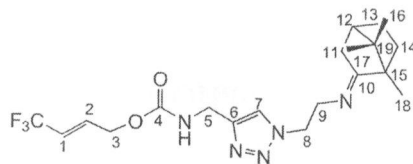


4.1.17. O-(4,4,4-Trifluorobut-2-en-1-yl) N-[(1-[2-N-1,7,7-trimethylbicyclo[2.2.1]heptane-2-ylideneaminoethyl]-1H-1,2,3-triazol-4-yl)methyl]carbamate 19



Yellow oil, yield 70%; ^1H NMR (CDCl_3 , 400 MHz): δ ppm 7.62 (s, 1H, CH-7), 6.45–6.41 (m, 1H, CH-1), 5.90–5.85 (m, 1H, CH-2), 5.75 (br. s, 1H, NH), 4.70 (br. s, 2H, CH_2 -3), 4.64 (t, 2H, $^3J_{\text{HH}} = 5.2$ Hz, CH_2 -8), 4.44 (d, 2H, $^3J_{\text{HH}} = 5.8$ Hz, CH_2 -5), 3.66 (dt, 2H, $^3J_{\text{HH}} = 18.5$ Hz, $^3J_{\text{HH}} = 5.6$ Hz, CH_2 -9), 2.16 (brd, 1H, $^2J_{\text{HH}} = 17.0$ Hz, CH-11), 1.87 (t, 1H, $^3J_{\text{HH}} = 4.2$ Hz, CH-12), 1.85–1.77 (m, 2H, CH-11 + CH-13), 1.63 (ddd, 1H, $^2J_{\text{HH}} = 12.4$ Hz, $^3J_{\text{HH}} = 12.4$ Hz, $^3J_{\text{HH}} = 3.5$ Hz, CH-14), 1.17 (ddd, 1H, $^2J_{\text{HH}} = 11.1$ Hz, $^3J_{\text{HH}} = 8.9$ Hz, $^4J_{\text{HH}} = 3.9$ Hz, CH-14), 1.05 (ddd, 1H, $^2J_{\text{HH}} = 10.4$ Hz, $^3J_{\text{HH}} = 8.5$ Hz, $^3J_{\text{HH}} = 4.0$ Hz, CH-13), 0.93 (s, 3H, CH_3 -16), 0.89 (s, 3H, CH_3 -17), 0.57 (s, 3H, CH_3 -18). ^{13}C NMR (CDCl_3 , 100 MHz): δ ppm = 185.61 (s, C-10), 155.34 (s, C-4), 143.83 (s, C-6), 134.43 (quin, $^3J_{\text{CF}} = 6.4$ Hz, C-2), 123.21 (s, C-7), 122.58 (q, $^1J_{\text{CF}} = 267.7$ Hz, CF_3), 118.75 (quin, $^2J_{\text{CF}} = 34.1$ Hz, C-1), 62.14 (s, C-3), 53.90 (s, C-15), 51.58 and 51.06 (both s, C-8 + C-9), 46.82 (s, C-19), 43.46 (s, C-12), 35.52 (s, C-11), 31.87 (s, C-14), 27.05 (s, C-13), 19.13 (s, C-17), 18.65 (s, C-18), 11.17 (s, C-16). ^{19}F NMR (CDCl_3 , 377 MHz): δ ppm = -64.45 (s, CF_3). Anal. calcd. for $\text{C}_{19}\text{H}_{30}\text{F}_5\text{N}_5\text{O}_2\text{S}$ · 0.5 CH_2Cl_2 : C, 52.39; , 6.22; N, 14.90; F, 12.13; found: C, 52.42; , 5.75; N, 14.96; F, 12.16.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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