

Supporting information

Targeting the Amyloid with [¹⁸F]AV-45 for Medullary Thyroid Carcinoma PET/CT Imaging: A Pilot Clinical Study

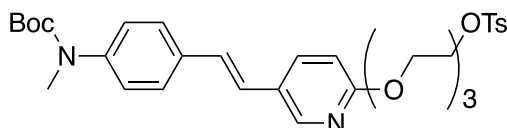
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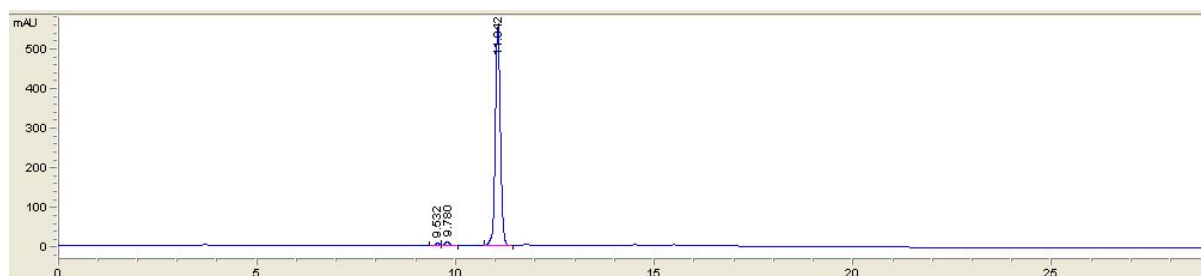
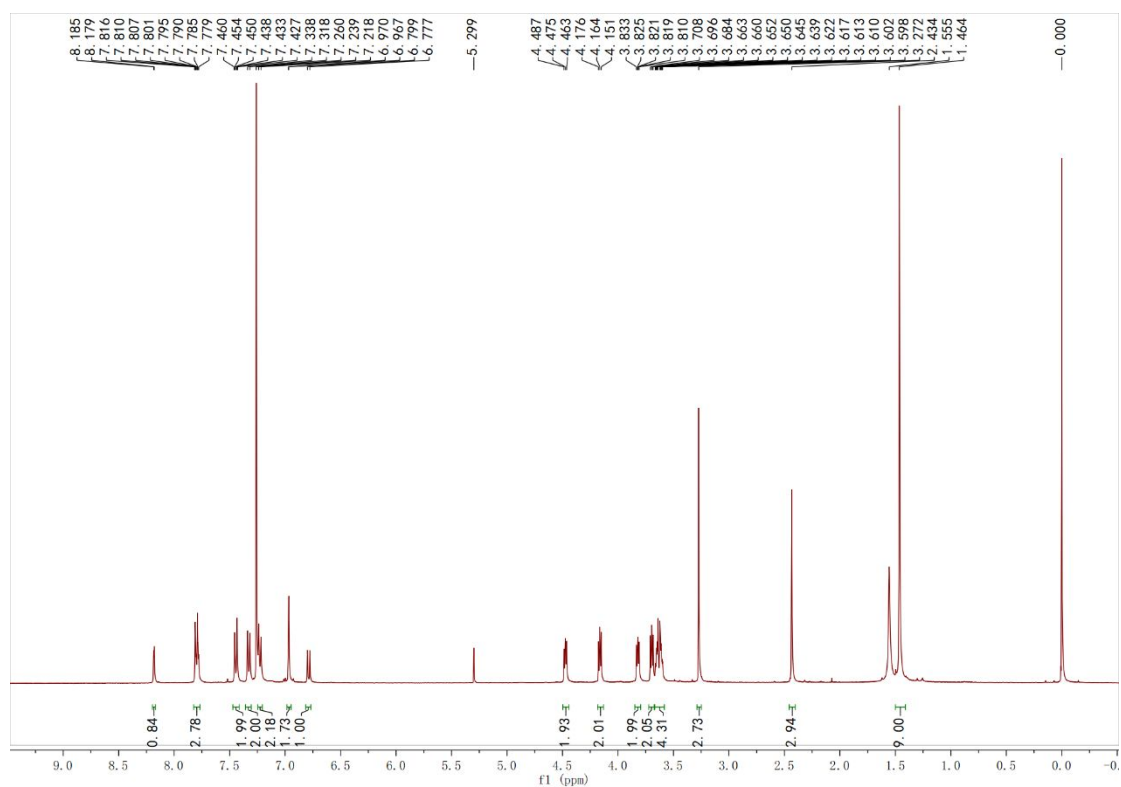
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AV-105 Characterization



AV-105 was prepared following literature methods.^[1] ¹H-NMR spectra was recorded on 400 MHz NMR Spectrometer instrument (Bruker Avance II, Vaian DLG400). Tetramethylsilane (δ 0.00) was used as internal standard for ¹H-NMR. ¹H NMR (400 MHz, Chloroform-*d*): δ 8.18 (d, J = 2.3 Hz, 1H), 7.82-7.77 (m, 3H), 7.44 (dt, J = 9.0, 2.1 Hz, 2H), 7.33 (d, J = 8.0 Hz, 2H), 7.23 (d, J = 8.5 Hz, 2H), 6.97 (d, J = 1.3 Hz, 2H), 6.79 (d, J = 8.6 Hz, 1H), 4.50-4.44 (m, 2H), 4.18-4.13 (m, 2H), 3.85-3.80 (m, 2H), 3.72-3.67 (m, 2H), 3.67-3.58 (m, 4H), 3.27 (s, 3H), 2.43 (s, 3H), 1.46 (s, 9H). HPLC conditions: XDB-C18 column (Waters XBridge Prep, 5 μ m, 4.6 x 150 mm). The mobile phase: solvent A, AcCN and solvent B, H₂O; starting from 60% of A to 100% of A in 20 min and go back to 60% of A in another 10 min; with a flow rate of 1.0 mL/min. The retention time of AV-105 is 11.0 min. HRMS: calculated for [M+Na]⁺ C₃₂H₄₀N₂NaO₈S⁺ 635.2403, found m/z 635.1773. The data are comparable with those reported in literature.^[1]



References:

- [1]. Yao, T. and Z. Li, Facile synthesis of TEG-substituted 4-(N-methyl-N-Boc-amino)styrylpyridine and PET imaging agent [F]florbetapir ([F]AV-45). *Synthetic Communications*, 2018. 48(4): p. 422-427.



Figure S1. Trasis Allinone automated synthesizer with $[^{18}\text{F}]\text{AV45}$ cassette

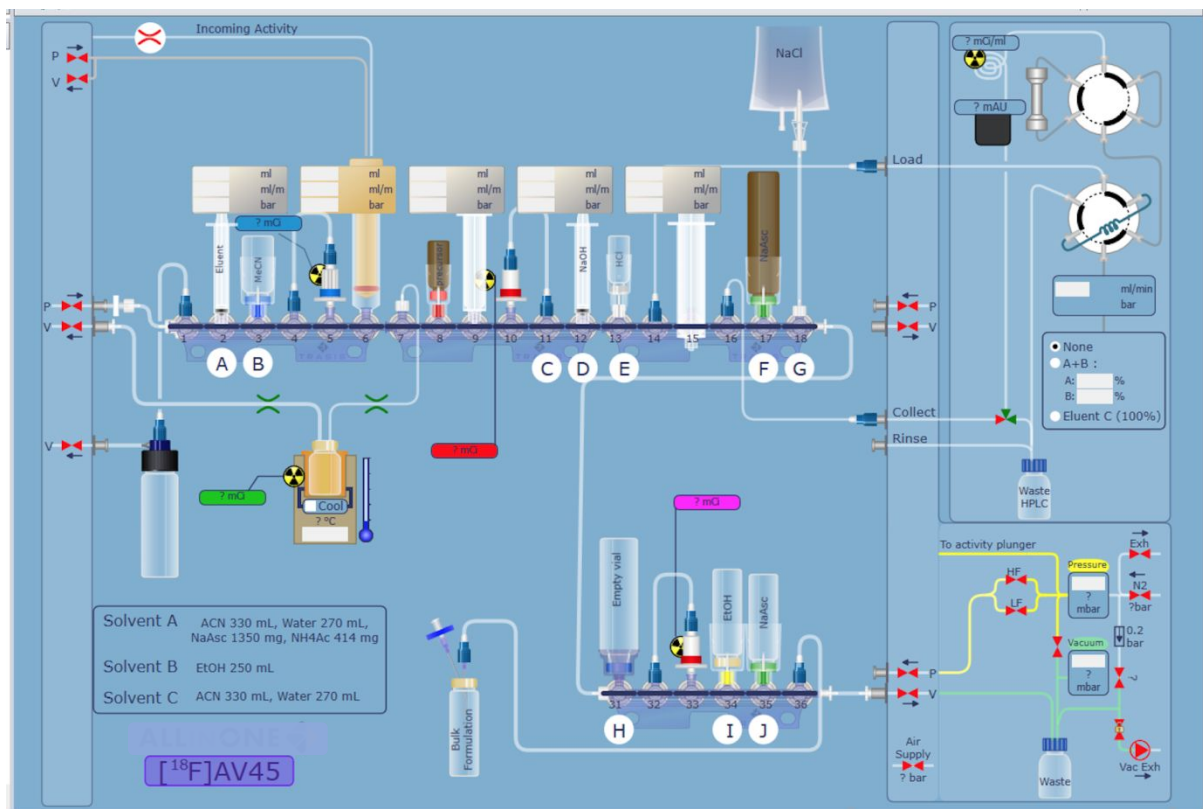


Figure S2. Trasis Allinone automated synthesizer $[^{18}\text{F}]\text{AV45}$ radiosynthesis module control diagram.

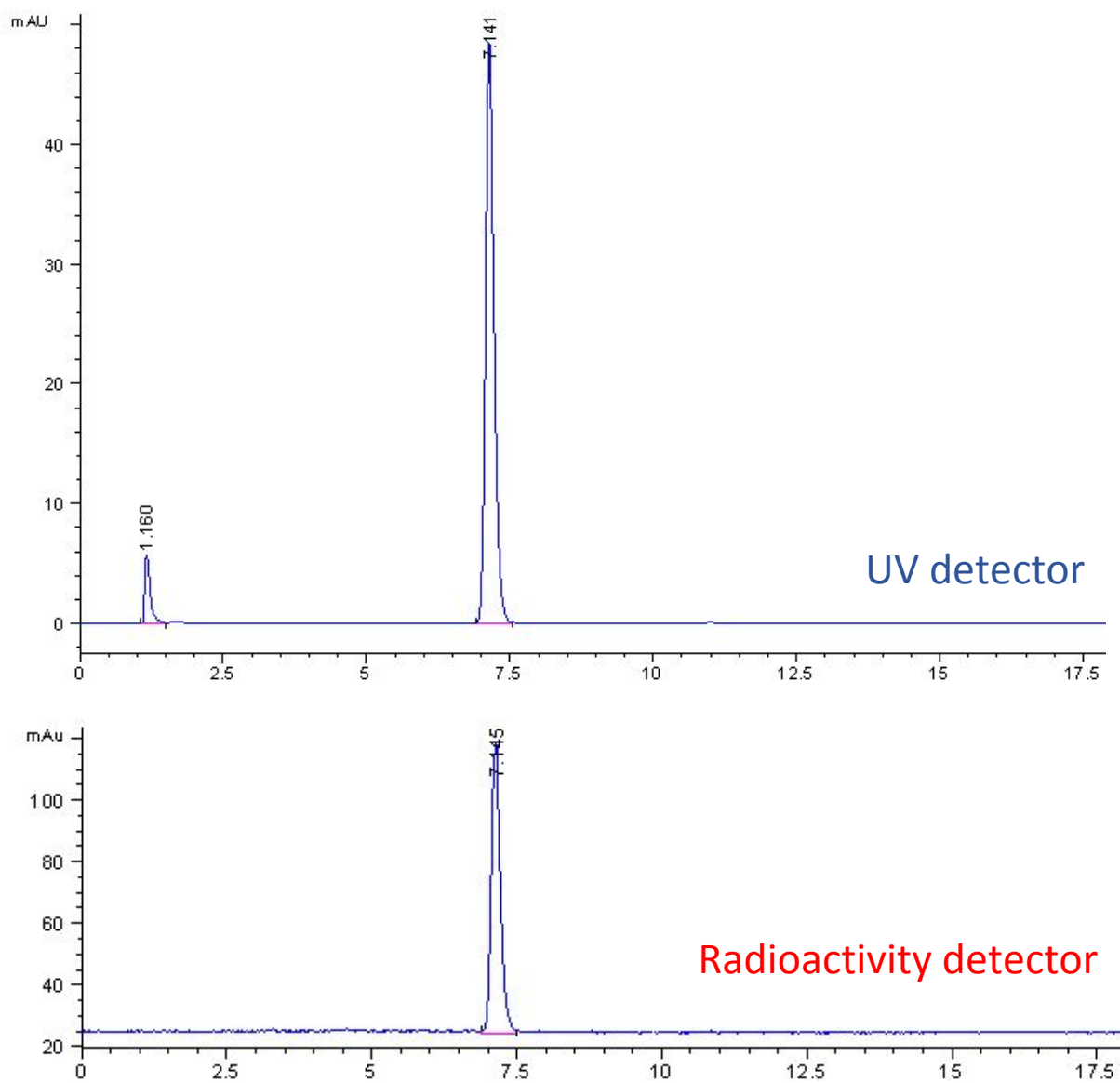


Figure S3. Quality control of [^{18}F]-AV-45. HPLC chromatogram of non-radioactive reference compound (above); HPLC chromatogram of purified [^{18}F]-AV-45 (below).