Full wwPDB X-ray Structure Validation Report (i)

Oct 23, 2023 – 10:26 PM EDT

PDB ID	:	2ZRS
Title	:	Crystal structure of Ca2+-bound form of des3-23ALG-2
Authors	:	Suzuki, H.; Kawasaki, M.; Kakiuchi, T.; Shibata, H.; Wakatsuki, S.; Maki, M.
Deposited on	:	2008-09-01
Resolution	:	3.10 Å(reported)

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

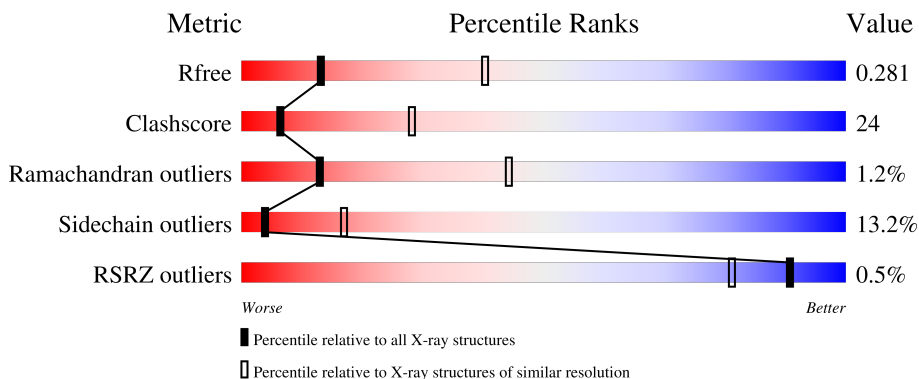|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 3.10 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.
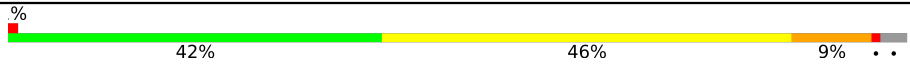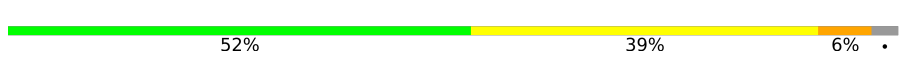
Metric	Percentile Ranks	Value
Rfree		0.281
Clashscore		24
Ramachandran outliers		1.2%
Sidechain outliers		13.2%
RSRZ outliers		0.5%

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	1094 (3.10-3.10)
Clashscore	141614	1184 (3.10-3.10)
Ramachandran outliers	138981	1141 (3.10-3.10)
Sidechain outliers	138945	1141 (3.10-3.10)
RSRZ outliers	127900	1067 (3.10-3.10)

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	168	.% 48% 39% 9% · ·
1	B	168	.% 46% 42% 8% · ·
1	C	168	49% 38% 9% · ·
1	D	168	48% 43% 7% ·
1	E	168	45% 44% 10% ·

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Mol	Chain	Length	Quality of chain
1	F	168	42% 46% 9%
1	G	168	57% 32% 8%
1	H	168	52% 39% 6%

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 10956 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 Programmed cell death protein 6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	165	Total	C	N	O	S	0	0	0
			1378	875	239	260	4			
1	B	163	Total	C	N	O	S	0	0	0
			1361	866	236	255	4			
1	C	162	Total	C	N	O	S	0	0	0
			1355	863	235	253	4			
1	D	164	Total	C	N	O	S	0	0	0
			1370	871	238	257	4			
1	E	166	Total	C	N	O	S	0	0	0
			1384	878	240	262	4			
1	F	163	Total	C	N	O	S	0	0	0
			1361	866	236	255	4			
1	G	163	Total	C	N	O	S	0	0	0
			1361	866	236	255	4			
1	H	163	Total	C	N	O	S	0	0	0
			1361	866	236	255	4			

- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	2	Total	Ca	0	0
			2	2		
2	B	4	Total	Ca	0	0
			4	4		
2	C	3	Total	Ca	0	0
			3	3		
2	D	3	Total	Ca	0	0
			3	3		
2	E	3	Total	Ca	0	0
			3	3		
2	F	3	Total	Ca	0	0
			3	3		

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W O R L D W I D E

PDB

PROTEIN DATA BANK

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	G	4	Total 4	Ca 4	0	0
2	H	3	Total 3	Ca 3	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: Programmed cell death protein 6
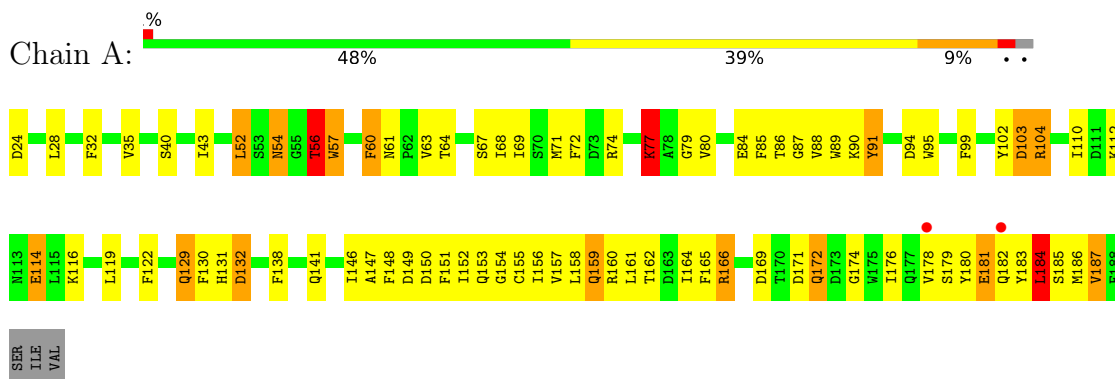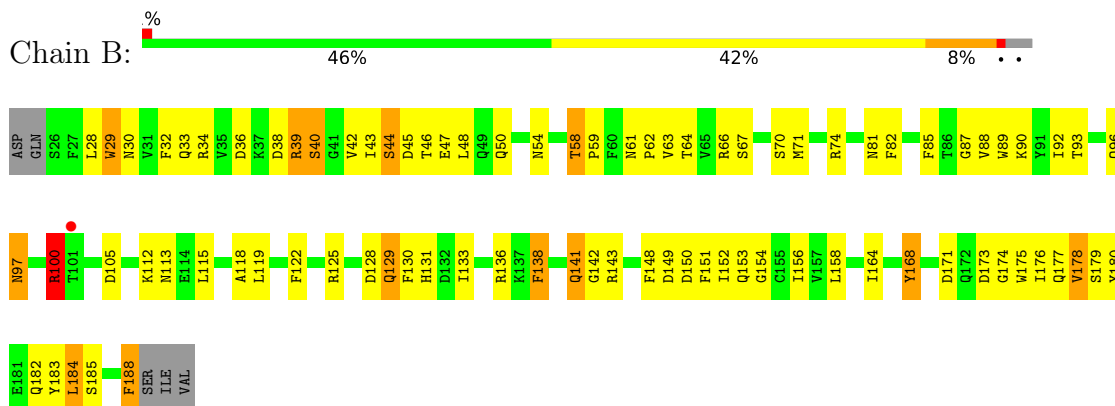
Chain A:

- Molecule 1: Programmed cell death protein 6

Chain B:

- Molecule 1: Programmed cell death protein 6

Chain C:

• Molecule 1: Programmed cell death protein 6

Chain D:

• Molecule 1: Programmed cell death protein 6

Chain E:

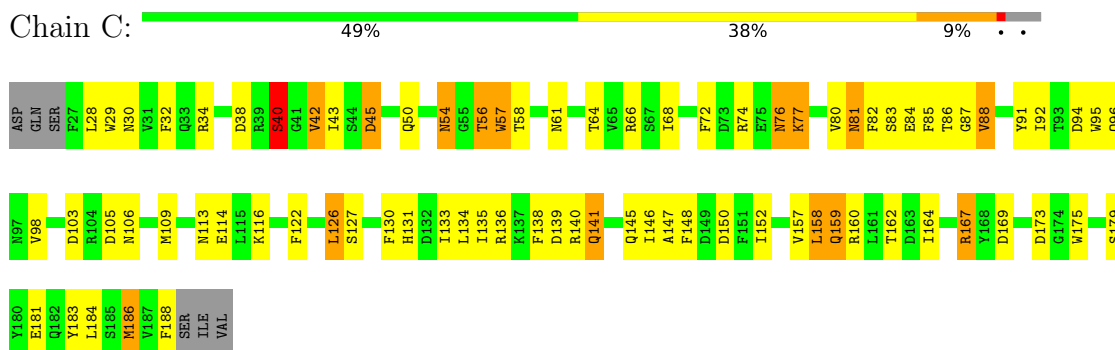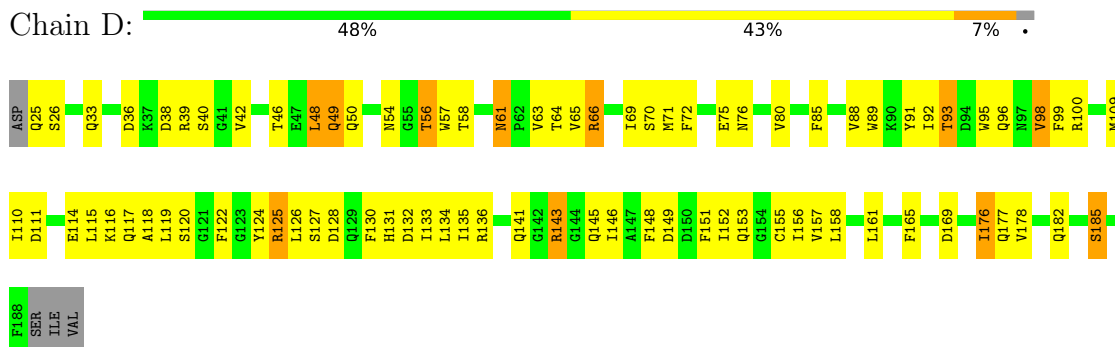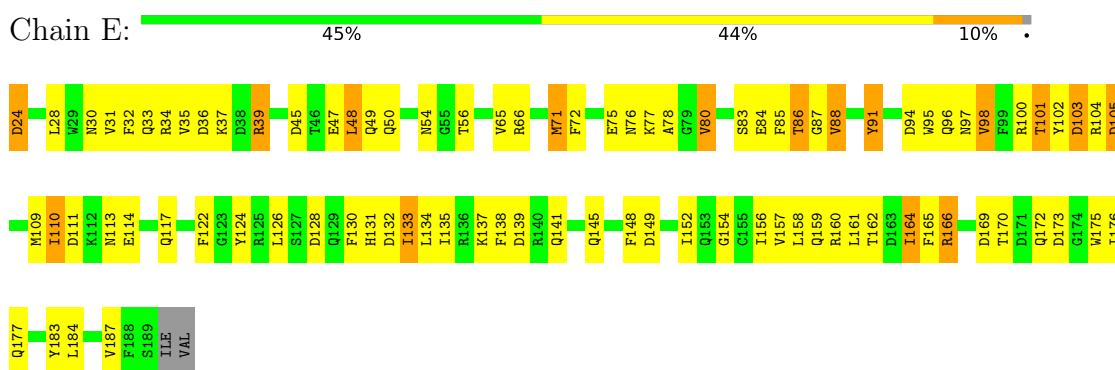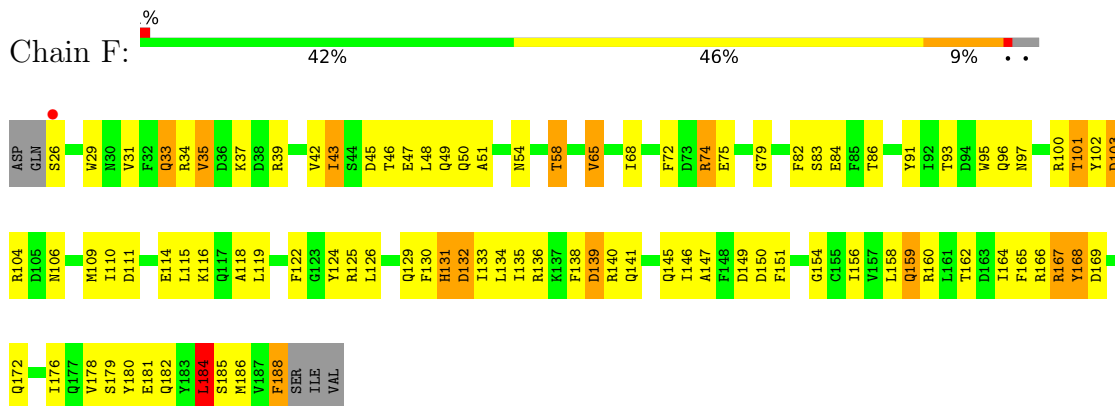• Molecule 1: Programmed cell death protein 6

Chain F:

• Molecule 1: Programmed cell death protein 6

Chain G:

• Molecule 1: Programmed cell death protein 6

Chain H:
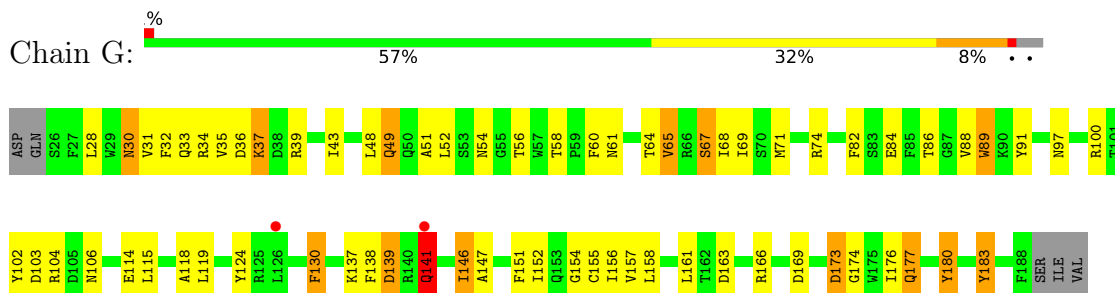
52%   39%   6%   •
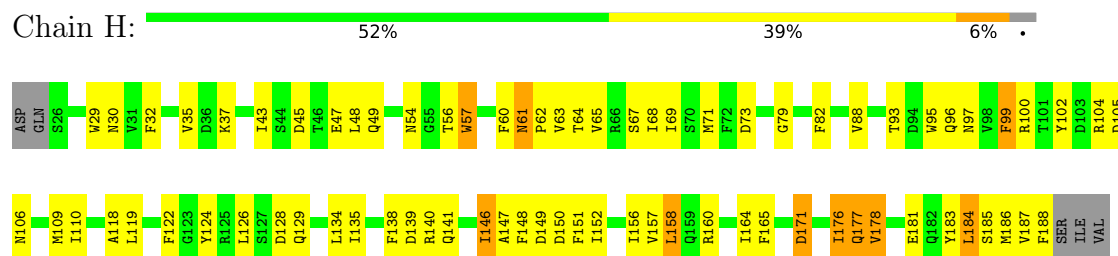
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	54.78Å 154.43Å 237.68Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 3.10 94.18 – 3.10	Depositor EDS
% Data completeness (in resolution range)	100.0 (50.00-3.10) 100.0 (94.18-3.10)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	214.55 (at 3.13Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.222 , 0.280 0.226 , 0.281	Depositor DCC
R_{free} test set	3769 reflections (10.00%)	wwPDB-VP
Wilson B-factor (Å^2)	51.2	Xtriage
Anisotropy	0.071	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.26 , 54.2	EDS
L-test for twinning[2]	$< |L| > = 0.51$, $< L^2 > = 0.35$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	10956	wwPDB-VP
Average B, all atoms (Å^2)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.82% 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 ⓘ

5.1 Standard geometry ⓘ

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

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	0.42	0/1410	0.82	9/1904 (0.5%)
1	B	0.39	0/1393	0.73	5/1881 (0.3%)
1	C	0.41	0/1387	0.63	1/1873 (0.1%)
1	D	0.43	0/1402	0.61	1/1893 (0.1%)
1	E	0.42	0/1416	0.66	3/1912 (0.2%)
1	F	0.41	0/1393	0.79	7/1881 (0.4%)
1	G	0.42	0/1393	0.89	4/1881 (0.2%)
1	H	0.41	0/1393	0.63	3/1881 (0.2%)
All	All	0.41	0/11187	0.73	33/15106 (0.2%)

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
1	A	0	2
1	G	0	1
All	All	0	3

There are no bond length outliers.

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	G	141	GLN	CB-CA-C	-20.51	69.39	110.40
1	F	26	SER	CB-CA-C	-13.90	83.69	110.10
1	G	141	GLN	C-N-CA	13.54	150.72	122.30
1	G	89	TRP	CB-CA-C	-11.48	87.45	110.40
1	A	181	GLU	N-CA-C	11.44	141.88	111.00
1	F	184	LEU	N-CA-C	9.16	135.74	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	40	SER	CB-CA-C	-8.88	93.23	110.10
1	H	171	ASP	CB-CA-C	-8.25	93.91	110.40
1	A	171	ASP	CB-CA-C	8.13	126.67	110.40
1	A	172	GLN	CB-CA-C	-7.78	94.84	110.40
1	H	57	TRP	CB-CA-C	-7.03	96.35	110.40
1	F	103	ASP	N-CA-C	-6.97	92.17	111.00
1	A	181	GLU	CB-CA-C	-6.95	96.51	110.40
1	A	40	SER	N-CA-C	6.90	129.63	111.00
1	A	77	LYS	CB-CA-C	-6.87	96.66	110.40
1	A	57	TRP	CB-CA-C	-6.61	97.19	110.40
1	B	129	GLN	CB-CA-C	-6.56	97.27	110.40
1	B	141	GLN	CB-CA-C	6.46	123.32	110.40
1	E	35	VAL	CB-CA-C	-6.42	99.20	111.40
1	F	184	LEU	CB-CA-C	-6.15	98.51	110.20
1	B	138	PHE	CB-CA-C	-6.15	98.10	110.40
1	H	106	ASN	N-CA-C	6.12	127.51	111.00
1	G	173	ASP	N-CA-C	6.03	127.27	111.00
1	E	48	LEU	CA-CB-CG	6.01	129.11	115.30
1	C	56	THR	CB-CA-C	-5.92	95.61	111.60
1	F	103	ASP	CB-CA-C	5.87	122.13	110.40
1	B	40	SER	N-CA-C	5.85	126.80	111.00
1	F	37	LYS	N-CA-C	5.65	126.27	111.00
1	D	48	LEU	CA-CB-CG	5.65	128.30	115.30
1	E	105	ASP	CB-CA-C	5.30	121.00	110.40
1	A	56	THR	N-CA-C	5.24	125.14	111.00
1	F	184	LEU	CA-CB-CG	5.18	127.21	115.30
1	A	184	LEU	CA-CB-CG	5.15	127.14	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	172	GLN	Peptide
1	A	181	GLU	Peptide
1	G	141	GLN	Peptide

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	1378	0	1308	70	0
1	B	1361	0	1296	81	0
1	C	1355	0	1290	59	0
1	D	1370	0	1303	70	0
1	E	1384	0	1312	78	0
1	F	1361	0	1296	74	0
1	G	1361	0	1294	60	0
1	H	1361	0	1296	55	0
2	A	2	0	0	0	0
2	B	4	0	0	0	0
2	C	3	0	0	0	0
2	D	3	0	0	0	0
2	E	3	0	0	0	0
2	F	3	0	0	0	0
2	G	4	0	0	0	0
2	H	3	0	0	0	0
All	All	10956	0	10395	513	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 24.

All (513) 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:G:89:TRP:O	1:G:89:TRP:CE3	1.83	1.29
1:G:141:GLN:CD	1:G:141:GLN:O	1.78	1.21
1:D:110:ILE:HB	1:D:146:ILE:HD11	1.27	1.14
1:B:178:VAL:HB	1:B:183:TYR:HB2	1.36	1.04
1:B:129:GLN:O	1:B:133:ILE:HG12	1.55	1.02
1:B:58:THR:HG22	1:B:59:PRO:HD2	1.45	0.95
1:G:36:ASP:HB2	1:G:43:ILE:HD13	1.49	0.95
1:G:64:THR:O	1:G:68:ILE:HG12	1.67	0.94
1:G:89:TRP:O	1:G:89:TRP:HE3	1.38	0.93
1:A:87:GLY:HA2	1:A:90:LYS:HB3	1.49	0.93
1:A:174:GLY:O	1:B:179:SER:HA	1.71	0.90
1:G:89:TRP:O	1:G:89:TRP:CD2	2.24	0.90
1:F:43:ILE:HA	1:F:47:GLU:OE2	1.70	0.90
1:G:141:GLN:O	1:G:141:GLN:OE1	1.89	0.90
1:C:61:ASN:HB2	1:C:140:ARG:NH1	1.88	0.87
1:D:115:LEU:HA	1:D:118:ALA:HB3	1.57	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:124:TYR:HE2	1:E:158:LEU:HD21	1.39	0.87
1:A:110:ILE:HG23	1:A:114:GLU:HB3	1.57	0.86
1:F:110:ILE:HG23	1:F:114:GLU:HB2	1.57	0.86
1:G:32:PHE:CE1	1:G:43:ILE:HG12	2.10	0.85
1:B:100:ARG:HB3	1:C:106:ASN:HB3	1.59	0.84
1:F:46:THR:O	1:F:50:GLN:HG2	1.78	0.84
1:E:80:VAL:HG11	1:E:88:VAL:HG21	1.60	0.83
1:B:179:SER:OG	1:B:182:GLN:HB3	1.77	0.82
1:H:110:ILE:HB	1:H:146:ILE:HG22	1.62	0.81
1:F:29:TRP:O	1:F:33:GLN:HB2	1.80	0.80
1:A:87:GLY:HA2	1:A:90:LYS:CB	2.12	0.80
1:A:32:PHE:HA	1:A:35:VAL:HG22	1.64	0.79
1:A:179:SER:O	1:A:183:TYR:HB3	1.81	0.78
1:D:110:ILE:HB	1:D:146:ILE:CD1	2.11	0.78
1:A:56:THR:O	1:A:57:TRP:HB2	1.84	0.77
1:H:119:LEU:O	1:H:124:TYR:HB2	1.87	0.75
1:H:183:TYR:O	1:H:187:VAL:HG23	1.87	0.75
1:E:96:GLN:O	1:E:100:ARG:HG3	1.86	0.75
1:G:176:ILE:HG12	1:G:177:GLN:H	1.51	0.75
1:A:178:VAL:HB	1:A:183:TYR:HB2	1.68	0.75
1:A:69:ILE:HG23	1:A:80:VAL:HG13	1.67	0.74
1:A:178:VAL:HG12	1:A:179:SER:H	1.51	0.74
1:G:141:GLN:O	1:G:141:GLN:CG	2.01	0.73
1:C:131:HIS:O	1:C:135:ILE:HG12	1.88	0.73
1:A:64:THR:HG23	1:A:153:GLN:HB2	1.69	0.73
1:F:122:PHE:HB2	1:F:124:TYR:CD1	2.24	0.73
1:B:74:ARG:H	1:B:74:ARG:HD2	1.53	0.73
1:H:148:PHE:HA	1:H:151:PHE:HB2	1.70	0.72
1:H:96:GLN:O	1:H:100:ARG:HG3	1.89	0.72
1:E:37:LYS:HE2	1:E:50:GLN:OE1	1.89	0.72
1:A:61:ASN:HD21	1:A:63:VAL:HB	1.55	0.72
1:A:178:VAL:O	1:B:175:TRP:HA	1.90	0.72
1:D:61:ASN:C	1:D:61:ASN:HD22	1.94	0.71
1:H:124:TYR:HB3	1:H:126:LEU:HG	1.72	0.71
1:F:93:THR:O	1:F:97:ASN:ND2	2.24	0.70
1:A:72:PHE:HB3	1:A:88:VAL:HG22	1.72	0.70
1:A:169:ASP:HB3	1:A:176:ILE:HG22	1.72	0.70
1:B:30:ASN:HB3	1:B:34:ARG:NH2	2.07	0.70
1:C:68:ILE:HG13	1:C:91:TYR:HE2	1.56	0.70
1:D:143:ARG:O	1:D:143:ARG:NE	2.25	0.70
1:C:56:THR:O	1:C:57:TRP:HB2	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:169:ASP:OD2	1:E:172:GLN:HA	1.92	0.69
1:F:126:LEU:HD23	1:F:130:PHE:HD2	1.57	0.69
1:C:109:MET:HB3	1:C:145:GLN:HB3	1.75	0.69
1:H:118:ALA:O	1:H:122:PHE:HD1	1.74	0.69
1:H:134:LEU:HD21	1:H:158:LEU:HG	1.73	0.69
1:E:152:ILE:O	1:E:156:ILE:HG12	1.94	0.68
1:G:84:GLU:O	1:G:88:VAL:HG23	1.92	0.68
1:B:112:LYS:NZ	1:B:128:ASP:O	2.26	0.68
1:H:37:LYS:HE2	1:H:47:GLU:HG3	1.76	0.68
1:D:85:PHE:HA	1:D:88:VAL:HG23	1.76	0.68
1:C:54:ASN:ND2	1:C:58:THR:O	2.27	0.68
1:E:124:TYR:CE2	1:E:158:LEU:HD21	2.26	0.68
1:A:151:PHE:O	1:A:155:CYS:HB2	1.94	0.67
1:G:137:LYS:NZ	1:H:188:PHE:HB2	2.09	0.67
1:A:182:GLN:O	1:A:185:SER:HB2	1.94	0.67
1:E:131:HIS:C	1:E:133:ILE:H	1.96	0.66
1:D:96:GLN:HB3	1:D:100:ARG:NH1	2.11	0.66
1:D:115:LEU:HA	1:D:118:ALA:CB	2.26	0.66
1:F:182:GLN:C	1:F:184:LEU:H	1.98	0.66
1:C:96:GLN:HG3	1:C:148:PHE:CE1	2.30	0.66
1:D:61:ASN:HD22	1:D:63:VAL:H	1.42	0.66
1:G:176:ILE:HG12	1:G:177:GLN:N	2.10	0.65
1:G:157:VAL:HG13	1:G:161:LEU:HD13	1.77	0.65
1:D:61:ASN:ND2	1:D:63:VAL:H	1.94	0.65
1:A:154:GLY:HA2	1:A:157:VAL:HB	1.79	0.65
1:B:58:THR:CG2	1:B:59:PRO:HD2	2.21	0.65
1:C:109:MET:SD	1:C:147:ALA:HA	2.37	0.65
1:E:83:SER:O	1:E:86:THR:HB	1.96	0.65
1:A:110:ILE:CG2	1:A:114:GLU:HB3	2.27	0.65
1:A:156:ILE:O	1:A:160:ARG:HG3	1.96	0.65
1:B:96:GLN:HG3	1:B:148:PHE:CZ	2.31	0.65
1:A:68:ILE:O	1:A:72:PHE:HB2	1.97	0.64
1:D:65:VAL:O	1:D:69:ILE:HG12	1.96	0.64
1:F:184:LEU:CD1	1:F:185:SER:H	2.10	0.64
1:A:146:ILE:HG22	1:A:147:ALA:O	1.98	0.64
1:C:81:ASN:HD22	1:C:81:ASN:H	1.45	0.63
1:F:54:ASN:HB2	1:F:149:ASP:OD1	1.97	0.63
1:A:104:ARG:HB2	1:A:114:GLU:OE1	1.98	0.63
1:C:135:ILE:HA	1:C:146:ILE:HD11	1.79	0.63
1:G:68:ILE:HD12	1:G:91:TYR:HE2	1.64	0.62
1:D:152:ILE:O	1:D:156:ILE:HG12	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:80:VAL:HB	1:E:84:GLU:HB2	1.81	0.62
1:G:97:ASN:HD22	1:G:100:ARG:HH12	1.46	0.62
1:B:29:TRP:HE3	1:B:29:TRP:O	1.83	0.62
1:F:184:LEU:HD13	1:F:185:SER:H	1.63	0.62
1:B:100:ARG:HG2	1:C:106:ASN:O	2.00	0.62
1:C:138:PHE:HZ	1:C:157:VAL:HG11	1.63	0.61
1:C:54:ASN:HD22	1:C:56:THR:HB	1.65	0.61
1:E:104:ARG:NH2	1:E:117:GLN:HG3	2.14	0.61
1:F:31:VAL:HA	1:F:34:ARG:NH1	2.16	0.61
1:F:122:PHE:HB2	1:F:124:TYR:HD1	1.63	0.61
1:B:93:THR:O	1:B:97:ASN:ND2	2.33	0.61
1:B:88:VAL:O	1:B:92:ILE:HG13	1.99	0.61
1:D:110:ILE:HG23	1:D:114:GLU:HB2	1.82	0.61
1:E:33:GLN:NE2	1:E:39:ARG:HD2	2.15	0.61
1:E:71:MET:SD	1:E:91:TYR:HE1	2.23	0.61
1:E:124:TYR:HE2	1:E:158:LEU:CD2	2.11	0.60
1:E:126:LEU:HD13	1:E:130:PHE:CE2	2.35	0.60
1:E:130:PHE:CE1	1:F:184:LEU:HB3	2.36	0.60
1:F:102:TYR:O	1:F:103:ASP:C	2.39	0.60
1:E:165:PHE:CZ	1:F:180:TYR:HB2	2.36	0.60
1:D:130:PHE:HA	1:D:133:ILE:HD12	1.82	0.60
1:E:72:PHE:HE1	1:E:91:TYR:HD1	1.50	0.60
1:H:156:ILE:HG22	1:H:160:ARG:HD2	1.84	0.60
1:E:72:PHE:HB2	1:E:88:VAL:HG23	1.84	0.60
1:F:102:TYR:CE1	1:F:118:ALA:HA	2.36	0.60
1:G:180:TYR:HA	1:G:183:TYR:CE2	2.37	0.60
1:A:112:LYS:HG2	1:A:131:HIS:O	2.02	0.59
1:B:133:ILE:HA	1:B:136:ARG:HH12	1.66	0.59
1:B:133:ILE:HA	1:B:136:ARG:NH1	2.17	0.59
1:A:138:PHE:HB3	1:A:150:ASP:HB3	1.84	0.59
1:A:43:ILE:HD12	1:A:80:VAL:HG23	1.84	0.59
1:E:30:ASN:O	1:E:34:ARG:HG3	2.01	0.59
1:G:48:LEU:HD23	1:G:65:VAL:HG22	1.84	0.59
1:F:119:LEU:O	1:F:124:TYR:HB2	2.02	0.59
1:G:67:SER:O	1:G:71:MET:HG3	2.01	0.59
1:E:184:LEU:HB3	1:F:130:PHE:HZ	1.68	0.59
1:F:83:SER:O	1:F:86:THR:OG1	2.21	0.59
1:B:47:GLU:HA	1:B:50:GLN:OE1	2.02	0.59
1:C:81:ASN:ND2	1:C:84:GLU:HB2	2.18	0.59
1:D:148:PHE:CE1	1:D:152:ILE:HD11	2.38	0.59
1:E:103:ASP:CG	1:E:103:ASP:O	2.41	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:115:LEU:HD23	1:F:131:HIS:HB3	1.84	0.59
1:G:48:LEU:O	1:G:52:LEU:HG	2.03	0.59
1:F:135:ILE:HD13	1:F:146:ILE:HD12	1.85	0.58
1:D:61:ASN:O	1:D:65:VAL:HG23	2.03	0.58
1:E:158:LEU:HD23	1:E:158:LEU:C	2.23	0.58
1:F:167:ARG:HH21	1:F:167:ARG:HB3	1.68	0.58
1:F:122:PHE:CB	1:F:124:TYR:CD1	2.86	0.58
1:C:42:VAL:HG13	1:C:77:LYS:HE3	1.86	0.58
1:C:164:ILE:HG23	1:C:167:ARG:NH2	2.19	0.58
1:D:165:PHE:CE1	1:D:176:ILE:HD12	2.38	0.58
1:D:46:THR:O	1:D:50:GLN:HG2	2.03	0.58
1:E:138:PHE:CZ	1:E:154:GLY:HA2	2.39	0.58
1:G:49:GLN:HG2	1:G:60:PHE:HB3	1.84	0.58
1:B:61:ASN:HD21	1:B:63:VAL:HB	1.69	0.57
1:D:58:THR:HB	1:D:141:GLN:HE22	1.68	0.57
1:D:33:GLN:HA	1:D:33:GLN:NE2	2.18	0.57
1:F:97:ASN:O	1:F:101:THR:OG1	2.22	0.57
1:G:89:TRP:O	1:G:89:TRP:CG	2.56	0.57
1:H:135:ILE:CD1	1:H:146:ILE:HB	2.35	0.57
1:E:131:HIS:C	1:E:133:ILE:N	2.56	0.57
1:B:45:ASP:CG	1:B:46:THR:H	2.08	0.57
1:F:139:ASP:OD1	1:F:139:ASP:C	2.43	0.56
1:D:119:LEU:HA	1:D:122:PHE:CD1	2.40	0.56
1:A:185:SER:HB3	1:B:130:PHE:CD1	2.40	0.56
1:H:69:ILE:CG2	1:H:79:GLY:HA2	2.36	0.56
1:F:102:TYR:O	1:F:104:ARG:N	2.39	0.56
1:E:91:TYR:CE2	1:E:95:TRP:NE1	2.74	0.56
1:D:157:VAL:O	1:D:161:LEU:HG	2.05	0.56
1:F:138:PHE:O	1:F:150:ASP:HB3	2.06	0.56
1:F:139:ASP:OD2	1:F:145:GLN:O	2.24	0.56
1:D:148:PHE:O	1:D:152:ILE:HD13	2.05	0.56
1:G:103:ASP:HA	1:G:114:GLU:OE2	2.06	0.56
1:F:34:ARG:O	1:F:35:VAL:C	2.45	0.55
1:G:176:ILE:HG23	1:H:178:VAL:HG23	1.89	0.55
1:A:52:LEU:HD13	1:A:60:PHE:CD2	2.41	0.55
1:H:64:THR:O	1:H:68:ILE:HG13	2.05	0.55
1:D:116:LYS:HG2	1:D:131:HIS:CE1	2.41	0.55
1:F:111:ASP:OD1	1:F:114:GLU:HG2	2.06	0.55
1:C:103:ASP:HA	1:C:114:GLU:OE2	2.06	0.55
1:H:181:GLU:HG2	1:H:184:LEU:HD21	1.87	0.55
1:E:148:PHE:CE1	1:E:152:ILE:HD11	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:44:SER:HB2	1:B:47:GLU:CB	2.36	0.55
1:C:68:ILE:HG13	1:C:91:TYR:CE2	2.40	0.55
1:C:80:VAL:CG2	1:C:84:GLU:HB3	2.37	0.55
1:C:126:LEU:HD21	1:C:158:LEU:HD11	1.89	0.54
1:B:66:ARG:NH1	1:B:70:SER:HB2	2.22	0.54
1:A:161:LEU:HD22	1:B:183:TYR:HE2	1.72	0.54
1:B:42:VAL:HG22	1:B:81:ASN:HB3	1.90	0.54
1:D:111:ASP:HB3	1:D:145:GLN:HG2	1.89	0.54
1:G:152:ILE:O	1:G:156:ILE:HG12	2.08	0.54
1:C:56:THR:O	1:C:56:THR:HG22	2.08	0.54
1:B:33:GLN:HA	1:B:36:ASP:HB3	1.89	0.54
1:B:130:PHE:HA	1:B:133:ILE:HB	1.90	0.54
1:C:81:ASN:HD21	1:C:84:GLU:HB2	1.73	0.54
1:H:61:ASN:HD22	1:H:63:VAL:H	1.56	0.54
1:A:178:VAL:HG12	1:A:179:SER:N	2.23	0.54
1:B:54:ASN:HB3	1:B:149:ASP:HB3	1.90	0.54
1:F:91:TYR:OH	1:F:156:ILE:HD11	2.08	0.53
1:F:160:ARG:O	1:F:164:ILE:HG12	2.08	0.53
1:C:105:ASP:OD2	1:C:105:ASP:N	2.40	0.53
1:D:146:ILE:HD12	1:D:146:ILE:O	2.08	0.53
1:E:183:TYR:CE1	1:F:178:VAL:HG11	2.43	0.53
1:A:152:ILE:HD12	1:A:152:ILE:H	1.74	0.53
1:E:162:THR:HG22	1:E:166:ARG:HE	1.73	0.53
1:C:72:PHE:CE2	1:C:87:GLY:HA3	2.44	0.53
1:D:149:ASP:OD1	1:D:149:ASP:N	2.41	0.53
1:B:28:LEU:HB3	1:B:82:PHE:HE1	1.73	0.53
1:B:176:ILE:HG22	1:B:178:VAL:HG13	1.90	0.53
1:D:66:ARG:NH1	1:D:70:SER:HB3	2.24	0.53
1:H:95:TRP:O	1:H:99:PHE:HB3	2.09	0.53
1:A:85:PHE:C	1:A:87:GLY:H	2.12	0.52
1:B:97:ASN:H	1:B:97:ASN:HD22	1.55	0.52
1:E:169:ASP:OD2	1:E:172:GLN:CA	2.57	0.52
1:G:31:VAL:HA	1:G:34:ARG:NH1	2.24	0.52
1:C:140:ARG:NH1	1:C:150:ASP:OD1	2.42	0.52
1:A:35:VAL:HG23	1:A:35:VAL:O	2.09	0.52
1:A:161:LEU:HD22	1:B:183:TYR:CE2	2.44	0.52
1:B:112:LYS:NZ	1:B:131:HIS:HB2	2.24	0.52
1:B:119:LEU:HD22	1:B:158:LEU:HD11	1.90	0.52
1:B:138:PHE:O	1:B:150:ASP:CG	2.48	0.52
1:C:76:ASN:C	1:C:76:ASN:HD22	2.12	0.52
1:A:54:ASN:HB3	1:A:149:ASP:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:127:SER:OG	1:D:130:PHE:HB2	2.09	0.52
1:H:61:ASN:HB2	1:H:149:ASP:HB2	1.91	0.52
1:E:97:ASN:O	1:E:101:THR:HG22	2.09	0.52
1:D:115:LEU:O	1:D:119:LEU:HG	2.10	0.52
1:F:100:ARG:O	1:G:106:ASN:ND2	2.43	0.52
1:H:140:ARG:HB2	1:H:150:ASP:OD1	2.09	0.52
1:F:165:PHE:CE1	1:F:176:ILE:HD11	2.45	0.52
1:C:68:ILE:HD11	1:C:152:ILE:HG21	1.92	0.52
1:D:49:GLN:HG2	1:D:65:VAL:HG21	1.92	0.52
1:E:172:GLN:HA	1:E:172:GLN:OE1	2.09	0.51
1:D:61:ASN:C	1:D:61:ASN:ND2	2.62	0.51
1:E:24:ASP:O	1:E:28:LEU:HG	2.11	0.51
1:E:131:HIS:O	1:E:133:ILE:N	2.43	0.51
1:B:45:ASP:C	1:B:47:GLU:H	2.12	0.51
1:B:96:GLN:HB3	1:B:100:ARG:HE	1.76	0.51
1:C:45:ASP:OD1	1:C:66:ARG:HD2	2.10	0.51
1:E:77:LYS:O	1:E:78:ALA:C	2.49	0.51
1:G:31:VAL:HG22	1:G:34:ARG:HH12	1.75	0.51
1:F:42:VAL:HG12	1:F:79:GLY:HA3	1.91	0.51
1:A:116:LYS:HA	1:A:131:HIS:CE1	2.46	0.51
1:C:61:ASN:HB2	1:C:140:ARG:HH12	1.69	0.51
1:C:64:THR:O	1:C:68:ILE:HD13	2.11	0.51
1:C:130:PHE:CE2	1:C:134:LEU:HD12	2.46	0.51
1:F:74:ARG:HB2	1:F:84:GLU:OE2	2.11	0.51
1:E:156:ILE:O	1:E:160:ARG:HG3	2.11	0.51
1:H:49:GLN:OE1	1:H:62:PRO:HA	2.10	0.51
1:B:74:ARG:HD2	1:B:74:ARG:N	2.23	0.51
1:D:119:LEU:HD13	1:D:126:LEU:HD12	1.92	0.51
1:H:29:TRP:HA	1:H:82:PHE:HE1	1.76	0.51
1:H:160:ARG:O	1:H:164:ILE:HG12	2.11	0.51
1:B:97:ASN:HD22	1:B:97:ASN:N	2.09	0.50
1:H:156:ILE:CG2	1:H:160:ARG:HD2	2.41	0.50
1:A:102:TYR:O	1:A:103:ASP:C	2.49	0.50
1:A:130:PHE:HE2	1:B:184:LEU:HD13	1.76	0.50
1:A:151:PHE:O	1:A:155:CYS:CB	2.59	0.50
1:F:169:ASP:HA	1:F:176:ILE:HG21	1.94	0.50
1:E:94:ASP:HA	1:E:97:ASN:HD22	1.76	0.50
1:C:133:ILE:HA	1:C:136:ARG:HD3	1.93	0.50
1:A:72:PHE:CB	1:A:88:VAL:HG22	2.40	0.50
1:D:122:PHE:HB2	1:D:124:TYR:HD1	1.77	0.50
1:G:37:LYS:NZ	1:G:37:LYS:HB3	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:126:LEU:CD2	1:F:130:PHE:HD2	2.23	0.50
1:A:67:SER:O	1:A:71:MET:HB3	2.11	0.50
1:B:138:PHE:O	1:B:150:ASP:HB3	2.11	0.50
1:D:135:ILE:HG12	1:D:146:ILE:HG23	1.92	0.49
1:E:134:LEU:O	1:E:134:LEU:HD23	2.12	0.49
1:F:54:ASN:HB2	1:F:149:ASP:CG	2.33	0.49
1:G:74:ARG:NH1	1:G:84:GLU:OE2	2.44	0.49
1:G:139:ASP:HA	1:G:146:ILE:HG22	1.94	0.49
1:A:60:PHE:HZ	1:A:152:ILE:HD13	1.76	0.49
1:D:132:ASP:O	1:D:136:ARG:HB2	2.12	0.49
1:H:32:PHE:HE1	1:H:43:ILE:HG13	1.77	0.49
1:E:124:TYR:CE2	1:E:158:LEU:CD2	2.91	0.49
1:H:165:PHE:CZ	1:H:176:ILE:HG23	2.48	0.49
1:A:180:TYR:N	1:B:174:GLY:HA3	2.27	0.49
1:B:38:ASP:C	1:B:40:SER:H	2.16	0.49
1:D:91:TYR:CE2	1:D:95:TRP:NE1	2.77	0.49
1:E:91:TYR:CE2	1:E:95:TRP:CD1	3.01	0.49
1:H:54:ASN:C	1:H:56:THR:H	2.16	0.49
1:A:54:ASN:O	1:A:148:PHE:HB3	2.12	0.49
1:B:44:SER:HB2	1:B:47:GLU:HB2	1.95	0.49
1:C:85:PHE:O	1:C:88:VAL:HB	2.12	0.49
1:C:181:GLU:HA	1:C:184:LEU:HD12	1.94	0.49
1:E:96:GLN:HG2	1:E:100:ARG:NE	2.28	0.49
1:F:48:LEU:O	1:F:51:ALA:N	2.43	0.49
1:H:164:ILE:HG22	1:H:164:ILE:O	2.12	0.49
1:B:129:GLN:O	1:B:133:ILE:CG1	2.46	0.48
1:E:54:ASN:HD22	1:E:149:ASP:CG	2.16	0.48
1:A:158:LEU:HD23	1:A:158:LEU:O	2.12	0.48
1:B:39:ARG:O	1:B:39:ARG:HG3	2.12	0.48
1:E:111:ASP:HB2	1:E:114:GLU:HB2	1.95	0.48
1:F:182:GLN:O	1:F:186:MET:HG2	2.13	0.48
1:H:102:TYR:HA	1:H:104:ARG:HH21	1.78	0.48
1:A:165:PHE:CZ	1:B:180:TYR:HA	2.48	0.48
1:B:58:THR:HG22	1:B:59:PRO:CD	2.31	0.48
1:D:182:GLN:HA	1:D:185:SER:HB3	1.94	0.48
1:E:45:ASP:OD1	1:E:66:ARG:HA	2.13	0.48
1:F:74:ARG:HB3	1:F:75:GLU:CD	2.34	0.48
1:C:96:GLN:HG3	1:C:148:PHE:CZ	2.48	0.48
1:A:80:VAL:HG11	1:A:88:VAL:HG21	1.95	0.48
1:B:118:ALA:HB1	1:B:151:PHE:HZ	1.78	0.48
1:E:162:THR:HG22	1:E:166:ARG:NE	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:45:ASP:CG	1:B:46:THR:N	2.67	0.48
1:B:64:THR:OG1	1:B:153:GLN:HB2	2.14	0.48
1:G:68:ILE:HD12	1:G:91:TYR:CE2	2.45	0.48
1:D:54:ASN:HD21	1:D:58:THR:HG23	1.77	0.48
1:A:158:LEU:C	1:A:160:ARG:N	2.67	0.47
1:C:92:ILE:O	1:C:95:TRP:HB2	2.14	0.47
1:G:166:ARG:HA	1:G:169:ASP:HB2	1.96	0.47
1:A:159:GLN:HE21	1:A:160:ARG:HG2	1.79	0.47
1:A:162:THR:HG22	1:A:166:ARG:NH1	2.28	0.47
1:E:32:PHE:HB2	1:E:85:PHE:CD2	2.49	0.47
1:E:175:TRP:CE3	1:F:179:SER:HB3	2.49	0.47
1:F:82:PHE:O	1:F:86:THR:HG23	2.14	0.47
1:F:168:TYR:O	1:F:176:ILE:HG21	2.14	0.47
1:E:184:LEU:HB3	1:F:130:PHE:CZ	2.46	0.47
1:A:61:ASN:ND2	1:A:63:VAL:HB	2.26	0.47
1:B:44:SER:HB2	1:B:47:GLU:HB3	1.96	0.47
1:D:146:ILE:HD13	1:D:151:PHE:CD1	2.49	0.47
1:E:36:ASP:HA	1:E:47:GLU:OE1	2.15	0.47
1:F:111:ASP:HB3	1:F:145:GLN:HE21	1.79	0.47
1:G:56:THR:HG21	1:G:147:ALA:HB2	1.97	0.47
1:E:48:LEU:HD12	1:E:65:VAL:HG13	1.96	0.47
1:E:173:ASP:OD1	1:E:173:ASP:N	2.46	0.47
1:B:39:ARG:O	1:B:39:ARG:CG	2.62	0.47
1:B:118:ALA:O	1:B:122:PHE:HD2	1.98	0.47
1:C:91:TYR:O	1:C:95:TRP:HD1	1.97	0.47
1:H:29:TRP:HA	1:H:82:PHE:CE1	2.49	0.47
1:D:71:MET:O	1:D:71:MET:HG2	2.15	0.47
1:E:126:LEU:HD13	1:E:130:PHE:HE2	1.79	0.47
1:A:112:LYS:HD2	1:A:132:ASP:HB3	1.96	0.47
1:B:173:ASP:OD2	1:B:174:GLY:N	2.48	0.47
1:F:182:GLN:O	1:F:184:LEU:N	2.41	0.47
1:B:38:ASP:OD2	1:B:40:SER:HB2	2.14	0.47
1:G:74:ARG:HD3	1:G:84:GLU:HG2	1.97	0.47
1:A:85:PHE:C	1:A:87:GLY:N	2.68	0.46
1:C:159:GLN:O	1:C:160:ARG:C	2.53	0.46
1:D:89:TRP:O	1:D:93:THR:HB	2.15	0.46
1:E:135:ILE:O	1:E:139:ASP:HB2	2.16	0.46
1:G:115:LEU:O	1:G:118:ALA:HB3	2.16	0.46
1:E:130:PHE:HD1	1:F:184:LEU:HD23	1.80	0.46
1:H:43:ILE:O	1:H:79:GLY:HA3	2.15	0.46
1:C:179:SER:O	1:C:183:TYR:CB	2.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:54:ASN:O	1:E:56:THR:HG23	2.15	0.46
1:B:42:VAL:HA	1:B:81:ASN:HA	1.97	0.46
1:B:152:ILE:O	1:B:156:ILE:HG12	2.16	0.46
1:D:36:ASP:CG	1:D:39:ARG:HA	2.37	0.46
1:D:146:ILE:CD1	1:D:151:PHE:CD1	2.99	0.46
1:E:102:TYR:CE2	1:E:117:GLN:O	2.68	0.46
1:H:181:GLU:O	1:H:184:LEU:HD21	2.15	0.46
1:D:98:VAL:O	1:D:99:PHE:C	2.52	0.46
1:D:165:PHE:O	1:D:169:ASP:HB2	2.16	0.46
1:E:162:THR:O	1:E:165:PHE:HB3	2.16	0.45
1:E:183:TYR:O	1:E:187:VAL:HG23	2.16	0.45
1:G:61:ASN:OD1	1:G:64:THR:N	2.44	0.45
1:H:64:THR:CG2	1:H:152:ILE:HB	2.46	0.45
1:H:93:THR:HG22	1:H:97:ASN:HD21	1.80	0.45
1:C:87:GLY:O	1:C:88:VAL:C	2.54	0.45
1:H:109:MET:HE1	1:H:147:ALA:HB2	1.99	0.45
1:E:31:VAL:HG22	1:E:34:ARG:HH21	1.81	0.45
1:G:54:ASN:ND2	1:G:58:THR:O	2.47	0.45
1:G:151:PHE:HD2	1:G:152:ILE:HD13	1.81	0.45
1:H:65:VAL:HA	1:H:68:ILE:HD12	1.98	0.45
1:B:48:LEU:C	1:B:50:GLN:H	2.19	0.45
1:B:133:ILE:HD13	1:B:136:ARG:HH22	1.82	0.45
1:D:39:ARG:HG3	1:G:39:ARG:NE	2.32	0.45
1:G:97:ASN:ND2	1:G:100:ARG:HH12	2.13	0.45
1:G:161:LEU:HD21	1:H:187:VAL:HG11	1.98	0.45
1:H:165:PHE:CE1	1:H:176:ILE:HD12	2.52	0.45
1:A:158:LEU:C	1:A:160:ARG:H	2.18	0.45
1:G:35:VAL:HG13	1:G:51:ALA:HB2	1.99	0.45
1:A:178:VAL:HB	1:A:183:TYR:CB	2.43	0.45
1:G:155:CYS:O	1:G:156:ILE:C	2.55	0.45
1:H:147:ALA:O	1:H:151:PHE:HB2	2.17	0.45
1:B:164:ILE:HD12	1:B:164:ILE:H	1.82	0.44
1:D:40:SER:C	1:D:42:VAL:H	2.20	0.44
1:E:76:ASN:O	1:E:76:ASN:CG	2.54	0.44
1:E:166:ARG:HB2	1:E:172:GLN:HE22	1.82	0.44
1:A:52:LEU:HD13	1:A:60:PHE:HD2	1.82	0.44
1:A:91:TYR:O	1:A:94:ASP:HB2	2.17	0.44
1:A:182:GLN:HG3	1:A:185:SER:OG	2.17	0.44
1:D:61:ASN:HD22	1:D:63:VAL:N	2.14	0.44
1:G:37:LYS:H	1:G:37:LYS:HG2	1.59	0.44
1:A:87:GLY:CA	1:A:90:LYS:HB3	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:183:TYR:O	1:B:184:LEU:C	2.56	0.44
1:G:102:TYR:CE2	1:G:118:ALA:HA	2.53	0.44
1:D:122:PHE:HB2	1:D:124:TYR:CD1	2.52	0.44
1:C:82:PHE:C	1:C:84:GLU:H	2.21	0.44
1:C:57:TRP:HA	1:C:57:TRP:CE3	2.52	0.44
1:D:49:GLN:CG	1:D:65:VAL:HG21	2.48	0.44
1:D:114:GLU:O	1:D:117:GLN:HB2	2.17	0.44
1:E:72:PHE:O	1:E:84:GLU:HB3	2.17	0.44
1:C:141:GLN:HE21	1:C:141:GLN:HB3	1.65	0.44
1:E:157:VAL:HG13	1:E:161:LEU:HD13	2.00	0.44
1:E:94:ASP:O	1:E:98:VAL:HG22	2.18	0.44
1:H:135:ILE:HD13	1:H:146:ILE:HB	1.99	0.44
1:H:139:ASP:OD1	1:H:141:GLN:HB2	2.18	0.44
1:B:48:LEU:C	1:B:50:GLN:N	2.71	0.43
1:B:92:ILE:HG22	1:B:96:GLN:OE1	2.18	0.43
1:F:106:ASN:HB3	1:G:100:ARG:HB3	2.00	0.43
1:F:111:ASP:CG	1:F:114:GLU:HG2	2.39	0.43
1:F:133:ILE:O	1:F:133:ILE:HG22	2.19	0.43
1:B:115:LEU:O	1:B:118:ALA:HB3	2.18	0.43
1:B:142:GLY:O	1:B:143:ARG:HD2	2.18	0.43
1:C:80:VAL:HG23	1:C:84:GLU:HB3	1.99	0.43
1:D:63:VAL:O	1:D:66:ARG:N	2.48	0.43
1:E:184:LEU:HD23	1:F:158:LEU:HD12	2.01	0.43
1:F:115:LEU:HD22	1:F:135:ILE:HG12	2.00	0.43
1:F:159:GLN:HE21	1:F:159:GLN:HB3	1.63	0.43
1:G:138:PHE:CE2	1:G:154:GLY:HA2	2.53	0.43
1:B:175:TRP:HZ3	1:B:177:GLN:HG3	1.82	0.43
1:F:109:MET:SD	1:F:147:ALA:HB2	2.58	0.43
1:G:65:VAL:O	1:G:69:ILE:HG12	2.18	0.43
1:G:154:GLY:O	1:G:158:LEU:HG	2.19	0.43
1:H:30:ASN:HD22	1:H:30:ASN:HA	1.67	0.43
1:C:38:ASP:OD1	1:C:40:SER:HB2	2.19	0.43
1:H:45:ASP:OD1	1:H:69:ILE:HB	2.18	0.43
1:H:48:LEU:HD22	1:H:69:ILE:HG13	2.01	0.43
1:A:74:ARG:HA	1:A:74:ARG:NE	2.34	0.43
1:B:32:PHE:CE1	1:B:43:ILE:HG13	2.54	0.43
1:D:39:ARG:HG3	1:G:39:ARG:HD2	2.01	0.43
1:D:70:SER:C	1:D:72:PHE:H	2.22	0.43
1:D:153:GLN:O	1:D:157:VAL:HG23	2.19	0.43
1:E:130:PHE:CD1	1:F:184:LEU:HD23	2.53	0.43
1:F:96:GLN:O	1:F:100:ARG:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:54:ASN:ND2	1:E:149:ASP:OD2	2.51	0.43
1:A:129:GLN:CD	1:A:129:GLN:H	2.22	0.43
1:C:139:ASP:OD1	1:C:145:GLN:N	2.52	0.43
1:D:56:THR:O	1:D:57:TRP:HB2	2.19	0.43
1:D:109:MET:HB3	1:D:145:GLN:HB3	2.00	0.43
1:E:169:ASP:OD2	1:E:172:GLN:N	2.51	0.43
1:F:162:THR:O	1:F:166:ARG:HG2	2.19	0.43
1:G:141:GLN:OE1	1:G:141:GLN:C	2.56	0.43
1:B:87:GLY:O	1:B:90:LYS:HB3	2.19	0.42
1:D:64:THR:HG23	1:D:153:GLN:HB2	2.01	0.42
1:D:119:LEU:HD11	1:D:134:LEU:HD13	2.01	0.42
1:F:104:ARG:HG2	1:F:114:GLU:OE1	2.19	0.42
1:H:118:ALA:O	1:H:122:PHE:CD1	2.63	0.42
1:H:138:PHE:HZ	1:H:157:VAL:HB	1.84	0.42
1:B:150:ASP:O	1:B:154:GLY:N	2.36	0.42
1:D:120:SER:OG	1:D:125:ARG:NH1	2.52	0.42
1:G:30:ASN:HA	1:G:33:GLN:HE21	1.83	0.42
1:G:82:PHE:O	1:G:86:THR:HG23	2.19	0.42
1:E:109:MET:C	1:E:110:ILE:HG12	2.39	0.42
1:F:95:TRP:CZ3	1:F:151:PHE:HE2	2.37	0.42
1:C:175:TRP:HE3	1:D:177:GLN:HG2	1.85	0.42
1:G:104:ARG:C	1:G:106:ASN:H	2.23	0.42
1:B:66:ARG:CZ	1:B:70:SER:HB2	2.49	0.42
1:C:94:ASP:O	1:C:98:VAL:HG23	2.19	0.42
1:F:49:GLN:HB2	1:F:65:VAL:HG11	2.01	0.42
1:A:184:LEU:O	1:A:187:VAL:HG12	2.19	0.42
1:C:32:PHE:CZ	1:C:82:PHE:HB2	2.54	0.42
1:H:177:GLN:H	1:H:177:GLN:CD	2.23	0.42
1:A:64:THR:HG23	1:A:153:GLN:H	1.85	0.42
1:C:116:LYS:HE3	1:C:116:LYS:HB2	1.95	0.42
1:D:148:PHE:CZ	1:D:152:ILE:HD11	2.55	0.42
1:E:86:THR:HG22	1:E:87:GLY:N	2.35	0.42
1:E:130:PHE:HE1	1:F:184:LEU:HB3	1.81	0.42
1:G:130:PHE:HD1	1:G:130:PHE:O	2.03	0.42
1:D:88:VAL:HG12	1:D:92:ILE:HD11	2.01	0.42
1:B:61:ASN:ND2	1:B:63:VAL:HB	2.34	0.41
1:C:30:ASN:O	1:C:34:ARG:HB2	2.20	0.41
1:C:54:ASN:ND2	1:C:56:THR:HB	2.33	0.41
1:F:138:PHE:CD2	1:F:154:GLY:HA2	2.55	0.41
1:F:168:TYR:HB3	1:F:176:ILE:HD13	2.01	0.41
1:C:186:MET:O	1:C:186:MET:HG3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:132:ASP:O	1:F:136:ARG:HB2	2.19	0.41
1:C:127:SER:O	1:C:131:HIS:CE1	2.73	0.41
1:E:137:LYS:HG2	1:F:188:PHE:HB2	2.02	0.41
1:E:165:PHE:CE2	1:F:180:TYR:HB2	2.54	0.41
1:H:60:PHE:CE2	1:H:65:VAL:HG23	2.56	0.41
1:A:178:VAL:CG1	1:A:179:SER:H	2.28	0.41
1:A:54:ASN:HD22	1:A:56:THR:H	1.68	0.41
1:A:119:LEU:HA	1:A:122:PHE:CD1	2.56	0.41
1:B:92:ILE:O	1:B:93:THR:C	2.58	0.41
1:B:100:ARG:HG2	1:C:106:ASN:C	2.41	0.41
1:D:56:THR:HB	1:D:58:THR:HG22	2.02	0.41
1:G:137:LYS:CE	1:H:188:PHE:HB2	2.50	0.41
1:C:130:PHE:HE2	1:C:134:LEU:HD12	1.85	0.41
1:E:37:LYS:CE	1:E:50:GLN:OE1	2.64	0.41
1:E:139:ASP:OD2	1:E:145:GLN:O	2.37	0.41
1:F:68:ILE:HD12	1:F:91:TYR:CD2	2.55	0.41
1:A:156:ILE:HD12	1:A:156:ILE:HA	1.92	0.41
1:B:28:LEU:HB3	1:B:82:PHE:CE1	2.55	0.41
1:C:28:LEU:O	1:C:29:TRP:C	2.59	0.41
1:A:77:LYS:HE2	1:A:79:GLY:HA3	2.02	0.41
1:A:110:ILE:HG23	1:A:114:GLU:CB	2.40	0.41
1:A:141:GLN:H	1:A:141:GLN:CD	2.23	0.41
1:B:138:PHE:O	1:B:150:ASP:CB	2.69	0.41
1:D:58:THR:CB	1:D:141:GLN:HE22	2.34	0.41
1:D:58:THR:HG21	1:D:141:GLN:OE1	2.20	0.41
1:E:164:ILE:H	1:E:164:ILE:HG13	1.63	0.41
1:F:160:ARG:HE	1:F:160:ARG:HB2	1.64	0.41
1:G:119:LEU:HB3	1:G:124:TYR:HB2	2.02	0.41
1:H:184:LEU:HD12	1:H:185:SER:N	2.36	0.41
1:D:119:LEU:HD12	1:D:131:HIS:NE2	2.35	0.41
1:H:138:PHE:CZ	1:H:157:VAL:HB	2.56	0.41
1:B:89:TRP:HA	1:B:92:ILE:HD12	2.02	0.40
1:E:128:ASP:C	1:E:130:PHE:H	2.25	0.40
1:H:69:ILE:HG21	1:H:79:GLY:HA2	2.00	0.40
1:B:164:ILE:O	1:B:168:TYR:N	2.53	0.40
1:F:181:GLU:O	1:F:184:LEU:HG	2.21	0.40
1:C:91:TYR:O	1:C:95:TRP:CD1	2.74	0.40
1:D:152:ILE:N	1:D:152:ILE:CD1	2.84	0.40
1:D:155:CYS:HA	1:D:158:LEU:HB2	2.04	0.40
1:E:138:PHE:CE1	1:E:154:GLY:HA2	2.57	0.40
1:F:54:ASN:ND2	1:F:58:THR:O	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:130:PHE:CE1	1:H:184:LEU:HD22	2.57	0.40
1:H:67:SER:O	1:H:71:MET:SD	2.79	0.40
1:B:61:ASN:HA	1:B:62:PRO:HD2	1.94	0.40
1:B:185:SER:HA	1:B:188:PHE:HD1	1.87	0.40
1:G:137:LYS:HZ1	1:H:188:PHE:HB2	1.84	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	163/168 (97%)	124 (76%)	38 (23%)	1 (1%)	25	59
1	B	161/168 (96%)	121 (75%)	38 (24%)	2 (1%)	13	44
1	C	160/168 (95%)	121 (76%)	36 (22%)	3 (2%)	8	33
1	D	162/168 (96%)	130 (80%)	32 (20%)	0	100	100
1	E	164/168 (98%)	123 (75%)	39 (24%)	2 (1%)	13	44
1	F	161/168 (96%)	124 (77%)	33 (20%)	4 (2%)	5	27
1	G	161/168 (96%)	121 (75%)	39 (24%)	1 (1%)	25	59
1	H	161/168 (96%)	130 (81%)	29 (18%)	2 (1%)	13	44
All	All	1293/1344 (96%)	994 (77%)	284 (22%)	15 (1%)	13	44

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	132	ASP
1	B	100	ARG
1	C	83	SER
1	E	88	VAL
1	F	131	HIS

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Mol	Chain	Res	Type
1	A	86	THR
1	B	39	ARG
1	F	35	VAL
1	C	40	SER
1	F	141	GLN
1	H	57	TRP
1	C	88	VAL
1	F	43	ILE
1	G	174	GLY
1	H	35	VAL

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	150/153 (98%)	127 (85%)	23 (15%)	2	12
1	B	148/153 (97%)	131 (88%)	17 (12%)	5	22
1	C	147/153 (96%)	123 (84%)	24 (16%)	2	10
1	D	149/153 (97%)	130 (87%)	19 (13%)	4	18
1	E	151/153 (99%)	128 (85%)	23 (15%)	3	12
1	F	148/153 (97%)	127 (86%)	21 (14%)	3	14
1	G	148/153 (97%)	133 (90%)	15 (10%)	7	28
1	H	148/153 (97%)	133 (90%)	15 (10%)	7	28
All	All	1189/1224 (97%)	1032 (87%)	157 (13%)	4	17

All (157) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	ASP
1	A	28	LEU
1	A	52	LEU
1	A	54	ASN
1	A	56	THR

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Mol	Chain	Res	Type
1	A	60	PHE
1	A	77	LYS
1	A	84	GLU
1	A	89	TRP
1	A	91	TYR
1	A	95	TRP
1	A	99	PHE
1	A	103	ASP
1	A	104	ARG
1	A	114	GLU
1	A	129	GLN
1	A	132	ASP
1	A	159	GLN
1	A	164	ILE
1	A	166	ARG
1	A	184	LEU
1	A	186	MET
1	A	187	VAL
1	B	29	TRP
1	B	44	SER
1	B	58	THR
1	B	67	SER
1	B	71	MET
1	B	85	PHE
1	B	97	ASN
1	B	100	ARG
1	B	105	ASP
1	B	113	ASN
1	B	125	ARG
1	B	141	GLN
1	B	168	TYR
1	B	171	ASP
1	B	178	VAL
1	B	184	LEU
1	B	188	PHE
1	C	40	SER
1	C	42	VAL
1	C	43	ILE
1	C	45	ASP
1	C	50	GLN
1	C	54	ASN
1	C	57	TRP

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Mol	Chain	Res	Type
1	C	74	ARG
1	C	76	ASN
1	C	77	LYS
1	C	81	ASN
1	C	86	THR
1	C	113	ASN
1	C	122	PHE
1	C	126	LEU
1	C	141	GLN
1	C	158	LEU
1	C	159	GLN
1	C	162	THR
1	C	167	ARG
1	C	169	ASP
1	C	173	ASP
1	C	186	MET
1	C	188	PHE
1	D	25	GLN
1	D	26	SER
1	D	38	ASP
1	D	48	LEU
1	D	49	GLN
1	D	56	THR
1	D	61	ASN
1	D	66	ARG
1	D	75	GLU
1	D	76	ASN
1	D	80	VAL
1	D	93	THR
1	D	98	VAL
1	D	125	ARG
1	D	128	ASP
1	D	143	ARG
1	D	176	ILE
1	D	178	VAL
1	D	185	SER
1	E	24	ASP
1	E	39	ARG
1	E	49	GLN
1	E	71	MET
1	E	75	GLU
1	E	80	VAL

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Mol	Chain	Res	Type
1	E	86	THR
1	E	91	TYR
1	E	98	VAL
1	E	101	THR
1	E	103	ASP
1	E	105	ASP
1	E	110	ILE
1	E	113	ASN
1	E	122	PHE
1	E	133	ILE
1	E	141	GLN
1	E	159	GLN
1	E	164	ILE
1	E	166	ARG
1	E	170	THR
1	E	176	ILE
1	E	177	GLN
1	F	33	GLN
1	F	39	ARG
1	F	45	ASP
1	F	58	THR
1	F	65	VAL
1	F	72	PHE
1	F	74	ARG
1	F	101	THR
1	F	116	LYS
1	F	125	ARG
1	F	129	GLN
1	F	132	ASP
1	F	134	LEU
1	F	139	ASP
1	F	140	ARG
1	F	159	GLN
1	F	167	ARG
1	F	168	TYR
1	F	172	GLN
1	F	184	LEU
1	F	188	PHE
1	G	28	LEU
1	G	30	ASN
1	G	37	LYS
1	G	49	GLN

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Mol	Chain	Res	Type
1	G	65	VAL
1	G	67	SER
1	G	130	PHE
1	G	139	ASP
1	G	141	GLN
1	G	146	ILE
1	G	163	ASP
1	G	173	ASP
1	G	177	GLN
1	G	180	TYR
1	G	183	TYR
1	H	61	ASN
1	H	73	ASP
1	H	88	VAL
1	H	99	PHE
1	H	105	ASP
1	H	128	ASP
1	H	129	GLN
1	H	146	ILE
1	H	158	LEU
1	H	171	ASP
1	H	176	ILE
1	H	177	GLN
1	H	178	VAL
1	H	184	LEU
1	H	186	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	54	ASN
1	A	61	ASN
1	A	97	ASN
1	A	131	HIS
1	A	159	GLN
1	B	49	GLN
1	B	97	ASN
1	B	131	HIS
1	B	182	GLN
1	C	33	GLN
1	C	54	ASN
1	C	61	ASN

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Mol	Chain	Res	Type
1	C	76	ASN
1	C	81	ASN
1	C	96	GLN
1	C	106	ASN
1	C	141	GLN
1	D	25	GLN
1	D	33	GLN
1	D	49	GLN
1	D	61	ASN
1	D	145	GLN
1	E	25	GLN
1	E	76	ASN
1	E	97	ASN
1	E	106	ASN
1	E	129	GLN
1	E	159	GLN
1	F	30	ASN
1	F	33	GLN
1	F	50	GLN
1	F	97	ASN
1	F	106	ASN
1	F	129	GLN
1	F	145	GLN
1	F	159	GLN
1	F	172	GLN
1	G	33	GLN
1	G	49	GLN
1	G	50	GLN
1	G	97	ASN
1	G	106	ASN
1	G	131	HIS
1	H	30	ASN
1	H	61	ASN
1	H	182	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 (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 25 ligands modelled in this entry, 25 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 (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

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	165/168 (98%)	-0.08	2 (1%)	79	61	41, 50, 61, 64	0
1	B	163/168 (97%)	-0.18	1 (0%)	89	78	30, 49, 58, 59	0
1	C	162/168 (96%)	-0.20	0	100	100	31, 43, 59, 61	0
1	D	164/168 (97%)	-0.50	0	100	100	12, 27, 37, 43	0
1	E	166/168 (98%)	-0.44	0	100	100	13, 25, 41, 47	0
1	F	163/168 (97%)	-0.34	1 (0%)	89	78	19, 29, 39, 47	0
1	G	163/168 (97%)	-0.26	2 (1%)	79	61	23, 38, 59, 65	0
1	H	163/168 (97%)	0.22	0	100	100	63, 72, 75, 76	0
All	All	1309/1344 (97%)	-0.22	6 (0%)	91	81	12, 41, 73, 76	0

All (6) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	182	GLN	3.7
1	F	26	SER	3.0
1	B	101	THR	2.4
1	A	178	VAL	2.3
1	G	141	GLN	2.3
1	G	126	LEU	2.3

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.

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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
2	CA	H	991	1/1	0.69	0.39	98,98,98,98	0
2	CA	G	992	1/1	0.75	0.15	77,77,77,77	0
2	CA	H	990	1/1	0.79	0.22	108,108,108,108	0
2	CA	B	991	1/1	0.82	0.14	66,66,66,66	0
2	CA	C	992	1/1	0.83	0.09	51,51,51,51	0
2	CA	D	992	1/1	0.85	0.17	73,73,73,73	0
2	CA	G	990	1/1	0.87	0.09	38,38,38,38	0
2	CA	G	991	1/1	0.88	0.48	147,147,147,147	0
2	CA	A	991	1/1	0.88	0.10	48,48,48,48	0
2	CA	B	992	1/1	0.89	0.08	40,40,40,40	0
2	CA	H	992	1/1	0.89	0.09	62,62,62,62	0
2	CA	F	992	1/1	0.90	0.11	50,50,50,50	0
2	CA	C	991	1/1	0.91	0.12	52,52,52,52	0
2	CA	A	990	1/1	0.91	0.09	50,50,50,50	0
2	CA	B	990	1/1	0.96	0.08	33,33,33,33	0
2	CA	C	990	1/1	0.96	0.12	33,33,33,33	0
2	CA	F	991	1/1	0.97	0.07	18,18,18,18	0
2	CA	B	2	1/1	0.98	0.07	31,31,31,31	0
2	CA	G	1	1/1	0.98	0.09	24,24,24,24	0
2	CA	E	990	1/1	0.98	0.12	19,19,19,19	0
2	CA	E	991	1/1	0.98	0.07	33,33,33,33	0
2	CA	F	990	1/1	0.98	0.09	18,18,18,18	0
2	CA	D	990	1/1	0.99	0.09	13,13,13,13	0
2	CA	E	992	1/1	0.99	0.07	21,21,21,21	0
2	CA	D	991	1/1	0.99	0.10	15,15,15,15	0

6.5 Other polymers ⓘ

There are no such residues in this entry.