

2-[*p*-(Dimethylamino)styryl]- α,α,α -trifluorotoluene (1c): **$^1\text{H NMR}$** (400 MHz, CDCl_3): δ = 7.76 (d, J = 8.0 Hz, 1H), 7.62 (d, J = 8.0 Hz, 1H), 7.49 (t, J = 7.8 Hz, 1H), 7.43 (d, J = 8.8 Hz, 2H), 7.31–7.22 (m, 2H), 7.03 (d, J = 16.0 Hz, 1H), 6.72 (d, J = 8.8 Hz, 2H), 2.99 (s, 6 H). **$^{13}\text{C NMR}$** (75 MHz, CDCl_3): δ = 150.5, 137.2 (q, $J_{\text{C-F}}$ = 2.0 Hz), 132.7, 131.71, 131.69, 128.0, 126.8 (q, $^2J_{\text{C-F}}$ = 29.7 Hz), 126.4, 126.2, 125.8 (q, $^3J_{\text{C-F}}$ = 5.6 Hz), 125.2, 124.6 (q, $^1J_{\text{C-F}}$ = 272 Hz), 119.7 (q, J = 2.0 Hz), 40.3. **IR** (CHCl_3): ν = 3649, 1600, 1522, 1313, 1163, 1124, 777 cm^{-1} . **EA**: Found. C 69.91%, H 5.56%, N 4.65%; Calcd. for $\text{C}_{17}\text{H}_{16}\text{F}_3\text{N}$: C 70.09%, H 5.54%, N 4.81%. Colorless crystal.

2-(*p*-Methoxystyryl)- α,α,α -trifluorotoluene (1d): **$^1\text{H NMR}$** (400 MHz, CDCl_3): δ = 7.74 (d, J = 8.0 Hz, 1H), 7.63 (d, J = 8.0 Hz, 1H), 7.50 (t, J = 7.6 Hz, 1H), 7.46 (d, J = 8.0 Hz, 2H), 7.37–7.27 (m, 2H), 7.02 (d, J = 16.0 Hz, 1H), 6.90 (d, J = 8.0 Hz, 2H), 3.81 (s, 3H). **$^{13}\text{C NMR}$** (75 MHz, CDCl_3): δ = 159.8, 136.7, 132.1, 131.8, 129.7, 128.2, 127.2 (q, $^2J_{\text{C-F}}$ = 29.0 Hz), 126.8, 126.7, 125.9 (q, $^3J_{\text{C-F}}$ = 5.6 Hz), 124.5 (q, $^1J_{\text{C-F}}$ = 272 Hz), 122.1, 114.2, 55.3. **IR** (CHCl_3): ν = 3011, 1603, 1512, 1456, 1315, 1290, 1163, 1126, 1036, 964 cm^{-1} . **EA**: Found. C 68.93%, H 4.55%; Calcd. for $\text{C}_{16}\text{H}_{13}\text{F}_3$: C 69.06%, H 4.71%.

2-(*m*-Methoxystyryl)- α,α,α -trifluorotoluene (1e): **$^1\text{H NMR}$** (400 MHz, CDCl_3): δ = 7.75 (d, J = 8.0 Hz, 1H), 7.65 (d, J = 8.0 Hz, 1H), 7.54–7.42 (m, 2H), 7.36–7.26 (m, 2H), 7.12 (d, J = 8.0 Hz, 1H), 7.05 (s, 1H), 7.03 (d, J = 16.0 Hz, 1H), 6.84 (dd, J = 8.0, 1.6 Hz, 1H), 3.83 (s, 3H). **$^{13}\text{C NMR}$** (100 MHz, CDCl_3): δ = 159.9, 138.3, 136.3, 132.5, 131.9, 129.7, 127.5 (q, $^2J_{\text{C-F}}$ = 29.8 Hz), 127.2, 127.0, 125.9 (q, $^3J_{\text{C-F}}$ = 5.7 Hz), 124.6 (q, $J_{\text{C-F}}$ = 1.9 Hz), 124.4 (q, $^1J_{\text{C-F}}$ = 272 Hz), 119.5, 113.7, 112.3, 55.2. **IR** (CHCl_3): ν = 3018, 1605, 1580, 1491, 1315, 1219, 1209, 1126 cm^{-1} . **EA**: Found. C 68.77%, H 4.74%; Calcd. for $\text{C}_{16}\text{H}_{13}\text{F}_3$: C 69.06%, H 4.71%.

スペクトルの表記例

- $^1\text{H NMR}$ は小数点以下 2 桁、 $^{13}\text{C NMR}$ は小数点以下 1 桁、 IR は 1 cm^{-1} 刻みで記す。
- コンマの直後と=の前後は半角 1 字空けること。
- 結合定数は記号 J (イタリック体の J) で表記する。
- 結合定数を表す記号 J には、カップリングしている原子を右下に付す場合がある。また、カップリングしている原子を隔てる結合の数を左肩に付す場合もある。