SUPPLEMENTAL MATERIAL

2-[3,5-bis-(2-fluorobenzylidene)-4-piperidon-1-yl]-N-(4-fluorobenzyl)-acetamide and its Evaluation as an Anticancer Agent

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3,5-Bis-(2-fluorobenzylidene)-4-piperidone (2): ^{1}H NMR (300 MHz, $CDCl_3$): 9.94 (s, 1H, NH), 7.90 (s, 2H, C=CH), 7.61-7.54 (m, 2H, Ar-H), 7.51 (t, 4H, Ar-H, *J* = 7.8 Hz), 7.39 (q, 2H, Ar-H, *J* = 7.2 Hz), 4.37 (s, 4H). R_f (60:40 Ethyl acetate:Hexanes) = 0.47. ^{13}C NMR (100 MHz, $CDCl_3$): δ 181.98, 172.09, 160.37 (d, *J* = 249.1 Hz), 132.55 (d, *J* = 8.5 Hz), 131.79 (d, *J* = 3.8 Hz), 131.03 (d, *J* = 1.5 Hz), 129.89, 124.95 (d, *J* = 3.2 Hz), 121. 52 (d, *J* = 13.1 Hz), 116.09 (d, *J* = 21.0 Hz), 43.85 (d, *J* = 3.1 Hz), 21.16. ESI Mass calculated for $C_{19}H_{16}F_2NO$ $(M+H)^+$ 312.12, found 312.13.

4-Cyano-N,N,N-trimethylanilinium trifluoromethanesulfonate (4): ^{1}H NMR (300 MHz, DMSO-d6): δ 8.25-8.10 (m, 4H), 3.63 (s, 9H). ^{13}C NMR (75 MHz, DMSO-d6): δ 150.7, 134.7, 122.6, 117.8, 113.6, 56.8.

N-(4-fluorobenzyl)-2-bromoacetamide (11): ^{1}H NMR (300 MHz, $CDCl_3$): δ 8.05 (br, 1H, NH), 7.35-7.20 (m, 2H, Ar-H), 7.03 (dd, 1H, Ar-H, *J* = 8.1, 1.5 Hz), 4.44 (d, 2H, benzylic-H, *J* = 5.7 Hz), 3.93 (s, 2H). ^{13}C NMR (300 MHz, $CDCl_3$): δ 168.6, 160.2, 129.5, 129.4, 115.8, 115.5, 43.5, 29.1.

2-[3,5-Bis-(2-fluorobenzylidene)-4-piperidin-1-yl]-N-(4-fluorobenzyl)-acetamide (12): ^{1}H NMR (300 MHz, $CDCl_3$): δ 7.93 (s, 1H), 7.83 (s, 2H, C=CH), 7.75-7.02 (m, 8H, Ar-H), 6.97 (dd, 2H, Ar-H, *J* = 7.2, 2.1 Hz), 6.68 (t, 2H, Ar-H, *J* = 7.2 Hz), 4.19 (s, 2H, benzylic), 4.17 (s, 2H), 3.76 (s, 4H). ESI Mass calculated for $C_{28}H_{23}F_3N_2NaO_2$ $(M+Na)^+$ 499.16, found 499.91.

HPLC of radiolabeled synthon (8) and ^{18}F-NFLOBA-EF24 (9): Compound **8** was analyzed by C-18 reverse phase high performance chromatography (RP-HPLC). It showed a retention time

of 14.2 min in radio-UV-RPHPLC (5% to 100% acetonitrile containing 0.1% TFA, over 15 min) at 254 nm wavelength. Compound **8** was used as an ^{18}F-labeled synthon for conjugation with compound **2** in the next step. The conjugation product of compound **8** and **2** was compound **9**. Compound **9** had a retention time of 14.6 min (5% to 100% acetonitrile gradient containing 0.1% TFA, over 15 min) at 254 nm wavelength (Figure 2).

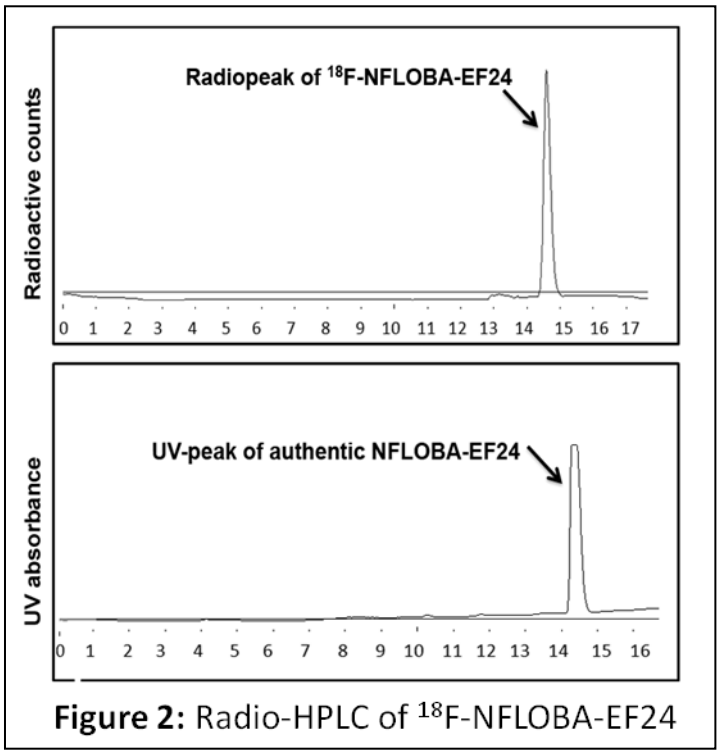

Figure 2: Radio-HPLC of ^{18}F-NFLOBA-EF24