Full wwPDB X-ray Structure Validation Report ⓘ

Jun 24, 2024 – 05:50 PM EDT

PDB ID	:	7CB0
Title	:	The apo 6-phosphogluconate dehydrogenase from Staphylococcus aureus (strain Newman)
Authors	:	Wang, H.; Wang, M.; Sun, H.
Deposited on	:	2020-06-10
Resolution	:	2.52 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:

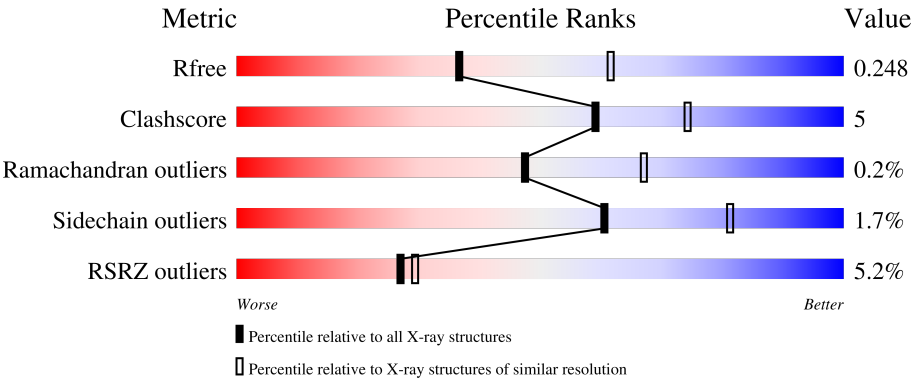
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.52 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}	130704	5743 (2.54-2.50)
Clashscore	141614	6463 (2.54-2.50)
Ramachandran outliers	138981	6335 (2.54-2.50)
Sidechain outliers	138945	6337 (2.54-2.50)
RSRZ outliers	127900	5630 (2.54-2.50)

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	468	3% 88% 11%
1	B	468	3% 88% 11%
1	C	468	8% 88% 11%
1	D	468	7% 85% 14%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 14481 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 6-phosphogluconate dehydrogenase, decarboxylating.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	466	Total	C	N	O	S	0	0	0
			3604	2277	606	704	17			
1	B	466	Total	C	N	O	S	0	0	0
			3612	2282	607	706	17			
1	C	466	Total	C	N	O	S	0	0	0
			3604	2278	606	703	17			
1	D	464	Total	C	N	O	S	0	0	0
			3574	2263	598	696	17			

- Molecule 2 is water.

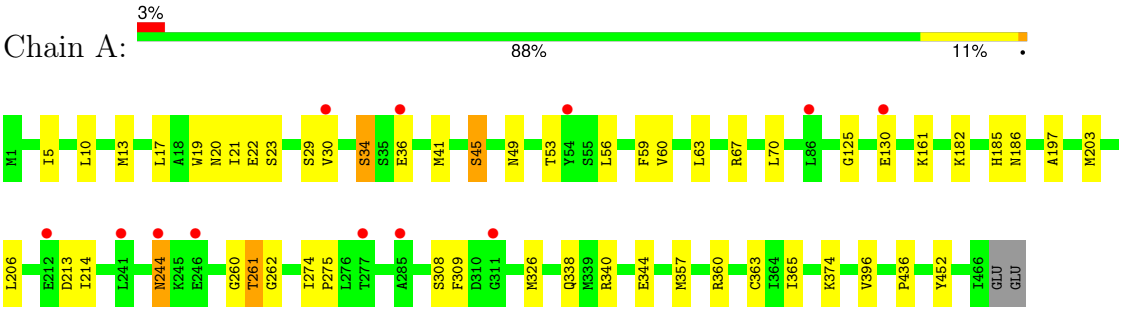
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	34	Total	O	0	0
			34	34		
2	B	28	Total	O	0	0
			28	28		
2	C	16	Total	O	0	0
			16	16		
2	D	9	Total	O	0	0
			9	9		

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.

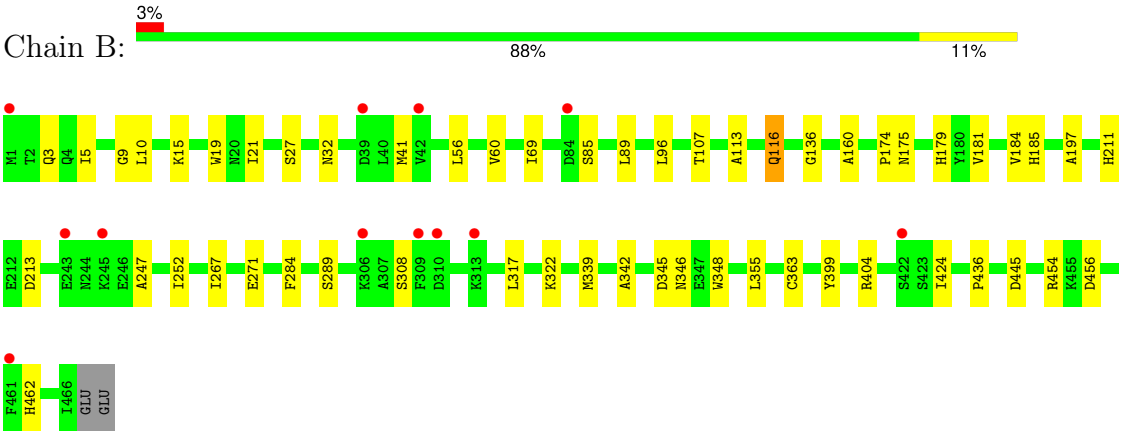
• Molecule 1: 6-phosphogluconate dehydrogenase, decarboxylating

Chain A:



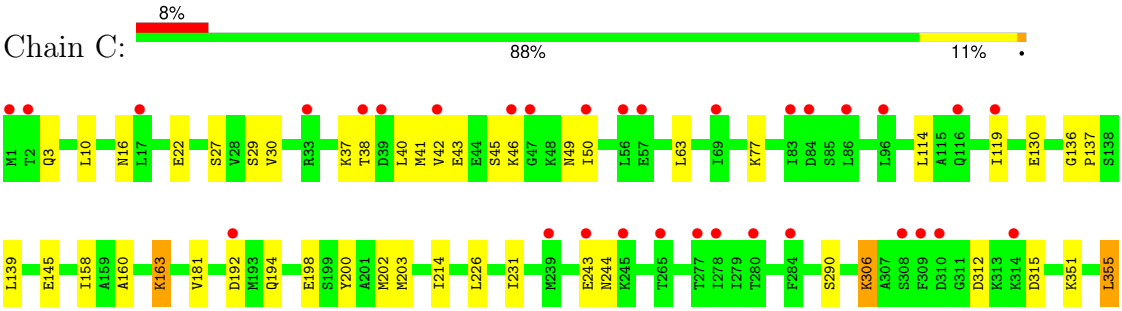
• Molecule 1: 6-phosphogluconate dehydrogenase, decarboxylating

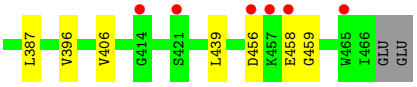
Chain B:



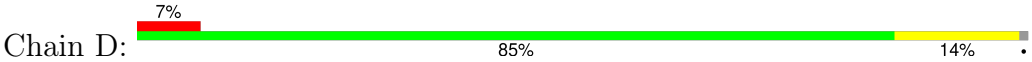
• Molecule 1: 6-phosphogluconate dehydrogenase, decarboxylating

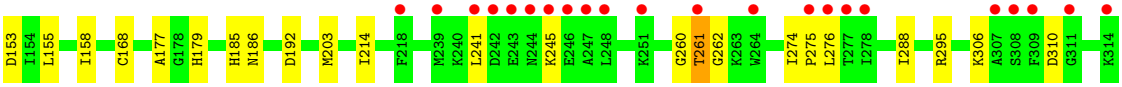
Chain C:





• Molecule 1: 6-phosphogluconate dehydrogenase, decarboxylating





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	89.83Å 133.05Å 165.53Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	44.91 – 2.52 44.92 – 2.52	Depositor EDS
% Data completeness (in resolution range)	99.9 (44.91-2.52) 100.0 (44.92-2.52)	Depositor EDS
R_{merge}	0.26	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.38 (at 2.51Å)	Xtriage
Refinement program	PHENIX 1.18.1	Depositor
R, R_{free}	0.202 , 0.250 0.202 , 0.248	Depositor DCC
R_{free} test set	3507 reflections (5.18%)	wwPDB-VP
Wilson B-factor (Å^2)	51.4	Xtriage
Anisotropy	0.192	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 38.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	14481	wwPDB-VP
Average B, all atoms (Å^2)	59.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.15% of the height of the origin peak. No significant pseudotranslation is detected.*

[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

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	0.27	0/3668	0.42	0/4955
1	B	0.27	0/3676	0.43	0/4964
1	C	0.26	0/3668	0.41	0/4954
1	D	0.27	0/3638	0.43	0/4915
All	All	0.27	0/14650	0.42	0/19788

There are no bond length outliers.

There are no bond angle outliers.

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	3604	0	3550	35	0
1	B	3612	0	3565	33	0
1	C	3604	0	3555	31	0
1	D	3574	0	3507	39	0
2	A	34	0	0	1	0
2	B	28	0	0	0	0
2	C	16	0	0	0	0
2	D	9	0	0	0	0
All	All	14481	0	14177	133	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 5.

All (133) 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:203:MET:HE1	1:A:214:ILE:HG23	1.64	0.79
1:D:186:ASN:HD22	1:D:261:THR:HG21	1.51	0.76
1:C:37:LYS:HD3	1:C:40:LEU:HD23	1.68	0.74
1:A:185:HIS:CE1	1:A:363:CYS:HB2	2.29	0.68
1:C:181:VAL:HG11	1:C:355:LEU:HD21	1.77	0.66
1:A:340:ARG:NH2	2:A:502:HOH:O	2.27	0.66
1:D:107:THR:HG21	1:D:179:HIS:ND1	2.10	0.66
1:A:326:MET:HG3	1:A:396:VAL:HG12	1.80	0.64
1:D:203:MET:HE1	1:D:214:ILE:HG23	1.79	0.64
1:A:260:GLY:O	1:A:262:GLY:N	2.28	0.63
1:A:19:TRP:HE1	1:A:45:SER:HB2	1.65	0.61
1:D:5:ILE:HG21	1:D:21:ILE:HG21	1.84	0.60
1:D:317:LEU:HA	1:D:320:ILE:HD12	1.83	0.59
1:D:39:ASP:HA	1:D:42:VAL:HG12	1.84	0.59
1:D:10:LEU:HD11	1:D:30:VAL:HB	1.85	0.58
1:D:343:SER:HB2	1:D:350:LEU:HD12	1.85	0.58
1:A:45:SER:O	1:A:45:SER:OG	2.20	0.57
1:B:181:VAL:HG11	1:B:355:LEU:HD11	1.86	0.57
1:D:391:TYR:O	1:D:395:ILE:HG12	2.04	0.57
1:D:39:ASP:OD1	1:D:54:TYR:OH	2.20	0.57
1:D:77:LYS:HD3	1:D:80:ASP:HB2	1.87	0.57
1:C:3:GLN:HG3	1:C:27:SER:HB2	1.86	0.57
1:C:243:GLU:HG2	1:C:244:ASN:N	2.22	0.55
1:C:306:LYS:HD3	1:C:306:LYS:H	1.70	0.55
1:D:139:LEU:HD13	1:D:155:LEU:HD22	1.89	0.54
1:B:339:MET:HE1	1:B:355:LEU:HD21	1.89	0.54
1:A:13:MET:HG2	1:A:130:GLU:HG3	1.89	0.53
1:B:3:GLN:HG3	1:B:27:SER:HB2	1.91	0.53
1:C:203:MET:HE3	1:C:214:ILE:HG23	1.90	0.53
1:A:10:LEU:HD21	1:A:30:VAL:HB	1.91	0.53
1:B:15:LYS:HG3	1:B:41:MET:HG3	1.92	0.52
1:D:185:HIS:CD2	1:D:365:ILE:HG12	2.44	0.52
1:B:456:ASP:OD1	1:B:456:ASP:N	2.42	0.52
1:D:10:LEU:HD13	1:D:41:MET:HG2	1.92	0.52
1:D:192:ASP:OD1	1:D:328:LYS:HG3	2.09	0.52
1:C:30:VAL:HG11	1:C:41:MET:HE1	1.92	0.51
1:C:10:LEU:HD11	1:C:30:VAL:HB	1.92	0.51
1:D:5:ILE:HD13	1:D:21:ILE:HD13	1.93	0.51
1:B:113:ALA:O	1:B:116:GLN:HG2	2.11	0.51
1:C:387:LEU:HD22	1:C:396:VAL:HG11	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:312:ASP:HB3	1:C:315:ASP:HB2	1.93	0.50
1:C:38:THR:O	1:C:42:VAL:HG23	2.12	0.50
1:A:244:ASN:ND2	1:A:244:ASN:O	2.45	0.50
1:A:185:HIS:HE1	1:A:363:CYS:HB2	1.75	0.49
1:D:102:THR:HG21	1:D:110:ARG:NH1	2.27	0.49
1:C:226:LEU:HB3	1:C:231:ILE:HD13	1.94	0.49
1:C:439:LEU:O	1:C:439:LEU:HD13	2.12	0.49
1:A:357:MET:HB2	1:A:374:LYS:HD2	1.93	0.49
1:A:274:ILE:HG13	1:A:338:GLN:HA	1.95	0.49
1:C:29:SER:HB2	1:C:63:LEU:HD21	1.95	0.49
1:C:439:LEU:HD13	1:C:439:LEU:C	2.33	0.49
1:D:370:LEU:HD23	1:D:373:ILE:HD12	1.94	0.48
1:B:69:ILE:HB	1:B:96:LEU:HD23	1.95	0.48
1:A:203:MET:HE3	1:A:203:MET:HB2	1.67	0.48
1:A:22:GLU:OE2	1:A:49:ASN:N	2.44	0.48
1:A:41:MET:O	1:A:45:SER:HB3	2.13	0.47
1:D:4:GLN:HA	1:D:64:GLU:HG2	1.96	0.47
1:D:66:PRO:HG3	1:D:150:LYS:HE3	1.98	0.46
1:B:445:ASP:OD2	1:B:462:HIS:ND1	2.41	0.46
1:B:184:VAL:HB	1:B:339:MET:HE3	1.98	0.46
1:B:342:ALA:O	1:B:346:ASN:ND2	2.49	0.46
1:B:5:ILE:HG21	1:B:21:ILE:HG21	1.98	0.45
1:C:136:GLY:HA2	1:C:158:ILE:O	2.16	0.45
1:C:137:PRO:HG2	1:C:139:LEU:HD21	1.98	0.45
1:C:202:MET:HE1	1:C:406:VAL:HG13	1.98	0.45
1:A:5:ILE:HG21	1:A:21:ILE:HG21	1.97	0.45
1:B:15:LYS:HD3	1:B:19:TRP:CH2	2.52	0.45
1:B:136:GLY:O	1:B:160:ALA:HB2	2.16	0.45
1:B:181:VAL:HA	1:B:339:MET:HE2	1.98	0.45
1:D:21:ILE:HG12	1:D:158:ILE:HG21	1.99	0.45
1:D:203:MET:HE3	1:D:203:MET:HB2	1.63	0.45
1:D:288:ILE:HG22	1:D:295:ARG:HD3	1.98	0.45
1:A:185:HIS:CE1	1:A:365:ILE:HG12	2.52	0.45
1:D:77:LYS:HD3	1:D:77:LYS:HA	1.76	0.45
1:A:206:LEU:HG	1:A:309:PHE:HB2	1.99	0.44
1:C:41:MET:HG2	1:C:45:SER:OG	2.18	0.44
1:C:458:GLU:OE2	1:C:459:GLY:N	2.50	0.44
1:D:57:GLU:O	1:D:61:ASN:ND2	2.51	0.44
1:B:9:GLY:HA2	1:B:32:ASN:HD22	1.82	0.44
1:D:260:GLY:O	1:D:262:GLY:N	2.49	0.44
1:A:60:VAL:O	1:A:67:ARG:NE	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:211:HIS:CD2	1:B:247:ALA:HB2	2.53	0.44
1:C:22:GLU:HG3	1:C:50:ILE:HG12	2.00	0.44
1:C:203:MET:HB2	1:C:203:MET:HE2	1.51	0.44
1:A:53:THR:HG21	1:A:59:PHE:HA	1.99	0.44
1:B:185:HIS:NE2	1:B:363:CYS:HB2	2.33	0.44
1:B:174:PRO:HG2	1:B:348:TRP:HD1	1.82	0.43
1:B:404:ARG:CZ	1:B:424:ILE:HD11	2.48	0.43
1:D:241:LEU:HD23	1:D:245:LYS:O	2.18	0.43
1:A:29:SER:HB2	1:A:63:LEU:HD21	1.99	0.43
1:B:355:LEU:HD12	1:B:355:LEU:HA	1.78	0.43
1:A:357:MET:HG3	1:A:360:ARG:NH2	2.33	0.43
1:A:17:LEU:HD13	1:A:70:LEU:HD21	2.01	0.42
1:B:317:LEU:HD23	1:B:317:LEU:HA	1.90	0.42
1:C:306:LYS:H	1:C:306:LYS:CD	2.33	0.42
1:D:28:VAL:HB	1:D:50:ILE:HD13	2.00	0.42
1:D:276:LEU:HD12	1:D:334:GLN:HB3	2.01	0.42
1:C:163:LYS:HD3	1:C:163:LYS:H	1.84	0.42
1:D:68:LYS:HD3	1:D:151:VAL:HG12	2.01	0.42
1:A:344:GLU:HG2	1:C:145:GLU:HB3	2.01	0.42
1:B:267:ILE:O	1:B:271:GLU:HG3	2.20	0.42
1:D:53:THR:HG21	1:D:59:PHE:HA	2.01	0.42
1:B:10:LEU:H	1:B:32:ASN:ND2	2.18	0.42
1:A:20:ASN:O	1:A:23:SER:OG	2.25	0.42
1:A:436:PRO:HB2	1:B:197:ALA:HB1	2.01	0.42
1:A:125:GLY:HA3	1:A:182:LYS:HB2	2.02	0.41
1:C:22:GLU:OE2	1:C:49:ASN:N	2.48	0.41
1:C:136:GLY:O	1:C:160:ALA:HB2	2.20	0.41
1:D:306:LYS:HD2	1:D:306:LYS:HA	1.89	0.41
1:B:56:LEU:HD23	1:B:56:LEU:HA	1.86	0.41
1:B:60:VAL:HG11	1:B:89:LEU:O	2.21	0.41
1:D:177:ALA:HB1	1:D:350:LEU:HD21	2.01	0.41
1:D:274:ILE:HA	1:D:275:PRO:HD3	1.92	0.41
1:D:310:ASP:OD1	1:D:310:ASP:N	2.53	0.41
1:A:186:ASN:HD22	1:A:261:THR:HG21	1.86	0.41
1:B:85:SER:O	1:B:89:LEU:HD13	2.21	0.41
1:C:114:LEU:HB3	1:C:119:ILE:HB	2.03	0.41
1:D:168:CYS:SG	1:D:361:GLU:HB2	2.60	0.41
1:A:34:SER:OG	1:A:36:GLU:OE1	2.27	0.41
1:A:197:ALA:HB1	1:B:436:PRO:HB2	2.03	0.41
1:A:357:MET:HG3	1:A:360:ARG:HH21	1.86	0.41
1:C:16:ASN:HD22	1:C:130:GLU:HB2	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:417:THR:OG1	1:D:417:THR:O	2.36	0.41
1:A:56:LEU:HD23	1:A:56:LEU:HA	1.80	0.40
1:C:40:LEU:O	1:C:43:GLU:HB3	2.21	0.40
1:B:322:LYS:HD3	1:B:399:TYR:CD1	2.56	0.40
1:B:454:ARG:NH2	1:B:456:ASP:OD2	2.55	0.40
1:D:153:ASP:OD1	1:D:153:ASP:N	2.53	0.40
1:D:168:CYS:HB3	1:D:358:ILE:O	2.22	0.40
1:B:107:THR:OG1	1:B:179:HIS:ND1	2.43	0.40
1:A:275:PRO:HA	1:B:284:PHE:CD1	2.56	0.40
1:A:452:TYR:CD1	1:B:252:ILE:HG12	2.56	0.40
1:C:194:GLN:O	1:C:198:GLU: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	464/468 (99%)	449 (97%)	14 (3%)	1 (0%)	47	67
1	B	464/468 (99%)	446 (96%)	17 (4%)	1 (0%)	47	67
1	C	464/468 (99%)	445 (96%)	19 (4%)	0	100	100
1	D	462/468 (99%)	443 (96%)	17 (4%)	2 (0%)	34	53
All	All	1854/1872 (99%)	1783 (96%)	67 (4%)	4 (0%)	47	67

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	261	THR
1	B	175	ASN
1	D	261	THR
1	D	451	THR

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	379/386 (98%)	373 (98%)	6 (2%)	62	82
1	B	381/386 (99%)	376 (99%)	5 (1%)	69	86
1	C	379/386 (98%)	369 (97%)	10 (3%)	46	70
1	D	372/386 (96%)	368 (99%)	4 (1%)	73	88
All	All	1511/1544 (98%)	1486 (98%)	25 (2%)	60	81

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	34	SER
1	A	45	SER
1	A	161	LYS
1	A	213	ASP
1	A	244	ASN
1	A	308	SER
1	B	116	GLN
1	B	213	ASP
1	B	289	SER
1	B	308	SER
1	B	345	ASP
1	C	46	LYS
1	C	77	LYS
1	C	163	LYS
1	C	192	ASP
1	C	200	TYR
1	C	290	SER
1	C	306	LYS
1	C	351	LYS
1	C	355	LEU
1	C	456	ASP
1	D	34	SER
1	D	49	ASN
1	D	77	LYS
1	D	369	PHE

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

Mol	Chain	Res	Type
1	A	185	HIS
1	B	464	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

There are no ligands in this entry.

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, 95^{th} 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	466/468 (99%)	0.25	12 (2%)	56	59	37, 49, 75, 119	0
1	B	466/468 (99%)	0.22	12 (2%)	56	59	38, 49, 73, 109	0
1	C	466/468 (99%)	0.50	38 (8%)	11	12	42, 59, 95, 111	0
1	D	464/468 (99%)	0.57	34 (7%)	15	16	47, 67, 93, 158	0
All	All	1862/1872 (99%)	0.39	96 (5%)	27	29	37, 56, 86, 158	0

All (96) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	245	LYS	6.3
1	D	244	ASN	6.2
1	C	458	GLU	5.5
1	D	241	LEU	5.4
1	B	1	MET	5.0
1	D	248	LEU	4.0
1	B	243	GLU	3.9
1	D	247	ALA	3.8
1	D	242	ASP	3.8
1	D	54	TYR	3.7
1	C	245	LYS	3.6
1	C	47	GLY	3.6
1	C	243	GLU	3.6
1	C	457	LYS	3.5
1	D	114	LEU	3.5
1	D	243	GLU	3.5
1	D	39	ASP	3.4
1	D	86	LEU	3.4
1	A	241	LEU	3.4
1	D	277	THR	3.3
1	A	244	ASN	3.3

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Mol	Chain	Res	Type	RSRZ
1	C	38	THR	3.2
1	D	218	PHE	3.1
1	C	56	LEU	3.1
1	C	50	ILE	3.1
1	D	85	SER	3.1
1	D	278	ILE	3.1
1	C	1	MET	3.0
1	C	83	ILE	3.0
1	D	50	ILE	3.0
1	C	465	TRP	3.0
1	D	264	TRP	3.0
1	C	96	LEU	2.9
1	D	311	GLY	2.9
1	C	69	ILE	2.9
1	C	86	LEU	2.9
1	B	309	PHE	2.8
1	C	119	ILE	2.8
1	C	33	ARG	2.8
1	D	239	MET	2.8
1	C	277	THR	2.8
1	A	36	GLU	2.8
1	D	275	PRO	2.8
1	B	310	ASP	2.7
1	D	57	GLU	2.7
1	D	308	SER	2.7
1	C	57	GLU	2.7
1	D	40	LEU	2.6
1	C	280	THR	2.6
1	C	239	MET	2.6
1	D	307	ALA	2.5
1	B	84	ASP	2.5
1	C	310	ASP	2.5
1	C	265	THR	2.5
1	B	461	PHE	2.5
1	D	10	LEU	2.5
1	B	313	LYS	2.4
1	C	456	ASP	2.4
1	C	46	LYS	2.4
1	C	17	LEU	2.4
1	B	42	VAL	2.4
1	C	42	VAL	2.3
1	C	284	PHE	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	315	ASP	2.3
1	D	55	SER	2.3
1	D	276	LEU	2.3
1	C	278	ILE	2.3
1	C	309	PHE	2.3
1	B	306	LYS	2.3
1	D	314	LYS	2.3
1	C	2	THR	2.2
1	C	116	GLN	2.2
1	D	246	GLU	2.2
1	A	130	GLU	2.2
1	D	251	LYS	2.2
1	D	261	THR	2.2
1	A	311	GLY	2.2
1	C	421	SER	2.2
1	C	314	LYS	2.1
1	D	309	PHE	2.1
1	B	422	SER	2.1
1	C	39	ASP	2.1
1	C	414	GLY	2.1
1	A	277	THR	2.1
1	C	308	SER	2.1
1	A	30	VAL	2.1
1	D	30	VAL	2.1
1	A	54	TYR	2.1
1	B	39	ASP	2.1
1	C	192	ASP	2.1
1	A	86	LEU	2.0
1	A	212	GLU	2.0
1	A	285	ALA	2.0
1	B	245	LYS	2.0
1	A	246	GLU	2.0
1	C	84	ASP	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

There are no ligands in this entry.

6.5 Other polymers

There are no such residues in this entry.