Full wwPDB X-ray Structure Validation Report (i)

Dec 17, 2023 – 02:59 am GMT

PDB ID	:	2XKP
Title	:	NtcA from Synechococcus elongatus: active and inactive
Authors	:	Llacer, J.L.; Castells, M.A.; Rubio, V.
Deposited on	:	2010-07-11
Resolution	:	3.05 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 (i) 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 (i)) were used in the production of this report:

|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
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
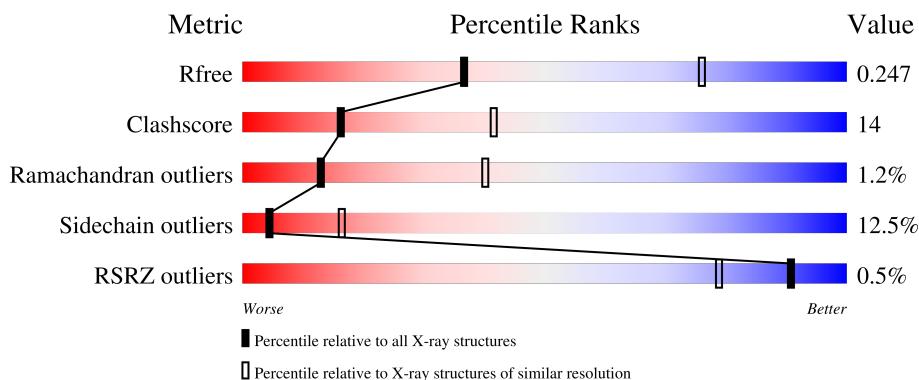
1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.05 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	1754 (3.10-3.02)
Clashscore	141614	1864 (3.10-3.02)
Ramachandran outliers	138981	1794 (3.10-3.02)
Sidechain outliers	138945	1793 (3.10-3.02)
RSRZ outliers	127900	1713 (3.10-3.02)

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	222	63% 27% • 7%
1	B	222	69% 22% • 5%
1	C	222	57% 25% 6% 12%
1	D	222	62% 27% 5% 7%
1	E	222	68% 23% • 5%

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Mol	Chain	Length	Quality of chain
1	F	222	59% 23% 6% 12%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	AKG	C	1220	-	-	X	-
2	AKG	F	1220	-	-	X	-

2 Entry composition (i)
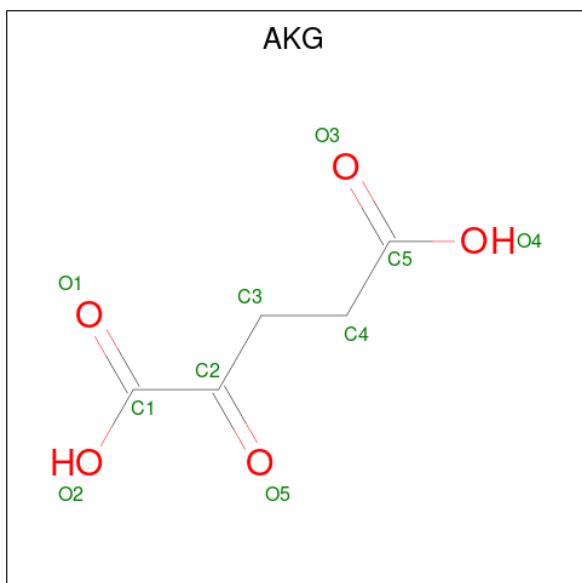
There are 2 unique types of molecules in this entry. The entry contains 9566 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 GLOBAL NITROGEN REGULATOR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	207	Total	C	N	O	S	0	0	0
			1616	1039	275	295	7			
1	B	211	Total	C	N	O	S	0	0	0
			1627	1048	280	293	6			
1	C	196	Total	C	N	O	S	0	0	0
			1510	976	257	271	6			
1	D	207	Total	C	N	O	S	0	0	0
			1616	1039	275	295	7			
1	E	211	Total	C	N	O	S	0	0	0
			1627	1048	280	293	6			
1	F	196	Total	C	N	O	S	0	0	0
			1510	976	257	271	6			

- Molecule 2 is 2-OXOGLUTARIC ACID (three-letter code: AKG) (formula: $C_5H_6O_5$).
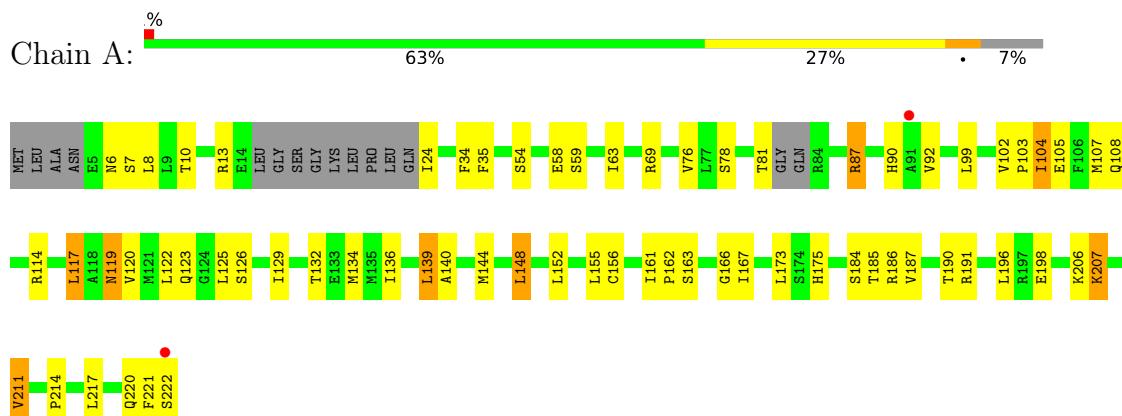
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total 10	C 5	O 5	0	0
2	B	1	Total 10	C 5	O 5	0	0
2	C	1	Total 10	C 5	O 5	0	0
2	D	1	Total 10	C 5	O 5	0	0
2	E	1	Total 10	C 5	O 5	0	0
2	F	1	Total 10	C 5	O 5	0	0
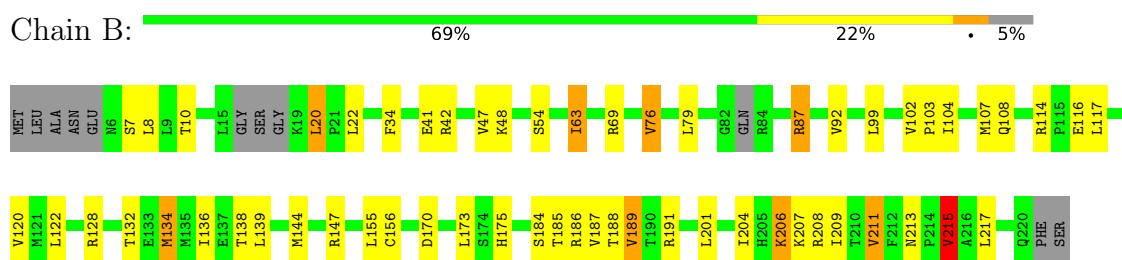
3 Residue-property plots ⓘ

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.
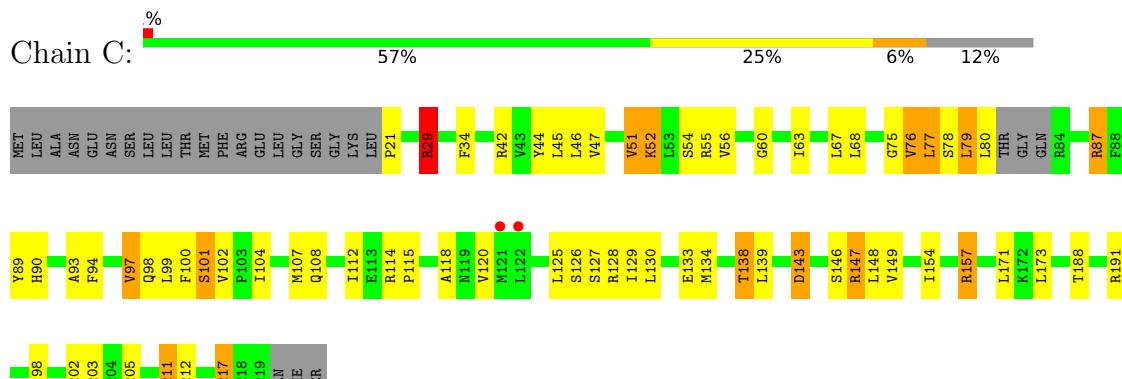
• Molecule 1: GLOBAL NITROGEN REGULATOR
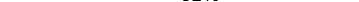
Chain A:

• Molecule 1: GLOBAL NITROGEN REGULATOR
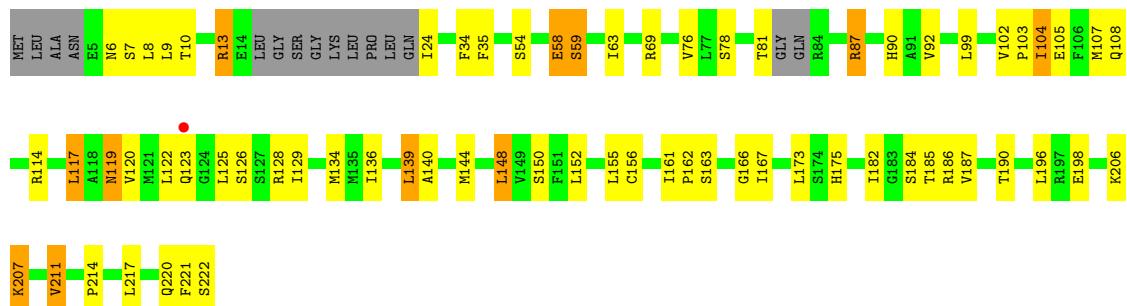
Chain B:

• Molecule 1: GLOBAL NITROGEN REGULATOR
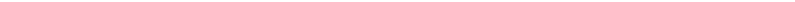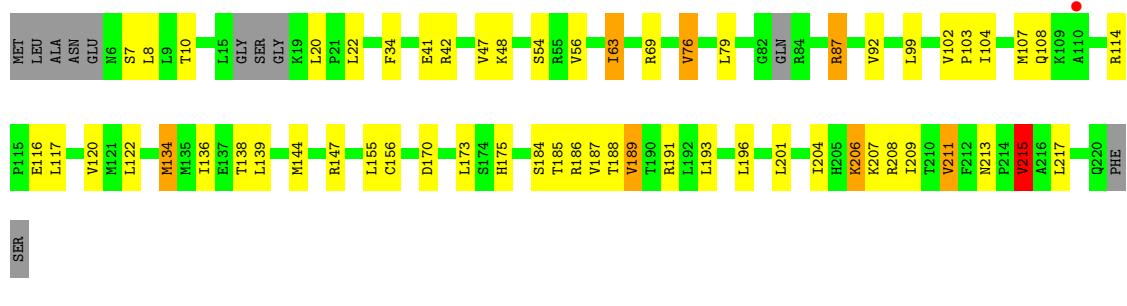
Chain C:

• Molecule 1: GLOBAL NITROGEN REGULATOR

Chain D:

62% 27% 5% 7%

MET LEU ALA ASN E5 N6 S7 L8 L9 T10 R13 E14 LEU GLY SER GLY LYS LEU PRO LEU GLN I24 F34 F35 S54 E58 S59 I63 R69 V76 L77 S78 T81 GLY GLN R84 R87 H90 A91 V92 L99 V102 P103 I104 E105 F106 M107 Q108

R114 L117 A118 N119 V120 M121 L122 Q123 G124 L125 S126 S127 R128 I129 M134 M135 I136 L139 A140 M144 L148 V149 S150 F151 L152 L155 C156 I161 P162 S163 G166 I167 L173 S174 H175 I182 G183 S184 T185 R186 V187 T190 L196 R197 E198 K206

K207 V211 P214 L217 Q220 F221 S222

• Molecule 1: GLOBAL NITROGEN REGULATOR

Chain E:

68% 23% • 5%

MET LEU ALA ASN GLU N6 S7 L8 L9 T10 L15 GLY SER GLY K19 L20 P21 L22 F34 E41 R42 V47 K48 S54 R55 V56 I63 R69 V76 L79 G82 GLN R84 R87 V92 L99 V102 P103 I104 M107 Q108 K109 A110 R114

P115 E116 L117 V120 M121 L122 M134 M135 I136 E137 T138 L139 M144 R147 L155 C156 D170 L173 S174 H175 S184 T185 R186 V187 T188 V189 T190 R191 L192 L193 L196 L201 I204 H205 K206 K207 R208 I209 T210 V211 F212 N213 P214 V215 A216 L217 Q220 PHE

SER

• Molecule 1: GLOBAL NITROGEN REGULATOR

Chain F:

59% 23% 6% 12%

MET LEU ALA ASN GLU ASN SER LEU LEU THR MET PHE ARG GLU LEU GLY SER GLY LYS LEU P21 R29 F34 R42 V43 Y44 L45 L46 V47 K48 V51 K52 L53 S54 R55 I63 L67 L68 R69 E70 V76 L77 S78 L79 L80 THR GLY GLN R84 R87 H90

A93 F94 V97 Q98 L99 F100 S101 V102 P103 I104 M107 Q108 I112 E113 R114 P115 A118 N119 V120 L125 S126 S127 R128 I129 L130 E133 M134 T138 L139 D143 S146 R147 L148 V149 I154 R157 L171 K172 L173 R191 E198 I202 A203

V211 F212 L217 S218 Q219 GLN PHE SER

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 61	Depositor
Cell constants a, b, c, α, β, γ	110.39Å 110.39Å 219.60Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	50.00 – 3.05 87.66 – 3.05	Depositor EDS
% Data completeness (in resolution range)	100.0 (50.00-3.05) 100.0 (87.66-3.05)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.85 (at 3.07Å)	Xtriage
Refinement program	REFMAC 5.5.0072	Depositor
R, R_{free}	0.206 , 0.247 0.217 , 0.247	Depositor DCC
R_{free} test set	1461 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	58.4	Xtriage
Anisotropy	0.164	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 59.8	EDS
L-test for twinning [2]	$< |L| > = 0.50, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.487 for h,-h-k,-l	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	9566	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.94% 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: AKG

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	0.44	0/1641	0.62	0/2217
1	B	0.46	0/1652	0.65	0/2233
1	C	0.48	0/1535	0.65	1/2077 (0.0%)
1	D	0.44	0/1641	0.61	0/2217
1	E	0.45	0/1652	0.65	0/2233
1	F	0.47	0/1535	0.65	1/2077 (0.0%)
All	All	0.46	0/9656	0.64	2/13054 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	29	ARG	NE-CZ-NH1	6.25	123.43	120.30
1	C	29	ARG	NE-CZ-NH1	5.97	123.28	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1616	0	1655	53	0
1	B	1627	0	1671	49	0
1	C	1510	0	1558	65	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	1616	0	1655	52	0
1	E	1627	0	1671	41	0
1	F	1510	0	1558	56	0
2	A	10	0	4	0	0
2	B	10	0	4	1	0
2	C	10	0	4	6	0
2	D	10	0	4	1	0
2	E	10	0	4	0	0
2	F	10	0	4	4	0
All	All	9566	0	9792	279	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 14.

All (279) 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:F:77:LEU:HG	2:F:1220:AKG:H31	1.45	0.97
1:B:79:LEU:HD23	1:B:104:ILE:HD11	1.54	0.90
1:E:79:LEU:HD23	1:E:104:ILE:HD11	1.54	0.89
1:B:170:ASP:OD1	1:B:208:ARG:NH2	2.12	0.83
1:E:170:ASP:OD1	1:E:208:ARG:NH2	2.14	0.81
1:C:149:VAL:HG13	1:C:217:LEU:HD22	1.63	0.80
1:C:47:VAL:HG21	1:C:100:PHE:CE2	2.17	0.79
1:F:149:VAL:HG13	1:F:217:LEU:HD22	1.64	0.78
1:F:46:LEU:HD22	1:F:51:VAL:HG12	1.65	0.78
1:F:104:ILE:HG22	1:F:108:GLN:HE21	1.49	0.76
1:C:104:ILE:HG22	1:C:108:GLN:HE21	1.48	0.76
1:F:47:VAL:HG21	1:F:100:PHE:CE2	2.21	0.76
1:C:46:LEU:HD22	1:C:51:VAL:HG12	1.67	0.75
1:B:187:VAL:CG1	1:C:56:VAL:HG21	2.15	0.75
1:D:167:ILE:HD13	1:D:214:PRO:CG	2.17	0.74
1:A:167:ILE:HD13	1:A:214:PRO:CG	2.18	0.74
1:B:187:VAL:HG13	1:C:56:VAL:HG21	1.71	0.73
1:C:52:LYS:HB2	1:C:67:LEU:HD22	1.72	0.72
1:C:51:VAL:HG13	1:C:68:LEU:HB2	1.71	0.71
1:F:52:LYS:HB2	1:F:67:LEU:HD22	1.72	0.71
1:F:143:ASP:OD2	1:F:146:SER:HB2	1.90	0.71
1:C:143:ASP:OD2	1:C:146:SER:HB2	1.91	0.69
1:B:170:ASP:OD1	1:B:208:ARG:CZ	2.40	0.69
1:F:51:VAL:HG13	1:F:68:LEU:HB2	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:167:ILE:HD13	1:D:214:PRO:HG3	1.73	0.69
1:A:167:ILE:HD13	1:A:214:PRO:HG3	1.73	0.68
1:B:206:LYS:HE3	1:B:208:ARG:HB2	1.75	0.68
1:E:170:ASP:OD1	1:E:208:ARG:CZ	2.42	0.68
1:A:114:ARG:O	1:A:117:LEU:HD22	1.93	0.67
1:E:206:LYS:HE3	1:E:208:ARG:HB2	1.75	0.67
1:C:34:PHE:CD1	1:C:87:ARG:HG2	2.29	0.67
1:F:34:PHE:CD1	1:F:87:ARG:HG2	2.28	0.67
1:D:114:ARG:O	1:D:117:LEU:HD22	1.94	0.67
1:D:119:ASN:HD22	1:E:108:GLN:HE21	1.43	0.67
1:F:134:MET:O	1:F:138:THR:HG23	1.95	0.67
1:E:79:LEU:HD23	1:E:104:ILE:CD1	2.25	0.66
1:C:29:ARG:HH11	1:C:29:ARG:HG2	1.59	0.66
1:F:29:ARG:HG2	1:F:29:ARG:HH11	1.58	0.66
1:B:79:LEU:HD23	1:B:104:ILE:CD1	2.25	0.66
1:D:119:ASN:HD22	1:E:108:GLN:NE2	1.94	0.65
1:F:138:THR:HG21	1:F:154:ILE:CD1	2.27	0.65
1:C:134:MET:O	1:C:138:THR:HG23	1.96	0.65
1:A:119:ASN:HD22	1:B:108:GLN:HE21	1.45	0.64
1:A:119:ASN:HD22	1:B:108:GLN:NE2	1.96	0.64
1:F:78:SER:O	1:F:79:LEU:HD13	1.97	0.64
1:C:77:LEU:HG	2:C:1220:AKG:H31	1.81	0.63
1:C:78:SER:O	1:C:79:LEU:HD13	1.98	0.63
1:E:206:LYS:O	1:E:207:LYS:HB2	1.98	0.62
1:A:166:GLY:C	1:A:167:ILE:HD12	2.20	0.62
1:B:206:LYS:O	1:B:207:LYS:HB2	1.99	0.62
1:B:99:LEU:C	1:B:99:LEU:HD12	2.20	0.62
1:C:52:LYS:HB2	1:C:67:LEU:CD2	2.30	0.61
1:C:77:LEU:O	1:C:80:LEU:HD21	2.00	0.61
1:D:114:ARG:HD3	1:D:117:LEU:HD11	1.83	0.61
1:E:99:LEU:HD12	1:E:99:LEU:C	2.20	0.61
1:F:52:LYS:HB2	1:F:67:LEU:CD2	2.30	0.61
1:C:138:THR:HG21	1:C:154:ILE:CD1	2.30	0.61
1:C:94:PHE:CE1	1:C:173:LEU:HD21	2.35	0.61
1:D:166:GLY:C	1:D:167:ILE:HD12	2.22	0.60
1:B:155:LEU:HD13	1:B:173:LEU:HD11	1.83	0.60
1:C:149:VAL:CG1	1:C:217:LEU:HD22	2.32	0.60
1:A:99:LEU:C	1:A:99:LEU:HD12	2.22	0.60
1:D:99:LEU:C	1:D:99:LEU:HD12	2.21	0.60
1:A:114:ARG:HD3	1:A:117:LEU:HD11	1.82	0.59
1:F:42:ARG:HD3	1:F:101:SER:HB3	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:155:LEU:HD13	1:D:173:LEU:HD11	1.85	0.59
1:A:155:LEU:HD13	1:A:173:LEU:HD11	1.85	0.59
1:C:89:TYR:CD2	2:C:1220:AKG:H32	2.37	0.59
1:F:94:PHE:CE1	1:F:173:LEU:HD21	2.38	0.59
1:B:138:THR:O	1:B:147:ARG:HG3	2.03	0.58
1:A:78:SER:O	1:A:104:ILE:HD11	2.03	0.58
1:F:76:VAL:HG21	1:F:125:LEU:HD21	1.85	0.58
1:E:155:LEU:HD13	1:E:173:LEU:HD11	1.84	0.58
1:B:213:ASN:OD1	1:B:215:VAL:HG23	2.04	0.58
1:D:144:MET:CE	1:D:184:SER:HB2	2.34	0.58
1:E:156:CYS:SG	1:E:211:VAL:CG1	2.92	0.57
1:B:156:CYS:SG	1:B:211:VAL:CG1	2.93	0.57
1:F:101:SER:O	1:F:102:VAL:HG23	2.04	0.57
1:D:78:SER:O	1:D:104:ILE:HD11	2.05	0.57
1:C:101:SER:O	1:C:102:VAL:HG23	2.04	0.57
1:C:76:VAL:HG21	1:C:125:LEU:HD21	1.87	0.57
1:E:138:THR:O	1:E:147:ARG:HG3	2.04	0.57
1:C:42:ARG:HD3	1:C:101:SER:HB3	1.84	0.57
1:C:89:TYR:HD2	2:C:1220:AKG:H32	1.69	0.56
1:E:213:ASN:OD1	1:E:215:VAL:HG23	2.05	0.56
1:F:125:LEU:O	1:F:128:ARG:N	2.33	0.56
1:A:144:MET:CE	1:A:184:SER:HB2	2.35	0.56
1:D:140:ALA:HB1	1:E:63:ILE:HG12	1.88	0.56
1:F:139:LEU:HA	1:F:147:ARG:HD2	1.87	0.56
1:A:117:LEU:N	1:A:117:LEU:HD13	2.20	0.56
1:F:149:VAL:CG1	1:F:217:LEU:HD22	2.33	0.56
1:C:139:LEU:HA	1:C:147:ARG:HD2	1.87	0.56
1:E:144:MET:CE	1:E:184:SER:HB2	2.35	0.56
1:F:77:LEU:O	1:F:80:LEU:HD21	2.06	0.56
1:B:144:MET:CE	1:B:184:SER:HB2	2.36	0.56
1:B:187:VAL:HG11	1:C:56:VAL:HG21	1.87	0.55
1:A:140:ALA:HB1	1:B:63:ILE:HG12	1.88	0.55
1:F:138:THR:HG21	1:F:154:ILE:HD11	1.88	0.55
1:A:148:LEU:HD13	1:A:196:LEU:CD1	2.37	0.55
1:A:156:CYS:SG	1:A:211:VAL:CG1	2.95	0.55
1:C:125:LEU:O	1:C:128:ARG:N	2.33	0.55
1:D:117:LEU:N	1:D:117:LEU:HD13	2.21	0.55
1:D:148:LEU:HD13	1:D:196:LEU:CD1	2.37	0.55
1:F:44:TYR:HD2	1:F:99:LEU:HD13	1.71	0.54
1:F:128:ARG:NH2	2:F:1220:AKG:O3	2.38	0.54
1:C:44:TYR:HD2	1:C:99:LEU:HD13	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:104:ILE:HD13	1:D:108:GLN:NE2	2.22	0.54
1:A:6:ASN:O	1:A:8:LEU:N	2.37	0.54
1:C:129:ILE:CG2	1:F:77:LEU:HD21	2.37	0.54
1:D:156:CYS:SG	1:D:211:VAL:CG1	2.95	0.54
1:A:104:ILE:HD13	1:A:108:GLN:NE2	2.23	0.53
1:E:20:LEU:O	1:E:20:LEU:HD12	2.08	0.53
1:E:102:VAL:HG12	1:E:103:PRO:O	2.08	0.53
1:D:161:ILE:HG22	1:D:162:PRO:O	2.09	0.53
1:D:102:VAL:HG12	1:D:103:PRO:O	2.09	0.53
1:A:155:LEU:CD1	1:A:173:LEU:HD11	2.38	0.53
1:C:128:ARG:NH2	2:C:1220:AKG:O3	2.34	0.53
1:D:155:LEU:CD1	1:D:173:LEU:HD11	2.39	0.53
1:C:54:SER:OG	1:C:90:HIS:HB3	2.09	0.53
1:C:75:GLY:HA2	2:C:1220:AKG:H42	1.91	0.53
1:C:143:ASP:OD2	1:C:146:SER:CB	2.57	0.53
1:B:34:PHE:CD1	1:B:87:ARG:HG2	2.45	0.52
1:F:29:ARG:HH11	1:F:29:ARG:CG	2.23	0.52
1:F:143:ASP:OD2	1:F:146:SER:CB	2.58	0.52
1:F:21:PRO:O	1:F:102:VAL:HG22	2.09	0.52
1:A:102:VAL:HG12	1:A:103:PRO:O	2.09	0.52
1:B:102:VAL:HG12	1:B:103:PRO:O	2.09	0.52
1:A:161:ILE:HG22	1:A:162:PRO:O	2.10	0.52
1:B:20:LEU:HD12	1:B:20:LEU:O	2.10	0.52
1:A:78:SER:O	1:A:104:ILE:CD1	2.59	0.51
1:A:161:ILE:HG23	1:A:162:PRO:HD2	1.93	0.51
1:C:45:LEU:C	1:C:45:LEU:HD23	2.31	0.51
1:C:29:ARG:HH11	1:C:29:ARG:CG	2.23	0.51
1:D:114:ARG:CD	1:D:117:LEU:HD21	2.41	0.51
1:A:34:PHE:CD1	1:A:87:ARG:HG2	2.45	0.51
1:A:114:ARG:CD	1:A:117:LEU:HD21	2.40	0.51
1:C:87:ARG:HG3	2:C:1220:AKG:O5	2.11	0.51
1:E:34:PHE:CD1	1:E:87:ARG:HG2	2.44	0.51
1:D:34:PHE:CD1	1:D:87:ARG:HG2	2.45	0.51
1:D:161:ILE:HG23	1:D:162:PRO:HD2	1.93	0.51
1:F:108:GLN:O	1:F:112:ILE:HG23	2.11	0.51
1:E:156:CYS:SG	1:E:211:VAL:HG11	2.51	0.51
1:A:217:LEU:O	1:A:220:GLN:HB3	2.11	0.50
1:C:138:THR:HG21	1:C:154:ILE:HD11	1.93	0.50
1:D:217:LEU:O	1:D:220:GLN:HB3	2.11	0.50
1:E:117:LEU:HA	1:E:120:VAL:HG23	1.94	0.50
1:A:175:HIS:ND1	1:A:190:THR:OG1	2.30	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:108:GLN:O	1:C:112:ILE:HG23	2.11	0.50
1:F:202:ILE:HG22	1:F:211:VAL:HB	1.94	0.50
1:F:45:LEU:C	1:F:45:LEU:HD23	2.32	0.50
1:F:54:SER:OG	1:F:90:HIS:HB3	2.11	0.50
1:F:87:ARG:HG3	2:F:1220:AKG:O5	2.11	0.50
1:B:156:CYS:SG	1:B:211:VAL:HG11	2.52	0.50
1:C:202:ILE:HG22	1:C:211:VAL:HB	1.94	0.50
1:D:99:LEU:HD12	1:D:99:LEU:O	2.12	0.50
1:D:78:SER:O	1:D:104:ILE:CD1	2.60	0.50
1:B:117:LEU:HA	1:B:120:VAL:HG23	1.93	0.50
1:A:148:LEU:HD13	1:A:196:LEU:HD12	1.94	0.50
1:D:148:LEU:HD13	1:D:196:LEU:HD12	1.94	0.50
1:A:156:CYS:SG	1:A:211:VAL:HG13	2.53	0.49
1:B:99:LEU:HD12	1:B:99:LEU:O	2.13	0.49
1:C:77:LEU:HD21	1:F:129:ILE:CG2	2.42	0.49
1:D:6:ASN:O	1:D:8:LEU:N	2.37	0.49
1:A:126:SER:HB3	1:B:76:VAL:HG13	1.95	0.48
1:C:21:PRO:O	1:C:102:VAL:HG22	2.12	0.48
1:C:55:ARG:NH1	1:F:133:GLU:OE2	2.47	0.48
1:C:205:HIS:CE1	1:E:56:VAL:HG21	2.48	0.48
1:A:139:LEU:CD2	1:B:136:ILE:HG23	2.43	0.48
1:E:41:GLU:HG3	1:E:42:ARG:HG3	1.95	0.48
1:E:155:LEU:CD1	1:E:173:LEU:HD11	2.44	0.48
1:F:129:ILE:HD12	1:F:129:ILE:H	1.79	0.48
1:A:148:LEU:HD22	1:A:152:LEU:HG	1.96	0.48
1:D:156:CYS:SG	1:D:211:VAL:HG13	2.54	0.47
1:E:201:LEU:HB3	1:E:217:LEU:HD11	1.96	0.47
1:B:41:GLU:HG3	1:B:42:ARG:HG3	1.96	0.47
1:B:201:LEU:HB3	1:B:217:LEU:HD11	1.95	0.47
1:C:125:LEU:HD12	1:F:125:LEU:HB2	1.97	0.47
1:B:155:LEU:CD1	1:B:173:LEU:HD11	2.43	0.47
1:B:156:CYS:SG	1:B:211:VAL:HG13	2.54	0.47
1:D:148:LEU:HD22	1:D:152:LEU:HG	1.96	0.47
1:D:175:HIS:ND1	1:D:190:THR:OG1	2.30	0.47
1:E:99:LEU:HD12	1:E:99:LEU:O	2.14	0.47
1:D:139:LEU:CD2	1:E:136:ILE:HG23	2.45	0.47
1:F:76:VAL:HG21	1:F:125:LEU:CD2	2.45	0.47
1:A:99:LEU:HD12	1:A:99:LEU:O	2.13	0.47
1:C:138:THR:HG21	1:C:154:ILE:HD12	1.97	0.47
1:A:139:LEU:HB3	1:B:139:LEU:HB3	1.97	0.46
1:A:191:ARG:HH21	1:C:188:THR:CG2	2.28	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:104:ILE:HG22	1:D:105:GLU:N	2.31	0.46
1:B:204:ILE:HG12	1:B:209:ILE:HG12	1.98	0.46
1:D:122:LEU:HD23	1:E:122:LEU:HD23	1.97	0.46
1:D:144:MET:HE1	1:D:182:ILE:O	2.15	0.46
1:A:35:PHE:HD2	1:A:90:HIS:CD2	2.34	0.46
1:A:206:LYS:O	1:A:207:LYS:HG2	2.16	0.46
1:C:93:ALA:CB	1:C:97:VAL:HG13	2.46	0.46
1:E:204:ILE:HG12	1:E:209:ILE:HG12	1.98	0.45
1:F:138:THR:CG2	1:F:154:ILE:HD11	2.46	0.45
1:B:47:VAL:O	1:B:48:LYS:HD2	2.17	0.45
1:C:125:LEU:HB2	1:F:125:LEU:HD12	1.98	0.45
1:D:126:SER:HB3	1:E:76:VAL:HG13	1.97	0.45
1:D:206:LYS:O	1:D:207:LYS:HG2	2.17	0.45
1:F:138:THR:HG21	1:F:154:ILE:HD12	1.96	0.45
1:C:133:GLU:OE2	1:F:55:ARG:NH1	2.48	0.45
1:D:35:PHE:HD2	1:D:90:HIS:CD2	2.34	0.45
1:F:104:ILE:HG22	1:F:108:GLN:NE2	2.26	0.45
1:C:129:ILE:H	1:C:129:ILE:HD12	1.81	0.45
1:A:122:LEU:HD23	1:B:122:LEU:HD23	1.97	0.45
1:E:156:CYS:SG	1:E:211:VAL:HG13	2.55	0.45
1:A:104:ILE:HG22	1:A:105:GLU:N	2.31	0.45
1:C:93:ALA:HB1	1:C:97:VAL:HG13	1.99	0.45
1:C:129:ILE:HG21	1:F:77:LEU:HD21	1.99	0.45
1:A:123:GLN:HG2	1:B:79:LEU:O	2.17	0.45
1:A:144:MET:HE1	1:A:184:SER:HB2	1.98	0.44
1:A:191:ARG:HH21	1:C:188:THR:HG21	1.81	0.44
1:B:187:VAL:HG21	1:C:90:HIS:CG	2.52	0.44
1:F:76:VAL:O	1:F:77:LEU:C	2.55	0.44
1:F:76:VAL:O	1:F:78:SER:N	2.49	0.44
1:B:134:MET:HE2	1:B:134:MET:HA	1.99	0.44
1:E:134:MET:HE2	1:E:134:MET:HA	2.00	0.44
1:D:123:GLN:HG2	1:E:79:LEU:O	2.16	0.44
1:D:139:LEU:HB3	1:E:139:LEU:HB3	1.98	0.44
1:B:8:LEU:HG	1:B:120:VAL:HG12	2.00	0.44
1:D:220:GLN:HG2	1:D:221:PHE:CE2	2.53	0.44
1:D:58:GLU:HA	1:D:59:SER:HA	1.80	0.44
1:C:76:VAL:O	1:C:77:LEU:C	2.56	0.44
1:E:8:LEU:HG	1:E:120:VAL:HG12	1.99	0.44
1:B:188:THR:HG23	1:C:60:GLY:CA	2.47	0.44
1:D:220:GLN:HG2	1:D:221:PHE:CD2	2.53	0.44
1:E:47:VAL:O	1:E:48:LYS:HD2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:156:CYS:SG	1:A:211:VAL:HG11	2.57	0.43
1:A:220:GLN:HG2	1:A:221:PHE:CD2	2.53	0.43
1:C:76:VAL:HG21	1:C:125:LEU:CD2	2.47	0.43
1:A:81:THR:CG2	1:A:108:GLN:HE22	2.31	0.43
1:F:93:ALA:CB	1:F:97:VAL:HG13	2.49	0.43
1:D:125:LEU:O	1:D:129:ILE:HG13	2.19	0.43
1:A:167:ILE:HD13	1:A:214:PRO:HG2	2.00	0.43
1:A:220:GLN:HG2	1:A:221:PHE:CE2	2.53	0.43
1:D:156:CYS:SG	1:D:211:VAL:HG11	2.57	0.43
1:C:76:VAL:O	1:C:78:SER:N	2.52	0.43
1:C:138:THR:CG2	1:C:154:ILE:HD11	2.49	0.43
1:E:175:HIS:HB3	1:E:189:VAL:HG22	2.01	0.43
1:C:203:ALA:HB2	1:C:212:PHE:CZ	2.54	0.43
1:F:203:ALA:HB2	1:F:212:PHE:CZ	2.53	0.43
1:C:97:VAL:HG21	1:C:99:LEU:HD23	2.01	0.43
1:D:81:THR:CG2	1:D:108:GLN:HE22	2.32	0.43
1:F:130:LEU:HD23	1:F:157:ARG:NH2	2.33	0.43
1:E:187:VAL:HG12	1:E:188:THR:N	2.34	0.42
1:F:93:ALA:HB1	1:F:97:VAL:HG13	2.00	0.42
1:F:77:LEU:CG	2:F:1220:AKG:H31	2.31	0.42
1:A:125:LEU:O	1:A:129:ILE:HG13	2.18	0.42
1:B:175:HIS:HB3	1:B:189:VAL:HG22	2.02	0.42
1:B:187:VAL:HG12	1:B:188:THR:N	2.35	0.42
1:D:128:ARG:NH2	2:D:1223:AKG:O4	2.50	0.42
1:D:167:ILE:HD13	1:D:214:PRO:HG2	1.98	0.42
1:C:130:LEU:HD23	1:C:157:ARG:NH2	2.34	0.42
1:D:184:SER:OG	1:D:185:THR:N	2.52	0.42
1:A:132:THR:HG21	1:B:132:THR:HB	2.02	0.42
1:A:8:LEU:HG	1:A:120:VAL:HG12	2.02	0.41
1:D:136:ILE:HG23	1:E:139:LEU:HD22	2.02	0.41
1:B:128:ARG:NH2	2:B:1221:AKG:O4	2.51	0.41
1:B:188:THR:HG23	1:C:60:GLY:HA3	2.02	0.41
1:D:8:LEU:HG	1:D:120:VAL:HG12	2.02	0.41
1:F:97:VAL:CG2	1:F:99:LEU:HD23	2.51	0.41
1:F:48:LYS:HA	1:F:70:GLU:HG2	2.03	0.41
1:F:97:VAL:HG21	1:F:99:LEU:HD23	2.02	0.41
1:F:115:PRO:O	1:F:118:ALA:HB3	2.20	0.41
1:A:136:ILE:HG23	1:B:139:LEU:HD22	2.02	0.41
1:B:187:VAL:HG11	1:C:56:VAL:CG2	2.51	0.41
1:C:115:PRO:O	1:C:118:ALA:HB3	2.21	0.41
1:D:150:SER:HB2	1:D:221:PHE:CZ	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:184:SER:OG	1:E:185:THR:N	2.53	0.41
1:A:184:SER:OG	1:A:185:THR:N	2.53	0.41
1:E:193:LEU:O	1:E:196:LEU:N	2.49	0.41
1:B:213:ASN:OD1	1:B:215:VAL:CG2	2.69	0.40
1:B:184:SER:OG	1:B:185:THR:N	2.53	0.40
1:A:81:THR:HG22	1:A:108:GLN:HE22	1.87	0.40
1:A:126:SER:CB	1:B:76:VAL:HG13	2.51	0.40
1:D:9:LEU:HD22	1:D:13:ARG:HH12	1.86	0.40
1:E:99:LEU:C	1:E:99:LEU:CD1	2.89	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	201/222 (90%)	187 (93%)	13 (6%)	1 (0%)	29	60
1	B	205/222 (92%)	194 (95%)	7 (3%)	4 (2%)	7	27
1	C	192/222 (86%)	179 (93%)	11 (6%)	2 (1%)	15	45
1	D	201/222 (90%)	187 (93%)	13 (6%)	1 (0%)	29	60
1	E	205/222 (92%)	193 (94%)	8 (4%)	4 (2%)	7	27
1	F	192/222 (86%)	178 (93%)	12 (6%)	2 (1%)	15	45
All	All	1196/1332 (90%)	1118 (94%)	64 (5%)	14 (1%)	13	40

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	7	SER
1	C	77	LEU
1	D	7	SER

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Mol	Chain	Res	Type
1	F	77	LEU
1	B	215	VAL
1	E	215	VAL
1	B	7	SER
1	E	7	SER
1	B	116	GLU
1	E	114	ARG
1	E	116	GLU
1	B	114	ARG
1	F	114	ARG
1	C	114	ARG

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	178/194 (92%)	153 (86%)	25 (14%)	3	13
1	B	176/194 (91%)	159 (90%)	17 (10%)	8	27
1	C	164/194 (84%)	140 (85%)	24 (15%)	3	12
1	D	178/194 (92%)	153 (86%)	25 (14%)	3	13
1	E	176/194 (91%)	160 (91%)	16 (9%)	9	30
1	F	164/194 (84%)	142 (87%)	22 (13%)	4	14
All	All	1036/1164 (89%)	907 (88%)	129 (12%)	4	16

All (129) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	10	THR
1	A	13	ARG
1	A	24	ILE
1	A	54	SER
1	A	58	GLU
1	A	59	SER
1	A	63	ILE

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Mol	Chain	Res	Type
1	A	69	ARG
1	A	76	VAL
1	A	87	ARG
1	A	92	VAL
1	A	104	ILE
1	A	107	MET
1	A	117	LEU
1	A	119	ASN
1	A	134	MET
1	A	139	LEU
1	A	148	LEU
1	A	163	SER
1	A	186	ARG
1	A	187	VAL
1	A	198	GLU
1	A	207	LYS
1	A	211	VAL
1	A	222	SER
1	B	10	THR
1	B	20	LEU
1	B	22	LEU
1	B	54	SER
1	B	63	ILE
1	B	69	ARG
1	B	76	VAL
1	B	87	ARG
1	B	92	VAL
1	B	107	MET
1	B	134	MET
1	B	186	ARG
1	B	189	VAL
1	B	191	ARG
1	B	206	LYS
1	B	211	VAL
1	B	215	VAL
1	C	29	ARG
1	C	51	VAL
1	C	52	LYS
1	C	63	ILE
1	C	76	VAL
1	C	79	LEU
1	C	87	ARG

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Mol	Chain	Res	Type
1	C	97	VAL
1	C	98	GLN
1	C	101	SER
1	C	107	MET
1	C	120	VAL
1	C	126	SER
1	C	127	SER
1	C	138	THR
1	C	143	ASP
1	C	147	ARG
1	C	148	LEU
1	C	157	ARG
1	C	171	LEU
1	C	191	ARG
1	C	198	GLU
1	C	211	VAL
1	C	217	LEU
1	D	10	THR
1	D	13	ARG
1	D	24	ILE
1	D	54	SER
1	D	58	GLU
1	D	59	SER
1	D	63	ILE
1	D	69	ARG
1	D	76	VAL
1	D	87	ARG
1	D	92	VAL
1	D	104	ILE
1	D	107	MET
1	D	117	LEU
1	D	119	ASN
1	D	134	MET
1	D	139	LEU
1	D	148	LEU
1	D	163	SER
1	D	186	ARG
1	D	187	VAL
1	D	198	GLU
1	D	207	LYS
1	D	211	VAL
1	D	222	SER

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Mol	Chain	Res	Type
1	E	10	THR
1	E	22	LEU
1	E	54	SER
1	E	63	ILE
1	E	69	ARG
1	E	76	VAL
1	E	87	ARG
1	E	92	VAL
1	E	107	MET
1	E	134	MET
1	E	186	ARG
1	E	189	VAL
1	E	191	ARG
1	E	206	LYS
1	E	211	VAL
1	E	215	VAL
1	F	29	ARG
1	F	51	VAL
1	F	52	LYS
1	F	63	ILE
1	F	79	LEU
1	F	87	ARG
1	F	97	VAL
1	F	98	GLN
1	F	101	SER
1	F	107	MET
1	F	120	VAL
1	F	127	SER
1	F	138	THR
1	F	143	ASP
1	F	147	ARG
1	F	148	LEU
1	F	157	ARG
1	F	171	LEU
1	F	191	ARG
1	F	198	GLU
1	F	211	VAL
1	F	217	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	6	ASN
1	A	98	GLN
1	A	108	GLN
1	B	108	GLN
1	B	123	GLN
1	C	108	GLN
1	D	6	ASN
1	D	98	GLN
1	D	108	GLN
1	D	123	GLN
1	E	108	GLN
1	E	123	GLN
1	F	108	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 ⓘ

6 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
2	AKG	B	1221	-	9,9,9	1.13	0	11,11,11	2.13	4 (36%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	AKG	E	1221	-	9,9,9	1.17	0	11,11,11	2.07	4 (36%)
2	AKG	F	1220	-	9,9,9	1.15	0	11,11,11	1.86	4 (36%)
2	AKG	C	1220	-	9,9,9	1.34	1 (11%)	11,11,11	1.76	3 (27%)
2	AKG	A	1223	-	9,9,9	1.12	0	11,11,11	1.95	4 (36%)
2	AKG	D	1223	-	9,9,9	1.10	0	11,11,11	1.98	4 (36%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	AKG	B	1221	-	-	5/9/9/9	-
2	AKG	E	1221	-	-	5/9/9/9	-
2	AKG	F	1220	-	-	4/9/9/9	-
2	AKG	C	1220	-	-	3/9/9/9	-
2	AKG	A	1223	-	-	5/9/9/9	-
2	AKG	D	1223	-	-	4/9/9/9	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1220	AKG	C2-C1	2.56	1.57	1.53

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1221	AKG	O1-C1-C2	-4.68	115.47	121.72
2	E	1221	AKG	O1-C1-C2	-4.53	115.67	121.72
2	A	1223	AKG	O1-C1-C2	-4.42	115.82	121.72
2	D	1223	AKG	O1-C1-C2	-4.36	115.90	121.72
2	E	1221	AKG	C3-C2-C1	2.85	121.26	115.97
2	B	1221	AKG	C3-C2-C1	2.84	121.25	115.97
2	F	1220	AKG	O5-C2-C1	2.80	123.48	119.43
2	E	1221	AKG	O2-C1-C2	2.66	121.24	113.97
2	B	1221	AKG	O2-C1-C2	2.65	121.21	113.97
2	C	1220	AKG	O1-C1-C2	-2.59	118.26	121.72
2	F	1220	AKG	O1-C1-C2	-2.59	118.27	121.72
2	C	1220	AKG	C3-C2-C1	2.50	120.61	115.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	1223	AKG	C4-C3-C2	-2.45	108.41	113.03
2	D	1223	AKG	C3-C2-C1	2.44	120.49	115.97
2	A	1223	AKG	C3-C2-C1	2.39	120.41	115.97
2	F	1220	AKG	C4-C3-C2	-2.34	108.62	113.03
2	A	1223	AKG	O2-C1-C2	2.30	120.26	113.97
2	B	1221	AKG	C4-C3-C2	-2.29	108.72	113.03
2	D	1223	AKG	O2-C1-C2	2.29	120.23	113.97
2	E	1221	AKG	C4-C3-C2	-2.29	108.72	113.03
2	A	1223	AKG	C4-C3-C2	-2.28	108.74	113.03
2	C	1220	AKG	O3-C5-C4	-2.23	115.93	123.08
2	F	1220	AKG	O3-C5-C4	-2.16	116.13	123.08

There are no chirality outliers.

All (26) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1223	AKG	C1-C2-C3-C4
2	A	1223	AKG	C2-C3-C4-C5
2	B	1221	AKG	C1-C2-C3-C4
2	B	1221	AKG	C2-C3-C4-C5
2	C	1220	AKG	C2-C3-C4-C5
2	D	1223	AKG	C1-C2-C3-C4
2	D	1223	AKG	C2-C3-C4-C5
2	E	1221	AKG	C1-C2-C3-C4
2	E	1221	AKG	C2-C3-C4-C5
2	F	1220	AKG	C2-C3-C4-C5
2	F	1220	AKG	C1-C2-C3-C4
2	D	1223	AKG	C3-C4-C5-O4
2	A	1223	AKG	C3-C4-C5-O4
2	B	1221	AKG	C3-C4-C5-O4
2	E	1221	AKG	C3-C4-C5-O3
2	A	1223	AKG	C3-C4-C5-O3
2	B	1221	AKG	C3-C4-C5-O3
2	D	1223	AKG	C3-C4-C5-O3
2	E	1221	AKG	C3-C4-C5-O4
2	C	1220	AKG	C3-C4-C5-O4
2	C	1220	AKG	C3-C4-C5-O3
2	A	1223	AKG	O5-C2-C3-C4
2	B	1221	AKG	O5-C2-C3-C4
2	E	1221	AKG	O5-C2-C3-C4
2	F	1220	AKG	C3-C4-C5-O4
2	F	1220	AKG	C3-C4-C5-O3

There are no ring outliers.

4 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1221	AKG	1	0
2	F	1220	AKG	4	0
2	C	1220	AKG	6	0
2	D	1223	AKG	1	0

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	A	207/222 (93%)	0.03	2 (0%) 82	63	34, 57, 90, 99	0
1	B	211/222 (95%)	-0.13	0 100	100	30, 47, 84, 101	0
1	C	196/222 (88%)	-0.28	2 (1%) 82	63	20, 44, 98, 127	0
1	D	207/222 (93%)	0.06	1 (0%) 91	79	34, 57, 90, 98	0
1	E	211/222 (95%)	-0.10	1 (0%) 91	79	32, 48, 83, 99	0
1	F	196/222 (88%)	-0.26	0 100	100	28, 46, 83, 99	0
All	All	1228/1332 (92%)	-0.11	6 (0%) 91	79	20, 50, 89, 127	0

All (6) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	222	SER	2.6
1	C	122	LEU	2.3
1	E	110	ALA	2.2
1	A	91	ALA	2.2
1	C	121	MET	2.1
1	D	123	GLN	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($\mathring{A}^2$)	Q<0.9
2	AKG	D	1223	10/10	0.85	0.46	47,50,59,60	0
2	AKG	A	1223	10/10	0.87	0.48	47,50,59,60	0
2	AKG	E	1221	10/10	0.89	0.24	47,50,59,60	0
2	AKG	B	1221	10/10	0.90	0.28	47,50,59,60	0
2	AKG	C	1220	10/10	0.92	0.40	76,77,77,77	0
2	AKG	F	1220	10/10	0.92	0.29	70,71,72,72	0

6.5　Other polymers ⓘ

There are no such residues in this entry.