



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 02:53 PM UTC

PDB ID : 6IH1 / pdb_00006ih1
Title : Crystal structure of a standalone versatile EAL protein from *Vibrio cholerae* O395 - c-di-GMP bound form
Authors : Yadav, M.; Pal, K.; Sen, U.
Deposited on : 2018-09-28
Resolution : 1.95 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 Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
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) : 2.49

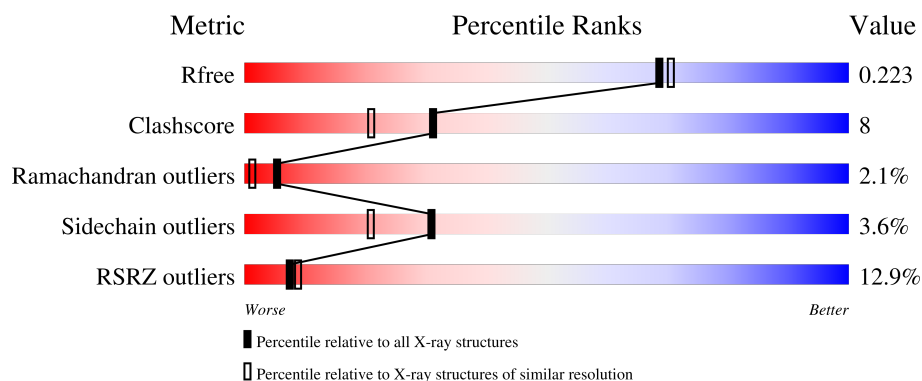
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.95 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}	180053	3494 (1.96-1.96)
Clashscore	190562	3612 (1.96-1.96)
Ramachandran outliers	187476	3587 (1.96-1.96)
Sidechain outliers	187428	3587 (1.96-1.96)
RSRZ outliers	180081	3495 (1.96-1.96)

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 $\leq 5\%$. 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	257	14% 76% 15% 8%
1	B	257	9% 72% 18% 8%
1	C	257	11% 70% 19% 8%
1	D	257	13% 75% 16% 8%

2 Entry composition [i](#)

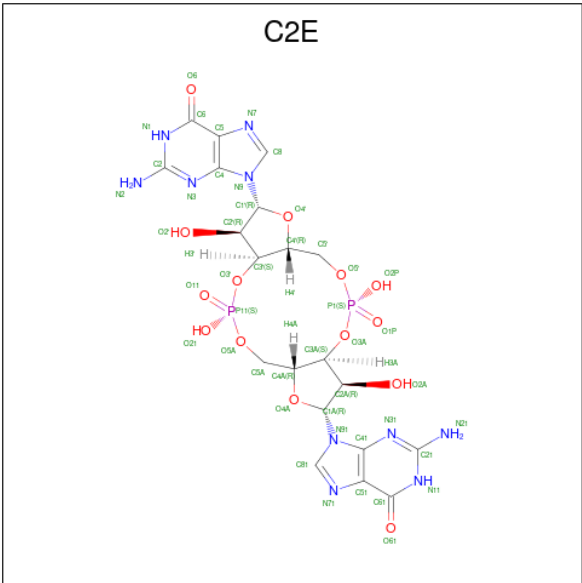
There are 4 unique types of molecules in this entry. The entry contains 8334 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 cyclic di nucleotide phosphodiesterase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	237	Total	C	N	O	S	0	0	0
			1895	1215	316	354	10			
1	B	237	Total	C	N	O	S	0	0	0
			1895	1215	316	354	10			
1	C	237	Total	C	N	O	S	0	0	0
			1895	1215	316	354	10			
1	D	237	Total	C	N	O	S	0	0	0
			1895	1215	316	354	10			

- Molecule 2 is 9,9'-[(2R,3R,3aS,5S,7aR,9R,10R,10aS,12S,14aR)-3,5,10,12-tetrahydroxy-5,12-dioxidoctahydro-2H,7H-difuro[3,2-d:3',2'-j][1,3,7,9,2,8]tetraoxadiphosphacyclododecine-2,9-diyl]bis(2-amino-1,9-dihydro-6H-purin-6-one) (CCD ID: C2E) (formula: C₂₀H₂₄N₁₀O₁₄P₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			46	20	10	14	2		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	B	1	Total	C	N	O	P	0	0
			46	20	10	14	2		
2	C	1	Total	C	N	O	P	0	0
			46	20	10	14	2		
2	D	1	Total	C	N	O	P	0	0
			46	20	10	14	2		

- Molecule 3 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Ca	0	0
			2	2		
3	B	2	Total	Ca	0	0
			2	2		
3	C	2	Total	Ca	0	0
			2	2		
3	D	2	Total	Ca	0	0
			2	2		

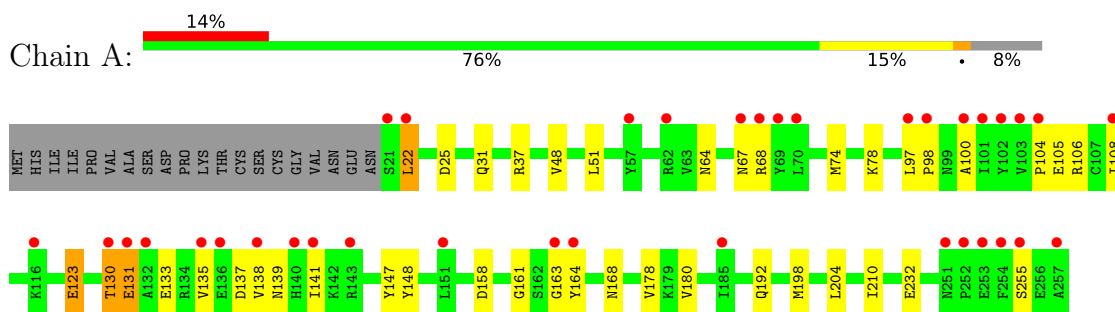
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	116	Total	O	0	0
			116	116		
4	B	166	Total	O	0	0
			166	166		
4	C	142	Total	O	0	0
			142	142		
4	D	138	Total	O	0	0
			138	138		

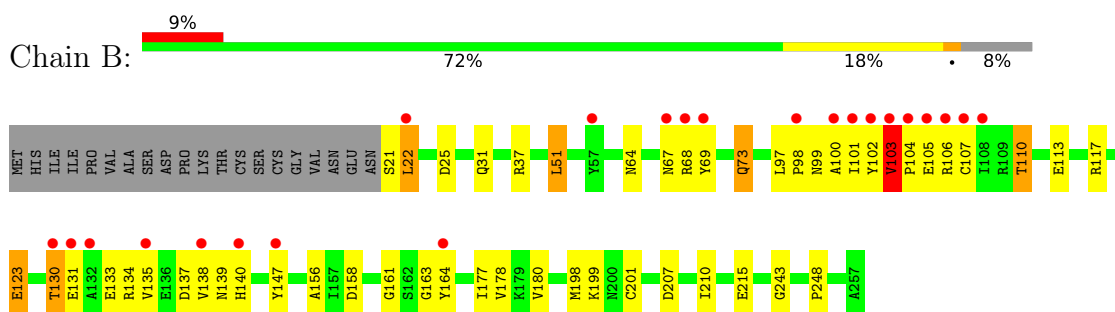
3 Residue-property plots [i](#)

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.

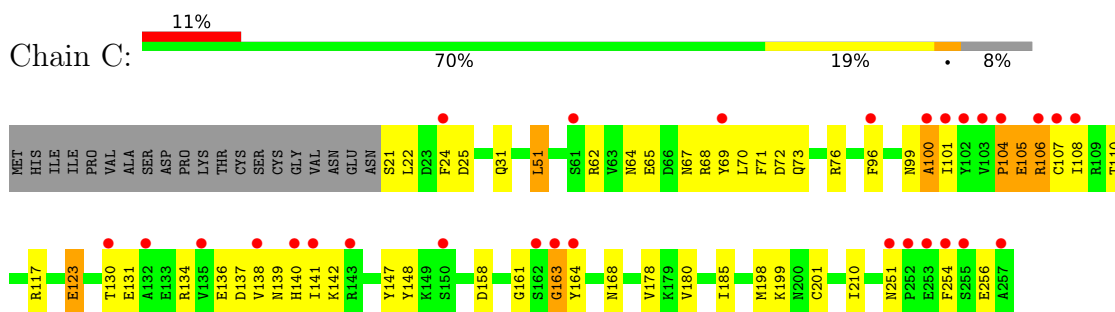
- Molecule 1: cyclic di nucleotide phosphodiesterase



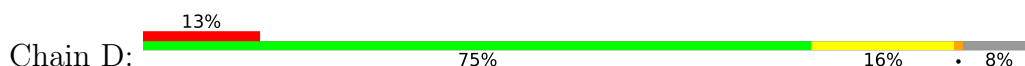
- Molecule 1: cyclic di nucleotide phosphodiesterase

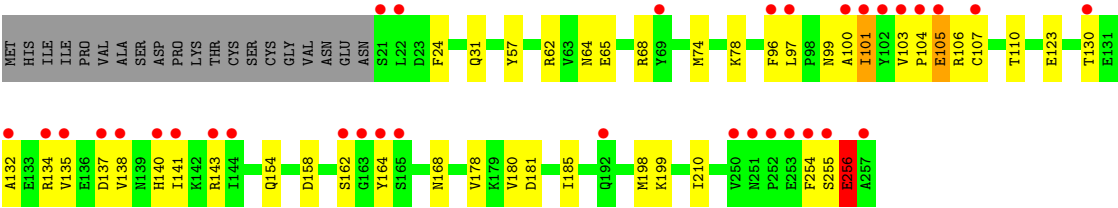


- Molecule 1: cyclic di nucleotide phosphodiesterase



- Molecule 1: cyclic di nucleotide phosphodiesterase





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	73.50Å 42.63Å 156.34Å 90.00° 94.42° 90.00°	Depositor
Resolution (Å)	40.92 – 1.95 40.92 – 1.95	Depositor EDS
% Data completeness (in resolution range)	95.9 (40.92-1.95) 96.0 (40.92-1.95)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.27 (at 1.95Å)	Xtriage
Refinement program	PHENIX 1.12_2829	Depositor
R, R_{free}	0.183 , 0.222 0.185 , 0.223	Depositor DCC
R_{free} test set	3321 reflections (4.65%)	wwPDB-VP
Wilson B-factor (Å ²)	25.8	Xtriage
Anisotropy	0.580	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 64.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	8334	wwPDB-VP
Average B, all atoms (Å ²)	50.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 40.71 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.6285e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: C2E, CA

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	0.31	0/1934	0.55	0/2613
1	B	0.35	0/1934	0.55	0/2613
1	C	0.36	0/1934	0.56	0/2613
1	D	0.32	0/1934	0.58	2/2613 (0.1%)
All	All	0.34	0/7736	0.56	2/10452 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	106	ARG	N-CA-C	-5.95	105.86	113.01
1	D	103	VAL	N-CA-C	5.17	120.05	108.88

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	1895	0	1871	27	0
1	B	1895	0	1871	38	1
1	C	1895	0	1871	40	0
1	D	1895	0	1871	31	1
2	A	46	0	21	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	46	0	20	1	0
2	C	46	0	20	1	0
2	D	46	0	21	1	0
3	A	2	0	0	0	0
3	B	2	0	0	0	0
3	C	2	0	0	0	0
3	D	2	0	0	0	0
4	A	116	0	0	2	0
4	B	166	0	0	6	0
4	C	142	0	0	8	0
4	D	138	0	0	3	0
All	All	8334	0	7566	126	1

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 8.

All (126) 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:C:180:VAL:HG11	1:C:198:MET:HE1	1.52	0.92
1:A:180:VAL:HG11	1:A:198:MET:HE1	1.53	0.91
1:D:180:VAL:HG11	1:D:198:MET:HE1	1.55	0.87
1:D:68:ARG:HB3	1:D:100:ALA:HA	1.58	0.85
1:D:137:ASP:HB3	1:D:140:HIS:HB2	1.60	0.84
1:D:134:ARG:HH12	1:D:164:TYR:HB3	1.42	0.84
1:C:201:CYS:SG	4:C:735:HOH:O	2.36	0.83
1:B:180:VAL:HG11	1:B:198:MET:HE1	1.62	0.82
1:C:68:ARG:NH1	1:C:99:ASN:O	2.17	0.77
1:B:201:CYS:SG	4:B:750:HOH:O	2.43	0.76
1:A:68:ARG:HH11	1:A:100:ALA:HA	1.53	0.73
1:A:137:ASP:O	1:A:139:ASN:N	2.22	0.72
1:C:139:ASN:HD22	1:C:142:LYS:HD3	1.56	0.70
1:D:74:MET:HE3	1:D:78:LYS:HE2	1.72	0.70
1:B:69:TYR:HH	1:B:107:CYS:HG	1.37	0.69
1:B:103:VAL:HB	1:B:104:PRO:HD3	1.74	0.68
1:C:105:GLU:O	1:C:107:CYS:N	2.27	0.67
1:B:163:GLY:HA2	1:D:164:TYR:CD1	2.30	0.67
1:D:154:GLN:NE2	4:D:601:HOH:O	2.19	0.66
1:C:178:VAL:HG23	1:C:210:ILE:HG21	1.77	0.65
1:A:74:MET:HE3	1:A:78:LYS:HE2	1.78	0.65
1:C:137:ASP:HB3	1:C:140:HIS:HB2	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:104:PRO:O	1:C:106:ARG:N	2.27	0.65
1:B:69:TYR:OH	1:B:107:CYS:SG	2.49	0.64
1:B:73:GLN:HG3	1:B:110:THR:HG21	1.80	0.63
1:B:137:ASP:O	1:B:139:ASN:N	2.27	0.63
1:B:25:ASP:HB3	1:B:51:LEU:HD21	1.80	0.62
1:A:31:GLN:OE1	2:A:501:C2E:H8	1.98	0.62
1:B:64:ASN:H	1:B:67:ASN:HB2	1.63	0.62
1:B:97:LEU:HD12	1:B:98:PRO:HD2	1.80	0.62
1:C:139:ASN:ND2	1:C:142:LYS:HD3	2.15	0.62
1:B:207:ASP:OD1	4:B:601:HOH:O	2.16	0.62
1:A:22:LEU:HD23	1:A:22:LEU:H	1.64	0.62
1:D:68:ARG:HH11	1:D:100:ALA:N	1.97	0.62
1:A:123:GLU:CD	1:A:123:GLU:H	2.08	0.61
1:A:178:VAL:HG23	1:A:210:ILE:HG21	1.82	0.61
1:D:130:THR:HB	1:D:158:ASP:HB3	1.81	0.60
1:B:68:ARG:NH2	1:B:99:ASN:O	2.34	0.60
1:D:178:VAL:HG23	1:D:210:ILE:HG21	1.82	0.60
1:B:31:GLN:OE1	2:B:501:C2E:H8	2.02	0.60
1:D:97:LEU:HB3	1:D:100:ALA:HB2	1.84	0.60
1:D:31:GLN:OE1	2:D:501:C2E:H8	2.02	0.60
1:C:72:ASP:OD2	1:C:76:ARG:NH2	2.35	0.59
1:B:37:ARG:NH2	4:B:606:HOH:O	2.33	0.59
1:C:251:ASN:ND2	4:C:606:HOH:O	2.36	0.58
1:C:140:HIS:HB3	4:C:610:HOH:O	2.04	0.58
1:D:199:LYS:NZ	4:D:605:HOH:O	2.36	0.58
1:A:64:ASN:H	1:A:67:ASN:HB2	1.68	0.57
1:A:164:TYR:CE2	1:C:163:GLY:HA2	2.40	0.57
1:B:215:GLU:OE1	4:B:602:HOH:O	2.18	0.56
1:C:24:PHE:HB3	1:C:62:ARG:NH1	2.21	0.56
1:B:130:THR:HB	1:B:158:ASP:HB3	1.88	0.55
1:B:21:SER:OG	1:B:22:LEU:N	2.38	0.55
1:D:68:ARG:NH1	1:D:100:ALA:O	2.39	0.55
1:A:161:GLY:O	1:C:168:ASN:HB3	2.06	0.55
1:A:232:GLU:OE2	1:B:199:LYS:NZ	2.40	0.54
1:D:143:ARG:NH1	4:D:607:HOH:O	2.39	0.54
1:C:31:GLN:OE1	2:C:501:C2E:H8	2.07	0.54
1:D:65:GLU:HA	1:D:68:ARG:HE	1.72	0.54
1:B:113:GLU:OE2	4:B:603:HOH:O	2.19	0.53
1:B:139:ASN:ND2	4:B:608:HOH:O	2.38	0.53
1:B:163:GLY:HA2	1:D:164:TYR:HD1	1.71	0.53
1:D:68:ARG:HD2	1:D:99:ASN:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:131:GLU:OE2	1:B:135:VAL:HB	2.09	0.52
1:B:133:GLU:HB3	1:B:135:VAL:HG23	1.91	0.52
1:C:25:ASP:HB3	1:C:51:LEU:HD21	1.91	0.52
1:B:161:GLY:O	1:D:168:ASN:HB3	2.09	0.52
1:A:37:ARG:NH2	4:A:610:HOH:O	2.43	0.51
1:D:24:PHE:HB3	1:D:62:ARG:NH1	2.25	0.51
1:D:134:ARG:HH12	1:D:164:TYR:CB	2.20	0.51
1:B:123:GLU:H	1:B:123:GLU:CD	2.17	0.51
1:A:163:GLY:HA2	1:C:164:TYR:CE2	2.46	0.50
1:C:131:GLU:OE2	1:C:134:ARG:HB3	2.12	0.50
1:D:254:PHE:O	1:D:256:GLU:N	2.45	0.49
1:B:133:GLU:HG3	1:B:134:ARG:H	1.77	0.49
1:C:22:LEU:HD11	1:C:71:PHE:HA	1.95	0.49
1:C:108:ILE:HD12	1:C:148:TYR:CE1	2.47	0.48
1:C:123:GLU:H	1:C:123:GLU:CD	2.21	0.48
1:C:69:TYR:HD1	1:C:101:ILE:HG22	1.79	0.48
1:A:108:ILE:HD12	1:A:148:TYR:CE1	2.48	0.48
1:B:102:TYR:HA	1:B:140:HIS:NE2	2.29	0.48
1:C:117:ARG:NH2	4:C:602:HOH:O	2.46	0.48
1:D:105:GLU:C	1:D:107:CYS:N	2.72	0.48
1:A:68:ARG:NH1	1:A:100:ALA:O	2.48	0.47
1:A:130:THR:HG22	1:A:158:ASP:HB3	1.96	0.47
1:C:199:LYS:NZ	4:C:608:HOH:O	2.40	0.47
1:A:141:ILE:HD12	1:A:141:ILE:H	1.79	0.47
1:C:141:ILE:HG13	4:C:610:HOH:O	2.14	0.47
1:D:105:GLU:C	1:D:107:CYS:H	2.20	0.47
1:C:51:LEU:HD22	4:C:653:HOH:O	2.15	0.46
1:C:105:GLU:HG2	1:C:147:TYR:OH	2.16	0.46
1:B:105:GLU:OE1	1:B:147:TYR:HD2	1.98	0.46
1:C:73:GLN:NE2	1:C:76:ARG:NH1	2.63	0.46
1:B:178:VAL:HG23	1:B:210:ILE:HG21	1.98	0.46
1:C:65:GLU:HG3	1:C:68:ARG:HH21	1.81	0.46
1:D:96:PHE:CZ	1:D:101:ILE:HD11	2.51	0.45
1:B:103:VAL:HB	1:B:104:PRO:CD	2.45	0.45
1:A:168:ASN:HB3	1:C:161:GLY:O	2.17	0.45
1:D:141:ILE:HD12	1:D:141:ILE:H	1.82	0.44
1:B:137:ASP:C	1:B:139:ASN:N	2.73	0.44
1:D:162:SER:HB3	1:D:181:ASP:CG	2.43	0.43
1:A:25:ASP:HB3	1:A:51:LEU:HD11	2.00	0.43
1:C:65:GLU:HA	1:C:68:ARG:HE	1.84	0.43
1:D:64:ASN:O	1:D:68:ARG:HG3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:105:GLU:HG3	1:A:147:TYR:CE1	2.54	0.42
1:D:254:PHE:C	1:D:256:GLU:H	2.28	0.42
1:B:137:ASP:C	1:B:139:ASN:H	2.21	0.42
1:B:163:GLY:HA2	1:D:164:TYR:CE1	2.55	0.42
1:C:137:ASP:CB	1:C:140:HIS:HB2	2.48	0.42
1:B:134:ARG:HD3	1:B:164:TYR:OH	2.19	0.42
1:C:96:PHE:CE1	1:C:100:ALA:HB3	2.55	0.42
1:D:134:ARG:NH1	1:D:164:TYR:CG	2.87	0.42
1:B:133:GLU:HG3	1:B:134:ARG:N	2.35	0.42
1:A:97:LEU:HD12	1:A:98:PRO:HD2	2.02	0.42
1:A:131:GLU:OE1	1:A:164:TYR:HB3	2.19	0.42
1:C:21:SER:N	1:C:70:LEU:HD21	2.35	0.42
1:C:25:ASP:OD2	4:C:601:HOH:O	2.22	0.42
1:A:105:GLU:HG3	1:A:147:TYR:CZ	2.54	0.41
1:A:192:GLN:HG3	4:A:647:HOH:O	2.20	0.41
1:A:163:GLY:HA2	1:C:164:TYR:CD2	2.54	0.41
1:C:24:PHE:HB3	1:C:62:ARG:CZ	2.51	0.41
1:C:64:ASN:H	1:C:67:ASN:HB2	1.86	0.41
1:C:130:THR:HB	1:C:158:ASP:HB3	2.01	0.41
1:B:243:GLY:HA3	1:B:248:PRO:HG3	2.02	0.40
1:A:48:VAL:HG12	2:A:501:C2E:N71	2.36	0.40
1:B:156:ALA:HA	1:B:177:ILE:O	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:25:ASP:OD2	1:D:57:TYR:OH[2_545]	2.19	0.01

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	235/257 (91%)	219 (93%)	11 (5%)	5 (2%)	5	1
1	B	235/257 (91%)	221 (94%)	10 (4%)	4 (2%)	7	2
1	C	235/257 (91%)	219 (93%)	10 (4%)	6 (3%)	4	1
1	D	235/257 (91%)	219 (93%)	11 (5%)	5 (2%)	5	1
All	All	940/1028 (91%)	878 (93%)	42 (4%)	20 (2%)	5	1

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	131	GLU
1	A	138	VAL
1	B	100	ALA
1	C	105	GLU
1	C	163	GLY
1	D	255	SER
1	C	100	ALA
1	D	105	GLU
1	B	103	VAL
1	B	106	ARG
1	C	106	ARG
1	A	135	VAL
1	D	256	GLU
1	A	106	ARG
1	C	104	PRO
1	D	104	PRO
1	C	136	GLU
1	D	132	ALA
1	A	104	PRO
1	B	138	VAL

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	204/222 (92%)	198 (97%)	6 (3%)	37	29

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	204/222 (92%)	195 (96%)	9 (4%)	25	15
1	C	204/222 (92%)	197 (97%)	7 (3%)	32	23
1	D	204/222 (92%)	197 (97%)	7 (3%)	32	23
All	All	816/888 (92%)	787 (96%)	29 (4%)	31	21

All (29) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	LEU
1	A	123	GLU
1	A	130	THR
1	A	133	GLU
1	A	204	LEU
1	A	255	SER
1	B	22	LEU
1	B	51	LEU
1	B	73	GLN
1	B	101	ILE
1	B	103	VAL
1	B	110	THR
1	B	117	ARG
1	B	123	GLU
1	B	130	THR
1	C	51	LEU
1	C	110	THR
1	C	123	GLU
1	C	138	VAL
1	C	185	ILE
1	C	254	PHE
1	C	256	GLU
1	D	101	ILE
1	D	110	THR
1	D	123	GLU
1	D	135	VAL
1	D	138	VAL
1	D	185	ILE
1	D	256	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	64	ASN
1	A	67	ASN
1	C	139	ASN
1	D	139	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 8 are monoatomic - leaving 4 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	$\# Z > 2$
2	C2E	D	501	3	52,52,52	3.93	31 (59%)	78,82,82	2.22	24 (30%)
2	C2E	C	501	3	52,52,52	3.89	30 (57%)	78,82,82	2.12	26 (33%)
2	C2E	B	501	3	52,52,52	3.92	29 (55%)	78,82,82	2.21	27 (34%)
2	C2E	A	501	3	52,52,52	4.03	33 (63%)	78,82,82	2.29	26 (33%)

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
2	C2E	D	501	3	-	3/30/62/62	0/6/7/7
2	C2E	C	501	3	-	4/30/62/62	0/6/7/7
2	C2E	B	501	3	-	2/30/62/62	0/6/7/7
2	C2E	A	501	3	-	3/30/62/62	0/6/7/7

All (123) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501	C2E	C2'-C3'	-13.20	1.24	1.53
2	B	501	C2E	C2'-C3'	-13.05	1.24	1.53
2	D	501	C2E	C2'-C3'	-12.90	1.24	1.53
2	C	501	C2E	C2'-C3'	-12.81	1.25	1.53
2	A	501	C2E	C3A-C4A	-10.78	1.25	1.52
2	D	501	C2E	C3A-C4A	-10.75	1.25	1.52
2	B	501	C2E	C3A-C4A	-10.64	1.25	1.52
2	C	501	C2E	C3A-C4A	-10.30	1.26	1.52
2	C	501	C2E	O4A-C4A	8.00	1.62	1.45
2	A	501	C2E	O4A-C4A	7.94	1.62	1.45
2	D	501	C2E	O4A-C4A	7.78	1.62	1.45
2	B	501	C2E	O4A-C4A	7.61	1.61	1.45
2	A	501	C2E	C41-N31	6.80	1.49	1.34
2	A	501	C2E	C4-N3	6.70	1.49	1.34
2	B	501	C2E	C41-N31	6.40	1.48	1.34
2	D	501	C2E	C4-N3	6.29	1.48	1.34
2	C	501	C2E	C4-N3	6.24	1.48	1.34
2	C	501	C2E	C41-N31	6.12	1.48	1.34
2	D	501	C2E	C41-N31	6.06	1.48	1.34
2	B	501	C2E	C4-N3	6.05	1.48	1.34
2	A	501	C2E	C2-N3	5.75	1.47	1.33
2	D	501	C2E	C2-N3	5.55	1.46	1.33
2	B	501	C2E	C2-N3	5.50	1.46	1.33
2	A	501	C2E	C21-N31	5.45	1.46	1.33
2	B	501	C2E	C21-N21	5.40	1.46	1.34
2	A	501	C2E	C21-N21	5.37	1.46	1.34
2	C	501	C2E	C2-N3	5.28	1.46	1.33
2	D	501	C2E	O4A-C1A	-5.14	1.30	1.42
2	D	501	C2E	C21-N21	5.10	1.46	1.34
2	B	501	C2E	C21-N31	5.08	1.45	1.33
2	D	501	C2E	C5'-C4'	-5.03	1.36	1.51
2	C	501	C2E	C5'-C4'	-5.03	1.36	1.51
2	C	501	C2E	O4A-C1A	-5.03	1.30	1.42
2	A	501	C2E	C5'-C4'	-5.01	1.36	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501	C2E	C2'-C1'	4.99	1.69	1.53
2	A	501	C2E	O4A-C1A	-4.99	1.30	1.42
2	B	501	C2E	C5'-C4'	-4.86	1.37	1.51
2	C	501	C2E	C2-N2	4.82	1.45	1.34
2	B	501	C2E	O4A-C1A	-4.79	1.30	1.42
2	B	501	C2E	C2'-C1'	4.79	1.68	1.53
2	C	501	C2E	C21-N21	4.77	1.45	1.34
2	D	501	C2E	C2-N2	4.76	1.45	1.34
2	B	501	C2E	C2-N2	4.69	1.45	1.34
2	D	501	C2E	O4'-C1'	-4.69	1.31	1.42
2	D	501	C2E	C2'-C1'	4.69	1.68	1.53
2	B	501	C2E	O4'-C1'	-4.64	1.31	1.42
2	C	501	C2E	C21-N31	4.62	1.44	1.33
2	A	501	C2E	C2-N2	4.57	1.44	1.34
2	D	501	C2E	C21-N31	4.53	1.44	1.33
2	C	501	C2E	C2'-C1'	4.49	1.67	1.53
2	A	501	C2E	O4'-C1'	-4.43	1.31	1.42
2	C	501	C2E	O4'-C1'	-4.42	1.31	1.42
2	C	501	C2E	P1-O3A	3.97	1.71	1.59
2	A	501	C2E	P11-O3'	3.89	1.71	1.59
2	A	501	C2E	P1-O3A	3.83	1.70	1.59
2	B	501	C2E	P11-O3'	3.79	1.70	1.59
2	D	501	C2E	P11-O3'	3.78	1.70	1.59
2	B	501	C2E	P1-O3A	3.68	1.70	1.59
2	C	501	C2E	P11-O3'	3.59	1.70	1.59
2	C	501	C2E	O4'-C4'	3.58	1.53	1.45
2	A	501	C2E	O3A-C3A	3.58	1.56	1.44
2	A	501	C2E	C3'-C4'	3.58	1.62	1.52
2	D	501	C2E	C3'-C4'	3.55	1.62	1.52
2	B	501	C2E	C3'-C4'	3.52	1.62	1.52
2	D	501	C2E	P1-O3A	3.49	1.69	1.59
2	C	501	C2E	C41-N91	-3.49	1.29	1.38
2	B	501	C2E	O3A-C3A	3.43	1.55	1.44
2	C	501	C2E	C5-N7	-3.38	1.32	1.39
2	D	501	C2E	C61-N11	3.33	1.45	1.38
2	B	501	C2E	O4'-C4'	3.29	1.52	1.45
2	C	501	C2E	O3A-C3A	3.26	1.55	1.44
2	A	501	C2E	O4'-C4'	3.25	1.52	1.45
2	D	501	C2E	O3A-C3A	3.21	1.55	1.44
2	A	501	C2E	C21-N11	3.20	1.45	1.37
2	D	501	C2E	C2-N1	3.13	1.45	1.37
2	C	501	C2E	C21-N11	3.08	1.45	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	501	C2E	O4'-C4'	3.08	1.51	1.45
2	B	501	C2E	C5-N7	-3.07	1.32	1.39
2	D	501	C2E	C21-N11	3.07	1.45	1.37
2	C	501	C2E	C3'-C4'	3.04	1.60	1.52
2	C	501	C2E	C2-N1	3.00	1.44	1.37
2	D	501	C2E	C41-N91	-2.99	1.30	1.38
2	B	501	C2E	C21-N11	2.98	1.44	1.37
2	A	501	C2E	C5-N7	-2.97	1.33	1.39
2	A	501	C2E	O3'-C3'	2.96	1.54	1.44
2	C	501	C2E	O2A-C2A	-2.96	1.35	1.43
2	D	501	C2E	C51-C61	2.93	1.55	1.44
2	B	501	C2E	C2-N1	2.91	1.44	1.37
2	D	501	C2E	O3'-C3'	2.90	1.54	1.44
2	D	501	C2E	C5-N7	-2.89	1.33	1.39
2	A	501	C2E	C61-N11	2.88	1.44	1.38
2	D	501	C2E	C6-N1	2.85	1.44	1.38
2	B	501	C2E	C51-C61	2.77	1.54	1.44
2	A	501	C2E	C2-N1	2.73	1.44	1.37
2	A	501	C2E	C51-C61	2.71	1.54	1.44
2	B	501	C2E	O3'-C3'	2.70	1.53	1.44
2	C	501	C2E	O3'-C3'	2.67	1.53	1.44
2	C	501	C2E	C61-N11	2.66	1.43	1.38
2	C	501	C2E	C5-C6	2.65	1.54	1.44
2	A	501	C2E	O6-C6	-2.63	1.18	1.23
2	B	501	C2E	C41-N91	-2.59	1.31	1.38
2	B	501	C2E	C6-N1	2.58	1.43	1.38
2	B	501	C2E	C5-C6	2.57	1.54	1.44
2	A	501	C2E	O2A-C2A	-2.53	1.36	1.43
2	C	501	C2E	C51-C61	2.52	1.53	1.44
2	B	501	C2E	C61-N11	2.52	1.43	1.38
2	B	501	C2E	O2A-C2A	-2.49	1.36	1.43
2	D	501	C2E	O2A-C2A	-2.43	1.36	1.43
2	A	501	C2E	C5-C6	2.39	1.53	1.44
2	A	501	C2E	O61-C61	-2.37	1.19	1.23
2	D	501	C2E	C5-C6	2.35	1.53	1.44
2	D	501	C2E	C81-N71	2.33	1.39	1.32
2	A	501	C2E	C6-N1	2.31	1.43	1.38
2	A	501	C2E	C41-N91	-2.24	1.32	1.38
2	C	501	C2E	O2'-C2'	2.21	1.48	1.43
2	C	501	C2E	P1-O5'	2.21	1.68	1.59
2	D	501	C2E	C1'-N9	-2.18	1.41	1.47
2	C	501	C2E	C6-N1	2.16	1.42	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	501	C2E	O2'-C2'	2.11	1.48	1.43
2	A	501	C2E	C51-N71	-2.06	1.34	1.39
2	D	501	C2E	C1A-N91	2.06	1.53	1.47
2	A	501	C2E	O2'-C2'	2.02	1.48	1.43
2	A	501	C2E	P1-O5'	2.02	1.67	1.59

All (103) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	C2E	C1A-N91-C81	-7.04	106.74	126.73
2	B	501	C2E	C1A-N91-C81	-6.21	109.10	126.73
2	D	501	C2E	C1'-N9-C4	-6.14	108.35	126.49
2	A	501	C2E	C1'-N9-C4	-5.73	109.55	126.49
2	A	501	C2E	C5-C4-N3	-5.66	119.38	128.39
2	B	501	C2E	C5-C4-N3	-5.65	119.39	128.39
2	D	501	C2E	C1'-N9-C8	5.57	142.55	126.73
2	C	501	C2E	C1A-N91-C81	-5.56	110.94	126.73
2	C	501	C2E	C5-C4-N3	-5.41	119.79	128.39
2	C	501	C2E	C1'-N9-C4	-5.39	110.57	126.49
2	D	501	C2E	C1A-N91-C81	-5.36	111.50	126.73
2	A	501	C2E	C1A-N91-C41	5.26	142.02	126.49
2	A	501	C2E	C1'-N9-C8	5.25	141.64	126.73
2	B	501	C2E	C1'-N9-C4	-5.20	111.13	126.49
2	C	501	C2E	C1'-N9-C8	5.19	141.46	126.73
2	D	501	C2E	C5-C4-N3	-5.04	120.36	128.39
2	B	501	C2E	C1'-N9-C8	4.90	140.64	126.73
2	D	501	C2E	N91-C81-N71	-4.69	104.70	113.40
2	C	501	C2E	N91-C81-N71	-4.62	104.84	113.40
2	B	501	C2E	C1A-N91-C41	4.49	139.75	126.49
2	B	501	C2E	C2-N3-C4	4.41	119.90	112.30
2	A	501	C2E	C2-N3-C4	4.39	119.86	112.30
2	B	501	C2E	N91-C81-N71	-4.33	105.36	113.40
2	A	501	C2E	N91-C81-N71	-4.24	105.54	113.40
2	D	501	C2E	C21-N31-C41	4.22	119.57	112.30
2	D	501	C2E	C2-N3-C4	4.21	119.54	112.30
2	A	501	C2E	C21-N31-C41	4.17	119.48	112.30
2	C	501	C2E	C2-N3-C4	4.15	119.44	112.30
2	A	501	C2E	N9-C4-N3	4.02	134.00	125.95
2	B	501	C2E	C21-N31-C41	3.95	119.10	112.30
2	B	501	C2E	N9-C4-N3	3.77	133.49	125.95
2	A	501	C2E	C51-C41-N31	-3.75	122.42	128.39
2	C	501	C2E	C1A-N91-C41	3.70	137.41	126.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	501	C2E	C1A-N91-C41	3.62	137.18	126.49
2	D	501	C2E	N21-C21-N11	3.55	124.26	116.76
2	D	501	C2E	C61-C51-N71	3.52	136.70	130.29
2	D	501	C2E	N9-C4-N3	3.49	132.93	125.95
2	A	501	C2E	C2-N1-C6	-3.49	118.79	125.11
2	C	501	C2E	N9-C4-N3	3.32	132.60	125.95
2	B	501	C2E	C2-N1-C6	-3.26	119.20	125.11
2	B	501	C2E	O4A-C1A-N91	3.19	115.59	108.36
2	B	501	C2E	C51-C41-N31	-3.19	123.32	128.39
2	D	501	C2E	C2-N1-C6	-3.10	119.49	125.11
2	C	501	C2E	C3'-C2'-C1'	3.09	106.67	99.89
2	D	501	C2E	N9-C8-N7	-3.00	107.84	113.40
2	C	501	C2E	C81-N91-C41	2.99	111.63	106.03
2	C	501	C2E	C21-N31-C41	2.97	117.41	112.30
2	A	501	C2E	N9-C8-N7	-2.87	108.08	113.40
2	D	501	C2E	C81-N91-C41	2.82	111.31	106.03
2	A	501	C2E	C51-C61-N11	2.81	120.40	113.25
2	C	501	C2E	C2-N1-C6	-2.81	120.02	125.11
2	A	501	C2E	C81-N91-C41	2.78	111.23	106.03
2	A	501	C2E	C5-C6-N1	2.78	120.32	113.25
2	D	501	C2E	C3'-C2'-C1'	2.76	105.96	99.89
2	C	501	C2E	C61-C51-N71	2.75	135.29	130.29
2	A	501	C2E	C21-N11-C61	-2.75	120.13	125.11
2	B	501	C2E	C81-N91-C41	2.72	111.13	106.03
2	D	501	C2E	O6-C6-C5	-2.63	119.60	126.53
2	C	501	C2E	N9-C8-N7	-2.62	108.53	113.40
2	D	501	C2E	C51-C41-N31	-2.57	124.30	128.39
2	D	501	C2E	C41-C51-N71	-2.56	106.61	110.67
2	B	501	C2E	O3A-P1-O1P	-2.56	101.61	109.81
2	A	501	C2E	O61-C61-C51	-2.56	119.77	126.53
2	B	501	C2E	C3'-C2'-C1'	2.56	105.51	99.89
2	D	501	C2E	O4A-C1A-N91	2.54	114.12	108.36
2	A	501	C2E	O6-C6-C5	-2.54	119.82	126.53
2	C	501	C2E	O3A-P1-O1P	-2.54	101.69	109.81
2	A	501	C2E	N91-C41-N31	2.53	131.02	125.95
2	D	501	C2E	C81-N71-C51	2.53	108.76	104.26
2	B	501	C2E	N9-C8-N7	-2.51	108.75	113.40
2	C	501	C2E	N21-C21-N11	2.51	122.05	116.76
2	C	501	C2E	O4A-C1A-N91	2.49	114.01	108.36
2	D	501	C2E	N11-C21-N31	-2.46	118.82	123.32
2	B	501	C2E	C61-C51-N71	2.45	134.76	130.29
2	C	501	C2E	C8-N7-C5	2.42	108.57	104.26

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	501	C2E	C2'-C1'-N9	-2.42	106.52	113.25
2	B	501	C2E	C81-N71-C51	2.41	108.56	104.26
2	A	501	C2E	C3'-C2'-C1'	2.38	105.11	99.89
2	C	501	C2E	C2A-C1A-N91	-2.37	106.65	113.25
2	B	501	C2E	C2'-C1'-N9	-2.36	106.67	113.25
2	D	501	C2E	C5-C6-N1	2.33	119.19	113.25
2	B	501	C2E	N21-C21-N11	2.32	121.67	116.76
2	B	501	C2E	N11-C21-N31	-2.31	119.09	123.32
2	B	501	C2E	C51-C61-N11	2.31	119.13	113.25
2	C	501	C2E	C81-N71-C51	2.30	108.35	104.26
2	A	501	C2E	C81-N71-C51	2.26	108.29	104.26
2	A	501	C2E	N21-C21-N11	2.26	121.53	116.76
2	B	501	C2E	C5-C6-N1	2.25	118.99	113.25
2	D	501	C2E	C51-C61-N11	2.24	118.96	113.25
2	B	501	C2E	O21-P11-O5A	2.24	117.72	107.57
2	C	501	C2E	O2P-P1-O3A	2.22	115.75	106.70
2	D	501	C2E	C8-N7-C5	2.19	108.17	104.26
2	A	501	C2E	P11-O5A-C5A	-2.19	108.82	121.35
2	A	501	C2E	C8-N7-C5	2.18	108.15	104.26
2	B	501	C2E	C8-N7-C5	2.18	108.14	104.26
2	B	501	C2E	O6-C6-C5	-2.13	120.90	126.53
2	C	501	C2E	C4-C5-N7	-2.10	107.35	110.67
2	A	501	C2E	N11-C21-N31	-2.05	119.56	123.32
2	C	501	C2E	N11-C21-N31	-2.04	119.58	123.32
2	B	501	C2E	P11-O5A-C5A	-2.02	109.75	121.35
2	A	501	C2E	O3A-P1-O1P	-2.02	103.36	109.81
2	C	501	C2E	C4A-O4A-C1A	-2.01	105.03	109.47
2	C	501	C2E	C5-C6-N1	2.00	118.35	113.25

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	501	C2E	C5'-O5'-P1-O1P
2	A	501	C2E	C4'-C5'-O5'-P1
2	B	501	C2E	C4'-C5'-O5'-P1
2	C	501	C2E	C4'-C5'-O5'-P1
2	A	501	C2E	C5'-O5'-P1-O2P
2	B	501	C2E	C5'-O5'-P1-O2P
2	C	501	C2E	C5'-O5'-P1-O2P
2	D	501	C2E	C5'-O5'-P1-O2P
2	D	501	C2E	C4'-C5'-O5'-P1

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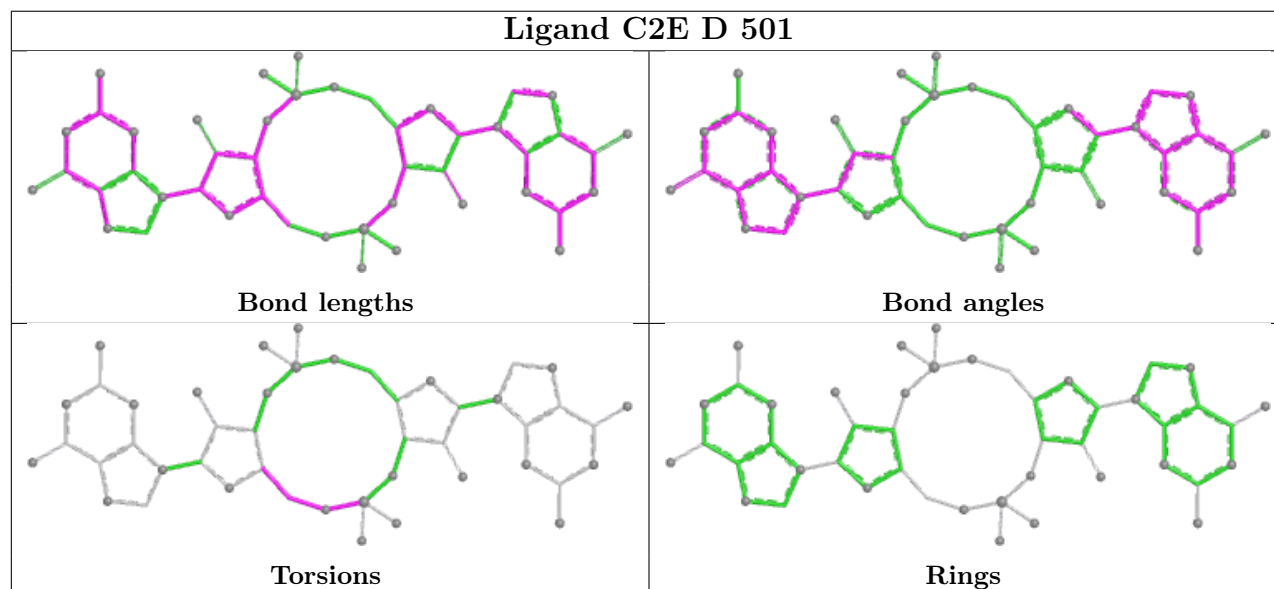
Mol	Chain	Res	Type	Atoms
2	A	501	C2E	C2A-C3A-O3A-P1
2	C	501	C2E	C2A-C3A-O3A-P1
2	D	501	C2E	O4'-C4'-C5'-O5'

There are no ring outliers.

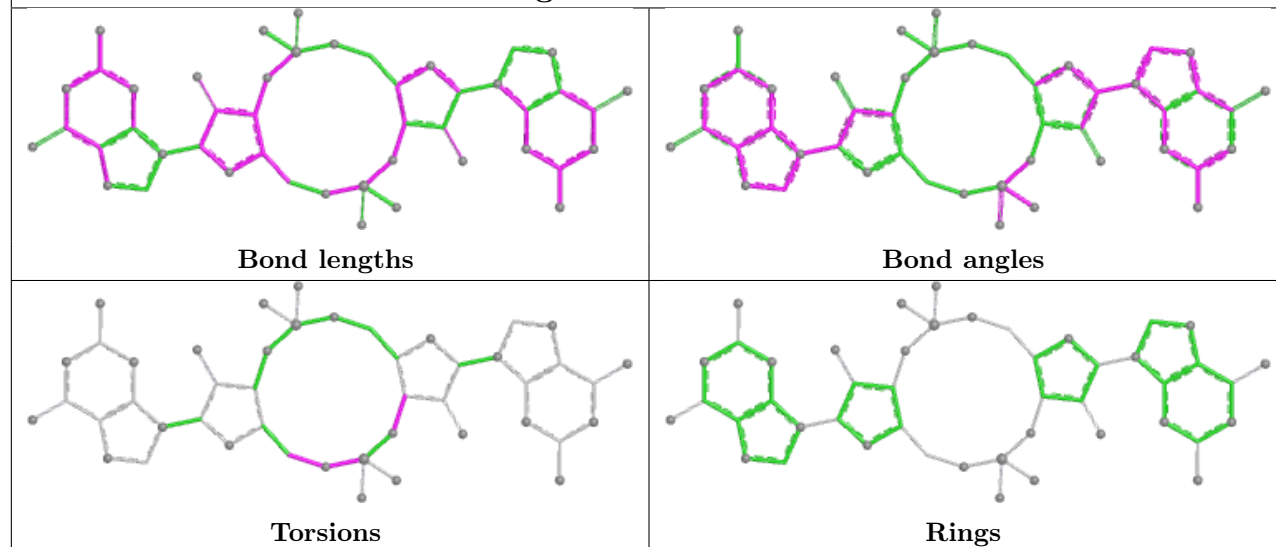
4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	501	C2E	1	0
2	C	501	C2E	1	0
2	B	501	C2E	1	0
2	A	501	C2E	2	0

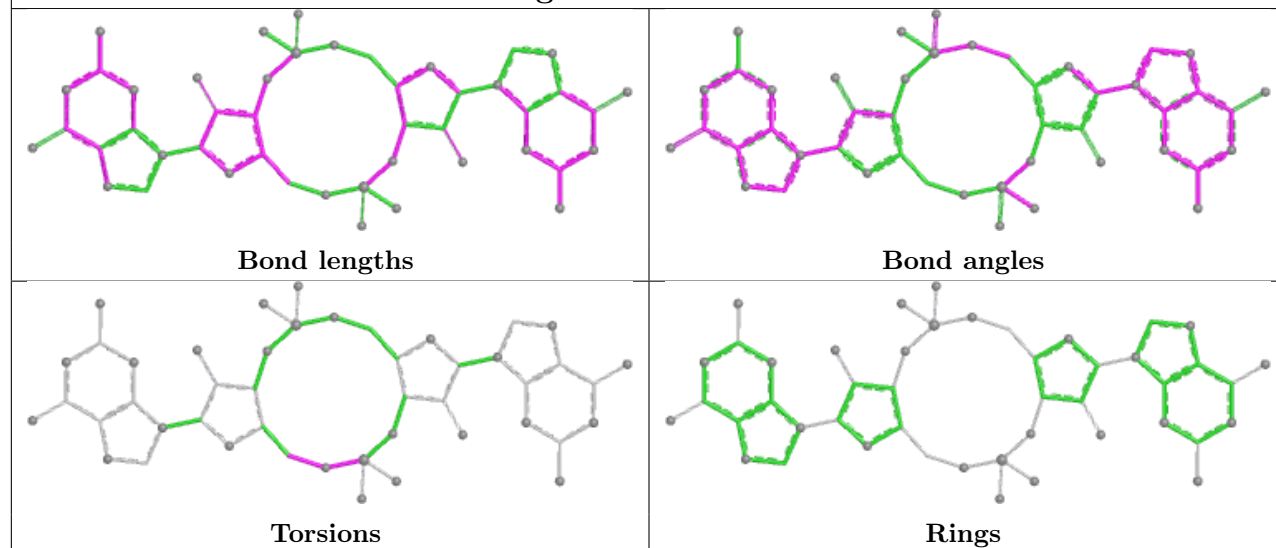
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 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.



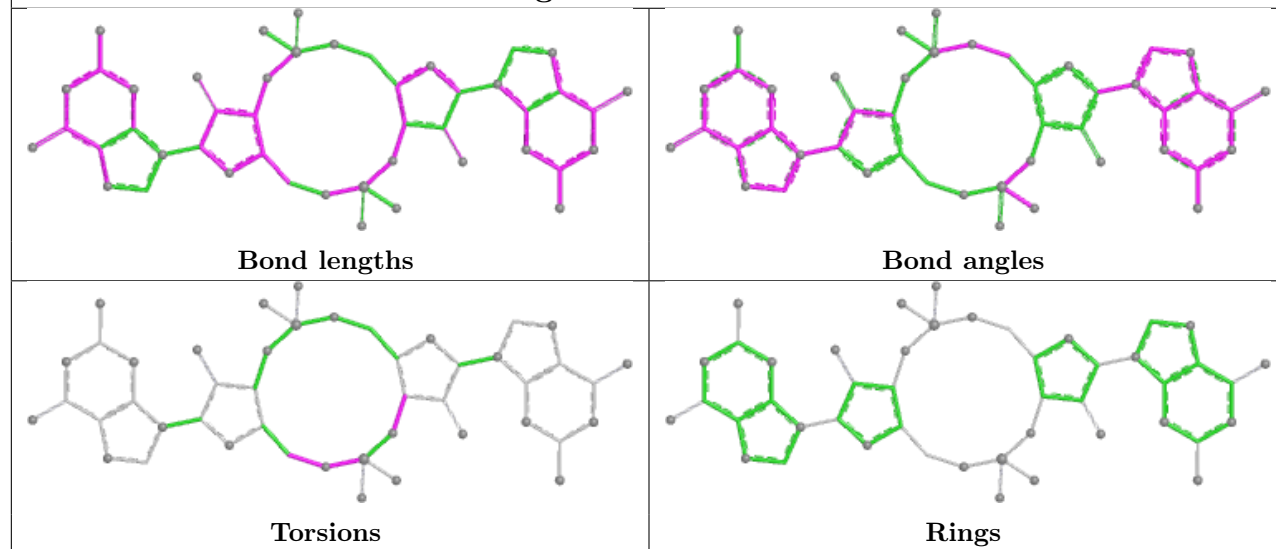
Ligand C2E C 501



Ligand C2E B 501



Ligand C2E A 501



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, 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(Å ²)	Q<0.9
1	A	237/257 (92%)	0.53	36 (15%) 5 6	18, 40, 136, 178	0
1	B	237/257 (92%)	0.37	23 (9%) 13 15	18, 36, 135, 186	0
1	C	237/257 (92%)	0.46	29 (12%) 8 10	16, 35, 129, 201	0
1	D	237/257 (92%)	0.53	34 (14%) 6 7	19, 36, 133, 187	0
All	All	948/1028 (92%)	0.47	122 (12%) 7 9	16, 37, 136, 201	0

All (122) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	101	ILE	7.1
1	B	101	ILE	6.6
1	C	103	VAL	5.7
1	D	164	TYR	5.7
1	B	103	VAL	5.5
1	C	96	PHE	5.5
1	A	101	ILE	5.2
1	D	257	ALA	5.2
1	D	100	ALA	5.1
1	C	138	VAL	5.0
1	D	96	PHE	4.9
1	A	257	ALA	4.9
1	B	22	LEU	4.8
1	C	257	ALA	4.7
1	D	103	VAL	4.7
1	D	138	VAL	4.6
1	B	107	CYS	4.4
1	C	135	VAL	4.3
1	D	135	VAL	4.2
1	C	132	ALA	4.2
1	B	132	ALA	4.1

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Mol	Chain	Res	Type	RSRZ
1	C	254	PHE	4.1
1	D	163	GLY	4.1
1	A	135	VAL	4.0
1	D	144	ILE	4.0
1	A	22	LEU	4.0
1	B	69	TYR	3.9
1	D	69	TYR	3.9
1	D	252	PRO	3.9
1	A	103	VAL	3.8
1	B	135	VAL	3.8
1	C	104	PRO	3.7
1	B	130	THR	3.5
1	C	252	PRO	3.5
1	C	100	ALA	3.5
1	A	255	SER	3.4
1	D	255	SER	3.4
1	A	104	PRO	3.4
1	D	101	ILE	3.4
1	D	254	PHE	3.3
1	B	147	TYR	3.2
1	C	164	TYR	3.2
1	C	255	SER	3.2
1	A	143	ARG	3.2
1	B	108	ILE	3.1
1	C	140	HIS	3.1
1	B	102	TYR	3.1
1	A	254	PHE	3.1
1	C	61	SER	3.1
1	C	108	ILE	3.0
1	A	252	PRO	3.0
1	B	104	PRO	3.0
1	D	132	ALA	3.0
1	C	69	TYR	3.0
1	C	24	PHE	3.0
1	B	105	GLU	3.0
1	C	102	TYR	3.0
1	D	162	SER	3.0
1	A	131	GLU	3.0
1	D	141	ILE	3.0
1	A	102	TYR	2.9
1	A	98	PRO	2.9
1	A	100	ALA	2.8

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Mol	Chain	Res	Type	RSRZ
1	D	251	ASN	2.8
1	A	164	TYR	2.8
1	D	97	LEU	2.7
1	D	137	ASP	2.7
1	A	67	ASN	2.7
1	A	251	ASN	2.7
1	B	138	VAL	2.7
1	D	134	ARG	2.7
1	A	132	ALA	2.6
1	C	163	GLY	2.6
1	A	69	TYR	2.6
1	D	130	THR	2.6
1	A	97	LEU	2.6
1	A	151	LEU	2.6
1	B	140	HIS	2.6
1	B	164	TYR	2.6
1	B	100	ALA	2.6
1	C	150	SER	2.6
1	A	68	ARG	2.5
1	B	68	ARG	2.5
1	C	107	CYS	2.5
1	D	102	TYR	2.5
1	D	250	VAL	2.4
1	D	107	CYS	2.4
1	A	141	ILE	2.4
1	A	130	THR	2.4
1	A	253	GLU	2.4
1	D	104	PRO	2.4
1	A	116	LYS	2.3
1	D	165	SER	2.3
1	D	253	GLU	2.3
1	A	108	ILE	2.3
1	A	136	GLU	2.3
1	D	105	GLU	2.3
1	C	143	ARG	2.2
1	A	185	ILE	2.2
1	A	140	HIS	2.2
1	B	106	ARG	2.2
1	C	106	ARG	2.2
1	B	57	TYR	2.2
1	C	251	ASN	2.2
1	A	138	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	130	THR	2.2
1	A	21	SER	2.2
1	D	21	SER	2.2
1	A	70	LEU	2.2
1	B	98	PRO	2.2
1	C	141	ILE	2.1
1	C	162	SER	2.1
1	B	131	GLU	2.1
1	B	67	ASN	2.1
1	D	22	LEU	2.1
1	D	143	ARG	2.1
1	A	62	ARG	2.1
1	C	253	GLU	2.0
1	D	192	GLN	2.0
1	D	140	HIS	2.0
1	A	163	GLY	2.0
1	A	57	TYR	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, 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(Å ²)	Q<0.9
3	CA	B	503	1/1	0.90	0.29	77,77,77,77	0
3	CA	D	503	1/1	0.90	0.23	96,96,96,96	0
2	C2E	A	501	46/46	0.91	0.09	33,51,59,61	0
3	CA	A	503	1/1	0.92	0.23	72,72,72,72	0
3	CA	C	503	1/1	0.93	0.22	76,76,76,76	0
2	C2E	C	501	46/46	0.95	0.07	25,32,35,37	0

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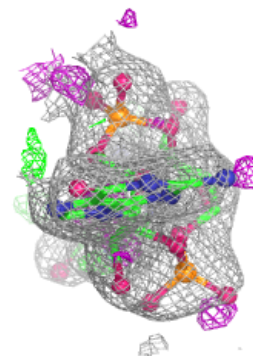
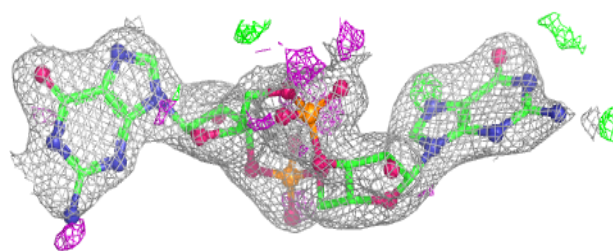
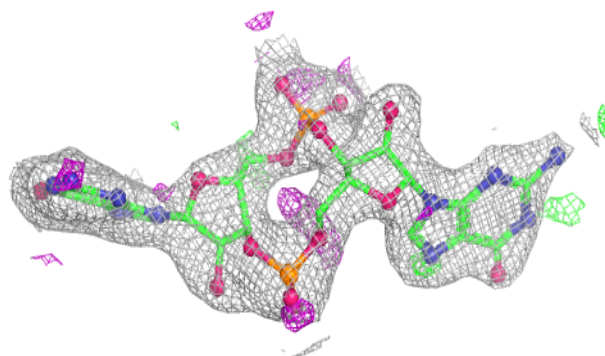
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	C2E	D	501	46/46	0.95	0.07	30,35,38,53	0
2	C2E	B	501	46/46	0.95	0.07	21,39,43,57	0
3	CA	A	502	1/1	0.98	0.07	29,29,29,29	0
3	CA	B	502	1/1	0.99	0.04	26,26,26,26	0
3	CA	D	502	1/1	0.99	0.04	27,27,27,27	0
3	CA	C	502	1/1	0.99	0.06	20,20,20,20	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.

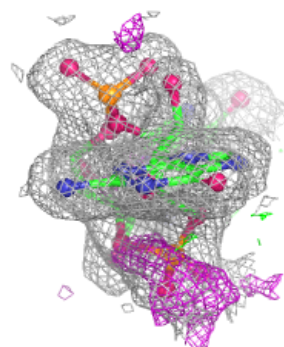
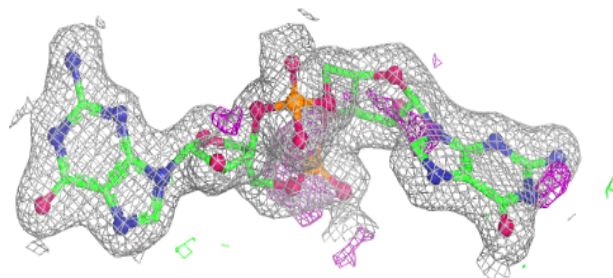
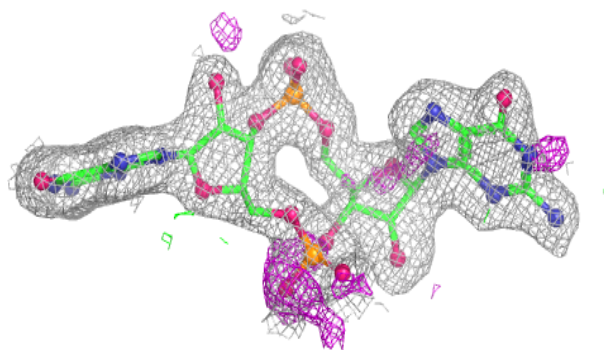
Electron density around C2E A 501:

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

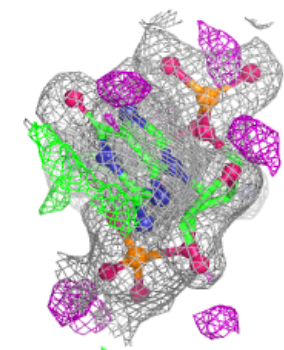
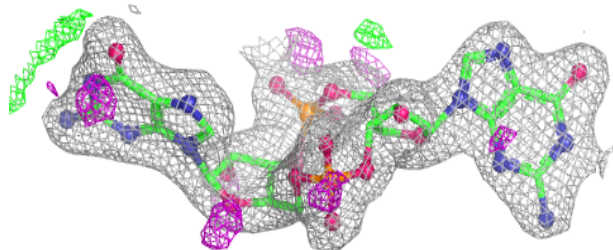
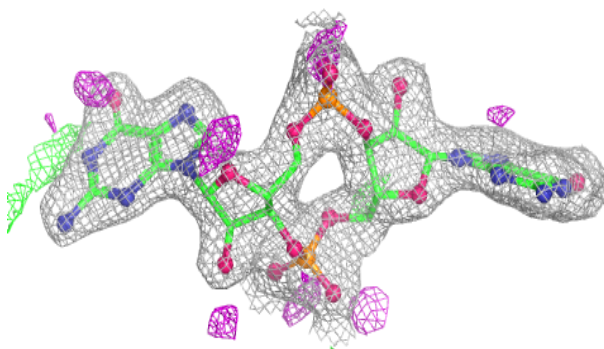


Electron density around C2E C 501:

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

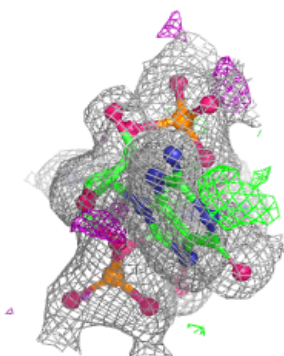
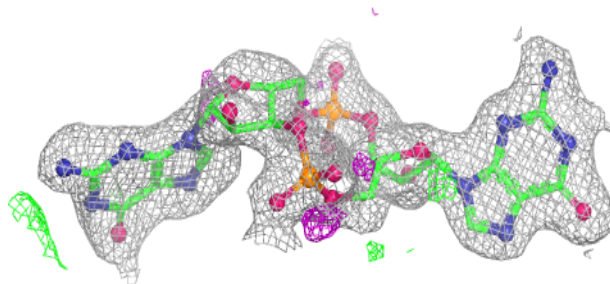
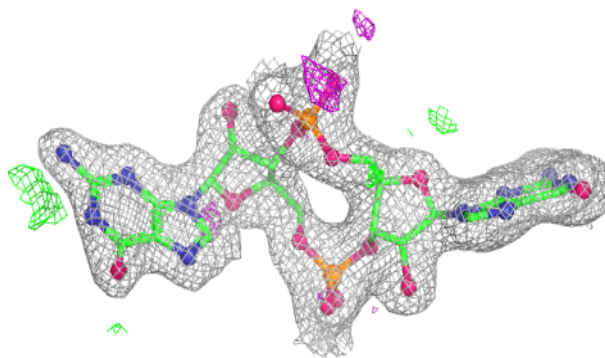
**Electron density around C2E D 501:**

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



Electron density around C2E 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 [i](#)

There are no such residues in this entry.