



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 20, 2026 – 09:11 AM UTC

PDB ID : 8I28 / pdb_00008i28
Title : Structure of Phosphoserine Aminotransferase from *Saccharomyces cerevisiae*
Authors : Jang, J.Y.; Chang, J.H.
Deposited on : 2023-01-14
Resolution : 2.80 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
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

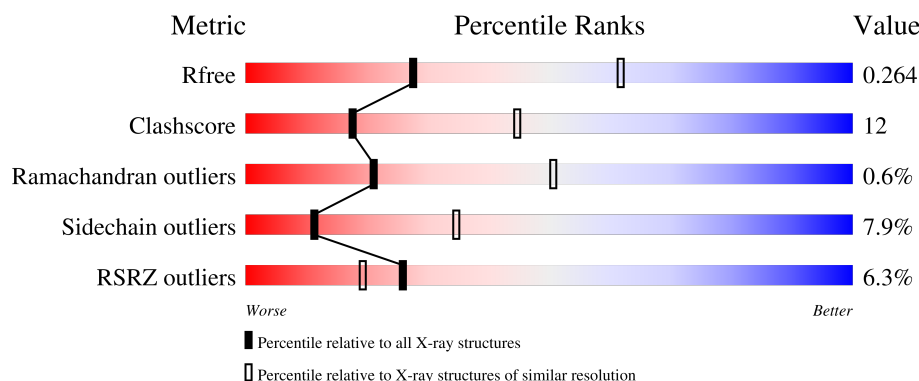
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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	395	6% 56% 26% • 15%
1	B	395	5% 61% 21% • 15%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 5253 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 Phosphoserine aminotransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	335	Total	C	N	O	S	0	0	0
			2604	1673	434	491	6			
1	B	335	Total	C	N	O	S	0	0	0
			2596	1664	435	491	6			

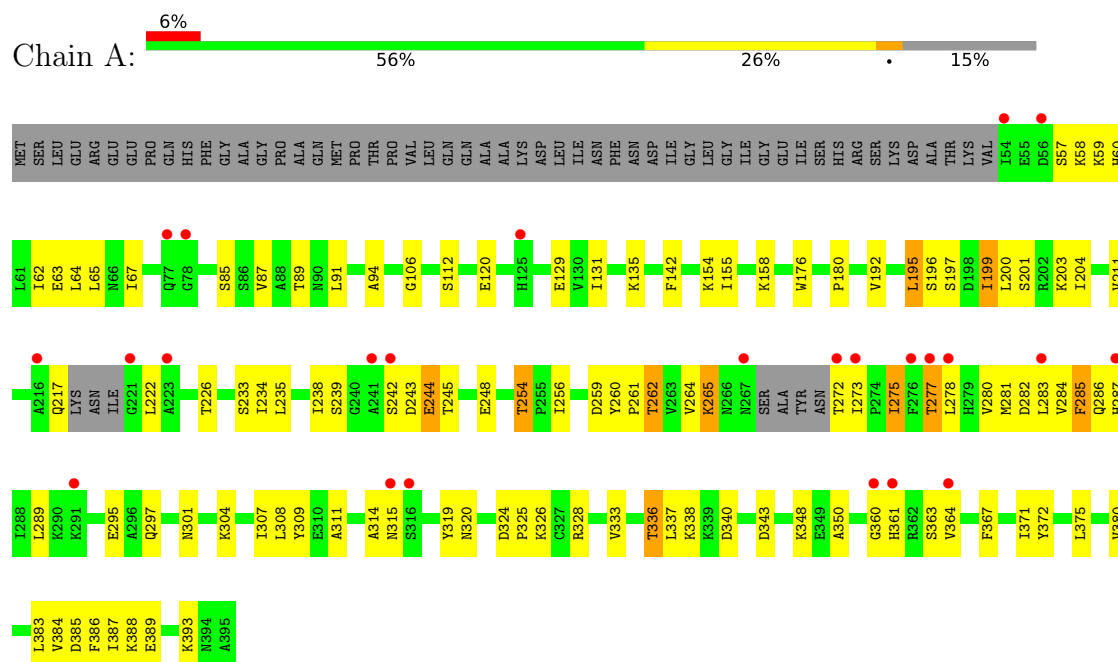
- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	23	Total	O	0	0
			23	23		
2	B	30	Total	O	0	0
			30	30		

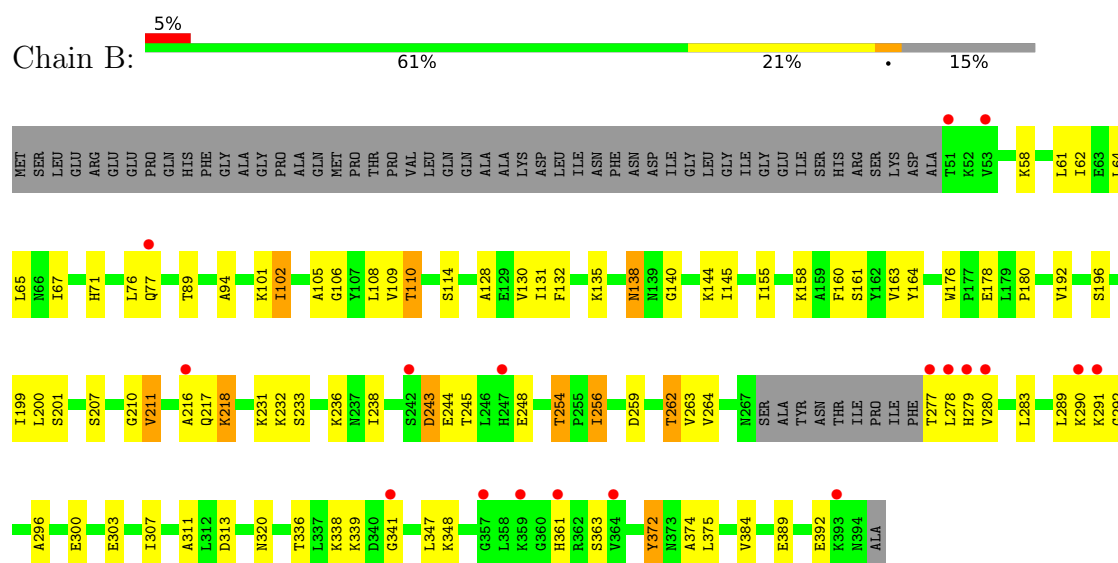
3 Residue-property plots

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: Phosphoserine aminotransferase



• Molecule 1: Phosphoserine aminotransferase



4 Data and refinement statistics

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	132.28Å 132.28Å 141.62Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	48.33 – 2.80 48.33 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.9 (48.33-2.80) 99.9 (48.33-2.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.62 (at 2.81Å)	Xtriage
Refinement program	PHENIX (1.19.1_4122: ???)	Depositor
R, R_{free}	0.229 , 0.268 0.230 , 0.264	Depositor DCC
R_{free} test set	1997 reflections (5.58%)	wwPDB-VP
Wilson B-factor (Å ²)	53.1	Xtriage
Anisotropy	0.411	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 62.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	0.046 for -h,-k,l	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	5253	wwPDB-VP
Average B, all atoms (Å ²)	62.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.31% 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 [i](#)

5.1 Standard geometry [i](#)

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	0.47	0/2656	0.68	0/3591
1	B	0.40	0/2648	0.59	1/3583 (0.0%)
All	All	0.43	0/5304	0.63	1/7174 (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	243	ASP	CB-CA-C	-5.96	108.69	115.79

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2604	0	2610	72	0
1	B	2596	0	2600	58	0
2	A	23	0	0	0	0
2	B	30	0	0	1	0
All	All	5253	0	5210	129	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 12.

All (129) 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:307:ILE:HD11	1:A:380:VAL:HG23	1.51	0.92
1:A:275:ILE:HA	1:A:278:LEU:HD23	1.58	0.85
1:A:320:ASN:HB2	1:A:336:THR:HG22	1.63	0.81
1:B:64:LEU:HB3	1:B:289:LEU:HD11	1.67	0.76
1:B:192:VAL:HG22	1:B:211:VAL:HG13	1.69	0.75
1:B:64:LEU:HD12	1:B:65:LEU:HG	1.69	0.74
1:A:62:ILE:HA	1:A:67:ILE:HD12	1.71	0.71
1:B:307:ILE:HG22	1:B:384:VAL:HG21	1.74	0.69
1:B:339:LYS:HE3	1:B:341:GLY:H	1.57	0.69
1:B:109:VAL:HA	1:B:114:SER:HB3	1.74	0.69
1:B:131:ILE:HG12	1:B:155:ILE:HD11	1.75	0.69
1:A:320:ASN:HD21	1:A:338:LYS:HE2	1.58	0.68
1:A:320:ASN:ND2	1:A:338:LYS:HE2	2.08	0.68
1:A:285:PHE:O	1:A:287:HIS:N	2.27	0.68
1:A:315:ASN:ND2	1:A:319:TYR:H	1.92	0.67
1:A:192:VAL:HG22	1:A:211:VAL:HB	1.75	0.67
1:A:286:GLN:HA	1:A:289:LEU:HB2	1.76	0.66
1:A:244:GLU:O	1:A:248:GLU:HG3	1.96	0.65
1:A:131:ILE:HD13	1:A:155:ILE:HD11	1.78	0.63
1:B:199:ILE:HG23	1:B:200:LEU:HG	1.79	0.63
1:A:308:LEU:HD12	1:A:371:ILE:HD11	1.81	0.63
1:A:65:LEU:HD12	1:A:67:ILE:HD11	1.80	0.62
1:A:280:VAL:O	1:A:284:VAL:HG23	1.99	0.62
1:A:372:TYR:CZ	1:A:375:LEU:HD23	2.34	0.62
1:A:238:ILE:HD12	1:A:261:PRO:HD3	1.81	0.62
1:B:196:SER:HB2	1:B:217:GLN:HE21	1.64	0.62
1:A:280:VAL:HA	1:A:283:LEU:HD12	1.82	0.61
1:B:280:VAL:HA	1:B:283:LEU:HD12	1.83	0.60
1:A:385:ASP:O	1:A:389:GLU:N	2.35	0.60
1:B:138:ASN:HB3	1:B:144:LYS:HD2	1.84	0.60
1:A:57:SER:OG	1:A:282:ASP:HB3	2.01	0.60
1:B:135:LYS:HG2	1:B:140:GLY:C	2.27	0.60
1:B:279:HIS:O	1:B:283:LEU:HG	2.03	0.58
1:B:311:ALA:HB2	1:B:384:VAL:HG13	1.85	0.58
1:B:64:LEU:HB3	1:B:289:LEU:CD1	2.33	0.57
1:A:388:LYS:C	1:A:389:GLU:N	2.62	0.57
1:A:311:ALA:HB2	1:A:384:VAL:HG13	1.87	0.57
1:B:135:LYS:HG2	1:B:140:GLY:O	2.05	0.56
1:A:94:ALA:HB2	1:A:238:ILE:HG23	1.87	0.56
1:B:62:ILE:HA	1:B:67:ILE:HD12	1.86	0.56
1:A:301:ASN:HA	1:A:304:LYS:HE2	1.87	0.55
1:A:59:LYS:O	1:A:63:GLU:HG3	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:320:ASN:HB2	1:B:336:THR:HG22	1.89	0.55
1:A:315:ASN:HD21	1:A:319:TYR:H	1.53	0.55
1:B:372:TYR:CZ	1:B:375:LEU:HG	2.42	0.55
1:B:296:ALA:O	1:B:300:GLU:HG3	2.08	0.54
1:A:281:MET:HE3	1:A:281:MET:HA	1.90	0.54
1:B:244:GLU:HB3	1:B:248:GLU:OE1	2.08	0.53
1:A:154:LYS:O	1:A:158:LYS:HG3	2.09	0.53
1:B:339:LYS:HE3	1:B:341:GLY:N	2.22	0.53
1:A:286:GLN:CA	1:A:289:LEU:HB2	2.39	0.53
1:A:89:THR:OG1	1:A:254:THR:HB	2.09	0.52
1:B:71:HIS:NE2	1:B:231:LYS:HG3	2.25	0.52
1:A:315:ASN:HD22	1:A:319:TYR:HD1	1.58	0.52
1:A:372:TYR:CE2	1:A:375:LEU:HD23	2.46	0.51
1:B:244:GLU:HB3	1:B:248:GLU:CD	2.37	0.50
1:B:64:LEU:HD23	1:B:289:LEU:HD13	1.94	0.49
1:B:292:GLY:HA3	1:B:296:ALA:HB2	1.94	0.49
1:A:235:LEU:HD23	1:A:238:ILE:HD11	1.93	0.49
1:A:340:ASP:N	1:A:340:ASP:OD1	2.45	0.49
1:A:60:HIS:CD2	1:A:282:ASP:HB2	2.48	0.49
1:A:260:TYR:O	1:A:264:VAL:HG23	2.12	0.49
1:B:216:ALA:HB1	1:B:218:LYS:HD2	1.94	0.49
1:A:281:MET:HG3	1:A:285:PHE:CZ	2.47	0.48
1:B:106:GLY:O	1:B:163:VAL:HA	2.13	0.48
1:A:350:ALA:HB2	1:A:386:PHE:CE2	2.48	0.48
1:B:176:TRP:CZ3	1:B:180:PRO:HG3	2.48	0.48
1:B:320:ASN:OD1	1:B:338:LYS:HG2	2.13	0.48
1:A:131:ILE:HA	1:A:154:LYS:HE2	1.96	0.48
1:B:303:GLU:O	1:B:307:ILE:HG13	2.14	0.48
1:A:309:TYR:CE1	1:A:333:VAL:HG13	2.49	0.47
1:B:178:GLU:HG2	2:B:417:HOH:O	2.14	0.47
1:B:320:ASN:ND2	1:B:338:LYS:HE2	2.28	0.47
1:A:234:ILE:O	1:A:238:ILE:HG12	2.13	0.47
1:B:94:ALA:HB2	1:B:238:ILE:HG13	1.96	0.47
1:A:272:THR:OG1	1:A:273:ILE:N	2.45	0.47
1:B:76:LEU:HD13	1:B:263:VAL:HG11	1.97	0.47
1:A:372:TYR:CZ	1:A:375:LEU:CD2	2.98	0.47
1:A:203:LYS:HD3	1:A:295:GLU:HG2	1.95	0.47
1:A:389:GLU:OE2	1:A:393:LYS:HE2	2.14	0.46
1:A:199:ILE:HG23	1:A:200:LEU:HG	1.97	0.46
1:A:324:ASP:OD1	1:A:326:LYS:HB2	2.16	0.46
1:A:280:VAL:O	1:A:283:LEU:HB2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:259:ASP:HB3	1:B:262:THR:HG23	1.97	0.46
1:A:242:SER:HG	1:A:245:THR:H	1.61	0.46
1:A:195:LEU:HD11	1:A:204:ILE:HD13	1.97	0.45
1:B:58:LYS:O	1:B:62:ILE:HG23	2.16	0.45
1:B:101:LYS:HG3	1:B:102:ILE:H	1.80	0.45
1:A:314:ALA:HA	1:B:313:ASP:O	2.16	0.45
1:A:196:SER:HB2	1:A:217:GLN:HE21	1.82	0.45
1:B:348:LYS:HA	1:B:348:LYS:HD2	1.77	0.44
1:A:361:HIS:C	1:A:363:SER:H	2.26	0.44
1:B:277:THR:N	1:B:279:HIS:CE1	2.85	0.44
1:A:319:TYR:CZ	1:A:387:ILE:HG23	2.53	0.44
1:B:256:ILE:H	1:B:256:ILE:HG13	1.30	0.44
1:B:289:LEU:O	1:B:290:LYS:HB2	2.17	0.44
1:A:325:PRO:HA	1:A:328:ARG:HD2	2.00	0.43
1:B:114:SER:HA	1:B:164:TYR:HE2	1.83	0.43
1:A:85:SER:OG	1:A:120:GLU:OE2	2.36	0.43
1:A:256:ILE:HA	1:A:259:ASP:HB2	2.00	0.43
1:B:290:LYS:C	1:B:292:GLY:H	2.27	0.43
1:A:297:GLN:HE21	1:A:297:GLN:HB2	1.62	0.43
1:A:343:ASP:HB2	1:A:367:PHE:CZ	2.54	0.43
1:A:262:THR:HA	1:A:265:LYS:HB2	2.01	0.43
1:A:176:TRP:CZ3	1:A:180:PRO:HG3	2.54	0.42
1:A:275:ILE:O	1:A:277:THR:N	2.43	0.42
1:B:347:LEU:HD23	1:B:347:LEU:HA	1.70	0.42
1:A:58:LYS:O	1:A:62:ILE:HG13	2.19	0.42
1:A:244:GLU:HG2	1:A:245:THR:N	2.34	0.42
1:B:110:THR:HG22	1:B:145:ILE:HG12	2.02	0.42
1:B:155:ILE:HD13	1:B:160:PHE:CE2	2.55	0.42
1:B:210:GLY:HA2	1:B:231:LYS:HE2	2.01	0.42
1:B:277:THR:HG23	1:B:278:LEU:HD12	2.00	0.42
1:A:273:ILE:O	1:A:275:ILE:HG23	2.20	0.42
1:B:361:HIS:C	1:B:363:SER:H	2.28	0.42
1:A:277:THR:HA	1:A:280:VAL:HG23	2.02	0.42
1:A:135:LYS:HD3	1:A:142:PHE:CZ	2.55	0.41
1:B:89:THR:OG1	1:B:254:THR:HB	2.20	0.41
1:B:339:LYS:HA	1:B:339:LYS:HD2	1.71	0.41
1:A:106:GLY:HA2	1:A:129:GLU:O	2.21	0.41
1:A:131:ILE:HD13	1:A:155:ILE:CD1	2.50	0.41
1:A:343:ASP:HB2	1:A:367:PHE:HZ	1.86	0.40
1:B:61:LEU:HD12	1:B:64:LEU:HD11	2.04	0.40
1:B:108:LEU:HD22	1:B:132:PHE:CE2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:372:TYR:HD2	1:B:374:ALA:HB3	1.86	0.40
1:A:238:ILE:CD1	1:A:261:PRO:HD3	2.50	0.40
1:A:285:PHE:CD1	1:A:285:PHE:N	2.89	0.40
1:B:105:ALA:H	1:B:128:ALA:HA	1.87	0.40
1:B:232:LYS:O	1:B:236:LYS:HG3	2.22	0.40

There are no symmetry-related clashes.

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	327/395 (83%)	300 (92%)	24 (7%)	3 (1%)	14	41
1	B	331/395 (84%)	300 (91%)	30 (9%)	1 (0%)	36	66
All	All	658/790 (83%)	600 (91%)	54 (8%)	4 (1%)	21	51

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	275	ILE
1	A	360	GLY
1	A	285	PHE
1	B	291	LYS

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	280/330 (85%)	257 (92%)	23 (8%)	10	33
1	B	279/330 (84%)	258 (92%)	21 (8%)	12	37
All	All	559/660 (85%)	515 (92%)	44 (8%)	11	35

All (44) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	64	LEU
1	A	87	VAL
1	A	91	LEU
1	A	112	SER
1	A	195	LEU
1	A	197	SER
1	A	199	ILE
1	A	201	SER
1	A	222	LEU
1	A	226	THR
1	A	233	SER
1	A	239	SER
1	A	243	ASP
1	A	244	GLU
1	A	254	THR
1	A	262	THR
1	A	265	LYS
1	A	277	THR
1	A	336	THR
1	A	337	LEU
1	A	348	LYS
1	A	364	VAL
1	A	383	LEU
1	B	77	GLN
1	B	102	ILE
1	B	110	THR
1	B	130	VAL
1	B	138	ASN
1	B	158	LYS
1	B	161	SER
1	B	201	SER
1	B	207	SER
1	B	211	VAL
1	B	218	LYS
1	B	233	SER

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Mol	Chain	Res	Type
1	B	243	ASP
1	B	245	THR
1	B	254	THR
1	B	256	ILE
1	B	262	THR
1	B	264	VAL
1	B	372	TYR
1	B	389	GLU
1	B	392	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	188	ASN
1	A	208	GLN
1	A	217	GLN
1	A	315	ASN
1	A	320	ASN
1	B	217	GLN
1	B	286	GLN
1	B	287	HIS
1	B	315	ASN
1	B	361	HIS
1	B	394	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

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	388:LYS	C	389:GLU	N	2.62

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ > 2		OWAB(Å ²)	Q < 0.9
1	A	335/395 (84%)	0.07	24 (7%)	21 16	30, 50, 109, 146	0
1	B	335/395 (84%)	0.23	18 (5%)	31 24	35, 61, 108, 157	0
All	All	670/790 (84%)	0.15	42 (6%)	26 19	30, 55, 109, 157	0

All (42) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	273	ILE	4.9
1	A	276	PHE	4.6
1	A	54	ILE	4.4
1	B	277	THR	4.1
1	A	364	VAL	3.5
1	A	287	HIS	3.5
1	A	361	HIS	3.5
1	B	51	THR	3.4
1	A	272	THR	3.4
1	B	278	LEU	3.3
1	A	221	GLY	3.1
1	A	277	THR	3.0
1	B	393	LYS	3.0
1	B	280	VAL	2.9
1	A	360	GLY	2.8
1	A	316	SER	2.8
1	B	361	HIS	2.8
1	B	291	LYS	2.8
1	A	223	ALA	2.7
1	B	290	LYS	2.7
1	A	267	ASN	2.7
1	B	341	GLY	2.6
1	B	247	HIS	2.5
1	B	53	VAL	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	359	LYS	2.5
1	B	279	HIS	2.5
1	A	216	ALA	2.5
1	B	77	GLN	2.4
1	B	242	SER	2.4
1	B	216	ALA	2.3
1	A	283	LEU	2.3
1	A	315	ASN	2.2
1	B	364	VAL	2.2
1	A	278	LEU	2.2
1	A	291	LYS	2.2
1	A	125	HIS	2.2
1	A	77	GLN	2.1
1	B	357	GLY	2.1
1	A	56	ASP	2.1
1	A	241	ALA	2.1
1	A	242	SER	2.1
1	A	78	GLY	2.1

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](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.