Full wwPDB X-ray Structure Validation Report (i)

Jun 17, 2024 – 12:00 AM EDT

PDB ID	:	5JER
Title	:	Structure of Rotavirus NSP1 bound to IRF-3
Authors	:	Zhao, B.; Li, P.
Deposited on	:	2016-04-18
Resolution	:	2.91 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

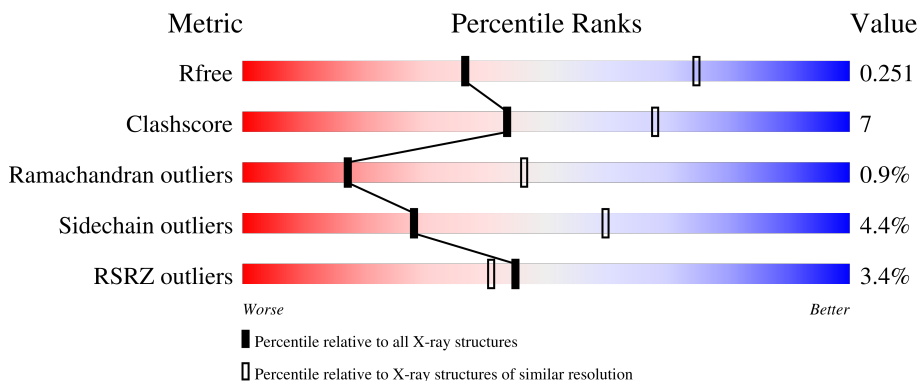|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1   Overall quality at a glance   ⓘ

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

The reported resolution of this entry is 2.91 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.
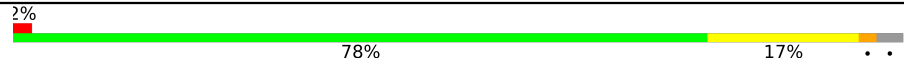
Metric	Percentile Ranks	Value
Rfree		0.251
Clashscore		7
Ramachandran outliers		0.9%
Sidechain outliers		4.4%
RSRZ outliers		3.4%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	2307 (2.94-2.90)
Clashscore	141614	2531 (2.94-2.90)
Ramachandran outliers	138981	2462 (2.94-2.90)
Sidechain outliers	138945	2464 (2.94-2.90)
RSRZ outliers	127900	2248 (2.94-2.90)

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	B	19	5% — 32% / 16% / 5% / 47%
1	D	19	11% — 42% / 11% / 47%
1	F	19	11% — 47% / 5% / 47%
1	H	19	11% — 32% / 21% / 47%
2	A	242	3% — 79% / 15% / · ·

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Mol	Chain	Length	Quality of chain
2	C	242	2% ■ 78% 17% • •
2	E	242	3% ■ 76% 19% • •
2	G	242	2% ■ 80% 15% • •

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 7710 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 Rotavirus NSP1 peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
1	B	10	Total 82	C 52	N 11	O 19	0	0	0
1	D	10	Total 82	C 52	N 11	O 19	0	0	0
1	F	10	Total 82	C 52	N 11	O 19	0	0	0
1	H	10	Total 82	C 52	N 11	O 19	0	0	0

- Molecule 2 is a protein called Interferon regulatory factor 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	A	234	Total 1850	C 1179	N 319	O 342	S 10	6	2	0
2	C	234	Total 1844	C 1176	N 318	O 340	S 10	0	1	0
2	E	234	Total 1844	C 1176	N 318	O 340	S 10	0	1	0
2	G	234	Total 1844	C 1176	N 318	O 340	S 10	0	1	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	186	SER	-	expression tag	UNP Q14653
A	187	GLU	-	expression tag	UNP Q14653
A	188	PHE	-	expression tag	UNP Q14653
C	186	SER	-	expression tag	UNP Q14653
C	187	GLU	-	expression tag	UNP Q14653
C	188	PHE	-	expression tag	UNP Q14653
E	186	SER	-	expression tag	UNP Q14653
E	187	GLU	-	expression tag	UNP Q14653

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Chain	Residue	Modelled	Actual	Comment	Reference
E	188	PHE	-	expression tag	UNP Q14653
G	186	SER	-	expression tag	UNP Q14653
G	187	GLU	-	expression tag	UNP Q14653
G	188	PHE	-	expression tag	UNP Q14653

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: Rotavirus NSP1 peptide

Chain B:

- Molecule 1: Rotavirus NSP1 peptide

Chain D:

- Molecule 1: Rotavirus NSP1 peptide

Chain F:

- Molecule 1: Rotavirus NSP1 peptide

Chain H:

- Molecule 2: Interferon regulatory factor 3

Chain A:

P357 K360 K366 E377 R380 V381 G382 G383 A384 S385 S386 L387 I395 S396 N397 T404 S405 Q422 GLY PRO GLU SER

• Molecule 2: Interferon regulatory factor 3

Chain C:

2%
78%
17%

SER GLU PHE E189 R194 L195 L196 E200 E201 W202 I220 L228 E232 V233 G234 V243 T253 D254 R255 G256 S259 R262 L265 S266 C267 L268 L272 R276 A277 W282 T291 L300 P301 K313 D314 K315 L322 I326 L329 S336

G337 R338 W345 W352 P353 R361 K366 S385 S386 L387 I395 H399 L403 T404 S405 L412 D420 F421 Q422 GLY PRO GLU SER

• Molecule 2: Interferon regulatory factor 3

Chain E:

3%
76%
19%

SER GLU PHE E189 N190 P191 R194 V197 E200 A208 F216 R227 S231 E232 V233 G234 D235 R236 T237 L238 L252 R255 G270 G271 L272 R276 A277 G278 R285 L286 G287 S296 E297 E298 P301 V311 P312 K313 D314 K315 I326 I330

R338 S339 P340 R341 Y342 W345 P353 R361 K366 E377 R380 G383 A384 S385 S386 L387 T390 P400 L401 D406 Q413 V416 D420 F421 Q422 GLY PRO GLU SER

• Molecule 2: Interferon regulatory factor 3

Chain G:

2%
80%
15%

SER GLU PHE E189 V197 E200 E201 A208 F216 P223 E224 R227 G230 S231 E232 V233 G234 L252 T253 D254 R255 M258 H263 G270 R285 L286 G287 H288 C289 H290 V295 S296 E297 L300 P301 N302 V311 P312 G317 T333 S336

R341 W345 P353 K366 E377 R380 S385 S386 L387 D406 K409 Q422 GLY PRO GLU SER

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	67.77Å 107.92Å 135.65Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.94 – 2.91 47.94 – 2.91	Depositor EDS
% Data completeness (in resolution range)	99.6 (47.94-2.91) 94.8 (47.94-2.91)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.15 (at 2.91Å)	Xtriage
Refinement program	PHENIX 1.9_1692	Depositor
R, R_{free}	0.210 , 0.250 0.212 , 0.251	Depositor DCC
R_{free} test set	2000 reflections (8.94%)	wwPDB-VP
Wilson B-factor (Å^2)	48.4	Xtriage
Anisotropy	0.164	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 24.5	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	7710	wwPDB-VP
Average B, all atoms (Å^2)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 17.49% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 (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	B	0.32	0/82	0.51	0/109
1	D	0.31	0/82	0.43	0/109
1	F	0.29	0/82	0.43	0/109
1	H	0.37	0/82	0.53	0/109
2	A	0.21	0/1903	0.38	0/2593
2	C	0.21	0/1897	0.37	0/2585
2	E	0.21	0/1897	0.37	0/2585
2	G	0.21	0/1897	0.38	0/2585
All	All	0.21	0/7922	0.38	0/10784

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 (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	B	82	0	75	1	0
1	D	82	0	75	1	0
1	F	82	0	75	0	0
1	H	82	0	75	3	0
2	A	1850	0	1794	22	0
2	C	1844	0	1790	27	0
2	E	1844	0	1790	26	0
2	G	1844	0	1790	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	7710	0	7464	101	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 7.

All (101) 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:482:GLU:OE2	2:A:360:LYS:NZ	1.95	1.00
2:C:194:ARG:NH1	2:C:200:GLU:OE2	1.94	1.00
2:A:194:ARG:NH1	2:A:397:ASN:O	2.02	0.92
2:A:377:GLU:OE1	2:A:380:ARG:NH1	2.08	0.87
2:G:377:GLU:OE1	2:G:380:ARG:NH1	2.08	0.85
1:H:482:GLU:OE2	2:C:338:ARG:NH2	2.10	0.84
2:C:200:GLU:O	2:C:276:ARG:NH1	2.20	0.73
2:C:385:SER:HB3	2:C:387:LEU:HD22	1.70	0.72
2:G:254:ASP:HB3	2:G:258:MET:HG2	1.72	0.71
2:E:285:ARG:NH1	2:E:287:GLY:O	2.27	0.68
2:G:285:ARG:NH1	2:G:287:GLY:O	2.27	0.67
2:A:384:ALA:HB3	2:A:387:LEU:HD21	1.77	0.66
2:A:262:ARG:O	2:A:266:SER:OG	2.18	0.62
2:A:227:ARG:NH2	2:A:270:GLY:O	2.32	0.62
2:E:377:GLU:OE1	2:E:380:ARG:NH1	2.32	0.61
2:A:383:GLY:O	2:E:252:LEU:N	2.24	0.60
2:C:228:LEU:HD12	2:C:272:LEU:HD23	1.84	0.59
2:A:195:LEU:HD23	2:A:395:ILE:HD13	1.85	0.59
2:E:227:ARG:NH2	2:E:270:GLY:O	2.36	0.58
2:G:301:PRO:HB3	2:G:345:TRP:CD2	2.40	0.57
2:E:252:LEU:HA	2:E:255:ARG:HE	1.69	0.57
2:G:300:LEU:HD12	2:G:301:PRO:HD2	1.87	0.56
2:E:276:ARG:NH2	2:E:278:GLY:O	2.39	0.55
2:E:313:LYS:HG2	2:E:314:ASP:H	1.72	0.54
2:E:191:PRO:HB2	2:E:401:LEU:HD21	1.89	0.54
2:E:301:PRO:HB3	2:E:345:TRP:CD2	2.42	0.54
2:C:353:PRO:HG3	2:C:361:ARG:HG3	1.89	0.54
2:E:338:ARG:NH1	2:E:341:ARG:NH1	2.54	0.54
2:A:226:LEU:HD21	2:A:274:LEU:HD23	1.90	0.54
2:E:313:LYS:O	2:E:315:LYS:N	2.38	0.54
2:E:353:PRO:HG3	2:E:361:ARG:HG3	1.91	0.53
2:C:301:PRO:HB3	2:C:345:TRP:CD2	2.43	0.53
2:A:301:PRO:HB3	2:A:345:TRP:CD2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:387:LEU:H	2:A:387:LEU:HD23	1.75	0.52
2:C:202:TRP:HA	2:C:395:ILE:HG22	1.91	0.52
2:A:251:SER:O	2:A:255:ARG:HB3	2.10	0.51
2:C:262:ARG:O	2:C:266:SER:OG	2.30	0.51
2:E:298:GLU:OE2	2:E:342:TYR:OH	2.18	0.50
2:E:208:ALA:HB3	2:E:216:PHE:HB3	1.93	0.50
2:G:201:GLU:OE2	2:G:223:PRO:HD3	2.11	0.50
2:E:197:VAL:HG23	2:E:200:GLU:HB2	1.92	0.50
2:E:345:TRP:CZ2	2:E:366:LYS:HD3	2.47	0.50
2:C:265:LEU:HA	2:C:268:LEU:HD12	1.93	0.49
1:H:486:LEU:HB3	1:H:488:ILE:HD12	1.95	0.49
2:E:194:ARG:NH2	2:E:200:GLU:OE2	2.45	0.49
2:G:253:THR:O	2:G:253:THR:OG1	2.30	0.49
2:G:252:LEU:HA	2:G:255:ARG:HB2	1.94	0.49
2:C:313:LYS:O	2:C:315:LYS:N	2.46	0.48
2:C:385:SER:OG	2:C:386:SER:N	2.46	0.48
2:C:220:ILE:HG13	2:C:243:VAL:HG22	1.96	0.48
2:C:329:LEU:HD23	2:C:412:LEU:HD11	1.97	0.47
2:C:420:ASP:OD1	2:C:420:ASP:N	2.45	0.47
2:G:312:PRO:HG2	2:G:317:GLY:HA3	1.97	0.47
2:E:406:ASP:OD2	2:E:406:ASP:N	2.48	0.47
2:E:296[B]:SER:OG	2:E:297:GLU:N	2.47	0.46
2:C:196:LEU:HD21	2:C:322:LEU:HD23	1.98	0.46
2:G:296[B]:SER:OG	2:G:297:GLU:N	2.45	0.46
2:C:195:LEU:HD23	2:C:395:ILE:HD13	1.97	0.46
2:A:277:ALA:HB3	2:A:282:TRP:HE1	1.80	0.45
2:A:345:TRP:CZ2	2:A:366:LYS:HD3	2.51	0.45
2:C:254:ASP:OD2	2:C:254:ASP:N	2.49	0.45
2:C:300:LEU:HD12	2:C:301:PRO:HD2	1.99	0.45
2:G:295:VAL:HG12	2:G:341:ARG:HB2	1.98	0.45
2:G:227:ARG:NH2	2:G:270:GLY:O	2.40	0.45
2:G:302:ASN:ND2	2:G:353:PRO:O	2.42	0.45
2:C:352:TRP:HA	2:C:353:PRO:HD3	1.84	0.45
2:E:235:ASP:O	2:E:237:THR:N	2.46	0.44
2:A:232:GLU:HA	2:A:233:VAL:HA	1.62	0.44
2:E:233:VAL:HA	2:E:234:GLY:HA2	1.70	0.44
2:A:387:LEU:O	2:A:404:THR:HA	2.18	0.44
2:G:252:LEU:HB3	2:G:255:ARG:HH11	1.81	0.44
2:A:190:ASN:HB3	2:A:193:LYS:HG3	1.98	0.44
2:C:233:VAL:HA	2:C:234:GLY:HA3	1.69	0.44
2:C:313:LYS:HG2	2:C:314:ASP:H	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:254:ASP:HB3	2:G:258:MET:CG	2.44	0.43
2:A:296[A]:SER:OG	2:A:297:GLU:N	2.51	0.43
2:C:277:ALA:HB3	2:C:282:TRP:HE1	1.83	0.43
2:E:272:LEU:HD11	2:E:311:VAL:HG11	2.01	0.43
2:E:413:GLN:HA	2:E:416:VAL:HG12	2.01	0.43
2:G:230:GLY:C	2:G:232:GLU:H	2.23	0.43
2:G:333:THR:HB	2:G:409:LYS:HE2	2.01	0.42
2:G:208:ALA:HB3	2:G:216:PHE:HB3	2.00	0.42
2:A:224:GLU:CD	2:A:240:GLY:H	2.23	0.42
2:A:222:CYS:HA	2:A:223:PRO:HD3	1.88	0.42
1:H:487:LEU:HB2	2:G:290:HIS:HB2	2.01	0.42
2:E:235:ASP:HB3	2:E:238:LEU:HG	2.01	0.42
2:G:230:GLY:O	2:G:232:GLU:N	2.52	0.42
2:G:197:VAL:HG23	2:G:200:GLU:HB2	2.01	0.41
2:G:345:TRP:CZ2	2:G:366:LYS:HD3	2.55	0.41
2:A:357:PRO:HG2	2:A:360:LYS:HG2	2.03	0.41
2:G:311:VAL:HA	2:G:312:PRO:HD3	1.90	0.41
2:A:208:ALA:HB3	2:A:216:PHE:HB3	2.01	0.41
2:G:252:LEU:H	2:G:252:LEU:HG	1.60	0.41
2:C:345:TRP:CZ2	2:C:366:LYS:HD3	2.55	0.41
2:E:326:ILE:O	2:E:330:ILE:HG12	2.20	0.41
2:E:235:ASP:C	2:E:237:THR:H	2.21	0.41
2:C:272:LEU:HD22	2:C:291:THR:HG21	2.03	0.41
2:G:252:LEU:CB	2:G:255:ARG:HH11	2.34	0.41
1:D:482:GLU:HB2	1:D:483:GLU:H	1.76	0.40
2:C:256:GLY:O	2:C:259:SER:OG	2.35	0.40
2:C:326:ILE:HG23	2:C:412:LEU:HD12	2.03	0.40

There are no symmetry-related clashes.

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	B	8/19 (42%)	7 (88%)	1 (12%)	0	100	100
1	D	8/19 (42%)	7 (88%)	1 (12%)	0	100	100
1	F	8/19 (42%)	8 (100%)	0	0	100	100
1	H	8/19 (42%)	7 (88%)	1 (12%)	0	100	100
2	A	234/242 (97%)	216 (92%)	14 (6%)	4 (2%)	9	29
2	C	233/242 (96%)	216 (93%)	17 (7%)	0	100	100
2	E	233/242 (96%)	217 (93%)	13 (6%)	3 (1%)	12	36
2	G	233/242 (96%)	215 (92%)	16 (7%)	2 (1%)	17	46
All	All	965/1044 (92%)	893 (92%)	63 (6%)	9 (1%)	17	46

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	G	254	ASP
2	A	248	PRO
2	A	385	SER
2	E	236	ARG
2	G	231	SER
2	E	385	SER
2	A	235	ASP
2	A	335	GLY
2	E	301	PRO

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	B	10/19 (53%)	6 (60%)	4 (40%)	0	0
1	D	10/19 (53%)	10 (100%)	0	100	100
1	F	10/19 (53%)	9 (90%)	1 (10%)	7	22
1	H	10/19 (53%)	10 (100%)	0	100	100
2	A	201/205 (98%)	193 (96%)	8 (4%)	31	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	C	200/205 (98%)	193 (96%)	7 (4%)	36	68
2	E	200/205 (98%)	192 (96%)	8 (4%)	31	63
2	G	200/205 (98%)	191 (96%)	9 (4%)	27	59
All	All	841/896 (94%)	804 (96%)	37 (4%)	28	60

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	482	GLU
1	B	483	GLU
1	B	489	SER
1	B	491	SER
1	F	489	SER
2	A	194	ARG
2	A	226	LEU
2	A	233	VAL
2	A	255	ARG
2	A	266	SER
2	A	272	LEU
2	A	387	LEU
2	A	405	SER
2	C	194	ARG
2	C	254	ASP
2	C	266	SER
2	C	399	HIS
2	C	403	LEU
2	C	405	SER
2	C	420	ASP
2	E	231	SER
2	E	233	VAL
2	E	297	GLU
2	E	339	SER
2	E	387	LEU
2	E	390	THR
2	E	399	HIS
2	E	406	ASP
2	G	200	GLU
2	G	224	GLU
2	G	231	SER
2	G	252	LEU
2	G	253	THR

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Mol	Chain	Res	Type
2	G	263	HIS
2	G	289	CYS
2	G	387	LEU
2	G	406	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
2	E	263	HIS

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, 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	B	10/19 (52%)	0.46	1 (10%)	7	5	46, 54, 85, 89	0
1	D	10/19 (52%)	1.13	2 (20%)	1	0	43, 52, 80, 92	0
1	F	10/19 (52%)	1.19	2 (20%)	1	0	48, 61, 99, 113	0
1	H	10/19 (52%)	1.03	2 (20%)	1	0	48, 58, 85, 94	0
2	A	234/242 (96%)	0.11	7 (2%)	50	46	21, 44, 77, 100	0
2	C	234/242 (96%)	0.04	6 (2%)	56	53	20, 46, 78, 99	0
2	E	234/242 (96%)	0.02	8 (3%)	45	41	21, 45, 79, 99	0
2	G	234/242 (96%)	0.03	5 (2%)	63	62	19, 43, 73, 83	0
All	All	976/1044 (93%)	0.09	33 (3%)	45	41	19, 45, 78, 113	0

All (33) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	491	SER	5.5
2	A	384	ALA	5.1
1	H	491	SER	4.9
2	A	232	GLU	4.6
1	D	491	SER	4.5
2	A	383	GLY	4.4
2	E	422	GLN	4.3
2	A	250	MET	3.9
2	C	234	GLY	3.8
2	C	232	GLU	3.7
2	E	232	GLU	3.5
2	A	189	GLU	3.5
1	D	490	ASN	3.4
2	G	231	SER	3.3
2	E	386	SER	3.2
2	G	385	SER	3.0

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Mol	Chain	Res	Type	RSRZ
2	G	234	GLY	2.8
2	E	385	SER	2.7
2	A	253	THR	2.7
2	E	231	SER	2.7
2	E	383	GLY	2.5
1	F	490	ASN	2.3
2	E	420	ASP	2.3
2	G	253	THR	2.3
2	A	382	GLY	2.3
2	G	336	SER	2.2
1	B	488	ILE	2.2
2	E	314	ASP	2.2
2	C	336	SER	2.2
2	C	189	GLU	2.2
2	C	233	VAL	2.1
1	H	489	SER	2.0
2	C	253	THR	2.0

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

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

6.3 Carbohydrates ⓘ

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.