Full wwPDB X-ray Structure Validation Report ⓘ

Feb 19, 2024 – 11:05 AM EST

PDB ID	:	4K8V
Title	:	Structure of cyclic GMP-AMP Synthase (cGAS)
Authors	:	Gao, P.; Wu, Y.; Patel, D.J.
Deposited on	:	2013-04-18
Resolution	:	2.00 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:

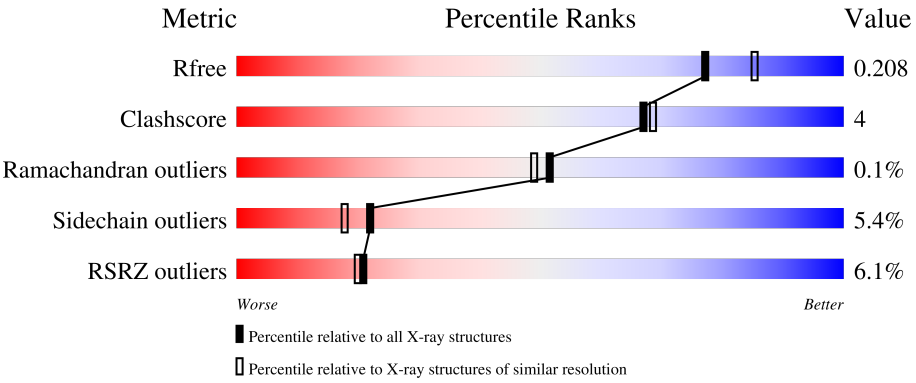
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.00 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	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	362	91% 9%
1	B	362	4% 85% 14%
1	C	362	91% 8%
1	D	362	19% 80% 19%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 13318 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 Cyclic GMP-AMP synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	C	362	Total	C	N	O	S	0	0	0
			2989	1922	509	545	13			
1	A	362	Total	C	N	O	S	0	0	0
			2990	1922	509	546	13			
1	B	362	Total	C	N	O	S	0	0	0
			2989	1922	509	545	13			
1	D	362	Total	C	N	O	S	0	0	0
			2989	1922	509	545	13			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	146	SER	-	expression tag	UNP Q8C6L5
A	146	SER	-	expression tag	UNP Q8C6L5
B	146	SER	-	expression tag	UNP Q8C6L5
D	146	SER	-	expression tag	UNP Q8C6L5

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	C	1	Total	Zn	0	0
			1	1		
2	A	1	Total	Zn	0	0
			1	1		
2	B	1	Total	Zn	0	0
			1	1		
2	D	1	Total	Zn	0	0
			1	1		

- Molecule 3 is water.

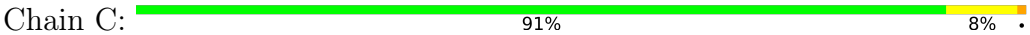
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	C	481	Total O 481 481	0	0
3	A	406	Total O 406 406	0	0
3	B	275	Total O 275 275	0	0
3	D	195	Total O 195 195	0	0

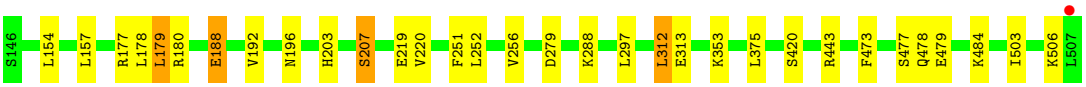
3 Residue-property plots (i)

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: Cyclic GMP-AMP synthase

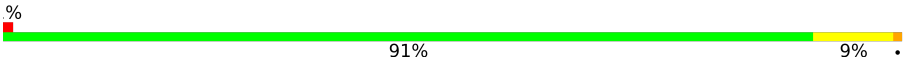
Chain C:

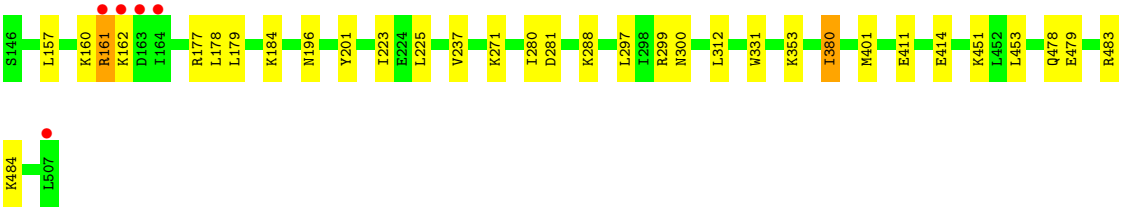




• Molecule 1: Cyclic GMP-AMP synthase

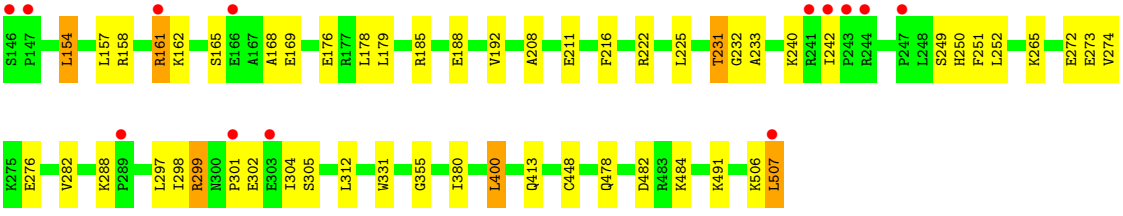
Chain A:





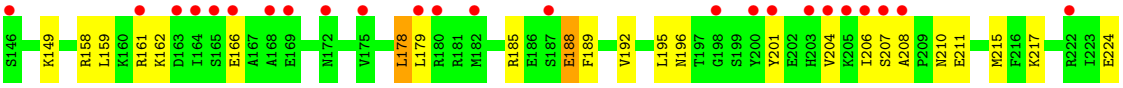
• Molecule 1: Cyclic GMP-AMP synthase

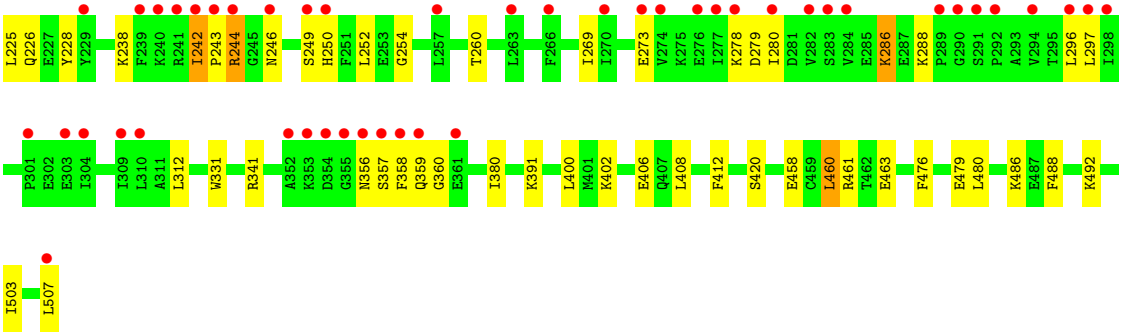
Chain B:



• Molecule 1: Cyclic GMP-AMP synthase

Chain D:




L225
Q226
E227
Y228
V229
K238
F239
K240
R241
I242
P243
R244
G245
N246
S249
H250
F251
L252
E253
G254
L257
T260
L263
F266
I269
I270
E273
V274
K275
E276
I277
K278
D279
I280
D281
V282
S283
V284
E285
K286
E287
K288
P289
G290
S291
P292
A293
V294
T295
L296
L297
I298
P301
E302
E303
I304
I309
L310
A311
L312
W331
R341
A352
K353
D354
G355
N356
S357
F358
Q359
G360
E361
I380
K391
L400
M401
K402
E406
Q407
L408
F412
S420
E458
C459
L460
R461
T462
E463
F476
E479
L480
K486
E487
F488
K492
I503
L507

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	86.56Å 84.15Å 124.72Å 90.00° 92.74° 90.00°	Depositor
Resolution (Å)	44.07 – 2.00 44.07 – 2.00	Depositor EDS
% Data completeness (in resolution range)	98.1 (44.07-2.00) 98.1 (44.07-2.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.69 (at 2.00Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.2_1309)	Depositor
R, R_{free}	0.175 , 0.208 0.176 , 0.208	Depositor DCC
R_{free} test set	5939 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å^2)	24.5	Xtriage
Anisotropy	0.070	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 50.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.008 for k,h,-l 0.007 for -k,-h,-l 0.018 for h,-k,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	13318	wwPDB-VP
Average B, all atoms (Å^2)	34.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.18% 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

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

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	0.48	0/3055	0.60	0/4102
1	B	0.45	0/3054	0.57	0/4100
1	C	0.54	0/3054	0.62	0/4100
1	D	0.41	0/3054	0.55	0/4100
All	All	0.47	0/12217	0.59	0/16402

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	2990	0	3038	16	0
1	B	2989	0	3038	28	0
1	C	2989	0	3038	15	0
1	D	2989	0	3038	37	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	406	0	0	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	275	0	0	4	0
3	C	481	0	0	4	0
3	D	195	0	0	0	0
All	All	13318	0	12152	94	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 4.

All (94) 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:B:448:CYS:SG	3:B:865:HOH:O	2.34	0.85
1:B:231:THR:HG23	3:B:721:HOH:O	1.85	0.75
1:D:185:ARG:NH1	1:D:273:GLU:OE2	2.22	0.72
1:D:201:TYR:O	1:D:402:LYS:NZ	2.26	0.67
1:D:206:ILE:HG23	1:D:406:GLU:HG3	1.79	0.65
1:A:331:TRP:O	1:A:380:ILE:HD13	2.02	0.59
1:B:231:THR:OG1	1:B:233:ALA:N	2.35	0.58
1:A:479:GLU:HG3	3:A:886:HOH:O	2.03	0.57
1:D:463:GLU:HG2	1:D:486:LYS:HE3	1.84	0.57
1:D:458:GLU:OE2	1:D:461:ARG:NH2	2.35	0.57
1:D:158:ARG:O	1:D:161:ARG:HG2	2.04	0.57
1:B:506:LYS:HG2	1:B:507:LEU:N	2.20	0.57
1:D:488:PHE:CZ	1:D:492:LYS:HE2	2.40	0.56
1:D:188:GLU:H	1:D:188:GLU:CD	2.09	0.56
1:A:161:ARG:HG3	1:A:162:LYS:N	2.20	0.56
1:A:281:ASP:HB3	1:A:299:ARG:HB2	1.87	0.55
1:D:356:ASN:C	1:D:359:GLN:HG2	2.26	0.55
1:D:208:ALA:HB3	1:D:211:GLU:HG3	1.88	0.55
1:C:279:ASP:OD1	1:C:279:ASP:N	2.32	0.54
1:B:165:SER:HA	1:B:168:ALA:HB3	1.91	0.53
1:C:203:HIS:ND1	1:C:375:LEU:HD12	2.23	0.52
1:B:185:ARG:NH1	1:B:272:GLU:OE1	2.41	0.52
1:D:260:THR:OG1	1:D:360:GLY:HA3	2.09	0.52
1:D:207:SER:HB3	1:D:211:GLU:HB2	1.91	0.52
1:C:188:GLU:H	1:C:188:GLU:CD	2.13	0.52
1:D:178:LEU:HD12	1:D:296:LEU:HD11	1.91	0.52
1:D:412:PHE:CZ	1:D:492:LYS:HE3	2.45	0.52
1:D:286:LYS:HE3	1:D:288:LYS:HG2	1.93	0.51
1:C:188:GLU:HG3	1:C:251:PHE:CE2	2.46	0.50
1:C:196:ASN:HB3	3:C:1101:HOH:O	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:503:ILE:HG13	1:C:506:LYS:HZ1	1.76	0.50
1:D:250:HIS:HD1	1:D:250:HIS:H	1.60	0.50
1:B:154:LEU:HD13	1:B:400:LEU:HD13	1.93	0.50
1:C:220:VAL:HG21	1:C:312:LEU:HG	1.93	0.49
1:B:222:ARG:HE	1:B:242:ILE:HG12	1.78	0.49
1:A:196:ASN:HB3	3:A:1002:HOH:O	2.11	0.48
1:C:256:VAL:HG13	3:C:701:HOH:O	2.13	0.48
1:B:273:GLU:OE1	3:B:943:HOH:O	2.20	0.48
1:D:246:ASN:O	1:D:249:SER:OG	2.20	0.48
1:B:188:GLU:H	1:B:188:GLU:CD	2.16	0.48
1:D:228:TYR:HE1	1:D:358:PHE:CD2	2.32	0.48
1:C:420:SER:HB2	3:C:1031:HOH:O	2.13	0.48
1:B:222:ARG:HH21	1:B:242:ILE:HD13	1.79	0.48
1:D:278:LYS:O	1:D:280:ILE:N	2.47	0.48
1:D:195:LEU:HD23	1:D:215:MET:HE2	1.96	0.47
1:C:207:SER:HB2	3:C:1142:HOH:O	2.13	0.47
1:A:271:LYS:NZ	3:A:950:HOH:O	2.46	0.47
1:B:231:THR:OG1	1:B:232:GLY:N	2.47	0.47
1:A:411:GLU:O	1:B:355:GLY:HA2	2.15	0.47
1:B:273:GLU:CD	3:B:943:HOH:O	2.54	0.46
1:B:491:LYS:HB3	1:B:491:LYS:HE2	1.71	0.46
1:D:460:LEU:HD13	1:D:476:PHE:CE2	2.50	0.46
1:D:341:ARG:HH11	1:D:341:ARG:HB3	1.80	0.46
1:D:206:ILE:HG13	1:D:420:SER:HB3	1.97	0.46
1:A:414:GLU:OE1	3:A:938:HOH:O	2.21	0.46
1:B:299:ARG:HA	1:B:302:GLU:O	2.15	0.46
1:D:408:LEU:HD23	1:D:503:ILE:HD12	1.97	0.46
1:C:177:ARG:HD2	1:C:180:ARG:HH21	1.81	0.45
1:A:483:ARG:NE	3:A:1011:HOH:O	2.49	0.45
1:D:149:LYS:HE3	1:D:149:LYS:HB2	1.75	0.45
1:D:244:ARG:H	1:D:244:ARG:HG2	1.43	0.45
1:B:192:VAL:CG2	1:B:216:PHE:HB3	2.46	0.45
1:D:331:TRP:O	1:D:380:ILE:HD13	2.17	0.45
1:B:299:ARG:HB2	1:B:301:PRO:O	2.17	0.45
1:A:380:ILE:HD12	1:A:380:ILE:O	2.17	0.45
1:D:242:ILE:O	1:D:242:ILE:HG13	2.18	0.44
1:C:443:ARG:HG3	1:A:451:LYS:HE2	1.99	0.44
1:A:157:LEU:HD12	1:A:160:LYS:HD3	2.00	0.44
1:B:158:ARG:O	1:B:161:ARG:HG2	2.17	0.44
1:D:226:GLN:OE1	1:D:238:LYS:NZ	2.41	0.44
1:D:252:LEU:C	1:D:254:GLY:H	2.22	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:477:SER:OG	1:C:479:GLU:HG2	2.17	0.44
1:A:401:MET:SD	1:A:453:LEU:HD23	2.58	0.44
1:B:507:LEU:H	1:B:507:LEU:HD22	1.82	0.44
1:B:298:ILE:O	1:B:304:ILE:N	2.51	0.43
1:D:189:PHE:HD2	1:D:269:ILE:HD12	1.83	0.43
1:B:331:TRP:O	1:B:380:ILE:HD13	2.18	0.43
1:D:279:ASP:N	1:D:279:ASP:OD1	2.51	0.43
1:D:286:LYS:O	1:D:286:LYS:HG2	2.16	0.42
1:B:222:ARG:HB3	1:B:240:LYS:HB2	2.02	0.42
1:D:162:LYS:O	1:D:166:GLU:HG3	2.19	0.42
1:C:179:LEU:HD12	1:C:192:VAL:HG13	2.01	0.42
1:B:274:VAL:HG13	1:B:282:VAL:HB	2.00	0.42
1:B:188:GLU:OE1	1:B:265:LYS:NZ	2.53	0.42
1:C:219:GLU:HA	1:C:313:GLU:HB3	2.01	0.42
1:B:188:GLU:HG3	1:B:251:PHE:CE2	2.55	0.41
1:B:188:GLU:CD	1:B:250:HIS:HE2	2.24	0.41
1:D:204:VAL:O	1:D:402:LYS:NZ	2.38	0.41
1:A:483:ARG:CD	3:A:1011:HOH:O	2.69	0.40
1:A:157:LEU:HD21	1:A:201:TYR:CE2	2.56	0.40
1:D:480:LEU:HA	1:D:480:LEU:HD23	1.79	0.40
1:A:223:ILE:HG23	1:A:237:VAL:HG13	2.04	0.40
1:B:208:ALA:HB3	1:B:211:GLU:HG3	2.02	0.40
1:D:242:ILE:HA	1:D:243:PRO:HD3	1.89	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	360/362 (99%)	352 (98%)	6 (2%)	2 (1%)	25 19
1	B	360/362 (99%)	347 (96%)	13 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	C	360/362 (99%)	354 (98%)	6 (2%)	0	100 100
1	D	360/362 (99%)	338 (94%)	22 (6%)	0	100 100
All	All	1440/1448 (99%)	1391 (97%)	47 (3%)	2 (0%)	51 49

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	161	ARG
1	A	300	ASN

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	335/335 (100%)	322 (96%)	13 (4%)	32 30
1	B	335/335 (100%)	311 (93%)	24 (7%)	14 9
1	C	335/335 (100%)	321 (96%)	14 (4%)	30 27
1	D	335/335 (100%)	314 (94%)	21 (6%)	18 13
All	All	1340/1340 (100%)	1268 (95%)	72 (5%)	22 18

All (72) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	154	LEU
1	C	157	LEU
1	C	178	LEU
1	C	179	LEU
1	C	188	GLU
1	C	207	SER
1	C	252	LEU
1	C	288	LYS
1	C	297	LEU
1	C	312	LEU

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Mol	Chain	Res	Type
1	C	353	LYS
1	C	473	PHE
1	C	478	GLN
1	C	484	LYS
1	A	177	ARG
1	A	178	LEU
1	A	179	LEU
1	A	184	LYS
1	A	225	LEU
1	A	280	ILE
1	A	288	LYS
1	A	297	LEU
1	A	312	LEU
1	A	353	LYS
1	A	380	ILE
1	A	478	GLN
1	A	484	LYS
1	B	154	LEU
1	B	157	LEU
1	B	161	ARG
1	B	162	LYS
1	B	169	GLU
1	B	176	GLU
1	B	178	LEU
1	B	179	LEU
1	B	225	LEU
1	B	231	THR
1	B	249	SER
1	B	252	LEU
1	B	276	GLU
1	B	288	LYS
1	B	297	LEU
1	B	299	ARG
1	B	305	SER
1	B	312	LEU
1	B	400	LEU
1	B	413	GLN
1	B	478	GLN
1	B	482	ASP
1	B	484	LYS
1	B	507	LEU
1	D	159	LEU

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Mol	Chain	Res	Type
1	D	178	LEU
1	D	179	LEU
1	D	188	GLU
1	D	192	VAL
1	D	196	ASN
1	D	210	ASN
1	D	217	LYS
1	D	224	GLU
1	D	225	LEU
1	D	242	ILE
1	D	244	ARG
1	D	286	LYS
1	D	297	LEU
1	D	312	LEU
1	D	357	SER
1	D	391	LYS
1	D	400	LEU
1	D	460	LEU
1	D	479	GLU
1	D	507	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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	362/362 (100%)	-0.45	5 (1%) 75 74	8, 21, 46, 83	0
1	B	362/362 (100%)	-0.20	13 (3%) 42 42	12, 28, 73, 106	0
1	C	362/362 (100%)	-0.52	1 (0%) 94 93	10, 20, 42, 70	0
1	D	362/362 (100%)	0.66	70 (19%) 1 0	13, 45, 115, 159	0
All	All	1448/1448 (100%)	-0.13	89 (6%) 21 20	8, 24, 92, 159	0

All (89) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	280	ILE	11.7
1	A	507	LEU	8.7
1	D	242	ILE	7.9
1	D	207	SER	7.7
1	D	206	ILE	7.4
1	D	282	VAL	6.9
1	D	241	ARG	6.6
1	D	240	LYS	6.2
1	B	243	PRO	6.1
1	D	358	PHE	5.9
1	D	243	PRO	5.8
1	D	244	ARG	5.5
1	D	200	TYR	5.2
1	D	278	LYS	5.2
1	D	284	VAL	4.8
1	D	277	ILE	4.8
1	C	507	LEU	4.8
1	B	507	LEU	4.7
1	B	244	ARG	4.7
1	D	289	PRO	4.7
1	B	289	PRO	4.6

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Mol	Chain	Res	Type	RSRZ
1	D	164	ILE	4.1
1	D	198	GLY	4.0
1	D	357	SER	3.8
1	D	182	MET	3.8
1	B	242	ILE	3.8
1	D	354	ASP	3.8
1	B	241	ARG	3.8
1	D	296	LEU	3.6
1	D	274	VAL	3.6
1	D	208	ALA	3.6
1	D	146	SER	3.6
1	A	163	ASP	3.5
1	D	175	VAL	3.4
1	D	298	ILE	3.4
1	D	249	SER	3.4
1	D	301	PRO	3.4
1	D	229	TYR	3.3
1	D	309	ILE	3.3
1	D	507	LEU	3.3
1	D	292	PRO	3.1
1	D	361	GLU	3.0
1	D	290	GLY	3.0
1	D	352	ALA	3.0
1	D	246	ASN	3.0
1	D	205	LYS	3.0
1	D	356	ASN	3.0
1	A	164	ILE	2.9
1	D	239	PHE	2.9
1	D	359	GLN	2.9
1	D	165	SER	2.9
1	B	166	GLU	2.9
1	D	297	LEU	2.9
1	D	266	PHE	2.8
1	D	180	ARG	2.8
1	D	222	ARG	2.8
1	D	179	LEU	2.8
1	D	250	HIS	2.8
1	D	172	ASN	2.7
1	B	161	ARG	2.7
1	D	203	HIS	2.6
1	D	355	GLY	2.6
1	D	303	GLU	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	146	SER	2.6
1	D	168	ALA	2.5
1	D	270	ILE	2.5
1	D	163	ASP	2.5
1	B	303	GLU	2.4
1	D	353	LYS	2.4
1	D	161	ARG	2.3
1	B	247	PRO	2.3
1	D	276	GLU	2.3
1	D	304	ILE	2.3
1	D	166	GLU	2.2
1	D	169	GLU	2.2
1	D	187	SER	2.2
1	D	310	LEU	2.2
1	D	283	SER	2.1
1	D	257	LEU	2.1
1	A	162	LYS	2.1
1	B	301	PRO	2.1
1	D	294	VAL	2.1
1	A	161	ARG	2.1
1	D	273	GLU	2.1
1	D	201	TYR	2.1
1	B	147	PRO	2.0
1	D	204	VAL	2.0
1	D	291	SER	2.0
1	D	263	LEU	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} 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
2	ZN	C	601	1/1	1.00	0.09	13,13,13,13	0
2	ZN	A	601	1/1	1.00	0.08	11,11,11,11	0
2	ZN	B	601	1/1	1.00	0.07	15,15,15,15	0
2	ZN	D	601	1/1	1.00	0.07	14,14,14,14	0

6.5 Other polymers (i)

There are no such residues in this entry.