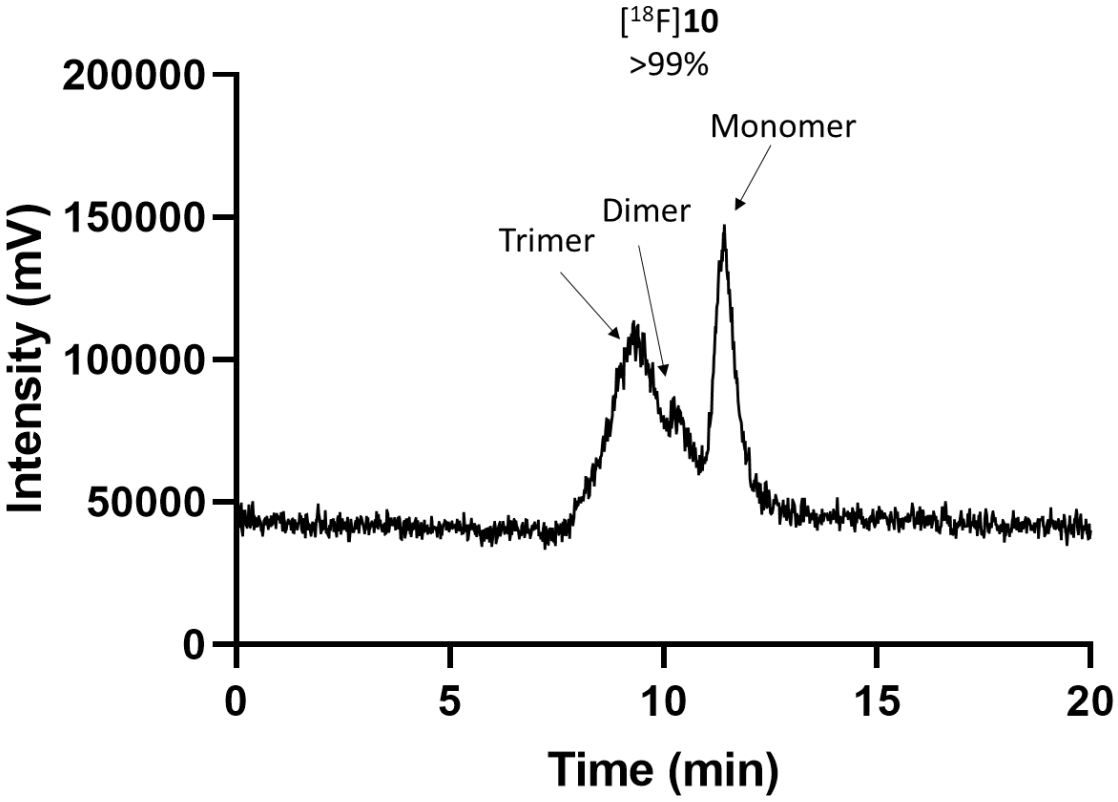

Figure S11. Radio-HPLC chromatogram of [^{18}F]fluoroalbumin ([^{18}F]**10**) (radiodetector).

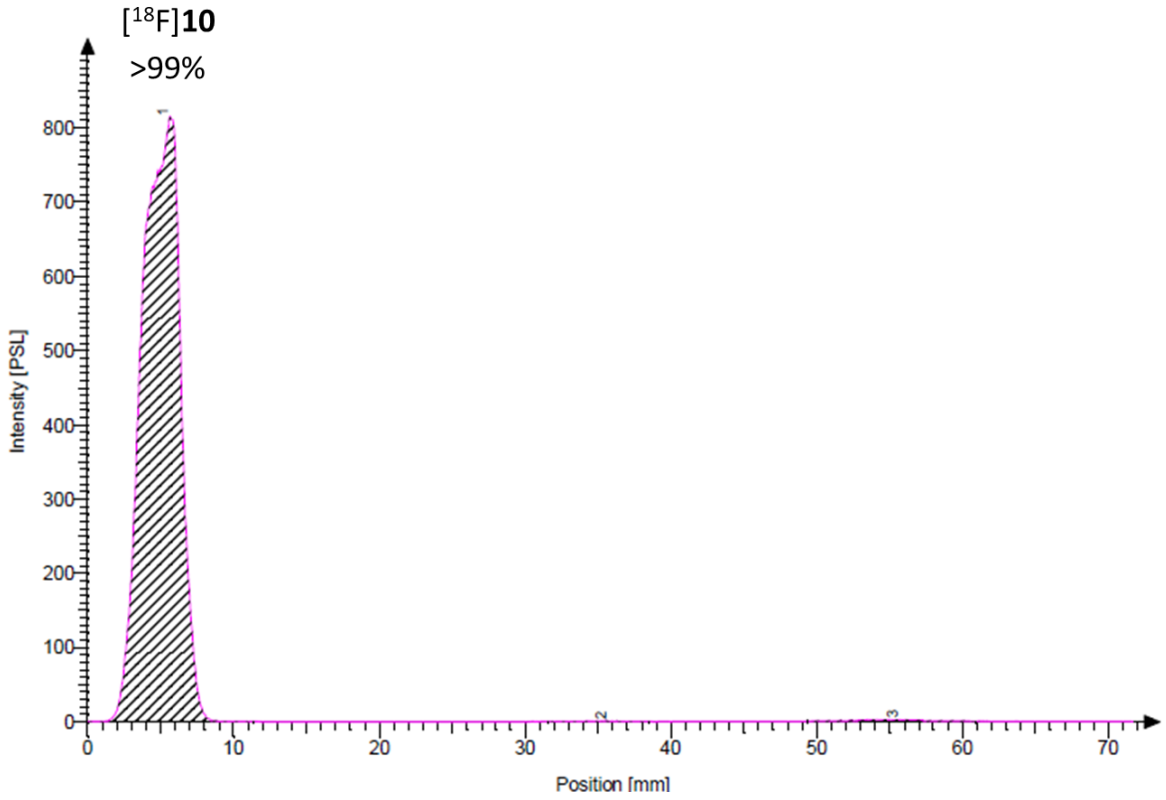

Figure S12. Radio-TLC chromatogram (digital autoradiography) of [^{18}F]fluoroalbumin ([^{18}F]**10**).

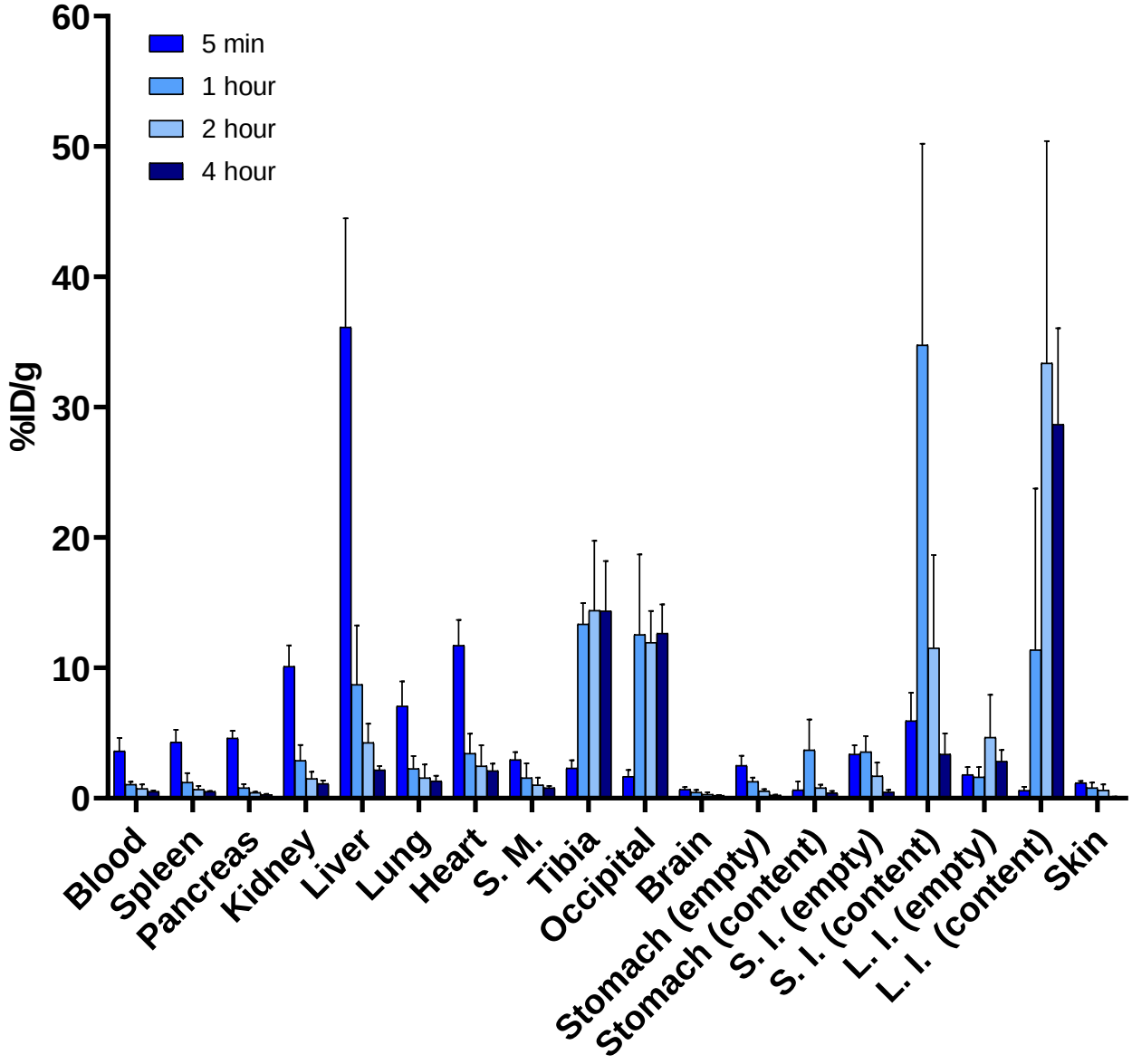

Figure S13. Biodistribution of radioactivity after intravenous administration of [^{18}F]SiFA-Tz ([^{18}F]**6**) demonstrating fast clearance from circulation, hepatobiliary excretion and high bone uptake at 60 minutes post-injection.

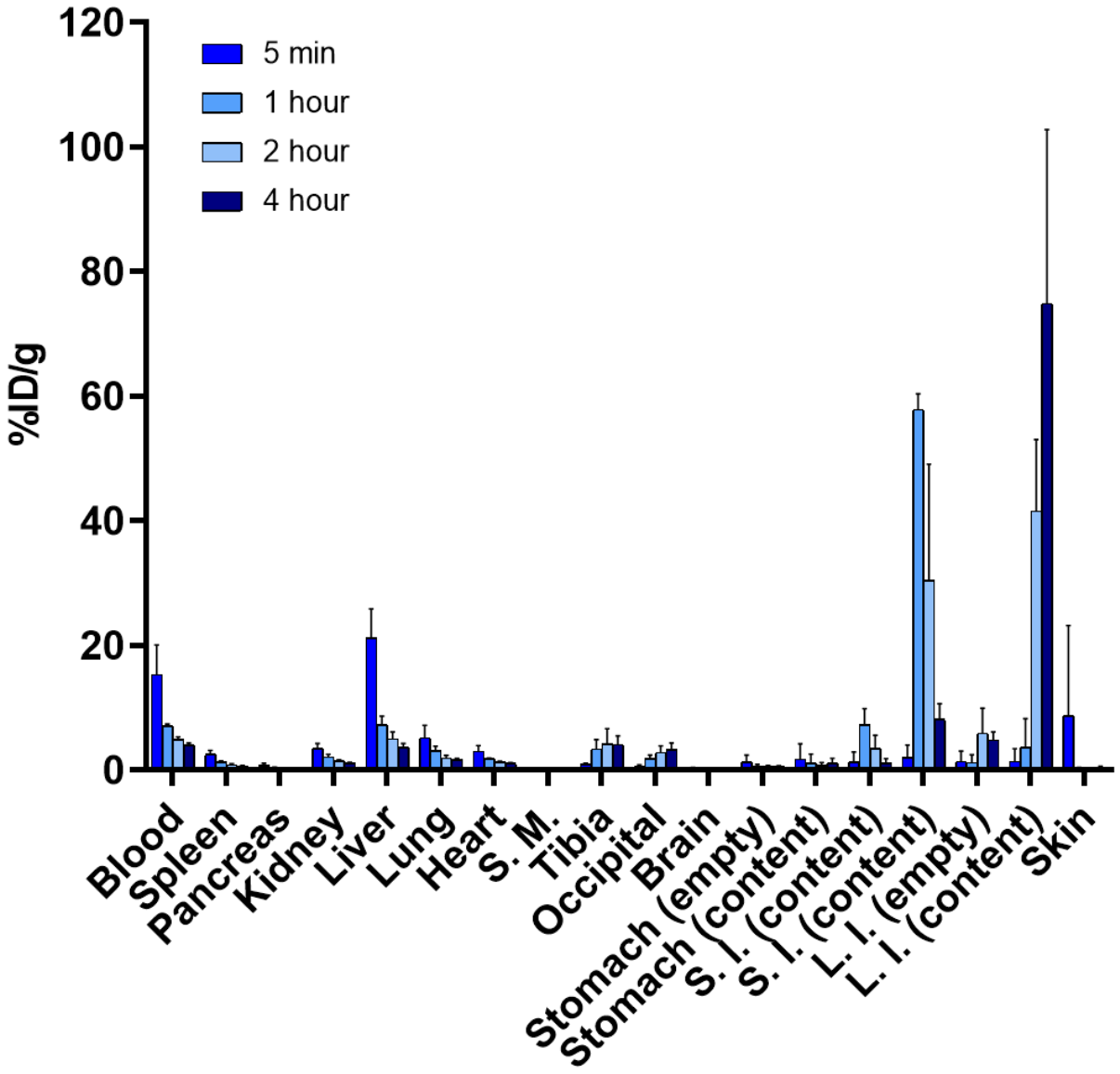

Figure S14. Biodistribution of radioactivity after intravenous administration of [^{18}F]fluoroalbumin ([^{18}F]**10**) demonstrating prolonged residence time in circulation.

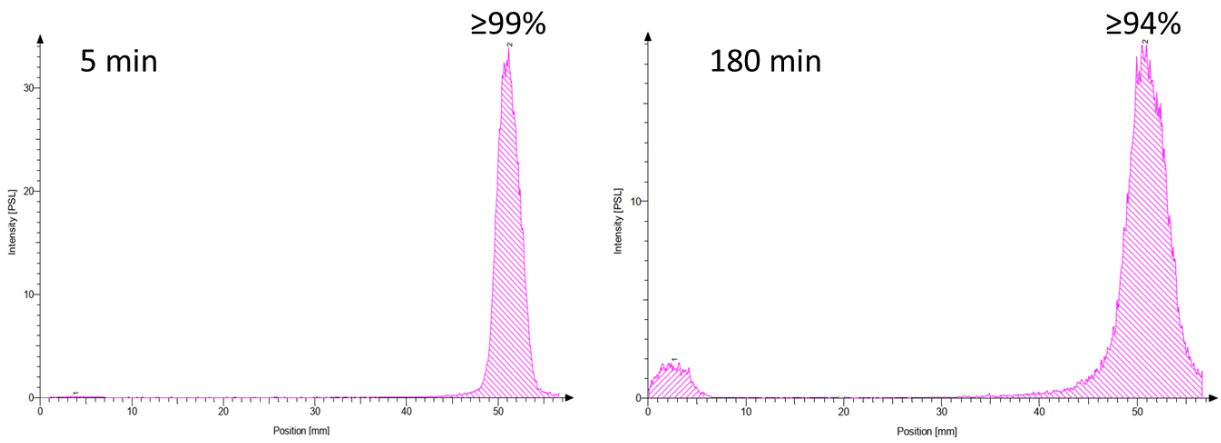

Figure S15. Radio-TLC (digital autoradiography) chromatograms of [^{18}F]SiFA-Tz ([^{18}F]**6**) in human plasma stability studies show minor defluorination of the radiotracer at 180 minutes after start of incubation.

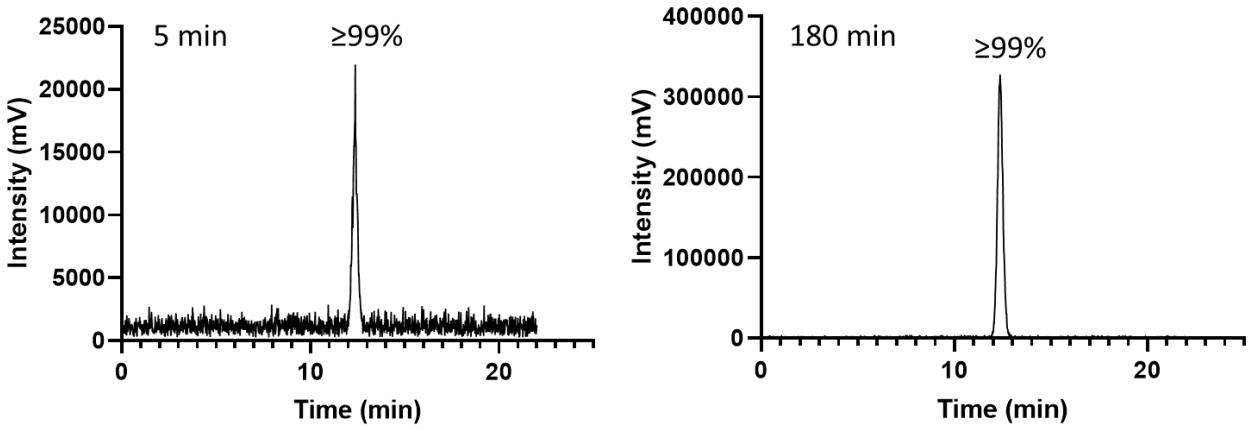

Figure S16. Radio-HPLC chromatograms of [^{18}F]SiFA-Tz ([^{18}F]**6**) in human plasma stability studies demonstrating no detectable decomposition.

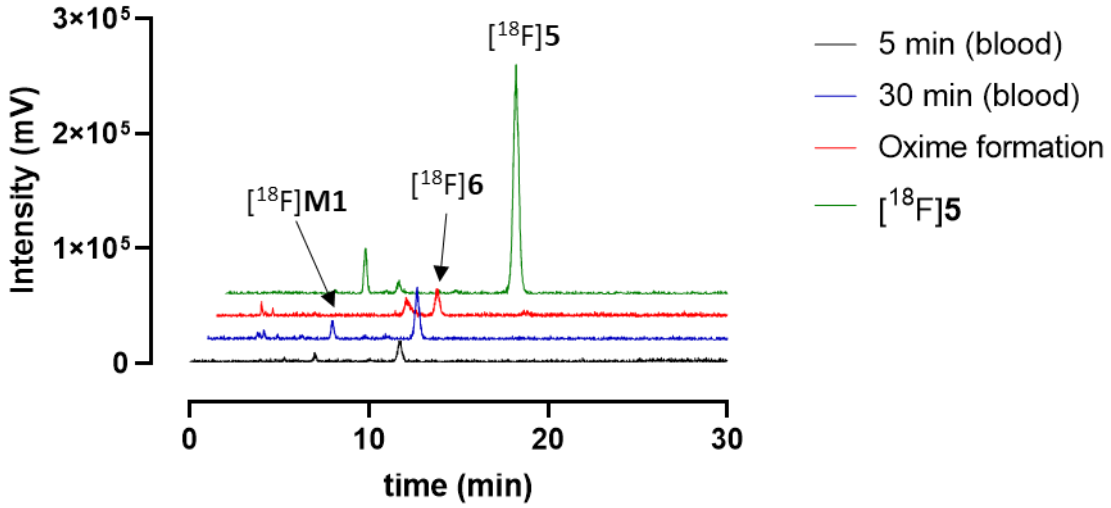

Figure S17. Radio-HPLC chromatograms of radiolabeling of [^{18}F]SiFA-aldehyde ([^{18}F]**5**), oxime formation producing [^{18}F]SiFA-Tz ([^{18}F]**6**) and metabolites (t = 5 min, 30 min) found in mouse blood after intravenous administration of [^{18}F]SiFA-Tz ([^{18}F]**6**).