



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 06:01 AM UTC

PDB ID : 2ARJ / pdb_00002arj
Title : CD8alpha-alpha in complex with YTS 105.18 Fab
Authors : Shore, D.A.; Teyton, L.; Dwek, R.A.; Rudd, P.M.; Wilson, I.A.
Deposited on : 2005-08-19
Resolution : 2.88 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

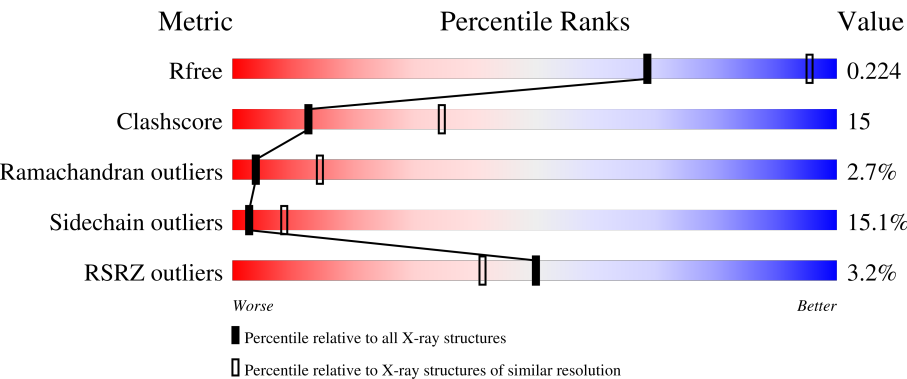
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.88 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}	180053	3557 (2.90-2.86)
Clashscore	190562	3801 (2.90-2.86)
Ramachandran outliers	187476	3699 (2.90-2.86)
Sidechain outliers	187428	3702 (2.90-2.86)
RSRZ outliers	180081	3558 (2.90-2.86)

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 $\leq 5\%$. 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	211	64%31%6%
1	L	211	70%24%. .
2	B	215	61%30%6%. .
2	H	215	69%21%7%. .
3	Q	123	55%24%11%. 7%

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Mol	Chain	Length	Quality of chain
3	R	123	2% 50% 28% 12% • 6%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 8334 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 YTS 105.18 antigen binding region Light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	L	211	Total	C	N	O	S	0	0	0
			1647	1034	277	329	7			
1	A	211	Total	C	N	O	S	0	0	0
			1647	1034	277	329	7			

- Molecule 2 is a protein called YTS 105.18 antigen binding region Heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	212	Total	C	N	O	S	0	0	0
			1593	1008	262	315	8			
2	B	212	Total	C	N	O	S	0	0	0
			1593	1008	262	315	8			

- Molecule 3 is a protein called T-cell surface glycoprotein CD8 alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	R	116	Total	C	N	O	S	0	0	0
			925	595	150	173	7			
3	Q	115	Total	C	N	O	S	0	0	0
			917	591	148	171	7			

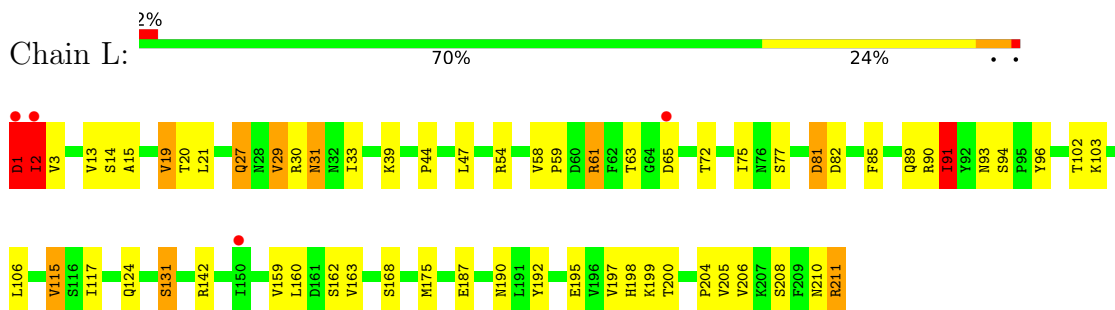
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	L	6	Total	O	0	0
			6	6		
4	H	1	Total	O	0	0
			1	1		
4	A	3	Total	O	0	0
			3	3		
4	B	2	Total	O	0	0
			2	2		

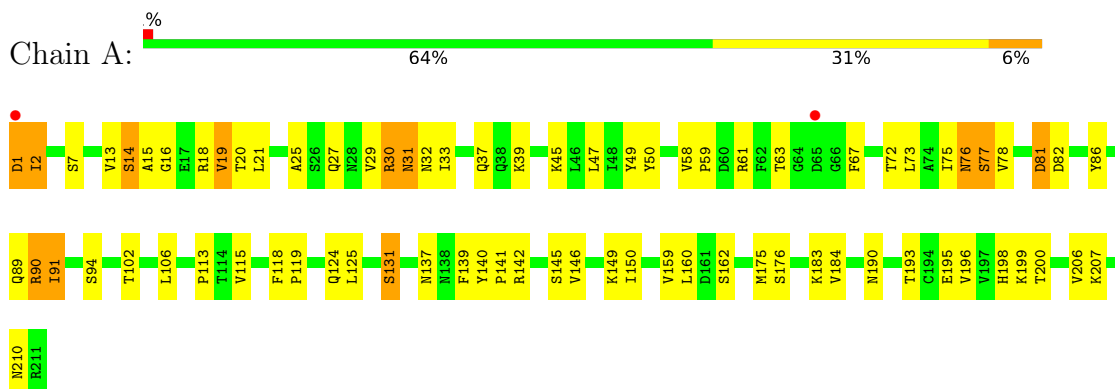
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

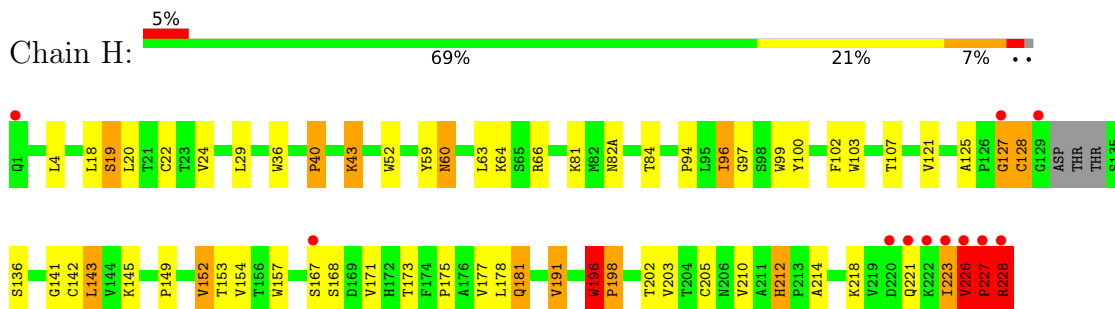
- Molecule 1: YTS 105.18 antigen binding region Light chain



- Molecule 1: YTS 105.18 antigen binding region Light chain

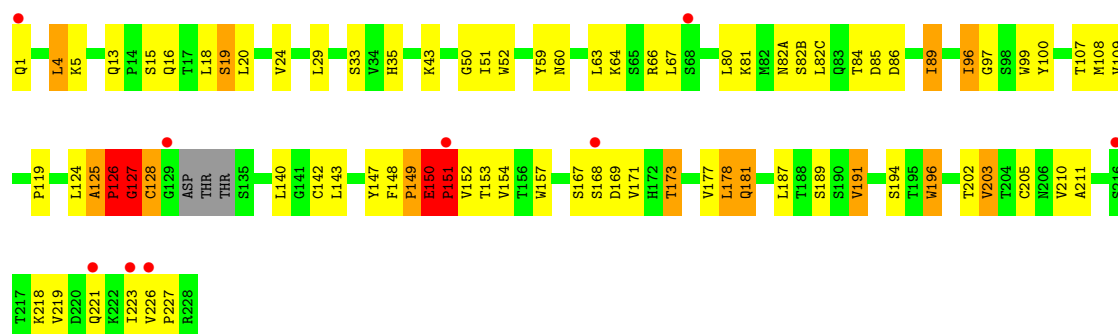


- Molecule 2: YTS 105.18 antigen binding region Heavy chain



- Molecule 2: YTS 105.18 antigen binding region Heavy chain

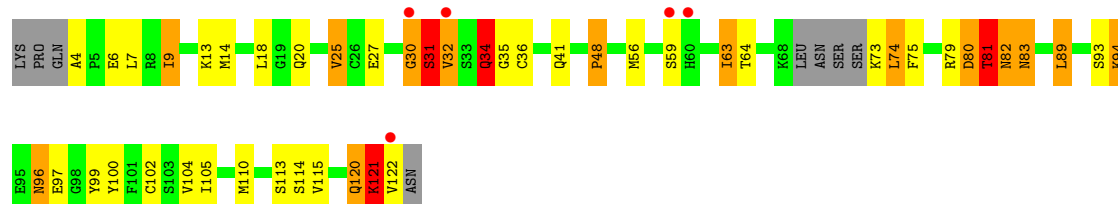




- Molecule 3: T-cell surface glycoprotein CD8 alpha chain



- Molecule 3: T-cell surface glycoprotein CD8 alpha chain



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	83.34Å 107.14Å 131.52Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.00 – 2.88 49.00 – 2.88	Depositor EDS
% Data completeness (in resolution range)	98.4 (49.00-2.88) 98.3 (49.00-2.88)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	0.15	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.24 (at 2.91Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.220 , 0.277 0.222 , 0.224	Depositor DCC
R_{free} test set	1332 reflections (4.90%)	wwPDB-VP
Wilson B-factor (Å ²)	50.1	Xtriage
Anisotropy	0.110	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 46.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	8334	wwPDB-VP
Average B, all atoms (Å ²)	41.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.45% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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

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	0.88	5/1684 (0.3%)	0.92	1/2288 (0.0%)
1	L	0.82	2/1684 (0.1%)	0.95	2/2288 (0.1%)
2	B	1.12	13/1636 (0.8%)	1.30	23/2240 (1.0%)
2	H	1.36	11/1636 (0.7%)	1.20	21/2240 (0.9%)
3	Q	0.99	4/937 (0.4%)	1.14	9/1264 (0.7%)
3	R	0.83	3/945 (0.3%)	1.06	6/1275 (0.5%)
All	All	1.03	38/8522 (0.4%)	1.10	62/11595 (0.5%)

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	L	0	1
2	B	0	4
2	H	0	1
All	All	0	6

All (38) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	127	GLY	CA-C	25.50	1.97	1.51
2	H	226	VAL	CA-C	24.34	1.72	1.52
1	A	1	ASP	N-CA	19.54	1.83	1.46
3	Q	81	THR	C-O	19.14	1.48	1.24
1	L	1	ASP	N-CA	17.16	1.78	1.46
2	B	126	PRO	N-CD	13.35	1.66	1.47
2	H	223	ILE	C-N	-13.21	1.19	1.33
2	B	127	GLY	CA-C	12.87	1.70	1.51
2	H	127	GLY	C-O	-12.42	1.06	1.23
2	B	127	GLY	C-O	-12.22	1.07	1.23
2	B	128	CYS	CA-CB	11.12	1.68	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	227	PRO	C-N	10.61	1.48	1.33
3	R	81	THR	C-O	10.43	1.37	1.24
2	H	226	VAL	N-CA	-9.94	1.37	1.46
2	B	227	PRO	C-O	-9.72	1.11	1.24
2	B	227	PRO	N-CD	9.54	1.61	1.47
2	B	227	PRO	C-N	9.30	1.46	1.33
2	H	226	VAL	CA-CB	-9.10	1.47	1.55
3	Q	82	ASN	C-O	-8.71	1.14	1.24
1	A	1	ASP	CG-OD1	7.29	1.39	1.25
1	A	1	ASP	C-O	7.20	1.38	1.23
2	B	128	CYS	CB-SG	-7.07	1.57	1.81
3	Q	31	SER	C-O	7.02	1.32	1.24
2	H	228	ARG	C-OXT	6.74	1.37	1.23
2	B	127	GLY	C-N	-6.57	1.24	1.33
2	H	228	ARG	N-CA	-6.46	1.33	1.46
2	B	226	VAL	C-O	-6.45	1.16	1.24
3	Q	121	LYS	C-O	-6.42	1.15	1.24
3	R	121	LYS	C-O	-5.99	1.16	1.24
3	R	82	ASN	C-O	-5.72	1.16	1.24
1	A	1	ASP	CA-C	5.70	1.65	1.52
2	H	40	PRO	CA-C	5.42	1.54	1.51
1	L	1	ASP	CA-C	5.37	1.64	1.52
2	B	226	VAL	CA-CB	5.22	1.60	1.54
2	B	196	TRP	C-O	5.22	1.30	1.23
2	H	127	GLY	C-N	5.18	1.41	1.33
1	A	150	ILE	CA-CB	5.18	1.60	1.54
2	B	128	CYS	N-CA	-5.14	1.40	1.46

All (62) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	127	GLY	CA-C-N	-13.77	103.77	123.05
2	B	127	GLY	C-N-CA	-13.77	103.77	123.05
2	B	127	GLY	O-C-N	-12.00	107.10	122.70
3	Q	81	THR	CA-C-N	-11.39	106.44	123.07
3	Q	81	THR	C-N-CA	-11.39	106.44	123.07
2	H	226	VAL	N-CA-CB	10.80	119.28	111.83
2	H	226	VAL	CA-C-O	9.90	133.48	120.90
1	L	91	ILE	N-CA-C	9.42	120.03	112.12
3	R	30	GLY	N-CA-C	-9.22	103.18	111.67
2	H	167	SER	N-CA-C	-9.22	104.11	114.62
2	H	227	PRO	CA-C-N	-8.89	105.69	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	227	PRO	C-N-CA	-8.89	105.69	121.70
3	R	83	ASN	N-CA-C	-8.85	99.56	110.88
2	B	148	PHE	CA-C-N	8.79	148.10	127.00
2	B	148	PHE	C-N-CA	8.79	148.10	127.00
3	Q	30	GLY	N-CA-C	-8.73	103.63	111.67
2	B	148	PHE	C-N-CD	-8.55	101.80	120.60
2	H	227	PRO	CA-C-O	8.40	135.89	120.60
2	B	150	GLU	CA-C-N	8.37	130.31	119.84
2	B	150	GLU	C-N-CA	8.37	130.31	119.84
2	B	227	PRO	O-C-N	8.20	133.71	122.64
2	H	226	VAL	CG1-CB-CG2	8.12	128.67	110.80
2	H	223	ILE	CA-C-N	-7.73	110.88	122.24
2	H	223	ILE	C-N-CA	-7.73	110.88	122.24
2	H	226	VAL	CA-CB-CG1	-7.62	97.45	110.40
3	Q	32	VAL	N-CA-C	7.61	117.66	110.74
3	R	32	VAL	N-CA-C	7.16	118.11	111.45
2	B	125	ALA	CA-C-N	7.16	128.79	119.84
2	B	125	ALA	C-N-CA	7.16	128.79	119.84
2	B	127	GLY	CA-C-O	7.14	133.00	120.57
2	B	196	TRP	CA-C-N	7.13	144.11	127.00
2	B	196	TRP	C-N-CA	7.13	144.11	127.00
2	H	196	TRP	CA-C-N	7.11	128.72	119.84
2	H	196	TRP	C-N-CA	7.11	128.72	119.84
3	Q	74	LEU	N-CA-C	7.00	119.79	111.33
2	B	196	TRP	C-N-CD	-6.96	105.28	120.60
2	B	167	SER	N-CA-C	-6.94	106.71	114.62
2	H	127	GLY	CA-C-N	6.89	134.71	121.54
2	H	127	GLY	C-N-CA	6.89	134.71	121.54
3	Q	82	ASN	N-CA-C	6.89	120.08	108.02
2	B	128	CYS	N-CA-C	-6.71	97.58	108.52
2	B	126	PRO	CA-C-N	-6.36	108.95	121.41
2	B	126	PRO	C-N-CA	-6.36	108.95	121.41
2	H	212	HIS	CA-C-N	6.26	125.82	119.19
2	H	212	HIS	C-N-CA	6.26	125.82	119.19
3	Q	4	ALA	CA-C-N	6.22	125.98	119.76
3	Q	4	ALA	C-N-CA	6.22	125.98	119.76
3	R	82	ASN	N-CA-C	6.17	123.95	110.80
2	B	226	VAL	CA-C-O	6.17	128.21	119.95
3	Q	121	LYS	N-CA-C	6.12	123.84	110.80
2	H	127	GLY	N-CA-C	-5.96	106.36	115.66
1	A	137	ASN	N-CA-C	5.74	118.84	109.59
3	R	33	SER	N-CA-C	5.67	118.84	109.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	227	PRO	N-CD-CG	-5.58	94.83	103.20
2	B	126	PRO	CA-N-CD	-5.56	104.22	112.00
2	B	227	PRO	CA-C-O	-5.32	110.92	120.60
2	B	227	PRO	N-CD-CG	-5.20	95.40	103.20
2	H	128	CYS	N-CA-CB	5.20	119.27	110.49
2	H	227	PRO	N-CA-CB	-5.20	97.80	103.25
1	L	2	ILE	CB-CA-C	5.13	119.70	111.29
2	H	227	PRO	CB-CA-C	-5.10	103.14	111.56
3	R	122	VAL	N-CA-C	5.02	119.77	109.34

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	127	GLY	Mainchain
2	B	128	CYS	Mainchain
2	B	150	GLU	Peptide
2	B	196	TRP	Peptide
2	H	196	TRP	Peptide
1	L	1	ASP	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	1647	0	1586	52	0
1	L	1647	0	1586	42	0
2	B	1593	0	1549	52	0
2	H	1593	0	1549	44	0
3	Q	917	0	915	33	0
3	R	925	0	921	44	0
4	A	3	0	0	0	0
4	B	2	0	0	2	0
4	H	1	0	0	0	0
4	L	6	0	0	0	0
All	All	8334	0	8106	251	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 15.

All (251) 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:L:1:ASP:N	1:L:1:ASP:CA	1.78	1.44
1:A:1:ASP:N	1:A:1:ASP:CA	1.83	1.40
2:H:127:GLY:C	2:H:127:GLY:CA	1.97	1.36
2:H:226:VAL:HG12	2:H:227:PRO:CD	1.88	1.04
1:A:90:ARG:HH11	1:A:90:ARG:CG	1.74	1.01
2:H:196:TRP:CD2	2:H:198:PRO:HD3	1.98	0.96
1:A:90:ARG:HG3	1:A:90:ARG:NH1	1.59	0.96
2:H:226:VAL:HG12	2:H:227:PRO:HD3	1.46	0.96
3:R:46:LYS:H	3:R:46:LYS:HD2	1.32	0.94
3:Q:9:ILE:HD11	3:Q:114:SER:HB2	1.52	0.90
1:A:90:ARG:HH11	1:A:90:ARG:HG3	0.79	0.90
3:R:81:THR:HG22	3:R:82:ASN:H	1.34	0.88
3:Q:14:MET:HE2	3:Q:20:GLN:HE22	1.39	0.88
2:H:196:TRP:CE3	2:H:198:PRO:HD3	2.08	0.88
3:R:9:ILE:HG13	3:R:113:SER:HB2	1.57	0.87
1:A:124:GLN:HE22	1:A:131:SER:HB2	1.39	0.87
1:A:2:ILE:HD13	1:A:27:GLN:HG3	1.57	0.85
1:L:2:ILE:HG22	1:L:27:GLN:HG3	1.58	0.84
3:R:110:MET:HE1	3:Q:110:MET:HE1	1.58	0.84
1:L:29:VAL:HG11	1:L:90:ARG:HE	1.40	0.84
1:A:2:ILE:HD13	1:A:27:GLN:CG	2.08	0.84
2:H:226:VAL:HG12	2:H:227:PRO:HD2	1.58	0.84
1:L:91:ILE:HD11	2:H:100:TYR:HB3	1.60	0.83
1:A:160:LEU:HD11	2:B:181:GLN:HG3	1.61	0.82
2:B:1:GLN:HA	4:B:229:HOH:O	1.78	0.82
3:Q:75:PHE:HE1	3:Q:89:LEU:HD22	1.44	0.81
1:L:29:VAL:HG11	1:L:90:ARG:NE	1.95	0.80
2:B:203:VAL:O	2:B:223:ILE:HG22	1.82	0.80
1:A:21:LEU:HD22	1:A:102:THR:HG21	1.63	0.79
3:Q:121:LYS:O	3:Q:122:VAL:HB	1.80	0.79
2:H:226:VAL:CG1	2:H:227:PRO:HD2	2.12	0.78
1:L:13:VAL:HG21	1:L:19:VAL:HG13	1.66	0.76
3:R:80:ASP:O	3:R:81:THR:O	2.02	0.76
1:L:90:ARG:NH2	1:L:93:ASN:HB2	2.01	0.76
2:H:226:VAL:CG1	2:H:227:PRO:CD	2.64	0.76
2:H:226:VAL:O	2:H:227:PRO:O	2.05	0.75
3:Q:75:PHE:CE1	3:Q:89:LEU:HD22	2.21	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1:GLN:CA	4:B:229:HOH:O	2.36	0.73
3:R:9:ILE:HD11	3:R:114:SER:HB2	1.69	0.73
3:R:7:LEU:HD22	3:R:28:VAL:HG22	1.69	0.72
3:R:14:MET:HE2	3:R:20:GLN:HE22	1.55	0.72
2:H:227:PRO:C	2:H:228:ARG:HG2	2.15	0.72
1:L:31:ASN:HD22	1:L:31:ASN:H	1.37	0.70
3:R:75:PHE:CE1	3:R:89:LEU:HD22	2.26	0.70
3:R:93:SER:H	3:R:96:ASN:HD21	1.40	0.69
1:A:19:VAL:HG23	1:A:75:ILE:HB	1.74	0.69
1:L:19:VAL:HG23	1:L:75:ILE:HB	1.76	0.68
2:B:125:ALA:HB2	2:B:223:ILE:HD11	1.76	0.68
3:R:81:THR:HG22	3:R:82:ASN:N	2.08	0.67
2:H:226:VAL:CB	2:H:227:PRO:HD2	2.24	0.67
1:L:91:ILE:HG12	2:H:99:TRP:O	1.94	0.66
3:R:9:ILE:H	3:R:9:ILE:HD12	1.60	0.66
3:R:75:PHE:HE1	3:R:89:LEU:HD22	1.61	0.66
1:L:160:LEU:HD11	2:H:181:GLN:HG3	1.79	0.65
3:R:46:LYS:HD2	3:R:46:LYS:N	2.09	0.65
3:Q:80:ASP:O	3:Q:81:THR:O	2.15	0.64
2:H:196:TRP:CD2	2:H:198:PRO:CD	2.79	0.64
2:H:125:ALA:HB2	2:H:223:ILE:CG2	2.28	0.64
2:B:171:VAL:HG22	2:B:191:VAL:HG13	1.78	0.63
3:Q:82:ASN:O	3:Q:83:ASN:CB	2.45	0.62
1:L:2:ILE:HD13	1:L:90:ARG:HD3	1.82	0.62
2:H:18:LEU:HD11	2:H:20:LEU:HG	1.82	0.61
1:A:2:ILE:HD11	1:A:25:ALA:HB1	1.82	0.61
3:Q:35:GLY:HA3	3:Q:56:MET:O	2.00	0.61
2:H:196:TRP:CE3	2:H:198:PRO:CD	2.83	0.61
1:A:1:ASP:N	1:A:1:ASP:OD1	2.34	0.61
1:A:76:ASN:HD22	1:A:76:ASN:N	1.98	0.60
1:A:32:ASN:HB3	1:A:91:ILE:HG22	1.84	0.60
2:B:173:THR:HB	2:B:189:SER:OG	2.01	0.60
2:B:223:ILE:HG23	2:B:223:ILE:O	2.01	0.60
1:A:91:ILE:HG12	2:B:99:TRP:O	2.01	0.59
2:B:96:ILE:HG13	2:B:96:ILE:O	2.01	0.59
3:Q:30:GLY:O	3:Q:31:SER:HB3	2.02	0.59
3:Q:9:ILE:HG13	3:Q:113:SER:HB2	1.85	0.59
3:Q:9:ILE:CD1	3:Q:114:SER:HB2	2.28	0.59
3:Q:82:ASN:O	3:Q:83:ASN:HB2	2.01	0.59
2:B:124:LEU:C	2:B:223:ILE:HD11	2.29	0.58
1:A:195:GLU:HG3	1:A:206:VAL:HG22	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Q:34:GLN:HA	3:Q:34:GLN:HE21	1.68	0.58
1:L:2:ILE:CD1	1:L:90:ARG:HD3	2.34	0.58
2:H:40:PRO:HB2	2:H:43:LYS:HG3	1.85	0.58
2:H:226:VAL:O	2:H:227:PRO:C	2.44	0.57
2:H:227:PRO:O	2:H:228:ARG:HG2	2.04	0.57
2:B:150:GLU:HB3	2:B:151:PRO:CD	2.34	0.57
2:B:157:TRP:CH2	2:B:205:CYS:HB3	2.38	0.57
2:H:226:VAL:CB	2:H:227:PRO:CD	2.82	0.57
2:B:125:ALA:HB2	2:B:223:ILE:CD1	2.34	0.57
1:A:21:LEU:HD12	1:A:73:LEU:HD23	1.85	0.57
3:R:35:GLY:HA3	3:R:56:MET:O	2.05	0.57
2:B:67:LEU:HD11	2:B:80:LEU:HD11	1.86	0.56
2:H:143:LEU:HD22	2:H:145:LYS:HB2	1.88	0.56
3:R:102:CYS:SG	3:R:113:SER:HB3	2.45	0.56
3:Q:99:TYR:HB3	3:Q:115:VAL:HG13	1.87	0.56
3:R:79:ARG:C	3:R:80:ASP:O	2.48	0.56
2:H:96:ILE:O	2:H:96:ILE:HG13	2.05	0.55
1:L:195:GLU:HG3	1:L:206:VAL:HG22	1.87	0.55
1:A:81:ASP:OD1	1:A:81:ASP:N	2.37	0.55
3:R:46:LYS:H	3:R:46:LYS:CD	2.12	0.55
1:A:20:THR:HG23	1:A:72:THR:HG23	1.87	0.55
1:A:2:ILE:HD13	1:A:27:GLN:HG2	1.86	0.55
2:B:203:VAL:HG22	2:B:223:ILE:HG21	1.88	0.54
1:A:118:PHE:HE2	2:B:126:PRO:HD3	1.71	0.54
3:R:56:MET:HG2	3:R:63:ILE:HG22	1.89	0.54
2:B:89:ILE:HG13	2:B:108:MET:HG2	1.91	0.53
2:H:157:TRP:CZ3	2:H:205:CYS:HB3	2.44	0.53
1:L:197:VAL:HG22	1:L:204:PRO:HB3	1.91	0.53
3:R:121:LYS:O	3:R:123:ASN:N	2.41	0.53
3:Q:41:GLN:NE2	3:Q:48:PRO:HA	2.23	0.53
3:Q:93:SER:HB2	3:Q:94:LYS:HE3	1.90	0.53
1:A:198:HIS:HD2	1:A:200:THR:H	1.55	0.53
2:B:157:TRP:CZ3	2:B:205:CYS:HB3	2.45	0.52
3:Q:14:MET:HE2	3:Q:20:GLN:NE2	2.18	0.52
3:Q:96:ASN:HB2	3:Q:100:TYR:OH	2.09	0.52
1:L:124:GLN:HE22	1:L:131:SER:HB2	1.74	0.52
1:L:31:ASN:HD22	1:L:31:ASN:N	2.02	0.52
3:Q:93:SER:H	3:Q:96:ASN:HD21	1.58	0.52
3:R:110:MET:HE1	3:Q:110:MET:CE	2.35	0.51
1:A:37:GLN:HB2	1:A:47:LEU:HD11	1.93	0.51
1:L:47:LEU:HA	1:L:58:VAL:HG21	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:R:99:TYR:HB3	3:R:115:VAL:HG13	1.92	0.51
1:A:2:ILE:O	1:A:2:ILE:HG23	2.11	0.51
1:A:13:VAL:HG21	1:A:19:VAL:HG13	1.92	0.51
1:L:198:HIS:CD2	1:L:200:THR:HG23	2.46	0.51
1:L:163:VAL:HG22	1:L:175:MET:HB3	1.93	0.50
1:A:146:VAL:HG22	1:A:196:VAL:HG22	1.92	0.50
3:R:39:LEU:HD23	3:R:52:PHE:HA	1.92	0.50
1:L:90:ARG:HH22	1:L:93:ASN:HB2	1.76	0.50
2:H:59:TYR:HB2	2:H:64:LYS:HD2	1.94	0.50
3:R:34:GLN:HE21	3:R:34:GLN:HA	1.76	0.50
3:Q:121:LYS:O	3:Q:122:VAL:CB	2.55	0.50
2:H:18:LEU:HD12	2:H:19:SER:N	2.27	0.50
1:L:187:GLU:HA	1:L:211:ARG:NE	2.27	0.49
2:H:97:GLY:HA2	3:Q:25:VAL:HG11	1.94	0.49
2:B:171:VAL:HG22	2:B:191:VAL:CG1	2.42	0.49
3:R:63:ILE:HG13	3:R:65:TRP:NE1	2.27	0.49
3:R:94:LYS:CD	3:R:94:LYS:H	2.25	0.49
3:R:9:ILE:HD12	3:R:9:ILE:N	2.25	0.49
3:R:30:GLY:O	3:R:31:SER:HB3	2.12	0.49
2:H:121:VAL:HG12	2:H:221:GLN:HG3	1.94	0.49
3:R:9:ILE:H	3:R:9:ILE:CD1	2.20	0.49
3:Q:56:MET:HG2	3:Q:63:ILE:HG22	1.94	0.49
1:L:198:HIS:HD2	1:L:200:THR:H	1.61	0.49
2:H:171:VAL:HG22	2:H:191:VAL:CG1	2.43	0.48
2:B:15:SER:HA	2:B:82(B):SER:HA	1.94	0.48
2:B:66:ARG:NH1	2:B:82(A):ASN:O	2.43	0.48
2:B:125:ALA:N	2:B:223:ILE:HD11	2.28	0.48
1:L:61:ARG:HG3	1:L:75:ILE:HG23	1.94	0.48
1:A:37:GLN:HG3	1:A:86:TYR:CE2	2.48	0.48
1:A:90:ARG:CG	1:A:90:ARG:NH1	2.46	0.48
1:A:61:ARG:NH1	1:A:82:ASP:OD2	2.47	0.48
2:B:140:LEU:HD13	2:B:223:ILE:HG21	1.94	0.48
1:A:21:LEU:HD22	1:A:102:THR:CG2	2.40	0.48
3:R:41:GLN:NE2	3:R:48:PRO:HA	2.30	0.47
3:Q:99:TYR:HB3	3:Q:115:VAL:CG1	2.44	0.47
2:H:97:GLY:HA2	3:Q:25:VAL:CG1	2.45	0.47
1:L:14:SER:O	1:L:15:ALA:C	2.56	0.47
2:B:52:TRP:HH2	2:B:99:TRP:CZ3	2.32	0.47
2:B:97:GLY:HA2	3:R:25:VAL:CG1	2.44	0.47
2:B:35:HIS:ND1	2:B:50:GLY:HA3	2.29	0.47
2:H:141:GLY:O	2:H:223:ILE:HD11	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:31:ASN:H	1:L:31:ASN:ND2	2.09	0.47
3:R:92:PHE:HZ	3:R:97:GLU:HG2	1.80	0.46
2:B:82(C):LEU:HD13	2:B:86:ASP:HB3	1.96	0.46
1:A:91:ILE:HD11	2:B:100:TYR:HB3	1.97	0.46
3:R:86:VAL:HG12	3:R:88:THR:HG22	1.97	0.46
1:L:117:ILE:HD13	1:L:208:SER:HA	1.97	0.46
3:R:122:VAL:O	3:R:123:ASN:HB2	2.15	0.46
2:H:152:VAL:HG23	2:H:212:HIS:CD2	2.51	0.45
3:R:46:LYS:N	3:R:46:LYS:CD	2.74	0.45
2:H:22:CYS:HB2	2:H:36:TRP:CH2	2.52	0.45
1:A:16:GLY:HA2	1:A:77:SER:HB2	1.97	0.45
3:Q:80:ASP:O	3:Q:81:THR:C	2.57	0.45
1:A:13:VAL:HG13	1:A:78:VAL:HG11	1.97	0.45
1:A:14:SER:O	1:A:15:ALA:C	2.59	0.45
1:L:21:LEU:HG	1:L:102:THR:HG21	1.99	0.45
2:B:125:ALA:CB	2:B:223:ILE:HD11	2.44	0.45
2:B:178:LEU:HD22	2:B:181:GLN:H	1.82	0.45
3:Q:18:LEU:HD21	3:Q:120:GLN:HE21	1.82	0.45
1:A:89:GLN:HG2	1:A:90:ARG:O	2.16	0.45
1:L:198:HIS:HD2	1:L:200:THR:HG23	1.82	0.45
1:L:190:ASN:HB3	1:L:210:ASN:ND2	2.32	0.44
3:R:27:GLU:HA	3:R:83:ASN:O	2.17	0.44
3:R:40:PHE:CZ	3:R:42:ASN:HA	2.52	0.44
2:B:18:LEU:HD12	2:B:19:SER:N	2.33	0.44
2:B:119:PRO:HB3	2:B:147:TYR:HB3	1.99	0.44
2:H:52:TRP:HH2	2:H:99:TRP:CZ3	2.35	0.44
1:A:190:ASN:HB3	1:A:210:ASN:ND2	2.32	0.44
2:B:18:LEU:HD11	2:B:20:LEU:HG	1.99	0.44
2:B:18:LEU:HD13	2:B:109:VAL:HG11	1.99	0.44
1:A:18:ARG:HA	1:A:75:ILE:O	2.18	0.44
1:L:44:PRO:HD2	2:H:103:TRP:CE3	2.53	0.44
1:L:58:VAL:HA	1:L:59:PRO:HD3	1.86	0.44
1:A:124:GLN:NE2	1:A:131:SER:HB2	2.20	0.44
3:R:82:ASN:HB3	3:R:83:ASN:H	1.51	0.44
1:L:89:GLN:NE2	1:L:96:TYR:HB3	2.33	0.44
2:H:66:ARG:HA	2:H:82(A):ASN:HD22	1.83	0.44
2:B:52:TRP:CH2	2:B:99:TRP:CZ3	3.05	0.44
2:B:82(C):LEU:HD13	2:B:86:ASP:CB	2.48	0.44
2:B:149:PRO:C	2:B:150:GLU:O	2.60	0.44
2:B:211:ALA:HB2	2:B:218:LYS:HD3	1.99	0.44
2:H:125:ALA:HB2	2:H:223:ILE:HG22	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:84:THR:C	2:B:86:ASP:H	2.26	0.44
1:A:149:LYS:HB2	1:A:193:THR:HB	1.99	0.43
2:H:149:PRO:HD2	2:H:214:ALA:CB	2.48	0.43
1:A:113:PRO:HB3	1:A:139:PHE:HB3	2.00	0.43
1:L:192:TYR:O	1:L:208:SER:HB2	2.19	0.43
1:L:90:ARG:HG3	1:L:91:ILE:N	2.32	0.43
2:B:35:HIS:CE1	2:B:50:GLY:HA3	2.54	0.43
1:L:1:ASP:N	1:L:1:ASP:CB	2.71	0.43
1:A:49:TYR:HD2	1:A:50:TYR:CD2	2.37	0.43
2:B:13:GLN:CG	2:B:16:GLN:HG3	2.49	0.43
2:B:97:GLY:HA2	3:R:25:VAL:HG11	2.00	0.43
2:B:66:ARG:HA	2:B:82(A):ASN:HD22	1.83	0.43
1:L:85:PHE:CZ	1:L:103:LYS:HG3	2.54	0.43
1:A:31:ASN:H	1:A:31:ASN:HD22	1.67	0.43
2:B:59:TYR:HB2	2:B:64:LYS:HD2	2.01	0.42
2:H:60:ASN:HD21	2:H:63:LEU:HD12	1.83	0.42
1:L:81:ASP:OD1	1:L:81:ASP:N	2.52	0.42
1:A:58:VAL:HA	1:A:59:PRO:HD3	1.89	0.42
3:Q:89:LEU:HD13	3:Q:96:ASN:HB2	2.01	0.42
2:H:52:TRP:CH2	2:H:99:TRP:CZ3	3.08	0.42
1:A:119:PRO:CG	2:B:127:GLY:HA3	2.49	0.42
1:L:61:ARG:NH1	1:L:82:ASP:OD2	2.53	0.42
1:A:30:ARG:HB3	1:A:67:PHE:CZ	2.55	0.42
1:A:2:ILE:HD12	1:A:2:ILE:HA	1.92	0.42
1:A:21:LEU:CD2	1:A:102:THR:HG21	2.43	0.42
1:A:29:VAL:HG12	1:A:90:ARG:NH2	2.34	0.42
2:B:33:SER:HB2	2:B:51:ILE:O	2.19	0.41
3:R:47:LEU:O	3:R:49:GLN:N	2.52	0.41
2:H:94:PRO:HD2	2:H:102:PHE:O	2.20	0.41
2:B:219:VAL:CG2	2:B:221:GLN:HE21	2.33	0.41
1:L:115:VAL:HG13	1:L:205:VAL:HG11	2.03	0.41
1:L:162:SER:OG	2:H:175:PRO:O	2.27	0.41
1:A:140:TYR:CG	1:A:141:PRO:HA	2.55	0.41
3:R:81:THR:CG2	3:R:82:ASN:N	2.79	0.41
2:B:4:LEU:N	2:B:4:LEU:HD22	2.36	0.41
2:B:89:ILE:CG1	2:B:108:MET:HG2	2.51	0.41
2:B:125:ALA:CA	2:B:223:ILE:HD11	2.51	0.41
3:R:92:PHE:HZ	3:R:97:GLU:CG	2.34	0.41
1:A:125:LEU:HD22	1:A:183:LYS:HG3	2.03	0.41
1:A:162:SER:O	1:A:175:MET:HB2	2.21	0.41
3:Q:27:GLU:HA	3:Q:83:ASN:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:27:GLN:HE21	1:L:27:GLN:HB3	1.69	0.40
3:R:94:LYS:H	3:R:94:LYS:HD3	1.86	0.40
3:Q:36:CYS:SG	3:Q:102:CYS:HB2	2.61	0.40
3:Q:94:LYS:CD	3:Q:94:LYS:H	2.32	0.40
1:A:1:ASP:N	1:A:1:ASP:C	2.73	0.40
2:B:63:LEU:O	2:B:64:LYS:C	2.64	0.40
3:R:36:CYS:SG	3:R:102:CYS:HB2	2.61	0.40
2:H:66:ARG:NH1	2:H:82(A):ASN:O	2.54	0.40
3:Q:79:ARG:C	3:Q:80:ASP:O	2.63	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	209/211 (99%)	195 (93%)	12 (6%)	2 (1%)	12	35
1	L	209/211 (99%)	196 (94%)	11 (5%)	2 (1%)	12	35
2	B	208/215 (97%)	188 (90%)	16 (8%)	4 (2%)	6	21
2	H	208/215 (97%)	196 (94%)	7 (3%)	5 (2%)	4	16
3	Q	111/123 (90%)	99 (89%)	4 (4%)	8 (7%)	1	2
3	R	112/123 (91%)	98 (88%)	6 (5%)	8 (7%)	1	2
All	All	1057/1098 (96%)	972 (92%)	56 (5%)	29 (3%)	4	14

All (29) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	H	168	SER
2	H	198	PRO
2	H	227	PRO

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Mol	Chain	Res	Type
2	B	150	GLU
2	B	151	PRO
3	R	31	SER
3	R	81	THR
3	R	122	VAL
3	Q	31	SER
3	Q	81	THR
3	Q	121	LYS
1	L	2	ILE
2	B	168	SER
3	R	59	SER
1	A	77	SER
3	R	34	GLN
3	R	80	ASP
3	Q	34	GLN
3	Q	59	SER
3	Q	83	ASN
2	H	128	CYS
2	B	85	ASP
3	R	48	PRO
1	L	77	SER
2	H	196	TRP
1	A	2	ILE
3	R	82	ASN
3	Q	48	PRO
3	Q	80	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	185/185 (100%)	161 (87%)	24 (13%)	4	11
1	L	185/185 (100%)	159 (86%)	26 (14%)	3	10
2	B	184/187 (98%)	154 (84%)	30 (16%)	2	7
2	H	184/187 (98%)	156 (85%)	28 (15%)	3	8

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	Q	107/115 (93%)	88 (82%)	19 (18%)	2	5
3	R	108/115 (94%)	91 (84%)	17 (16%)	2	7
All	All	953/974 (98%)	809 (85%)	144 (15%)	3	8

All (144) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	L	2	ILE
1	L	3	VAL
1	L	19	VAL
1	L	20	THR
1	L	27	GLN
1	L	29	VAL
1	L	30	ARG
1	L	31	ASN
1	L	33	ILE
1	L	39	LYS
1	L	54	ARG
1	L	61	ARG
1	L	63	THR
1	L	65	ASP
1	L	72	THR
1	L	81	ASP
1	L	91	ILE
1	L	94	SER
1	L	106	LEU
1	L	115	VAL
1	L	131	SER
1	L	142	ARG
1	L	159	VAL
1	L	168	SER
1	L	199	LYS
1	L	211	ARG
2	H	4	LEU
2	H	19	SER
2	H	24	VAL
2	H	29	LEU
2	H	43	LYS
2	H	60	ASN
2	H	81	LYS
2	H	84	THR

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Mol	Chain	Res	Type
2	H	96	ILE
2	H	107	THR
2	H	136	SER
2	H	142	CYS
2	H	143	LEU
2	H	152	VAL
2	H	153	THR
2	H	154	VAL
2	H	173	THR
2	H	177	VAL
2	H	178	LEU
2	H	181	GLN
2	H	191	VAL
2	H	202	THR
2	H	203	VAL
2	H	210	VAL
2	H	218	LYS
2	H	226	VAL
2	H	227	PRO
2	H	228	ARG
1	A	7	SER
1	A	14	SER
1	A	19	VAL
1	A	30	ARG
1	A	31	ASN
1	A	33	ILE
1	A	39	LYS
1	A	45	LYS
1	A	63	THR
1	A	76	ASN
1	A	81	ASP
1	A	90	ARG
1	A	91	ILE
1	A	94	SER
1	A	106	LEU
1	A	115	VAL
1	A	131	SER
1	A	142	ARG
1	A	145	SER
1	A	159	VAL
1	A	176	SER
1	A	184	VAL

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Mol	Chain	Res	Type
1	A	199	LYS
1	A	207	LYS
2	B	4	LEU
2	B	5	LYS
2	B	19	SER
2	B	24	VAL
2	B	29	LEU
2	B	43	LYS
2	B	60	ASN
2	B	81	LYS
2	B	89	ILE
2	B	96	ILE
2	B	107	THR
2	B	126	PRO
2	B	142	CYS
2	B	143	LEU
2	B	149	PRO
2	B	151	PRO
2	B	152	VAL
2	B	153	THR
2	B	154	VAL
2	B	169	ASP
2	B	173	THR
2	B	177	VAL
2	B	178	LEU
2	B	181	GLN
2	B	187	LEU
2	B	191	VAL
2	B	194	SER
2	B	202	THR
2	B	203	VAL
2	B	210	VAL
3	R	6	GLU
3	R	9	ILE
3	R	13	LYS
3	R	25	VAL
3	R	32	VAL
3	R	46	LYS
3	R	63	ILE
3	R	66	ASP
3	R	80	ASP
3	R	83	ASN

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Mol	Chain	Res	Type
3	R	88	THR
3	R	89	LEU
3	R	94	LYS
3	R	96	ASN
3	R	97	GLU
3	R	105	ILE
3	R	120	GLN
3	Q	6	GLU
3	Q	7	LEU
3	Q	9	ILE
3	Q	13	LYS
3	Q	25	VAL
3	Q	32	VAL
3	Q	34	GLN
3	Q	63	ILE
3	Q	64	THR
3	Q	73	LYS
3	Q	74	LEU
3	Q	81	THR
3	Q	89	LEU
3	Q	94	LYS
3	Q	96	ASN
3	Q	97	GLU
3	Q	104	VAL
3	Q	105	ILE
3	Q	120	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	L	27	GLN
1	L	31	ASN
1	L	76	ASN
1	L	124	GLN
1	L	190	ASN
1	L	198	HIS
1	L	210	ASN
2	H	60	ASN
2	H	82(A)	ASN
2	H	83	GLN
1	A	31	ASN
1	A	76	ASN

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Mol	Chain	Res	Type
1	A	79	GLN
1	A	124	GLN
1	A	190	ASN
1	A	198	HIS
1	A	210	ASN
2	B	16	GLN
2	B	77	GLN
2	B	82(A)	ASN
2	B	221	GLN
3	R	20	GLN
3	R	34	GLN
3	R	41	GLN
3	R	60	HIS
3	R	96	ASN
3	R	120	GLN
3	R	123	ASN
3	Q	20	GLN
3	Q	34	GLN
3	Q	90	ASN
3	Q	96	ASN
3	Q	120	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	H	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	H	223:ILE	C	226:VAL	N	1.19

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	211/211 (100%)	0.10	2 (0%) 81 75	35, 41, 48, 55	0
1	L	211/211 (100%)	0.17	4 (1%) 66 58	34, 41, 48, 55	0
2	B	212/215 (98%)	0.26	9 (4%) 40 32	32, 42, 51, 58	0
2	H	212/215 (98%)	0.36	11 (5%) 33 26	30, 41, 50, 59	0
3	Q	115/123 (93%)	0.57	5 (4%) 40 32	30, 42, 51, 60	0
3	R	116/123 (94%)	0.36	3 (2%) 57 48	32, 42, 50, 65	0
All	All	1077/1098 (98%)	0.27	34 (3%) 50 41	30, 41, 50, 65	0

All (34) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	H	1	GLN	4.4
2	B	216	SER	3.9
2	H	223	ILE	3.5
3	R	30	GLY	3.3
1	L	65	ASP	3.3
3	Q	30	GLY	3.1
2	B	226	VAL	3.1
3	Q	60	HIS	3.0
3	R	31	SER	3.0
2	H	227	PRO	2.9
2	B	129	GLY	2.9
2	H	222	LYS	2.8
3	Q	122	VAL	2.8
1	L	2	ILE	2.8
2	H	127	GLY	2.8
1	A	65	ASP	2.7
2	H	228	ARG	2.7
2	H	167	SER	2.6
2	B	168	SER	2.6

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Mol	Chain	Res	Type	RSRZ
2	H	221	GLN	2.6
2	H	129	GLY	2.5
1	L	150	ILE	2.5
1	L	1	ASP	2.4
2	B	223	ILE	2.4
2	B	1	GLN	2.3
3	R	73	LYS	2.3
3	Q	59	SER	2.3
1	A	1	ASP	2.2
3	Q	32	VAL	2.2
2	B	221	GLN	2.2
2	B	68	SER	2.2
2	H	226	VAL	2.1
2	H	220	ASP	2.1
2	B	151	PRO	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.