



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 04:21 PM UTC

PDB ID : 4XCD / pdb_00004xcd
Title : Crystal structure of an octadecameric TF55 complex from *S. solfataricus*
Authors : Chaston, J.J.; Stewart, A.G.; Smits, C.; Stock, D.
Deposited on : 2014-12-17
Resolution : 3.79 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

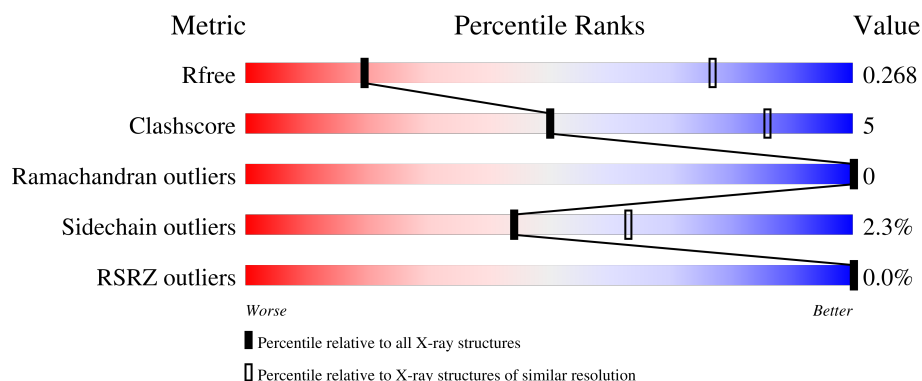
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.79 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	1065 (3.96-3.64)
Clashscore	190562	1012 (3.94-3.66)
Ramachandran outliers	187476	1048 (3.96-3.64)
Sidechain outliers	187428	1043 (3.96-3.64)
RSRZ outliers	180081	1064 (3.96-3.64)

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	570	 77% 12% 11%
1	B	570	 76% 11% 12%
1	C	570	 77% 11% 11%
1	D	570	 76% 11% 12%
1	E	570	 74% 14% 12%

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Mol	Chain	Length	Quality of chain
1	F	570	78% 9% 12%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 23117 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 Thermosome subunit beta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	507	Total	C	N	O	S	0	0	0
			3854	2425	668	750	11			
1	B	500	Total	C	N	O	S	0	0	0
			3801	2394	659	737	11			
1	C	505	Total	C	N	O	S	0	0	0
			3842	2419	668	744	11			
1	D	503	Total	C	N	O	S	0	0	0
			3833	2413	665	744	11			
1	E	501	Total	C	N	O	S	0	0	0
			3819	2408	663	737	11			
1	F	500	Total	C	N	O	S	0	0	0
			3806	2397	661	737	11			

There are 96 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-12	MET	-	initiating methionine	UNP Q9V2T8
A	-11	ALA	-	expression tag	UNP Q9V2T8
A	-10	SER	-	expression tag	UNP Q9V2T8
A	-9	MET	-	expression tag	UNP Q9V2T8
A	-8	THR	-	expression tag	UNP Q9V2T8
A	-7	GLY	-	expression tag	UNP Q9V2T8
A	-6	GLY	-	expression tag	UNP Q9V2T8
A	-5	GLN	-	expression tag	UNP Q9V2T8
A	-4	GLN	-	expression tag	UNP Q9V2T8
A	-3	MET	-	expression tag	UNP Q9V2T8
A	-2	GLY	-	expression tag	UNP Q9V2T8
A	-1	ARG	-	expression tag	UNP Q9V2T8
A	0	GLY	-	expression tag	UNP Q9V2T8
A	1	SER	-	expression tag	UNP Q9V2T8
A	2	ARG	-	expression tag	UNP Q9V2T8
A	3	LYS	-	expression tag	UNP Q9V2T8
B	-12	MET	-	initiating methionine	UNP Q9V2T8

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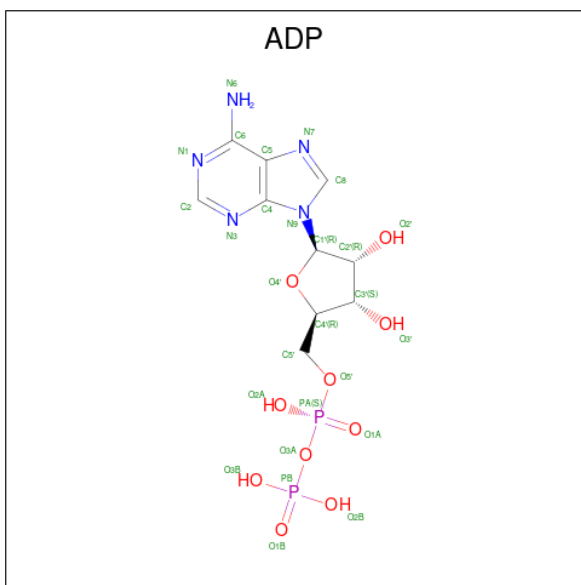
Chain	Residue	Modelled	Actual	Comment	Reference
B	-11	ALA	-	expression tag	UNP Q9V2T8
B	-10	SER	-	expression tag	UNP Q9V2T8
B	-9	MET	-	expression tag	UNP Q9V2T8
B	-8	THR	-	expression tag	UNP Q9V2T8
B	-7	GLY	-	expression tag	UNP Q9V2T8
B	-6	GLY	-	expression tag	UNP Q9V2T8
B	-5	GLN	-	expression tag	UNP Q9V2T8
B	-4	GLN	-	expression tag	UNP Q9V2T8
B	-3	MET	-	expression tag	UNP Q9V2T8
B	-2	GLY	-	expression tag	UNP Q9V2T8
B	-1	ARG	-	expression tag	UNP Q9V2T8
B	0	GLY	-	expression tag	UNP Q9V2T8
B	1	SER	-	expression tag	UNP Q9V2T8
B	2	ARG	-	expression tag	UNP Q9V2T8
B	3	LYS	-	expression tag	UNP Q9V2T8
C	-12	MET	-	initiating methionine	UNP Q9V2T8
C	-11	ALA	-	expression tag	UNP Q9V2T8
C	-10	SER	-	expression tag	UNP Q9V2T8
C	-9	MET	-	expression tag	UNP Q9V2T8
C	-8	THR	-	expression tag	UNP Q9V2T8
C	-7	GLY	-	expression tag	UNP Q9V2T8
C	-6	GLY	-	expression tag	UNP Q9V2T8
C	-5	GLN	-	expression tag	UNP Q9V2T8
C	-4	GLN	-	expression tag	UNP Q9V2T8
C	-3	MET	-	expression tag	UNP Q9V2T8
C	-2	GLY	-	expression tag	UNP Q9V2T8
C	-1	ARG	-	expression tag	UNP Q9V2T8
C	0	GLY	-	expression tag	UNP Q9V2T8
C	1	SER	-	expression tag	UNP Q9V2T8
C	2	ARG	-	expression tag	UNP Q9V2T8
C	3	LYS	-	expression tag	UNP Q9V2T8
D	-12	MET	-	initiating methionine	UNP Q9V2T8
D	-11	ALA	-	expression tag	UNP Q9V2T8
D	-10	SER	-	expression tag	UNP Q9V2T8
D	-9	MET	-	expression tag	UNP Q9V2T8
D	-8	THR	-	expression tag	UNP Q9V2T8
D	-7	GLY	-	expression tag	UNP Q9V2T8
D	-6	GLY	-	expression tag	UNP Q9V2T8
D	-5	GLN	-	expression tag	UNP Q9V2T8
D	-4	GLN	-	expression tag	UNP Q9V2T8
D	-3	MET	-	expression tag	UNP Q9V2T8
D	-2	GLY	-	expression tag	UNP Q9V2T8

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-1	ARG	-	expression tag	UNP Q9V2T8
D	0	GLY	-	expression tag	UNP Q9V2T8
D	1	SER	-	expression tag	UNP Q9V2T8
D	2	ARG	-	expression tag	UNP Q9V2T8
D	3	LYS	-	expression tag	UNP Q9V2T8
E	-12	MET	-	initiating methionine	UNP Q9V2T8
E	-11	ALA	-	expression tag	UNP Q9V2T8
E	-10	SER	-	expression tag	UNP Q9V2T8
E	-9	MET	-	expression tag	UNP Q9V2T8
E	-8	THR	-	expression tag	UNP Q9V2T8
E	-7	GLY	-	expression tag	UNP Q9V2T8
E	-6	GLY	-	expression tag	UNP Q9V2T8
E	-5	GLN	-	expression tag	UNP Q9V2T8
E	-4	GLN	-	expression tag	UNP Q9V2T8
E	-3	MET	-	expression tag	UNP Q9V2T8
E	-2	GLY	-	expression tag	UNP Q9V2T8
E	-1	ARG	-	expression tag	UNP Q9V2T8
E	0	GLY	-	expression tag	UNP Q9V2T8
E	1	SER	-	expression tag	UNP Q9V2T8
E	2	ARG	-	expression tag	UNP Q9V2T8
E	3	LYS	-	expression tag	UNP Q9V2T8
F	-12	MET	-	initiating methionine	UNP Q9V2T8
F	-11	ALA	-	expression tag	UNP Q9V2T8
F	-10	SER	-	expression tag	UNP Q9V2T8
F	-9	MET	-	expression tag	UNP Q9V2T8
F	-8	THR	-	expression tag	UNP Q9V2T8
F	-7	GLY	-	expression tag	UNP Q9V2T8
F	-6	GLY	-	expression tag	UNP Q9V2T8
F	-5	GLN	-	expression tag	UNP Q9V2T8
F	-4	GLN	-	expression tag	UNP Q9V2T8
F	-3	MET	-	expression tag	UNP Q9V2T8
F	-2	GLY	-	expression tag	UNP Q9V2T8
F	-1	ARG	-	expression tag	UNP Q9V2T8
F	0	GLY	-	expression tag	UNP Q9V2T8
F	1	SER	-	expression tag	UNP Q9V2T8
F	2	ARG	-	expression tag	UNP Q9V2T8
F	3	LYS	-	expression tag	UNP Q9V2T8

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



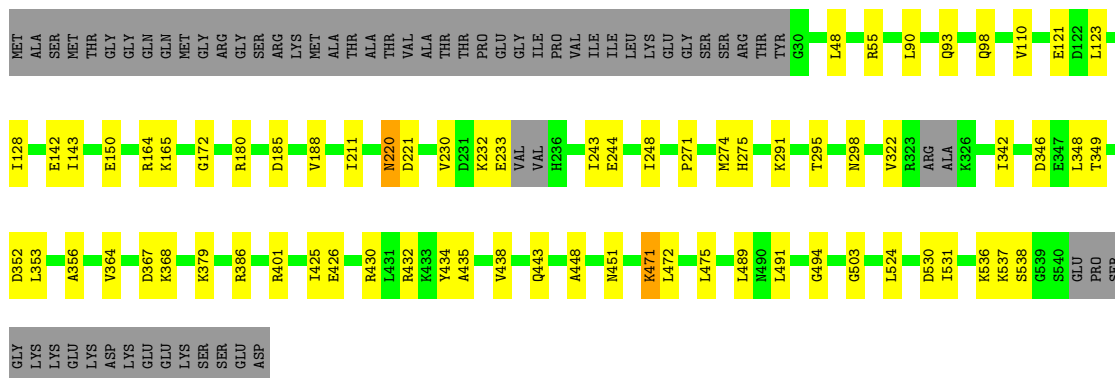
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
2	A	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	B	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	C	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	D	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	E	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	F	1	Total 27	C 10	N 5	O 10	P 2	0	0

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.

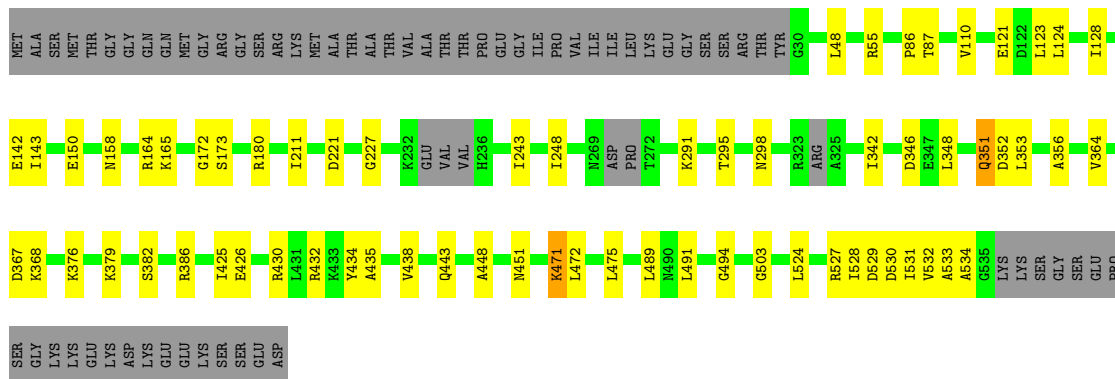
- Molecule 1: Thermosome subunit beta

Chain A: 



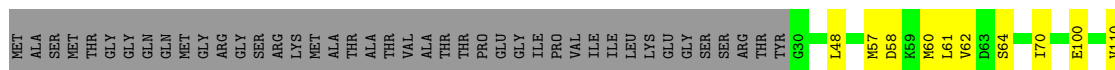
- Molecule 1: Thermosome subunit beta

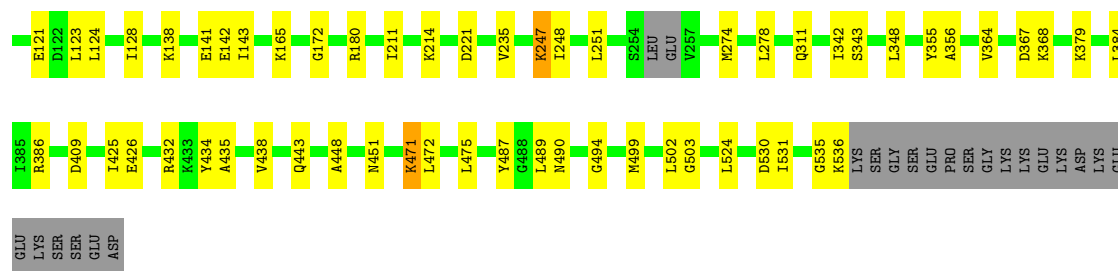
Chain B: 



- Molecule 1: Thermosome subunit beta

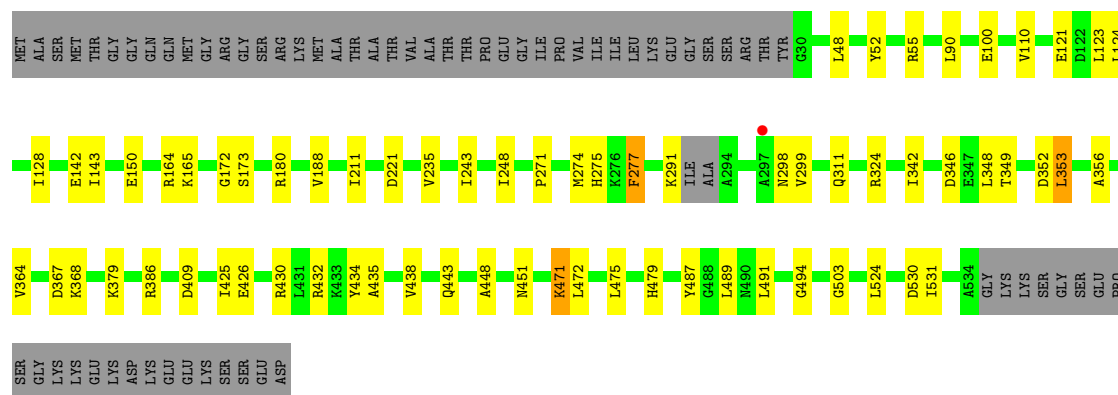
Chain C: 





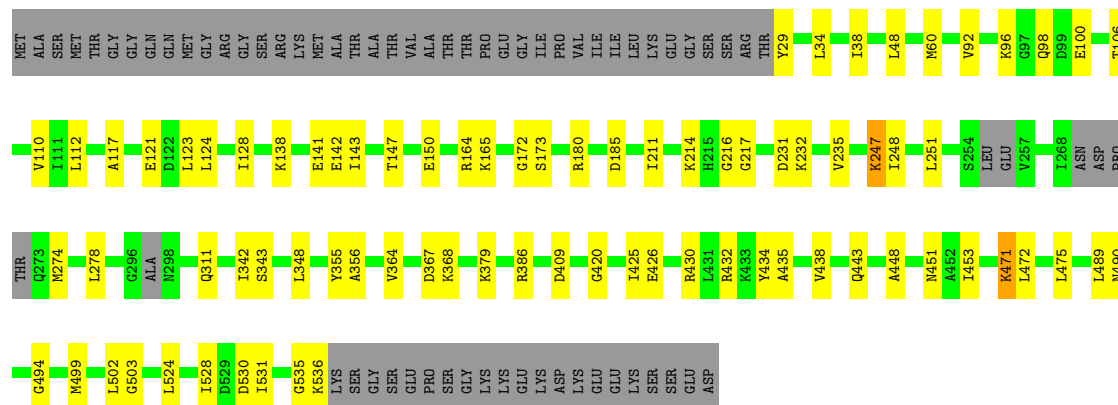
- Molecule 1: Thermosome subunit beta

Chain D: 76% 11% 12%



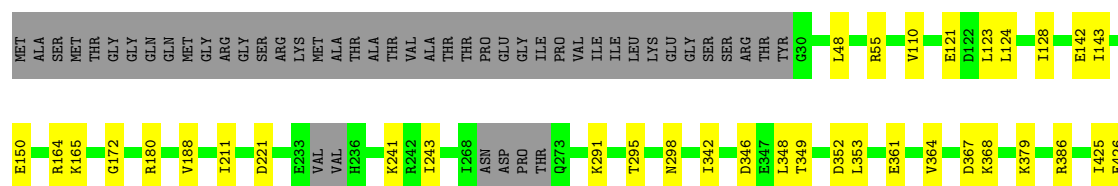
- Molecule 1: Thermosome subunit beta

Chain E: 74% 14% 12%



- Molecule 1: Thermosome subunit beta

Chain F: 78% 9% 12%





4 Data and refinement statistics

Property	Value	Source
Space group	P 63	Depositor
Cell constants a, b, c, α , β , γ	163.36Å 163.36Å 327.29Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	64.93 – 3.79 64.93 – 3.79	Depositor EDS
% Data completeness (in resolution range)	71.3 (64.93-3.79) 71.3 (64.93-3.79)	Depositor EDS
R_{merge}	0.33	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.91 (at 3.77Å)	Xtriage
Refinement program	REFMAC 5.8.0073	Depositor
R, R_{free}	0.240 , 0.279 0.234 , 0.268	Depositor DCC
R_{free} test set	3630 reflections (7.39%)	wwPDB-VP
Wilson B-factor (Å ²)	94.7	Xtriage
Anisotropy	0.303	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 161.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.42$, $\langle L^2 \rangle = 0.24$	Xtriage
Estimated twinning fraction	0.368 for h,-h-k,-l	Xtriage
Reported twinning fraction	0.501 for H, K, L 0.499 for K, H, -L	Depositor
Outliers	0 of 34789 reflections	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	23117	wwPDB-VP
Average B, all atoms (Å ²)	177.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.87% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5.1 Standard geometry

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

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	0.45	0/3890	0.76	0/5244
1	B	0.43	0/3836	0.75	1/5173 (0.0%)
1	C	0.50	0/3880	0.80	0/5236
1	D	0.45	0/3871	0.75	0/5225
1	E	0.51	0/3855	0.80	0/5197
1	F	0.43	0/3842	0.74	0/5181
All	All	0.47	0/23174	0.77	1/31256 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	351	GLN	N-CA-C	-8.11	97.92	110.17

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	3854	0	4005	49	4
1	B	3801	0	3954	44	4
1	C	3842	0	4000	51	0
1	D	3833	0	3985	39	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	3819	0	3978	57	0
1	F	3806	0	3961	27	0
2	A	27	0	12	0	0
2	B	27	0	12	1	0
2	C	27	0	12	0	0
2	D	27	0	12	2	0
2	E	27	0	12	2	0
2	F	27	0	12	0	0
All	All	23117	0	23955	251	4

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 5.

All (251) 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:211:ILE:HD11	1:A:401:ARG:NH1	1.43	1.33
1:A:211:ILE:HD12	1:A:401:ARG:NH2	1.47	1.27
1:A:211:ILE:CD1	1:A:401:ARG:CZ	2.14	1.25
1:A:211:ILE:CD1	1:A:401:ARG:NH1	2.06	1.17
1:B:531:ILE:HG12	1:C:60:MET:HB3	1.37	1.03
1:A:211:ILE:CD1	1:A:401:ARG:NH2	2.23	0.96
1:E:535:GLY:O	1:E:536:LYS:HG2	1.68	0.94
1:A:211:ILE:HD12	1:A:401:ARG:HH22	1.22	0.93
1:A:211:ILE:HD12	1:A:401:ARG:CZ	1.85	0.92
1:B:531:ILE:HA	1:C:60:MET:O	1.69	0.92
1:E:216:GLY:O	1:E:386:ARG:HD3	1.73	0.89
1:F:241:LYS:HD2	1:F:361:GLU:OE1	1.82	0.80
1:A:211:ILE:HD11	1:A:401:ARG:HH12	1.43	0.79
1:C:221:ASP:O	1:C:386:ARG:NH1	2.15	0.79
1:A:536:LYS:O	1:A:538:SER:N	2.16	0.78
1:D:291:LYS:NZ	1:D:346:ASP:OD1	2.22	0.73
1:B:291:LYS:NZ	1:B:346:ASP:OD1	2.21	0.73
1:E:147:THR:HG23	1:E:430:ARG:HD2	1.69	0.73
1:B:351:GLN:O	1:B:352:ASP:HB2	1.88	0.72
1:A:295:THR:HG21	1:A:353:LEU:HD11	1.74	0.70
1:D:271:PRO:O	1:D:275:HIS:ND1	2.23	0.70
1:B:295:THR:HG21	1:B:353:LEU:HD11	1.74	0.70
1:E:535:GLY:O	1:E:536:LYS:CG	2.39	0.70
1:F:295:THR:HG21	1:F:353:LEU:HD11	1.74	0.69
1:F:291:LYS:NZ	1:F:346:ASP:OD1	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:112:LEU:HD11	1:E:453:ILE:HD13	1.74	0.68
1:E:216:GLY:O	1:E:386:ARG:CD	2.42	0.68
1:A:291:LYS:NZ	1:A:346:ASP:OD1	2.26	0.68
1:A:211:ILE:HD13	1:A:401:ARG:CZ	2.21	0.67
1:E:535:GLY:C	1:E:536:LYS:HG2	2.20	0.66
1:E:147:THR:CG2	1:E:430:ARG:HD2	2.28	0.63
1:B:531:ILE:HG12	1:C:60:MET:CB	2.23	0.63
1:B:364:VAL:HG12	1:B:386:ARG:NH2	2.14	0.63
1:D:364:VAL:HG12	1:D:386:ARG:NH2	2.14	0.62
1:E:164:ARG:NH1	1:E:185:ASP:OD2	2.32	0.62
1:E:231:ASP:O	1:E:232:LYS:HD3	2.00	0.61
1:C:221:ASP:HB3	1:C:386:ARG:HH11	1.65	0.61
1:F:364:VAL:HG12	1:F:386:ARG:NH2	2.14	0.61
1:A:364:VAL:HG12	1:A:386:ARG:NH2	2.15	0.61
1:B:55:ARG:NH2	1:B:491:LEU:O	2.34	0.61
1:A:55:ARG:NH2	1:A:491:LEU:O	2.35	0.60
1:D:55:ARG:NH2	1:D:491:LEU:O	2.34	0.60
1:E:34:LEU:CD2	1:E:528:ILE:O	2.49	0.60
1:F:55:ARG:NH2	1:F:491:LEU:O	2.35	0.59
1:C:274:MET:O	1:C:278:LEU:HD13	2.02	0.59
1:A:211:ILE:CD1	1:A:401:ARG:HH12	2.01	0.59
1:E:274:MET:O	1:E:278:LEU:HD13	2.03	0.59
1:E:490:ASN:CG	1:E:499:MET:HE1	2.29	0.58
1:D:274:MET:HA	1:D:277:PHE:HB2	1.85	0.58
1:E:34:LEU:HD23	1:E:528:ILE:O	2.03	0.58
1:A:221:ASP:HB3	1:A:386:ARG:NH2	2.19	0.57
1:B:530:ASP:O	1:C:60:MET:N	2.37	0.57
1:C:471:LYS:HB3	1:C:489:LEU:HD11	1.85	0.57
1:C:490:ASN:CG	1:C:499:MET:HE1	2.30	0.57
1:C:471:LYS:HE3	1:C:494:GLY:O	2.05	0.57
1:D:90:LEU:HD22	1:E:60:MET:HE1	1.87	0.57
1:E:471:LYS:HE3	1:E:494:GLY:O	2.05	0.57
1:E:471:LYS:HB3	1:E:489:LEU:HD11	1.86	0.57
1:A:271:PRO:O	1:A:275:HIS:ND1	2.36	0.56
1:D:248:ILE:HA	1:D:299:VAL:HG13	1.86	0.56
1:B:527:ARG:O	1:C:58:ASP:HB2	2.06	0.56
1:B:221:ASP:HB3	1:B:386:ARG:NH2	2.21	0.55
1:B:342:ILE:HG21	1:B:348:LEU:HD23	1.89	0.55
1:C:248:ILE:HD11	1:C:356:ALA:HB2	1.89	0.55
1:B:173:SER:OG	2:B:600:ADP:O1A	2.09	0.55
1:B:529:ASP:N	1:C:58:ASP:O	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:471:LYS:HB3	1:D:489:LEU:HD11	1.89	0.55
1:F:221:ASP:HB3	1:F:386:ARG:NH2	2.22	0.55
1:C:364:VAL:HG12	1:C:386:ARG:CZ	2.37	0.54
1:E:248:ILE:HD11	1:E:356:ALA:HB2	1.89	0.54
1:A:342:ILE:HG21	1:A:348:LEU:HD23	1.89	0.54
1:D:342:ILE:HG21	1:D:348:LEU:HD23	1.89	0.54
1:E:216:GLY:O	1:E:386:ARG:CG	2.56	0.54
1:A:471:LYS:HB3	1:A:489:LEU:HD11	1.89	0.54
1:D:221:ASP:HB3	1:D:386:ARG:NH2	2.22	0.54
1:F:243:ILE:HG21	1:F:298:ASN:HB3	1.90	0.54
1:F:342:ILE:HG21	1:F:348:LEU:HD23	1.89	0.54
1:B:529:ASP:HB2	1:C:57:MET:HB3	1.89	0.53
1:A:211:ILE:HD12	1:A:401:ARG:NH1	2.05	0.53
1:A:243:ILE:HG21	1:A:298:ASN:HB3	1.90	0.53
1:B:533:ALA:HA	1:C:62:VAL:O	2.08	0.53
1:A:536:LYS:O	1:A:537:LYS:C	2.50	0.53
1:D:100:GLU:OE2	1:D:409:ASP:OD1	2.26	0.53
1:E:217:GLY:HA3	1:E:386:ARG:HD3	1.89	0.53
1:E:251:LEU:HD21	1:E:348:LEU:HD21	1.91	0.53
1:B:243:ILE:HG21	1:B:298:ASN:HB3	1.91	0.53
1:F:471:LYS:HB3	1:F:489:LEU:HD11	1.89	0.53
1:B:471:LYS:HB3	1:B:489:LEU:HD11	1.89	0.53
1:C:251:LEU:HD21	1:C:348:LEU:HD21	1.91	0.52
1:D:243:ILE:HG21	1:D:298:ASN:HB3	1.91	0.52
1:B:86:PRO:HG3	1:C:62:VAL:HG21	1.92	0.52
1:E:150:GLU:OE1	1:E:430:ARG:CZ	2.58	0.52
1:B:532:VAL:HB	1:C:61:LEU:CD2	2.39	0.52
1:B:87:THR:HG22	1:C:60:MET:HE1	1.91	0.52
1:C:248:ILE:HD11	1:C:356:ALA:CB	2.40	0.51
1:E:100:GLU:OE2	1:E:409:ASP:OD1	2.28	0.51
1:E:248:ILE:HD11	1:E:356:ALA:CB	2.41	0.51
1:E:138:LYS:O	1:E:141:GLU:HG3	2.12	0.50
1:C:490:ASN:OD1	1:C:502:LEU:CD1	2.60	0.50
1:C:100:GLU:OE2	1:C:409:ASP:OD1	2.29	0.50
1:D:235:VAL:HG21	1:D:311:GLN:NE2	2.27	0.50
1:D:432:ARG:NH2	1:D:451:ASN:OD1	2.45	0.49
1:E:490:ASN:OD1	1:E:502:LEU:CD1	2.59	0.49
1:F:425:ILE:HD12	1:F:426:GLU:N	2.27	0.49
1:F:475:LEU:HD11	1:F:489:LEU:HG	1.94	0.49
1:A:425:ILE:HD12	1:A:426:GLU:N	2.28	0.49
1:A:475:LEU:HD11	1:A:489:LEU:HG	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:475:LEU:HD11	1:B:489:LEU:HG	1.94	0.49
1:E:342:ILE:HG21	1:E:348:LEU:HD23	1.94	0.49
1:C:342:ILE:HG21	1:C:348:LEU:HD23	1.95	0.49
1:B:432:ARG:NH2	1:B:451:ASN:OD1	2.46	0.49
1:B:534:ALA:O	1:C:64:SER:HB2	2.12	0.49
1:C:425:ILE:HD12	1:C:426:GLU:N	2.28	0.49
1:B:425:ILE:HD12	1:B:426:GLU:N	2.28	0.49
1:E:420:GLY:HA2	2:E:600:ADP:N3	2.28	0.49
1:D:271:PRO:HA	1:D:274:MET:HG2	1.95	0.48
1:A:90:LEU:HD12	1:A:93:GLN:HE21	1.78	0.48
1:C:138:LYS:O	1:C:141:GLU:HG3	2.14	0.48
1:E:475:LEU:HD11	1:E:489:LEU:HG	1.94	0.48
1:F:432:ARG:NH2	1:F:451:ASN:OD1	2.46	0.48
1:A:432:ARG:NH2	1:A:451:ASN:OD1	2.47	0.48
1:E:425:ILE:HD12	1:E:426:GLU:N	2.29	0.48
1:E:432:ARG:NH2	1:E:451:ASN:OD1	2.47	0.48
1:D:425:ILE:HD12	1:D:426:GLU:N	2.29	0.47
1:C:432:ARG:NH2	1:C:451:ASN:OD1	2.48	0.47
1:E:112:LEU:CD1	1:E:453:ILE:HD13	2.44	0.47
1:A:233:GLU:HG3	1:A:367:ASP:OD1	2.15	0.47
1:E:364:VAL:HG12	1:E:386:ARG:NH1	2.29	0.47
1:C:143:ILE:CD1	1:C:434:TYR:CE2	2.98	0.46
1:A:271:PRO:HA	1:A:274:MET:HG2	1.97	0.46
1:E:490:ASN:OD1	1:E:499:MET:HE1	2.16	0.46
1:B:528:ILE:HD11	1:C:70:ILE:HG21	1.97	0.46
1:F:143:ILE:CD1	1:F:434:TYR:CE2	2.98	0.46
1:A:472:LEU:C	1:A:472:LEU:HD23	2.40	0.46
1:C:214:LYS:HE2	1:C:367:ASP:HB2	1.98	0.46
1:B:143:ILE:CD1	1:B:434:TYR:CE2	2.98	0.46
1:C:214:LYS:HE2	1:C:367:ASP:CB	2.45	0.46
1:C:530:ASP:OD1	1:C:531:ILE:N	2.49	0.46
1:E:472:LEU:C	1:E:472:LEU:HD23	2.41	0.46
1:A:530:ASP:OD1	1:A:531:ILE:N	2.49	0.46
1:B:472:LEU:HD23	1:B:472:LEU:C	2.41	0.46
1:D:472:LEU:C	1:D:472:LEU:HD23	2.41	0.46
1:E:214:LYS:HE2	1:E:367:ASP:CB	2.46	0.46
1:C:384:LEU:CD2	1:C:386:ARG:NH2	2.79	0.45
1:E:214:LYS:HE2	1:E:367:ASP:HB2	1.98	0.45
1:C:472:LEU:C	1:C:472:LEU:HD23	2.42	0.45
1:E:143:ILE:CD1	1:E:434:TYR:CE2	2.99	0.45
1:C:490:ASN:OD1	1:C:499:MET:HE1	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:172:GLY:O	1:D:180:ARG:NH1	2.50	0.45
1:A:232:LYS:HG3	1:A:322:VAL:CG1	2.47	0.45
1:B:530:ASP:OD1	1:B:531:ILE:N	2.48	0.45
1:C:235:VAL:HG22	1:C:311:GLN:NE2	2.32	0.45
1:D:530:ASP:OD1	1:D:531:ILE:N	2.50	0.45
1:A:143:ILE:CD1	1:A:434:TYR:CE2	2.99	0.45
1:A:230:VAL:HG12	1:A:232:LYS:HG2	1.97	0.45
1:E:235:VAL:HG22	1:E:311:GLN:NE2	2.32	0.45
1:A:233:GLU:CG	1:A:367:ASP:OD1	2.65	0.45
1:D:143:ILE:CD1	1:D:434:TYR:CE2	2.99	0.45
1:B:150:GLU:OE1	1:B:430:ARG:NH1	2.49	0.45
1:D:471:LYS:HE3	1:D:494:GLY:O	2.16	0.45
1:B:532:VAL:HB	1:C:61:LEU:HD22	1.99	0.45
1:A:211:ILE:HG13	1:A:211:ILE:O	2.16	0.44
1:D:90:LEU:HD22	1:E:60:MET:CE	2.47	0.44
1:B:471:LYS:HE3	1:B:494:GLY:O	2.17	0.44
1:E:530:ASP:OD1	1:E:531:ILE:N	2.50	0.44
1:A:471:LYS:HE3	1:A:494:GLY:O	2.17	0.44
1:E:173:SER:OG	2:E:600:ADP:O2A	2.27	0.44
1:F:172:GLY:O	1:F:180:ARG:NH1	2.50	0.44
1:D:52:TYR:CE1	2:D:600:ADP:H5'1	2.52	0.44
1:F:150:GLU:OE1	1:F:430:ARG:NH1	2.50	0.44
1:A:172:GLY:O	1:A:180:ARG:NH1	2.51	0.44
1:B:172:GLY:O	1:B:180:ARG:NH1	2.51	0.44
1:E:247:LYS:HG2	1:E:355:TYR:CD1	2.53	0.44
1:F:471:LYS:HE3	1:F:494:GLY:O	2.17	0.44
1:D:475:LEU:HD11	1:D:487:TYR:O	2.18	0.44
1:E:172:GLY:O	1:E:180:ARG:NH1	2.51	0.43
1:F:472:LEU:C	1:F:472:LEU:HD23	2.43	0.43
1:A:150:GLU:OE1	1:A:430:ARG:NH1	2.51	0.43
1:D:173:SER:OG	2:D:600:ADP:O2A	2.26	0.43
1:C:172:GLY:O	1:C:180:ARG:NH1	2.52	0.43
1:D:353:LEU:HD23	1:D:353:LEU:H	1.83	0.43
1:E:29:TYR:O	1:E:29:TYR:CG	2.72	0.43
1:E:48:LEU:HD13	1:E:110:VAL:HG11	2.00	0.43
1:C:475:LEU:HD11	1:C:487:TYR:O	2.19	0.43
1:E:123:LEU:HD21	1:E:448:ALA:HB2	2.01	0.43
1:B:123:LEU:HD21	1:B:448:ALA:HB2	2.01	0.43
1:B:123:LEU:HD21	1:B:448:ALA:CB	2.49	0.43
1:C:535:GLY:C	1:C:536:LYS:HG2	2.44	0.43
1:E:92:VAL:O	1:E:96:LYS:HB3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:123:LEU:HD12	1:A:128:ILE:HD12	2.00	0.43
1:C:123:LEU:HD12	1:C:128:ILE:HD12	2.00	0.42
1:C:247:LYS:HG2	1:C:355:TYR:CD1	2.54	0.42
1:E:123:LEU:HD21	1:E:448:ALA:CB	2.49	0.42
1:E:435:ALA:HB1	1:E:443:GLN:HG3	2.01	0.42
1:C:435:ALA:HB1	1:C:443:GLN:HG3	2.01	0.42
1:F:123:LEU:HD21	1:F:448:ALA:CB	2.49	0.42
1:A:48:LEU:HD13	1:A:110:VAL:HG11	2.01	0.42
1:A:367:ASP:OD1	1:A:368:LYS:N	2.52	0.42
1:D:165:LYS:HD3	1:D:503:GLY:HA2	2.01	0.42
1:C:165:LYS:HD3	1:C:503:GLY:HA2	2.01	0.42
1:D:48:LEU:HD13	1:D:110:VAL:HG11	2.01	0.42
1:F:123:LEU:HD12	1:F:128:ILE:HD12	2.01	0.42
1:F:48:LEU:HD13	1:F:110:VAL:HG11	2.01	0.42
1:F:530:ASP:OD1	1:F:531:ILE:N	2.50	0.42
1:B:48:LEU:HD13	1:B:110:VAL:HG11	2.01	0.42
1:C:48:LEU:HD13	1:C:110:VAL:HG11	2.02	0.42
1:D:123:LEU:HD21	1:D:448:ALA:HB2	2.02	0.42
1:A:123:LEU:HD21	1:A:448:ALA:CB	2.50	0.42
1:C:123:LEU:HD21	1:C:448:ALA:CB	2.50	0.42
1:F:349:THR:OG1	1:F:352:ASP:CG	2.62	0.42
1:B:123:LEU:HD12	1:B:128:ILE:HD12	2.01	0.42
1:D:150:GLU:OE1	1:D:430:ARG:NH1	2.53	0.42
1:A:349:THR:OG1	1:A:352:ASP:CG	2.62	0.42
1:D:123:LEU:HD12	1:D:128:ILE:HD12	2.00	0.42
1:A:123:LEU:HD21	1:A:448:ALA:HB2	2.02	0.41
1:A:435:ALA:HB1	1:A:443:GLN:HG3	2.02	0.41
1:B:367:ASP:OD1	1:B:368:LYS:N	2.53	0.41
1:D:123:LEU:HD21	1:D:448:ALA:CB	2.49	0.41
1:D:248:ILE:HD11	1:D:356:ALA:HB2	2.02	0.41
1:D:364:VAL:CG1	1:D:386:ARG:NH2	2.83	0.41
1:E:138:LYS:NZ	1:E:141:GLU:OE2	2.37	0.41
1:F:123:LEU:HD21	1:F:448:ALA:HB2	2.02	0.41
1:F:165:LYS:HD3	1:F:503:GLY:HA2	2.02	0.41
1:B:165:LYS:HD3	1:B:503:GLY:HA2	2.01	0.41
1:E:165:LYS:HD3	1:E:503:GLY:HA2	2.02	0.41
1:A:165:LYS:HD3	1:A:503:GLY:HA2	2.02	0.41
1:E:367:ASP:OD1	1:E:368:LYS:N	2.52	0.41
1:E:98:GLN:OE1	1:E:106:THR:HG22	2.21	0.41
1:C:123:LEU:HD21	1:C:448:ALA:HB2	2.02	0.41
1:A:364:VAL:CG1	1:A:386:ARG:NH2	2.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:364:VAL:CG1	1:B:386:ARG:NH2	2.83	0.41
1:E:123:LEU:HD12	1:E:128:ILE:HD12	2.01	0.41
1:E:138:LYS:HA	1:E:141:GLU:HG2	2.02	0.41
1:F:367:ASP:OD1	1:F:368:LYS:N	2.53	0.41
1:D:349:THR:OG1	1:D:352:ASP:CG	2.63	0.41
1:C:367:ASP:OD1	1:C:368:LYS:N	2.52	0.40
1:F:435:ALA:HB1	1:F:443:GLN:HG3	2.03	0.40
1:F:164:ARG:HG3	1:F:188:VAL:HG21	2.04	0.40
1:B:227:GLY:O	1:B:382:SER:OG	2.38	0.40
1:B:351:GLN:O	1:B:352:ASP:CB	2.59	0.40
1:B:248:ILE:HD11	1:B:356:ALA:HB2	2.04	0.40
1:C:342:ILE:HD13	1:C:348:LEU:CD2	2.52	0.40
1:D:367:ASP:OD1	1:D:368:LYS:N	2.53	0.40
1:D:435:ALA:HB1	1:D:443:GLN:HG3	2.03	0.40
1:E:38:ILE:HG23	1:E:117:ALA:HB1	2.03	0.40
1:A:164:ARG:HG3	1:A:188:VAL:HG21	2.02	0.40
1:A:248:ILE:HD11	1:A:356:ALA:HB2	2.04	0.40
1:B:435:ALA:HB1	1:B:443:GLN:HG3	2.02	0.40
1:C:138:LYS:NZ	1:C:141:GLU:OE2	2.38	0.40
1:D:164:ARG:HG3	1:D:188:VAL:HG21	2.04	0.40
1:D:425:ILE:HD11	1:D:479:HIS:NE2	2.36	0.40

All (4) 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:A:185:ASP:OD2	1:B:164:ARG:NH2[2_745]	1.78	0.42
1:A:220:ASN:ND2	1:B:158:ASN:OD1[2_745]	1.94	0.26
1:A:220:ASN:CG	1:B:158:ASN:OD1[2_745]	2.03	0.17
1:A:244:GLU:OE2	1:B:376:LYS:NZ[2_745]	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	499/570 (88%)	484 (97%)	15 (3%)	0	100	100
1	B	492/570 (86%)	475 (96%)	17 (4%)	0	100	100
1	C	501/570 (88%)	483 (96%)	18 (4%)	0	100	100
1	D	499/570 (88%)	481 (96%)	18 (4%)	0	100	100
1	E	493/570 (86%)	478 (97%)	15 (3%)	0	100	100
1	F	494/570 (87%)	476 (96%)	18 (4%)	0	100	100
All	All	2978/3420 (87%)	2877 (97%)	101 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	406/457 (89%)	398 (98%)	8 (2%)	48	65
1	B	399/457 (87%)	391 (98%)	8 (2%)	48	65
1	C	404/457 (88%)	394 (98%)	10 (2%)	42	61
1	D	404/457 (88%)	393 (97%)	11 (3%)	39	59
1	E	401/457 (88%)	391 (98%)	10 (2%)	42	61
1	F	399/457 (87%)	391 (98%)	8 (2%)	48	65
All	All	2413/2742 (88%)	2358 (98%)	55 (2%)	44	63

All (55) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	98	GLN
1	A	121	GLU
1	A	142	GLU
1	A	220	ASN
1	A	379	LYS

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Mol	Chain	Res	Type
1	A	438	VAL
1	A	471	LYS
1	A	524	LEU
1	B	121	GLU
1	B	124	LEU
1	B	142	GLU
1	B	211	ILE
1	B	379	LYS
1	B	438	VAL
1	B	471	LYS
1	B	524	LEU
1	C	121	GLU
1	C	124	LEU
1	C	142	GLU
1	C	211	ILE
1	C	247	LYS
1	C	343	SER
1	C	379	LYS
1	C	438	VAL
1	C	471	LYS
1	C	524	LEU
1	D	121	GLU
1	D	124	LEU
1	D	142	GLU
1	D	211	ILE
1	D	277	PHE
1	D	324	ARG
1	D	353	LEU
1	D	379	LYS
1	D	438	VAL
1	D	471	LYS
1	D	524	LEU
1	E	121	GLU
1	E	124	LEU
1	E	142	GLU
1	E	211	ILE
1	E	247	LYS
1	E	343	SER
1	E	379	LYS
1	E	438	VAL
1	E	471	LYS
1	E	524	LEU

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Mol	Chain	Res	Type
1	F	121	GLU
1	F	124	LEU
1	F	142	GLU
1	F	211	ILE
1	F	379	LYS
1	F	438	VAL
1	F	471	LYS
1	F	524	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	93	GLN
1	A	344	ASN
1	A	474	GLN
1	B	220	ASN
1	B	275	HIS
1	B	344	ASN
1	B	474	GLN
1	C	193	GLN
1	C	275	HIS
1	C	344	ASN
1	C	474	GLN
1	D	93	GLN
1	D	220	ASN
1	D	311	GLN
1	D	474	GLN
1	E	98	GLN
1	E	344	ASN
1	E	474	GLN
1	F	93	GLN
1	F	275	HIS
1	F	474	GLN

5.3.3 RNA ⓘ

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](#)

6 ligands are modelled in this entry.

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	ADP	B	600	-	28,29,29	0.41	0	43,45,45	0.53	0
2	ADP	C	600	-	28,29,29	0.45	0	43,45,45	0.57	0
2	ADP	F	600	-	28,29,29	0.48	0	43,45,45	0.63	0
2	ADP	E	600	-	28,29,29	0.37	0	43,45,45	0.71	1 (2%)
2	ADP	D	600	-	28,29,29	0.40	0	43,45,45	0.74	1 (2%)
2	ADP	A	600	-	28,29,29	0.43	0	43,45,45	0.60	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	ADP	B	600	-	-	4/16/32/32	0/3/3/3
2	ADP	C	600	-	-	3/16/32/32	0/3/3/3
2	ADP	F	600	-	-	3/16/32/32	0/3/3/3
2	ADP	E	600	-	-	4/16/32/32	0/3/3/3
2	ADP	D	600	-	-	3/16/32/32	0/3/3/3
2	ADP	A	600	-	-	4/16/32/32	0/3/3/3

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	600	ADP	O3B-PB-O2B	2.14	115.83	107.80
2	D	600	ADP	O3B-PB-O2B	2.09	115.63	107.80

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	600	ADP	PB-O3A-PA-O5'
2	B	600	ADP	PB-O3A-PA-O5'
2	B	600	ADP	O4'-C4'-C5'-O5'
2	C	600	ADP	O4'-C4'-C5'-O5'
2	D	600	ADP	O4'-C4'-C5'-O5'
2	D	600	ADP	C3'-C4'-C5'-O5'
2	E	600	ADP	PB-O3A-PA-O5'
2	B	600	ADP	C3'-C4'-C5'-O5'
2	F	600	ADP	O4'-C4'-C5'-O5'
2	E	600	ADP	O4'-C4'-C5'-O5'
2	C	600	ADP	C3'-C4'-C5'-O5'
2	F	600	ADP	C3'-C4'-C5'-O5'
2	E	600	ADP	C3'-C4'-C5'-O5'
2	C	600	ADP	PB-O3A-PA-O5'
2	D	600	ADP	PB-O3A-PA-O5'
2	F	600	ADP	PB-O3A-PA-O5'
2	A	600	ADP	O4'-C4'-C5'-O5'
2	E	600	ADP	C5'-O5'-PA-O2A
2	A	600	ADP	PA-O3A-PB-O1B
2	B	600	ADP	PA-O3A-PB-O1B
2	A	600	ADP	C3'-C4'-C5'-O5'

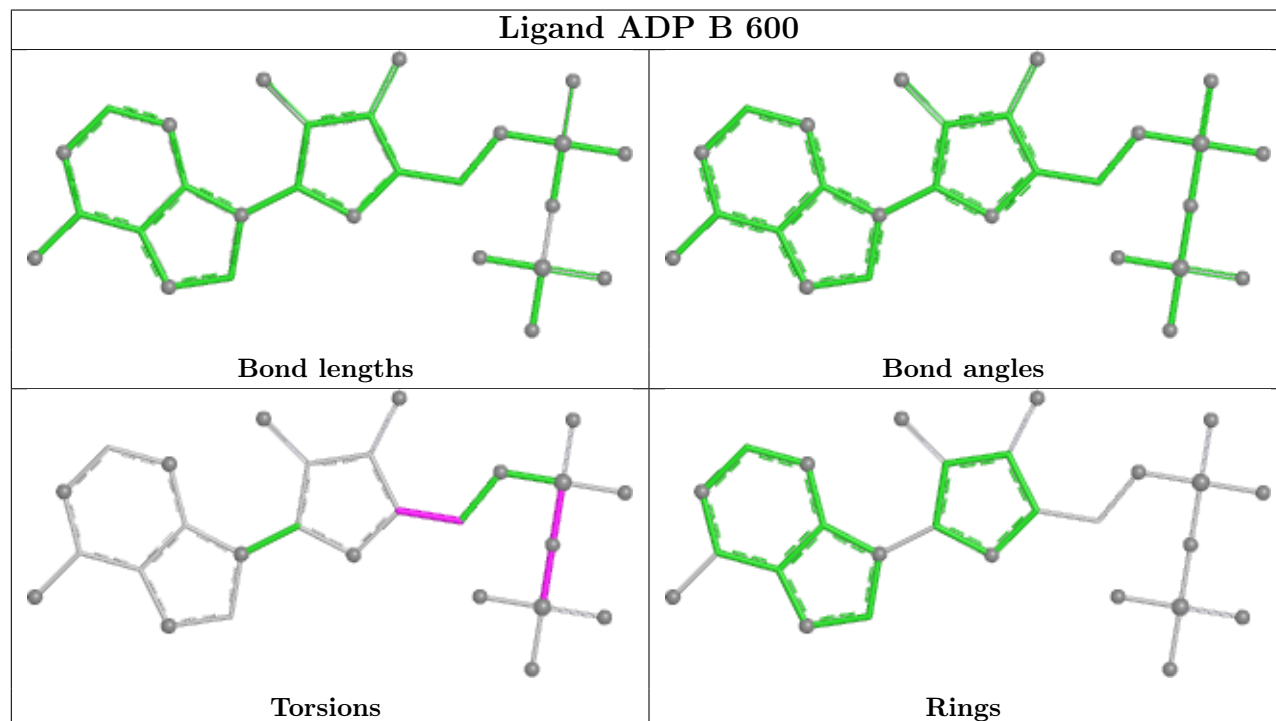
There are no ring outliers.

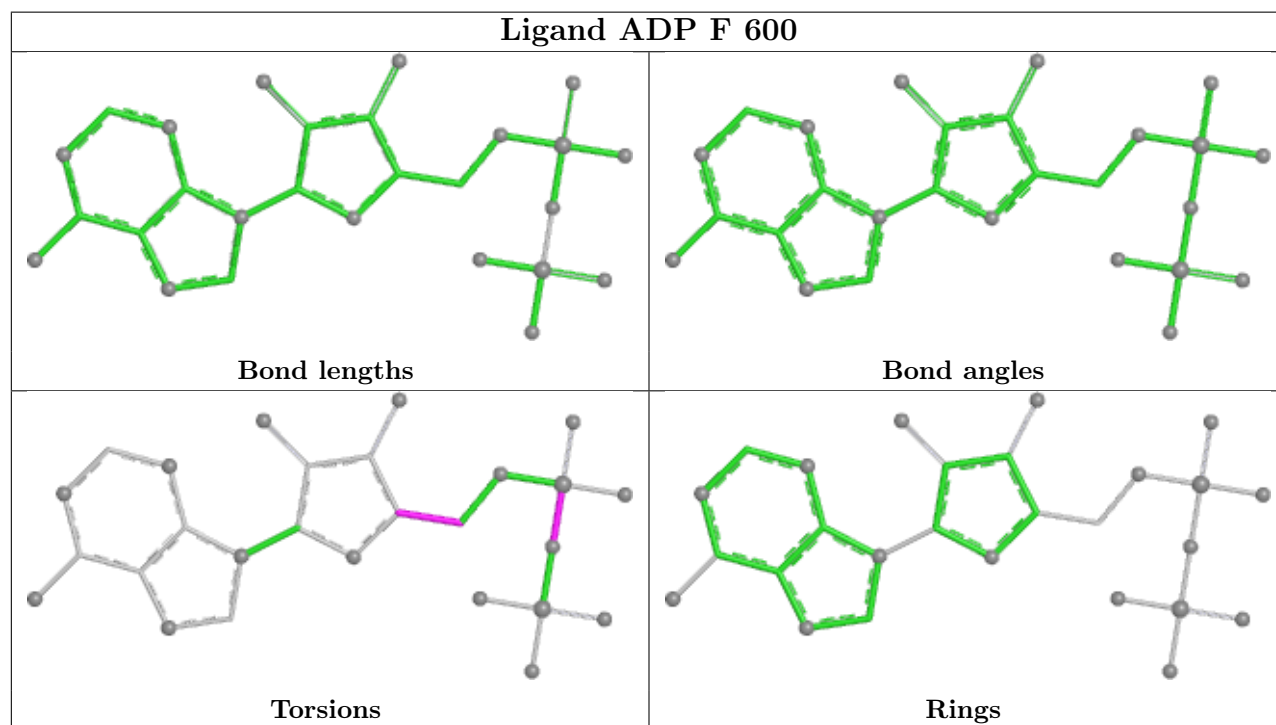
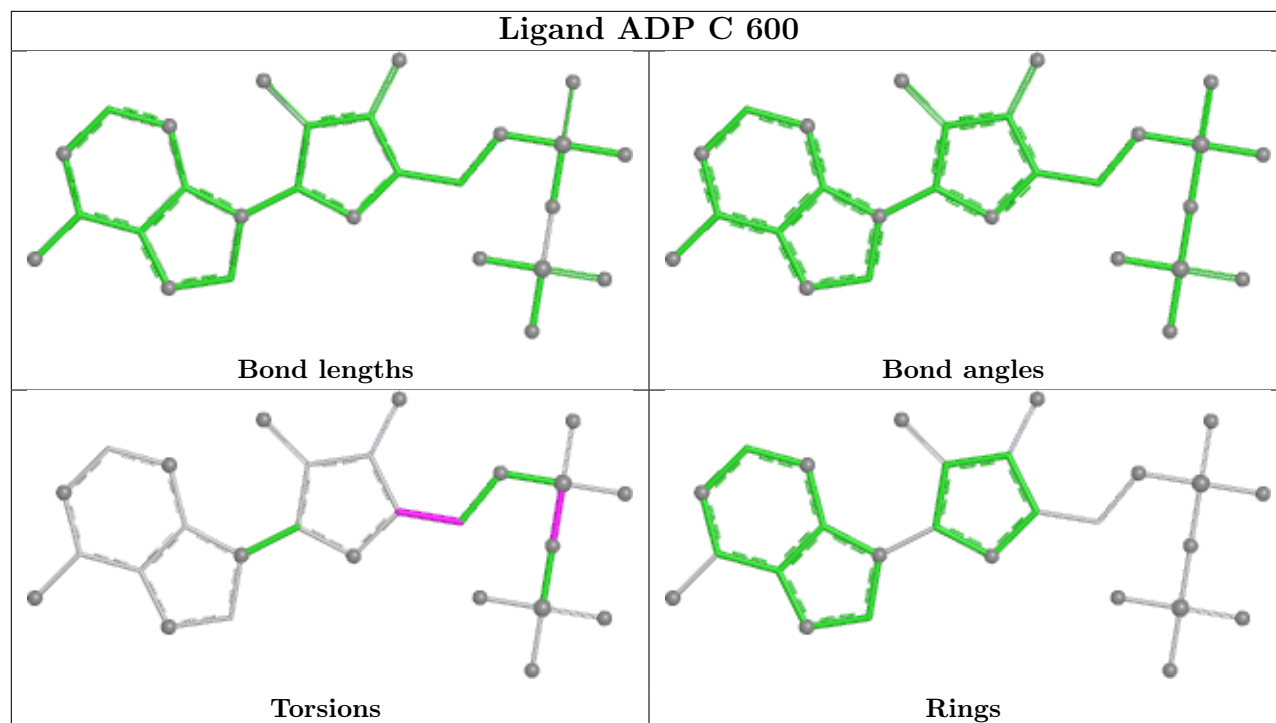
3 monomers are involved in 5 short contacts:

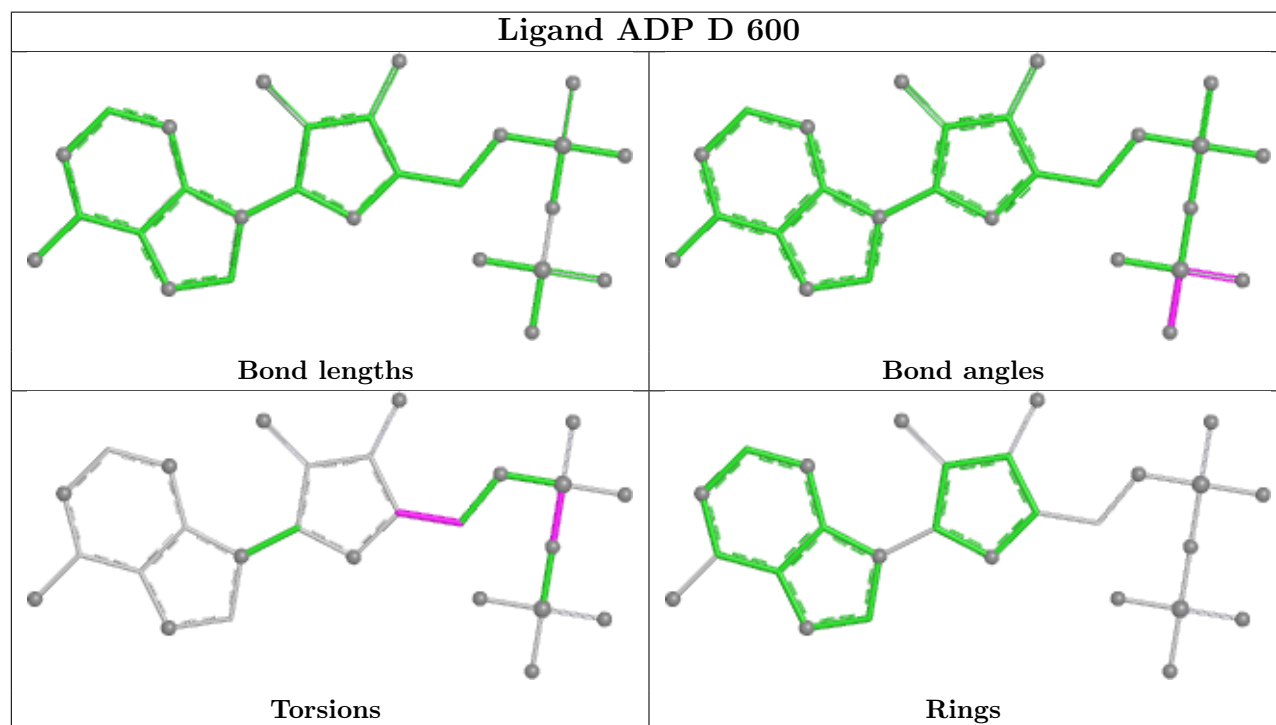
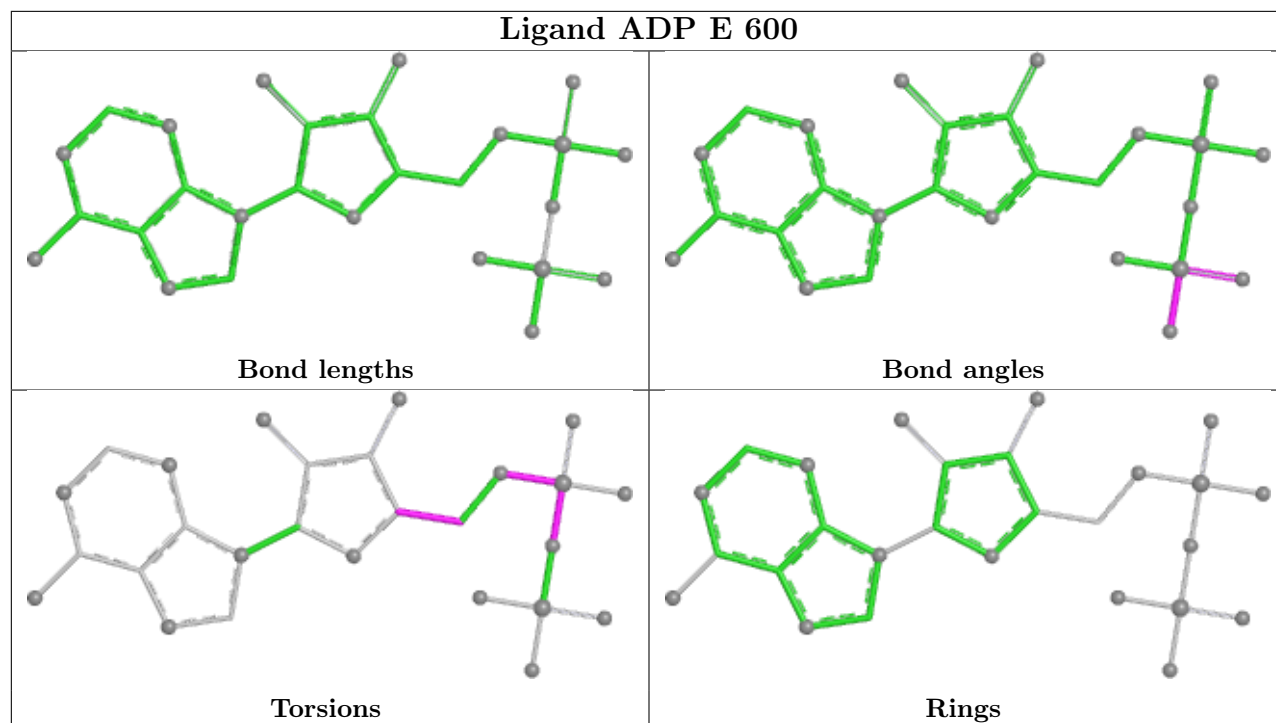
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	600	ADP	1	0
2	E	600	ADP	2	0
2	D	600	ADP	2	0

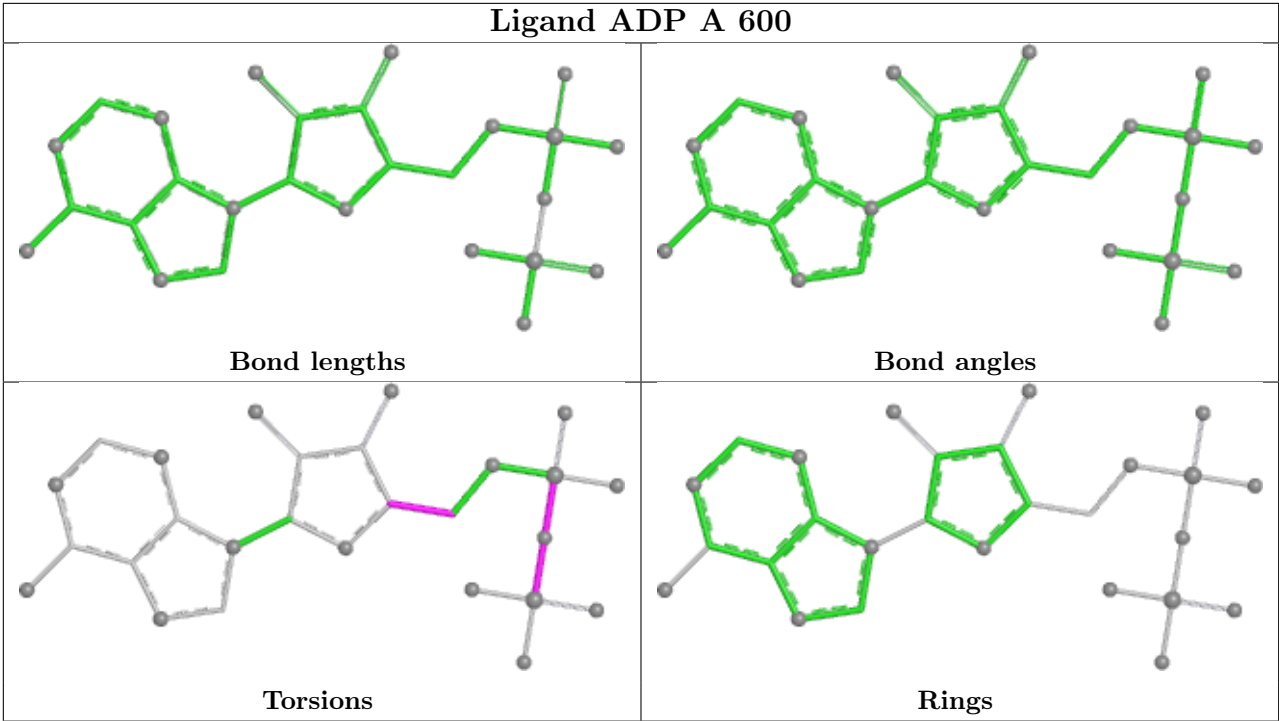
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

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.









5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	537:LYS	C	538:SER	N	3.09

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	507/570 (88%)	-1.26	0 100 100	50, 159, 306, 447	0
1	B	500/570 (87%)	-1.23	0 100 100	63, 171, 298, 441	0
1	C	505/570 (88%)	-1.22	0 100 100	42, 162, 286, 342	0
1	D	503/570 (88%)	-1.24	1 (0%) 91 81	54, 142, 311, 454	0
1	E	501/570 (87%)	-1.27	0 100 100	35, 166, 306, 395	0
1	F	500/570 (87%)	-1.26	0 100 100	54, 177, 340, 450	0
All	All	3016/3420 (88%)	-1.25	1 (0%) 100 100	35, 165, 308, 454	0

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	297	ALA	2.8

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](#)

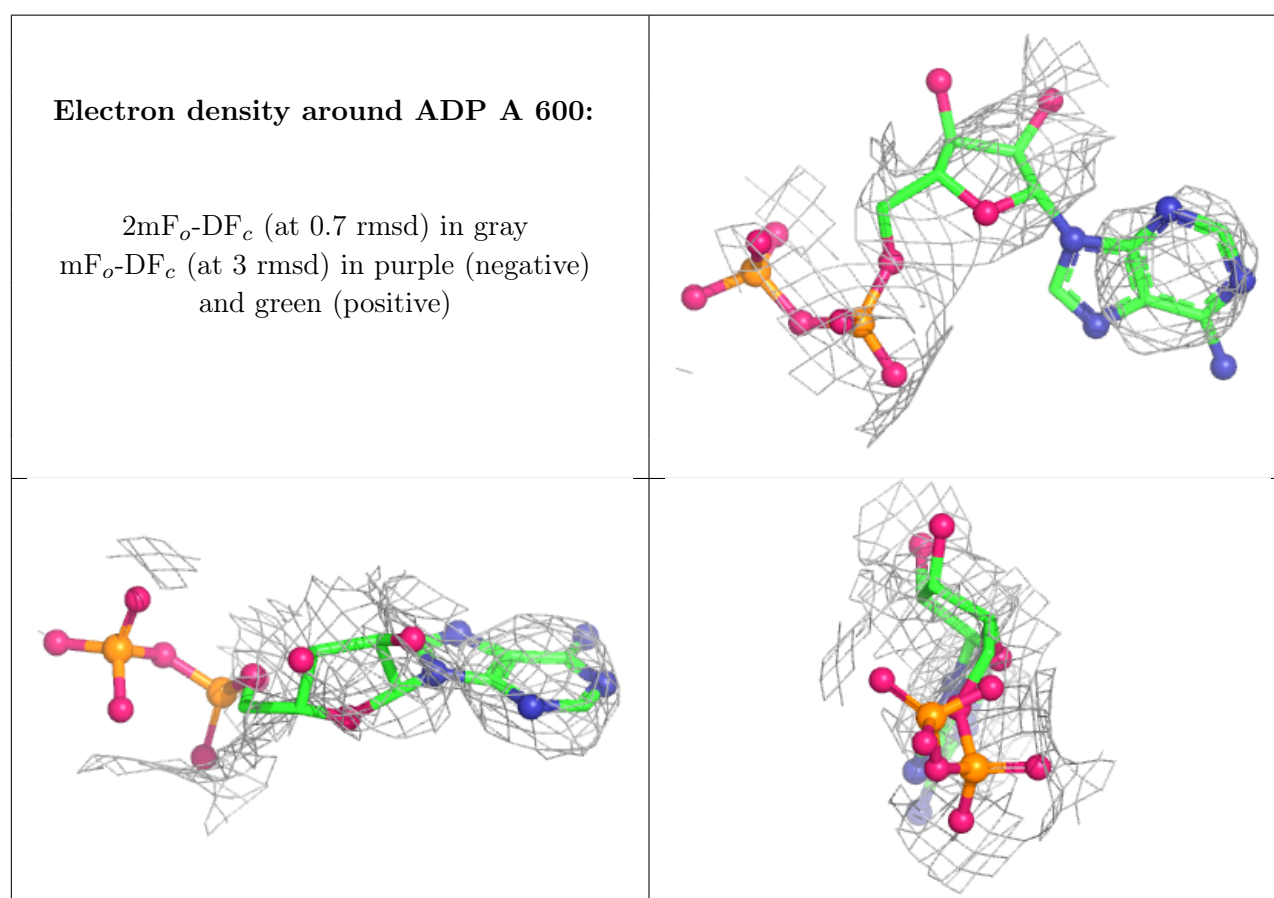
There are no oligosaccharides in this entry.

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.

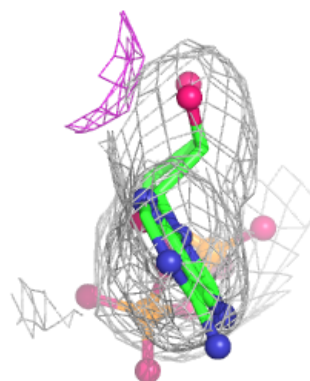
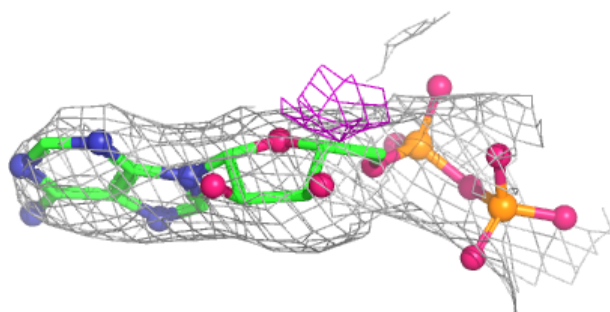
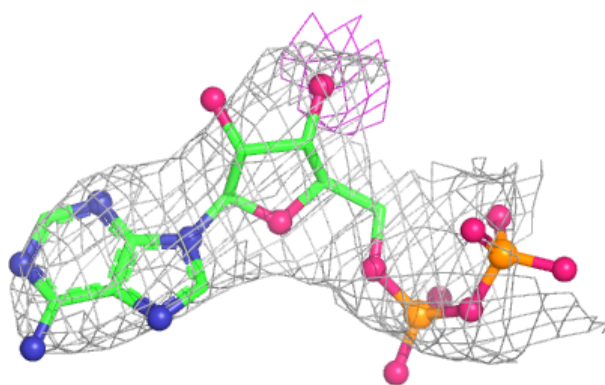
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	ADP	A	600	27/27	0.99	0.03	142,167,180,185	0
2	ADP	B	600	27/27	0.99	0.04	128,145,205,207	0
2	ADP	C	600	27/27	0.99	0.03	138,169,226,228	0
2	ADP	F	600	27/27	0.99	0.04	164,188,201,213	0
2	ADP	E	600	27/27	1.00	0.02	128,141,159,167	0
2	ADP	D	600	27/27	1.00	0.03	95,106,121,130	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.

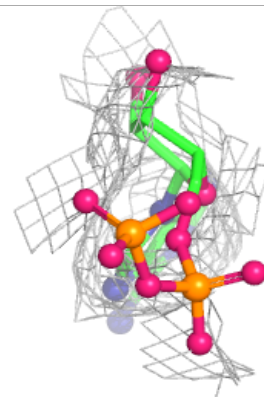
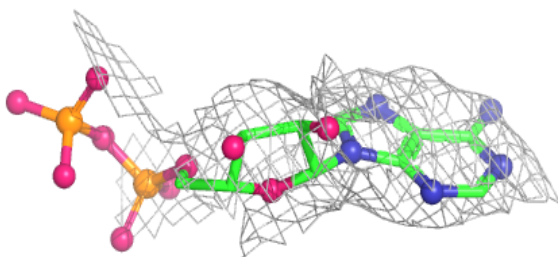
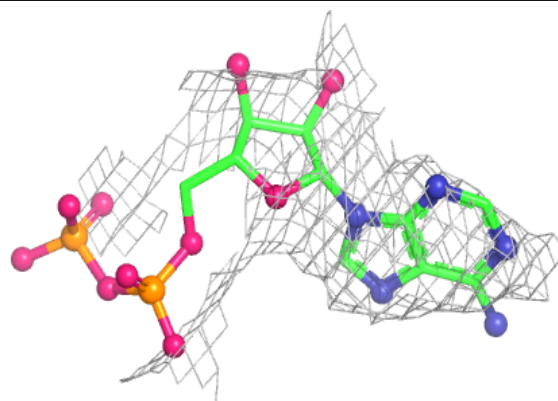


Electron density around ADP B 600:

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

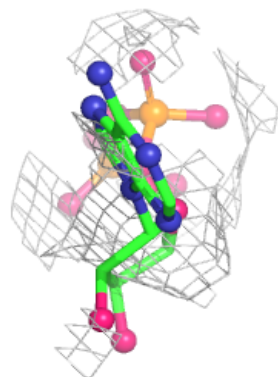
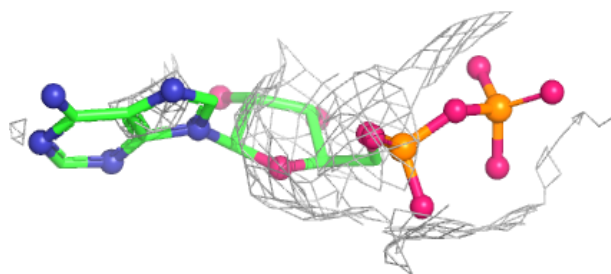
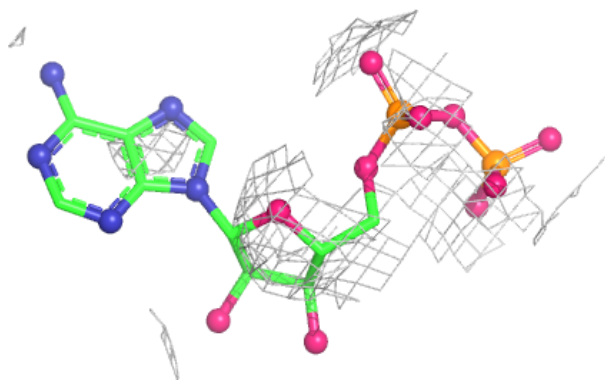
**Electron density around ADP C 600:**

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

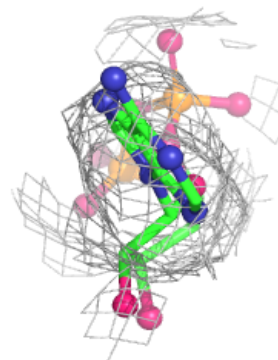
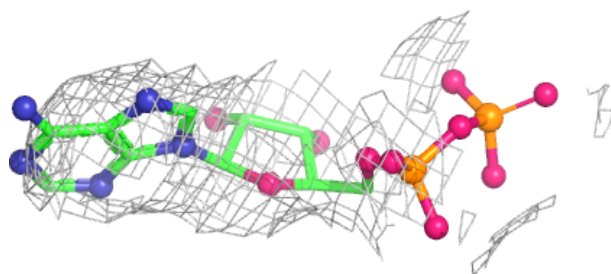
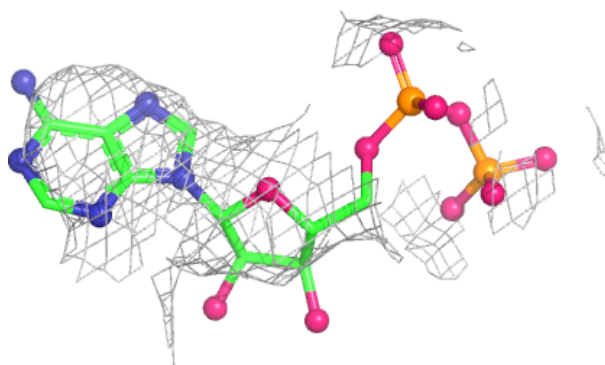


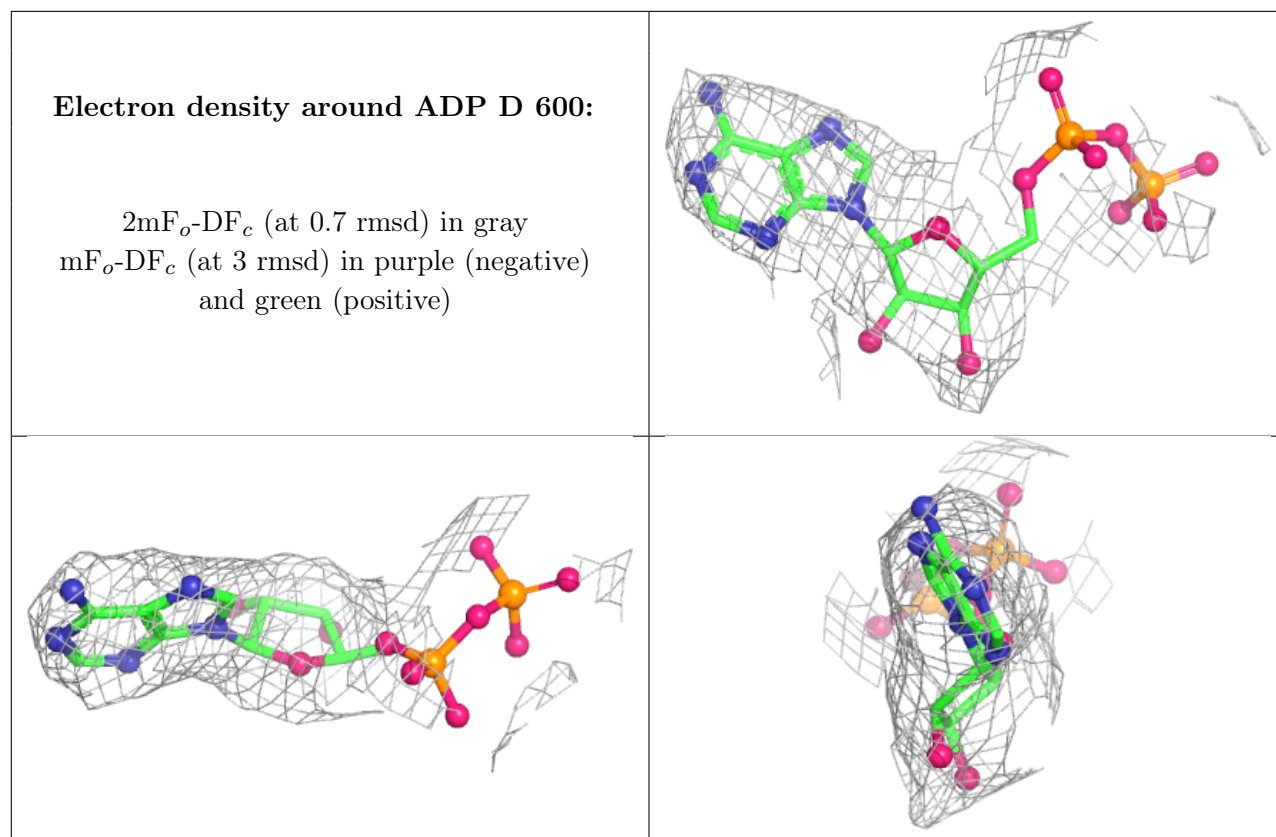
Electron density around ADP F 600:

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

**Electron density around ADP E 600:**

$2mF_o-DF_c$ (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.