Acta Crystallographica Section E
Structure Reports Online
ISSN 1600-5368

catena-Poly[[aqua(*N*,*N*-dimethylformamide-κO)strontium(II)]-bis[μ-2-(4-carboxyphenoxy)propionato-$\kappa^3 O,O':O'$]]

Li-Li Kong,[a] Shan Gao,[a] Li-Hua Huo[a] and Seik Weng Ng[b]*

[a]School of Chemistry and Materials Science, Heilongjiang University, Harbin 150080, People's Republic of China, and [b]Department of Chemistry, University of Malaya, 50603 Kuala Lumpur, Malaysia
Correspondence e-mail: seikweng@um.edu.my

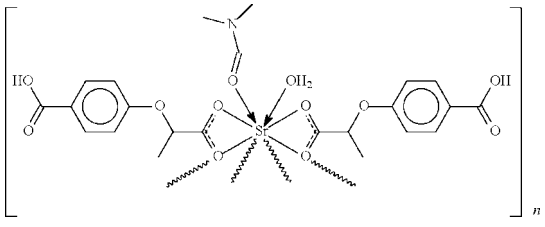
Received 17 October 2007; accepted 21 October 2007

Key indicators: single-crystal X-ray study; T = 295 K; mean σ(C–C) = 0.006 Å; disorder in main residue; R factor = 0.059; wR factor = 0.183; data-to-parameter ratio = 15.2.

In the crystal structure of the polymeric title compound, $[Sr(C_{10}H_9O_5)_2(C_3H_7NO)(H_2O)]_n$, the Sr^{II} atom is O,O'-chelated by the carboxylate end of two 2-(4-carboxyphenoxy)propionate monoanions, and is coordinated by a water molecule and a dimethylformamide (DMF) molecule. It also interacts with the carboxylate O atom of two adjacent monoanions; these bonds give rise to a zigzag chain along the *a* axis. Meanwhile, the carboxyl $-CO_2H$ end of the anion interacts with an acceptor site [O···O = 2.629 (4) Å]; this interaction and hydrogen bonding involving the water molecule [O···O = 3.191 (5) Å] give rise to a three-dimensional network. The eight coordinating O atoms comprise an irregular polyhedron around the metal atom. The Sr atom, the water O atom, and the N and O atoms of the DMF molecule lie on a special position of site symmetry *m*; the DMF molecule is disordered about the mirror plane.

Related literature

For transition metal derivatives of 2-[4-(carboxyphenoxy)propionic acid, see: Deng *et al.* (2007*a*,*b*); Xiao *et al.* (2007).



Experimental

Crystal data

$[Sr(C_{10}H_9O_5)_2(C_3H_7NO)(H_2O)]$
M_r = 597.08
Orthorhombic, *Pnma*
a = 7.8303 (3) Å
b = 23.973 (1) Å
c = 13.3136 (5) Å
V = 2499.17 (17) Å^3
Z = 4
Mo $K\alpha$ radiation
μ = 2.22 mm^{-1}
T = 295 (2) K
0.30 × 0.24 × 0.18 mm

Data collection

Rigaku R-AXIS RAPID diffractometer
Absorption correction: multi-scan (*ABSCOR*; Higashi, 1995)
T_{min} = 0.443, T_{max} = 0.690
36357 measured reflections
2917 independent reflections
2218 reflections with $I > 2\sigma(I)$
R_{int} = 0.087

Refinement

$R[F^2 > 2\sigma(F^2)]$ = 0.059
$wR(F^2)$ = 0.183
S = 1.17
2917 reflections
192 parameters
H-atom parameters constrained
$\Delta\rho_{max}$ = 2.43 e Å^{-3}
$\Delta\rho_{min}$ = −1.17 e Å^{-3}

Table 1
Hydrogen-bond geometry (Å, °).

D—H···A	D—H	H···A	D···A	D—H···A
O5—H5O···O1^{i}	0.82	1.81	2.629 (4)	174
O1W—H1W···O4^{ii}	0.82	2.37	3.191 (5)	178

Symmetry codes: (i) $-x+\frac{1}{2}, -y+1, z-\frac{1}{2}$; (ii) $-x+\frac{1}{2}, y+\frac{1}{2}, z+\frac{1}{2}$.

Data collection: *RAPID-AUTO* (Rigaku, 1998); cell refinement: *RAPID-AUTO*; data reduction: *CrystalStructure* (Rigaku/MSC, 2002); program(s) used to solve structure: *SHELXS97* (Sheldrick, 1997); program(s) used to refine structure: *SHELXL97* (Sheldrick, 1997); molecular graphics: *X-SEED* (Barbour, 2001); software used to prepare material for publication: *publCIF* (Westrip, 2007).

The authors thank the Heilongjiang Province Natural Science Foundation (grant No. B200501), the Scientific Fund for Remarkable Teachers of Heilongjiang Province (grant No. 1054 G036), Heilongjiang University and the University of Malaya for supporting this work.

Supplementary data and figures for this paper are available from the IUCr electronic archives (Reference: CI2486).

References

Barbour, L. J. (2001). *J. Supramol. Chem.* **1**, 189–191.
Deng, Z.-P., Gao, S. & Chen, P.-G. (2007*a*). *Acta Cryst.* E**63**, m296–m298.
Deng, Z.-P., Gao, S. & Chen, P.-G. (2007*b*). *Acta Cryst.* E**63**, m553–m554.
Higashi, T. (1995). *ABSCOR*. Rigaku Corporation, Tokyo, Japan.
Rigaku (1998). *RAPID-AUTO*. Rigaku Corporation, Tokyo, Japan.
Rigaku/MSC (2002). *CrystalStructure*. Rigaku/MSC, The Woodlands, Texas, USA.
Sheldrick, G. M. (1997). *SHELXL97* and *SHELXS97*. University of Göttingen, Germany.
Westrip, S. P. (2007). *publCIF*. In preparation.
Xiao, Y.-H., Kong, L.-L. & Gao, S. (2007). *Acta Cryst.* E**63**, m1587–m1588.

supplementary materials

Acta Cryst. (2007). E**63**, m2849 [**doi:10.1107/S1600536807052166**]

catena-Poly[[aqua(*N*,*N*-dimethylformamide-*κO*)strontium(II)]-bis[*μ*-2-(4-carboxyphenoxy)propionato-$\kappa^3 O,O':O'$]]

L.-L. Kong, S. Gao, L.-H. Huo and S. W. Ng

Comment

This report continues previous studies on the transition metal derivatives of 2-[4-carboxyaltophenoxy]propionic acid (Deng *et al.*, 2007*a*,b; Xiao *et al.*, 2007). The studies are extended to the main-group metal derivatives. In the present strontium compound (Fig. 1), the metal shows irregular eight-coordination (Fig. 2).

Experimental

A solution of strontium carbonate (1 mmol) was added to a solution of 2-(4-carboxylatophenoxy)propionic acid (1 mmol) in DMF. The mixture was filtered and colourless were isolated after several days.

Refinement

Carbon- and oxygen-bound H atoms were placed in calculated positions [C—H = 0.93–0.97 Å and U_{iso}(H) = 1.2–1.5U_{eq}(C); O–H = 0.82 Å and U_{iso}(H) = 1.5U_{eq}(O)], and were included in the refinement in the riding-model approximation. A rotating group model was used for the methyl and hydroxyl groups. The final difference Fourier map had large peaks/holes in the vicinity of the strontium atom.

Figures

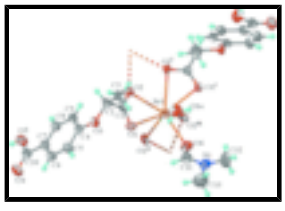


Fig. 1. Part of the polymeric structure of the title compound, showing 50% probability displacement ellipsoids. H atoms are shown as small spheres of arbitrary radii. Symmetry codes: (i) *x*, 3/2 − *y*, *z*; (ii) 1/2 + *x*, 3/2 − *y*, 1/2 − *z*; (iii) 1/2 + *x*, *y*, 1/2 − *z*.

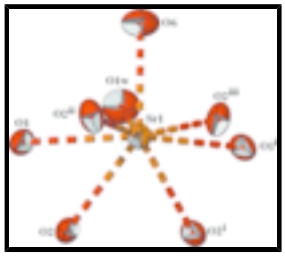


Fig. 2. Irregular eight-coordinate geometry of Sr.

catena-Poly[[aqua(_N_,_N_-dimethylformamide-κ_O_)strontium(II)]- bis[μ-2-(4-carboxyphenoxy)propionato-$\kappa^3 O,O':O'$]]

Crystal data

$[Sr(C_{10}H_9O_5)_2(C_3H_7NO)(H_2O)]$	F_{000} = 1224
M_r = 597.08	D_x = 1.587 Mg m^{-3}
Orthorhombic, *Pnma*	Mo *K*α radiation λ = 0.71073 Å
Hall symbol: -P 2ac 2n	Cell parameters from 21767 reflections
a = 7.8303 (3) Å	θ = 3.0–27.5º
b = 23.973 (1) Å	μ = 2.22 mm^{-1}
c = 13.3136 (5) Å	*T* = 295 (2) K
V = 2499.17 (17) Å^3	Prism, colourless
Z = 4	0.30 × 0.24 × 0.18 mm

Data collection

Rigaku R-AXIS RAPID diffractometer	2917 independent reflections
Radiation source: fine-focus sealed tube	2218 reflections with $I > 2\sigma(I)$
Monochromator: graphite	R_{int} = 0.087
Detector resolution: 10.000 pixels mm^{-1}	θ_{max} = 27.5º
T = 295(2) K	θ_{min} = 3.0º
ω scans	*h* = −10→9
Absorption correction: multi-scan (ABSCOR; Higashi, 1995)	*k* = −31→31
T_{min} = 0.443, T_{max} = 0.690	*l* = −17→17
36357 measured reflections	

Refinement

Refinement on F^2	Hydrogen site location: inferred from neighbouring sites
Least-squares matrix: full	H-atom parameters constrained
$R[F^2 > 2\sigma(F^2)]$ = 0.059	$w = 1/[\sigma^2(F_o^2) + (0.1071P)^2 + 0.6055P]$ where $P = (F_o^2 + 2F_c^2)/3$
$wR(F^2)$ = 0.183	$(\Delta/\sigma)_{max}$ = 0.001
S = 1.17	$\Delta\rho_{max}$ = 2.43 e Å^{-3}
2917 reflections	$\Delta\rho_{min}$ = −1.17 e Å^{-3}
192 parameters	Extinction correction: SHELXL97 (Sheldrick, 1997), $Fc^*=kFc[1+0.001xFc^2\lambda^3/\sin(2\theta)]^{-1/4}$
Primary atom site location: structure-invariant direct methods	Extinction coefficient: 0.009 (2)
Secondary atom site location: difference Fourier map	

Fractional atomic coordinates and isotropic or equivalent isotropic displacement parameters (Å^2)

	x	*y*	*z*	U_{iso}*/U_{eq}	Occ. (<1)
Sr1	0.29520 (6)	0.7500	0.32490 (4)	0.0362 (3)	
O1	0.1965 (3)	0.64729 (13)	0.3671 (3)	0.0451 (7)	
O2	0.0140 (4)	0.69144 (12)	0.2698 (2)	0.0495 (8)	
O3	−0.0257 (4)	0.55897 (11)	0.3874 (2)	0.0433 (7)	
O4	0.2868 (5)	0.36228 (16)	0.1218 (3)	0.0652 (10)	
O5	0.1929 (4)	0.42171 (16)	0.0062 (3)	0.0608 (10)	
H5o	0.2231	0.4013	−0.0400	0.091*	
O6	0.5137 (6)	0.7500	0.4629 (4)	0.0636 (13)	
O1W	0.1315 (8)	0.7500	0.5024 (4)	0.0707 (14)	
H1W	0.1512	0.7793	0.5320	0.106*	
N1	0.5613 (8)	0.7500	0.6316 (4)	0.0585 (15)	
C1	0.0504 (5)	0.65244 (17)	0.3291 (3)	0.0371 (9)	
C2	−0.0920 (5)	0.61218 (17)	0.3582 (3)	0.0425 (9)	
H2	−0.1719	0.6077	0.3021	0.051*	
C3	−0.1852 (6)	0.6352 (2)	0.4494 (4)	0.0587 (13)	
H3A	−0.2794	0.6113	0.4658	0.088*	
H3B	−0.2270	0.6720	0.4346	0.088*	
H3C	−0.1080	0.6370	0.5053	0.088*	
C4	0.0337 (5)	0.52473 (17)	0.3125 (3)	0.0402 (9)	
C5	0.1010 (6)	0.47397 (18)	0.3454 (3)	0.0492 (10)	
H5	0.1054	0.4658	0.4136	0.059*	
C6	0.1603 (6)	0.43628 (18)	0.2766 (4)	0.0501 (11)	
H6	0.2052	0.4025	0.2988	0.060*	
C7	0.1548 (6)	0.44757 (19)	0.1737 (3)	0.0449 (10)	
C8	0.0878 (6)	0.49822 (18)	0.1425 (4)	0.0456 (9)	
H8	0.0829	0.5063	0.0742	0.055*	
C9	0.0280 (6)	0.53707 (18)	0.2114 (4)	0.0448 (10)	
H9	−0.0155	0.5711	0.1896	0.054*	
C10	0.2186 (5)	0.4064 (2)	0.1001 (4)	0.0479 (10)	
C11	0.5191 (12)	0.7256 (4)	0.5421 (8)	0.059 (2)	0.50
H11	0.4927	0.6878	0.5423	0.071*	0.50
C12	0.604 (2)	0.8030 (6)	0.6455 (10)	0.083 (4)	0.50
H12A	0.5590	0.8252	0.5916	0.124*	0.50
H12B	0.7263	0.8063	0.6466	0.124*	0.50
H12C	0.5582	0.8159	0.7081	0.124*	0.50
C13	0.5730 (19)	0.7093 (6)	0.7196 (10)	0.087 (4)	0.50
H13A	0.4955	0.7207	0.7716	0.130*	0.50
H13B	0.6875	0.7091	0.7454	0.130*	0.50
H13C	0.5434	0.6725	0.6971	0.130*	0.50

Atomic displacement parameters (Å^2)

	U^{11}	U^{22}	U^{33}	U^{12}	U^{13}	U^{23}
Sr1	0.0357 (3)	0.0334 (3)	0.0396 (4)	0.000	0.0025 (2)	0.000

O1	0.0406 (16)	0.0403 (16)	0.0543 (19)	−0.0014 (11)	−0.0037 (12)	0.0109 (15)
O2	0.0512 (16)	0.0366 (16)	0.0608 (19)	−0.0029 (13)	−0.0145 (15)	0.0115 (14)
O3	0.0521 (16)	0.0323 (14)	0.0454 (16)	0.0016 (12)	0.0046 (13)	0.0018 (12)
O4	0.084 (3)	0.048 (2)	0.064 (2)	0.0150 (17)	0.0024 (18)	−0.0038 (18)
O5	0.076 (2)	0.058 (2)	0.048 (2)	0.0189 (17)	0.0067 (16)	−0.0077 (16)
O6	0.057 (3)	0.086 (4)	0.047 (3)	0.000	−0.008 (2)	0.000
O1W	0.071 (3)	0.082 (4)	0.058 (3)	0.000	0.010 (3)	0.000
N1	0.057 (3)	0.071 (4)	0.048 (3)	0.000	−0.006 (3)	0.000
C1	0.040 (2)	0.0340 (19)	0.037 (2)	0.0033 (16)	0.0008 (16)	−0.0024 (15)
C2	0.043 (2)	0.0330 (19)	0.051 (2)	0.0018 (17)	0.0028 (19)	0.0018 (17)
C3	0.062 (3)	0.041 (2)	0.073 (3)	0.003 (2)	0.019 (2)	0.001 (2)
C4	0.041 (2)	0.032 (2)	0.047 (2)	−0.0040 (17)	0.0019 (17)	−0.0019 (16)
C5	0.060 (3)	0.041 (2)	0.047 (2)	0.003 (2)	0.003 (2)	0.0070 (19)
C6	0.057 (2)	0.036 (2)	0.057 (3)	0.005 (2)	0.000 (2)	0.0029 (19)
C7	0.043 (2)	0.040 (2)	0.052 (3)	−0.0024 (19)	0.0035 (18)	−0.0019 (18)
C8	0.050 (2)	0.042 (2)	0.045 (2)	−0.0001 (19)	0.0000 (19)	0.0004 (18)
C9	0.051 (2)	0.034 (2)	0.050 (2)	0.0007 (18)	−0.0030 (19)	0.0026 (19)
C10	0.049 (2)	0.042 (2)	0.052 (3)	−0.0007 (19)	0.0019 (19)	−0.002 (2)
C11	0.062 (5)	0.049 (5)	0.065 (6)	−0.003 (4)	−0.001 (5)	0.002 (5)
C12	0.112 (11)	0.068 (8)	0.069 (8)	−0.021 (7)	−0.009 (8)	−0.009 (7)
C13	0.103 (10)	0.094 (10)	0.063 (7)	−0.009 (8)	−0.005 (7)	0.033 (7)

Geometric parameters (Å, °)

Sr1—O1	2.641 (3)	C2—H2	0.98
Sr1—O1^{i}	2.641 (3)	C3—H3A	0.96
Sr1—O2	2.712 (3)	C3—H3B	0.96
Sr1—O2^{ii}	2.549 (3)	C3—H3C	0.96
Sr1—O2^{iii}	2.549 (3)	C4—C9	1.379 (6)
Sr1—O2^{i}	2.712 (3)	C4—C5	1.396 (6)
Sr1—O6	2.511 (5)	C5—C6	1.368 (6)
Sr1—O1W	2.688 (5)	C5—H5	0.93
O1—C1	1.257 (5)	C6—C7	1.397 (6)
O2—C1	1.257 (5)	C6—H6	0.93
O3—C4	1.373 (5)	C7—C8	1.387 (6)
O3—C2	1.431 (5)	C7—C10	1.478 (6)
O4—C10	1.218 (6)	C8—C9	1.389 (6)
O5—C10	1.319 (6)	C8—H8	0.93
O5—H5o	0.82	C9—H9	0.93
O6—C11	1.206 (11)	C11—H11	0.93
O1W—H1W	0.82	C12—H12A	0.96
N1—C12	1.327 (13)	C12—H12B	0.96
N1—C11	1.368 (11)	C12—H12C	0.96
N1—C13	1.527 (12)	C13—H13A	0.96
C1—C2	1.525 (6)	C13—H13B	0.96
C2—C3	1.521 (6)	C13—H13C	0.96
O6—Sr1—O2^{ii}	84.48 (12)	O3—C2—C3	106.3 (4)
O6—Sr1—O2^{iii}	84.48 (12)	O3—C2—C1	111.6 (3)

O2^{ii}—Sr1—O2^{iii}	66.84 (13)	C3—C2—C1	108.9 (3)
O6—Sr1—O1^{i}	92.50 (8)	O3—C2—H2	110.0
O2^{ii}—Sr1—O1^{i}	77.79 (10)	C3—C2—H2	110.0
O2^{iii}—Sr1—O1^{i}	144.64 (10)	C1—C2—H2	110.0
O6—Sr1—O1	92.50 (8)	C2—C3—H3A	109.5
O2^{ii}—Sr1—O1	144.64 (10)	C2—C3—H3B	109.5
O2^{iii}—Sr1—O1	77.79 (10)	H3A—C3—H3B	109.5
O1^{i}—Sr1—O1	137.57 (14)	C2—C3—H3C	109.5
O6—Sr1—O1W	71.44 (18)	H3A—C3—H3C	109.5
O2^{ii}—Sr1—O1W	139.05 (11)	H3B—C3—H3C	109.5
O2^{iii}—Sr1—O1W	139.05 (11)	O3—C4—C9	124.7 (4)
O1^{i}—Sr1—O1W	70.93 (8)	O3—C4—C5	114.9 (4)
O1—Sr1—O1W	70.93 (8)	C9—C4—C5	120.3 (4)
O6—Sr1—O2	138.70 (10)	C6—C5—C4	119.6 (4)
O2^{ii}—Sr1—O2	134.19 (4)	C6—C5—H5	120.2
O2^{iii}—Sr1—O2	97.29 (8)	C4—C5—H5	120.2
O1^{i}—Sr1—O2	107.61 (9)	C5—C6—C7	121.2 (4)
O1—Sr1—O2	48.52 (9)	C5—C6—H6	119.4
O1W—Sr1—O2	81.42 (14)	C7—C6—H6	119.4
O6—Sr1—O2^{i}	138.70 (10)	C8—C7—C6	118.4 (4)
O2^{ii}—Sr1—O2^{i}	97.29 (8)	C8—C7—C10	121.0 (4)
O2^{iii}—Sr1—O2^{i}	134.19 (4)	C6—C7—C10	120.7 (4)
O1^{i}—Sr1—O2^{i}	48.52 (9)	C7—C8—C9	121.1 (4)
O1—Sr1—O2^{i}	107.61 (9)	C7—C8—H8	119.4
O1W—Sr1—O2^{i}	81.42 (14)	C9—C8—H8	119.4
O2—Sr1—O2^{i}	62.34 (12)	C4—C9—C8	119.4 (4)
C1—O1—Sr1	95.1 (2)	C4—C9—H9	120.3
C1—O2—Sr1^{iv}	150.8 (3)	C8—C9—H9	120.3
C1—O2—Sr1	91.8 (2)	O4—C10—O5	122.3 (5)
Sr1^{iv}—O2—Sr1	113.24 (10)	O4—C10—C7	124.8 (5)
C4—O3—C2	117.3 (3)	O5—C10—C7	113.0 (4)
C10—O5—H5o	120.0	O6—C11—N1	124.3 (9)
C11—O6—Sr1	131.5 (5)	O6—C11—H11	117.9
Sr1—O1W—H1W	109.5	N1—C11—H11	117.9
C12—N1—C11	126.2 (9)	N1—C12—H12A	109.5
C12—N1—C13	119.4 (10)	N1—C12—H12B	109.5
C11—N1—C13	114.2 (8)	N1—C12—H12C	109.5
O2—C1—O1	122.2 (4)	N1—C13—H13A	109.5
O2—C1—C2	117.7 (4)	N1—C13—H13B	109.5
O1—C1—C2	120.1 (4)	N1—C13—H13C	109.5
O6—Sr1—O1—C1	156.3 (3)	Sr1—O1—C1—O2	16.4 (4)
O2^{ii}—Sr1—O1—C1	−119.7 (3)	Sr1—O1—C1—C2	−160.7 (3)
O2^{iii}—Sr1—O1—C1	−119.9 (3)	C4—O3—C2—C3	167.1 (4)
O1^{i}—Sr1—O1—C1	59.8 (4)	C4—O3—C2—C1	−74.3 (4)

O1W—Sr1—O1—C1	86.9 (3)	O2—C1—C2—O3	154.9 (4)
O2—Sr1—O1—C1	−8.5 (2)	O1—C1—C2—O3	−27.9 (5)
$O2^{i}$—Sr1—O1—C1	12.9 (3)	O2—C1—C2—C3	−88.1 (5)
O6—Sr1—O2—C1	−14.9 (3)	O1—C1—C2—C3	89.2 (5)
$O2^{ii}$—Sr1—O2—C1	139.7 (2)	C2—O3—C4—C9	−2.6 (6)
$O2^{iii}$—Sr1—O2—C1	75.1 (2)	C2—O3—C4—C5	178.4 (4)
$O1^{i}$—Sr1—O2—C1	−130.4 (2)	O3—C4—C5—C6	178.6 (4)
O1—Sr1—O2—C1	8.5 (2)	C9—C4—C5—C6	−0.4 (7)
O1W—Sr1—O2—C1	−63.6 (2)	C4—C5—C6—C7	−0.1 (7)
$O2^{i}$—Sr1—O2—C1	−148.4 (2)	C5—C6—C7—C8	0.2 (7)
O6—Sr1—O2—$Sr1^{iv}$	149.72 (15)	C5—C6—C7—C10	−179.7 (4)
$O2^{ii}$—Sr1—O2—$Sr1^{iv}$	−55.74 (17)	C6—C7—C8—C9	0.2 (7)
$O2^{iii}$—Sr1—O2—$Sr1^{iv}$	−120.36 (18)	C10—C7—C8—C9	−179.9 (4)
$O1^{i}$—Sr1—O2—$Sr1^{iv}$	34.21 (16)	O3—C4—C9—C8	−178.1 (4)
O1—Sr1—O2—$Sr1^{iv}$	173.1 (2)	C5—C4—C9—C8	0.8 (6)
O1W—Sr1—O2—$Sr1^{iv}$	100.98 (14)	C7—C8—C9—C4	−0.7 (7)
$O2^{i}$—Sr1—O2—$Sr1^{iv}$	16.22 (16)	C8—C7—C10—O4	176.2 (4)
O1—Sr1—O6—C11	−28.6 (7)	C6—C7—C10—O4	−3.9 (7)
O1W—Sr1—O6—C11	40.3 (7)	C8—C7—C10—O5	−4.5 (6)
O2—Sr1—O6—C11	−11.3 (8)	C6—C7—C10—O5	175.4 (4)
Sr1—O2—C1—O1	−15.9 (4)	Sr1—O6—C11—N1	−133.9 (7)
$Sr1^{iv}$—O2—C1—C2	11.3 (8)	C12—N1—C11—O6	−0.8 (16)
Sr1—O2—C1—C2	161.2 (3)	C13—N1—C11—O6	−175.2 (10)

Symmetry codes: (i) *x*, −*y*+3/2, *z*; (ii) *x*+1/2, −*y*+3/2, −*z*+1/2; (iii) *x*+1/2, *y*, −*z*+1/2; (iv) *x*−1/2, *y*, −*z*+1/2.

Hydrogen-bond geometry (Å, °)

D—H···*A*	*D*—H	H···*A*	*D*···*A*	*D*—H···*A*
O5—H5O···$O1^{v}$	0.82	1.81	2.629 (4)	174
O1W—H1W···$O4^{vi}$	0.82	2.37	3.191 (5)	178

Symmetry codes: (v) −*x*+1/2, −*y*+1, *z*−1/2; (vi) −*x*+1/2, *y*+1/2, *z*+1/2.

Fig. 1

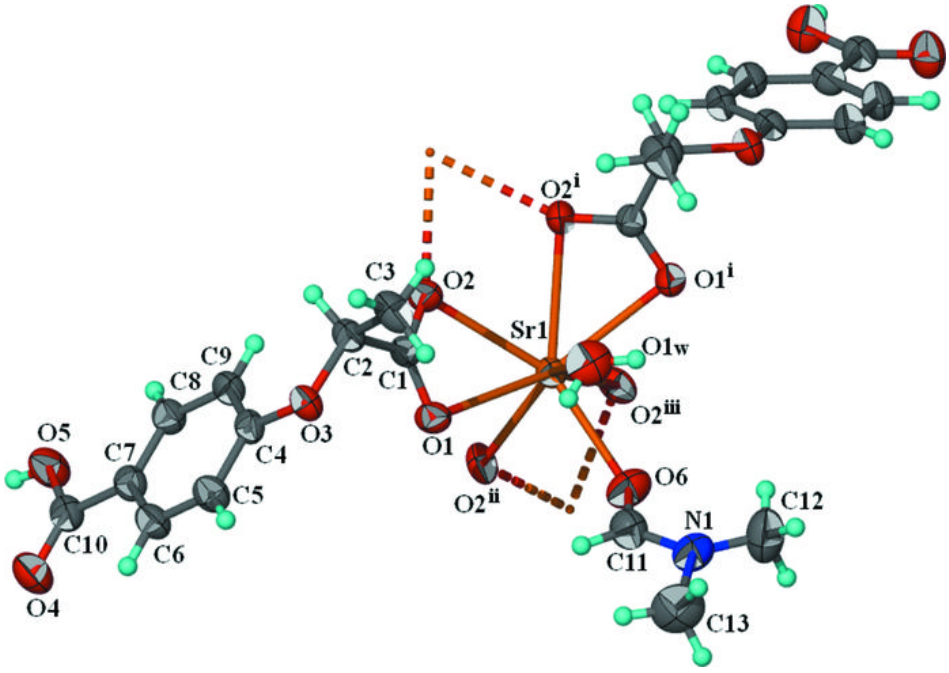

O2i
O1i
C3
O2
Sr1
O1w
C9
C8
C2
C1
O2iii
O5
C7
O3
O1
C4
O6
C5
O2ii
C12
N1
C10
C6
C11
O4
C13

Fig. 2