



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 9, 2026 – 08:25 AM UTC

PDB ID : 4LL7 / pdb_00004ll7
Title : Structure of She3p amino terminus.
Authors : Shi, H.; Singh, N.; Esselborn, F.; Blobel, G.
Deposited on : 2013-07-09
Resolution : 2.31 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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
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

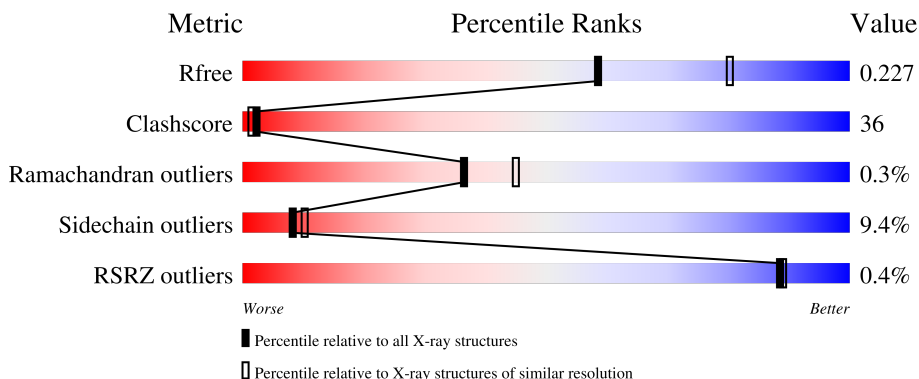
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.31 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	7754 (2.34-2.30)
Clashscore	190562	8383 (2.34-2.30)
Ramachandran outliers	187476	8303 (2.34-2.30)
Sidechain outliers	187428	8303 (2.34-2.30)
RSRZ outliers	180081	7760 (2.34-2.30)

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	96	
1	B	96	
1	C	96	
1	D	96	
1	E	96	

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Mol	Chain	Length	Quality of chain
1	F	96	
1	G	96	
1	H	96	

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
3	SO4	A	209	-	-	X	-
5	DTT	A	212	-	-	X	-
7	IPA	F	206	-	-	X	-

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 6422 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 SWI5-dependent HO expression protein 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	94	778	480	136	160	2	0	0	0
1	B	88	731	452	127	150	2	0	0	0
1	C	90	746	460	129	155	2	0	0	0
1	D	91	754	466	130	156	2	0	0	0
1	E	90	746	460	129	155	2	0	0	0
1	F	91	754	466	130	156	2	0	0	0
1	G	87	723	446	126	149	2	0	0	0
1	H	91	754	466	130	156	2	0	0	0

- Molecule 2 is DYSPROSIUM ION (CCD ID: DY) (formula: Dy).

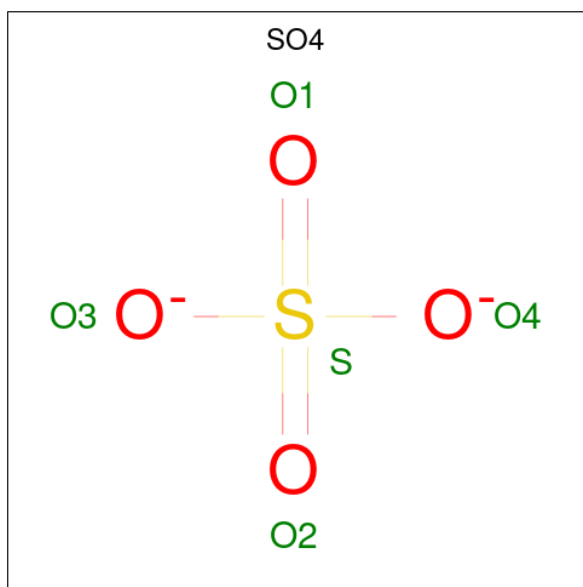
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	4	Total 5	Dy 5	0	1
2	B	3	Total 3	Dy 3	0	0
2	C	3	Total 5	Dy 5	0	2
2	D	3	Total 3	Dy 3	0	0
2	E	5	Total 6	Dy 6	0	1
2	F	3	Total 3	Dy 3	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	G	2	Total	Dy	0	0
			2	2		
2	H	3	Total	Dy	0	0
			3	3		

- Molecule 3 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	B	1	Total	O	S	0	0
			5	4	1		
3	B	1	Total	O	S	0	0
			5	4	1		
3	B	1	Total	O	S	0	0
			5	4	1		

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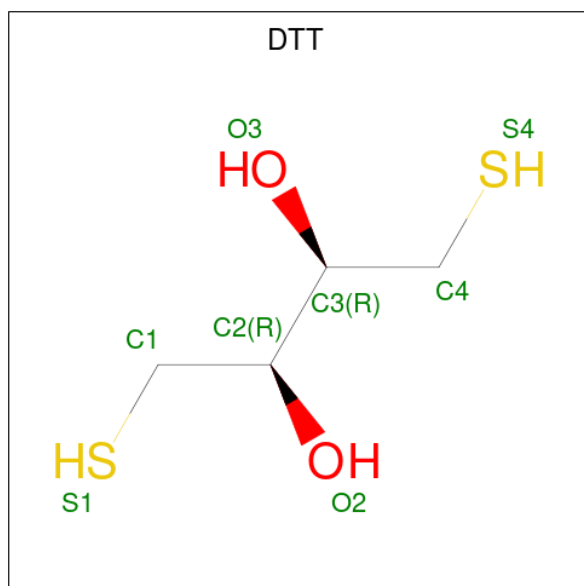
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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	B	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	D	1	Total	O	S	0	0
			5	4	1		
3	D	1	Total	O	S	0	0
			5	4	1		
3	E	1	Total	O	S	0	0
			5	4	1		
3	F	1	Total	O	S	0	0
			5	4	1		
3	G	1	Total	O	S	0	0
			5	4	1		
3	G	1	Total	O	S	0	0
			5	4	1		
3	G	1	Total	O	S	0	0
			5	4	1		
3	G	1	Total	O	S	0	0
			5	4	1		
3	G	1	Total	O	S	0	0
			5	4	1		
3	H	1	Total	O	S	0	0
			5	4	1		
3	H	1	Total	O	S	0	0
			5	4	1		

- Molecule 4 is PLATINUM (II) ION (CCD ID: PT) (formula: Pt).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Pt	0	0
			1	1		
4	B	1	Total	Pt	0	0
			1	1		
4	C	1	Total	Pt	0	0
			1	1		
4	D	1	Total	Pt	0	0
			1	1		
4	E	1	Total	Pt	0	0
			1	1		
4	G	1	Total	Pt	0	0
			1	1		

- Molecule 5 is 2,3-DIHYDROXY-1,4-DITHIOBUTANE (CCD ID: DTT) (formula: $C_4H_{10}O_2S_2$).



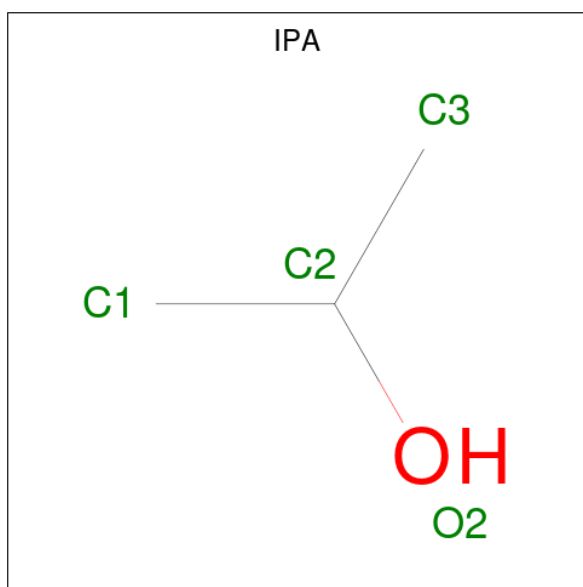
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	O	S	0	0
			8	4	2	2		

- Molecule 6 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	B	1	Total C O 4 2 2	0	0
6	D	1	Total C O 4 2 2	0	0
6	D	1	Total C O 4 2 2	0	0
6	E	1	Total C O 4 2 2	0	0
6	E	1	Total C O 4 2 2	0	0
6	F	1	Total C O 4 2 2	0	0
6	H	1	Total C O 4 2 2	0	0

- Molecule 7 is ISOPROPYL ALCOHOL (CCD ID: IPA) (formula: C₃H₈O).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	C	1	Total C O 4 3 1	0	0
7	D	1	Total C O 4 3 1	0	0
7	E	1	Total C O 4 3 1	0	0
7	F	1	Total C O 4 3 1	0	0
7	F	1	Total C O 4 3 1	0	0
7	F	1	Total C O 4 3 1	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	20	Total O 20 20	0	0
8	B	34	Total O 34 34	0	0
8	C	30	Total O 30 30	0	0
8	D	17	Total O 17 17	0	0
8	E	26	Total O 26 26	0	0
8	F	20	Total O 20 20	0	0

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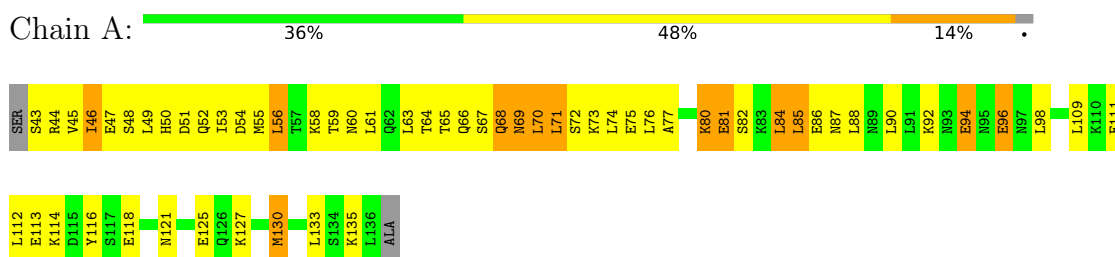
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	G	21	Total O 21 21	0	0
8	H	27	Total O 27 27	0	0

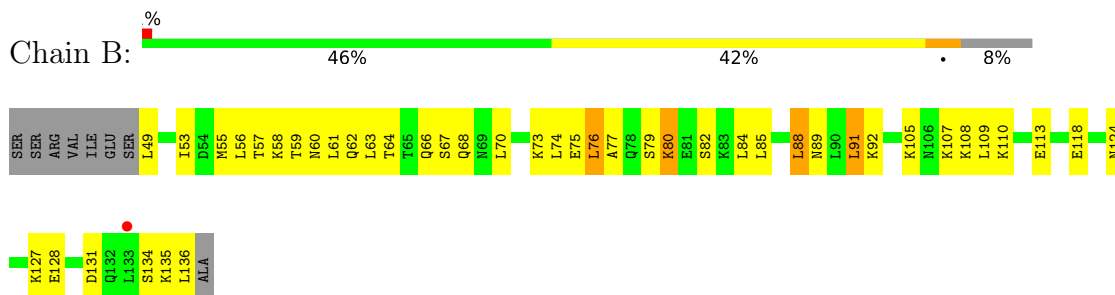
3 Residue-property plots [i](#)

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

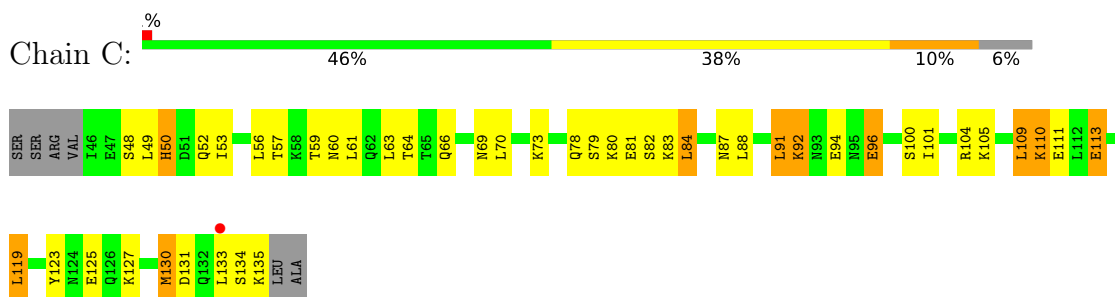
- Molecule 1: SWI5-dependent HO expression protein 3



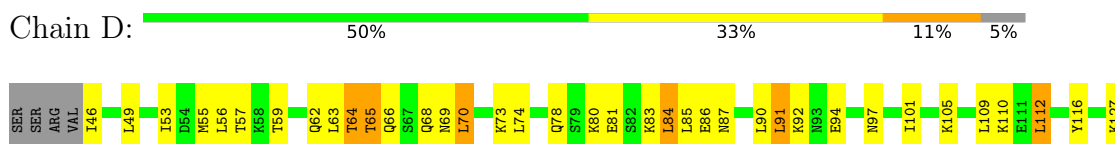
- Molecule 1: SWI5-dependent HO expression protein 3

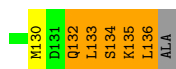


- Molecule 1: SWI5-dependent HO expression protein 3



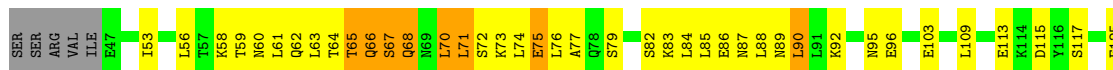
- Molecule 1: SWI5-dependent HO expression protein 3





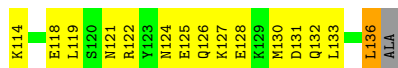
- Molecule 1: SWI5-dependent HO expression protein 3

Chain E: 43% 41% 10% 6%



- Molecule 1: SWI5-dependent HO expression protein 3

Chain F: 40% 50% 5% 5%



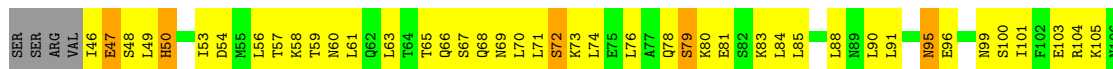
- Molecule 1: SWI5-dependent HO expression protein 3

Chain G: 49% 35% 6% 9%



- Molecule 1: SWI5-dependent HO expression protein 3

Chain H: 32% 53% 9% 5%



4 Data and refinement statistics i

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	28.07Å 49.58Å 149.95Å 89.96° 84.67° 89.98°	Depositor
Resolution (Å)	29.86 – 2.31 29.86 – 2.31	Depositor EDS
% Data completeness (in resolution range)	78.7 (29.86-2.31) 90.2 (29.86-2.31)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.00 (at 2.31Å)	Xtrriage
Refinement program	CNS	Depositor
R, R_{free}	0.231 , 0.264 0.224 , 0.227	Depositor DCC
R_{free} test set	3438 reflections (9.98%)	wwPDB-VP
Wilson B-factor (Å ²)	30.1	Xtrriage
Anisotropy	0.681	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 92.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.53$, $\langle L^2 \rangle = 0.37$	Xtrriage
Estimated twinning fraction	0.447 for h,-k,h-l 0.447 for -h,k,-l 0.458 for -h,-k,-h+l	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	6422	wwPDB-VP
Average B, all atoms (Å ²)	76.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 29.99 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.4095e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: DTT, IPA, EDO, PT, SO4, DY

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	0.53	0/781	1.06	5/1041 (0.5%)
1	B	0.40	0/734	0.82	0/978
1	C	0.42	0/749	0.84	2/998 (0.2%)
1	D	0.41	0/757	0.87	3/1009 (0.3%)
1	E	0.40	0/749	1.05	7/998 (0.7%)
1	F	0.42	0/757	0.83	1/1009 (0.1%)
1	G	0.46	0/726	0.81	1/967 (0.1%)
1	H	0.41	0/757	0.97	5/1009 (0.5%)
All	All	0.43	0/6010	0.91	24/8009 (0.3%)

There are no bond length outliers.

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	46	ILE	N-CA-C	12.04	121.98	110.30
1	A	48	SER	N-CA-C	-8.96	101.59	111.36
1	H	65	THR	N-CA-C	-7.86	102.67	111.71
1	E	66	GLN	N-CA-C	-7.34	103.28	111.28
1	E	71	LEU	N-CA-C	-7.01	103.64	111.28

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	778	0	803	89	0
1	B	731	0	754	81	0
1	C	746	0	765	71	1
1	D	754	0	776	89	0
1	E	746	0	765	67	0
1	F	754	0	776	84	0
1	G	723	0	743	73	0
1	H	754	0	776	67	1
2	A	5	0	0	0	0
2	B	3	0	0	0	0
2	C	5	0	0	0	1
2	D	3	0	0	0	0
2	E	6	0	0	0	0
2	F	3	0	0	0	0
2	G	2	0	0	0	0
2	H	3	0	0	0	1
3	A	30	0	0	2	0
3	B	20	0	0	0	0
3	C	35	0	0	1	0
3	D	10	0	0	1	0
3	E	5	0	0	0	0
3	F	5	0	0	1	0
3	G	30	0	0	0	0
3	H	10	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
4	G	1	0	0	0	0
5	A	8	0	10	9	0
6	B	4	0	6	0	0
6	D	8	0	12	1	0
6	E	8	0	12	1	0
6	F	4	0	6	2	0
6	H	4	0	6	2	0
7	C	4	0	8	0	0
7	D	4	0	8	3	0
7	E	4	0	8	1	0
7	F	12	0	24	8	0
8	A	20	0	0	0	0
8	B	34	0	0	5	0
8	C	30	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	D	17	0	0	0	0
8	E	26	0	0	1	0
8	F	20	0	0	2	0
8	G	21	0	0	2	0
8	H	27	0	0	1	0
All	All	6422	0	6258	449	2

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 36.

The worst 5 of 449 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:121:ASN:HB3	5:A:212:DTT:O2	1.42	1.15
1:F:63:LEU:HB3	1:G:63:LEU:HB3	1.38	1.06
1:F:56:LEU:HD23	1:G:56:LEU:HB2	1.34	1.05
1:A:56:LEU:HD23	1:C:56:LEU:HB3	1.39	1.02
1:C:92:LYS:HG2	1:G:127:LYS:NZ	1.74	1.01

All (2) 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:H:113:GLU:OE1	2:C:201[B]:DY:DY[1_565]	2.03	0.17
1:C:125:GLU:OE2	2:H:202:DY:DY[1_545]	2.10	0.10

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	92/96 (96%)	88 (96%)	4 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	86/96 (90%)	82 (95%)	4 (5%)	0	100	100
1	C	88/96 (92%)	88 (100%)	0	0	100	100
1	D	89/96 (93%)	87 (98%)	2 (2%)	0	100	100
1	E	88/96 (92%)	84 (96%)	4 (4%)	0	100	100
1	F	89/96 (93%)	89 (100%)	0	0	100	100
1	G	85/96 (88%)	82 (96%)	2 (2%)	1 (1%)	10	11
1	H	89/96 (93%)	85 (96%)	3 (3%)	1 (1%)	11	12
All	All	706/768 (92%)	685 (97%)	19 (3%)	2 (0%)	36	45

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	135	LYS
1	H	79	SER

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	93/94 (99%)	83 (89%)	10 (11%)	6	7
1	B	87/94 (93%)	79 (91%)	8 (9%)	8	11
1	C	89/94 (95%)	77 (86%)	12 (14%)	4	4
1	D	90/94 (96%)	80 (89%)	10 (11%)	6	6
1	E	89/94 (95%)	85 (96%)	4 (4%)	24	36
1	F	90/94 (96%)	83 (92%)	7 (8%)	11	15
1	G	86/94 (92%)	79 (92%)	7 (8%)	11	14
1	H	90/94 (96%)	81 (90%)	9 (10%)	7	8
All	All	714/752 (95%)	647 (91%)	67 (9%)	8	10

5 of 67 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	136	LEU
1	H	50	HIS
1	H	132	GLN
1	C	100	SER
1	C	96	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	69	ASN
1	G	95	ASN
1	C	126	GLN
1	H	87	ASN
1	E	126	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 79 ligands modelled in this entry, 36 are monoatomic - leaving 43 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
3	SO4	B	207	-	4,4,4	0.38	0	6,6,6	0.08	0
3	SO4	B	204	-	4,4,4	0.37	0	6,6,6	0.08	0
3	SO4	H	204	-	4,4,4	0.36	0	6,6,6	0.12	0
6	EDO	E	209	-	3,3,3	0.46	0	2,2,2	0.37	0
7	IPA	D	209	-	3,3,3	0.55	0	3,3,3	0.30	0
3	SO4	C	205	-	4,4,4	0.38	0	6,6,6	0.09	0
6	EDO	B	209	-	3,3,3	0.46	0	2,2,2	0.32	0
6	EDO	D	207	-	3,3,3	0.42	0	2,2,2	0.38	0
7	IPA	F	207	-	3,3,3	0.58	0	3,3,3	0.30	0
3	SO4	E	206	-	4,4,4	0.36	0	6,6,6	0.10	0
6	EDO	H	206	-	3,3,3	0.45	0	2,2,2	0.33	0
7	IPA	F	206	-	3,3,3	0.56	0	3,3,3	0.35	0
3	SO4	D	204	-	4,4,4	0.38	0	6,6,6	0.08	0
3	SO4	D	205	-	4,4,4	0.36	0	6,6,6	0.08	0
3	SO4	C	207	-	4,4,4	0.38	0	6,6,6	0.09	0
7	IPA	C	212	-	3,3,3	0.68	0	3,3,3	0.28	0
3	SO4	A	207	-	4,4,4	0.37	0	6,6,6	0.08	0
3	SO4	H	205	-	4,4,4	0.24	0	6,6,6	0.15	0
3	SO4	C	210	-	4,4,4	0.27	0	6,6,6	0.13	0
3	SO4	G	204	2	4,4,4	0.38	0	6,6,6	0.07	0
3	SO4	G	206	-	4,4,4	0.35	0	6,6,6	0.09	0
3	SO4	F	204	-	4,4,4	0.36	0	6,6,6	0.10	0
7	IPA	E	210	-	3,3,3	0.60	0	3,3,3	0.33	0
3	SO4	G	207	-	4,4,4	0.38	0	6,6,6	0.08	0
6	EDO	E	208	-	3,3,3	0.37	0	2,2,2	0.39	0
6	EDO	F	205	-	3,3,3	0.45	0	2,2,2	0.25	0
3	SO4	C	209	-	4,4,4	0.26	0	6,6,6	0.13	0
3	SO4	G	203	-	4,4,4	0.37	0	6,6,6	0.08	0
3	SO4	G	205	-	4,4,4	0.37	0	6,6,6	0.06	0
5	DTT	A	212	-	7,7,7	2.00	2 (28%)	4,8,8	3.00	2 (50%)
3	SO4	A	205	-	4,4,4	0.37	0	6,6,6	0.11	0
3	SO4	A	206	-	4,4,4	0.39	0	6,6,6	0.06	0
3	SO4	C	206	-	4,4,4	0.37	0	6,6,6	0.11	0
3	SO4	A	210	-	4,4,4	0.37	0	6,6,6	0.07	0
7	IPA	F	208	-	3,3,3	0.50	0	3,3,3	0.37	0
3	SO4	B	205	-	4,4,4	0.40	0	6,6,6	0.06	0
3	SO4	C	204	-	4,4,4	0.38	0	6,6,6	0.05	0
3	SO4	G	208	-	4,4,4	0.28	0	6,6,6	0.09	0
3	SO4	C	208	-	4,4,4	0.27	0	6,6,6	0.16	0
3	SO4	A	208	-	4,4,4	0.37	0	6,6,6	0.07	0
3	SO4	B	206	-	4,4,4	0.39	0	6,6,6	0.06	0
3	SO4	A	209	-	4,4,4	0.36	0	6,6,6	0.06	0
6	EDO	D	208	-	3,3,3	0.42	0	2,2,2	0.38	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
6	EDO	E	209	-	-	1/1/1/1	-
6	EDO	D	207	-	-	0/1/1/1	-
6	EDO	B	209	-	-	0/1/1/1	-
5	DTT	A	212	-	-	0/8/8/8	-
6	EDO	H	206	-	-	1/1/1/1	-
6	EDO	D	208	-	-	1/1/1/1	-
6	EDO	E	208	-	-	0/1/1/1	-
6	EDO	F	205	-	-	0/1/1/1	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	212	DTT	O2-C2	-2.96	1.37	1.43
5	A	212	DTT	C1-C2	2.80	1.59	1.51

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	212	DTT	O3-C3-C2	-5.05	98.96	109.57
5	A	212	DTT	C3-C4-S4	-2.49	107.48	114.43

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	D	208	EDO	O1-C1-C2-O2
6	H	206	EDO	O1-C1-C2-O2
6	E	209	EDO	O1-C1-C2-O2

There are no ring outliers.

13 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	D	209	IPA	3	0
6	D	207	EDO	1	0
6	H	206	EDO	2	0
7	F	206	IPA	6	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	204	SO4	1	0
3	F	204	SO4	1	0
7	E	210	IPA	1	0
6	E	208	EDO	1	0
6	F	205	EDO	2	0
3	C	209	SO4	1	0
5	A	212	DTT	9	0
7	F	208	IPA	2	0
3	A	209	SO4	2	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [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	94/96 (97%)	-0.50	0 100 100	20, 73, 127, 144	0
1	B	88/96 (91%)	-0.30	1 (1%) 78 79	20, 76, 150, 154	0
1	C	90/96 (93%)	-0.32	1 (1%) 78 79	22, 71, 136, 156	0
1	D	91/96 (94%)	-0.38	0 100 100	17, 74, 143, 148	0
1	E	90/96 (93%)	-0.47	0 100 100	20, 69, 136, 154	0
1	F	91/96 (94%)	-0.37	0 100 100	19, 72, 147, 156	0
1	G	87/96 (90%)	-0.45	0 100 100	20, 71, 143, 155	0
1	H	91/96 (94%)	-0.40	1 (1%) 78 79	21, 75, 134, 140	0
All	All	722/768 (94%)	-0.40	3 (0%) 88 89	17, 75, 142, 156	0

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	133	LEU	2.8
1	H	133	LEU	2.5
1	C	133	LEU	2.3

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands i

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
7	IPA	F	206	4/4	0.92	0.14	50,51,58,66	0
2	DY	C	203	1/1	0.93	0.06	70,70,70,70	1
2	DY	F	203	1/1	0.93	0.05	58,58,58,58	1
6	EDO	F	205	4/4	0.93	0.12	34,49,54,61	0
2	DY	B	202	1/1	0.93	0.08	72,72,72,72	1
4	PT	D	206	1/1	0.94	0.09	105,105,105,105	1
4	PT	E	207	1/1	0.94	0.06	88,88,88,88	1
6	EDO	B	209	4/4	0.94	0.09	63,64,68,73	0
6	EDO	D	207	4/4	0.94	0.11	72,76,76,77	0
6	EDO	E	208	4/4	0.94	0.12	35,42,50,55	0
2	DY	A	203	1/1	0.94	0.07	71,71,71,71	1
3	SO4	G	208	5/5	0.94	0.06	116,116,118,121	0
3	SO4	A	207	5/5	0.95	0.09	144,144,145,146	0
3	SO4	C	206	5/5	0.95	0.09	115,117,118,121	0
3	SO4	G	205	5/5	0.95	0.08	153,154,155,155	0
2	DY	E	204	1/1	0.95	0.04	61,61,61,61	1
3	SO4	H	205	5/5	0.95	0.07	83,91,94,100	0
6	EDO	H	206	4/4	0.95	0.09	44,49,51,56	0
7	IPA	C	212	4/4	0.95	0.08	44,54,62,68	0
7	IPA	E	210	4/4	0.95	0.13	64,66,70,74	0
2	DY	H	201	1/1	0.95	0.14	80,80,80,80	1
7	IPA	F	207	4/4	0.95	0.10	53,66,70,73	0
5	DTT	A	212	8/8	0.96	0.14	84,87,90,97	0
2	DY	D	201	1/1	0.96	0.05	83,83,83,83	1
3	SO4	C	208	5/5	0.96	0.11	104,105,107,111	0
6	EDO	D	208	4/4	0.96	0.07	48,52,53,63	0
3	SO4	D	204	5/5	0.96	0.08	104,106,108,108	0
6	EDO	E	209	4/4	0.96	0.09	53,74,74,82	0
2	DY	E	203	1/1	0.96	0.09	79,79,79,79	1
3	SO4	A	210	5/5	0.96	0.05	159,160,160,161	0
3	SO4	H	204	5/5	0.96	0.11	91,93,103,106	0
7	IPA	D	209	4/4	0.96	0.11	62,65,65,67	0
3	SO4	B	205	5/5	0.96	0.06	83,84,87,87	0
3	SO4	B	207	5/5	0.96	0.14	121,121,124,124	0
3	SO4	C	205	5/5	0.96	0.09	119,122,122,123	0
4	PT	A	211	1/1	0.97	0.07	105,105,105,105	1
3	SO4	A	208	5/5	0.97	0.06	131,131,134,134	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	SO4	A	209	5/5	0.97	0.09	110,110,117,117	0
4	PT	G	209	1/1	0.97	0.05	86,86,86,86	1
2	DY	H	202	1/1	0.97	0.07	65,65,65,65	1
3	SO4	C	209	5/5	0.97	0.08	88,89,93,95	0
3	SO4	C	210	5/5	0.97	0.13	74,78,81,84	0
3	SO4	B	204	5/5	0.97	0.08	122,123,126,127	0
3	SO4	D	205	5/5	0.97	0.08	112,112,115,116	0
3	SO4	E	206	5/5	0.97	0.08	96,97,102,106	0
3	SO4	F	204	5/5	0.97	0.10	118,118,119,125	0
3	SO4	G	203	5/5	0.97	0.07	108,108,112,112	0
2	DY	H	203	1/1	0.97	0.04	70,70,70,70	1
3	SO4	G	207	5/5	0.97	0.08	149,149,151,151	0
3	SO4	B	206	5/5	0.97	0.12	75,78,83,87	0
2	DY	D	203	1/1	0.97	0.05	33,33,33,33	1
3	SO4	C	204	5/5	0.97	0.08	108,110,112,112	0
2	DY	A	204	1/1	0.98	0.06	71,71,71,71	1
3	SO4	G	204	5/5	0.98	0.06	99,99,102,104	0
2	DY	B	201	1/1	0.98	0.03	63,63,63,63	1
3	SO4	G	206	5/5	0.98	0.10	131,131,132,133	0
3	SO4	C	207	5/5	0.98	0.06	79,82,87,88	0
2	DY	G	201	1/1	0.98	0.07	84,84,84,84	1
2	DY	G	202	1/1	0.98	0.07	55,55,55,55	1
2	DY	D	202	1/1	0.98	0.04	56,56,56,56	1
2	DY	A	202	1/1	0.98	0.14	56,56,56,56	1
4	PT	C	211	1/1	0.98	0.04	112,112,112,112	1
2	DY	B	203	1/1	0.98	0.04	67,67,67,67	1
3	SO4	A	205	5/5	0.98	0.05	61,72,74,76	0
3	SO4	A	206	5/5	0.98	0.07	83,90,93,94	0
7	IPA	F	208	4/4	0.98	0.11	74,78,80,80	0
2	DY	F	201	1/1	0.99	0.03	94,94,94,94	1
2	DY	F	202	1/1	0.99	0.02	64,64,64,64	1
4	PT	B	208	1/1	0.99	0.08	106,106,106,106	1
2	DY	E	202	1/1	0.99	0.09	85,85,85,85	1
2	DY	C	202[A]	1/1	0.99	0.02	32,32,32,32	1
2	DY	C	202[B]	1/1	0.99	0.02	17,17,17,17	1
2	DY	E	205	1/1	0.99	0.03	71,71,71,71	1
2	DY	C	201[B]	1/1	1.00	0.02	18,18,18,18	1
2	DY	A	201[A]	1/1	1.00	0.02	33,33,33,33	1
2	DY	A	201[B]	1/1	1.00	0.02	18,18,18,18	1
2	DY	E	201[A]	1/1	1.00	0.02	29,29,29,29	1
2	DY	E	201[B]	1/1	1.00	0.02	13,13,13,13	1
2	DY	C	201[A]	1/1	1.00	0.02	35,35,35,35	1

6.5 Other polymers [i](#)

There are no such residues in this entry.