Full wwPDB X-ray Structure Validation Report ⓘ

Jul 8, 2025 – 01:35 pm BST

PDB ID	:	9GON / pdb_00009gon
Title	:	Crystal structure of DPP9 in complex with sulphostin
Authors	:	Sewald, L.; Tabak, W.W.A.; Fehr, L.; Zolg, S.; Najdzion, M.; Verhoef, C.J.A.; Podlesainski, D.; Geiss-Friedlander, R.; Lammens, A.; Kaschani, F.; Hellerschmied, D.; Huber, R.; Kaiser, M.
Deposited on	:	2024-09-05
Resolution	:	1.89 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

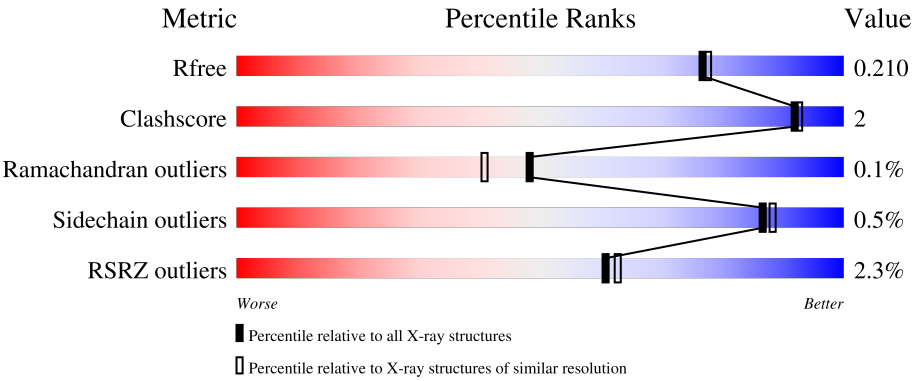
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.89 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	7293 (1.90-1.90)
Clashscore	180529	8090 (1.90-1.90)
Ramachandran outliers	177936	8022 (1.90-1.90)
Sidechain outliers	177891	8022 (1.90-1.90)
RSRZ outliers	164620	7292 (1.90-1.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	851	2% 94% 5%
1	B	851	% 94%
1	C	851	2% 96%
1	D	851	3% 94% 5%

2 Entry composition (i)

There are 8 unique types of molecules in this entry. The entry contains 30750 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Dipeptidyl peptidase 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	844	Total	C	N	O	S	113	27	0
			7024	4501	1199	1288	36			
1	B	840	Total	C	N	O	S	78	31	0
			7037	4512	1207	1283	35			
1	C	845	Total	C	N	O	S	84	26	0
			7027	4505	1199	1288	35			
1	D	843	Total	C	N	O	S	158	14	0
			6918	4440	1178	1267	33			

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	19	MET	-	initiating methionine	UNP Q86TI2
A	864	HIS	-	expression tag	UNP Q86TI2
A	865	HIS	-	expression tag	UNP Q86TI2
A	866	HIS	-	expression tag	UNP Q86TI2
A	867	HIS	-	expression tag	UNP Q86TI2
A	868	HIS	-	expression tag	UNP Q86TI2
A	869	HIS	-	expression tag	UNP Q86TI2
B	19	MET	-	initiating methionine	UNP Q86TI2
B	864	HIS	-	expression tag	UNP Q86TI2
B	865	HIS	-	expression tag	UNP Q86TI2
B	866	HIS	-	expression tag	UNP Q86TI2
B	867	HIS	-	expression tag	UNP Q86TI2
B	868	HIS	-	expression tag	UNP Q86TI2
B	869	HIS	-	expression tag	UNP Q86TI2
C	19	MET	-	initiating methionine	UNP Q86TI2
C	864	HIS	-	expression tag	UNP Q86TI2
C	865	HIS	-	expression tag	UNP Q86TI2
C	866	HIS	-	expression tag	UNP Q86TI2
C	867	HIS	-	expression tag	UNP Q86TI2
C	868	HIS	-	expression tag	UNP Q86TI2
C	869	HIS	-	expression tag	UNP Q86TI2

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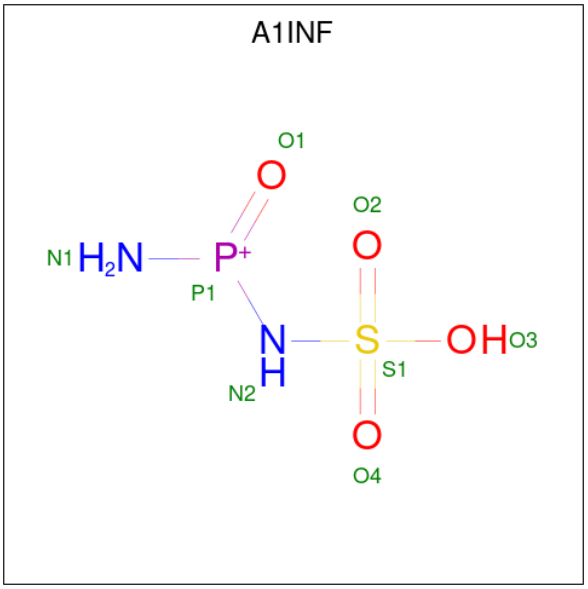
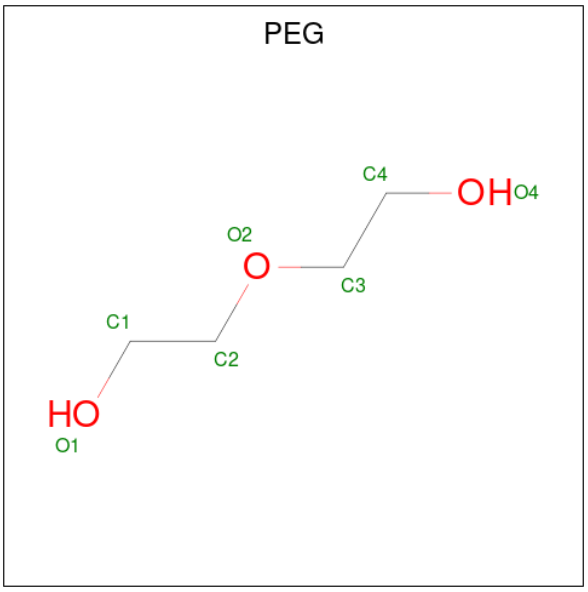
Chain	Residue	Modelled	Actual	Comment	Reference
D	19	MET	-	initiating methionine	UNP Q86TI2
D	864	HIS	-	expression tag	UNP Q86TI2
D	865	HIS	-	expression tag	UNP Q86TI2
D	866	HIS	-	expression tag	UNP Q86TI2
D	867	HIS	-	expression tag	UNP Q86TI2
D	868	HIS	-	expression tag	UNP Q86TI2
D	869	HIS	-	expression tag	UNP Q86TI2

- Molecule 2 is azanyl-oxidanylidene-(sulfoamino)phosphanium (CCD ID: A1INF) (formula: $H_4N_2O_4PS$) (labeled as "Ligand of Interest" by depositor).



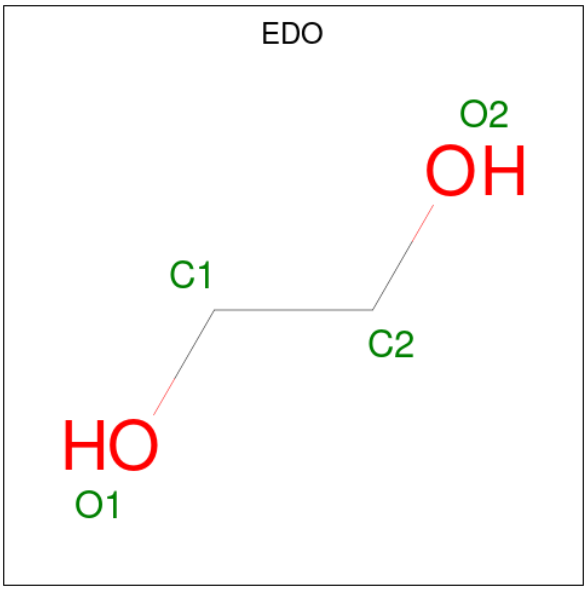
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	N	O	P	S	0	0
			8	2	4	1	1		
2	B	1	Total	N	O	P	S	0	0
			8	2	4	1	1		
2	C	1	Total	N	O	P	S	0	0
			8	2	4	1	1		
2	D	1	Total	N	O	P	S	0	0
			8	2	4	1	1		

- Molecule 3 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 7 4 3	0	0
3	B	1	Total C O 7 4 3	0	0
3	B	1	Total C O 7 4 3	0	0
3	D	1	Total C O 7 4 3	0	0

- Molecule 4 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	A	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	B	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	C	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0
4	D	1	Total C O 4 2 2	0	0

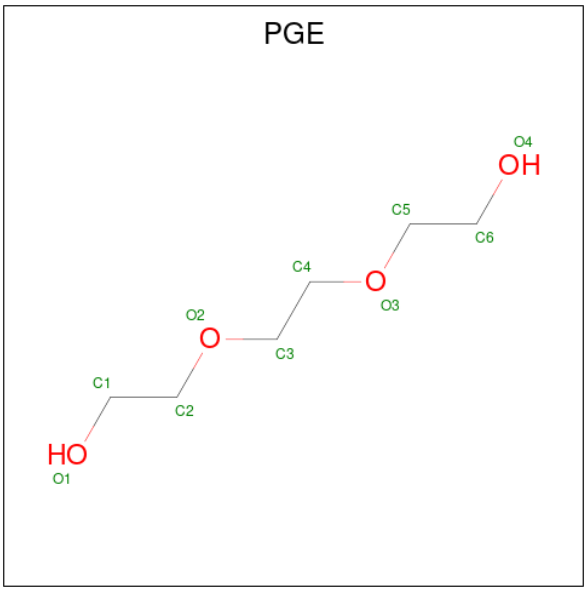
- Molecule 5 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	3	Total Cl 3 3	0	0
5	B	4	Total Cl 4 4	0	0
5	C	3	Total Cl 3 3	0	0
5	D	2	Total Cl 2 2	0	0

- Molecule 6 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total Na 1 1	0	0
6	B	1	Total Na 1 1	0	0
6	C	1	Total Na 1 1	0	0
6	D	2	Total Na 2 2	0	0

- Molecule 7 is TRIETHYLENE GLYCOL (CCD ID: PGE) (formula: $C_6H_{14}O_4$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	C	1	Total C O 10 6 4	0	0

- Molecule 8 is water.

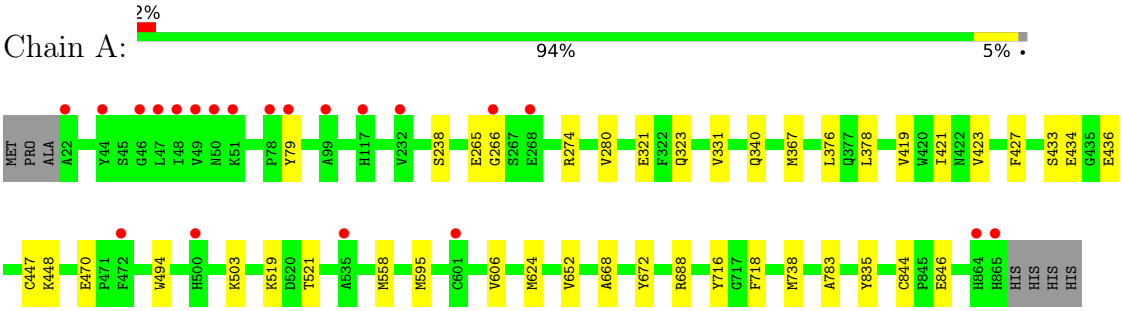
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	656	Total O 656 656	0	0
8	B	701	Total O 701 701	0	0
8	C	608	Total O 608 608	0	0
8	D	408	Total O 408 408	0	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

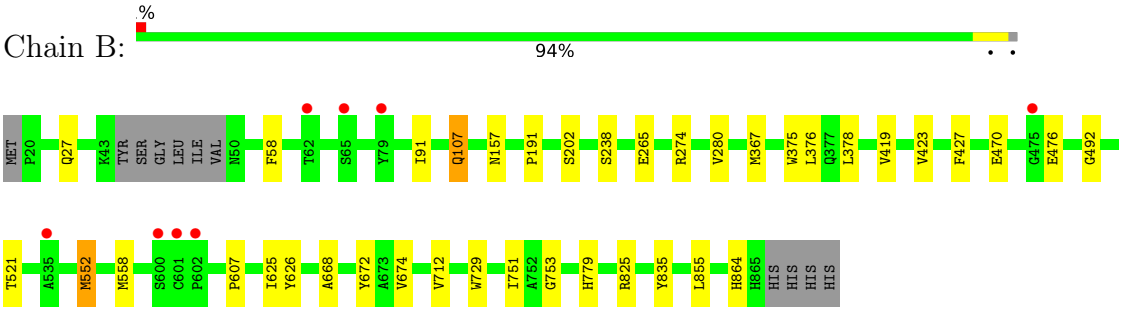
• Molecule 1: Dipeptidyl peptidase 9

Chain A:



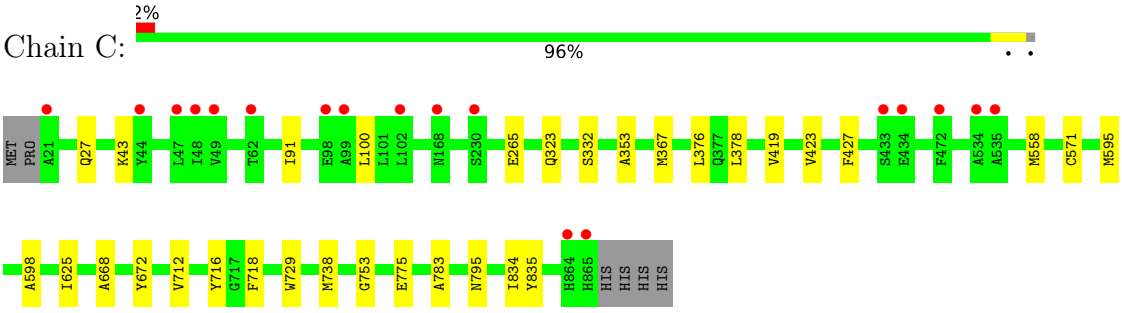
• Molecule 1: Dipeptidyl peptidase 9

Chain B:



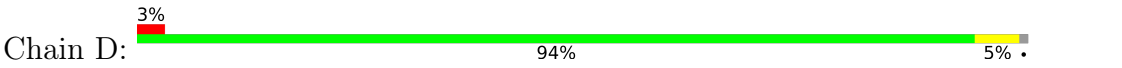
• Molecule 1: Dipeptidyl peptidase 9

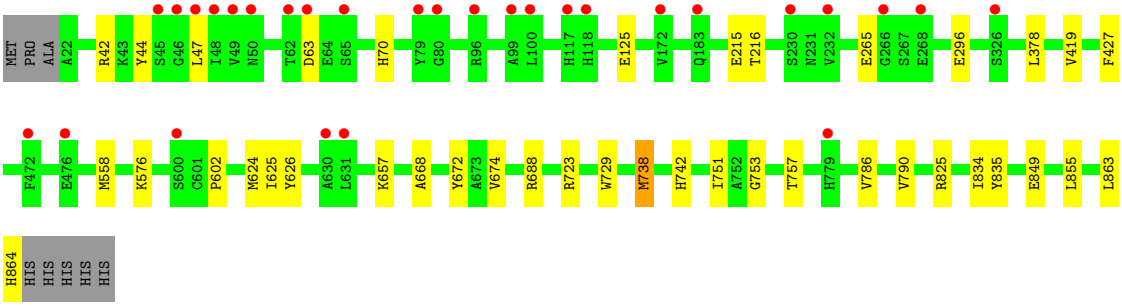
Chain C:



• Molecule 1: Dipeptidyl peptidase 9

Chain D:




MET PRO ALA A22 R42 K43 Y44 S45 G46 L47 I48 V49 N50 T62 D63 E64 S65 H70 Y79 G80 R96 A99 L100 H117 H118 E125 V172 Q183 E215 T216 S230 N231 V232 E265 G266 S267 E268 E296 S326 L378 V419 F427
F472 E476 M558 K576 S600 C601 P602 M624 I625 Y626 A630 L631 K657 A668 Y672 A673 V674 R688 R723 W729 M738 H742 I751 A752 G753 T757 H779 V786 V790 R825 I834 Y835 E849 L855 L863
H864 HIS HIS HIS HIS HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	88.80Å 106.68Å 121.14Å 65.05° 70.82° 76.58°	Depositor
Resolution (Å)	90.21 – 1.89 90.21 – 1.89	Depositor EDS
% Data completeness (in resolution range)	96.2 (90.21-1.89) 96.2 (90.21-1.89)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.68 (at 1.90Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.163 , 0.206 0.170 , 0.210	Depositor DCC
R_{free} test set	2370 reflections (0.79%)	wwPDB-VP
Wilson B-factor (Å^2)	29.5	Xtriage
Anisotropy	0.190	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 38.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	30750	wwPDB-VP
Average B, all atoms (Å^2)	39.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.09% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NA, PGE, PEG, A1INF, CL, EDO

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	1.00	1/7231 (0.0%)	1.21	6/9811 (0.1%)
1	B	0.99	2/7244 (0.0%)	1.20	4/9823 (0.0%)
1	C	0.99	0/7234	1.20	1/9818 (0.0%)
1	D	1.01	0/7124	1.21	5/9670 (0.1%)
All	All	1.00	3/28833 (0.0%)	1.21	16/39122 (0.0%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	864	HIS	CE1-NE2	8.15	1.40	1.32
1	A	606	VAL	N-CA	5.21	1.50	1.46
1	B	492	GLY	C-O	5.07	1.28	1.23

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	835	TYR	CB-CA-C	8.06	119.03	110.65
1	B	835	TYR	CB-CA-C	7.59	118.54	110.65
1	D	835	TYR	CB-CA-C	7.28	118.22	110.65
1	C	835	TYR	CB-CA-C	6.64	117.56	110.65
1	A	688	ARG	CD-NE-CZ	6.36	133.30	124.40
1	D	863	LEU	CA-C-N	6.00	132.50	121.70
1	D	863	LEU	C-N-CA	6.00	132.50	121.70
1	B	274	ARG	CG-CD-NE	-5.52	99.85	112.00
1	D	688	ARG	CD-NE-CZ	5.43	132.00	124.40
1	A	79	TYR	CA-C-O	-5.36	114.87	120.55
1	B	470	GLU	CB-CA-C	5.29	115.40	110.17
1	B	607	PRO	N-CA-CB	5.24	106.12	103.19
1	A	266	GLY	CA-C-O	-5.20	116.28	121.90
1	A	434	GLU	CB-CG-CD	5.11	121.28	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	63	ASP	CA-CB-CG	5.10	117.70	112.60
1	A	688	ARG	NE-CZ-NH2	5.09	123.78	119.20

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7024	0	6786	20	0
1	B	7037	0	6810	28	0
1	C	7027	0	6790	19	0
1	D	6918	0	6689	19	0
2	A	8	0	0	0	0
2	B	8	0	0	0	0
2	C	8	0	0	0	0
2	D	8	0	0	0	0
3	A	7	0	10	0	0
3	B	14	0	20	0	0
3	D	7	0	10	0	0
4	A	68	0	102	0	0
4	B	80	0	120	0	0
4	C	84	0	126	0	0
4	D	52	0	78	0	0
5	A	3	0	0	0	0
5	B	4	0	0	0	0
5	C	3	0	0	1	0
5	D	2	0	0	0	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
6	C	1	0	0	0	0
6	D	2	0	0	0	0
7	C	10	0	14	0	0
8	A	656	0	0	1	0
8	B	701	0	0	5	0
8	C	608	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	D	408	0	0	1	0
All	All	30750	0	27555	85	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 2.

All (85) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:58[A]:PHE:CE1	1:B:558[A]:MET:SD	2.66	0.88
1:B:378[B]:LEU:HD21	1:B:427:PHE:CE1	2.09	0.88
1:C:834[B]:ILE:HD11	1:D:834[B]:ILE:HD11	1.73	0.71
1:C:367[B]:MET:HE1	1:C:423:VAL:HG13	1.76	0.68
1:D:378[B]:LEU:HD21	1:D:427:PHE:CD1	2.30	0.66
1:A:378[B]:LEU:HD21	1:A:427:PHE:CD1	2.32	0.64
1:D:378[B]:LEU:HD21	1:D:427:PHE:CE1	2.34	0.63
1:A:378[B]:LEU:HD21	1:A:427:PHE:CE1	2.33	0.63
1:C:27[B]:GLN:NE2	8:C:1003:HOH:O	2.31	0.62
1:A:844[A]:CYS:SG	8:A:1590:HOH:O	2.56	0.62
1:C:795[B]:ASN:N	1:C:795[B]:ASN:HD22	1.99	0.60
1:D:738:MET:HE3	1:D:786:VAL:HG12	1.83	0.60
1:C:571[B]:CYS:SG	1:C:598:ALA:HB2	2.42	0.60
1:B:367[B]:MET:HE1	1:B:423:VAL:HG13	1.84	0.59
1:D:738:MET:HE2	1:D:738:MET:HA	1.84	0.59
1:B:58[A]:PHE:CD1	1:B:558[A]:MET:SD	2.97	0.58
1:C:775:GLU:OE1	8:C:1002:HOH:O	2.17	0.58
1:A:323[B]:GLN:O	1:A:331[B]:VAL:HG22	2.03	0.57
1:C:91:ILE:HG21	1:C:558:MET:HE1	1.86	0.57
1:B:367[B]:MET:HE3	1:B:376:LEU:HD11	1.86	0.56
1:B:375:TRP:CZ2	1:B:476:GLU:HB3	2.41	0.56
1:D:825:ARG:HD2	8:D:1300:HOH:O	2.07	0.55
1:D:624:MET:HE1	1:D:657:LYS:HE3	1.89	0.54
1:B:625[A]:ILE:HD12	1:B:712:VAL:CG1	2.39	0.53
1:D:723:ARG:HD3	1:D:864:HIS:HB3	1.91	0.53
1:B:625[A]:ILE:HD12	1:B:712:VAL:HG13	1.91	0.53
1:B:27[A]:GLN:CD	8:B:1154:HOH:O	2.52	0.52
1:B:58[A]:PHE:HE1	1:B:558[A]:MET:SD	2.30	0.52
1:C:795[B]:ASN:ND2	5:C:926:CL:CL	2.80	0.52
1:C:323[B]:GLN:OE1	1:C:332:SER:OG	2.25	0.51
1:C:367[B]:MET:HE3	1:C:376:LEU:HD11	1.93	0.50
1:A:421:ILE:HD13	1:A:447[B]:CYS:SG	2.52	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:779:HIS:CD2	8:B:1458:HOH:O	2.65	0.50
1:D:558:MET:HG2	1:D:576:LYS:HA	1.95	0.49
1:A:340:GLN:NE2	1:A:470:GLU:O	2.46	0.49
1:C:595[B]:MET:HB3	1:C:595[B]:MET:HE2	1.75	0.48
1:A:367[A]:MET:HE1	1:A:423:VAL:HG13	1.95	0.47
1:A:738:MET:HE1	1:A:783:ALA:O	2.15	0.47
1:A:844[B]:CYS:SG	1:A:846:GLU:OE1	2.73	0.47
1:B:367[A]:MET:HE2	1:B:378[A]:LEU:HD21	1.97	0.47
1:D:44:TYR:CE1	1:D:602:PRO:HD3	2.50	0.46
1:B:626:TYR:HB2	1:B:674:VAL:HB	1.98	0.46
1:C:265:GLU:HB2	8:C:1370:HOH:O	2.15	0.46
1:A:558:MET:HE2	1:A:558:MET:HB3	1.82	0.45
1:D:70:HIS:CE1	1:D:558:MET:HE2	2.51	0.45
1:D:729:TRP:CE3	1:D:753:GLY:HA3	2.51	0.45
1:B:375:TRP:CH2	1:B:476:GLU:HB3	2.51	0.45
1:B:668:ALA:HA	1:B:672:TYR:O	2.16	0.45
1:A:433[B]:SER:OG	1:A:436:GLU:HB2	2.16	0.45
1:C:716:TYR:HB3	1:C:718:PHE:CE2	2.52	0.45
1:A:668:ALA:HA	1:A:672:TYR:O	2.16	0.45
1:B:378[B]:LEU:HD21	1:B:427:PHE:CD1	2.52	0.45
1:C:729:TRP:CE3	1:C:753:GLY:HA3	2.52	0.45
1:D:626:TYR:HB2	1:D:674:VAL:HB	1.99	0.45
1:A:716:TYR:HB3	1:A:718:PHE:CE2	2.52	0.44
1:B:558[B]:MET:HB3	1:B:558[B]:MET:HE3	1.61	0.44
1:B:825[B]:ARG:HH11	1:B:825[B]:ARG:HG2	1.83	0.44
1:A:595[B]:MET:HB3	1:A:595[B]:MET:HE2	1.53	0.44
1:A:238[A]:SER:OG	1:A:280:VAL:HG22	2.18	0.44
1:D:668:ALA:HA	1:D:672:TYR:O	2.17	0.44
1:A:367[A]:MET:HE3	1:A:376:LEU:HD11	2.00	0.44
1:D:42:ARG:HD3	1:D:849[A]:GLU:HG2	2.00	0.43
1:B:107:GLN:NE2	8:B:1020:HOH:O	2.51	0.43
1:A:274:ARG:HG2	1:A:321:GLU:HG2	2.01	0.43
1:B:157:ASN:ND2	8:B:1015:HOH:O	2.50	0.43
1:B:558[A]:MET:HE2	1:B:558[A]:MET:HB3	1.75	0.43
1:C:668:ALA:HA	1:C:672:TYR:O	2.19	0.43
1:C:738:MET:HE1	1:C:783:ALA:O	2.18	0.43
1:D:751:ILE:HG21	1:D:855[B]:LEU:CD2	2.47	0.43
1:C:625[B]:ILE:HD12	1:C:712:VAL:HG11	2.01	0.43
1:B:729:TRP:CE3	1:B:753:GLY:HA3	2.54	0.42
1:A:494:TRP:CZ2	1:A:519:LYS:HD2	2.55	0.42
1:D:757:THR:HA	1:D:786:VAL:HG22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:751:ILE:HG21	1:B:855[B]:LEU:HD21	2.02	0.42
1:B:265:GLU:HB2	8:B:1408:HOH:O	2.20	0.41
1:C:353:ALA:HB3	1:C:367[B]:MET:HE2	2.03	0.41
1:B:91:ILE:HG21	1:B:558[A]:MET:HE1	2.03	0.41
1:D:215[B]:GLU:HG2	1:D:216:THR:HG23	2.01	0.41
1:D:738:MET:HE1	1:D:742:HIS:CE1	2.56	0.41
1:C:378[B]:LEU:HD21	1:C:427:PHE:CD1	2.56	0.41
1:B:552[A]:MET:HB2	1:B:552[A]:MET:HE2	1.48	0.41
1:A:421:ILE:CD1	1:A:447[B]:CYS:SG	3.09	0.40
1:B:238[A]:SER:OG	1:B:280:VAL:HG22	2.20	0.40
1:A:624:MET:HE3	1:A:652:VAL:HA	2.02	0.40
1:B:191:PRO:HA	1:B:202:SER:O	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	869/851 (102%)	844 (97%)	24 (3%)	1 (0%)	48	41
1	B	867/851 (102%)	839 (97%)	27 (3%)	1 (0%)	48	41
1	C	869/851 (102%)	844 (97%)	24 (3%)	1 (0%)	48	41
1	D	855/851 (100%)	833 (97%)	21 (2%)	1 (0%)	48	41
All	All	3460/3404 (102%)	3360 (97%)	96 (3%)	4 (0%)	48	41

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	419	VAL
1	B	419	VAL
1	C	419	VAL

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Mol	Chain	Res	Type
1	D	419	VAL

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	769/748 (103%)	765 (100%)	4 (0%)	86 88
1	B	769/748 (103%)	765 (100%)	4 (0%)	86 88
1	C	768/748 (103%)	766 (100%)	2 (0%)	91 92
1	D	755/748 (101%)	747 (99%)	8 (1%)	70 71
All	All	3061/2992 (102%)	3043 (99%)	18 (1%)	86 86

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	265	GLU
1	A	448	LYS
1	A	503	LYS
1	A	521	THR
1	B	107	GLN
1	B	521	THR
1	B	552[A]	MET
1	B	552[B]	MET
1	C	43	LYS
1	C	100	LEU
1	D	47	LEU
1	D	125	GLU
1	D	265	GLU
1	D	296	GLU
1	D	625	ILE
1	D	738	MET
1	D	790[A]	VAL
1	D	790[B]	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21)

such sidechains are listed below:

Mol	Chain	Res	Type
1	A	29	HIS
1	A	161	HIS
1	A	555	ASN
1	A	614	HIS
1	A	837	ASN
1	B	157	ASN
1	B	161	HIS
1	B	334	GLN
1	B	798	ASN
1	B	837	ASN
1	C	29	HIS
1	C	157	ASN
1	C	555	ASN
1	C	837	ASN
1	D	25	GLN
1	D	29	HIS
1	D	161	HIS
1	D	334	GLN
1	D	525	HIS
1	D	562	HIS
1	D	837	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 97 ligands modelled in this entry, 17 are monoatomic - leaving 80 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	EDO	B	918	-	3,3,3	0.06	0	2,2,2	0.23	0
4	EDO	A	915	-	3,3,3	0.22	0	2,2,2	0.48	0
4	EDO	C	916	-	3,3,3	0.09	0	2,2,2	0.13	0
4	EDO	B	902	-	3,3,3	0.20	0	2,2,2	0.48	0
4	EDO	A	908	-	3,3,3	0.24	0	2,2,2	0.30	0
4	EDO	A	906	-	3,3,3	0.06	0	2,2,2	0.21	0
4	EDO	C	917	-	3,3,3	0.12	0	2,2,2	0.21	0
7	PGE	C	902	-	9,9,9	0.19	0	8,8,8	0.13	0
4	EDO	C	913	-	3,3,3	0.09	0	2,2,2	0.18	0
4	EDO	D	905	-	3,3,3	0.04	0	2,2,2	0.38	0
2	A1INF	D	901	1	3,7,7	5.03	1 (33%)	1,10,10	3.93	1 (100%)
4	EDO	B	922	-	3,3,3	0.13	0	2,2,2	0.06	0
3	PEG	B	903	-	6,6,6	0.24	0	5,5,5	0.18	0
4	EDO	B	911	-	3,3,3	0.13	0	2,2,2	0.44	0
4	EDO	A	909	-	3,3,3	0.13	0	2,2,2	0.37	0
4	EDO	B	920	-	3,3,3	0.15	0	2,2,2	0.19	0
4	EDO	B	912	-	3,3,3	0.09	0	2,2,2	0.38	0
4	EDO	A	917	-	3,3,3	0.17	0	2,2,2	0.32	0
4	EDO	A	913	-	3,3,3	0.15	0	2,2,2	0.29	0
2	A1INF	C	901	1	3,7,7	5.01	1 (33%)	1,10,10	3.62	1 (100%)
3	PEG	A	902	-	6,6,6	0.22	0	5,5,5	0.20	0
4	EDO	D	911	-	3,3,3	0.24	0	2,2,2	0.14	0
4	EDO	B	910	-	3,3,3	0.13	0	2,2,2	0.08	0
4	EDO	C	904	-	3,3,3	0.07	0	2,2,2	0.09	0
4	EDO	C	907	-	3,3,3	0.07	0	2,2,2	0.28	0
4	EDO	D	916	-	3,3,3	0.13	0	2,2,2	0.17	0
4	EDO	B	916	-	3,3,3	0.16	0	2,2,2	0.32	0
4	EDO	D	910	-	3,3,3	0.12	0	2,2,2	0.10	0
4	EDO	A	905	-	3,3,3	0.04	0	2,2,2	0.04	0
4	EDO	D	908	-	3,3,3	0.06	0	2,2,2	0.29	0
4	EDO	C	905	-	3,3,3	0.09	0	2,2,2	0.27	0
4	EDO	A	919	-	3,3,3	0.19	0	2,2,2	0.04	0
4	EDO	A	918	-	3,3,3	0.14	0	2,2,2	0.45	0
4	EDO	C	921	-	3,3,3	0.11	0	2,2,2	0.34	0
4	EDO	D	909	-	3,3,3	0.08	0	2,2,2	0.17	0
4	EDO	A	916	-	3,3,3	0.10	0	2,2,2	0.19	0
4	EDO	C	919	-	3,3,3	0.13	0	2,2,2	0.24	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	EDO	D	915	-	3,3,3	0.06	0	2,2,2	0.36	0
4	EDO	C	918	-	3,3,3	0.17	0	2,2,2	0.42	0
4	EDO	B	915	-	3,3,3	0.09	0	2,2,2	0.36	0
4	EDO	C	908	-	3,3,3	0.20	0	2,2,2	0.46	0
4	EDO	C	915	-	3,3,3	0.06	0	2,2,2	0.36	0
4	EDO	A	907	-	3,3,3	0.05	0	2,2,2	0.21	0
4	EDO	C	909	-	3,3,3	0.08	0	2,2,2	0.14	0
4	EDO	A	912	-	3,3,3	0.10	0	2,2,2	0.21	0
4	EDO	A	903	-	3,3,3	0.15	0	2,2,2	0.44	0
4	EDO	B	904	-	3,3,3	0.03	0	2,2,2	0.11	0
4	EDO	D	907	-	3,3,3	0.08	0	2,2,2	0.31	0
4	EDO	B	919	-	3,3,3	0.12	0	2,2,2	0.42	0
4	EDO	C	922	-	3,3,3	0.07	0	2,2,2	0.09	0
4	EDO	C	911	-	3,3,3	0.09	0	2,2,2	0.22	0
4	EDO	A	910	-	3,3,3	0.09	0	2,2,2	0.24	0
4	EDO	B	917	-	3,3,3	0.11	0	2,2,2	0.44	0
4	EDO	C	912	-	3,3,3	0.16	0	2,2,2	0.07	0
2	A1INF	A	901	1	3,7,7	4.36	1 (33%)	1,10,10	3.26	1 (100%)
4	EDO	B	914	-	3,3,3	0.14	0	2,2,2	0.36	0
4	EDO	D	913	-	3,3,3	0.12	0	2,2,2	0.42	0
4	EDO	A	911	-	3,3,3	0.10	0	2,2,2	0.28	0
4	EDO	B	905	-	3,3,3	0.16	0	2,2,2	0.35	0
2	A1INF	B	901	1	3,7,7	4.03	1 (33%)	1,10,10	2.76	1 (100%)
4	EDO	C	920	-	3,3,3	0.07	0	2,2,2	0.08	0
4	EDO	B	927	-	3,3,3	0.17	0	2,2,2	0.18	0
3	PEG	B	909	-	6,6,6	0.14	0	5,5,5	0.07	0
4	EDO	C	906	-	3,3,3	0.17	0	2,2,2	0.30	0
4	EDO	D	914	-	3,3,3	0.24	0	2,2,2	0.45	0
4	EDO	B	923	-	3,3,3	0.20	0	2,2,2	0.54	0
3	PEG	D	903	-	6,6,6	0.22	0	5,5,5	0.17	0
4	EDO	B	913	-	3,3,3	0.07	0	2,2,2	0.25	0
4	EDO	C	910	-	3,3,3	0.09	0	2,2,2	0.17	0
4	EDO	A	904	-	3,3,3	0.26	0	2,2,2	0.42	0
4	EDO	A	914	-	3,3,3	0.14	0	2,2,2	0.39	0
4	EDO	D	904	-	3,3,3	0.19	0	2,2,2	0.08	0
4	EDO	B	906	-	3,3,3	0.10	0	2,2,2	0.35	0
4	EDO	C	925	-	3,3,3	0.10	0	2,2,2	0.38	0
4	EDO	B	921	-	3,3,3	0.18	0	2,2,2	0.43	0
4	EDO	C	914	-	3,3,3	0.13	0	2,2,2	0.42	0
4	EDO	C	903	-	3,3,3	0.20	0	2,2,2	0.39	0
4	EDO	D	912	-	3,3,3	0.10	0	2,2,2	0.32	0
4	EDO	D	906	-	3,3,3	0.10	0	2,2,2	0.30	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	EDO	B	925	-	3,3,3	0.14	0	2,2,2	0.48	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	EDO	B	918	-	-	0/1/1/1	-
4	EDO	A	915	-	-	0/1/1/1	-
4	EDO	C	916	-	-	1/1/1/1	-
4	EDO	B	902	-	-	1/1/1/1	-
4	EDO	A	908	-	-	0/1/1/1	-
4	EDO	A	906	-	-	0/1/1/1	-
4	EDO	C	917	-	-	1/1/1/1	-
7	PGE	C	902	-	-	1/7/7/7	-
4	EDO	C	913	-	-	0/1/1/1	-
4	EDO	D	905	-	-	0/1/1/1	-
2	A1INF	D	901	1	-	0/0/5/5	-
4	EDO	B	922	-	-	1/1/1/1	-
3	PEG	B	903	-	-	2/4/4/4	-
4	EDO	B	911	-	-	1/1/1/1	-
4	EDO	A	909	-	-	1/1/1/1	-
4	EDO	B	920	-	-	0/1/1/1	-
4	EDO	B	912	-	-	0/1/1/1	-
4	EDO	A	917	-	-	1/1/1/1	-
4	EDO	A	913	-	-	0/1/1/1	-
2	A1INF	C	901	1	-	0/0/5/5	-
3	PEG	A	902	-	-	3/4/4/4	-
4	EDO	D	911	-	-	0/1/1/1	-
4	EDO	B	910	-	-	0/1/1/1	-
4	EDO	C	904	-	-	0/1/1/1	-
4	EDO	C	907	-	-	0/1/1/1	-
4	EDO	D	916	-	-	1/1/1/1	-
4	EDO	B	916	-	-	0/1/1/1	-
4	EDO	D	910	-	-	1/1/1/1	-
4	EDO	A	905	-	-	0/1/1/1	-
4	EDO	D	908	-	-	0/1/1/1	-
4	EDO	C	905	-	-	0/1/1/1	-
4	EDO	A	919	-	-	0/1/1/1	-
4	EDO	A	918	-	-	1/1/1/1	-
4	EDO	C	921	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	EDO	D	909	-	-	0/1/1/1	-
4	EDO	A	916	-	-	1/1/1/1	-
4	EDO	C	919	-	-	1/1/1/1	-
4	EDO	D	915	-	-	1/1/1/1	-
4	EDO	C	918	-	-	1/1/1/1	-
4	EDO	B	915	-	-	1/1/1/1	-
4	EDO	C	908	-	-	1/1/1/1	-
4	EDO	C	915	-	-	1/1/1/1	-
4	EDO	A	907	-	-	0/1/1/1	-
4	EDO	C	909	-	-	0/1/1/1	-
4	EDO	A	912	-	-	0/1/1/1	-
4	EDO	A	903	-	-	1/1/1/1	-
4	EDO	B	904	-	-	0/1/1/1	-
4	EDO	D	907	-	-	1/1/1/1	-
4	EDO	B	919	-	-	1/1/1/1	-
4	EDO	C	922	-	-	0/1/1/1	-
4	EDO	C	911	-	-	0/1/1/1	-
4	EDO	A	910	-	-	0/1/1/1	-
4	EDO	B	917	-	-	0/1/1/1	-
4	EDO	C	912	-	-	0/1/1/1	-
2	A1INF	A	901	1	-	0/0/5/5	-
4	EDO	B	914	-	-	1/1/1/1	-
4	EDO	D	913	-	-	0/1/1/1	-
4	EDO	A	911	-	-	0/1/1/1	-
4	EDO	B	905	-	-	0/1/1/1	-
2	A1INF	B	901	1	-	0/0/5/5	-
4	EDO	C	920	-	-	0/1/1/1	-
4	EDO	B	927	-	-	1/1/1/1	-
3	PEG	B	909	-	-	1/4/4/4	-
4	EDO	C	906	-	-	0/1/1/1	-
4	EDO	D	914	-	-	0/1/1/1	-
4	EDO	B	923	-	-	1/1/1/1	-
3	PEG	D	903	-	-	1/4/4/4	-
4	EDO	B	913	-	-	0/1/1/1	-
4	EDO	C	910	-	-	1/1/1/1	-
4	EDO	A	904	-	-	1/1/1/1	-
4	EDO	A	914	-	-	1/1/1/1	-
4	EDO	D	904	-	-	0/1/1/1	-
4	EDO	B	906	-	-	1/1/1/1	-
4	EDO	C	925	-	-	1/1/1/1	-
4	EDO	B	921	-	-	1/1/1/1	-
4	EDO	C	914	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	EDO	C	903	-	-	0/1/1/1	-
4	EDO	D	912	-	-	1/1/1/1	-
4	EDO	D	906	-	-	0/1/1/1	-
4	EDO	B	925	-	-	1/1/1/1	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	901	A1INF	O4-S1	8.68	1.52	1.42
2	C	901	A1INF	O4-S1	8.63	1.52	1.42
2	A	901	A1INF	O4-S1	7.49	1.50	1.42
2	B	901	A1INF	O4-S1	6.92	1.50	1.42

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	901	A1INF	O2-S1-O4	-3.93	110.87	120.16
2	C	901	A1INF	O2-S1-O4	-3.62	111.61	120.16
2	A	901	A1INF	O2-S1-O4	-3.26	112.44	120.16
2	B	901	A1INF	O2-S1-O4	-2.76	113.65	120.16

There are no chirality outliers.

All (41) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	C	902	PGE	O3-C5-C6-O4
3	A	902	PEG	O2-C3-C4-O4
3	D	903	PEG	O2-C3-C4-O4
3	B	903	PEG	O2-C3-C4-O4
4	A	903	EDO	O1-C1-C2-O2
4	A	914	EDO	O1-C1-C2-O2
4	A	918	EDO	O1-C1-C2-O2
4	B	914	EDO	O1-C1-C2-O2
4	B	923	EDO	O1-C1-C2-O2
4	C	908	EDO	O1-C1-C2-O2
4	C	916	EDO	O1-C1-C2-O2
4	C	925	EDO	O1-C1-C2-O2
4	A	904	EDO	O1-C1-C2-O2
4	B	915	EDO	O1-C1-C2-O2
4	B	921	EDO	O1-C1-C2-O2
4	B	925	EDO	O1-C1-C2-O2

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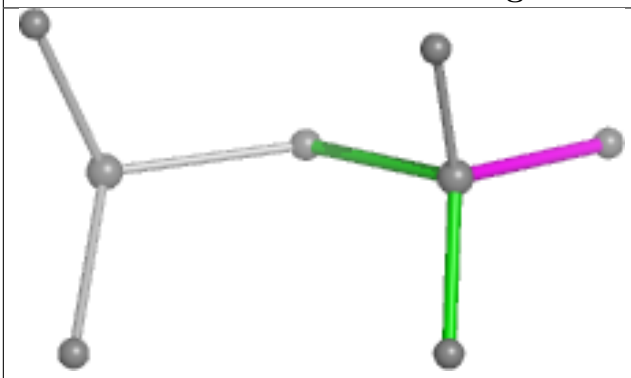
Mol	Chain	Res	Type	Atoms
4	D	916	EDO	O1-C1-C2-O2
3	A	902	PEG	O1-C1-C2-O2
3	A	902	PEG	C4-C3-O2-C2
4	A	909	EDO	O1-C1-C2-O2
4	A	916	EDO	O1-C1-C2-O2
4	C	915	EDO	O1-C1-C2-O2
4	D	907	EDO	O1-C1-C2-O2
4	D	912	EDO	O1-C1-C2-O2
4	A	917	EDO	O1-C1-C2-O2
4	C	910	EDO	O1-C1-C2-O2
4	C	914	EDO	O1-C1-C2-O2
4	D	910	EDO	O1-C1-C2-O2
3	B	909	PEG	O2-C3-C4-O4
4	B	906	EDO	O1-C1-C2-O2
4	C	917	EDO	O1-C1-C2-O2
4	B	927	EDO	O1-C1-C2-O2
4	C	918	EDO	O1-C1-C2-O2
3	B	903	PEG	O1-C1-C2-O2
4	B	902	EDO	O1-C1-C2-O2
4	B	911	EDO	O1-C1-C2-O2
4	B	919	EDO	O1-C1-C2-O2
4	B	922	EDO	O1-C1-C2-O2
4	C	919	EDO	O1-C1-C2-O2
4	C	921	EDO	O1-C1-C2-O2
4	D	915	EDO	O1-C1-C2-O2

There are no ring outliers.

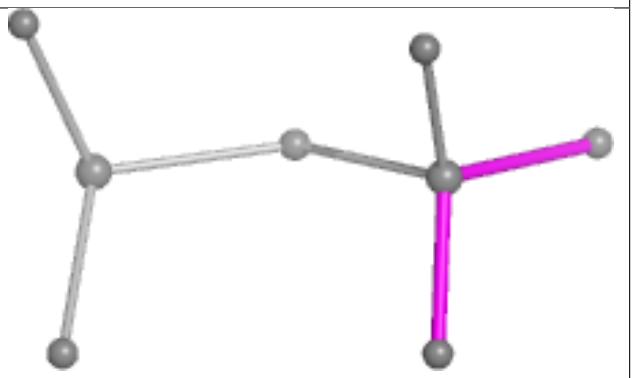
No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

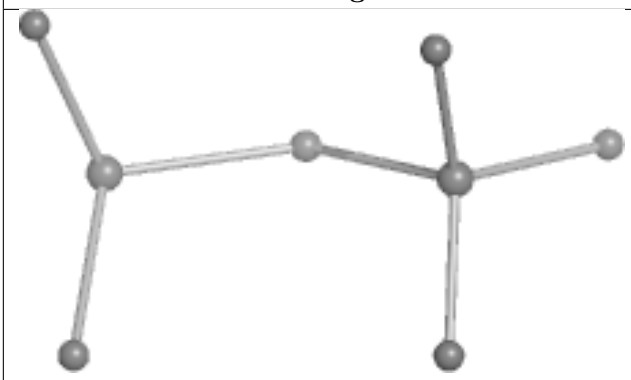
Ligand A1INF D 901



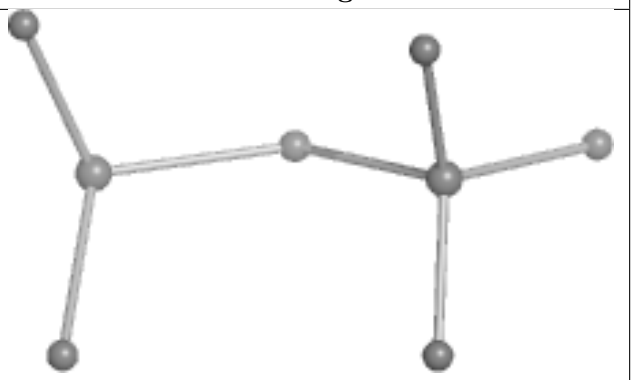
Bond lengths



Bond angles

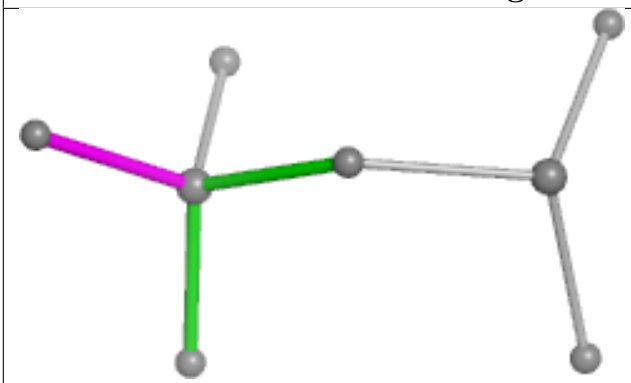


Torsions

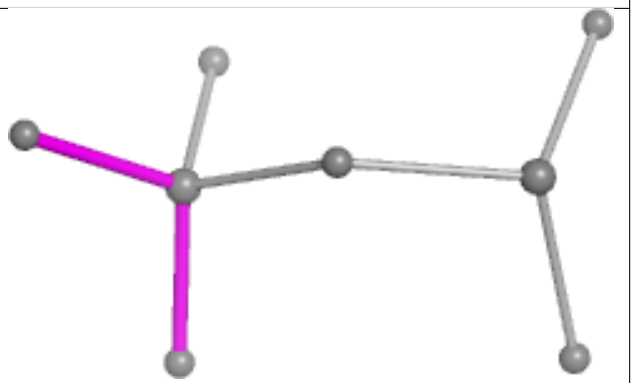


Rings

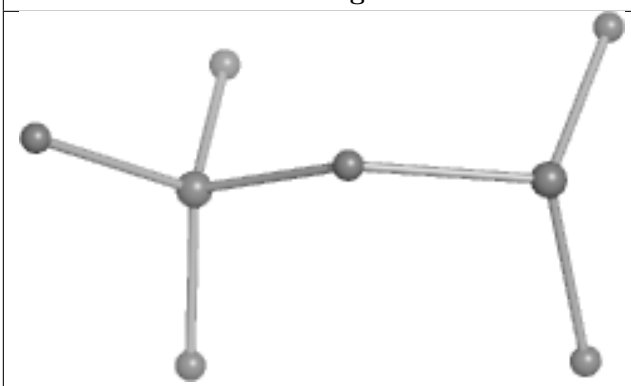
Ligand A1INF C 901



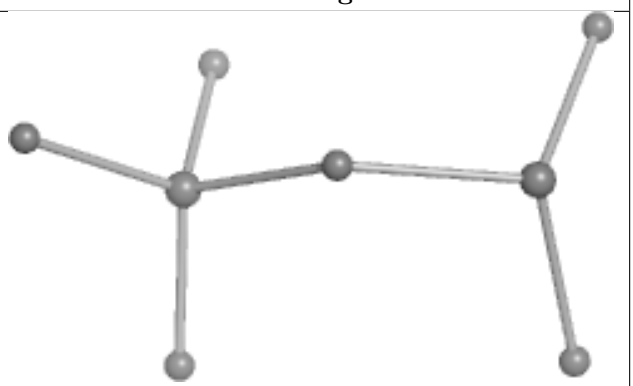
Bond lengths



Bond angles

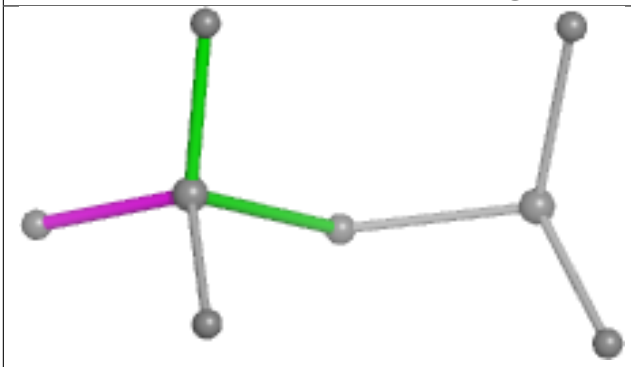


Torsions

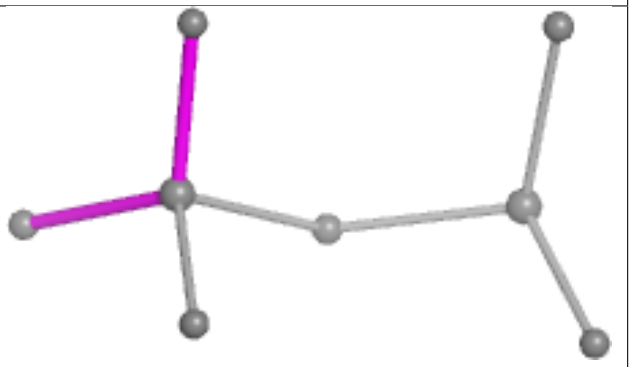


Rings

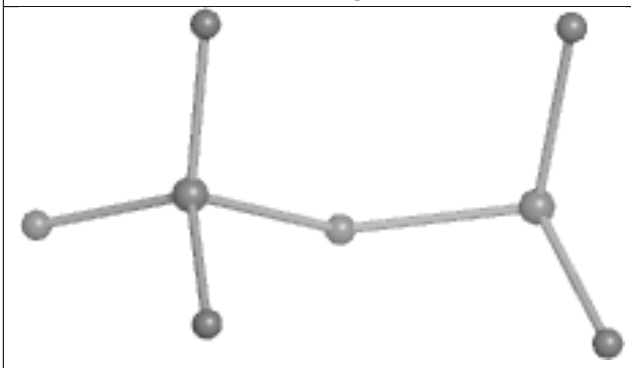
Ligand A1INF A 901



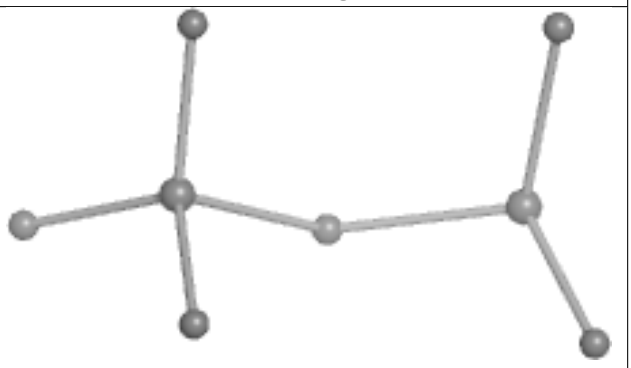
Bond lengths



Bond angles

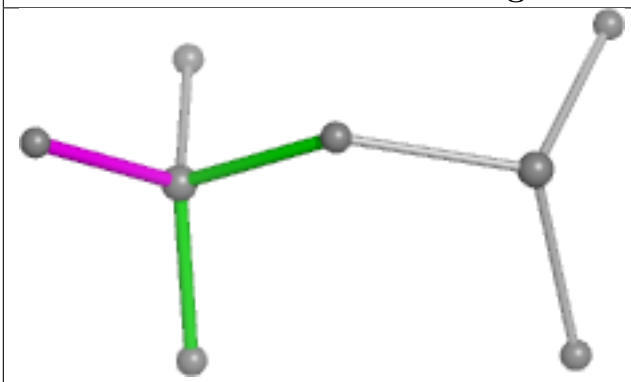


Torsions

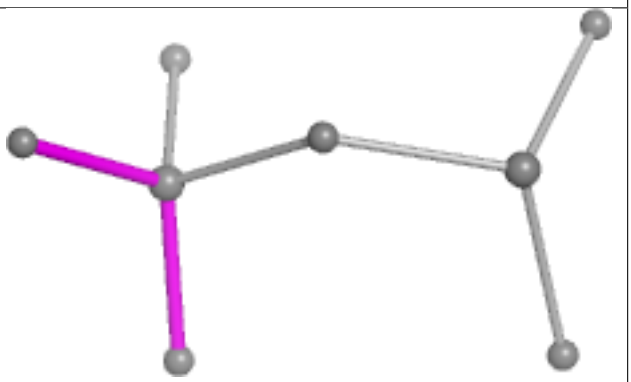


Rings

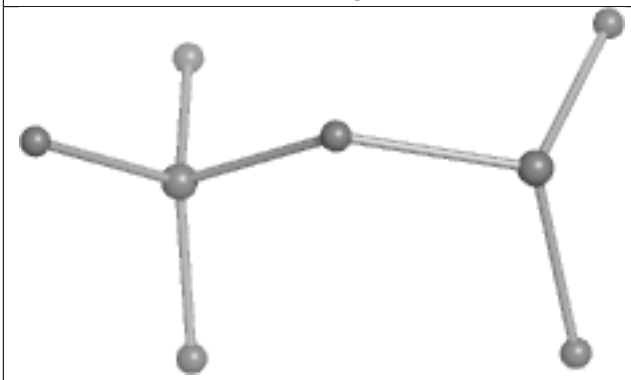
Ligand A1INF B 901



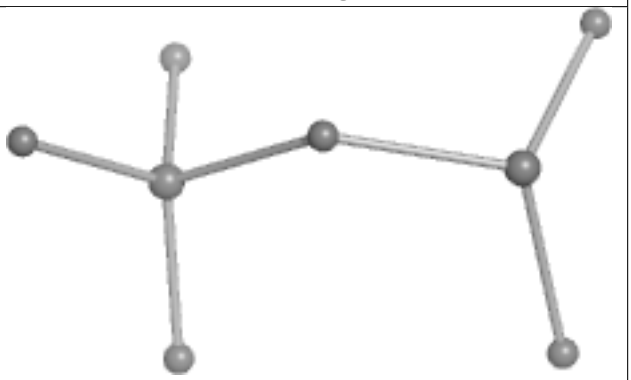
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	844/851 (99%)	-0.21	21 (2%)	58	60	12, 32, 55, 85	66 (7%)
1	B	840/851 (98%)	-0.32	8 (0%)	79	81	12, 30, 52, 86	57 (6%)
1	C	845/851 (99%)	-0.15	18 (2%)	63	65	13, 34, 59, 80	57 (6%)
1	D	843/851 (99%)	0.10	29 (3%)	48	50	12, 41, 73, 99	69 (8%)
All	All	3372/3404 (99%)	-0.15	76 (2%)	61	63	12, 34, 64, 99	249 (7%)

All (76) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	21	ALA	4.9
1	A	79	TYR	4.1
1	D	46	GLY	3.7
1	B	475	GLY	3.4
1	C	99	ALA	3.4
1	D	47	LEU	3.4
1	B	62	THR	3.1
1	C	62	THR	3.1
1	C	48	ILE	3.1
1	A	864	HIS	3.1
1	D	326	SER	3.1
1	B	601	CYS	3.0
1	D	100	LEU	3.0
1	B	79	TYR	3.0
1	C	230	SER	3.0
1	A	50	ASN	2.9
1	C	47	LEU	2.9
1	A	472	PHE	2.9
1	D	232	VAL	2.9
1	B	602	PRO	2.9
1	A	51	LYS	2.9

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Mol	Chain	Res	Type	RSRZ
1	D	117	HIS	2.9
1	D	62	THR	2.8
1	D	63	ASP	2.8
1	D	48	ILE	2.8
1	D	631	LEU	2.8
1	D	630	ALA	2.8
1	A	865	HIS	2.7
1	A	46	GLY	2.7
1	A	48	ILE	2.7
1	D	45	SER	2.7
1	C	49	VAL	2.6
1	C	168	ASN	2.6
1	D	50	ASN	2.6
1	D	65	SER	2.6
1	A	44	TYR	2.6
1	D	266	GLY	2.6
1	C	44	TYR	2.6
1	C	434	GLU	2.6
1	D	96	ARG	2.6
1	B	535	ALA	2.6
1	D	268	GLU	2.5
1	D	49	VAL	2.5
1	B	600	SER	2.5
1	A	99	ALA	2.5
1	D	230	SER	2.5
1	C	472	PHE	2.5
1	D	172	VAL	2.5
1	C	535	ALA	2.4
1	D	476	GLU	2.4
1	D	779	HIS	2.4
1	D	80	GLY	2.4
1	D	99	ALA	2.3
1	A	232[A]	VAL	2.2
1	D	79	TYR	2.2
1	A	266	GLY	2.2
1	A	268	GLU	2.2
1	C	864	HIS	2.2
1	C	433[A]	SER	2.2
1	A	22	ALA	2.2
1	C	534	ALA	2.2
1	C	98	GLU	2.2
1	A	535	ALA	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	865	HIS	2.1
1	D	118	HIS	2.1
1	A	500	HIS	2.1
1	A	78	PRO	2.1
1	D	600	SER	2.1
1	A	117	HIS	2.1
1	A	47	LEU	2.0
1	C	102[A]	LEU	2.0
1	D	472	PHE	2.0
1	A	49	VAL	2.0
1	A	601	CYS	2.0
1	D	183	GLN	2.0
1	B	65	SER	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	EDO	A	912	4/4	0.78	0.17	66,69,73,73	0
4	EDO	B	919	4/4	0.78	0.17	58,59,60,63	0
4	EDO	B	918	4/4	0.79	0.21	69,70,72,72	0
4	EDO	B	923	4/4	0.79	0.17	52,56,57,58	0
4	EDO	D	915	4/4	0.79	0.19	61,62,64,65	0
4	EDO	C	911	4/4	0.80	0.17	76,76,77,80	0
3	PEG	B	903	7/7	0.80	0.16	49,65,77,79	0
5	CL	D	917	1/1	0.81	0.15	78,78,78,78	0
4	EDO	C	917	4/4	0.82	0.19	55,55,59,61	0
4	EDO	A	905	4/4	0.83	0.17	39,42,44,48	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	EDO	B	906	4/4	0.83	0.17	71,75,75,79	0
4	EDO	B	917	4/4	0.83	0.15	51,55,56,59	0
4	EDO	C	909	4/4	0.83	0.13	54,57,59,62	0
4	EDO	B	914	4/4	0.84	0.15	67,70,73,73	0
4	EDO	A	904	4/4	0.84	0.14	56,57,60,64	0
4	EDO	B	925	4/4	0.84	0.20	77,78,78,78	0
4	EDO	B	913	4/4	0.84	0.18	61,63,66,67	0
4	EDO	D	905	4/4	0.85	0.18	72,72,75,75	0
5	CL	B	926	1/1	0.85	0.14	82,82,82,82	0
4	EDO	D	906	4/4	0.85	0.17	80,80,80,82	0
4	EDO	B	905	4/4	0.86	0.13	61,66,66,67	0
4	EDO	C	925	4/4	0.86	0.17	69,70,70,71	0
3	PEG	B	909	7/7	0.86	0.15	59,61,62,63	0
4	EDO	C	907	4/4	0.86	0.14	56,57,59,62	0
4	EDO	D	907	4/4	0.86	0.16	60,62,62,65	0
4	EDO	D	909	4/4	0.86	0.14	52,52,53,53	0
4	EDO	D	910	4/4	0.86	0.17	54,55,56,58	0
4	EDO	D	912	4/4	0.86	0.10	70,70,70,71	0
4	EDO	B	912	4/4	0.86	0.13	58,61,62,66	0
4	EDO	B	902	4/4	0.86	0.19	60,60,61,64	0
4	EDO	C	912	4/4	0.86	0.23	50,53,55,55	0
4	EDO	A	908	4/4	0.87	0.17	52,52,53,54	0
4	EDO	B	927	4/4	0.87	0.23	54,57,59,62	0
4	EDO	C	905	4/4	0.87	0.13	65,66,70,72	0
3	PEG	D	903	7/7	0.87	0.15	66,68,69,70	0
4	EDO	C	919	4/4	0.87	0.16	56,57,58,63	0
7	PGE	C	902	10/10	0.87	0.13	63,65,70,70	0
4	EDO	C	916	4/4	0.88	0.15	37,42,43,56	0
4	EDO	D	904	4/4	0.88	0.13	38,38,43,47	0
5	CL	C	926	1/1	0.88	0.11	86,86,86,86	0
4	EDO	A	906	4/4	0.88	0.16	62,64,64,65	0
5	CL	D	918	1/1	0.88	0.13	88,88,88,88	0
6	NA	D	919	1/1	0.88	0.14	63,63,63,63	0
3	PEG	A	902	7/7	0.88	0.15	65,66,70,71	0
4	EDO	B	921	4/4	0.89	0.11	49,55,58,60	0
4	EDO	A	914	4/4	0.90	0.11	64,68,69,72	0
4	EDO	C	921	4/4	0.90	0.11	61,67,67,67	0
4	EDO	D	908	4/4	0.90	0.12	44,51,53,56	0
4	EDO	C	914	4/4	0.90	0.12	66,67,68,68	0
4	EDO	A	907	4/4	0.90	0.13	49,49,51,51	0
6	NA	B	928	1/1	0.90	0.11	51,51,51,51	0
4	EDO	A	913	4/4	0.90	0.13	60,62,66,68	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	EDO	D	914	4/4	0.90	0.14	51,53,54,57	0
4	EDO	C	913	4/4	0.91	0.14	43,43,44,45	0
4	EDO	A	917	4/4	0.91	0.12	50,50,50,55	0
6	NA	C	927	1/1	0.91	0.12	50,50,50,50	0
4	EDO	C	906	4/4	0.91	0.10	49,51,52,53	0
4	EDO	A	903	4/4	0.91	0.11	59,62,64,66	0
4	EDO	B	915	4/4	0.92	0.10	58,59,60,64	0
5	CL	C	923	1/1	0.92	0.13	70,70,70,70	0
4	EDO	B	910	4/4	0.92	0.14	42,45,46,52	0
4	EDO	B	904	4/4	0.92	0.09	32,36,39,43	0
4	EDO	C	904	4/4	0.92	0.12	42,42,42,46	0
4	EDO	C	922	4/4	0.92	0.10	37,39,47,50	0
4	EDO	A	919	4/4	0.92	0.11	38,41,44,50	0
4	EDO	A	909	4/4	0.92	0.10	54,57,59,63	0
4	EDO	C	915	4/4	0.92	0.11	54,56,57,58	0
5	CL	A	923	1/1	0.93	0.14	65,65,65,65	0
4	EDO	A	915	4/4	0.93	0.14	32,40,43,45	0
4	EDO	B	916	4/4	0.93	0.11	32,41,43,46	0
4	EDO	D	911	4/4	0.93	0.13	40,44,44,50	0
5	CL	A	921	1/1	0.93	0.10	81,81,81,81	0
5	CL	C	924	1/1	0.94	0.10	65,65,65,65	0
4	EDO	A	916	4/4	0.94	0.10	42,45,48,53	0
4	EDO	B	922	4/4	0.94	0.11	38,39,41,45	0
4	EDO	C	903	4/4	0.94	0.09	37,40,42,46	0
6	NA	A	922	1/1	0.94	0.10	54,54,54,54	0
4	EDO	C	908	4/4	0.94	0.12	55,56,58,59	0
5	CL	B	924	1/1	0.94	0.12	58,58,58,58	0
4	EDO	A	910	4/4	0.94	0.09	33,36,38,45	0
4	EDO	D	913	4/4	0.94	0.11	33,42,44,50	0
5	CL	A	920	1/1	0.95	0.07	66,66,66,66	0
4	EDO	B	911	4/4	0.95	0.10	34,39,43,49	0
4	EDO	C	918	4/4	0.95	0.12	35,42,44,49	0
4	EDO	C	910	4/4	0.95	0.15	39,41,42,44	0
4	EDO	D	916	4/4	0.95	0.08	40,43,44,48	0
4	EDO	B	920	4/4	0.96	0.07	31,36,37,38	0
4	EDO	A	918	4/4	0.96	0.10	47,47,51,54	0
5	CL	B	907	1/1	0.96	0.11	50,50,50,50	0
4	EDO	C	920	4/4	0.96	0.07	37,37,37,38	0
4	EDO	A	911	4/4	0.96	0.09	33,34,35,37	0
2	A1INF	D	901	8/8	0.97	0.05	27,36,46,47	0
2	A1INF	C	901	8/8	0.98	0.04	25,31,39,42	0
2	A1INF	A	901	8/8	0.98	0.05	24,32,37,40	0

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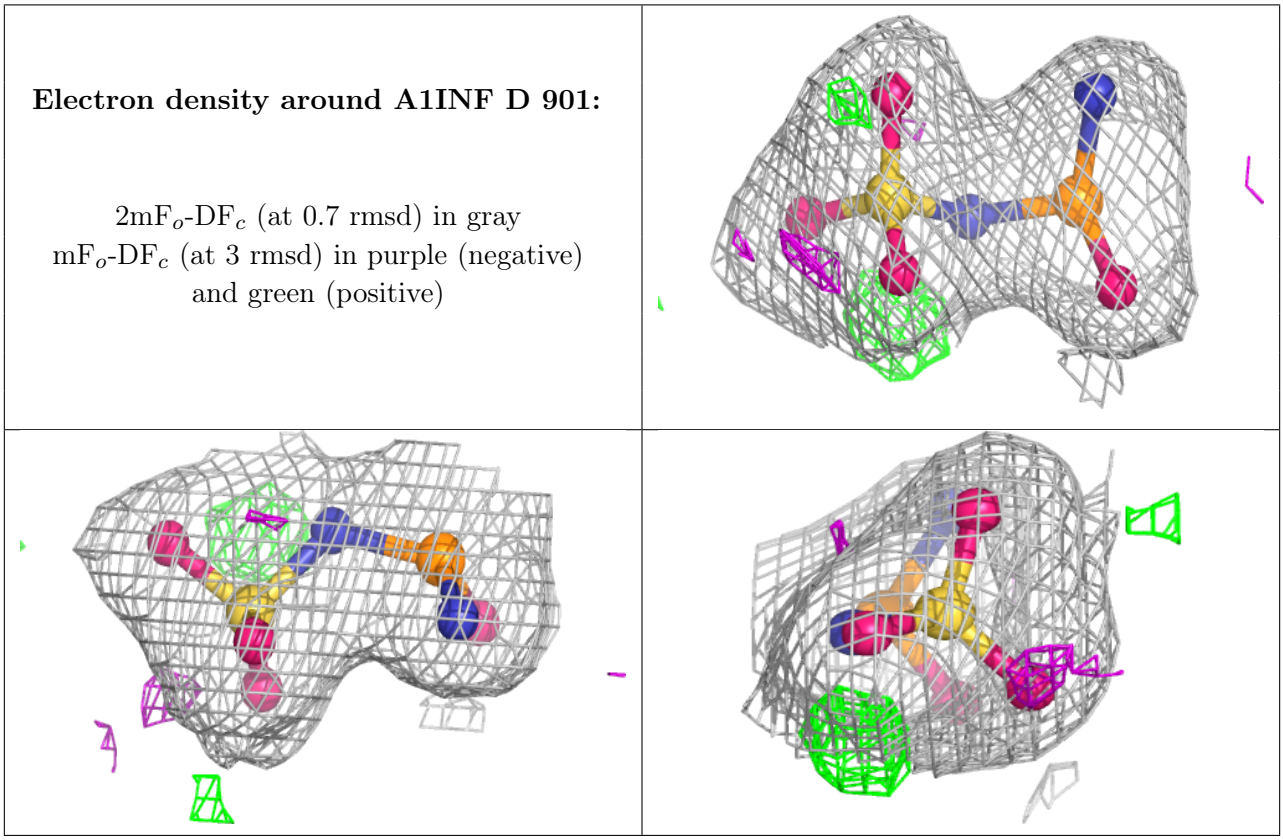
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
6	NA	D	902	1/1	0.98	0.17	40,40,40,40	0
2	A1INF	B	901	8/8	0.98	0.05	24,28,35,38	0
5	CL	B	908	1/1	0.98	0.09	52,52,52,52	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

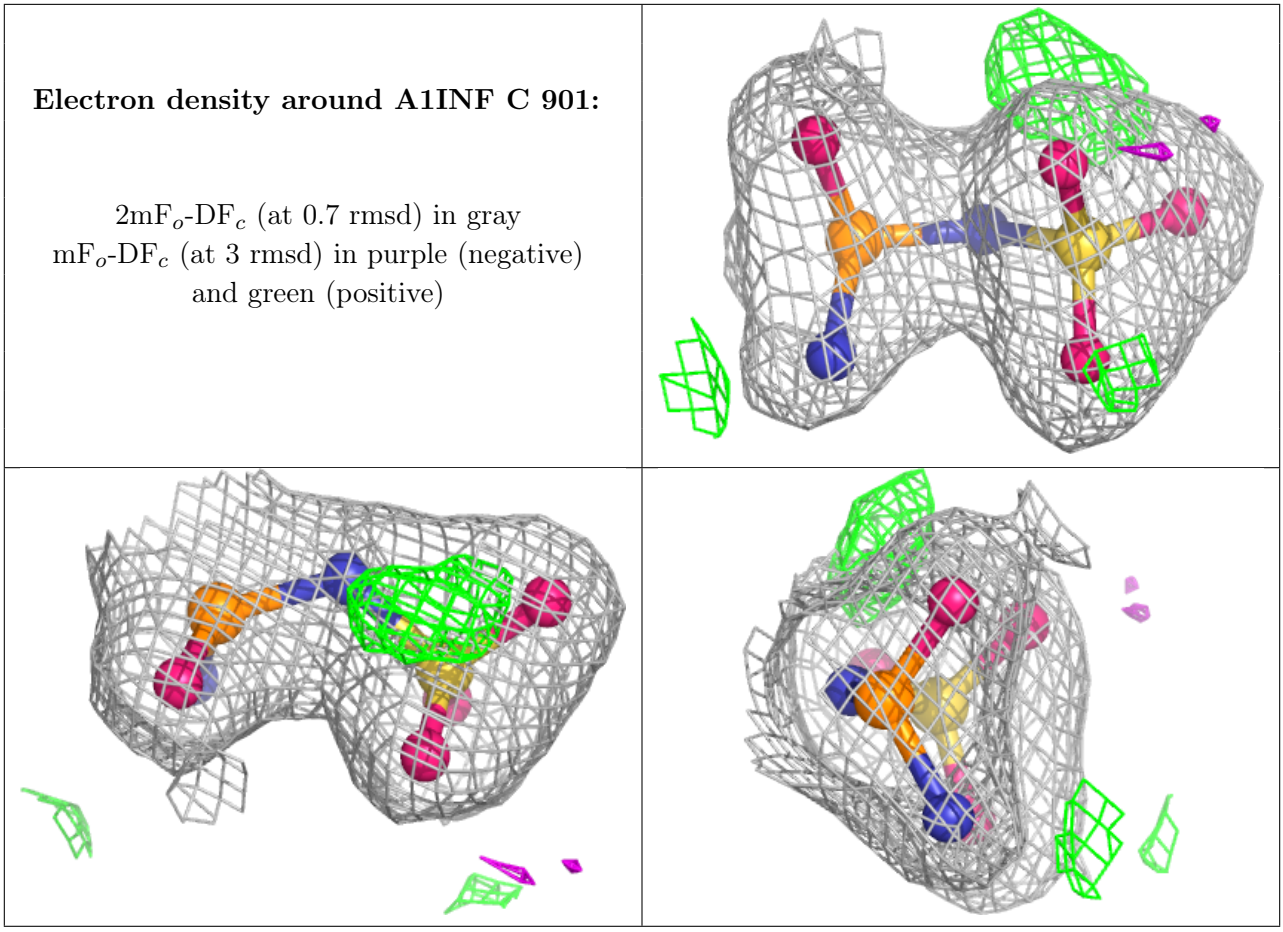
Electron density around A1INF D 901:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



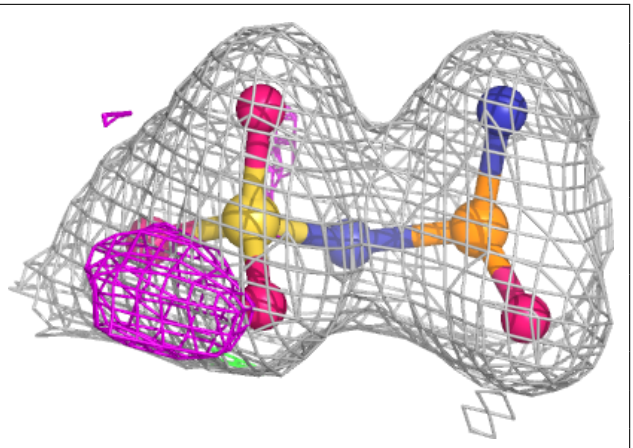
Electron density around A1INF C 901:

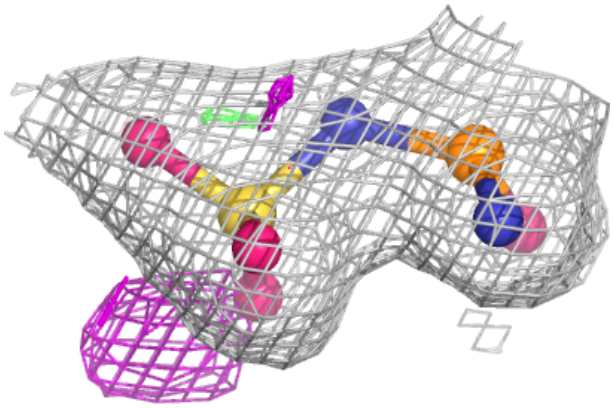
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

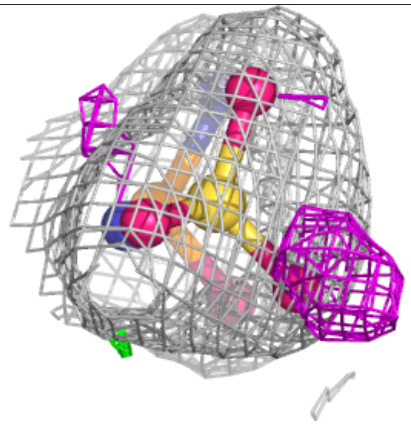


Electron density around A1INF A 901:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

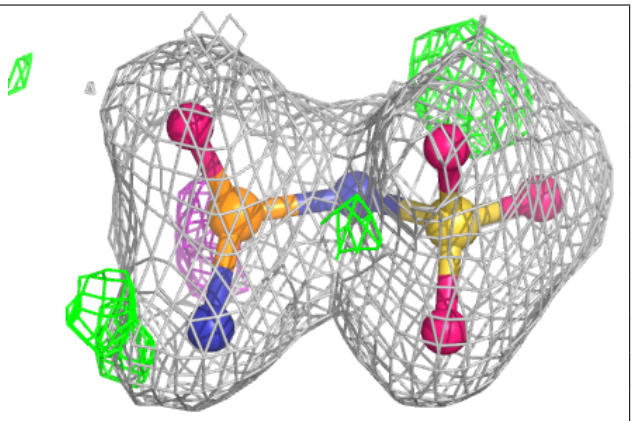


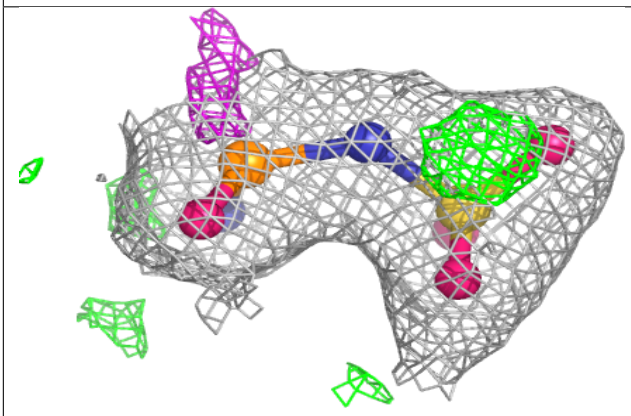


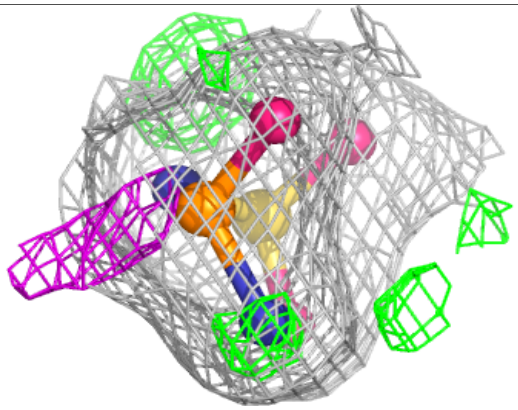


Electron density around A1INF B 901:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)







6.5 Other polymers (i)

There are no such residues in this entry.