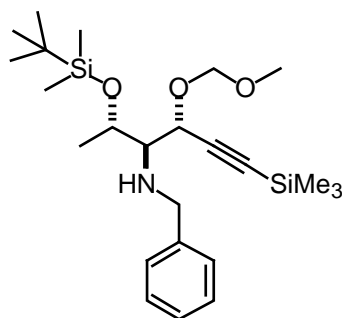


## Supporting information

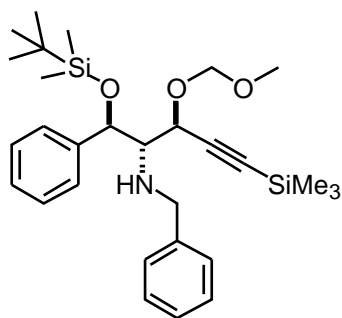
Imines were prepared, according to known procedures<sup>1</sup>, by slow addition of the amine to a cold solution (0°C) of the aldehyde in toluene in the presence of anhydrous MgSO<sub>4</sub>. The reaction mixture was then diluted with ether and washed with a cold dilute aqueous solution of NH<sub>4</sub>Cl. The organic phase was dried over MgSO<sub>4</sub> and the volatiles removed under reduced pressure. They were used as such.

### Addition to imines

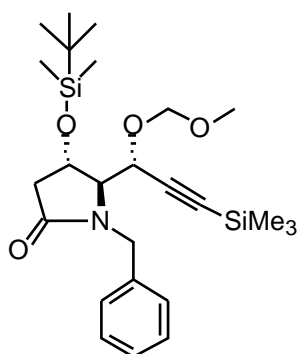


**(5S\*,4S\*,3R\*)-4-(N-Benzylamino)-5-tertbutyldimethylsilyloxy-3-methoxymethoxy-1-(trimethylsilyl)hex-1-yne (6).** *sec*-BuLi (1.3N/hexane, 2.5 mL, 3.3 mmol) was added dropwise to a cold (-78°C) solution of 3-methoxymethoxy-1-trimethylsilyl-1-propyne (517 mg, 3 mmol) in THF. The reaction was stirred for 30 minutes and ZnBr<sub>2</sub> (1N/ THF, 3.3 mL, 3.3 mmol) was subsequently added at -70°C. After further 30 minutes stirring, imine **4** (832 mg, 3 mmol) was added dropwise. The reaction was stirred one hour at -70°C and one hour at -50°C. The reaction was subsequently quenched by addition of 10 mL of a 1/2 solution of NH<sub>4</sub>OH/NH<sub>4</sub>Cl. After vigorous stirring, water (10 mL) and ether (10 mL) were added. The layers were separated and the aqueous phase extracted twice with Et<sub>2</sub>O. The combined organic layers were washed with brine and dried over MgSO<sub>4</sub>. The volatiles were removed under reduced pressure and the residue was purified by flash chromatography on silica gel (eluent pentane/ether 94/6) to yield **6** (1.0 g, 75%) as a colorless oil. IR (neat)  $\nu$  cm<sup>-1</sup>: 2960, 2940, 2900, 2860, 2180, 1470, 1250; <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  0.08 (3H, s), 0.09 (3H, s), 0.92 (9H, s), 1.26 (3H, d, *J* = 6.2 Hz), 2.77 (1H, dd, *J* = 4.2 and 6.6 Hz), 3.41 (3H, s), 3.87-3.93 (2H, m), 4.14 (1H, d, *J* = 13.0 Hz), 4.76 (1H, d, *J* = 4.1 Hz), 7.23-7.41 (5H, m); <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>)  $\delta$  -4.6, -4.1, 19.1, 20.4, 26.0, 53.6, 55.8, 66.3, 69.0, 69.6, 92.8, 94.2, 102.4, 126.8, 128.3, 128.4, 141.4; Anal.calcd for C<sub>24</sub>H<sub>43</sub>NO<sub>3</sub>Si<sub>2</sub>: C, 64.09; H, 9.64; N, 3.11. Found: C, 64.08; H, 9.68; N, 2.88.

<sup>1</sup> Kobayashi, Y.; Takemoto, Y.; Kajimo, T.; Harada, H.; Ito, Y.; Therashima, S. *Tetrahedron* **1992**, *48*, 1853-1868.



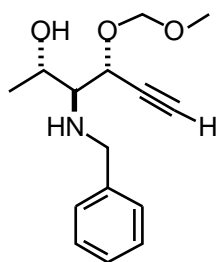
**(5R\*,4R\*,3S\*)-4-(N-Benzylamino)-5-tertbutyldimethylsilyloxy-3-methoxymethoxy-5-phenyl-1-(trimethylsilyl)pent-1-yne (5).** *sec*-BuLi (1.3N/hexane, 2.2 mL, 2.8 mmol) was added dropwise to a cold (-78°C) solution of 3-methoxymethoxy-1-trimethylsilyl-1-propyne (414 mg, 2.4 mmol) in THF. The reaction was stirred for 30 minutes and ZnBr<sub>2</sub> (1N/ THF, 3.0 mL, 3.0 mmol) was subsequently added at -78°C. After further 30 minutes stirring, imine **3** (679 mg, 2.0 mmol) was added dropwise. The reaction was stirred one hour at -70°C and slowly warmed to -20°C. The reaction was subsequently quenched by addition of 10 mL of a 1/2 solution of NH<sub>4</sub>OH/NH<sub>4</sub>Cl. After vigorous stirring, water (10 mL) and ether (10 mL) were added. The layers were separated and the aqueous phase extracted twice with Et<sub>2</sub>O. The combined organic layers were washed with brine and dried over MgSO<sub>4</sub>. The volatiles were removed under reduced pressure and the residue was purified by flash chromatography on silica gel (eluent pentane/ether 95/5) to yield **5** (552 mg, 56%) as a colorless oil. <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ -0.24 (3H, s), 0.07 (3H, s), 0.24 (9H, s), 0.89 (9H, s), 1.67 (1H, s, OH), 3.02 (1H, dd, *J* = 3.2 and 7.6 Hz), 3.29 (3H, s), 3.53 (1H, d, *J* = 13.6 Hz), 3.73 (1H, d, *J* = 13.6 Hz), 4.58 (1H, d, *J* = 6.4 Hz), 4.66 (1H, d, *J* = 7.2 Hz), 4.90 (2H, m), 7.06 (2H, d, *J* = 6.0 Hz), 7.08-7.41 (8H, m); <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) δ -5.0, -4.3, 0.1, 18.2, 25.9, 53.1, 55.6, 66.5, 68.8, 76.7, 92.9, 94.1, 102.1, 126.5, 127.5, 127.7, 128.0, 128.3, 141.1, 143.0; Anal. Calcd. for C<sub>30</sub>H<sub>45</sub>NO<sub>3</sub>Si: C, 72.68; H, 9.15; N, 2.83. Found: C, 68.72; H, 8.98; N, 2.82.



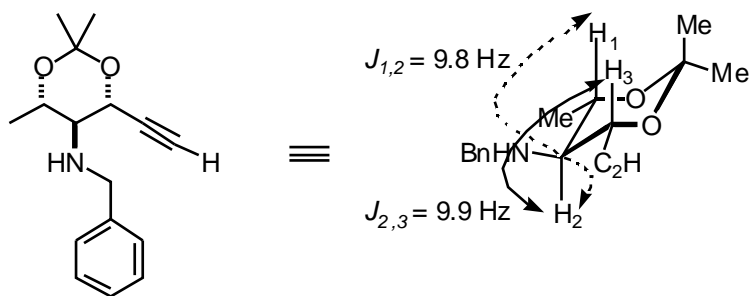
**(4S,5S,1'R)-(-)-N-Benzyl-4-tertbutyldimethylsilyloxy-5-(3-(3-methoxymethoxy-1-trimethylsilyl prop-1-yne))-2-oxopyrrolidine ((-)-13).** *sec*-BuLi (1.3N/hexane, 965 μL, 1.2 mmol) was added dropwise to a solution of 3-methoxymethoxy-1-trimethylsilyl-1-propyne (206

mg, 1.2 mmol) in THF at -78°C. After 30 minutes stirring, ZnBr<sub>2</sub> (1M/THF, 1.3 mL, 1.3 mmol) was added dropwise. Imine (*S*)-**12** (100 mg, 0.3 mmol) in solution in THF was then added dropwise over 30 minutes at -70°C. The reaction mixture was then allowed to warm to -20°C, stirred for further one hour and quenched by addition of 10 mL of a 1/2 solution of NH<sub>4</sub>OH/NH<sub>4</sub>Cl. The layers were separated and the aqueous phase extracted twice with ether. The combined organic phases were dried over MgSO<sub>4</sub> and the volatiles removed under reduced pressure. The residue was purified by flash chromatography on silica gel (eluent pentane/ether, 75/25->65/35) to afford (*-*)-**13** (117 mg, 86%) as a colorless oil. <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 0.03 (3H, s), 0.11 (3H, s), 0.19 (9H, s), 0.88 (9H, s), 2.28 (1H, d, *J* = 16.8 Hz), 2.90 (1H, dd, *J* = 5.6 and 16.8 Hz), 3.32 (3H, s), 3.48 (1H, d, *J* = 2.5 Hz), 3.92 (1H, d, *J* = 15.7 Hz), 4.46 (1H, d, *J* = 6.9 Hz), 4.51 (1H, d, *J* = 2.5 Hz), 4.56 (1H, d, *J* = 5.5 Hz), 4.86 (1H, d, *J* = 6.9 Hz), 5.24 (1H, d, *J* = 15.8 Hz), 7.24-7.34 (5H, m); <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) δ -4.9, -4.6, -0.4, 17.6, 25.5, 41.7, 43.1, 55.9, 63.6, 67.4, 69.2, 92.8, 94.0, 100.6, 127.2, 128.5, 135.7, 174.5; [ $\alpha$ ]<sub>D</sub><sup>30</sup> = -120.5 (c = 1, CHCl<sub>3</sub>).

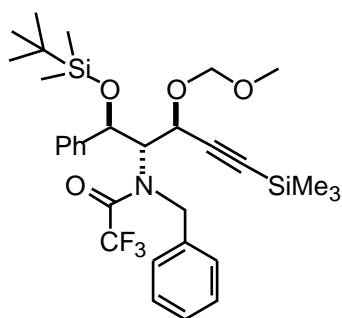
### Structure determination



(*5S*\*,*4S*\*,*3R*\*)-4-(*N*-Benzylamino)-3-methoxymethoxyhex-1-yn-5-ol (**9**). HF<sub>3</sub>.NEt<sub>3</sub> (0.35 mL, 2.2 mmol) was added to a solution of **6** (490 mg, 1.1 mmol) in CH<sub>3</sub>CN. After 3 hours stirring, 10 mL of a saturated solution of sodium hydrogenocarbonate was subsequently added. The layers were separated and the aqueous phase extracted twice with ether. The combined organic phases were dried over MgSO<sub>4</sub> and the volatiles removed under reduced pressure. The residue was purified by flash chromatography on silica gel (eluent cyclohexane/AcOEt, 3/2) to yield 204 mg (70%) of the titled compound. <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 1.23 (3H, d, *J* = 6.3 Hz), 2.55 (1H, d, *J* = 2 Hz), 2.94 (1H, t, *J* = 4.8 Hz), 3.41 (3H, s), 3.85 (1H, d, *J* = 12.9 Hz), 4.01 (1H, quint, *J* = 6.0 Hz), 4.06 (1H, d, *J* = 13.0 Hz), 4.62 (1H, d, *J* = 6.8 Hz), 4.66 (1H, dd, *J* = 2.2 and 4.2 Hz), 4.98 (1H, d, *J* = 6.8 Hz), 7.28-7.39 (5H, m); <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) δ 19.4, 50.6, 56.1, 64.6, 66.5, 67.1, 76.9, 80.3, 94.5, 127.2, 128.4, 128.5, 140.4.

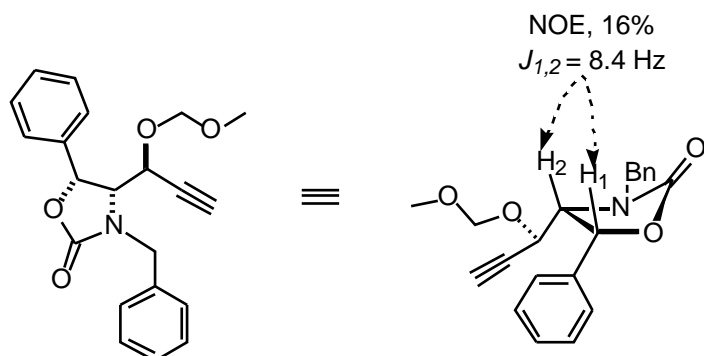


**(4S\*,5S\*,6R\*)-5-(N-Benzylamino)-6-ethynyl-4,2,2-trimethyl-1,3-dioxane (**10**)**. HCl (12N, 1ml) was added to a solution of **9** (50 mg, 0.2 mmol) in MeOH (2 mL). The reaction was stirred at room temperature and monitored by TLC. After an overnight stirring at room temperature, sodium hydrogenocarbonate (1 g) was added portionwise. The suspension was filtered and the volatiles removed under reduced pressure. The residue was used without further purification. This product was dissolved in 2,2-dimethoxypropane (5 mL) and camphorsulfonic acid was added. The reaction was monitored by TLC and when no starting material was left, the volatiles were removed under reduced pressure. The residue was purified by flash chromatography on silica gel (eluent pentane/ether, 4/1) to yield **10** (10 mg, 20% two steps) with much side products.  $^1\text{H}$  NMR ( $\text{CDCl}_3$ )  $\delta$  1.28 (3H, d,  $J = 6.1$  Hz), 1.47 (3H, s), 1.49 (3H, s), 2.50 (1H, t,  $J = 9.9$  Hz), 2.54 (1H, d,  $J = 2.0$  Hz), 3.71 (1H, dq,  $J = 6.0$  and 9.9 Hz), 3.94 (1H, d,  $J = 12.5$  Hz), 4.07 (1H, d,  $J = 12.5$  Hz), 4.41 (1H, dd,  $J = 2.2$  and 9.9 Hz), 7.25-7.39 (5H, m).



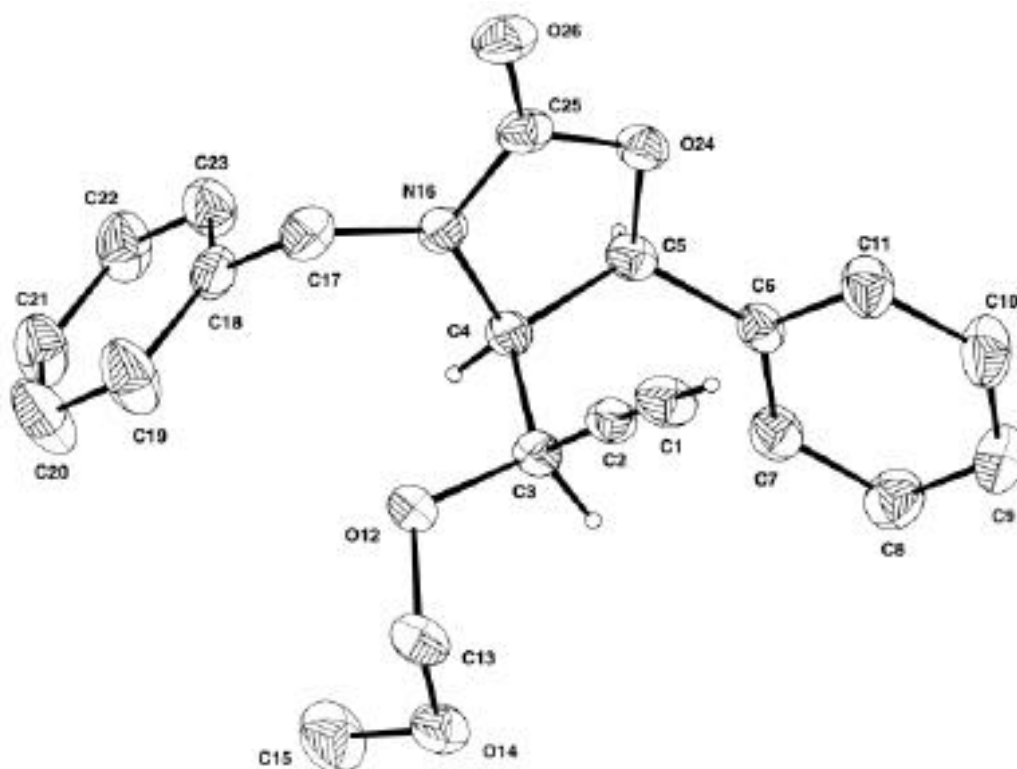
**(5R\*,4R\*,3S\*)-4-(N-Benzyltrifluoroacetamido)-5-tertbutyldimethylsilyloxy-3-methoxymethoxy-5-phenyl-1-(trimethylsilyl)pent-1-yne (**7**)**. Trifluoroacetic anhydride (35  $\mu\text{l}$ , 0.24 mmol) was added dropwise to a  $\text{CH}_2\text{Cl}_2$  (2 mL) solution of **5** (100 mg, 0.20 mmol) and Hünig's base (1 mL). After one hour stirring at room temperature, HCl (1N, 2ml) was added. The layers were separated and the aqueous one extracted twice with ether. The combined organic phases dried over  $\text{MgSO}_4$  and the volatiles removed under reduced pressure. The residue was purified by flash chromatography on silica gel (eluent pentane/ether, 97/3) to yield **7** (99 mg, 83%) as a colorless oil. **Two conformers:**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ )  $\delta$  0.35 (1.2H, s), 0.28 (1.8H, s), 0.49 (1.2H, s), 0.11 (3.6H, s), 0.15 (5.4H, s), 0.83 (5.4H, s), 0.86 (3.6H, s), 3.47 (1.2H, s), 3.47 (1.8H, s), 4.52-4.57 (1H, m), 4.71 (0.6H, d,  $J = 6.4$  Hz), 4.76 (1.8H, m), 4.94 (0.6H, d,  $J = 6.4$  Hz), 5.04-5.14

(2.4H, m), 5.40 (0.6H, m), 7.08-7.32 (10H, m);  $^{13}\text{C}$  NMR (100 MHz,  $\text{CDCl}_3$ )  $\delta$  (-5.1, -4.9), (-4.6, -4.4), (-0.5, -0.3), 18.1, 25.8, 49.2, 56.1, 64.4, 65.3, 73.5, 74..2, (93.5, 95.3), (94.2, 94.4), 101.1, 127.0, 127.3, 128.2, 128.3, 128.4, 136.8, 139.4, 140.5;  $^{19}\text{F}$  NMR ( $\text{CDCl}_3$ )  $\delta$  -69.01, -65.78.



**(5*R*\*,4*R*\*,1'*S*\*)-3-Benzyl-4-(1'-methoxymethylprop-2'-yne)-5-phenyl-2-oxazolidinone (**8**).**

TBAF (1M/THF, 0.33 mL, 0.33 mmol) was added to a solution of **7** (99 mg, 0.17 mmol) in THF (1 mL) and the reaction stirred for 30 minutes at room temperature. Water was added and the aqueous phase extracted twice with ether. The combined organic phases were dried over  $\text{MgSO}_4$  and the volatiles removed under reduced pressure. The residue was purified by flash chromatography on silica gel (eluent pentane/ether, 98/2) to yield **8** (48 mg, 80%) which crystallised on stand. Mp. =  $104^\circ\text{C}$ ; IR (neat)  $\nu\text{ cm}^{-1}$ : 3280, 3030, 2940, 2880, 2120, 1700, 1605, 1495, 1450, 1420;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ )  $\delta$  2.54 (1H, d,  $J = 2.1$  Hz), 3.21 (3H, s), 3.91 (1H, t,  $J = 2.2$  Hz), 4.02 (1H, dd,  $J = 1.6$  and 8.3 Hz), 4.40 (1H, d,  $J = 14.8$  Hz), 4.46 (1H, d,  $J = 6.7$  Hz), 4.71 (1H, d,  $J = 6.7$  Hz), 5.12 (1H, d,  $J = 14.9$  Hz), 5.61 (1H, d,  $J = 8.4$  Hz), 7.33-7.42 (10H, m);  $^{13}\text{C}$  NMR (100 MHz,  $\text{CDCl}_3$ )  $\delta$  47.2, 55.9, 61.9, 66.8, 78.1, 94.3, 126.5, 127.9, 128.6, 128.8, 128.9, 133.4, 136.7, (missing carbonyl).



# **CRYSTAL DATA for**

**C<sub>21</sub>H<sub>21</sub>NO<sub>4</sub>**

<b>Fw</b>	<b>351.4</b>
<b>a (Å)</b>	<b>26.888(5)</b>
<b>b (Å)</b>	<b>6.192(1)</b>
<b>c (Å)</b>	<b>24.739(6)</b>
<b>α (°)</b>	<b>90</b>
<b>β (°)</b>	<b>116.31(2)</b>
<b>γ (°)</b>	<b>90</b>
<b>V (Å<sup>3</sup>)</b>	<b>3691(1)</b>
<b>Z</b>	<b>8</b>
<b>Crystal system</b>	<b>monoclinic</b>
<b>Space group</b>	<b>C 2/c</b>
<b>Linear absorption coefficient μ (cm<sup>-1</sup>)</b>	<b>0.8</b>
<b>Density ρ (g.cm<sup>-3</sup>)</b>	<b>1.26</b>
<b>Diffractometer</b>	<b>CAD4 Enraf-Nonius</b>
<b>Radiation</b>	<b>MoKα ( λ = 0.71069 Å )</b>
<b>Scan type</b>	<b>ω /2θ</b>
<b>Scan range (°)</b>	<b>0.8 + 0.345 tgθ</b>
<b>θ Limits (°)</b>	<b>1 - 25</b>
<b>Temperature of measurement</b>	<b>295K</b>
<b>Octants collected</b>	<b>-31, 28; 0, 7; 0, 29</b>
<b>Decay %</b>	<b>7</b>
<b>Nb of data collected</b>	<b>3673</b>
<b>Nb of unique data collected</b>	<b>3255 (R<sub>int</sub> = 0.01)</b>
<b>Nb of unique data used for refinement</b>	<b>2098 (F<sub>o</sub>)<sup>2</sup> &gt; 3σ( F<sub>o</sub>)<sup>2</sup></b>

$R = \Sigma  F_o  -  F_c   / \Sigma F_o $	0.0427
$Rw^* = [\Sigma w( F_o  -  F_c )^2 / \Sigma w F_o ^2]^{1/2}$	0.0534
S	1.11
Extinction parameter	513
Nb of variables	237
$\Delta\rho_{min}$ (e.Å <sup>-3</sup> )	-0.18
$\Delta\rho_{max}$ (e.Å <sup>-3</sup> )	0.21

\*  $w = w'[1 - ((|F_o| - |F_c|)/6.\sigma(F_o))^2]^2$  with  $w' = 1/\Sigma_r A_r T_r(X)$  with 3 coefficients 5.03, 0.487 and 3.69 for a Chebyshev Series, for which X is  $F_c/F_c(max)$

Table 1. Fractional parameters for C<sub>21</sub>H<sub>21</sub>NO<sub>4</sub>

Atom	x/a	y/b	z/c	U(eq)
C(1)	0.06816(9)	-0.3747(4)	0.2939(1)	0.0545
C(2)	0.07779(8)	-0.2138(3)	0.32249(9)	0.0435
C(3)	0.08517(8)	-0.0127(3)	0.35679(9)	0.0414
C(4)	0.14151(8)	0.0034(3)	0.41247(9)	0.0400
C(5)	0.19278(8)	-0.0094(3)	0.40005(9)	0.0426
C(6)	0.18619(8)	0.0493(3)	0.33843(9)	0.0419
C(7)	0.1724(1)	0.2605(4)	0.3178(1)	0.0526
C(8)	0.1662(1)	0.3177(4)	0.2611(1)	0.0656
C(9)	0.1756(1)	0.1683(5)	0.2253(1)	0.0689
C(10)	0.1912(1)	-0.0388(5)	0.2467(1)	0.0685
C(11)	0.1965(1)	-0.0973(4)	0.3027(1)	0.0589
O(12)	0.04369(6)	0.0014(2)	0.37808(7)	0.0490
C(13)	-0.00945(9)	0.0569(4)	0.3329(1)	0.0532
O(14)	-0.01347(7)	0.2748(3)	0.31785(8)	0.0601
C(15)	-0.0102(2)	0.4104(5)	0.3648(2)	0.0835
N(16)	0.15261(7)	-0.1797(3)	0.45262(7)	0.0436
C(17)	0.1248(1)	-0.2249(4)	0.4900(1)	0.0542
C(18)	0.12452(9)	-0.0328(4)	0.52719(9)	0.0476
C(19)	0.0757(1)	0.0448(6)	0.5237(1)	0.0710
C(20)	0.0742(1)	0.2210(6)	0.5572(2)	0.0816
C(21)	0.1224(1)	0.3239(5)	0.5941(1)	0.0700
C(22)	0.1713(1)	0.2499(5)	0.5978(1)	0.0667
C(23)	0.1725(1)	0.0728(5)	0.5647(1)	0.0593
O(24)	0.21004(6)	-0.2337(2)	0.41239(7)	0.0479
C(25)	0.18770(9)	-0.3209(3)	0.44671(9)	0.0437
O(26)	0.19976(7)	-0.5013(3)	0.46752(7)	0.0574

Table 2. Anisotropic thermal parameters for C<sub>21</sub>H<sub>21</sub>NO<sub>4</sub>

Atom	U(11)	U(22)	U(33)	U(23)	U(13)	U(12)
C(1)	0.049(1)	0.050(1)	0.060(1)	-0.010(1)	0.014(1)	0.004(1)
C(2)	0.036(1)	0.049(1)	0.042(1)	-0.000(1)	0.0125(9)	0.0048(9)
C(3)	0.041(1)	0.042(1)	0.042(1)	-0.0001(9)	0.0191(9)	0.0048(9)
C(4)	0.044(1)	0.039(1)	0.039(1)	-0.0028(9)	0.0189(9)	0.0049(9)
C(5)	0.041(1)	0.041(1)	0.044(1)	-0.0081(9)	0.0145(9)	0.0022(9)
C(6)	0.035(1)	0.047(1)	0.046(1)	-0.0071(9)	0.0190(9)	-0.0027(9)
C(7)	0.056(1)	0.049(1)	0.056(1)	-0.005(1)	0.027(1)	0.003(1)
C(8)	0.078(2)	0.060(1)	0.066(2)	0.009(1)	0.036(1)	0.002(1)
C(9)	0.086(2)	0.079(2)	0.059(1)	0.002(1)	0.041(1)	-0.005(2)
C(10)	0.102(2)	0.074(2)	0.064(2)	-0.013(1)	0.053(2)	0.000(2)
C(11)	0.076(2)	0.051(1)	0.065(2)	-0.008(1)	0.040(1)	0.002(1)
O(12)	0.0437(8)	0.0588(9)	0.0517(8)	0.0042(7)	0.0243(7)	0.0096(7)
C(13)	0.040(1)	0.053(1)	0.071(2)	-0.002(1)	0.024(1)	0.002(1)
O(14)	0.065(1)	0.056(1)	0.072(1)	0.0113(8)	0.0356(9)	0.0186(8)
C(15)	0.118(3)	0.062(2)	0.110(2)	-0.006(2)	0.069(2)	0.017(2)
N(16)	0.050(1)	0.0427(9)	0.0377(9)	0.0008(8)	0.0173(8)	0.0071(8)
C(17)	0.061(1)	0.052(1)	0.050(1)	0.006(1)	0.024(1)	-0.001(1)
C(18)	0.050(1)	0.062(1)	0.038(1)	0.004(1)	0.022(1)	-0.002(1)
C(19)	0.049(1)	0.120(3)	0.082(2)	-0.041(2)	0.033(1)	-0.016(2)
C(20)	0.059(2)	0.142(3)	0.100(2)	-0.047(2)	0.041(2)	0.003(2)
C(21)	0.079(2)	0.086(2)	0.068(2)	-0.024(2)	0.043(2)	-0.007(2)
C(22)	0.061(2)	0.097(2)	0.058(2)	-0.022(1)	0.028(1)	-0.018(1)
C(23)	0.045(1)	0.086(2)	0.055(1)	-0.010(1)	0.021(1)	0.001(1)
O(24)	0.0482(8)	0.0463(8)	0.0512(9)	0.0002(7)	0.0199(7)	0.0124(7)
C(25)	0.046(1)	0.044(1)	0.035(1)	-0.0044(9)	0.0066(9)	0.005(1)
O(26)	0.072(1)	0.0446(9)	0.0534(9)	0.0038(7)	0.0147(8)	0.0138(8)

Table 3. Interatomic distances (Å) for C<sub>21</sub>H<sub>21</sub>NO<sub>4</sub>

C(1) - C(2)	1.182(3)	C(2) - C(3)	1.470(3)
C(3) - C(4)	1.534(3)	C(3) - O(12)	1.432(2)
C(4) - C(5)	1.542(3)	C(4) - N(16)	1.449(3)
C(5) - C(6)	1.499(3)	C(5) - O(24)	1.453(2)
C(6) - C(7)	1.393(3)	C(6) - C(11)	1.379(3)
C(7) - C(8)	1.382(3)	C(8) - C(9)	1.380(4)
C(9) - C(10)	1.379(4)	C(10) - C(11)	1.377(4)
O(12) - C(13)	1.412(3)	C(13) - O(14)	1.391(3)
O(14) - C(15)	1.404(3)	N(16) - C(17)	1.451(3)
N(16) - C(25)	1.341(3)	C(17) - C(18)	1.506(3)
C(18) - C(19)	1.365(3)	C(18) - C(23)	1.375(3)
C(19) - C(20)	1.381(4)	C(20) - C(21)	1.367(4)
C(21) - C(22)	1.358(4)	C(22) - C(23)	1.377(4)
O(24) - C(25)	1.351(3)	C(25) - O(26)	1.213(3)



Table 4: Bond angles (°) for C<sub>21</sub>H<sub>21</sub>NO<sub>4</sub>

C(1) - C(2) - C(3)	175.6(2)	C(2) - C(3) - C(4)	113.6(2)
C(2) - C(3) - O(12)	109.7(2)	C(4) - C(3) - O(12)	106.6(2)
C(3) - C(4) - C(5)	115.6(2)	C(3) - C(4) - N(16)	112.7(2)
C(5) - C(4) - N(16)	99.5(2)	C(4) - C(5) - C(6)	118.5(2)
C(4) - C(5) - O(24)	103.8(2)	C(6) - C(5) - O(24)	109.2(2)
C(5) - C(6) - C(7)	119.5(2)	C(5) - C(6) - C(11)	121.7(2)
C(7) - C(6) - C(11)	118.7(2)	C(6) - C(7) - C(8)	120.4(2)
C(7) - C(8) - C(9)	120.3(2)	C(8) - C(9) - C(10)	119.2(2)
C(9) - C(10) - C(11)	120.6(2)	C(6) - C(11) - C(10)	120.7(2)
C(3) - O(12) - C(13)	113.8(2)	O(12) - C(13) - O(14)	112.3(2)
C(13) - O(14) - C(15)	112.9(2)	C(4) - N(16) - C(17)	125.4(2)
C(4) - N(16) - C(25)	112.1(2)	C(17) - N(16) - C(25)	122.0(2)
N(16) - C(17) - C(18)	112.4(2)	C(17) - C(18) - C(19)	120.3(2)
C(17) - C(18) - C(23)	122.0(2)	C(19) - C(18) - C(23)	117.6(2)
C(18) - C(19) - C(20)	121.5(3)	C(19) - C(20) - C(21)	119.9(3)
C(20) - C(21) - C(22)	119.3(3)	C(21) - C(22) - C(23)	120.4(2)
C(18) - C(23) - C(22)	121.2(2)	C(5) - O(24) - C(25)	108.9(2)
N(16) - C(25) - O(24)	109.8(2)	N(16) - C(25) - O(26)	128.5(2)
O(24) - C(25) - O(26)	121.7(2)		