WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Dec 1, 2025 – 04:28 PM JST

PDB ID	:	9KVA / pdb_00009kva
Title	:	ECR CK PROTEIN
Authors	:	Kulakman, C.; DeMirci, H.; Wakatsuki, S.; Mathews, I.
Deposited on	:	2024-12-04
Resolution	:	1.40 Å(reported)

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

|		
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

1   Overall quality at a glance   ⓘ

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

The reported resolution of this entry is 1.40 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.
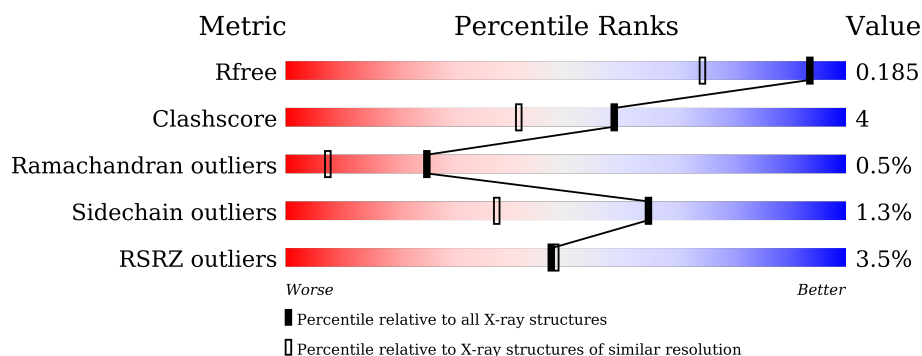
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	2247 (1.40-1.40)
Clashscore	180529	2446 (1.40-1.40)
Ramachandran outliers	177936	2398 (1.40-1.40)
Sidechain outliers	177891	2397 (1.40-1.40)
RSRZ outliers	164620	2246 (1.40-1.40)

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	410	4% 90% 9% •
1	B	410	3% 92% 7% •

2　Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 6775 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 Putative crotonyl-CoA reductase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	410	Total	C	N	O	S	0	1	0
			3125	1977	558	576	14			
1	B	410	Total	C	N	O	S	0	2	0
			3130	1979	559	578	14			

- Molecule 2 is HEXAETHYLENE GLYCOL (CCD ID: P6G) (formula: $C_{12}H_{26}O_7$).

P6G
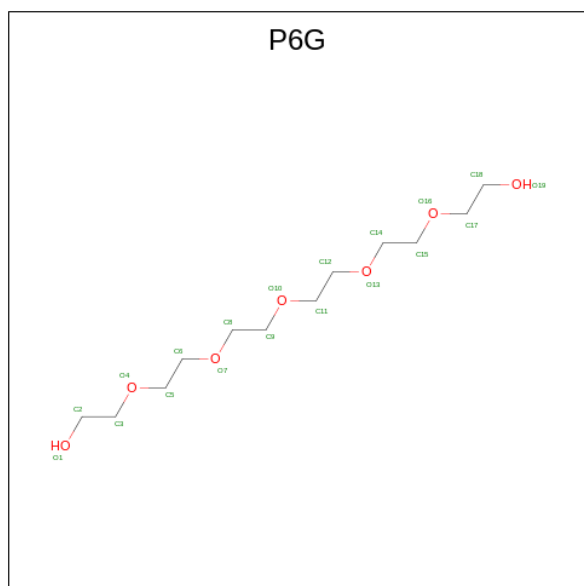
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			16	10	6		

- Molecule 3 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$) (labeled as "Ligand of Interest" by depositor).

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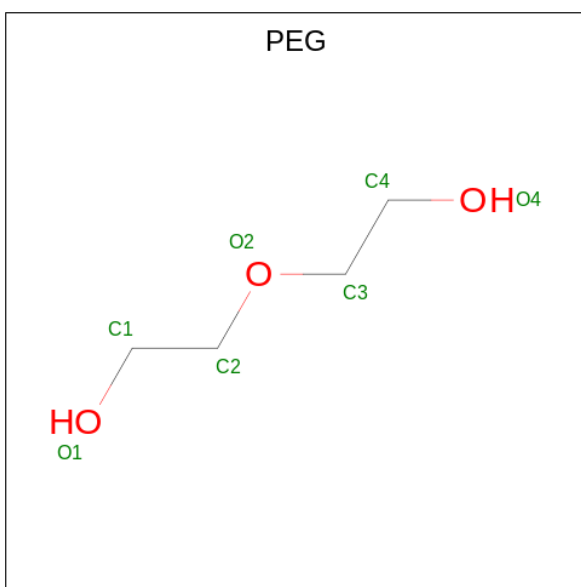
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 7	C 4	O 3	0	0

- Molecule 4 is 4-(2-HYDROXYETHYL)-1-PIPERAZINE ETHANESULFONIC ACID (CCD ID: EPE) (formula: $C_8H_{18}N_2O_4S$).

EPE
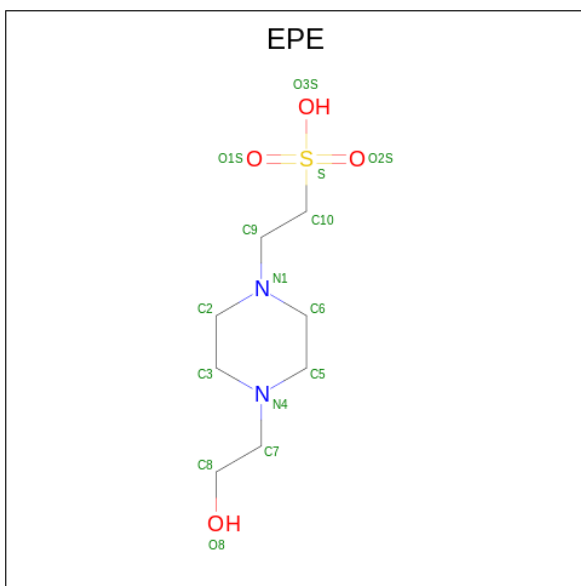
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total 15	C 8	N 2	O 4	S 1	0	0
4	B	1	Total 15	C 8	N 2	O 4	S 1	0	0

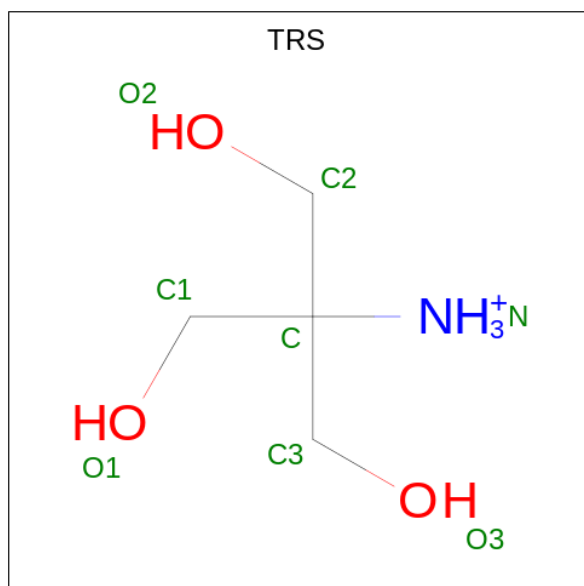• Molecule 5 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total Na 1 1		0	0

• Molecule 6 is 2-AMINO-2-HYDROXYMETHYL-PROPANE-1,3-DIOL (CCD ID: TRS) (formula: $C_4H_{12}NO_3$) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	B	1	Total C N O 8 4 1 3				0	0

• Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	199	Total O 200 200		0	1
7	B	254	Total O 258 258		0	4

3 Residue-property plots ⓘ

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 resi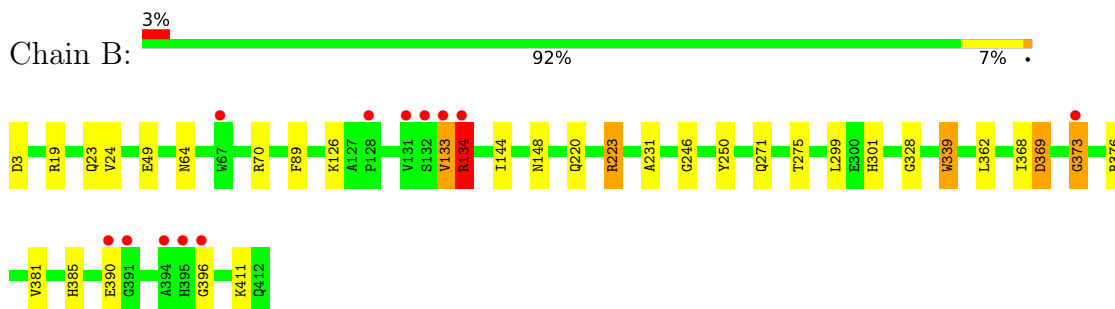due indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Putative crotonyl-CoA reductase

Chain A:

• Molecule 1: Putative crotonyl-CoA reductase

Chain B:
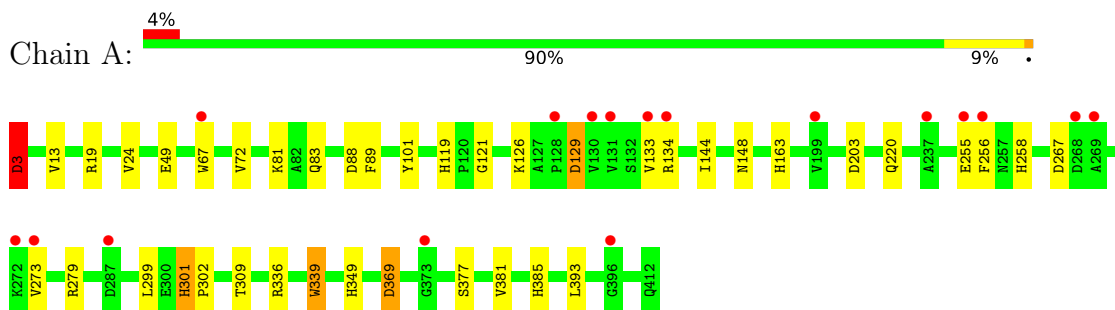
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	187.99Å 104.31Å 44.81Å 90.00° 91.59° 90.00°	Depositor
Resolution (Å)	35.36 – 1.40 35.36 – 1.40	Depositor EDS
% Data completeness (in resolution range)	98.0 (35.36-1.40) 98.2 (35.36-1.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.25 (at 1.40Å)	Xtriage
Refinement program	REFMAC 5.8.0425	Depositor
R, R_{free}	0.148 , 0.185 0.147 , 0.185	Depositor DCC
R_{free} test set	8338 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	20.5	Xtriage
Anisotropy	0.239	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 46.4	EDS
L-test for twinning [2]	$< \|L\| > = 0.51, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.000 for -1/2*h-3/2*k,-1/2*h+1/2*k,-l 0.000 for -1/2*h+3/2*k,1/2*h+1/2*k,-l 0.000 for 1/2*h-3/2*k,-1/2*h-1/2*k,-l 0.000 for 1/2*h+3/2*k,1/2*h-1/2*k,-l 0.017 for -h,-k,l	Xtriage
F_o,F_c correlation	0.98	EDS
Total number of atoms	6775	wwPDB-VP
Average B, all atoms (Å^2)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.77% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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, PEG, EPE, TRS, P6G

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	0.66	0/3207	1.04	9/4364 (0.2%)
1	B	0.71	1/3212 (0.0%)	1.03	5/4370 (0.1%)
All	All	0.69	1/6419 (0.0%)	1.03	14/8734 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	5
All	All	0	6

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	390	GLU	CD-OE2	5.89	1.36	1.25

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	336	ARG	NE-CZ-NH2	6.61	125.15	119.20
1	B	64	ASN	OD1-CG-ND2	-6.35	116.25	122.60
1	B	369	ASP	CA-CB-CG	6.34	118.94	112.60
1	A	255	GLU	CB-CG-CD	6.13	123.03	112.60
1	A	369	ASP	CA-CB-CG	6.03	118.63	112.60
1	A	129	ASP	CA-CB-CG	5.77	118.37	112.60
1	A	256	PHE	N-CA-CB	5.68	120.35	110.81
1	A	119	HIS	CA-CB-CG	5.46	119.26	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3	ASP	CB-CA-C	5.34	120.25	110.10
1	B	134	ARG	CG-CD-NE	5.24	123.52	112.00
1	A	267	ASP	CA-CB-CG	5.17	117.77	112.60
1	B	3	ASP	CA-CB-CG	5.13	117.73	112.60
1	A	203	ASP	CA-CB-CG	5.07	117.67	112.60
1	B	328	GLY	CA-C-O	-5.03	118.26	122.33

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	19	ARG	Sidechain
1	B	134	ARG	Sidechain
1	B	19	ARG	Sidechain
1	B	223	ARG	Sidechain
1	B	373	GLY	Peptide
1	B	376	ARG	Sidechain

5.2 Too-close contacts ⓘ

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	3125	0	3040	31	0
1	B	3130	0	3042	23	0
2	A	16	0	21	3	0
3	A	7	0	10	0	0
4	A	15	0	18	0	0
4	B	15	0	18	1	0
5	A	1	0	0	0	0
6	B	8	0	12	0	0
7	A	200	0	0	2	0
7	B	258	0	0	3	0
All	All	6775	0	6161	54	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 4.

All (54) 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:411:LYS:NZ	7:B:601:HOH:O	1.89	1.01
1:A:220:GLN:HE22	1:A:369:ASP:H	1.13	0.96
1:B:220:GLN:HE22	1:B:369:ASP:H	1.14	0.95
1:B:133:VAL:HG12	1:B:134:ARG:H	1.34	0.92
1:A:129:ASP:O	1:A:133:VAL:HG22	1.71	0.91
1:A:83:GLN:HE22	2:A:501:P6G:H182	1.46	0.81
1:A:279:ARG:HH11	1:A:279:ARG:HG3	1.45	0.81
1:A:81:LYS:CE	1:A:88:ASP:OD1	2.31	0.78
1:B:144:ILE:H	1:B:148:ASN:HD22	1.36	0.74
1:A:144:ILE:H	1:A:148:ASN:HD22	1.35	0.73
1:B:49:GLU:OE2	1:B:126:LYS:CE	2.37	0.72
1:A:81:LYS:HE3	1:A:88:ASP:OD1	1.89	0.72
1:A:67:TRP:CE3	1:A:72:VAL:HG21	2.29	0.67
1:B:49:GLU:OE2	1:B:126:LYS:HE3	1.94	0.67
1:A:67:TRP:CE3	1:A:72:VAL:CG2	2.81	0.63
1:B:362:LEU:HB3	1:B:368:ILE:HG12	1.80	0.63
1:B:133:VAL:CG1	1:B:134:ARG:H	2.11	0.63
1:B:133:VAL:HG12	1:B:134:ARG:N	2.11	0.61
1:A:349:HIS:HE1	7:A:699:HOH:O	1.83	0.61
1:A:24:VAL:HG13	1:A:89:PHE:HB2	1.86	0.57
1:B:49:GLU:CD	1:B:126:LYS:HE3	2.29	0.57
1:A:279:ARG:HG3	1:A:279:ARG:NH1	2.19	0.57
1:A:129:ASP:HB2	1:A:133:VAL:HG13	1.89	0.55
1:B:271:GLN:O	1:B:275:THR:HG23	2.06	0.54
1:A:279:ARG:HH11	1:A:279:ARG:CG	2.19	0.54
1:A:220:GLN:NE2	1:A:369:ASP:H	1.95	0.53
4:B:502:EPE:O3S	7:B:602:HOH:O	2.19	0.51
1:B:223:ARG:HD3	1:B:246:GLY:HA3	1.92	0.50
1:B:220:GLN:NE2	1:B:369:ASP:H	1.97	0.50
1:B:70:ARG:HG2	1:B:70:ARG:HH11	1.77	0.49
1:A:67:TRP:HE3	1:A:72:VAL:CG2	2.24	0.49
1:A:339:TRP:CD1	1:A:339:TRP:C	2.90	0.49
1:A:258:HIS:HE1	1:A:309:THR:OG1	1.97	0.48
1:B:133:VAL:HB	7:B:631:HOH:O	2.13	0.48
1:A:148:ASN:HB3	2:A:501:P6G:H151	1.96	0.48
1:A:279:ARG:NH1	1:A:279:ARG:CG	2.77	0.47
1:A:121:GLY:O	1:A:163:HIS:HE1	1.99	0.46
1:B:381:VAL:O	1:B:385:HIS:HD2	1.98	0.46
1:B:144:ILE:H	1:B:148:ASN:ND2	2.09	0.46
1:A:49:GLU:OE2	1:A:126:LYS:HE3	2.16	0.45
1:A:349:HIS:CD2	1:B:339:TRP:HE1	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:163:HIS:HD2	7:A:729:HOH:O	2.00	0.45
1:A:3:ASP:OD1	1:A:3:ASP:N	2.51	0.44
1:A:144:ILE:H	1:A:148:ASN:ND2	2.11	0.43
1:B:339:TRP:CD1	1:B:339:TRP:C	2.97	0.43
1:A:301:HIS:CG	1:A:302:PRO:HD3	2.54	0.42
1:B:373:GLY:HA3	1:B:396:GLY:HA3	2.00	0.42
1:B:49:GLU:OE2	1:B:126:LYS:HE2	2.17	0.42
1:A:381:VAL:O	1:A:385:HIS:HD2	2.02	0.42
1:B:231:ALA:O	1:B:250:TYR:HA	2.21	0.41
1:B:24:VAL:CG1	1:B:89:PHE:HB2	2.51	0.41
1:A:148:ASN:CB	2:A:501:P6G:H151	2.52	0.40
1:A:13:VAL:HA	1:A:101:TYR:CZ	2.57	0.40
1:A:134:ARG:O	1:A:134:ARG:CG	2.67	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	409/410 (100%)	399 (98%)	8 (2%)	2 (0%)	25	7
1	B	410/410 (100%)	398 (97%)	10 (2%)	2 (0%)	25	7
All	All	819/820 (100%)	797 (97%)	18 (2%)	4 (0%)	25	7

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	301	HIS
1	B	301	HIS
1	B	133	VAL
1	A	393	LEU

5.3.2 Protein sidechains ⓘ

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	320/319 (100%)	315 (98%)	5 (2%)	58	29
1	B	321/319 (101%)	318 (99%)	3 (1%)	75	53
All	All	641/638 (100%)	633 (99%)	8 (1%)	65	41

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ASP
1	A	273	VAL
1	A	299	LEU
1	A	339	TRP
1	A	377	SER
1	B	23	GLN
1	B	299	LEU
1	B	339	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	18	ASN
1	A	65	ASN
1	A	83	GLN
1	A	109	HIS
1	A	163	HIS
1	A	220	GLN
1	A	258	HIS
1	A	277	GLN
1	A	294	ASN
1	A	349	HIS
1	A	385	HIS
1	B	18	ASN
1	B	111	GLN
1	B	143	GLN

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Mol	Chain	Res	Type
1	B	148	ASN
1	B	220	GLN
1	B	294	ASN
1	B	385	HIS

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 6 ligands modelled in this entry, 1 is monoatomic - leaving 5 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	EPE	A	503	-	15,15,15	0.71	1 (6%)	18,20,20	1.31	3 (16%)
6	TRS	B	501	-	7,7,7	0.21	0	9,9,9	0.40	0
2	P6G	A	501	-	15,15,18	0.42	0	14,14,17	0.42	0
4	EPE	B	502	-	15,15,15	0.82	1 (6%)	18,20,20	1.17	2 (11%)
3	PEG	A	502	-	6,6,6	0.27	0	5,5,5	0.30	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	EPE	A	503	-	-	0/9/19/19	0/1/1/1
6	TRS	B	501	-	-	0/9/9/9	-
2	P6G	A	501	-	-	4/13/13/16	-
4	EPE	B	502	-	-	3/9/19/19	0/1/1/1
3	PEG	A	502	-	-	1/4/4/4	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	502	EPE	O3S-S	2.59	1.56	1.47
4	A	503	EPE	O3S-S	2.25	1.55	1.47

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	503	EPE	O2S-S-C10	-3.40	102.82	106.92
4	B	502	EPE	O2S-S-C10	-3.15	103.12	106.92
4	A	503	EPE	O3S-S-C10	-2.75	101.31	105.77
4	A	503	EPE	O3S-S-O1S	2.16	116.55	111.27
4	B	502	EPE	O3S-S-C10	2.03	109.05	105.77

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	502	EPE	S-C10-C9-N1
4	B	502	EPE	C8-C7-N4-C3
2	A	501	P6G	O7-C8-C9-O10
4	B	502	EPE	N4-C7-C8-O8
3	A	502	PEG	O2-C3-C4-O4
2	A	501	P6G	C15-C14-O13-C12
2	A	501	P6G	O10-C11-C12-O13
2	A	501	P6G	O13-C14-C15-O16

There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	P6G	3	0
4	B	502	EPE	1	0

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 TRS B 501

Bond lengths

Bond angles

Torsions

Rings

Ligand P6G A 501

Bond lengths

Bond angles

Torsions

Rings

Ligand PEG A 502
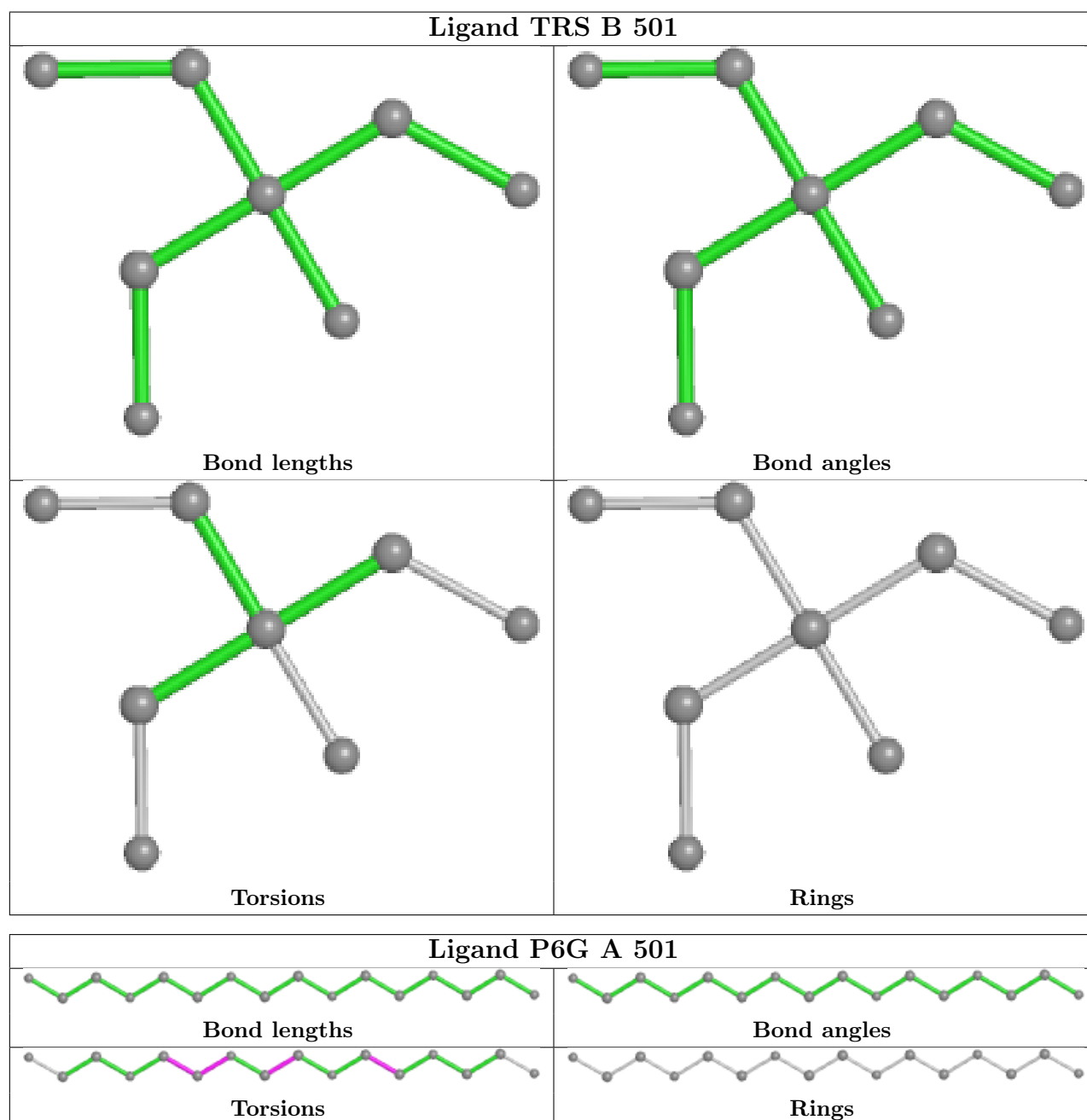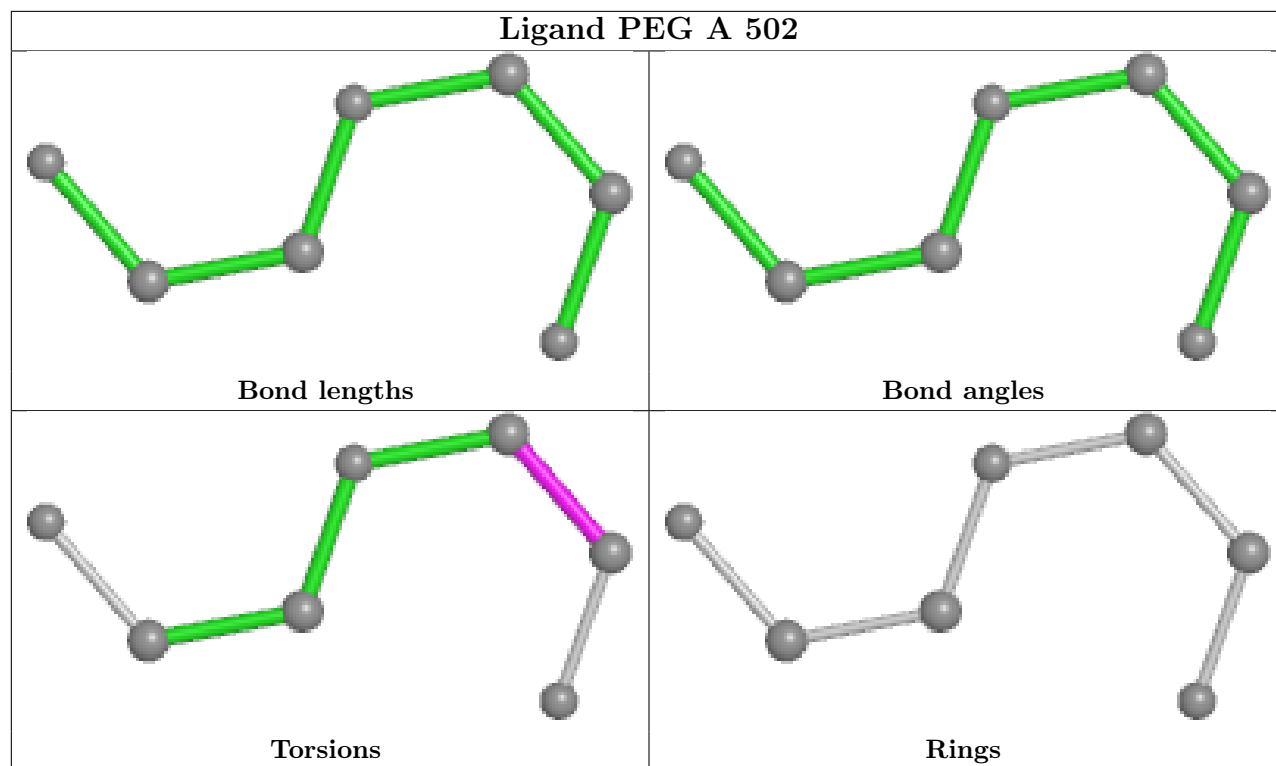
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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, 95th 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(Å²)	Q<0.9
1	A	410/410 (100%)	0.18	17 (4%)	42	43	15, 29, 62, 92	1 (0%)
1	B	410/410 (100%)	-0.06	12 (2%)	54	55	13, 25, 53, 72	2 (0%)
All	All	820/820 (100%)	0.06	29 (3%)	47	48	13, 27, 58, 92	3 (0%)

All (29) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	133	VAL	7.0
1	A	273	VAL	5.5
1	A	131	VAL	4.7
1	A	269	ALA	4.3
1	A	67	TRP	4.3
1	B	67	TRP	4.2
1	A	134	ARG	4.0
1	B	395	HIS	3.6
1	A	133	VAL	3.2
1	A	272	LYS	3.1
1	A	128	PRO	3.0
1	B	394	ALA	2.9
1	A	256	PHE	2.8
1	B	132	SER	2.6
1	A	237	ALA	2.6
1	B	128	PRO	2.5
1	A	396	GLY	2.5
1	B	131	VAL	2.5
1	B	134	ARG	2.5
1	A	268	ASP	2.4
1	B	391	GLY	2.4
1	A	199	VAL	2.4
1	B	396	GLY	2.3
1	A	373	GLY	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	373	GLY	2.3
1	A	287	ASP	2.3
1	A	130	VAL	2.1
1	A	255	GLU	2.1
1	B	390	GLU	2.1

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

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

6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

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, 95th 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($\mathring{A}^2$)	Q<0.9
4	EPE	B	502	15/15	0.78	0.20	34,49,62,68	0
4	EPE	A	503	15/15	0.81	0.19	41,54,63,68	0
2	P6G	A	501	16/19	0.90	0.11	26,35,47,47	0
3	PEG	A	502	7/7	0.92	0.12	41,44,47,49	0
6	TRS	B	501	8/8	0.95	0.07	23,26,28,29	0
5	NA	A	504	1/1	0.96	0.33	45,45,45,45	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 P6G A 501:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
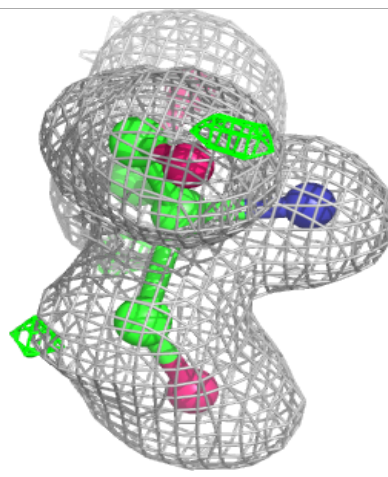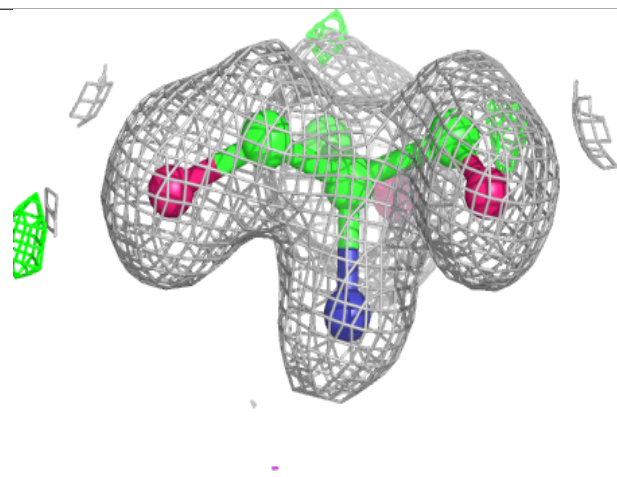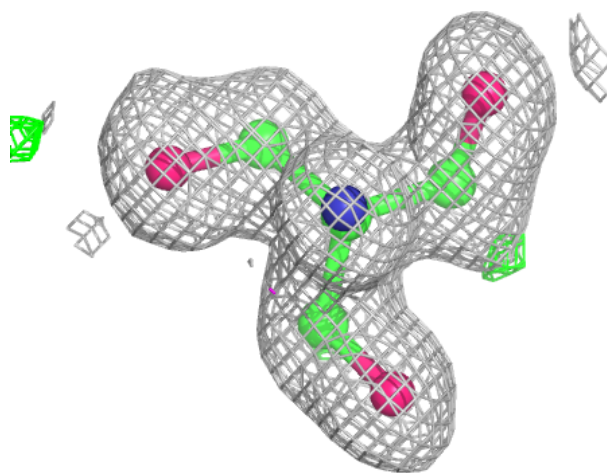and green (positive)
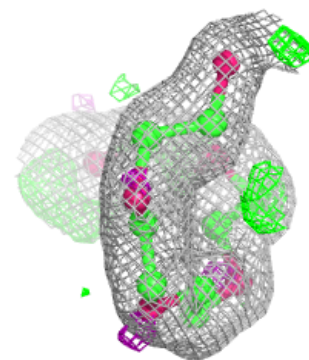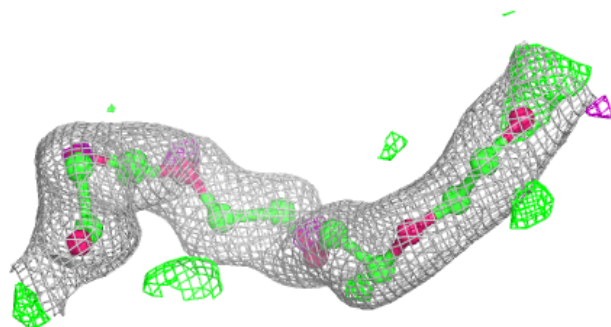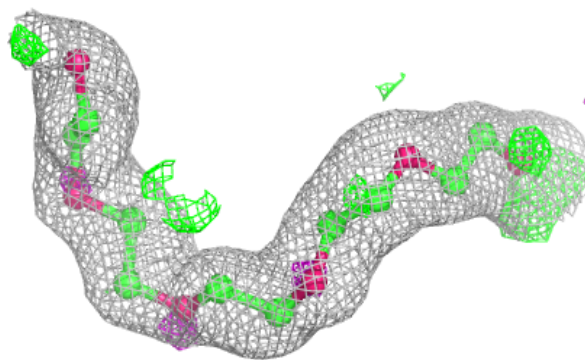
Electron density around PEG A 502:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
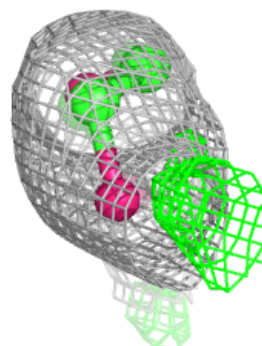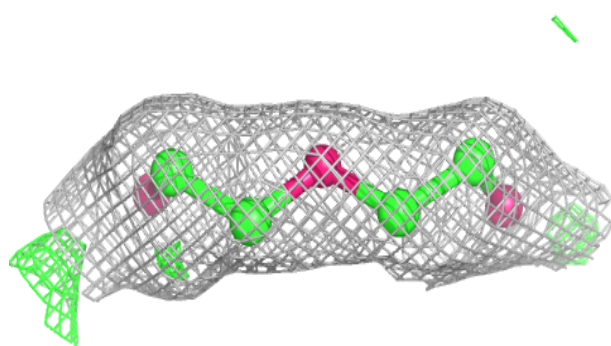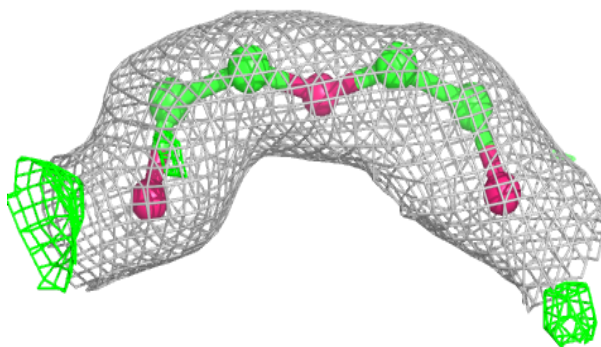
Electron density around TRS B 501:

$2mF_o$-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 ⓘ

There are no such residues in this entry.