WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Mar 13, 2024 – 04:51 PM JST

PDB ID	:	5EJ4
Title	:	EcMenD-ThDP-Mn2+ complex soaked with 2-ketoglutarate for 15 min
Authors	:	Song, H.G.; Dong, C.; Chen, Y.Z.; Sun, Y.R.; Guo, Z.H.
Deposited on	:	2015-11-01
Resolution	:	1.77 Å(reported)

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

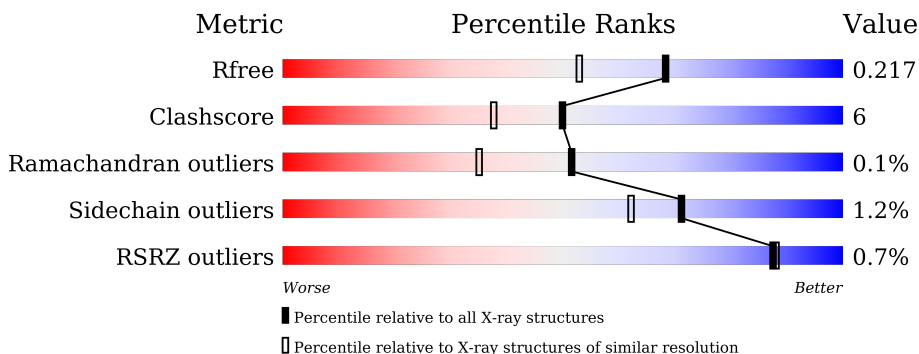|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 1.77 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	Percentile Ranks	Value
Rfree		0.217
Clashscore		6
Ramachandran outliers		0.1%
Sidechain outliers		1.2%
RSRZ outliers		0.7%

Worse   *Better*

■ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	9185 (1.80-1.76)
Clashscore	141614	10184 (1.80-1.76)
Ramachandran outliers	138981	10051 (1.80-1.76)
Sidechain outliers	138945	10050 (1.80-1.76)
RSRZ outliers	127900	9032 (1.80-1.76)

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	556	89% 10% •
1	B	556	% 90% 9%
1	C	556	% 90% 9%
1	D	556	% 89% 11%
1	E	556	% 91% 9% •
1	F	556	% 89% 11%

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Mol	Chain	Length	Quality of chain
1	G	556	87% 12%
1	H	556	91% 8%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	GOL	G	604	-	-	X	-
5	FMT	D	601	-	-	X	-
5	FMT	F	601	-	-	X	-

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 39804 atoms, of which 304 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 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase.
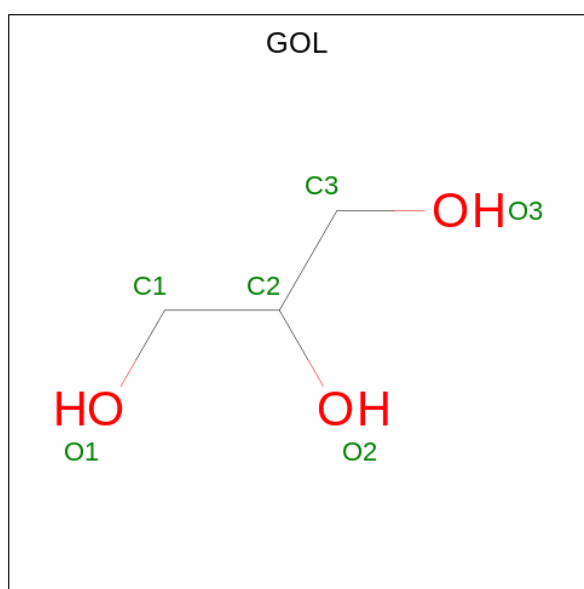
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	556	Total	C	N	O	S	0	11	0
			4402	2793	794	799	16			
1	B	556	Total	C	N	O	S	0	3	0
			4337	2753	778	791	15			
1	C	556	Total	C	N	O	S	0	2	0
			4321	2742	776	788	15			
1	D	556	Total	C	N	O	S	0	2	0
			4321	2740	778	787	16			
1	E	556	Total	C	N	O	S	0	6	0
			4357	2764	786	791	16			
1	F	556	Total	C	N	O	S	0	4	0
			4329	2743	777	793	16			
1	G	556	Total	C	N	O	S	0	4	0
			4355	2760	784	796	15			
1	H	556	Total	C	N	O	S	0	3	0
			4329	2747	775	793	14			

- Molecule 2 is (4S)-4-{3-[(4-amino-2-methylpyrimidin-5-yl)methyl]-5-(2-{[(S)-hydroxy(phosphonooxy)phosphoryl]oxy}ethyl)-4-methyl-1,3lambda 5 -thiazol-2-yl}-4-hydroxybutanoic acid (three-letter code: TD6) (formula: $C_{16}H_{25}N_4O_{10}P_2S$).

TD6

Mol	Chain	Residues	Atoms							ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	B	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	C	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	D	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	E	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	F	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	G	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		
2	H	1	Total	C	H	N	O	P	S	0	0
			53	16	20	4	10	2	1		

- Molecule 3 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Mn	0	0
			1	1		
3	B	1	Total	Mn	0	0
			1	1		
3	C	1	Total	Mn	0	0
			1	1		
3	D	1	Total	Mn	0	0
			1	1		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	E	1	Total Mn 1 1		0	0
3	F	1	Total Mn 1 1		0	0
3	G	1	Total Mn 1 1		0	0
3	H	1	Total Mn 1 1		0	0

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total C H O 14 3 8 3				0	0
4	A	1	Total C H O 14 3 8 3				0	0
4	B	1	Total C H O 14 3 8 3				0	0
4	B	1	Total C H O 14 3 8 3				0	0
4	C	1	Total C H O 14 3 8 3				0	0
4	C	1	Total C H O 14 3 8 3				0	0
4	D	1	Total C H O 14 3 8 3				0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	D	1	Total 14	C 3	H 8	O 3	0	0
4	E	1	Total 14	C 3	H 8	O 3	0	0
4	E	1	Total 14	C 3	H 8	O 3	0	0
4	F	1	Total 14	C 3	H 8	O 3	0	0
4	F	1	Total 14	C 3	H 8	O 3	0	0
4	G	1	Total 14	C 3	H 8	O 3	0	0
4	G	1	Total 14	C 3	H 8	O 3	0	0
4	H	1	Total 14	C 3	H 8	O 3	0	0
4	H	1	Total 14	C 3	H 8	O 3	0	0

- Molecule 5 is FORMIC ACID (three-letter code: FMT) (formula: CH_2O_2).
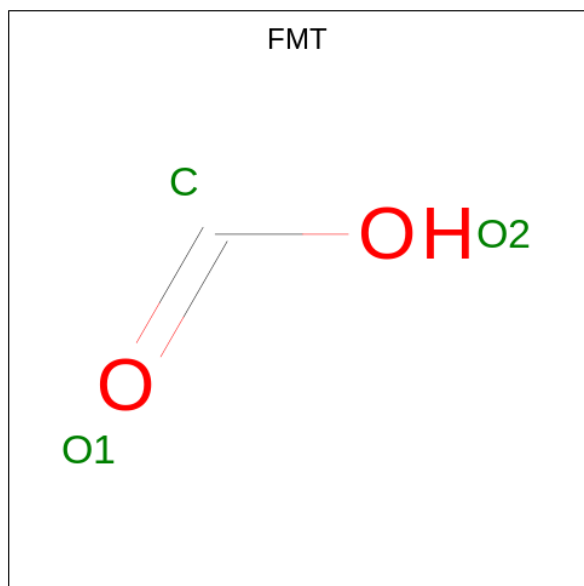
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total 5	C 1	H 2	O 2	0	0
5	B	1	Total 5	C 1	H 2	O 2	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	C	1	Total 5	C 1	H 2	O 2	0	0
5	D	1	Total 5	C 1	H 2	O 2	0	0
5	E	1	Total 5	C 1	H 2	O 2	0	0
5	F	1	Total 5	C 1	H 2	O 2	0	0
5	G	1	Total 5	C 1	H 2	O 2	0	0
5	H	1	Total 5	C 1	H 2	O 2	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	574	Total 574	O 574	0	0
6	B	556	Total 556	O 556	0	0
6	C	578	Total 578	O 578	0	0
6	D	501	Total 501	O 501	0	0
6	E	481	Total 481	O 481	0	0
6	F	535	Total 535	O 535	0	0
6	G	585	Total 585	O 585	0	0
6	H	547	Total 547	O 547	0	0

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 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.

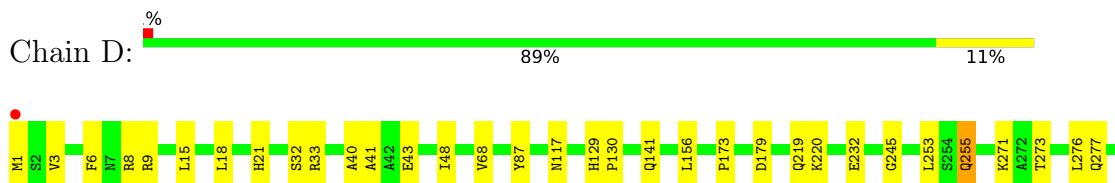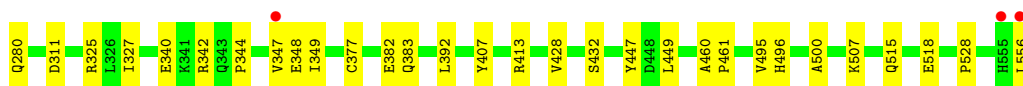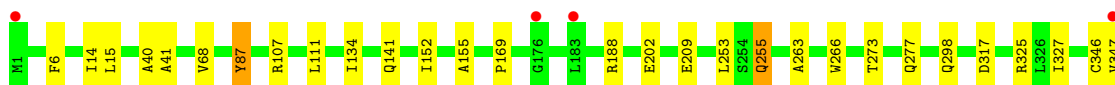- Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain A:

- Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase
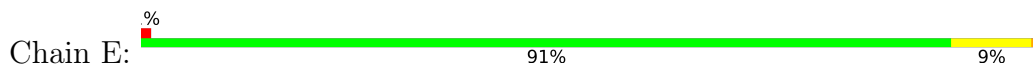
Chain B:

- Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain C:

- Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase
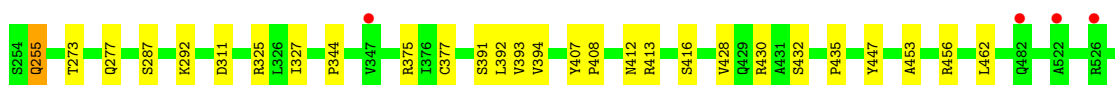
Chain D:

Q280 D311 R325 L326 I327 E340 K341 R342 Q343 P344 V347 E348 I349 C377 E382 Q383 L392 Y407 R413 V428 S432 Y447 D448 L449 A460 P461 V495 H496 A500 K507 Q515 E518 P528 H555 L556
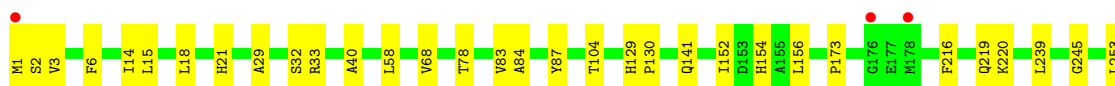
• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain E:

%

91% 9%

M1 F6 I14 L15 A40 A41 V68 Y87 R107 L111 I134 Q141 I152 A155 P169 G176 L183 R188 E202 E209 L253 S254 Q255 A263 W266 T273 Q277 Q298 D317 R325 L326 I327 C346 V347

E348 R351 E354 A362 E369 I376 C377 Q383 N390 S391 L392 Y407 P408 R413 S432 I439 Y447 A460 P461 Q482 M535 Q544 Q547 H555 L556
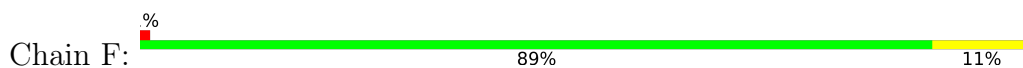
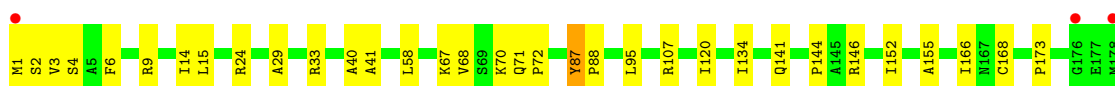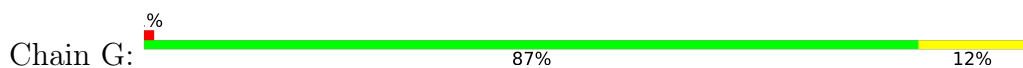• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain F:

%

89% 11%

M1 S2 V3 F6 I14 L15 L18 H21 A29 S32 R33 A40 L58 V68 I78 V83 A84 Y87 T104 H129 P130 Q141 I152 D153 H154 A155 L156 P173 G176 E177 M178 F216 Q219 K220 L239 G245 L253

S254 Q255 T273 Q277 S287 K292 D311 R325 L326 I327 P344 V347 R375 I376 C377 S391 L392 V393 V394 Y407 P408 N412 R413 S416 V428 Q429 R430 A431 S432 P435 Y447 A453 R456 L462 Q482 A522 R526

T530 Q544 L556

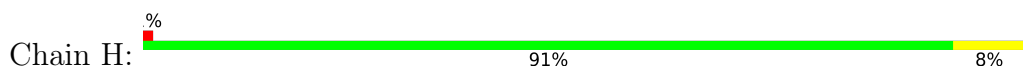• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain G:

%

87% 12%

M1 S2 V3 S4 A5 F6 R9 I14 L15 R24 A29 R33 A40 A41 L58 K67 V68 S69 K70 Q71 P72 Y87 P88 L95 R107 I120 I134 Q141 P144 A145 R146 I152 A155 I166 N167 C168 P173 G176 E177 M178

K210 R228 L253 S254 Q255 K271 A272 T273 Q277 S288 G314 R325 L326 I327 L336 V347 E348 R364 H374 R375 I376 C377 S391 L403 R413 S432 Y447 A453 R456 Q457 A460 P461 I465 T480 R485 V495

H496 Q512 Q515 E518 F521 L556

• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain H:

%

91% 8%

M1 F6 N7 R8 L15 L18 H21 R24 R33 A40 A41 A42 E43 V68 Y87 L95 I120 Q141 L156 E172 G176 E177 R188 K197 K210 R228 W240 T243 L244 G245 L253 S254 Q255 R315 L326

I327 L334 E335 L336 K341 P344 E348 R363 S391 L392 V393 V394 Y407 R413 S432 Y447 A460 P461 V495 H496 R510 P528 L556

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	90.79Å 90.77Å 169.56Å 83.27° 76.01° 64.30°	Depositor
Resolution (Å)	41.82 – 1.77 45.26 – 1.77	Depositor EDS
% Data completeness (in resolution range)	96.6 (41.82-1.77) 93.0 (45.26-1.77)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.30 (at 1.77Å)	Xtriage
Refinement program	PHENIX 1.9_1692	Depositor
R, R_{free}	0.176 , 0.217 0.177 , 0.217	Depositor DCC
R_{free} test set	21851 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	14.6	Xtriage
Anisotropy	0.144	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 53.6	EDS
L-test for twinning[2]	$< |L| > = 0.45, < L^2 > = 0.27$	Xtriage
Estimated twinning fraction	0.054 for -h,-k,-h+l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	39804	wwPDB-VP
Average B, all atoms (Å^2)	19.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 11.12% 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: FMT, MN, GOL, TD6

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	0.37	0/4511	0.53	0/6153
1	B	0.35	0/4443	0.53	0/6062
1	C	0.36	0/4429	0.53	0/6044
1	D	0.34	0/4427	0.52	0/6041
1	E	0.34	0/4463	0.51	0/6088
1	F	0.36	0/4437	0.53	0/6058
1	G	0.36	0/4463	0.54	0/6088
1	H	0.36	0/4437	0.52	1/6056 (0.0%)
All	All	0.35	0/35610	0.52	1/48590 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	H	228	ARG	NE-CZ-NH2	-5.02	117.79	120.30

There are no chirality outliers.

There are no planarity outliers.

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	4402	0	4358	60	0
1	B	4337	0	4291	43	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	4321	0	4265	41	0
1	D	4321	0	4263	58	0
1	E	4357	0	4314	50	0
1	F	4329	0	4255	50	0
1	G	4355	0	4309	51	0
1	H	4329	0	4266	44	0
2	A	33	20	21	2	0
2	B	33	20	21	3	0
2	C	33	20	21	2	0
2	D	33	20	21	4	0
2	E	33	20	21	3	0
2	F	33	20	21	3	0
2	G	33	20	21	2	0
2	H	33	20	21	3	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
3	G	1	0	0	0	0
3	H	1	0	0	0	0
4	A	12	16	16	0	0
4	B	12	16	16	1	0
4	C	12	16	16	1	0
4	D	12	16	16	0	0
4	E	12	16	16	0	0
4	F	12	16	16	2	0
4	G	12	16	16	4	0
4	H	12	16	16	0	0
5	A	3	2	1	1	0
5	B	3	2	1	1	0
5	C	3	2	1	0	0
5	D	3	2	1	5	0
5	E	3	2	1	0	0
5	F	3	2	1	4	0
5	G	3	2	1	1	0
5	H	3	2	1	1	0
6	A	574	0	0	13	4
6	B	556	0	0	8	1
6	C	578	0	0	16	0
6	D	501	0	0	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	E	481	0	0	14	0
6	F	535	0	0	13	4
6	G	585	0	0	10	1
6	H	547	0	0	13	2
All	All	39500	304	34625	402	6

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 6.

All (402) 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:A:252[A]:VAL:HG23	1:A:398:ASP:HA	1.41	1.02
1:A:285[A]:LEU:HD12	1:A:309:VAL:HB	1.49	0.90
1:C:503:MET:SD	6:D:1151:HOH:O	2.30	0.90
1:F:453:ALA:HA	1:F:456:ARG:HD2	1.53	0.88
1:A:146[B]:ARG:HG2	1:A:146[B]:ARG:HH21	1.38	0.88
1:B:515:GLN:NE2	1:B:515:GLN:CG	2.41	0.83
1:G:15:LEU:HD12	1:G:40:ALA:HB3	1.61	0.82
1:E:377[B]:CYS:SG	6:E:1131:HOH:O	2.38	0.82
1:E:535:MET:SD	6:E:1057:HOH:O	2.38	0.81
1:A:15[A]:LEU:HD12	1:A:40:ALA:HB3	1.61	0.81
1:D:515:GLN:CG	1:D:515:GLN:NE2	2.43	0.80
1:B:168:CYS:SG	6:B:1246:HOH:O	2.39	0.79
1:E:351[B]:ARG:HA	1:E:351[B]:ARG:NE	1.98	0.77
1:A:146[A]:ARG:NH2	6:A:703:HOH:O	2.18	0.77
1:B:33:ARG:H	5:B:601:FMT:H	1.50	0.77
1:D:15:LEU:HD12	1:D:40:ALA:HB3	1.66	0.77
1:G:166:ILE:HG22	6:G:707:HOH:O	1.83	0.77
1:D:219:GLN:OE1	1:D:342:ARG:NH1	2.19	0.75
1:D:9:ARG:NH1	6:D:703:HOH:O	2.19	0.75
1:C:15:LEU:HD12	1:C:40:ALA:HB3	1.68	0.74
1:G:33:ARG:H	5:G:605:FMT:H	1.52	0.74
1:E:351[B]:ARG:NH1	1:E:354:GLU:OE1	2.21	0.74
1:B:37:LEU:HD21	6:B:1246:HOH:O	1.88	0.74
1:A:212:ARG:O	6:A:701:HOH:O	2.05	0.73
1:E:209:GLU:OE1	1:E:209:GLU:CG	2.37	0.72
1:E:209:GLU:CG	1:E:209:GLU:OE2	2.37	0.72
1:E:317:ASP:OD1	6:E:701:HOH:O	2.06	0.72
2:D:602:TD6:HN4A	2:D:602:TD6:H11	1.53	0.72
1:A:1:MET:HG3	1:A:2:SER:H	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:9:ARG:NH1	6:G:705:HOH:O	2.23	0.72
1:F:1:MET:SD	6:F:1226:HOH:O	2.49	0.71
1:B:515:GLN:NE2	1:B:515:GLN:OE1	2.24	0.71
1:A:146[B]:ARG:NH2	6:A:703:HOH:O	2.24	0.71
1:A:1:MET:HG3	1:A:2:SER:N	2.05	0.71
1:B:515:GLN:CG	1:B:515:GLN:OE1	2.39	0.70
1:D:515:GLN:CG	1:D:515:GLN:OE1	2.39	0.70
1:E:15[B]:LEU:HD12	1:E:40:ALA:HB3	1.71	0.70
1:D:515:GLN:NE2	1:D:515:GLN:OE1	2.24	0.70
1:D:449:LEU:HD21	6:D:1151:HOH:O	1.92	0.70
1:C:547:GLN:NE2	6:C:704:HOH:O	2.21	0.70
2:A:601:TD6:H11	2:A:601:TD6:HN4A	1.56	0.69
2:C:601:TD6:H11	2:C:601:TD6:HN4A	1.57	0.69
2:G:601:TD6:HN4A	2:G:601:TD6:H11	1.57	0.69
2:F:602:TD6:HN4A	2:F:602:TD6:H11	1.58	0.69
1:G:15:LEU:HD12	1:G:40:ALA:CB	2.22	0.69
1:F:1:MET:HG3	1:F:2:SER:N	2.08	0.69
1:E:369:GLU:OE1	6:E:702:HOH:O	2.11	0.68
1:F:33:ARG:H	5:F:601:FMT:H	1.59	0.68
1:F:15:LEU:HD12	1:F:40:ALA:HB3	1.76	0.67
1:A:252[A]:VAL:CG2	1:A:398:ASP:HA	2.21	0.67
1:D:33:ARG:H	5:D:601:FMT:H	1.58	0.67
1:G:210:LYS:HG2	1:G:336:LEU:HD13	1.77	0.67
2:B:602:TD6:H11	2:B:602:TD6:HN4A	1.59	0.66
1:C:544:GLN:HG2	6:C:704:HOH:O	1.95	0.66
1:H:315:ARG:NH2	6:H:705:HOH:O	2.28	0.66
2:E:601:TD6:HN4A	2:E:601:TD6:H11	1.61	0.66
1:B:453:ALA:HA	1:B:456:ARG:HD2	1.78	0.66
1:H:43:GLU:HG3	6:H:953:HOH:O	1.95	0.66
1:H:15[A]:LEU:HD12	1:H:40:ALA:HB3	1.77	0.65
1:D:15:LEU:HD12	1:D:40:ALA:CB	2.26	0.65
2:H:602:TD6:HN4A	2:H:602:TD6:H11	1.60	0.65
1:H:528:PRO:O	6:H:701:HOH:O	2.14	0.65
1:A:15[A]:LEU:HD12	1:A:40:ALA:CB	2.27	0.65
1:D:311:ASP:OD2	6:D:701:HOH:O	2.15	0.64
1:C:311:ASP:OD2	6:C:701:HOH:O	2.15	0.64
1:B:15:LEU:HD12	1:B:40:ALA:HB3	1.80	0.63
1:C:273:THR:O	1:C:277:GLN:HG3	1.98	0.63
1:C:15:LEU:HD12	1:C:40:ALA:CB	2.28	0.63
1:D:383:GLN:NE2	1:E:544:GLN:OE1	2.25	0.63
1:G:347:VAL:HG23	1:G:348:GLU:HG2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:ARG:NH1	6:B:708:HOH:O	2.32	0.62
1:C:253:LEU:HD11	1:C:413:ARG:HG3	1.81	0.62
1:D:18:LEU:HD22	1:D:156:LEU:HD21	1.82	0.62
1:D:32:SER:H	5:D:601:FMT:C	2.12	0.62
1:F:1:MET:HG3	1:F:2:SER:H	1.65	0.62
1:H:6:PHE:CE1	1:H:141:GLN:HG2	2.34	0.61
1:F:311:ASP:HB3	6:F:1082:HOH:O	2.00	0.61
1:A:43:GLU:HG3	6:A:776:HOH:O	2.00	0.61
1:C:278:GLN:HG2	6:C:1204:HOH:O	2.00	0.61
1:G:6:PHE:CE1	1:G:141:GLN:HG2	2.36	0.61
1:B:253:LEU:HD11	1:B:413:ARG:HG3	1.83	0.61
1:B:495[B]:VAL:HG12	1:B:496:HIS:O	2.01	0.61
1:D:32:SER:H	5:D:601:FMT:H	1.66	0.60
1:D:347:VAL:O	6:D:702:HOH:O	2.16	0.60
1:E:209:GLU:OE1	1:E:209:GLU:OE2	2.20	0.60
1:H:188:ARG:NH1	6:H:710:HOH:O	2.33	0.60
1:A:181:THR:O	6:A:702:HOH:O	2.17	0.60
1:A:252[A]:VAL:HG23	1:A:398:ASP:CA	2.26	0.60
1:D:117:ASN:ND2	6:D:709:HOH:O	2.32	0.60
1:H:243:THR:HG23	1:H:341:LYS:HG2	1.83	0.60
1:C:181:THR:O	6:C:702:HOH:O	2.16	0.60
1:G:375:ARG:HA	4:G:604:GOL:H11	1.81	0.60
1:F:253:LEU:HD11	1:F:413:ARG:HG3	1.84	0.59
1:G:3:VAL:HB	1:G:173:PRO:HD2	1.84	0.59
1:D:21:HIS:HB2	1:D:156:LEU:HD23	1.84	0.59
1:F:32:SER:H	5:F:601:FMT:C	2.16	0.59
1:A:457:GLN:HG3	6:A:939:HOH:O	2.02	0.59
1:G:253:LEU:HD11	1:G:413:ARG:HG3	1.83	0.59
1:H:1:MET:N	6:H:711:HOH:O	2.35	0.59
1:A:253:LEU:HD11	1:A:413:ARG:HG3	1.84	0.58
1:F:435:PRO:HG3	6:F:1185:HOH:O	2.03	0.58
1:B:6:PHE:CE1	1:B:141:GLN:HG2	2.37	0.58
1:C:14:ILE:HG12	1:C:152:ILE:HD11	1.85	0.58
1:G:24:ARG:NH1	6:G:710:HOH:O	2.29	0.58
1:C:206:LEU:O	6:C:703:HOH:O	2.17	0.58
1:C:457:GLN:HG3	6:C:926:HOH:O	2.03	0.58
1:B:273:THR:O	1:B:277:GLN:HG3	2.03	0.58
1:E:253:LEU:HD11	1:E:413:ARG:HG3	1.86	0.57
1:A:146[B]:ARG:HG2	6:A:824:HOH:O	2.03	0.57
1:E:15[B]:LEU:HD12	1:E:40:ALA:CB	2.35	0.57
1:A:465:ILE:HD11	1:A:521:PHE:HZ	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1:MET:HE2	6:B:1136:HOH:O	2.05	0.57
1:F:219[B]:GLN:NE2	6:F:715:HOH:O	2.37	0.57
1:H:33:ARG:NH2	1:H:172:GLU:OE1	2.37	0.57
1:H:363:ARG:HA	6:H:1121:HOH:O	2.05	0.57
2:D:602:TD6:HN4A	2:D:602:TD6:C11	2.18	0.56
1:E:14:ILE:HG12	1:E:152:ILE:HD11	1.86	0.56
1:G:374:HIS:NE2	4:G:604:GOL:H32	2.20	0.56
1:A:14:ILE:HG12	1:A:152:ILE:HD11	1.88	0.56
2:F:602:TD6:HN4A	2:F:602:TD6:C11	2.19	0.56
1:G:14:ILE:HG12	1:G:152:ILE:HD11	1.88	0.56
1:F:311:ASP:OD2	6:F:701:HOH:O	2.18	0.56
1:D:253:LEU:HD11	1:D:413:ARG:HG3	1.87	0.56
1:E:273:THR:O	1:E:277:GLN:HG3	2.05	0.56
1:G:168:CYS:SG	6:G:707:HOH:O	2.58	0.56
1:C:327:ILE:N	1:C:327:ILE:HD12	2.21	0.56
1:D:528:PRO:HG2	1:E:555:HIS:CE1	2.41	0.56
1:D:219:GLN:NE2	1:D:340:GLU:OE1	2.39	0.55
1:H:24:ARG:NH2	6:H:714:HOH:O	2.39	0.55
1:B:482:GLN:HG3	6:B:1086:HOH:O	2.05	0.55
1:G:465:ILE:HD11	1:G:521:PHE:HZ	1.71	0.55
1:A:210:LYS:HD3	1:A:336:LEU:HD22	1.89	0.55
1:E:351[B]:ARG:HG2	1:E:351[B]:ARG:HH21	1.72	0.55
1:C:277:GLN:HG2	6:C:1181:HOH:O	2.06	0.55
1:F:68:VAL:HG11	1:F:432:SER:HB3	1.87	0.55
1:G:518:GLU:OE1	6:G:701:HOH:O	2.18	0.55
2:G:601:TD6:HN4A	2:G:601:TD6:C11	2.18	0.55
1:H:253:LEU:HD11	1:H:413:ARG:HG3	1.89	0.55
2:C:601:TD6:HN4A	2:C:601:TD6:C11	2.20	0.55
1:A:212:ARG:NH1	6:A:719:HOH:O	2.38	0.55
1:D:507:LYS:HD3	6:D:769:HOH:O	2.07	0.55
1:G:453:ALA:HA	1:G:456:ARG:HD2	1.87	0.55
1:H:68:VAL:HG11	1:H:432:SER:HB3	1.88	0.55
2:B:602:TD6:HN4A	2:B:602:TD6:C11	2.20	0.54
1:A:15[B]:LEU:HD23	1:A:41:ALA:HA	1.88	0.54
1:F:375:ARG:HD3	6:F:882:HOH:O	2.07	0.54
1:D:271:LYS:NZ	1:D:556:LEU:OXT	2.35	0.54
1:H:21:HIS:HB2	1:H:156:LEU:HD23	1.89	0.54
1:E:134:ILE:HD11	1:E:155:ALA:HB2	1.88	0.54
1:G:15:LEU:HD13	1:G:41:ALA:N	2.23	0.54
1:E:460:ALA:HB1	1:E:461:PRO:HD2	1.90	0.53
1:F:216:PHE:CZ	1:F:220:LYS:HE3	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:ARG:CZ	1:B:48:ILE:HD11	2.39	0.53
1:F:311:ASP:HB3	6:F:1130:HOH:O	2.07	0.53
1:B:18:LEU:HD22	1:B:156:LEU:HD21	1.91	0.53
1:F:377[B]:CYS:SG	4:F:605:GOL:O1	2.55	0.53
1:B:495[B]:VAL:HG12	1:B:496:HIS:N	2.23	0.53
1:F:216:PHE:O	1:F:219[A]:GLN:HG2	2.08	0.53
2:A:601:TD6:HN4A	2:A:601:TD6:C11	2.21	0.53
1:C:216:PHE:CZ	1:C:220:LYS:HE3	2.44	0.53
2:H:602:TD6:HN4A	2:H:602:TD6:C11	2.21	0.53
1:A:68:VAL:HG11	1:A:432:SER:HB3	1.90	0.52
1:H:18:LEU:HD22	1:H:156:LEU:HD21	1.90	0.52
1:B:378:ASP:OD2	4:B:605:GOL:O2	2.27	0.52
1:A:134:ILE:HD11	1:A:155:ALA:HB2	1.91	0.52
1:E:68:VAL:HG11	1:E:432:SER:HB3	1.90	0.52
1:E:298:GLN:HG2	6:E:701:HOH:O	2.10	0.52
1:A:146[B]:ARG:HH21	1:A:146[B]:ARG:CG	2.16	0.52
1:A:215:PHE:HD2	6:A:701:HOH:O	1.92	0.52
1:H:15[B]:LEU:CD2	1:H:41:ALA:HB2	2.40	0.52
1:H:255:GLN:HG2	1:H:407:TYR:O	2.10	0.52
1:G:24:ARG:HD3	6:G:710:HOH:O	2.08	0.51
1:D:15:LEU:HD13	1:D:41:ALA:N	2.25	0.51
1:D:495:VAL:HG12	1:D:496:HIS:N	2.26	0.51
1:F:15:LEU:HD12	1:F:40:ALA:CB	2.39	0.51
1:A:15[A]:LEU:HD13	1:A:41:ALA:N	2.25	0.51
1:F:14:ILE:HG12	1:F:152:ILE:HD11	1.93	0.51
1:G:377:CYS:SG	1:G:403:LEU:HD23	2.50	0.51
1:H:15[A]:LEU:HD12	1:H:40:ALA:CB	2.39	0.51
1:D:48:ILE:HD11	1:E:362:ALA:HB1	1.91	0.51
1:D:347:VAL:HG23	1:D:348:GLU:HG2	1.93	0.51
1:D:18:LEU:CD2	1:D:156:LEU:HD21	2.41	0.51
2:E:601:TD6:HN4A	2:E:601:TD6:C11	2.22	0.51
1:A:284:GLN:C	1:A:285[A]:LEU:HD13	2.31	0.51
1:C:207:GLU:HG2	6:C:956:HOH:O	2.11	0.51
1:B:15:LEU:HD12	1:B:40:ALA:CB	2.41	0.51
1:G:327:ILE:HD12	1:G:327:ILE:N	2.26	0.51
1:F:6:PHE:CE1	1:F:141:GLN:HG2	2.45	0.51
1:G:68:VAL:HG11	1:G:432:SER:HB3	1.93	0.51
1:A:273:THR:O	1:A:277:GLN:HG3	2.11	0.50
1:D:495:VAL:HG12	1:D:496:HIS:O	2.10	0.50
1:B:301:CYS:HB2	6:B:1101:HOH:O	2.10	0.50
1:A:3:VAL:HB	1:A:173:PRO:HD2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:14:ILE:HA	1:A:152:ILE:HD13	1.93	0.50
1:B:14:ILE:HG12	1:B:152[A]:ILE:HD11	1.93	0.50
1:A:210:LYS:HG2	1:A:336:LEU:HD13	1.93	0.50
1:F:21:HIS:HB2	1:F:156:LEU:HD23	1.94	0.50
1:C:6:PHE:CE1	1:C:141:GLN:HG2	2.47	0.50
1:E:351[B]:ARG:HG2	1:E:351[B]:ARG:NH2	2.26	0.50
1:C:255:GLN:HG2	1:C:407:TYR:O	2.11	0.49
1:D:8:ARG:NH2	1:D:43:GLU:OE2	2.44	0.49
1:D:33:ARG:H	5:D:601:FMT:C	2.25	0.49
1:G:375:ARG:HG2	4:G:604:GOL:H31	1.94	0.49
1:A:283:VAL:HG12	1:A:285[B]:LEU:CD2	2.43	0.49
1:D:3:VAL:HB	1:D:173:PRO:HD2	1.94	0.49
1:E:263:ALA:HA	1:E:266:TRP:NE1	2.28	0.49
1:E:376:ILE:HD11	1:E:439:ILE:HD11	1.93	0.49
1:G:9:ARG:NE	6:G:702:HOH:O	2.22	0.49
1:A:6:PHE:CE1	1:A:141:GLN:HG2	2.48	0.49
1:E:347:VAL:HG23	1:E:348:GLU:HG2	1.94	0.49
1:A:15[A]:LEU:CD1	1:A:40:ALA:HB3	2.37	0.49
1:C:456:ARG:NH2	6:C:706:HOH:O	2.24	0.49
1:B:21:HIS:HB2	1:B:156:LEU:HD23	1.93	0.49
1:E:547:GLN:NE2	6:E:715:HOH:O	2.37	0.49
1:F:292:LYS:NZ	6:F:707:HOH:O	2.28	0.49
1:G:457:GLN:HG2	6:G:1101:HOH:O	2.12	0.49
1:A:265:LEU:HD23	1:A:550:LEU:HD23	1.94	0.49
1:G:210:LYS:HD3	1:G:336:LEU:HD22	1.93	0.49
1:H:510:ARG:NH2	6:H:726:HOH:O	2.46	0.49
1:A:15[B]:LEU:HD23	1:A:41:ALA:CA	2.43	0.48
1:A:460:ALA:HB1	1:A:461:PRO:HD2	1.94	0.48
1:F:327:ILE:N	1:F:327:ILE:HD12	2.27	0.48
1:H:327:ILE:N	1:H:327:ILE:HD12	2.29	0.48
1:A:327:ILE:N	1:A:327:ILE:HD12	2.28	0.48
1:B:393:VAL:HG13	1:B:394:VAL:N	2.28	0.48
1:C:460:ALA:HB1	1:C:461:PRO:HD2	1.96	0.48
1:E:169:PRO:HD2	6:E:987:HOH:O	2.14	0.48
1:G:134:ILE:HD11	1:G:155:ALA:HB2	1.96	0.48
1:H:15[A]:LEU:HD13	1:H:41:ALA:N	2.28	0.48
1:F:216:PHE:CE1	1:F:220:LYS:HE3	2.49	0.48
1:H:15[B]:LEU:HD23	1:H:41:ALA:HA	1.96	0.48
1:C:503:MET:CE	1:D:495:VAL:HG11	2.43	0.48
1:D:220:LYS:HE3	1:D:280:GLN:NE2	2.29	0.47
1:H:228:ARG:HD2	6:H:1176:HOH:O	2.12	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:15:LEU:CD1	1:G:40:ALA:HB3	2.37	0.47
1:B:24:ARG:NE	1:B:48:ILE:HD11	2.29	0.47
1:D:255:GLN:HG2	1:D:407:TYR:O	2.14	0.47
1:D:528:PRO:HG2	1:E:555:HIS:NE2	2.28	0.47
1:D:68:VAL:HG11	1:D:432:SER:HB3	1.95	0.47
1:E:255:GLN:HG2	1:E:407:TYR:O	2.14	0.47
1:B:392:LEU:HB2	2:B:602:TD6:O2B	2.15	0.47
1:H:495:VAL:HG22	1:H:496:HIS:N	2.29	0.47
1:A:33:ARG:H	5:A:605:FMT:C	2.28	0.47
1:B:495[A]:VAL:HG22	1:B:496:HIS:O	2.14	0.47
1:D:273:THR:O	1:D:277:GLN:HG3	2.15	0.47
1:D:6:PHE:CE1	1:D:141:GLN:HG2	2.51	0.46
1:D:327:ILE:N	1:D:327:ILE:HD12	2.30	0.46
1:F:255:GLN:HG2	1:F:407:TYR:O	2.14	0.46
1:G:271:LYS:NZ	1:G:556:LEU:O	2.47	0.46
1:B:457:GLN:HG3	6:B:1030:HOH:O	2.14	0.46
1:F:245:GLY:O	1:F:344:PRO:HA	2.16	0.46
1:G:210:LYS:CG	1:G:336:LEU:HD13	2.43	0.46
1:H:460:ALA:HB1	1:H:461:PRO:HD2	1.97	0.46
1:H:495:VAL:HG22	1:H:496:HIS:O	2.16	0.46
1:B:495[A]:VAL:HG22	1:B:496:HIS:N	2.30	0.46
1:F:393:VAL:HG13	1:F:394:VAL:N	2.30	0.46
1:F:544:GLN:NE2	6:F:726:HOH:O	2.48	0.46
1:C:144:PRO:HB2	1:C:146:ARG:HG2	1.97	0.46
1:E:327:ILE:HD12	1:E:327:ILE:N	2.31	0.46
1:A:377[A]:CYS:SG	1:A:403:LEU:HD23	2.56	0.46
1:H:15[A]:LEU:HD13	1:H:41:ALA:CA	2.46	0.46
1:F:430:ARG:NH2	4:F:604:GOL:O1	2.45	0.46
1:G:67:LYS:O	1:G:70:LYS:NZ	2.49	0.46
1:A:335:GLU:OE1	6:A:704:HOH:O	2.21	0.45
1:C:15:LEU:HD13	1:C:41:ALA:N	2.31	0.45
1:A:255:GLN:HG2	1:A:407:TYR:O	2.16	0.45
1:D:245:GLY:O	1:D:344:PRO:HA	2.17	0.45
1:D:515:GLN:NE2	1:D:518:GLU:OE1	2.50	0.45
1:E:40:ALA:HB2	6:E:823:HOH:O	2.15	0.45
1:F:273:THR:O	1:F:277:GLN:HG3	2.16	0.45
1:B:327:ILE:HD12	1:B:327:ILE:N	2.31	0.45
1:D:377[B]:CYS:SG	6:D:996:HOH:O	2.60	0.45
1:D:518:GLU:HG3	6:D:920:HOH:O	2.15	0.45
1:E:188:ARG:HD3	6:E:1119:HOH:O	2.15	0.45
1:H:15[B]:LEU:HD21	1:H:41:ALA:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:68:VAL:HG11	1:C:432:SER:HB3	1.99	0.45
1:A:40:ALA:HB2	6:A:981:HOH:O	2.14	0.45
1:C:265:LEU:HD23	1:C:550:LEU:HD23	1.98	0.45
1:C:271:LYS:HE3	1:C:352:LEU:HD21	1.98	0.45
1:D:495:VAL:CG1	1:D:496:HIS:N	2.79	0.45
1:D:21:HIS:CB	1:D:156:LEU:HD23	2.46	0.45
1:F:18:LEU:HD22	1:F:156:LEU:HD21	1.98	0.45
1:G:71[B]:GLN:HB3	1:G:72:PRO:HD2	1.98	0.45
1:C:142:ASP:HA	6:C:744:HOH:O	2.16	0.45
1:D:68:VAL:HG21	1:D:428:VAL:HG13	1.99	0.45
1:H:8:ARG:NH2	1:H:43:GLU:OE2	2.48	0.45
1:B:15:LEU:HD13	1:B:41:ALA:N	2.32	0.44
1:E:6:PHE:CE1	1:E:141:GLN:HG2	2.52	0.44
1:E:107:ARG:HG3	6:E:756:HOH:O	2.17	0.44
1:G:495:VAL:HG22	1:G:496:HIS:O	2.18	0.44
1:H:210:LYS:HE3	1:H:336:LEU:HD11	1.98	0.44
1:E:392:LEU:HB2	2:E:601:TD6:O2B	2.17	0.44
1:B:134:ILE:HD11	1:B:155:ALA:HB2	1.99	0.44
1:B:453:ALA:O	1:B:456:ARG:HD3	2.18	0.44
1:C:503:MET:HE2	1:D:495:VAL:HG11	1.97	0.44
1:F:29:ALA:HB2	1:F:58:LEU:HD22	2.00	0.44
1:D:382:GLU:HG3	1:D:383:GLN:HG2	1.99	0.44
1:E:15[B]:LEU:HD13	1:E:41:ALA:CA	2.48	0.44
1:H:528:PRO:HB2	6:H:1110:HOH:O	2.18	0.44
1:E:383:GLN:NE2	6:E:728:HOH:O	2.50	0.44
1:H:33:ARG:H	5:H:601:FMT:C	2.31	0.44
1:A:15[B]:LEU:HD21	1:A:41:ALA:HB2	2.00	0.44
1:C:221:ARG:NH1	6:C:730:HOH:O	2.50	0.44
1:C:547:GLN:OE1	6:C:705:HOH:O	2.21	0.44
1:G:29:ALA:HB2	1:G:58:LEU:HD22	1.99	0.44
1:H:348:GLU:OE1	6:H:702:HOH:O	2.21	0.44
1:C:376:ILE:HD11	1:C:439:ILE:HD11	1.99	0.44
1:A:29:ALA:HB2	1:A:58:LEU:HD22	2.00	0.44
1:F:129:HIS:N	1:F:130:PRO:HD2	2.32	0.44
1:C:510:ARG:NH2	6:C:731:HOH:O	2.50	0.44
1:F:239:LEU:HD12	6:F:872:HOH:O	2.16	0.44
1:H:15[B]:LEU:HD23	1:H:41:ALA:CA	2.48	0.44
1:H:141:GLN:HG3	6:H:1021:HOH:O	2.17	0.44
1:D:129:HIS:N	1:D:130:PRO:HD2	2.33	0.43
1:F:83:VAL:HG13	1:F:104:THR:HG21	2.00	0.43
1:F:462:LEU:O	1:F:530:THR:HA	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:284:GLN:O	1:A:285[A]:LEU:HD13	2.19	0.43
1:D:232:GLU:HG2	6:D:982:HOH:O	2.18	0.43
1:E:390:ASN:OD1	1:E:413:ARG:HD2	2.18	0.43
1:G:495:VAL:HG22	1:G:496:HIS:N	2.33	0.43
1:B:67:LYS:NZ	6:B:728:HOH:O	2.51	0.43
1:C:343:GLN:HA	1:C:344:PRO:HD3	1.92	0.43
1:G:460:ALA:HB1	1:G:461:PRO:HD2	2.00	0.43
1:A:503:MET:CE	1:B:495[B]:VAL:HG11	2.48	0.43
1:G:228:ARG:NH2	1:G:288:SER:OG	2.51	0.43
1:C:343:GLN:H	1:C:343:GLN:CD	2.20	0.43
1:D:15:LEU:HD13	1:D:41:ALA:CA	2.49	0.43
1:F:407:TYR:HA	1:F:408:PRO:HD3	1.92	0.43
1:G:14:ILE:HA	1:G:152:ILE:HD13	2.01	0.43
1:D:460:ALA:HB1	1:D:461:PRO:HD2	2.01	0.43
1:A:4[A]:SER:OG	1:A:173:PRO:HB2	2.19	0.43
1:A:14:ILE:HA	1:A:152:ILE:CD1	2.48	0.43
1:D:500:ALA:HB2	6:D:1151:HOH:O	2.19	0.43
1:F:1:MET:N	6:F:720:HOH:O	2.44	0.43
1:G:515:GLN:NE2	6:G:704:HOH:O	2.23	0.43
1:B:460:ALA:HB1	1:B:461:PRO:HD2	2.01	0.42
1:A:144:PRO:HB2	1:A:146[A]:ARG:HG2	2.00	0.42
1:B:255:GLN:HG2	1:B:407:TYR:O	2.19	0.42
1:F:154:HIS:CE1	1:G:314:GLY:HA2	2.55	0.42
1:E:351[A]:ARG:HD2	1:E:351[A]:ARG:O	2.19	0.42
1:F:68:VAL:CG2	1:F:428:VAL:HG13	2.50	0.42
1:B:276:LEU:HG	1:B:349:ILE:HD11	2.01	0.42
1:D:1:MET:HE3	1:D:179:ASP:OD2	2.19	0.42
2:D:602:TD6:H6	2:D:602:TD6:HM4	1.93	0.42
1:G:95:LEU:HD11	1:H:120:ILE:HG22	2.01	0.42
1:A:298:GLN:O	1:A:321:HIS:HE1	2.02	0.42
1:D:392:LEU:HB2	2:D:602:TD6:O2B	2.19	0.42
1:E:87:TYR:HB3	1:F:84:ALA:HB1	2.01	0.42
1:E:346:CYS:HB2	6:E:895:HOH:O	2.19	0.42
1:F:456:ARG:NH2	6:F:730:HOH:O	2.49	0.42
1:G:273:THR:O	1:G:277:GLN:HG3	2.19	0.42
1:A:71[B]:GLN:HB3	1:A:72:PRO:HD2	2.02	0.42
1:A:146[B]:ARG:HG2	1:A:146[B]:ARG:NH2	2.17	0.42
1:B:15:LEU:HD13	1:B:41:ALA:CA	2.50	0.42
1:C:393:VAL:HG13	1:C:394:VAL:N	2.35	0.42
1:D:32:SER:N	5:D:601:FMT:H	2.34	0.42
1:E:351[B]:ARG:HA	1:E:351[B]:ARG:CZ	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:263:ALA:HA	1:E:266:TRP:CD1	2.55	0.42
1:B:538:ASN:HB2	1:B:541:ASP:OD2	2.19	0.41
1:F:3:VAL:HB	1:F:173:PRO:HD2	2.02	0.41
1:F:412:ASN:O	1:F:416:SER:HA	2.20	0.41
1:G:144:PRO:HB2	1:G:146:ARG:HG2	2.01	0.41
1:G:480:THR:O	1:G:485:ARG:NH2	2.49	0.41
1:B:68:VAL:HG11	1:B:432:SER:HB3	2.01	0.41
1:C:407:TYR:HA	1:C:408:PRO:HD3	1.96	0.41
1:F:392:LEU:HB2	2:F:602:TD6:O2B	2.21	0.41
1:H:393:VAL:HG13	1:H:394:VAL:N	2.36	0.41
1:A:252[A]:VAL:CG2	1:A:398:ASP:CA	2.90	0.41
1:B:245:GLY:O	1:B:344:PRO:HA	2.21	0.41
1:D:276:LEU:HD23	1:D:276:LEU:HA	1.94	0.41
1:G:1:MET:HG3	1:G:2:SER:N	2.35	0.41
1:H:18:LEU:CD2	1:H:156:LEU:HD21	2.50	0.41
1:H:197:LYS:HD3	6:H:742:HOH:O	2.20	0.41
1:A:377[A]:CYS:SG	1:A:403:LEU:HA	2.60	0.41
1:E:346:CYS:HB2	6:E:1089:HOH:O	2.21	0.41
1:G:364:ARG:HE	4:G:604:GOL:C3	2.34	0.41
1:B:390:ASN:OD1	1:B:413:ARG:HD2	2.21	0.41
1:A:221:ARG:HD3	6:A:1010:HOH:O	2.21	0.41
1:C:212:ARG:NH2	6:C:736:HOH:O	2.53	0.41
1:H:245:GLY:O	1:H:344:PRO:HA	2.20	0.41
1:A:328:ALA:HB2	6:A:902:HOH:O	2.21	0.41
1:C:342:ARG:NH1	6:C:715:HOH:O	2.41	0.41
1:F:33:ARG:H	5:F:601:FMT:C	2.30	0.41
1:G:4[A]:SER:OG	1:G:173:PRO:HB2	2.20	0.41
1:C:430:ARG:NH2	4:C:603:GOL:O1	2.49	0.41
1:E:111:LEU:HD13	6:E:756:HOH:O	2.20	0.41
1:A:15[B]:LEU:CD2	1:A:41:ALA:N	2.84	0.40
1:A:285[B]:LEU:HD13	1:A:309:VAL:HB	2.03	0.40
1:E:15[A]:LEU:CD2	1:E:41:ALA:HB2	2.51	0.40
1:E:202:GLU:HB2	1:H:325:ARG:HB3	2.03	0.40
1:E:347:VAL:HG23	1:E:348:GLU:N	2.36	0.40
1:G:87:TYR:HB3	1:G:88:PRO:HD3	2.04	0.40
1:E:407:TYR:HA	1:E:408:PRO:HD3	1.93	0.40
1:F:68:VAL:HG21	1:F:428:VAL:HG13	2.03	0.40
1:F:78:THR:OG1	5:F:601:FMT:H	2.21	0.40
1:H:240:TRP:CG	1:H:334:LEU:HD22	2.56	0.40
1:C:15:LEU:CD1	1:C:40:ALA:HB3	2.45	0.40
1:G:24:ARG:HB3	6:G:716:HOH:O	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:120:ILE:HG22	1:H:95:LEU:HD11	2.03	0.40
1:D:276:LEU:HG	1:D:349:ILE:HD11	2.03	0.40
1:H:392:LEU:HB2	2:H:602:TD6:O2B	2.21	0.40
1:F:287:SER:HB2	6:F:946:HOH:O	2.21	0.40

All (6) 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)
6:A:1118:HOH:O	6:F:777:HOH:O[1_456]	2.04	0.16
6:A:701:HOH:O	6:B:916:HOH:O[1_455]	2.10	0.10
6:A:811:HOH:O	6:G:1148:HOH:O[1_456]	2.14	0.06
6:F:1103:HOH:O	6:H:1194:HOH:O[1_645]	2.15	0.05
6:F:1227:HOH:O	6:H:1222:HOH:O[1_645]	2.16	0.04
6:A:951:HOH:O	6:F:952:HOH:O[1_456]	2.18	0.02

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	565/556 (102%)	554 (98%)	10 (2%)	1 (0%)	47	32
1	B	557/556 (100%)	545 (98%)	11 (2%)	1 (0%)	47	32
1	C	556/556 (100%)	546 (98%)	9 (2%)	1 (0%)	47	32
1	D	556/556 (100%)	546 (98%)	10 (2%)	0	100	100
1	E	560/556 (101%)	550 (98%)	9 (2%)	1 (0%)	47	32
1	F	558/556 (100%)	549 (98%)	9 (2%)	0	100	100
1	G	558/556 (100%)	547 (98%)	10 (2%)	1 (0%)	47	32
1	H	557/556 (100%)	547 (98%)	9 (2%)	1 (0%)	47	32
All	All	4467/4448 (100%)	4384 (98%)	77 (2%)	6 (0%)	51	35

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	391	SER
1	E	391	SER
1	G	391	SER
1	H	391	SER
1	A	391	SER
1	B	391	SER

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	459/452 (102%)	449 (98%)	10 (2%)	52	36
1	B	451/452 (100%)	446 (99%)	5 (1%)	73	65
1	C	448/452 (99%)	442 (99%)	6 (1%)	69	59
1	D	447/452 (99%)	443 (99%)	4 (1%)	78	72
1	E	452/452 (100%)	447 (99%)	5 (1%)	73	65
1	F	449/452 (99%)	444 (99%)	5 (1%)	73	65
1	G	454/452 (100%)	448 (99%)	6 (1%)	69	59
1	H	449/452 (99%)	444 (99%)	5 (1%)	73	65
All	All	3609/3616 (100%)	3563 (99%)	46 (1%)	71	59

All (46) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	87	TYR
1	A	252[A]	VAL
1	A	252[B]	VAL
1	A	255	GLN
1	A	285[A]	LEU
1	A	285[B]	LEU
1	A	325	ARG
1	A	341	LYS

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Mol	Chain	Res	Type
1	A	391	SER
1	A	447	TYR
1	B	87	TYR
1	B	255	GLN
1	B	325	ARG
1	B	391	SER
1	B	447	TYR
1	C	87	TYR
1	C	255	GLN
1	C	325	ARG
1	C	341	LYS
1	C	391	SER
1	C	447	TYR
1	D	87	TYR
1	D	255	GLN
1	D	325	ARG
1	D	447	TYR
1	E	87	TYR
1	E	255	GLN
1	E	325	ARG
1	E	391	SER
1	E	447	TYR
1	F	87	TYR
1	F	255	GLN
1	F	325	ARG
1	F	391	SER
1	F	447	TYR
1	G	87	TYR
1	G	107	ARG
1	G	255	GLN
1	G	325	ARG
1	G	391	SER
1	G	447	TYR
1	H	87	TYR
1	H	255	GLN
1	H	325	ARG
1	H	391	SER
1	H	447	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	547	GLN
1	H	141	GLN

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 40 ligands modelled in this entry, 8 are monoatomic - leaving 32 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	TD6	A	601	3	29,34,34	2.76	5 (17%)	35,50,50	1.70	6 (17%)
4	GOL	A	604	-	5,5,5	0.44	0	5,5,5	0.39	0
4	GOL	G	604	-	5,5,5	0.48	0	5,5,5	0.26	0
4	GOL	H	604	-	5,5,5	0.33	0	5,5,5	0.51	0
4	GOL	E	604	-	5,5,5	0.34	0	5,5,5	0.52	0
4	GOL	H	605	-	5,5,5	0.36	0	5,5,5	0.67	0
4	GOL	C	604	-	5,5,5	0.36	0	5,5,5	0.51	0
4	GOL	B	604	-	5,5,5	0.35	0	5,5,5	0.51	0
2	TD6	D	602	3	29,34,34	2.60	5 (17%)	35,50,50	1.81	8 (22%)
2	TD6	H	602	3	29,34,34	2.71	5 (17%)	35,50,50	1.84	9 (25%)
5	FMT	F	601	-	2,2,2	0.74	0	1,1,1	0.38	0
5	FMT	D	601	-	2,2,2	0.77	0	1,1,1	0.29	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	FMT	G	605	-	2,2,2	0.76	0	1,1,1	0.30	0
2	TD6	G	601	3	29,34,34	2.48	4 (13%)	35,50,50	1.72	7 (20%)
2	TD6	F	602	3	29,34,34	2.75	5 (17%)	35,50,50	1.76	8 (22%)
2	TD6	C	601	3	29,34,34	2.43	5 (17%)	35,50,50	1.69	8 (22%)
5	FMT	A	605	-	2,2,2	0.77	0	1,1,1	0.40	0
4	GOL	B	605	-	5,5,5	0.44	0	5,5,5	0.44	0
5	FMT	E	605	-	2,2,2	0.72	0	1,1,1	0.35	0
2	TD6	E	601	3	29,34,34	2.49	4 (13%)	35,50,50	1.77	9 (25%)
4	GOL	D	604	-	5,5,5	0.38	0	5,5,5	0.25	0
5	FMT	B	601	-	2,2,2	0.81	0	1,1,1	0.39	0
5	FMT	C	605	-	2,2,2	0.68	0	1,1,1	0.43	0
4	GOL	G	603	-	5,5,5	0.35	0	5,5,5	0.47	0
4	GOL	D	605	-	5,5,5	0.41	0	5,5,5	0.27	0
4	GOL	A	603	-	5,5,5	0.42	0	5,5,5	0.39	0
4	GOL	F	604	-	5,5,5	0.45	0	5,5,5	0.30	0
5	FMT	H	601	-	2,2,2	0.80	0	1,1,1	0.47	0
4	GOL	F	605	-	5,5,5	0.38	0	5,5,5	0.69	0
4	GOL	E	603	-	5,5,5	0.33	0	5,5,5	0.34	0
2	TD6	B	602	3	29,34,34	2.79	5 (17%)	35,50,50	1.80	10 (28%)
4	GOL	C	603	-	5,5,5	0.40	0	5,5,5	0.12	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
2	TD6	A	601	3	-	4/21/26/26	0/2/2/2
4	GOL	A	604	-	-	2/4/4/4	-
4	GOL	G	604	-	-	2/4/4/4	-
4	GOL	H	604	-	-	4/4/4/4	-
4	GOL	E	604	-	-	0/4/4/4	-
4	GOL	H	605	-	-	0/4/4/4	-
4	GOL	C	604	-	-	0/4/4/4	-
4	GOL	B	604	-	-	2/4/4/4	-
2	TD6	D	602	3	-	4/21/26/26	0/2/2/2
2	TD6	H	602	3	-	5/21/26/26	0/2/2/2
2	TD6	G	601	3	-	5/21/26/26	0/2/2/2
2	TD6	F	602	3	-	5/21/26/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	TD6	C	601	3	-	5/21/26/26	0/2/2/2
4	GOL	B	605	-	-	4/4/4/4	-
2	TD6	E	601	3	-	5/21/26/26	0/2/2/2
4	GOL	D	604	-	-	2/4/4/4	-
4	GOL	G	603	-	-	2/4/4/4	-
4	GOL	D	605	-	-	4/4/4/4	-
4	GOL	A	603	-	-	2/4/4/4	-
4	GOL	F	604	-	-	2/4/4/4	-
4	GOL	F	605	-	-	0/4/4/4	-
4	GOL	E	603	-	-	2/4/4/4	-
2	TD6	B	602	3	-	6/21/26/26	0/2/2/2
4	GOL	C	603	-	-	2/4/4/4	-

All (38) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	602	TD6	C6-C5	13.23	1.56	1.50
2	A	601	TD6	C6-C5	13.18	1.56	1.50
2	F	602	TD6	C6-C5	13.11	1.56	1.50
2	H	602	TD6	C6-C5	12.81	1.56	1.50
2	D	602	TD6	C6-C5	12.06	1.56	1.50
2	E	601	TD6	C6-C5	11.54	1.56	1.50
2	G	601	TD6	C6-C5	11.33	1.55	1.50
2	C	601	TD6	C6-C5	11.12	1.55	1.50
2	A	601	TD6	CM4-C4	3.29	1.56	1.49
2	D	602	TD6	CM4-C4	3.29	1.56	1.49
2	B	602	TD6	CM4-C4	3.23	1.56	1.49
2	F	602	TD6	CM4-C4	3.22	1.56	1.49
2	G	601	TD6	CM4-C4	3.21	1.56	1.49
2	C	601	TD6	CM4-C4	3.15	1.56	1.49
2	E	601	TD6	CM4-C4	3.12	1.56	1.49
2	H	602	TD6	CM2-C2'	2.97	1.58	1.49
2	H	602	TD6	CM4-C4	2.87	1.55	1.49
2	E	601	TD6	CM2-C2'	2.83	1.57	1.49
2	G	601	TD6	CM2-C2'	2.81	1.57	1.49
2	B	602	TD6	CM2-C2'	2.75	1.57	1.49
2	D	602	TD6	CM2-C2'	2.74	1.57	1.49
2	B	602	TD6	C7'-C5'	2.73	1.56	1.51
2	A	601	TD6	CM2-C2'	2.70	1.57	1.49
2	F	602	TD6	CM2-C2'	2.67	1.57	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	601	TD6	CM2-C2'	2.64	1.57	1.49
2	H	602	TD6	C7'-C5'	2.63	1.56	1.51
2	G	601	TD6	C7'-C5'	2.59	1.56	1.51
2	C	601	TD6	C7'-C5'	2.57	1.56	1.51
2	F	602	TD6	C7'-C5'	2.31	1.56	1.51
2	D	602	TD6	C5'-C4'	-2.19	1.39	1.42
2	D	602	TD6	C7'-C5'	2.17	1.55	1.51
2	H	602	TD6	C6-C7	2.08	1.58	1.50
2	A	601	TD6	C6-C7	2.06	1.57	1.50
2	C	601	TD6	C6-C7	2.04	1.57	1.50
2	E	601	TD6	C7'-C5'	2.04	1.55	1.51
2	B	602	TD6	C6-C7	2.01	1.57	1.50
2	F	602	TD6	C6-C7	2.01	1.57	1.50
2	A	601	TD6	C7'-C5'	2.00	1.55	1.51

All (65) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	602	TD6	C6'-N1'-C2'	4.35	123.37	115.96
2	B	602	TD6	C6'-N1'-C2'	4.27	123.22	115.96
2	H	602	TD6	C5-C4-N3	4.17	116.37	107.66
2	D	602	TD6	CM2-C2'-N1'	4.12	121.67	117.14
2	D	602	TD6	C5-C4-N3	3.95	115.92	107.66
2	B	602	TD6	C5-C4-N3	3.92	115.86	107.66
2	F	602	TD6	C5-C4-N3	3.91	115.83	107.66
2	E	601	TD6	C5-C4-N3	3.87	115.74	107.66
2	A	601	TD6	C6'-N1'-C2'	3.82	122.47	115.96
2	C	601	TD6	C5-C4-N3	3.82	115.65	107.66
2	A	601	TD6	C5-C4-N3	3.79	115.58	107.66
2	G	601	TD6	C5-C4-N3	3.77	115.55	107.66
2	F	602	TD6	C6'-N1'-C2'	3.66	122.19	115.96
2	G	601	TD6	CM2-C2'-N1'	3.66	121.16	117.14
2	G	601	TD6	C6'-N1'-C2'	3.61	122.11	115.96
2	C	601	TD6	C6'-N1'-C2'	3.60	122.09	115.96
2	D	602	TD6	C6'-N1'-C2'	3.60	122.08	115.96
2	F	602	TD6	N1'-C2'-N3'	-3.37	119.75	125.54
2	H	602	TD6	N1'-C2'-N3'	-3.37	119.75	125.54
2	H	602	TD6	C5'-C6'-N1'	-3.35	118.24	123.82
2	D	602	TD6	N1'-C2'-N3'	-3.33	119.81	125.54
2	F	602	TD6	CM4-C4-C5	-3.33	120.33	127.60
2	A	601	TD6	CM4-C4-C5	-3.31	120.37	127.60
2	E	601	TD6	N1'-C2'-N3'	-3.30	119.86	125.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	601	TD6	C6'-N1'-C2'	3.30	121.57	115.96
2	A	601	TD6	C5'-C6'-N1'	-3.27	118.37	123.82
2	B	602	TD6	N1'-C2'-N3'	-3.26	119.94	125.54
2	C	601	TD6	C5'-C6'-N1'	-3.24	118.43	123.82
2	D	602	TD6	CM4-C4-C5	-3.22	120.56	127.60
2	E	601	TD6	CM4-C4-C5	-3.22	120.56	127.60
2	F	602	TD6	CM2-C2'-N1'	3.18	120.63	117.14
2	G	601	TD6	C5'-C6'-N1'	-3.16	118.55	123.82
2	H	602	TD6	CM4-C4-C5	-3.13	120.75	127.60
2	E	601	TD6	CM2-C2'-N1'	3.13	120.58	117.14
2	B	602	TD6	C5'-C6'-N1'	-3.11	118.65	123.82
2	B	602	TD6	CM4-C4-C5	-3.10	120.81	127.60
2	C	601	TD6	CM4-C4-C5	-3.10	120.83	127.60
2	A	601	TD6	CM2-C2'-N1'	3.00	120.43	117.14
2	G	601	TD6	CM4-C4-C5	-2.91	121.23	127.60
2	D	602	TD6	C5'-C6'-N1'	-2.88	119.02	123.82
2	G	601	TD6	N1'-C2'-N3'	-2.84	120.64	125.54
2	A	601	TD6	N1'-C2'-N3'	-2.84	120.66	125.54
2	F	602	TD6	C5'-C6'-N1'	-2.76	119.22	123.82
2	C	601	TD6	N1'-C2'-N3'	-2.74	120.83	125.54
2	E	601	TD6	C5'-C6'-N1'	-2.72	119.29	123.82
2	B	602	TD6	C5'-C7'-N3	-2.69	108.82	113.26
2	H	602	TD6	CM2-C2'-N1'	2.66	120.06	117.14
2	H	602	TD6	C13-CLB-C11	-2.57	110.63	114.45
2	C	601	TD6	CLB-C13-CLC	-2.49	105.91	112.51
2	G	601	TD6	CLB-C13-CLC	-2.47	105.96	112.51
2	F	602	TD6	O1B-PB-O3A	2.43	112.78	104.64
2	H	602	TD6	O1B-PB-O3A	2.42	112.73	104.64
2	E	601	TD6	C2'-N3'-C4'	2.41	121.84	118.08
2	H	602	TD6	CLB-C13-CLC	-2.32	106.34	112.51
2	B	602	TD6	CLB-C13-CLC	-2.29	106.43	112.51
2	B	602	TD6	CM2-C2'-N3'	2.28	120.72	117.15
2	C	601	TD6	O1B-PB-O3A	2.17	111.93	104.64
2	E	601	TD6	C13-CLB-C11	-2.17	111.22	114.45
2	D	602	TD6	CLB-C13-CLC	-2.13	106.86	112.51
2	B	602	TD6	PA-O3A-PB	-2.10	125.63	132.83
2	D	602	TD6	O1B-PB-O3A	2.08	111.62	104.64
2	C	601	TD6	CM2-C2'-N1'	2.06	119.41	117.14
2	F	602	TD6	PA-O3A-PB	-2.02	125.88	132.83
2	E	601	TD6	C5'-C7'-N3	-2.02	109.93	113.26
2	B	602	TD6	CM2-C2'-N1'	2.01	119.35	117.14

There are no chirality outliers.

All (69) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	TD6	C2-C11-CLB-C13
2	A	601	TD6	OL1-C11-CLB-C13
2	B	602	TD6	C2-C11-CLB-C13
2	B	602	TD6	OL1-C11-CLB-C13
2	C	601	TD6	C2-C11-CLB-C13
2	C	601	TD6	OL1-C11-CLB-C13
2	D	602	TD6	C2-C11-CLB-C13
2	D	602	TD6	OL1-C11-CLB-C13
2	E	601	TD6	C2-C11-CLB-C13
2	E	601	TD6	OL1-C11-CLB-C13
2	E	601	TD6	C4'-C5'-C7'-N3
2	F	602	TD6	C2-C11-CLB-C13
2	F	602	TD6	OL1-C11-CLB-C13
2	G	601	TD6	C2-C11-CLB-C13
2	G	601	TD6	OL1-C11-CLB-C13
2	H	602	TD6	C2-C11-CLB-C13
2	H	602	TD6	OL1-C11-CLB-C13
4	A	604	GOL	O1-C1-C2-C3
4	B	605	GOL	O1-C1-C2-O2
4	D	605	GOL	O1-C1-C2-C3
4	D	605	GOL	C1-C2-C3-O3
4	G	604	GOL	C1-C2-C3-O3
4	H	604	GOL	O1-C1-C2-C3
4	H	604	GOL	C1-C2-C3-O3
4	B	605	GOL	O2-C2-C3-O3
4	D	605	GOL	O1-C1-C2-O2
4	G	604	GOL	O2-C2-C3-O3
4	H	604	GOL	O1-C1-C2-O2
4	H	604	GOL	O2-C2-C3-O3
4	A	603	GOL	O1-C1-C2-C3
4	B	604	GOL	O1-C1-C2-C3
4	B	605	GOL	O1-C1-C2-C3
4	B	605	GOL	C1-C2-C3-O3
4	C	603	GOL	O1-C1-C2-C3
4	D	604	GOL	O1-C1-C2-C3
4	E	603	GOL	O1-C1-C2-C3
4	F	604	GOL	O1-C1-C2-C3
4	G	603	GOL	O1-C1-C2-C3
4	A	604	GOL	O1-C1-C2-O2
4	D	605	GOL	O2-C2-C3-O3
2	B	602	TD6	PB-O3A-PA-O7
2	F	602	TD6	PB-O3A-PA-O7

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Mol	Chain	Res	Type	Atoms
4	B	604	GOL	O1-C1-C2-O2
4	C	603	GOL	O1-C1-C2-O2
4	D	604	GOL	O1-C1-C2-O2
4	E	603	GOL	O1-C1-C2-O2
4	F	604	GOL	O1-C1-C2-O2
4	G	603	GOL	O1-C1-C2-O2
2	B	602	TD6	C4-C5-C6-C7
2	C	601	TD6	C4-C5-C6-C7
2	H	602	TD6	CLB-C13-CLC-OL3
2	D	602	TD6	CLB-C13-CLC-OL3
2	F	602	TD6	CLB-C13-CLC-OL3
2	A	601	TD6	CLB-C13-CLC-OL3
2	G	601	TD6	CLB-C13-CLC-OL3
2	B	602	TD6	CLB-C13-CLC-OL3
2	E	601	TD6	CLB-C13-CLC-OL3
2	A	601	TD6	CLB-C13-CLC-OL2
2	C	601	TD6	CLB-C13-CLC-OL2
2	C	601	TD6	CLB-C13-CLC-OL3
2	B	602	TD6	CLB-C13-CLC-OL2
2	E	601	TD6	CLB-C13-CLC-OL2
2	F	602	TD6	CLB-C13-CLC-OL2
2	D	602	TD6	CLB-C13-CLC-OL2
2	G	601	TD6	CLB-C13-CLC-OL2
2	H	602	TD6	CLB-C13-CLC-OL2
2	G	601	TD6	C4'-C5'-C7'-N3
2	H	602	TD6	C4'-C5'-C7'-N3
4	A	603	GOL	O1-C1-C2-O2

There are no ring outliers.

19 monomers are involved in 43 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	601	TD6	2	0
4	G	604	GOL	4	0
2	D	602	TD6	4	0
2	H	602	TD6	3	0
5	F	601	FMT	4	0
5	D	601	FMT	5	0
5	G	605	FMT	1	0
2	G	601	TD6	2	0
2	F	602	TD6	3	0
2	C	601	TD6	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	605	FMT	1	0
4	B	605	GOL	1	0
2	E	601	TD6	3	0
5	B	601	FMT	1	0
4	F	604	GOL	1	0
5	H	601	FMT	1	0
4	F	605	GOL	1	0
2	B	602	TD6	3	0
4	C	603	GOL	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 TD6 A 601

Bond lengths

Bond angles

Torsions

Rings

Ligand TD6 D 602

Bond lengths

Bond angles

Torsions

Rings

Ligand TD6 H 602

Bond lengths

Bond angles

Torsions

Rings

Ligand TD6 G 601

Bond lengths

Bond angles

Torsions

Rings

Ligand TD6 F 602

Bond lengths

Bond angles

Torsions

Rings

Ligand TD6 C 601

Bond lengths

Bond angles

Torsions

Rings

Full wwPDB X-ray Structure Validation Report

Ligand TD6 E 601

Bond lengths

Bond angles

Torsions

Rings

Ligand TD6 B 602

Bond lengths

Bond angles

Torsions

Rings

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	556/556 (100%)	-0.19	2 (0%)	92	92	9, 14, 27, 55	5 (0%)
1	B	556/556 (100%)	-0.16	3 (0%)	91	91	10, 16, 27, 43	2 (0%)
1	C	556/556 (100%)	-0.12	3 (0%)	91	91	9, 15, 28, 49	3 (0%)
1	D	556/556 (100%)	-0.06	4 (0%)	87	88	9, 18, 33, 46	3 (0%)
1	E	556/556 (100%)	-0.10	6 (1%)	80	81	10, 18, 32, 52	4 (0%)
1	F	556/556 (100%)	-0.07	8 (1%)	75	75	9, 16, 29, 50	0
1	G	556/556 (100%)	-0.15	4 (0%)	87	88	8, 15, 29, 58	5 (0%)
1	H	556/556 (100%)	-0.18	3 (0%)	91	91	9, 16, 27, 46	3 (0%)
All	All	4448/4448 (100%)	-0.13	33 (0%)	87	88	8, 16, 30, 58	25 (0%)

All (33) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1	MET	6.0
1	G	1	MET	5.3
1	F	1	MET	3.9
1	F	176	GLY	3.5
1	D	1	MET	3.5
1	D	347	VAL	3.4
1	G	176	GLY	3.1
1	B	1	MET	3.0
1	C	1	MET	2.9
1	H	177	GLU	2.9
1	G	178	MET	2.8
1	E	347	VAL	2.6
1	F	347	VAL	2.6
1	F	556	LEU	2.6
1	E	1	MET	2.4
1	H	176	GLY	2.4

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Mol	Chain	Res	Type	RSRZ
1	F	178	MET	2.4
1	A	178	MET	2.3
1	D	556	LEU	2.2
1	E	183	LEU	2.2
1	E	556	LEU	2.2
1	E	482	GLN	2.2
1	F	526	ARG	2.2
1	E	176	GLY	2.2
1	F	482	GLN	2.1
1	C	178	MET	2.1
1	B	180	ASP	2.1
1	B	522	ALA	2.1
1	C	176	GLY	2.1
1	D	555	HIS	2.1
1	G	512	GLN	2.0
1	F	522	ALA	2.0
1	H	1	MET	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 monosaccharides 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
4	GOL	H	605	6/6	0.71	0.23	26,46,65,65	0
5	FMT	G	605	3/3	0.84	0.12	26,31,37,45	0
4	GOL	F	605	6/6	0.86	0.23	22,34,42,44	0
4	GOL	B	605	6/6	0.87	0.18	27,40,52,62	0
4	GOL	G	604	6/6	0.88	0.14	26,43,51,54	0
4	GOL	C	604	6/6	0.89	0.16	20,34,39,43	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å²)	Q<0.9
4	GOL	D	605	6/6	0.90	0.15	28,39,48,52	0
5	FMT	H	601	3/3	0.90	0.14	26,27,33,40	0
4	GOL	D	604	6/6	0.94	0.09	19,29,35,36	0
4	GOL	H	604	6/6	0.94	0.12	22,30,37,39	0
4	GOL	A	604	6/6	0.94	0.16	20,37,46,46	0
5	FMT	B	601	3/3	0.94	0.09	26,29,33,39	0
4	GOL	E	603	6/6	0.94	0.09	21,29,41,41	0
4	GOL	B	604	6/6	0.94	0.09	18,23,35,35	0
4	GOL	E	604	6/6	0.95	0.19	20,36,45,47	0
5	FMT	D	601	3/3	0.95	0.08	25,30,34,37	0
5	FMT	F	601	3/3	0.95	0.14	26,26,31,37	0
4	GOL	A	603	6/6	0.95	0.09	13,25,34,34	0
4	GOL	G	603	6/6	0.95	0.10	15,28,41,41	0
4	GOL	C	603	6/6	0.96	0.08	16,32,39,39	0
5	FMT	C	605	3/3	0.96	0.10	25,25,30,31	0
5	FMT	E	605	3/3	0.97	0.08	29,30,35,36	0
4	GOL	F	604	6/6	0.97	0.10	18,30,35,36	0
2	TD6	C	601	33/33	0.97	0.08	8,16,35,41	0
5	FMT	A	605	3/3	0.97	0.09	23,25,30,35	0
2	TD6	E	601	33/33	0.98	0.07	11,19,33,44	0
2	TD6	F	602	33/33	0.98	0.07	10,16,30,37	0
2	TD6	G	601	33/33	0.98	0.09	8,15,29,35	0
2	TD6	H	602	33/33	0.98	0.08	10,18,38,46	0
2	TD6	B	602	33/33	0.98	0.07	9,17,29,40	0
2	TD6	A	601	33/33	0.98	0.08	8,15,31,38	0
2	TD6	D	602	33/33	0.98	0.08	10,18,29,35	0
3	MN	B	603	1/1	0.99	0.03	20,20,20,20	0
3	MN	E	602	1/1	0.99	0.03	23,23,23,23	0
3	MN	H	603	1/1	0.99	0.03	21,21,21,21	0
3	MN	C	602	1/1	1.00	0.04	19,19,19,19	0
3	MN	D	603	1/1	1.00	0.03	20,20,20,20	0
3	MN	A	602	1/1	1.00	0.03	19,19,19,19	0
3	MN	F	603	1/1	1.00	0.01	20,20,20,20	0
3	MN	G	602	1/1	1.00	0.03	19,19,19,19	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.
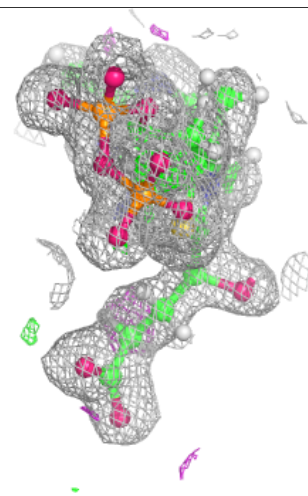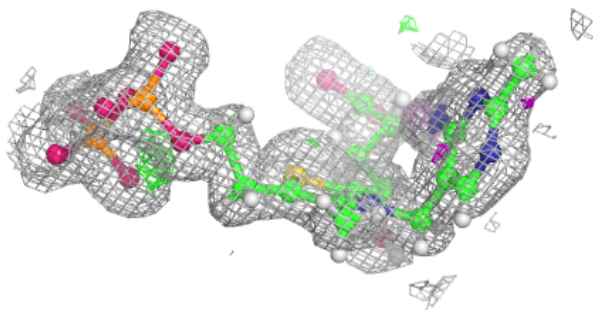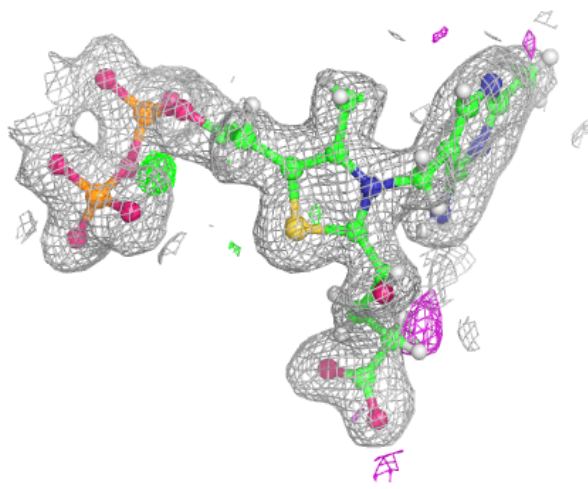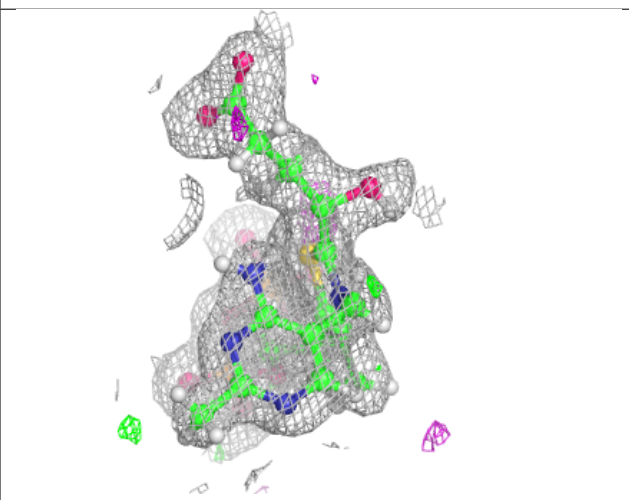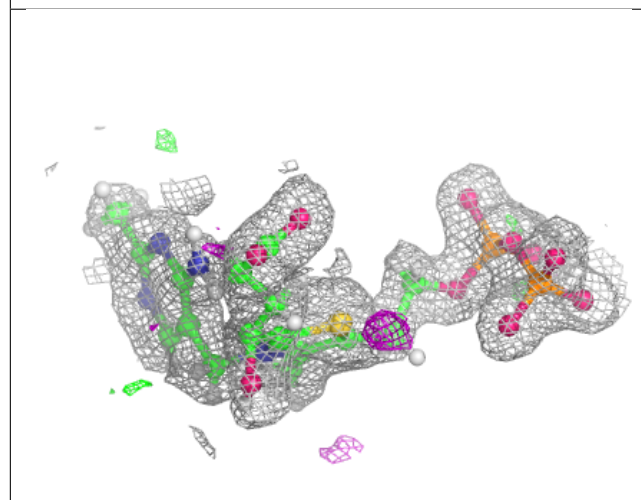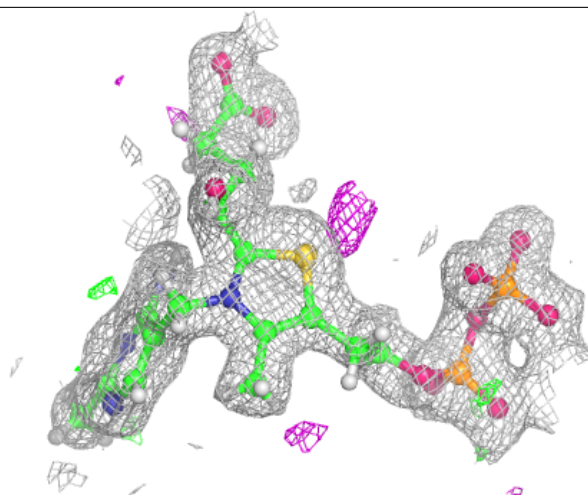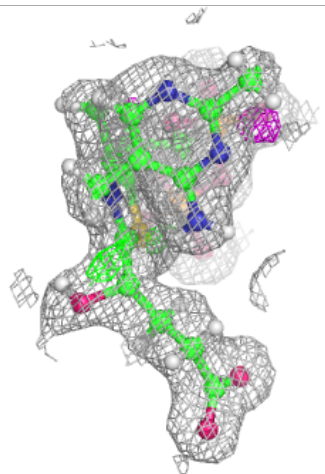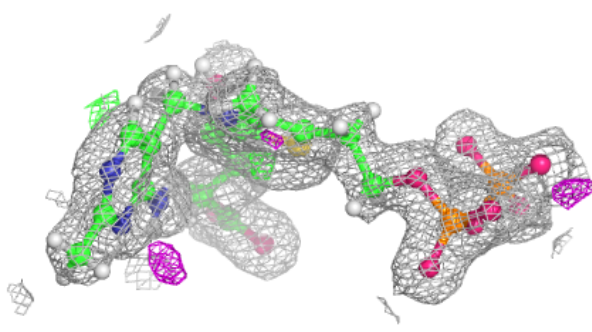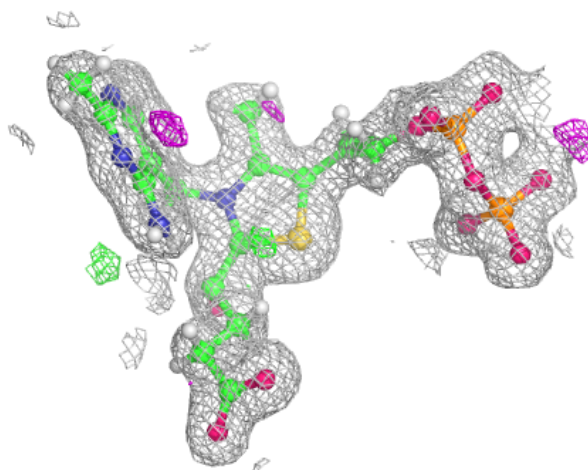
Electron density around TD6 C 601:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
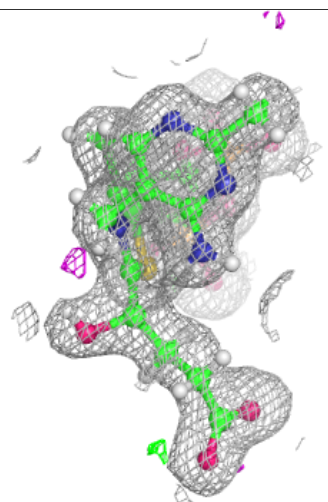mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
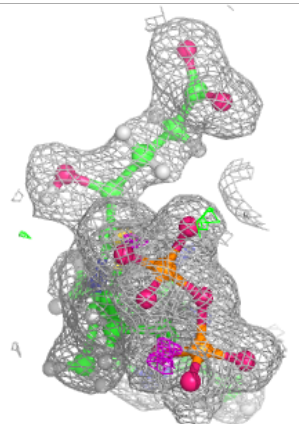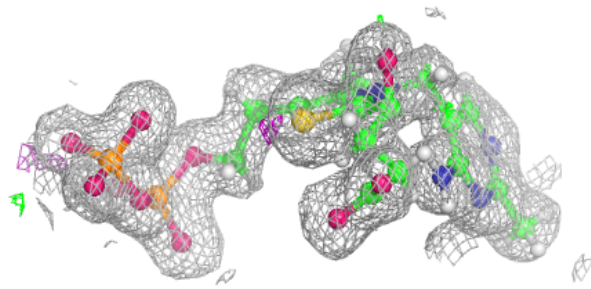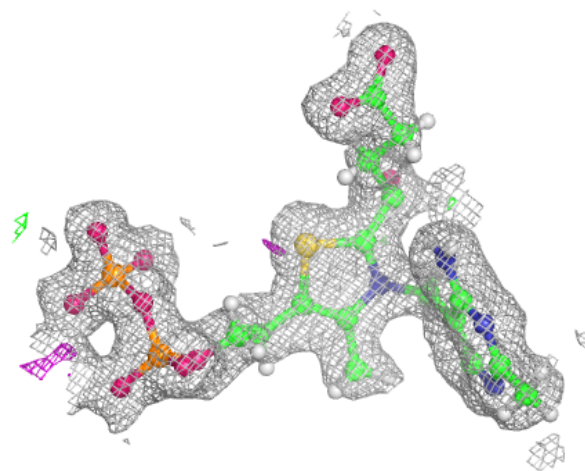
Electron density around TD6 E 601:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
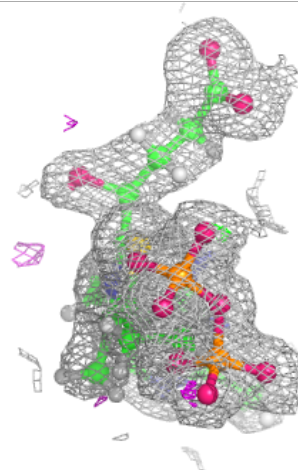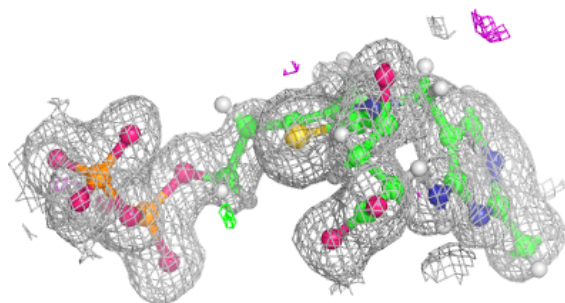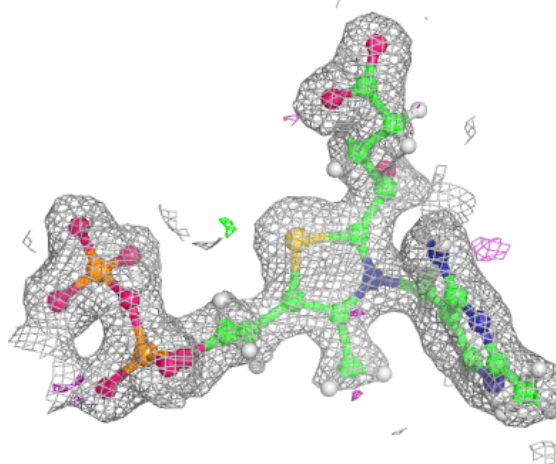
Electron density around TD6 F 602:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
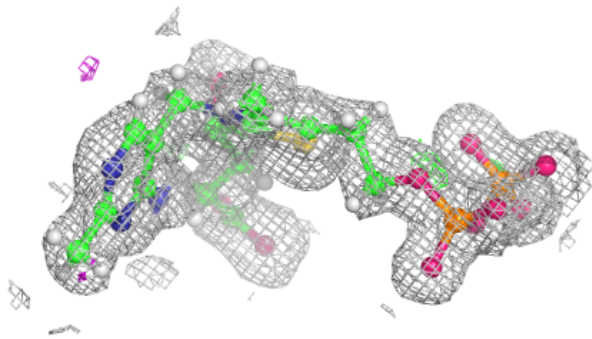$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
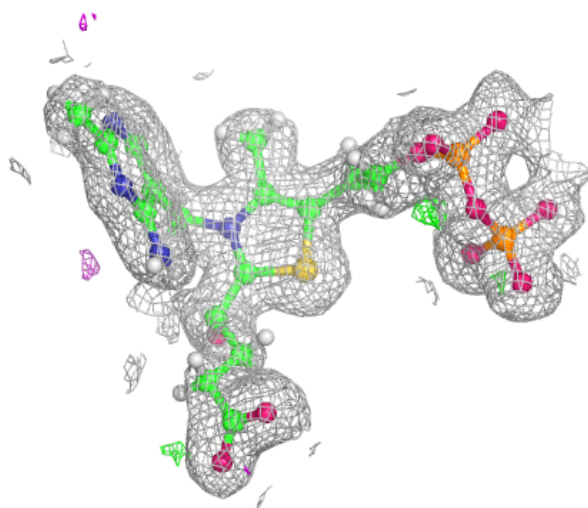and green (positive)
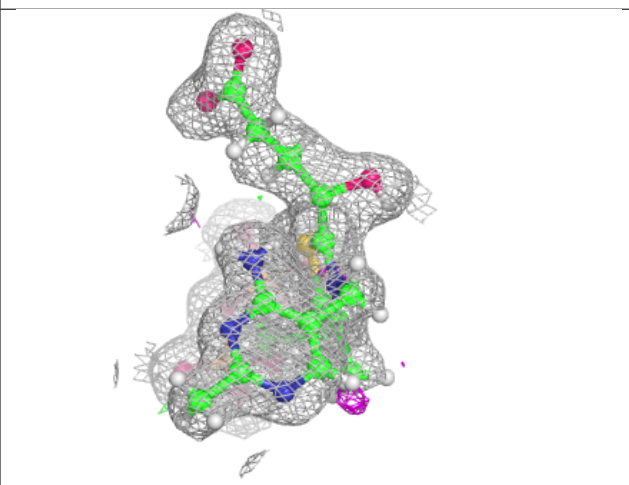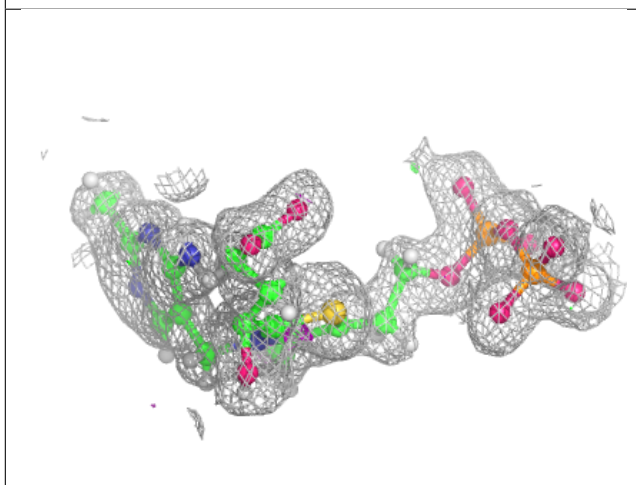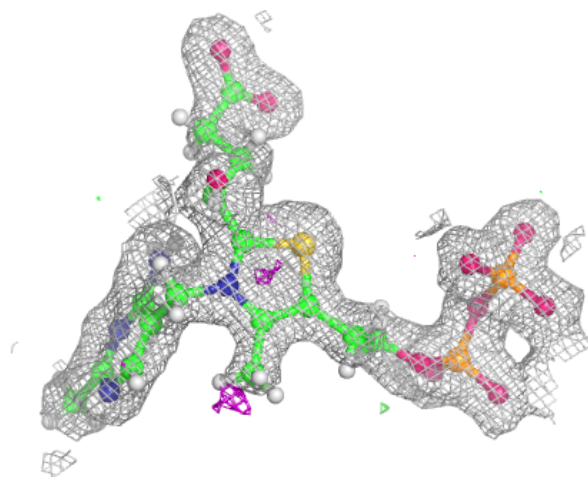
Electron density around TD6 G 601:

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 TD6 H 602:

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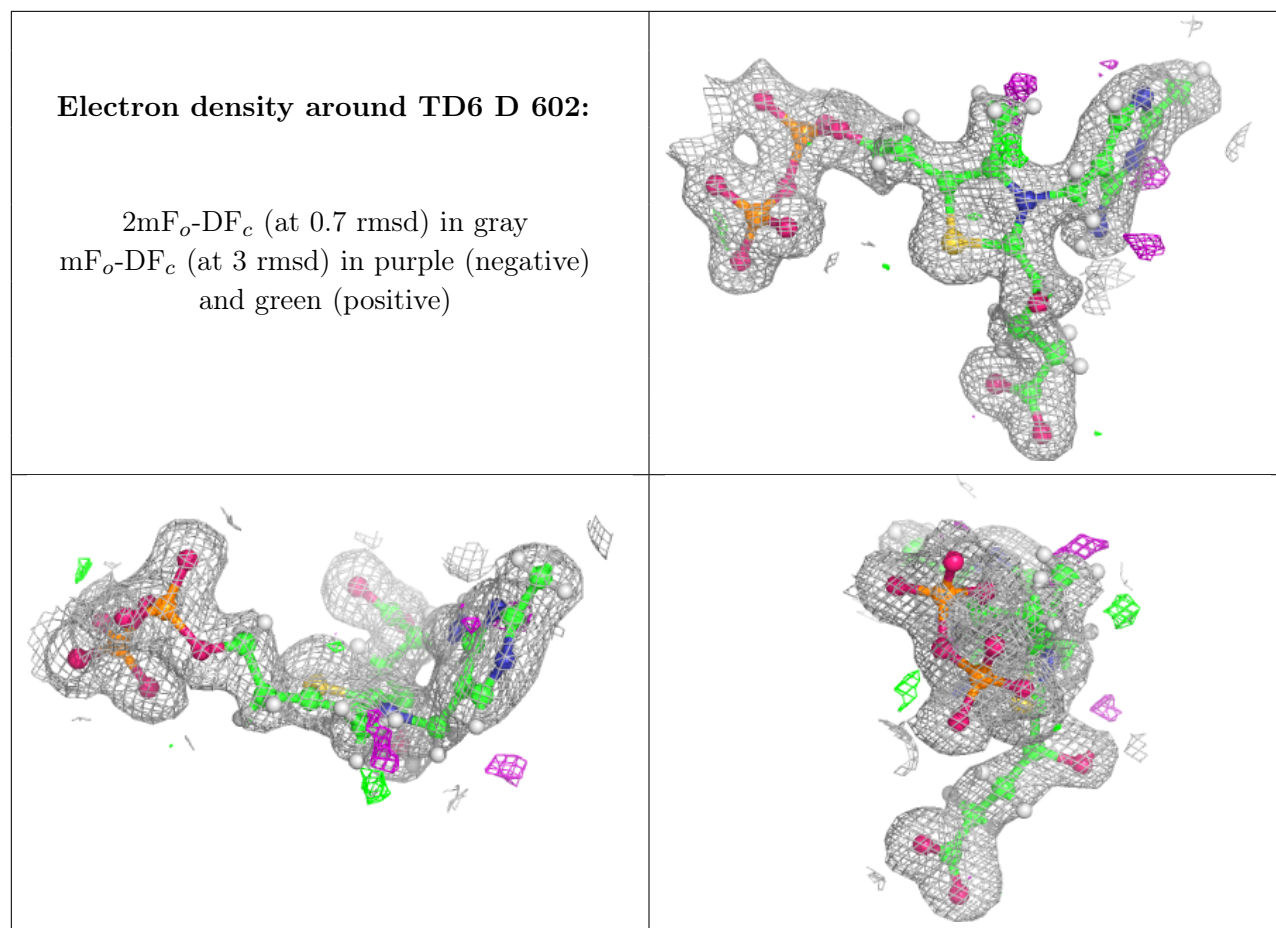and green (positive)

Electron density around TD6 B 602:

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

Electron density around TD6 A 601:

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 TD6 D 602:

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

6.5　Other polymers ⓘ

There are no such residues in this entry.