Full wwPDB X-ray Structure Validation Report ⓘ

Oct 31, 2023 – 10:01 PM EDT

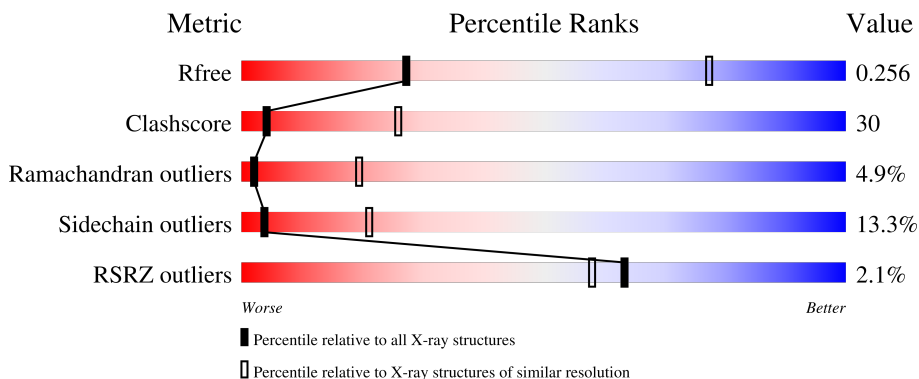|		
PDB ID	:	3SIP
Title	:	Crystal structure of drICE and dIAP1-BIR1 complex
Authors	:	Li, X.; Wang, J.; Shi, Y.
Deposited on	:	2011-06-20
Resolution	:	3.50 Å(reported)

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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 3.50 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		0.256
Clashscore		30
Ramachandran outliers		4.9%
Sidechain outliers		13.3%
RSRZ outliers		2.1%

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	1659 (3.60-3.40)
Clashscore	141614	1036 (3.58-3.42)
Ramachandran outliers	138981	1005 (3.58-3.42)
Sidechain outliers	138945	1006 (3.58-3.42)
RSRZ outliers	127900	1559 (3.60-3.40)

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	157	43% 42% 10% 5%
1	C	157	41% 47% 8% ··
2	E	115	6% / 35% 44% 8% 13%
2	F	115	6% / 40% 41% 11% · 6%
3	B	109	% / 50% 37% 7% 6%

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Mol	Chain	Length	Quality of chain
3	D	109	44% 40% 7% 8%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 5714 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 Caspase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	149	Total 1188	C 747	N 210	O 222	S 9	0	0	0
1	C	152	Total 1214	C 761	N 217	O 227	S 9	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	ALA	-	SEE REMARK 999	UNP O01382
A	2	LEU	-	SEE REMARK 999	UNP O01382
A	3	GLY	-	SEE REMARK 999	UNP O01382
A	4	SER	-	SEE REMARK 999	UNP O01382
C	1	ALA	-	SEE REMARK 999	UNP O01382
C	2	LEU	-	SEE REMARK 999	UNP O01382
C	3	GLY	-	SEE REMARK 999	UNP O01382
C	4	SER	-	SEE REMARK 999	UNP O01382

- Molecule 2 is a protein called Apoptosis 1 inhibitor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	E	100	Total 820	C 517	N 146	O 152	S 5	0	0	0
2	F	108	Total 875	C 548	N 156	O 166	S 5	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	89	SER	CYS	engineered mutation	UNP Q24306
F	89	SER	CYS	engineered mutation	UNP Q24306

- Molecule 3 is a protein called Caspase.

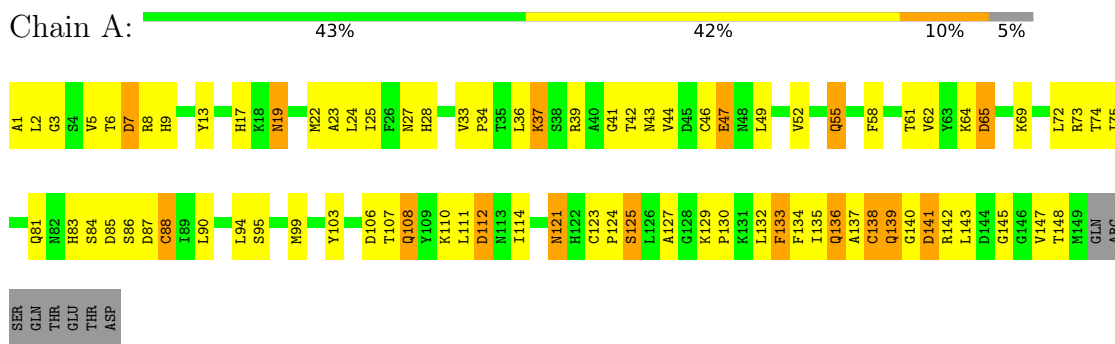| Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	B	103	Total 815	C 522	N 139	O 147	S 7	0	0	0
3	D	100	Total 800	C 514	N 136	O 143	S 7	0	0	0

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	E	1	Total 1	Zn 1	0	0
4	F	1	Total 1	Zn 1	0	0

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: Caspase

- Molecule 1: Caspase

- Molecule 2: Apoptosis 1 inhibitor

- Molecule 2: Apoptosis 1 inhibitor

Chain F:

6%

40%   41%   11%   6%

ASN ASN ILE ASN LYS THR ARG M38 N39 D40 L41 N42 R43 E44 E45 T46 R47 L48 K49 T50 F51 W54 P55 L56 D60 K61 R62 Q63 L64 A65 Q66 M69 Y70 F71 T72 H73 D76 K79 F82 C83 G84 V85 W90 E91 Q92 P96 V97 P98 E99 N106 C107
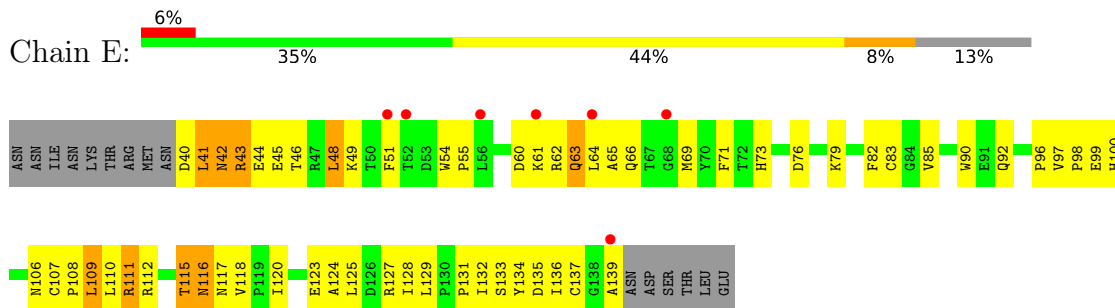
P108 L109 L110 R111 R112 T115 N116 N117 V118 P119 I120 E123 A124 L125 D126 R127 I128 L129 P130 P131 I132 S133 Y134 D135 I136 C137 G138 A139 N140 D141 S142 T143 L144 E145

● Molecule 3: Caspase

Chain B:

%

50%   37%   7%   6%

GLY ASP SER SER M162 K165 V168 L173 I174 A175 Y176 S177 T178 V179 P180 G181 F182 Y183 S184 W185 R186 N187 T188 T189 R190 G191 S192 W193 E201 L202 A203 A204 N205 R208 L209 D210 L214 Q220 A223 F226 E227 S228 C229 E235 M236 H237 Q238 Q239 K240 Q241

I242 P243 C244 I245 T246 T247 M248 R251 I252 L253 R254 Q259 L260 A261 P262 A263 G264 ARG VAL

● Molecule 3: Caspase

Chain D:

44%   40%   7%   8%

GLY ASP SER SER MET SER Y164 K165 I166 P167 V168 L173 I174 A175 Y176 S177 T178 V179 P180 G181 F182 Y183 S184 W185 R186 N187 T188 T189 R190 G191 S192 W193 E201 L202 A203 A204 L209 D210 I211 L214 F226 E227 S228 C229 E235 M236 H237 Q238 Q239 K240 Q241 I242 P243 C244

I245 T246 T247 M248 L249 T250 R251 I252 L253 R254 F255 S256 D257 K258 Q259 L260 A261 P262 A263 GLY ARG VAL

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	I 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	91.35Å 148.12Å 156.74Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.09 – 3.50 47.09 – 3.50	Depositor EDS
% Data completeness (in resolution range)	99.1 (47.09-3.50) 99.4 (47.09-3.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.13 (at 3.48Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.6.3_473)	Depositor
R, R_{free}	0.210 , 0.256 0.205 , 0.256	Depositor DCC
R_{free} test set	720 reflections (5.23%)	wwPDB-VP
Wilson B-factor (Å^2)	81.5	Xtriage
Anisotropy	0.385	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 75.9	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	0.92	EDS
Total number of atoms	5714	wwPDB-VP
Average B, all atoms (Å^2)	92.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.42% 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)

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	0.30	0/1213	0.50	0/1637
1	C	0.31	0/1239	0.50	0/1671
2	E	0.26	0/843	0.46	0/1148
2	F	0.26	0/898	0.48	0/1224
3	B	0.35	0/835	0.57	0/1135
3	D	0.33	0/820	0.57	0/1115
All	All	0.30	0/5848	0.51	0/7930

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	F	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	F	39	ASN	Peptide

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	1188	0	1157	80	0
1	C	1214	0	1183	78	0
2	E	820	0	783	64	0
2	F	875	0	826	68	0
3	B	815	0	811	62	0
3	D	800	0	801	64	0
4	E	1	0	0	0	0
4	F	1	0	0	0	0
All	All	5714	0	5561	334	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 30.

All (334) 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)
2:F:46:THR:HG23	2:F:49:LYS:HE2	1.42	0.99
2:E:46:THR:HG23	2:E:49:LYS:HE2	1.44	0.99
3:D:190:ARG:HH11	3:D:190:ARG:HG3	1.31	0.95
2:F:123:GLU:HG3	2:F:127:ARG:HH21	1.29	0.94
1:A:135:ILE:HB	3:B:176:TYR:HB2	1.51	0.93
3:B:259:GLN:O	3:B:260:LEU:HG	1.69	0.93
2:E:123:GLU:HG3	2:E:127:ARG:HH21	1.31	0.93
1:C:121:ASN:H	1:C:121:ASN:HD22	1.17	0.92
3:B:190:ARG:HG3	3:B:190:ARG:HH11	1.35	0.91
3:D:259:GLN:O	3:D:260:LEU:HG	1.71	0.91
1:A:121:ASN:H	1:A:121:ASN:HD22	1.18	0.91
1:C:135:ILE:HB	3:D:176:TYR:HB2	1.54	0.89
2:E:64:LEU:HD23	2:E:96:PRO:HB3	1.57	0.86
2:F:64:LEU:HD23	2:F:96:PRO:HB3	1.56	0.85
2:E:44:GLU:HB3	2:E:120:ILE:HG13	1.57	0.85
2:F:44:GLU:HB3	2:F:120:ILE:HG13	1.59	0.85
3:B:254:ARG:HH11	3:B:254:ARG:HB2	1.40	0.84
3:D:254:ARG:HB2	3:D:254:ARG:HH11	1.42	0.84
2:F:54:TRP:HB3	2:F:61:LYS:HE2	1.60	0.84
1:A:7:ASP:OD2	1:C:152:SER:HB2	1.78	0.83
2:E:43:ARG:HA	2:E:118:VAL:HB	1.61	0.83
2:F:43:ARG:HA	2:F:118:VAL:HB	1.59	0.83
2:E:54:TRP:HB3	2:E:61:LYS:HE2	1.60	0.82
2:E:43:ARG:HB2	2:E:45:GLU:HG2	1.63	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:121:ASN:HD22	1:C:121:ASN:N	1.79	0.79
1:A:121:ASN:HD22	1:A:121:ASN:N	1.79	0.79
2:F:43:ARG:HB2	2:F:45:GLU:HG2	1.64	0.79
1:A:75:ILE:HG12	1:A:114:ILE:HG23	1.65	0.79
2:F:41:LEU:HD12	2:F:41:LEU:H	1.48	0.79
2:E:41:LEU:HD12	2:E:41:LEU:H	1.48	0.78
1:C:28:HIS:HB2	1:C:95:SER:HB3	1.64	0.78
1:A:28:HIS:HB2	1:A:95:SER:HB3	1.65	0.78
1:A:25:ILE:HB	1:A:62:VAL:HG22	1.67	0.76
1:A:138:CYS:HA	3:B:184:SER:HB2	1.67	0.76
1:C:75:ILE:HG12	1:C:114:ILE:HG23	1.67	0.76
2:E:63:GLN:HE22	2:E:96:PRO:HG3	1.51	0.75
2:F:106:ASN:ND2	3:B:227:GLU:H	1.85	0.74
1:C:137:ALA:C	1:C:139:GLN:H	1.89	0.74
1:A:137:ALA:C	1:A:139:GLN:H	1.90	0.73
1:A:13:TYR:CD2	3:B:251:ARG:HG3	2.23	0.73
1:C:25:ILE:HB	1:C:62:VAL:HG22	1.70	0.73
1:C:138:CYS:HA	3:D:184:SER:HB2	1.69	0.73
2:F:63:GLN:HE22	2:F:96:PRO:HG3	1.53	0.72
2:E:42:ASN:HB2	2:E:43:ARG:HH21	1.54	0.72
2:F:42:ASN:HB2	2:F:43:ARG:HH21	1.55	0.71
1:C:13:TYR:CD2	3:D:251:ARG:HG3	2.26	0.71
3:B:246:THR:HA	3:D:246:THR:HA	1.71	0.71
1:A:135:ILE:HB	3:B:176:TYR:CB	2.22	0.69
2:E:106:ASN:ND2	3:D:227:GLU:H	1.91	0.69
2:F:106:ASN:HD21	3:B:226:PHE:HA	1.57	0.69
1:C:41:GLY:O	1:C:44:VAL:HG22	1.93	0.68
1:A:41:GLY:O	1:A:44:VAL:HG22	1.94	0.68
2:F:97:VAL:HB	2:F:98:PRO:HD3	1.75	0.68
2:E:97:VAL:HB	2:E:98:PRO:HD3	1.75	0.68
2:E:111:ARG:HD3	2:E:133:SER:OG	1.94	0.68
2:F:123:GLU:HG3	2:F:127:ARG:NH2	2.06	0.67
1:C:44:VAL:HA	1:C:47:GLU:HG2	1.77	0.67
1:A:44:VAL:HA	1:A:47:GLU:HG2	1.76	0.67
1:A:140:GLY:HA3	3:B:182:PHE:N	2.08	0.67
2:E:123:GLU:HG3	2:E:127:ARG:NH2	2.08	0.67
2:E:111:ARG:HH22	3:D:193:TRP:HH2	1.41	0.66
1:C:106:ASP:OD1	1:C:107:THR:HG22	1.94	0.66
2:F:111:ARG:HD3	2:F:133:SER:OG	1.96	0.66
1:A:106:ASP:OD1	1:A:107:THR:HG22	1.95	0.66
2:F:111:ARG:HH22	3:B:193:TRP:HH2	1.42	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:ARG:CD	1:A:95:SER:HA	2.27	0.65
1:C:39:ARG:CD	1:C:95:SER:HA	2.27	0.64
2:E:106:ASN:HD21	3:D:227:GLU:H	1.44	0.64
2:F:106:ASN:HD21	3:B:227:GLU:H	1.44	0.64
1:C:33:VAL:HB	1:C:36:LEU:HD12	1.78	0.64
1:C:121:ASN:H	1:C:121:ASN:ND2	1.93	0.64
1:C:140:GLY:HA3	3:D:182:PHE:N	2.13	0.63
3:D:190:ARG:HG3	3:D:190:ARG:NH1	2.09	0.63
1:C:135:ILE:HB	3:D:176:TYR:CB	2.26	0.63
3:D:186:ARG:HA	3:D:192:SER:HA	1.80	0.63
1:A:33:VAL:HB	1:A:36:LEU:HD12	1.80	0.62
3:B:186:ARG:HA	3:B:192:SER:HA	1.81	0.62
1:A:141:ASP:HA	3:B:183:TYR:CE2	2.35	0.62
3:D:189:THR:O	3:D:190:ARG:HG2	2.01	0.61
1:C:151:ARG:O	1:C:151:ARG:HD3	2.01	0.61
1:A:88:CYS:HB2	1:A:130:PRO:O	2.01	0.60
2:E:51:PHE:CE2	2:E:65:ALA:HB2	2.37	0.60
1:C:141:ASP:HA	3:D:183:TYR:CE2	2.37	0.60
3:D:177:SER:O	3:D:243:PRO:HA	2.02	0.60
1:C:23:ALA:HB2	1:C:58:PHE:CD2	2.37	0.60
2:F:127:ARG:HB2	2:F:127:ARG:NH1	2.17	0.59
1:A:121:ASN:H	1:A:121:ASN:ND2	1.93	0.59
2:F:40:ASP:HB2	2:F:41:LEU:HD12	1.85	0.59
2:F:51:PHE:CE2	2:F:65:ALA:HB2	2.37	0.59
3:B:189:THR:O	3:B:190:ARG:HG2	2.02	0.59
1:C:88:CYS:HB2	1:C:130:PRO:O	2.03	0.59
2:F:127:ARG:HB2	2:F:127:ARG:HH11	1.68	0.59
2:F:66:GLN:HE22	2:F:128:ILE:CD1	2.15	0.59
3:B:254:ARG:HB2	3:B:254:ARG:NH1	2.13	0.59
1:A:133:PHE:CD1	1:A:133:PHE:N	2.72	0.58
2:E:66:GLN:HE22	2:E:128:ILE:CD1	2.16	0.58
2:E:106:ASN:HD21	3:D:226:PHE:HA	1.68	0.58
1:A:143:LEU:HB3	3:B:239:GLN:HE21	1.68	0.58
2:F:65:ALA:HA	2:F:69:MET:O	2.04	0.58
2:F:76:ASP:OD2	2:F:90:TRP:HD1	1.86	0.58
2:E:127:ARG:NH1	2:E:127:ARG:HB2	2.18	0.58
3:B:190:ARG:HG3	3:B:190:ARG:NH1	2.13	0.58
3:B:190:ARG:HH11	3:B:190:ARG:CG	2.14	0.58
1:A:37:LYS:HG2	2:F:141:ASP:OD1	2.04	0.58
3:B:177:SER:O	3:B:243:PRO:HA	2.03	0.58
1:A:23:ALA:HB2	1:A:58:PHE:CD2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:143:LEU:HB3	3:D:239:GLN:HE21	1.69	0.57
2:E:127:ARG:HB2	2:E:127:ARG:HH11	1.69	0.57
2:E:40:ASP:HB2	2:E:41:LEU:HD12	1.87	0.57
2:E:76:ASP:OD2	2:E:90:TRP:HD1	1.87	0.56
3:D:190:ARG:HH11	3:D:190:ARG:CG	2.10	0.56
1:C:137:ALA:C	1:C:139:GLN:N	2.59	0.56
2:E:51:PHE:CZ	2:E:64:LEU:HD12	2.40	0.56
1:A:52:VAL:HG12	3:B:203:ALA:HB2	1.88	0.56
2:E:65:ALA:HA	2:E:69:MET:O	2.06	0.56
2:F:125:LEU:O	2:F:129:LEU:HD23	2.06	0.56
1:A:37:LYS:HE3	2:F:139:ALA:HB1	1.88	0.56
2:E:137:CYS:HB2	3:D:183:TYR:HB3	1.88	0.56
2:F:51:PHE:CZ	2:F:64:LEU:HD12	2.41	0.56
3:D:254:ARG:HB2	3:D:254:ARG:NH1	2.15	0.56
1:A:13:TYR:CG	3:B:251:ARG:HG3	2.41	0.55
1:A:1:ALA:HB3	2:E:99:GLU:HG2	1.87	0.55
2:E:48:LEU:HD21	2:E:62:ARG:HA	1.88	0.55
1:A:75:ILE:HG12	1:A:114:ILE:CG2	2.36	0.55
1:C:133:PHE:N	1:C:133:PHE:CD1	2.73	0.55
2:F:38:MET:O	2:F:40:ASP:N	2.40	0.55
2:E:63:GLN:HE22	2:E:96:PRO:CG	2.19	0.55
2:F:63:GLN:HE22	2:F:96:PRO:CG	2.20	0.55
2:E:51:PHE:CD1	2:E:71:PHE:HB2	2.42	0.54
2:F:48:LEU:HD21	2:F:62:ARG:HA	1.88	0.54
3:B:244:CYS:HA	3:D:248:MET:HE3	1.88	0.54
1:C:52:VAL:HG12	3:D:203:ALA:HB2	1.89	0.54
1:A:137:ALA:C	1:A:139:GLN:N	2.59	0.54
2:F:64:LEU:O	2:F:69:MET:HB2	2.08	0.54
1:C:143:LEU:HD21	3:D:183:TYR:HD1	1.72	0.54
2:E:125:LEU:HD12	2:E:129:LEU:HD21	1.89	0.53
2:F:136:ILE:HG22	2:F:137:CYS:H	1.73	0.53
1:C:121:ASN:N	1:C:121:ASN:ND2	2.52	0.53
1:C:147:VAL:HG23	3:B:168:VAL:HG12	1.90	0.53
2:F:38:MET:O	2:F:40:ASP:HA	2.08	0.52
1:A:143:LEU:HD21	3:B:183:TYR:HD1	1.75	0.52
3:B:246:THR:HB	3:D:246:THR:HB	1.92	0.52
2:E:51:PHE:CD2	2:E:65:ALA:HB2	2.44	0.52
2:E:125:LEU:O	2:E:129:LEU:HD23	2.09	0.52
2:F:125:LEU:HD12	2:F:129:LEU:HD21	1.91	0.52
2:F:51:PHE:CD1	2:F:71:PHE:HB2	2.44	0.52
1:A:139:GLN:O	3:B:182:PHE:O	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:51:PHE:CD2	2:F:65:ALA:HB2	2.45	0.52
1:C:137:ALA:O	1:C:139:GLN:N	2.43	0.51
2:F:143:THR:HG23	3:B:188:THR:HG21	1.92	0.51
3:B:165:LYS:O	3:D:240:LYS:HE3	2.11	0.51
3:B:248:MET:HE3	3:D:244:CYS:HA	1.93	0.51
2:F:38:MET:O	2:F:39:ASN:C	2.49	0.51
2:F:135:ASP:OD2	3:B:228:SER:O	2.29	0.51
1:A:142:ARG:HD2	3:B:182:PHE:CZ	2.46	0.50
1:C:13:TYR:CG	3:D:251:ARG:HG3	2.46	0.50
1:A:137:ALA:O	1:A:139:GLN:N	2.45	0.50
1:C:75:ILE:HG12	1:C:114:ILE:CG2	2.39	0.50
1:C:27:ASN:HD21	1:C:42:THR:HG23	1.76	0.50
2:E:135:ASP:OD2	3:D:228:SER:O	2.30	0.50
1:A:1:ALA:HB3	2:E:99:GLU:CG	2.41	0.50
2:E:64:LEU:O	2:E:69:MET:HB2	2.11	0.50
2:E:124:ALA:HA	2:E:127:ARG:HH22	1.76	0.50
2:E:136:ILE:HG22	2:E:137:CYS:H	1.76	0.50
3:B:259:GLN:C	3:B:260:LEU:HG	2.30	0.49
1:C:23:ALA:HA	1:C:90:LEU:O	2.13	0.49
1:A:17:HIS:HB2	1:A:87:ASP:OD1	2.12	0.49
2:F:111:ARG:O	2:F:112:ARG:HB2	2.13	0.49
3:D:259:GLN:C	3:D:260:LEU:HG	2.32	0.49
1:C:55:GLN:HE22	3:D:203:ALA:HA	1.76	0.49
2:F:124:ALA:HA	2:F:127:ARG:HH22	1.77	0.49
1:C:84:SER:HA	1:C:129:LYS:NZ	2.28	0.48
1:C:17:HIS:HB2	1:C:87:ASP:OD1	2.14	0.48
1:C:139:GLN:O	3:D:182:PHE:O	2.30	0.48
3:B:201:GLU:HB3	3:B:214:LEU:HD11	1.94	0.48
1:A:55:GLN:O	1:A:55:GLN:HG2	2.13	0.48
3:B:227:GLU:HG2	3:B:240:LYS:HE2	1.96	0.48
1:A:121:ASN:N	1:A:121:ASN:ND2	2.51	0.48
1:C:134:PHE:N	1:C:134:PHE:CD2	2.82	0.48
1:A:23:ALA:HA	1:A:90:LEU:O	2.12	0.48
1:C:55:GLN:O	1:C:55:GLN:HG2	2.13	0.48
2:E:111:ARG:O	2:E:112:ARG:HB2	2.14	0.47
3:D:190:ARG:NH1	3:D:190:ARG:CG	2.74	0.47
1:A:43:ASN:O	1:A:46:CYS:N	2.47	0.47
1:C:1:ALA:HB3	2:F:99:GLU:HG2	1.96	0.47
1:A:13:TYR:CE2	3:B:251:ARG:HG3	2.49	0.47
1:C:2:LEU:HD13	1:C:3:GLY:O	2.14	0.47
2:F:38:MET:O	2:F:40:ASP:CA	2.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:64:LYS:HG3	1:A:65:ASP:H	1.80	0.47
1:A:33:VAL:HG13	1:A:34:PRO:HD2	1.97	0.47
1:C:43:ASN:O	1:C:46:CYS:N	2.48	0.47
2:F:139:ALA:O	2:F:140:ASN:C	2.53	0.47
1:C:143:LEU:HD21	3:D:183:TYR:CD1	2.50	0.47
3:D:201:GLU:HB3	3:D:214:LEU:HD11	1.95	0.47
1:A:145:GLY:O	3:D:165:LYS:HD3	2.15	0.47
2:E:134:TYR:HB2	3:D:188:THR:HG21	1.97	0.47
3:D:229:CYS:HA	3:D:237:HIS:CE1	2.50	0.46
1:A:83:HIS:HB2	1:A:125:SER:HB2	1.97	0.46
1:A:147:VAL:HG23	3:D:168:VAL:HG12	1.95	0.46
3:B:240:LYS:HE3	3:D:165:LYS:O	2.15	0.46
2:F:46:THR:HG23	2:F:49:LYS:CE	2.31	0.46
1:A:84:SER:HA	1:A:129:LYS:NZ	2.30	0.46
1:A:139:GLN:C	1:A:139:GLN:CD	2.73	0.46
2:F:106:ASN:O	2:F:107:CYS:C	2.54	0.46
1:C:83:HIS:HB2	1:C:125:SER:HB2	1.98	0.46
1:A:8:ARG:HB3	1:C:152:SER:OG	2.15	0.46
1:C:1:ALA:HB3	2:F:99:GLU:CG	2.46	0.46
1:C:8:ARG:O	3:D:251:ARG:NH2	2.49	0.46
1:A:1:ALA:CB	2:E:99:GLU:HG2	2.46	0.46
1:C:13:TYR:CE2	3:D:251:ARG:HG3	2.51	0.45
1:A:19:ASN:O	1:A:86:SER:HA	2.15	0.45
1:A:27:ASN:HD21	1:A:42:THR:HG23	1.81	0.45
1:C:136:GLN:NE2	3:D:192:SER:HB2	2.32	0.45
3:B:229:CYS:HA	3:B:237:HIS:CE1	2.51	0.45
1:C:139:GLN:C	1:C:139:GLN:CD	2.74	0.45
1:C:142:ARG:HD2	3:D:182:PHE:CZ	2.52	0.45
2:E:106:ASN:O	2:E:107:CYS:C	2.55	0.45
2:F:64:LEU:HD13	2:F:69:MET:CB	2.47	0.45
1:A:55:GLN:HE22	3:B:203:ALA:HA	1.81	0.45
1:A:136:GLN:NE2	3:B:192:SER:HB2	2.32	0.45
1:C:19:ASN:O	1:C:86:SER:HA	2.16	0.45
1:C:34:PRO:C	1:C:36:LEU:H	2.19	0.45
2:F:42:ASN:ND2	2:F:116:ASN:HB2	2.32	0.45
3:D:179:VAL:HG23	3:D:242:ILE:HG23	1.99	0.45
1:C:6:THR:OG1	1:C:9:HIS:CD2	2.70	0.45
1:C:64:LYS:HG3	1:C:65:ASP:H	1.81	0.45
3:D:173:LEU:HD12	3:D:174:ILE:N	2.32	0.45
1:A:69:LYS:O	1:A:73:ARG:HG3	2.17	0.45
1:A:136:GLN:HG3	3:B:192:SER:OG	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:109:LEU:HD12	2:E:109:LEU:O	2.16	0.45
1:A:134:PHE:C	1:A:135:ILE:HD12	2.37	0.45
2:F:45:GLU:HA	2:F:120:ILE:HD11	1.99	0.45
2:E:71:PHE:CE2	2:E:73:HIS:HA	2.52	0.44
1:A:83:HIS:H	1:A:125:SER:HB2	1.82	0.44
1:A:94:LEU:O	1:A:95:SER:HB3	2.17	0.44
2:E:111:ARG:HH12	2:E:135:ASP:CG	2.20	0.44
2:F:42:ASN:CB	2:F:43:ARG:HH21	2.28	0.44
2:F:111:ARG:HH12	2:F:135:ASP:CG	2.20	0.44
1:A:123:CYS:N	1:A:124:PRO:HD3	2.33	0.44
1:A:138:CYS:HA	3:B:184:SER:CB	2.42	0.44
1:C:83:HIS:H	1:C:125:SER:HB2	1.82	0.44
3:B:185:TRP:HB2	3:B:193:TRP:CD1	2.53	0.44
3:D:185:TRP:HB2	3:D:193:TRP:CD1	2.53	0.44
1:A:140:GLY:HA2	3:B:181:GLY:HA2	1.99	0.44
1:A:2:LEU:HD13	1:A:3:GLY:O	2.18	0.44
1:C:69:LYS:O	1:C:73:ARG:HG3	2.17	0.44
2:F:124:ALA:HA	2:F:127:ARG:NH2	2.33	0.44
1:A:34:PRO:C	1:A:36:LEU:H	2.20	0.44
1:C:123:CYS:N	1:C:124:PRO:HD3	2.33	0.44
1:C:145:GLY:O	3:B:165:LYS:HD3	2.18	0.44
1:C:94:LEU:O	1:C:95:SER:HB3	2.17	0.44
2:E:115:THR:C	2:E:117:ASN:H	2.21	0.44
2:E:124:ALA:HA	2:E:127:ARG:NH2	2.32	0.44
2:F:79:LYS:HA	2:F:85:VAL:O	2.18	0.44
1:C:138:CYS:HA	3:D:184:SER:CB	2.45	0.43
1:C:37:LYS:HE3	2:E:139:ALA:HB1	1.99	0.43
1:A:134:PHE:CD2	1:A:134:PHE:N	2.85	0.43
2:E:42:ASN:CB	2:E:43:ARG:HH21	2.28	0.43
2:F:111:ARG:NH2	3:B:193:TRP:HH2	2.13	0.43
2:E:110:LEU:HD23	2:E:110:LEU:HA	1.89	0.43
3:D:209:LEU:HD23	3:D:209:LEU:HA	1.72	0.43
3:D:227:GLU:HG2	3:D:240:LYS:HE2	2.00	0.43
1:A:6:THR:OG1	1:A:9:HIS:CD2	2.71	0.43
2:E:42:ASN:ND2	2:E:116:ASN:HB2	2.33	0.43
3:B:223:ALA:HB1	3:D:167:PRO:HD2	2.01	0.43
2:F:71:PHE:CE2	2:F:73:HIS:HA	2.54	0.43
2:F:115:THR:C	2:F:117:ASN:H	2.22	0.43
3:B:179:VAL:HG23	3:B:242:ILE:HG23	2.00	0.43
3:D:211:ILE:CG2	3:D:253:LEU:HB3	2.49	0.42
2:E:79:LYS:HA	2:E:85:VAL:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:201:GLU:HB3	3:D:214:LEU:CD1	2.50	0.42
1:A:124:PRO:HA	1:A:127:ALA:HB2	2.01	0.42
1:A:140:GLY:HA3	3:B:182:PHE:H	1.84	0.42
1:A:33:VAL:CG1	1:A:34:PRO:HD2	2.49	0.42
2:E:45:GLU:HA	2:E:120:ILE:HD11	2.01	0.42
1:C:6:THR:C	1:C:8:ARG:H	2.22	0.42
1:C:134:PHE:C	1:C:135:ILE:HD12	2.40	0.42
2:E:42:ASN:HB3	2:E:43:ARG:HE	1.85	0.42
1:C:140:GLY:HA2	3:D:181:GLY:HA2	2.01	0.42
1:C:39:ARG:HD2	1:C:95:SER:HA	1.99	0.42
1:A:110:LYS:HB3	1:A:110:LYS:HE2	1.77	0.42
2:F:66:GLN:HE22	2:F:128:ILE:HD13	1.85	0.42
2:F:111:ARG:NH2	2:F:135:ASP:OD2	2.52	0.42
2:E:64:LEU:HD13	2:E:69:MET:CB	2.50	0.42
2:F:137:CYS:HB2	3:B:183:TYR:HB3	2.01	0.42
1:C:103:TYR:HA	1:C:108:GLN:HA	2.02	0.41
1:C:151:ARG:HD3	1:C:151:ARG:C	2.40	0.41
2:E:82:PHE:O	2:E:108:PRO:HD2	2.19	0.41
3:B:220:GLN:HB2	3:D:250:THR:O	2.20	0.41
1:A:112:ASP:OD1	1:A:112:ASP:N	2.53	0.41
1:A:143:LEU:HD21	3:B:183:TYR:CD1	2.54	0.41
2:F:109:LEU:HD12	2:F:109:LEU:O	2.20	0.41
3:B:252:ILE:HG21	3:B:254:ARG:HH12	1.84	0.41
1:A:64:LYS:HD2	1:A:64:LYS:HA	1.91	0.41
2:E:109:LEU:HD12	2:E:109:LEU:C	2.41	0.41
1:C:130:PRO:HG3	3:D:253:LEU:HD23	2.02	0.41
1:C:136:GLN:HG3	3:D:192:SER:OG	2.21	0.41
2:E:100:HIS:CG	2:E:110:LEU:HD11	2.55	0.41
2:F:56:LEU:HD21	2:F:90:TRP:HB2	2.03	0.41
1:A:103:TYR:HA	1:A:108:GLN:HA	2.03	0.41
1:C:33:VAL:HG13	1:C:34:PRO:HD2	2.02	0.41
3:B:205:ASN:O	3:B:208:ARG:N	2.54	0.41
2:F:82:PHE:O	2:F:108:PRO:HD2	2.21	0.41
3:B:201:GLU:HB3	3:B:214:LEU:CD1	2.51	0.41
3:B:247:THR:HG23	3:D:245:ILE:HB	2.02	0.41
3:D:252:ILE:HD12	3:D:252:ILE:N	2.35	0.41
1:A:6:THR:C	1:A:8:ARG:H	2.24	0.41
1:C:16:ARG:HE	3:D:256:SER:CB	2.33	0.41
1:C:124:PRO:HA	1:C:127:ALA:HB2	2.02	0.41
2:E:44:GLU:OE2	2:E:66:GLN:HG3	2.21	0.41
2:E:63:GLN:HE21	2:E:64:LEU:N	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:40:ASP:O	2:F:43:ARG:HG2	2.21	0.41
2:F:42:ASN:HB3	2:F:43:ARG:HE	1.86	0.41
3:B:240:LYS:HA	3:B:240:LYS:HD3	1.92	0.41
1:A:39:ARG:HD2	1:A:95:SER:HA	1.99	0.41
1:A:72:LEU:HD12	1:A:72:LEU:N	2.36	0.41
2:E:107:CYS:HA	2:E:108:PRO:HD3	1.93	0.41
2:F:42:ASN:OD1	2:F:116:ASN:HB2	2.21	0.41
1:A:7:ASP:OD2	1:C:152:SER:CB	2.60	0.40
3:D:202:LEU:HA	3:D:202:LEU:HD23	1.77	0.40
3:D:203:ALA:O	3:D:204:ALA:HB2	2.21	0.40
1:A:8:ARG:O	3:B:251:ARG:NH2	2.54	0.40
1:A:133:PHE:N	1:A:133:PHE:HD1	2.18	0.40
1:C:36:LEU:HD23	1:C:36:LEU:HA	1.86	0.40
2:E:111:ARG:NH2	2:E:135:ASP:OD2	2.55	0.40
2:E:132:ILE:HD12	2:E:132:ILE:HA	1.98	0.40
3:B:203:ALA:O	3:B:204:ALA:HB2	2.22	0.40
3:B:252:ILE:N	3:B:252:ILE:HD12	2.35	0.40
2:E:48:LEU:HD13	2:E:48:LEU:O	2.22	0.40
2:F:64:LEU:HD13	2:F:69:MET:HB2	2.03	0.40
1:C:32:GLU:HG3	1:C:105:LYS:HG2	2.04	0.40
1:C:150:GLN:HG3	1:C:151:ARG:HD2	2.02	0.40
3:B:173:LEU:HD12	3:B:174:ILE:N	2.36	0.40
3:D:257:ASP:C	3:D:258:LYS:HG3	2.42	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	A	147/157 (94%)	125 (85%)	18 (12%)	4 (3%)	5	33
1	C	150/157 (96%)	126 (84%)	18 (12%)	6 (4%)	3	24

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	E	98/115 (85%)	79 (81%)	13 (13%)	6 (6%)	1	15
2	F	106/115 (92%)	80 (76%)	14 (13%)	12 (11%)	0	6
3	B	101/109 (93%)	85 (84%)	13 (13%)	3 (3%)	4	30
3	D	98/109 (90%)	83 (85%)	12 (12%)	3 (3%)	4	30
All	All	700/762 (92%)	578 (83%)	88 (13%)	34 (5%)	2	19

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	E	131	PRO
2	F	131	PRO
3	B	204	ALA
3	B	262	PRO
3	D	204	ALA
1	A	65	ASP
1	A	138	CYS
1	C	65	ASP
1	C	138	CYS
1	C	151	ARG
3	D	262	PRO
2	E	92	GLN
2	F	39	ASN
2	F	92	GLN
2	F	139	ALA
2	F	141	ASP
1	A	88	CYS
1	C	88	CYS
2	E	83	CYS
2	E	116	ASN
2	F	83	CYS
2	F	140	ASN
2	F	143	THR
3	B	261	ALA
3	D	261	ALA
1	A	141	ASP
1	C	51	ARG
2	E	55	PRO
2	E	60	ASP
2	F	55	PRO
2	F	116	ASN
1	C	35	THR

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Mol	Chain	Res	Type
2	F	40	ASP
2	F	60	ASP

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	A	128/136 (94%)	104 (81%)	24 (19%)	1	8
1	C	131/136 (96%)	106 (81%)	25 (19%)	1	8
2	E	90/105 (86%)	82 (91%)	8 (9%)	9	37
2	F	96/105 (91%)	87 (91%)	9 (9%)	8	35
3	B	90/96 (94%)	81 (90%)	9 (10%)	7	32
3	D	89/96 (93%)	81 (91%)	8 (9%)	9	37
All	All	624/674 (93%)	541 (87%)	83 (13%)	4	21

All (83) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	VAL
1	A	7	ASP
1	A	19	ASN
1	A	22	MET
1	A	24	LEU
1	A	37	LYS
1	A	47	GLU
1	A	49	LEU
1	A	55	GLN
1	A	61	THR
1	A	74	THR
1	A	81	GLN
1	A	85	ASP
1	A	99	MET
1	A	108	GLN
1	A	111	LEU

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Mol	Chain	Res	Type
1	A	112	ASP
1	A	121	ASN
1	A	125	SER
1	A	132	LEU
1	A	133	PHE
1	A	136	GLN
1	A	139	GLN
1	A	148	THR
1	C	5	VAL
1	C	7	ASP
1	C	19	ASN
1	C	22	MET
1	C	24	LEU
1	C	37	LYS
1	C	47	GLU
1	C	49	LEU
1	C	55	GLN
1	C	61	THR
1	C	74	THR
1	C	81	GLN
1	C	85	ASP
1	C	99	MET
1	C	108	GLN
1	C	111	LEU
1	C	112	ASP
1	C	121	ASN
1	C	125	SER
1	C	132	LEU
1	C	133	PHE
1	C	136	GLN
1	C	139	GLN
1	C	148	THR
1	C	151	ARG
2	E	41	LEU
2	E	42	ASN
2	E	43	ARG
2	E	48	LEU
2	E	63	GLN
2	E	109	LEU
2	E	111	ARG
2	E	115	THR
2	F	41	LEU

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Mol	Chain	Res	Type
2	F	42	ASN
2	F	43	ARG
2	F	48	LEU
2	F	63	GLN
2	F	109	LEU
2	F	111	ARG
2	F	115	THR
2	F	140	ASN
3	B	176	TYR
3	B	190	ARG
3	B	193	TRP
3	B	210	ASP
3	B	235	GLU
3	B	246	THR
3	B	248	MET
3	B	251	ARG
3	B	254	ARG
3	D	176	TYR
3	D	190	ARG
3	D	193	TRP
3	D	235	GLU
3	D	246	THR
3	D	248	MET
3	D	251	ARG
3	D	254	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	9	HIS
1	A	27	ASN
1	A	28	HIS
1	A	81	GLN
1	A	83	HIS
1	A	121	ASN
1	A	136	GLN
1	C	9	HIS
1	C	27	ASN
1	C	28	HIS
1	C	43	ASN
1	C	81	GLN
1	C	83	HIS

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Mol	Chain	Res	Type
1	C	121	ASN
1	C	136	GLN
1	C	150	GLN
2	E	63	GLN
2	E	66	GLN
2	E	106	ASN
2	F	63	GLN
2	F	66	GLN
2	F	106	ASN
3	B	205	ASN
3	B	239	GLN
3	D	205	ASN
3	D	239	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 ⓘ

Of 2 ligands modelled in this entry, 2 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, 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(Å²)	Q<0.9
1	A	149/157 (94%)	-0.04	0	100	100	55, 82, 107, 123	0
1	C	152/157 (96%)	-0.11	0	100	100	57, 83, 109, 127	0
2	E	100/115 (86%)	0.50	7 (7%)	16	16	72, 117, 146, 154	0
2	F	108/115 (93%)	0.65	7 (6%)	18	17	72, 122, 153, 174	0
3	B	103/109 (94%)	-0.07	1 (0%)	82	77	56, 72, 94, 119	0
3	D	100/109 (91%)	-0.14	0	100	100	56, 73, 94, 121	0
All	All	712/762 (93%)	0.11	15 (2%)	63	58	55, 86, 140, 174	0

All (15) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	F	142	SER	4.0
2	F	143	THR	3.1
2	F	41	LEU	2.9
2	E	52	THR	2.8
2	E	139	ALA	2.8
2	F	145	GLU	2.5
2	F	82	PHE	2.4
3	B	262	PRO	2.3
2	E	68	GLY	2.3
2	E	61	LYS	2.2
2	F	70	TYR	2.2
2	E	51	PHE	2.2
2	E	56	LEU	2.1
2	F	40	ASP	2.1
2	E	64	LEU	2.1

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 ⓘ

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
4	ZN	E	1	1/1	0.98	0.07	104,104,104,104	0
4	ZN	F	1	1/1	0.98	0.08	90,90,90,90	0

6.5 Other polymers ⓘ

There are no such residues in this entry.