WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Jul 19, 2022 – 01:16 pm BST

PDB ID	:	7NDT
Title	:	UL40:01 TCR in complex with HLA-E with a non-natural amino acid
Authors	:	Pengelly, R.J.; Robinson, R.A.
Deposited on	:	2021-02-02
Resolution	:	3.00 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	:	2.29
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.29

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 3.00 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.
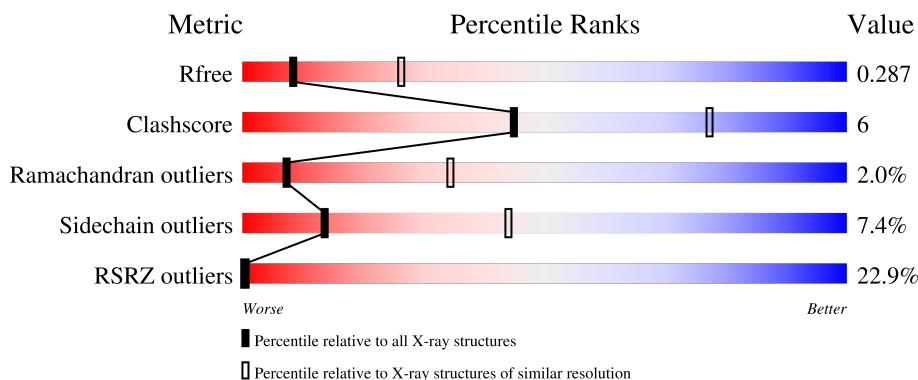
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)

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	AAA	277	23% / 81% 16% ··
1	FFF	277	30% / 76% 18% ··
2	BBB	100	12% / 77% 19% ··
2	GGG	100	13% / 79% 17% ··
3	CCC	9	33% / 67% 33%
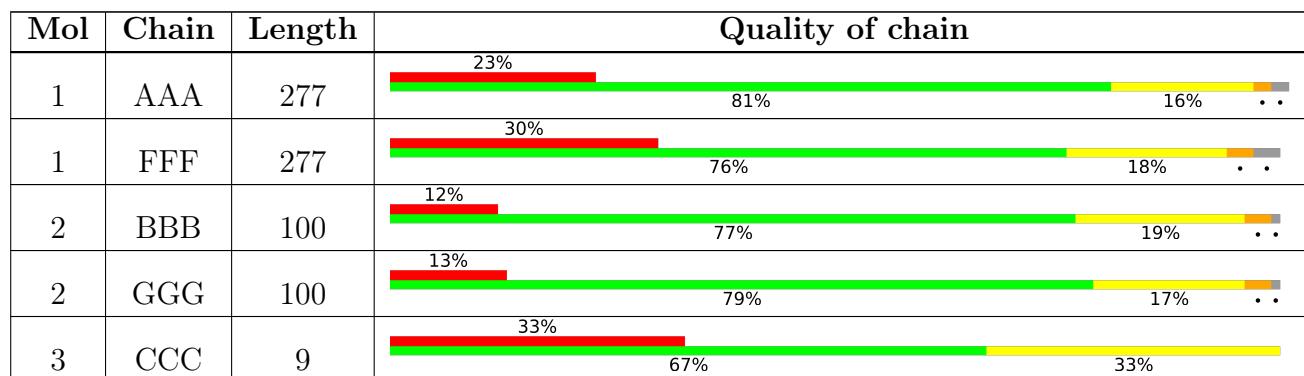
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Mol	Chain	Length	Quality of chain
3	HHH	9	22% ... 89% ... 11%
4	DDD	198	28% ... 70% ... 21% ... 5%
4	III	198	8% ... 77% ... 16% ... 5%
5	EEE	243	37% ... 75% ... 21%
5	JJJ	243	14% ... 79% ... 19%

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 13024 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 HLA class I histocompatibility antigen, alpha chain E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	AAA	271	Total 2208	C 1380	N 395	O 425	S 8	0	0	0
1	FFF	270	Total 2203	C 1378	N 394	O 423	S 8	0	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AAA	0	MET	-	initiating methionine	UNP P13747
AAA	116	CYS	PHE	conflict	UNP P13747
FFF	0	MET	-	initiating methionine	UNP P13747
FFF	116	CYS	PHE	conflict	UNP P13747

- Molecule 2 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	BBB	99	Total 829	C 528	N 140	O 158	S 3	0	0	0
2	GGG	99	Total 829	C 528	N 140	O 158	S 3	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BBB	0	MET	-	initiating methionine	UNP P61769
GGG	0	MET	-	initiating methionine	UNP P61769

- Molecule 3 is a protein called UL40(15-23 H4C).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	CCC	9	Total 71	C 46	N 12	O 11	S 2	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	HHH	9	71	46	12	11	2	0	0	0

- Molecule 4 is a protein called T cell receptor alpha variable 26-1,T cell receptor alpha joining 37,T cell receptor alpha chain constant.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	DDD	190	1483	919	256	299	9	0	0	0
			Total	C	N	O	S			
4	III	189	1474	913	255	297	9	0	0	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DDD	0	MET	-	initiating methionine	UNP A0A087WT03
DDD	1	ALA	-	expression tag	UNP A0A087WT03
DDD	9	PRO	THR	engineered mutation	UNP A0A087WT03
DDD	13	VAL	CYS	engineered mutation	UNP A0A087WT03
DDD	107	VAL	-	linker	UNP A0A087WT03
DDD	108	ARG	-	linker	UNP A0A087WT03
DDD	129	ASP	-	linker	UNP A0A087X096
DDD	176	CYS	THR	engineered mutation	UNP P01848
III	0	MET	-	initiating methionine	UNP A0A087WT03
III	1	ALA	-	expression tag	UNP A0A087WT03
III	9	PRO	THR	engineered mutation	UNP A0A087WT03
III	13	VAL	CYS	engineered mutation	UNP A0A087WT03
III	107	VAL	-	linker	UNP A0A087WT03
III	108	ARG	-	linker	UNP A0A087WT03
III	129	ASP	-	linker	UNP A0A087X096
III	176	CYS	THR	engineered mutation	UNP P01848

- Molecule 5 is a protein called T cell receptor beta variable 14,T cell receptor beta joining 2-3,T cell receptor beta constant 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	EEE	240	1924	1212	336	369	7	0	0	0
			Total	C	N	O	S			
5	JJJ	241	1929	1215	337	370	7	0	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
EEE	0	MET	-	initiating methionine	UNP A0A5B0
EEE	109	ASP	-	linker	UNP A0A5B0
EEE	113	ARG	-	linker	UNP A0A5B0
EEE	129	GLU	-	linker	UNP A0A0B4J200
EEE	138	GLU	LYS	engineered mutation	UNP A0A5B9
EEE	185	CYS	SER	engineered mutation	UNP A0A5B9
EEE	203	ALA	CYS	engineered mutation	UNP A0A5B9
JJJ	0	MET	-	initiating methionine	UNP A0A5B0
JJJ	109	ASP	-	linker	UNP A0A5B0
JJJ	113	ARG	-	linker	UNP A0A5B0
JJJ	129	GLU	-	linker	UNP A0A0B4J200
JJJ	138	GLU	LYS	engineered mutation	UNP A0A5B9
JJJ	185	CYS	SER	engineered mutation	UNP A0A5B9
JJJ	203	ALA	CYS	engineered mutation	UNP A0A5B9

- Molecule 6 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	EEE	1	Total 1	O 1	0	0
6	FFF	1	Total 1	O 1	0	0
6	III	1	Total 1	O 1	0	0

3 Residue-property plots ⓘ

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

• Molecule 1: HLA class I histocompatibility antigen, alpha chain E
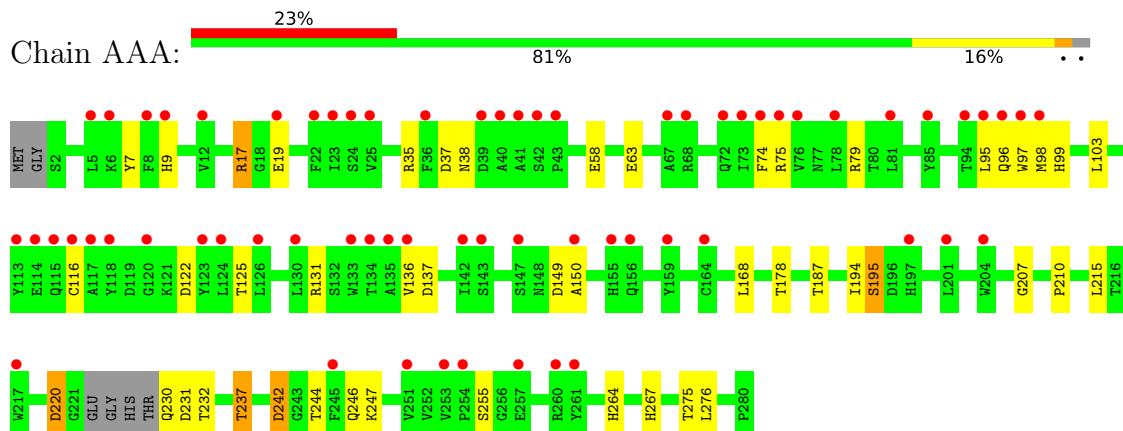
• Molecule 1: HLA class I histocompatibility antigen, alpha chain E
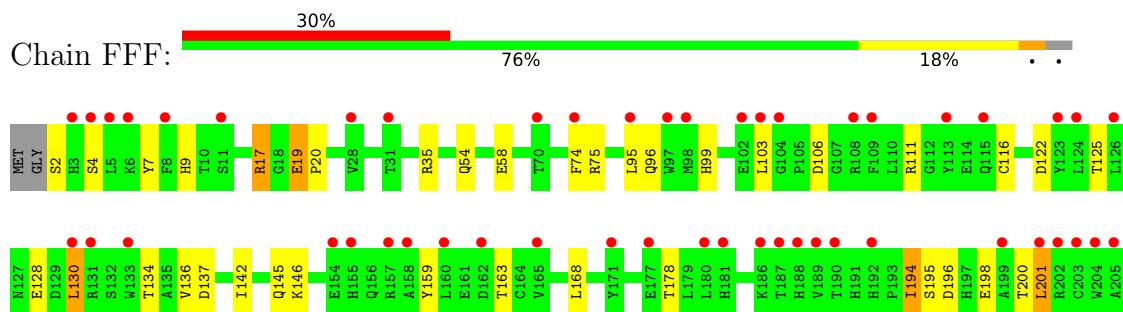
• Molecule 2: Beta-2-microglobulin
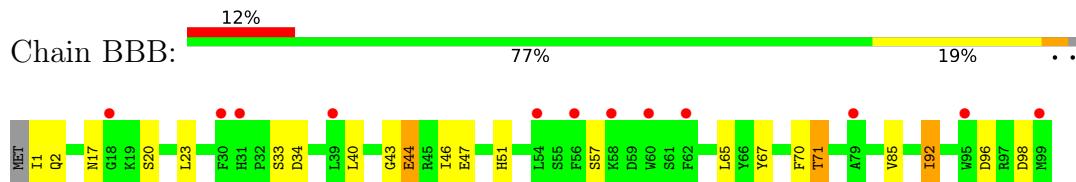
• Molecule 2: Beta-2-microglobulin
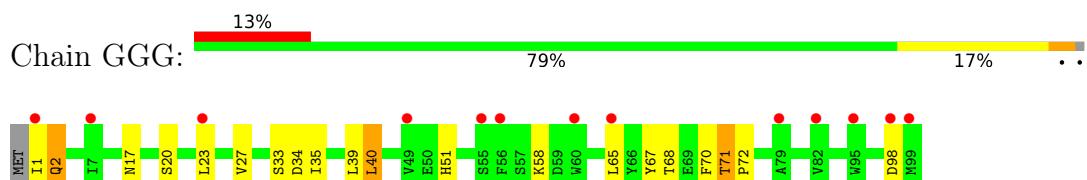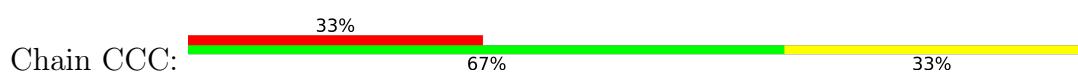
Chain GGG:

• Molecule 3: UL40(15-23 H4C)

Chain CCC:

• Molecule 3: UL40(15-23 H4C)

Chain HHH:

• Molecule 4: T cell receptor alpha variable 26-1,T cell receptor alpha joining 37,T cell receptor alpha chain constant

Chain DDD:

• Molecule 4: T cell receptor alpha variable 26-1,T cell receptor alpha joining 37,T cell receptor alpha chain constant

Chain III:

• Molecule 5: T cell receptor beta variable 14,T cell receptor beta joining 2-3,T cell receptor beta constant 2

Chain EEE:

37%

75%

21%

• Molecule 5: T cell receptor beta variable 14,T cell receptor beta joining 2-3,T cell receptor beta constant 2

Chain JJJ:

14%

79%

19%
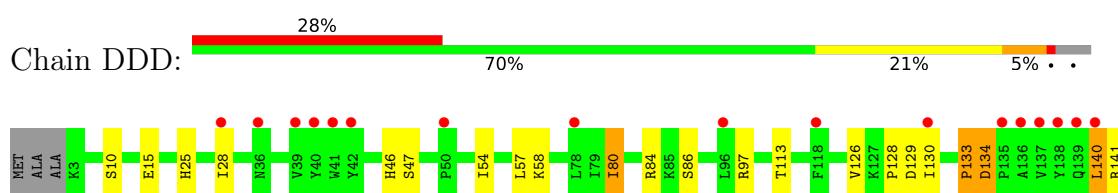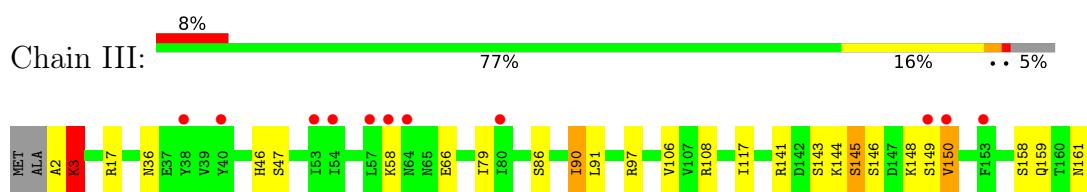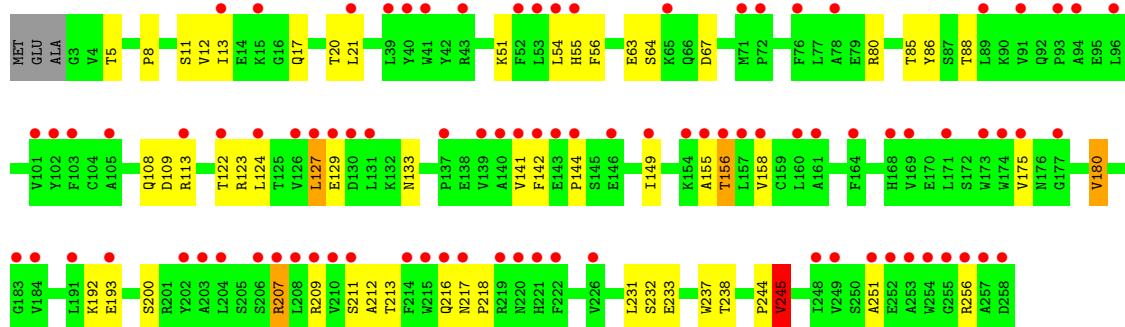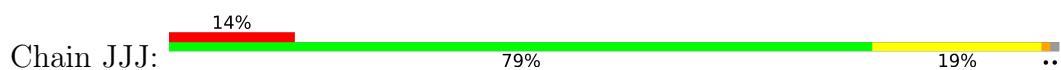
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	117.61Å 76.58Å 130.34Å 90.00° 107.64° 90.00°	Depositor
Resolution (Å)	65.27 – 3.00 65.19 – 3.00	Depositor EDS
% Data completeness (in resolution range)	99.9 (65.27-3.00) 99.5 (65.19-3.00)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.03 (at 3.01Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.221 , 0.269 0.235 , 0.287	Depositor DCC
R_{free} test set	2195 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	110.1	Xtriage
Anisotropy	0.125	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.89	EDS
Total number of atoms	13024	wwPDB-VP
Average B, all atoms (Å^2)	73.0	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 ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: QM8

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	AAA	0.63	0/2272	0.76	0/3088
1	FFF	0.64	0/2267	0.75	0/3083
2	BBB	0.64	0/852	0.75	0/1152
2	GGG	0.65	0/852	0.73	0/1152
3	CCC	0.59	0/61	0.81	0/82
3	HHH	0.59	0/61	0.78	0/82
4	DDD	0.65	0/1512	0.78	0/2053
4	III	0.64	0/1503	0.79	0/2041
5	EEE	0.63	0/1976	0.76	0/2685
5	JJJ	0.63	0/1981	0.74	0/2692
All	All	0.63	0/13337	0.76	0/18110

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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	AAA	2208	0	2053	29	0
1	FFF	2203	0	2050	25	0
2	BBB	829	0	794	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	GGG	829	0	794	9	0
3	CCC	71	0	74	2	0
3	HHH	71	0	74	0	0
4	DDD	1483	0	1428	33	0
4	III	1474	0	1417	13	0
5	EEE	1924	0	1830	35	0
5	JJJ	1929	0	1835	25	0
6	EEE	1	0	0	0	0
6	FFF	1	0	0	1	0
6	III	1	0	0	0	0
All	All	13024	0	12349	165	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 6.

All (165) 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:AAA:242:ASP:OD1	1:AAA:244:THR:HG22	1.77	0.82
5:JJJ:83:GLY:O	5:JJJ:85:THR:N	2.17	0.78
1:AAA:187:THR:HB	1:AAA:276:LEU:HD11	1.65	0.76
4:III:3:LYS:HD2	4:III:106:VAL:HG21	1.69	0.74
1:AAA:79:ARG:NH1	5:EEE:63:GLU:OE2	2.23	0.70
5:JJJ:193:GLU:O	5:JJJ:200:SER:OG	2.10	0.69
4:DDD:173:THR:HG22	4:DDD:191:VAL:H	1.59	0.67
4:DDD:141:ARG:HD2	4:DDD:145:SER:HB2	1.76	0.67
4:III:141:ARG:HD2	4:III:145:SER:HB2	1.76	0.67
4:DDD:130:ILE:HD11	4:DDD:188:ASN:ND2	2.10	0.67
5:JJJ:21:LEU:HG	5:JJJ:122:THR:HG21	1.77	0.66
1:FFF:201:LEU:HD21	1:FFF:279:TRP:HB2	1.78	0.64
1:FFF:145:GLN:HE21	1:FFF:146:LYS:HG3	1.64	0.63
4:DDD:200:ALA:HB3	4:DDD:203:ASN:HD21	1.64	0.62
5:EEE:21:LEU:HG	5:EEE:122:THR:HG21	1.82	0.61
5:EEE:231:LEU:O	5:EEE:245:VAL:HA	2.01	0.61
4:III:2:ALA:O	4:III:3:LYS:HB2	2.00	0.61
1:AAA:264:HIS:ND1	1:AAA:275:THR:HG22	2.17	0.60
1:AAA:150:ALA:HA	5:EEE:109:ASP:HB3	1.84	0.60
5:EEE:217:ASN:HB2	5:EEE:218:PRO:HD3	1.83	0.60
1:FFF:236:VAL:O	1:FFF:248:LYS:HE2	2.02	0.59
2:GGG:20:SER:HA	2:GGG:71:THR:HG23	1.84	0.59
4:DDD:173:THR:CG2	4:DDD:191:VAL:H	2.16	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:JJJ:107:SER:O	5:JJJ:108:GLN:HB3	2.03	0.58
1:AAA:37:ASP:OD1	1:AAA:38:ASN:O	2.21	0.58
4:DDD:58:LYS:O	4:DDD:80:ILE:HD11	2.03	0.58
5:EEE:156:THR:HG23	5:EEE:209:ARG:HG3	1.86	0.57
5:EEE:237:TRP:O	5:EEE:238:THR:OG1	2.18	0.56
4:III:148:LYS:O	4:III:150:VAL:N	2.39	0.55
1:FFF:142:ILE:O	1:FFF:145:GLN:HG3	2.06	0.55
5:EEE:13:ILE:HG23	5:EEE:17:GLN:HB2	1.89	0.55
4:DDD:173:THR:HG21	5:EEE:207:ARG:NH1	2.22	0.54
1:FFF:128:GLU:O	1:FFF:130:LEU:HD22	2.08	0.54
4:DDD:130:ILE:HD11	4:DDD:188:ASN:HD22	1.70	0.54
1:AAA:237:THR:HG22	1:AAA:247:LYS:HD2	1.89	0.54
2:BBB:20:SER:HA	2:BBB:71:THR:HG23	1.88	0.54
2:GGG:27:VAL:HG11	2:GGG:35:ILE:HD11	1.90	0.54
1:AAA:210:PRO:O	1:AAA:267:HIS:HE1	1.92	0.53
5:JJJ:149:ILE:HG23	5:JJJ:212:ALA:HB1	1.89	0.53
5:JJJ:186:THR:HG22	5:JJJ:206:SER:OG	2.08	0.53
5:EEE:149:ILE:HG23	5:EEE:212:ALA:HB1	1.91	0.53
4:DDD:25:HIS:HB2	4:DDD:28:ILE:HG23	1.91	0.52
1:FFF:265:HIS:CD2	1:FFF:276:THR:HG22	2.45	0.52
5:JJJ:227:GLN:HE22	5:JJJ:248:ILE:HD11	1.73	0.52
4:III:36:ASN:OD1	4:III:108:ARG:NH1	2.43	0.52
5:JJJ:141:VAL:HG23	5:JJJ:251:ALA:HB3	1.92	0.52
4:DDD:160:THR:HA	4:DDD:209:ILE:HD12	1.92	0.52
5:EEE:141:VAL:HG23	5:EEE:251:ALA:HB3	1.92	0.52
5:EEE:175:VAL:HG13	5:EEE:180:VAL:HG21	1.92	0.52
2:BBB:51:HIS:HA	2:BBB:65:LEU:O	2.10	0.52
1:FFF:103:LEU:HD13	1:FFF:168:LEU:HD23	1.92	0.52
4:DDD:173:THR:HG22	4:DDD:191:VAL:N	2.25	0.52
5:EEE:127:LEU:HD11	5:EEE:133:ASN:HD21	1.75	0.51
2:GGG:51:HIS:HA	2:GGG:65:LEU:O	2.10	0.51
1:FFF:136:VAL:HG13	1:FFF:137:ASP:HB2	1.93	0.50
5:JJJ:54:LEU:HD23	5:JJJ:55:HIS:N	2.27	0.50
5:EEE:192:LYS:O	5:EEE:200:SER:OG	2.30	0.50
5:EEE:54:LEU:HD23	5:EEE:55:HIS:N	2.27	0.50
5:JJJ:54:LEU:HD22	5:JJJ:56:PHE:CE2	2.47	0.50
2:BBB:46:ILE:HG22	2:BBB:47:GLU:O	2.11	0.50
4:DDD:167:ASP:HB3	4:DDD:170:VAL:HG13	1.94	0.49
2:GGG:27:VAL:HG11	2:GGG:35:ILE:CD1	2.42	0.49
5:EEE:54:LEU:HD22	5:EEE:56:PHE:CE2	2.47	0.49
4:III:117:ILE:HD12	4:III:117:ILE:N	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:DDD:200:ALA:CB	4:DDD:203:ASN:HD21	2.25	0.49
4:DDD:143:SER:O	4:DDD:144:LYS:HB3	2.13	0.49
5:EEE:142:PHE:HB2	5:EEE:158:VAL:HG12	1.95	0.49
4:DDD:155:ASP:OD1	5:EEE:209:ARG:NH2	2.44	0.49
1:AAA:74:PHE:CD2	1:AAA:95:LEU:HD23	2.48	0.49
1:AAA:103:LEU:HG	1:AAA:168:LEU:HD23	1.95	0.49
1:FFF:74:PHE:CD2	1:FFF:95:LEU:HD23	2.48	0.49
4:DDD:80:ILE:HD13	4:DDD:80:ILE:H	1.76	0.49
1:FFF:194:ILE:HG23	1:FFF:198:GLU:HB3	1.94	0.49
5:EEE:216:GLN:HG3	5:EEE:217:ASN:OD1	2.13	0.48
1:AAA:7:TYR:HB2	1:AAA:99:HIS:CE1	2.49	0.48
4:DDD:80:ILE:H	4:DDD:80:ILE:CD1	2.27	0.48
1:AAA:149:ASP:CB	5:EEE:108:GLN:HE22	2.27	0.47
1:AAA:136:VAL:HG13	1:AAA:137:ASP:HB2	1.95	0.47
4:DDD:201:CYS:HA	4:DDD:204:ALA:HB2	1.96	0.47
1:FFF:7:TYR:HB2	1:FFF:99:HIS:CE1	2.50	0.47
2:GGG:40:LEU:CD2	2:GGG:40:LEU:N	2.78	0.47
1:AAA:63:GLU:OE1	3:CCC:1:VAL:HG23	2.15	0.47
4:III:143:SER:O	4:III:144:LYS:HB3	2.14	0.47
5:JJJ:207:ARG:N	5:JJJ:207:ARG:CD	2.78	0.47
2:BBB:23:LEU:O	2:BBB:67:TYR:HA	2.15	0.47
5:JJJ:8:PRO:O	5:JJJ:122:THR:HG23	2.14	0.47
5:JJJ:144:PRO:CG	5:JJJ:155:ALA:HB1	2.45	0.46
4:III:161:ASN:OD1	4:III:175:LYS:NZ	2.49	0.46
1:FFF:198:GLU:HA	6:FFF:301:HOH:O	2.16	0.46
2:GGG:23:LEU:O	2:GGG:67:TYR:HA	2.16	0.46
2:BBB:40:LEU:HD12	2:BBB:92:ILE:HD11	1.99	0.45
1:FFF:122:ASP:O	1:FFF:136:VAL:HG11	2.16	0.45
5:EEE:213:THR:O	5:EEE:217:ASN:HB2	2.16	0.45
4:DDD:171:TYR:CE1	5:EEE:193:GLU:HA	2.51	0.45
5:EEE:8:PRO:O	5:EEE:122:THR:HG23	2.16	0.45
5:EEE:217:ASN:CB	5:EEE:218:PRO:HD3	2.46	0.45
2:BBB:43:GLY:O	2:BBB:44:GLU:O	2.34	0.45
5:JJJ:175:VAL:CG2	5:JJJ:180:VAL:HG21	2.48	0.45
4:DDD:199:PHE:O	4:DDD:200:ALA:HB2	2.17	0.44
1:AAA:220:ASP:OD1	1:AAA:220:ASP:N	2.50	0.44
4:DDD:140:LEU:HB2	4:DDD:150:VAL:CG1	2.48	0.44
4:DDD:172:ILE:HD13	4:DDD:192:ALA:HB1	2.00	0.44
5:EEE:144:PRO:CG	5:EEE:155:ALA:HB1	2.47	0.44
5:JJJ:189:GLN:HE21	5:JJJ:189:GLN:HA	1.82	0.44
1:AAA:9:HIS:HE1	1:AAA:99:HIS:NE2	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AAA:149:ASP:HB2	5:EEE:108:GLN:HE22	1.83	0.44
1:AAA:207:GLY:C	1:AAA:244:THR:OG1	2.56	0.44
1:FFF:9:HIS:HE1	1:FFF:99:HIS:NE2	2.16	0.43
1:FFF:145:GLN:NE2	1:FFF:146:LYS:HG3	2.31	0.43
5:JJJ:76:PHE:CE1	5:JJJ:91:VAL:HG22	2.53	0.43
4:III:79:ILE:N	4:III:79:ILE:HD12	2.33	0.43
5:EEE:109:ASP:O	5:EEE:113:ARG:HB2	2.19	0.43
1:FFF:159:TYR:HA	1:FFF:163:THR:OG1	2.19	0.43
4:DDD:148:LYS:O	4:DDD:150:VAL:N	2.51	0.43
1:AAA:215:LEU:HD22	1:AAA:247:LYS:HG2	2.00	0.43
5:EEE:244:PRO:O	5:EEE:245:VAL:O	2.37	0.43
1:AAA:230:GLN:CG	1:AAA:230:GLN:O	2.67	0.42
4:DDD:113:THR:HG21	5:EEE:67:ASP:HB2	2.01	0.42
5:JJJ:5:THR:OG1	5:JJJ:24:ASP:HB2	2.18	0.42
1:FFF:239:ARG:HE	1:FFF:247:GLN:HE21	1.67	0.42
2:GGG:17:ASN:HA	2:GGG:72:PRO:O	2.19	0.42
1:AAA:131:ARG:NH1	5:JJJ:218:PRO:O	2.52	0.42
5:EEE:129:GLU:HG2	5:EEE:129:GLU:O	2.18	0.42
5:EEE:233:GLU:HA	5:EEE:233:GLU:OE1	2.20	0.42
2:GGG:1:ILE:HG23	2:GGG:2:GLN:N	2.34	0.42
5:EEE:85:THR:OG1	5:EEE:86:TYR:N	2.52	0.42
1:FFF:254:VAL:HB	1:FFF:255:PRO:HD2	2.01	0.42
1:FFF:257:GLY:O	1:FFF:258:GLU:CB	2.67	0.42
1:FFF:96:GLN:O	1:FFF:116:CYS:HA	2.20	0.42
5:JJJ:231:LEU:O	5:JJJ:245:VAL:HA	2.20	0.42
4:DDD:57:LEU:O	4:DDD:84:ARG:NH1	2.52	0.42
4:DDD:128:PRO:HG3	4:DDD:188:ASN:HD21	1.84	0.42
4:III:171:TYR:O	4:III:192:ALA:HA	2.20	0.42
5:JJJ:13:ILE:HD11	5:JJJ:126:VAL:HG22	2.01	0.42
5:JJJ:13:ILE:CD1	5:JJJ:124:LEU:HD11	2.50	0.41
1:AAA:96:GLN:O	1:AAA:116:CYS:HA	2.20	0.41
1:FFF:20:PRO:HD2	1:FFF:75:ARG:HG3	2.02	0.41
1:FFF:220:ASP:N	1:FFF:220:ASP:OD1	2.53	0.41
2:GGG:39:LEU:CD1	2:GGG:68:THR:HG22	2.50	0.41
4:DDD:171:TYR:O	4:DDD:192:ALA:HA	2.20	0.41
1:AAA:187:THR:CB	1:AAA:276:LEU:HD11	2.45	0.41
1:AAA:149:ASP:HA	5:JJJ:177:GLY:HA3	2.03	0.41
1:FFF:196:ASP:OD1	1:FFF:196:ASP:N	2.52	0.41
5:JJJ:85:THR:OG1	5:JJJ:86:TYR:N	2.51	0.41
5:JJJ:92:GLN:HA	5:JJJ:93:PRO:HA	1.86	0.41
4:DDD:156:PHE:CD1	4:DDD:160:THR:HG22	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:DDD:173:THR:HG23	4:DDD:174:ASP:O	2.21	0.41
5:EEE:63:GLU:HA	5:EEE:80:ARG:O	2.20	0.41
1:FFF:236:VAL:O	1:FFF:248:LYS:CE	2.68	0.41
1:AAA:230:GLN:O	1:AAA:230:GLN:HG3	2.21	0.41
4:DDD:156:PHE:CE1	4:DDD:188:ASN:HB3	2.56	0.41
1:AAA:97:TRP:CH2	3:CCC:3:ALA:HB3	2.57	0.40
1:AAA:194:ILE:O	1:AAA:195:SER:CB	2.69	0.40
4:DDD:15:GLU:HB3	4:DDD:126:VAL:HG12	2.03	0.40
5:EEE:11:SER:OG	5:EEE:13:ILE:CD1	2.69	0.40
4:III:170:VAL:HG22	4:III:194:SER:HB2	2.03	0.40
1:AAA:122:ASP:O	1:AAA:136:VAL:HG11	2.20	0.40
4:DDD:133:PRO:O	4:DDD:134:ASP:CB	2.69	0.40
5:EEE:12:VAL:O	5:EEE:12:VAL:HG23	2.21	0.40
1:FFF:280:LYS:HB2	1:FFF:281:PRO:HD3	2.04	0.40
1:AAA:194:ILE:O	1:AAA:194:ILE:HG23	2.22	0.40
4:DDD:145:SER:OG	4:DDD:146:SER:N	2.53	0.40
4:III:90:ILE:HG13	4:III:90:ILE:O	2.21	0.40
4:III:145:SER:OG	4:III:146:SER:N	2.54	0.40
5:JJJ:63:GLU:HA	5:JJJ:80:ARG:O	2.21	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	AAA	267/277 (96%)	247 (92%)	16 (6%)	4 (2%)	10	42
1	FFF	266/277 (96%)	243 (91%)	14 (5%)	9 (3%)	3	20
2	BBB	97/100 (97%)	89 (92%)	4 (4%)	4 (4%)	3	16
2	GGG	97/100 (97%)	90 (93%)	5 (5%)	2 (2%)	7	33
3	CCC	7/9 (78%)	7 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	HHH	7/9 (78%)	7 (100%)	0	0	100	100
4	DDD	188/198 (95%)	160 (85%)	20 (11%)	8 (4%)	2	15
4	III	187/198 (94%)	161 (86%)	23 (12%)	3 (2%)	9	40
5	EEE	238/243 (98%)	209 (88%)	28 (12%)	1 (0%)	34	72
5	JJJ	239/243 (98%)	215 (90%)	23 (10%)	1 (0%)	34	72
All	All	1593/1654 (96%)	1428 (90%)	133 (8%)	32 (2%)	7	34

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	AAA	195	SER
2	BBB	44	GLU
5	EEE	245	VAL
1	FFF	195	SER
1	FFF	256	SER
4	III	149	SER
5	JJJ	84	GLY
1	AAA	17	ARG
2	BBB	17	ASN
4	DDD	133	PRO
1	FFF	17	ARG
1	FFF	194	ILE
4	III	3	LYS
4	DDD	134	ASP
4	DDD	148	LYS
4	DDD	149	SER
4	DDD	200	ALA
4	DDD	207	ASN
1	FFF	106	ASP
1	FFF	232	ASP
1	FFF	258	GLU
2	GGG	34	ASP
1	AAA	231	ASP
4	DDD	129	ASP
1	FFF	243	ASP
2	GGG	2	GLN
2	BBB	2	GLN
1	AAA	242	ASP
2	BBB	34	ASP
4	DDD	46	HIS

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Mol	Chain	Res	Type
4	III	46	HIS
1	FFF	19	GLU

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	AAA	234/238 (98%)	221 (94%)	13 (6%)	21	56
1	FFF	234/238 (98%)	213 (91%)	21 (9%)	9	35
2	BBB	94/95 (99%)	85 (90%)	9 (10%)	8	32
2	GGG	94/95 (99%)	88 (94%)	6 (6%)	17	51
3	CCC	7/7 (100%)	7 (100%)	0	100	100
3	HHH	7/7 (100%)	7 (100%)	0	100	100
4	DDD	171/177 (97%)	155 (91%)	16 (9%)	8	32
4	III	169/177 (96%)	152 (90%)	17 (10%)	7	29
5	EEE	211/213 (99%)	196 (93%)	15 (7%)	14	46
5	JJJ	211/213 (99%)	202 (96%)	9 (4%)	29	66
All	All	1432/1460 (98%)	1326 (93%)	106 (7%)	13	44

All (106) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	AAA	17	ARG
1	AAA	19	GLU
1	AAA	35	ARG
1	AAA	58	GLU
1	AAA	75	ARG
1	AAA	98	MET
1	AAA	125	THR
1	AAA	178	THR
1	AAA	220	ASP
1	AAA	232	THR
1	AAA	237	THR

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Mol	Chain	Res	Type
1	AAA	246	GLN
1	AAA	255	SER
2	BBB	1	ILE
2	BBB	33	SER
2	BBB	57	SER
2	BBB	70	PHE
2	BBB	71	THR
2	BBB	85	VAL
2	BBB	92	ILE
2	BBB	96	ASP
2	BBB	98	ASP
4	DDD	10	SER
4	DDD	47	SER
4	DDD	54	ILE
4	DDD	80	ILE
4	DDD	86	SER
4	DDD	97	ARG
4	DDD	140	LEU
4	DDD	145	SER
4	DDD	148	LYS
4	DDD	150	VAL
4	DDD	152	LEU
4	DDD	154	THR
4	DDD	158	SER
4	DDD	160	THR
4	DDD	170	VAL
4	DDD	176	CYS
5	EEE	5	THR
5	EEE	20	THR
5	EEE	51	LYS
5	EEE	64	SER
5	EEE	88	THR
5	EEE	123	ARG
5	EEE	124	LEU
5	EEE	127	LEU
5	EEE	156	THR
5	EEE	180	VAL
5	EEE	207	ARG
5	EEE	211	SER
5	EEE	232	SER
5	EEE	245	VAL
5	EEE	256	ARG

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Mol	Chain	Res	Type
1	FFF	2	SER
1	FFF	4	SER
1	FFF	17	ARG
1	FFF	19	GLU
1	FFF	35	ARG
1	FFF	54	GLN
1	FFF	58	GLU
1	FFF	111	ARG
1	FFF	125	THR
1	FFF	130	LEU
1	FFF	134	THR
1	FFF	178	THR
1	FFF	200	THR
1	FFF	201	LEU
1	FFF	216	THR
1	FFF	220	ASP
1	FFF	231	GLN
1	FFF	235	LEU
1	FFF	247	GLN
1	FFF	252	VAL
1	FFF	256	SER
2	GGG	33	SER
2	GGG	40	LEU
2	GGG	58	LYS
2	GGG	70	PHE
2	GGG	71	THR
2	GGG	98	ASP
4	III	3	LYS
4	III	17	ARG
4	III	47	SER
4	III	58	LYS
4	III	66	GLU
4	III	86	SER
4	III	90	ILE
4	III	91	LEU
4	III	97	ARG
4	III	145	SER
4	III	150	VAL
4	III	158	SER
4	III	159	GLN
4	III	180	MET
4	III	182	SER

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Mol	Chain	Res	Type
4	III	203	ASN
4	III	206	ASN
5	JJJ	13	ILE
5	JJJ	64	SER
5	JJJ	123	ARG
5	JJJ	132	LYS
5	JJJ	185	CYS
5	JJJ	186	THR
5	JJJ	189	GLN
5	JJJ	225	GLN
5	JJJ	250	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3   RNA ⓘ

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues 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	$\#|Z| > 2$
3	QM8	CCC	9	3,1	8,9,9	0.87	1 (12%)	9,10,10	1.28	1 (11%)
3	QM8	HHH	9	3,1	8,9,9	0.87	1 (12%)	9,10,10	1.63	3 (33%)

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
3	QM8	CCC	9	3,1	-	<mark>2/9/9/9</mark>	-
3	QM8	HHH	9	3,1	-	<mark>2/9/9/9</mark>	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	CCC	9	QM8	OXT-C	-2.17	1.23	1.30
3	HHH	9	QM8	OXT-C	-2.11	1.23	1.30

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	HHH	9	QM8	OXT-C-O	-2.57	118.26	124.09
3	HHH	9	QM8	CB-CA-N	-2.37	103.95	110.17
3	HHH	9	QM8	OXT-C-CA	2.29	121.17	113.38
3	CCC	9	QM8	CD-CE-SZ	-2.24	105.76	112.96

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	HHH	9	QM8	CE-CD-CG-CB
3	HHH	9	QM8	CA-CB-CG-CD
3	CCC	9	QM8	CE-CD-CG-CB
3	CCC	9	QM8	CG-CD-CE-SZ

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	AAA	271/277 (97%)	1.20	65 (23%)	0	0	40, 56, 88, 101	0
1	FFF	270/277 (97%)	1.53	83 (30%)	0	0	57, 81, 124, 140	0
2	BBB	99/100 (99%)	0.81	12 (12%)	4	1	45, 61, 83, 94	0
2	GGG	99/100 (99%)	0.92	13 (13%)	3	1	58, 73, 91, 96	0
3	CCC	8/9 (88%)	2.15	3 (37%)	0	0	51, 54, 61, 62	0
3	HHH	8/9 (88%)	1.38	2 (25%)	0	0	59, 61, 67, 67	0
4	DDD	190/198 (95%)	1.83	55 (28%)	0	0	53, 80, 123, 140	0
4	III	189/198 (95%)	0.79	15 (7%)	12	4	49, 60, 86, 93	0
5	EEE	240/243 (98%)	1.75	89 (37%)	0	0	51, 94, 129, 153	0
5	JJJ	241/243 (99%)	1.09	33 (13%)	3	1	51, 61, 88, 111	0
All	All	1615/1654 (97%)	1.31	370 (22%)	0	0	40, 69, 115, 153	0

All (370) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	DDD	209	ILE	14.1
4	DDD	205	PHE	10.0
1	FFF	201	LEU	8.5
1	FFF	215	LEU	8.5
4	DDD	140	LEU	8.4
4	DDD	201	CYS	8.3
5	EEE	253	ALA	8.1
5	EEE	155	ALA	7.9
4	DDD	172	ILE	7.5
1	AAA	78	LEU	7.5
1	FFF	103	LEU	7.4
1	FFF	202	ARG	7.3
5	EEE	258	ASP	7.2

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Mol	Chain	Res	Type	RSRZ
1	AAA	123	TYR	7.1
4	DDD	152	LEU	7.0
4	DDD	204	ALA	6.9
4	DDD	170	VAL	6.9
4	DDD	206	ASN	6.8
4	DDD	193	TRP	6.7
5	EEE	254	TRP	6.6
5	EEE	141	VAL	6.6
4	DDD	208	SER	6.6
1	FFF	217	TRP	6.5
4	DDD	139	GLN	6.5
4	DDD	191	VAL	6.3
1	FFF	266	VAL	6.3
5	EEE	142	PHE	6.2
1	FFF	277	LEU	6.2
5	JJJ	199	ASP	6.1
1	FFF	109	PHE	6.1
4	DDD	162	VAL	6.0
5	JJJ	197	LEU	5.9
4	DDD	173	THR	5.8
5	EEE	217	ASN	5.8
4	DDD	150	VAL	5.8
5	EEE	173	TRP	5.6
5	EEE	157	LEU	5.6
4	DDD	197	SER	5.5
1	FFF	261	ARG	5.5
1	AAA	147	SER	5.4
3	CCC	7	LEU	5.4
4	DDD	185	PHE	5.4
1	FFF	203	CYS	5.3
5	EEE	204	LEU	5.2
1	FFF	250	ALA	5.2
5	EEE	215	TRP	5.2
4	DDD	207	ASN	5.2
1	FFF	251	ALA	5.1
4	DDD	153	PHE	5.1
5	EEE	222	PHE	5.1
2	GGG	99	MET	5.1
4	DDD	137	VAL	5.1
4	DDD	198	ASP	5.1
5	JJJ	196	ALA	5.0
1	FFF	248	LYS	4.9

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Mol	Chain	Res	Type	RSRZ
1	AAA	97	TRP	4.9
4	DDD	171	TYR	4.9
5	JJJ	165	TYR	4.9
5	EEE	255	GLY	4.8
5	EEE	208	LEU	4.8
5	JJJ	166	PRO	4.8
4	DDD	178	LEU	4.7
5	EEE	257	ALA	4.7
5	JJJ	13	ILE	4.7
5	EEE	89	LEU	4.6
4	DDD	203	ASN	4.6
1	AAA	115	GLN	4.5
5	EEE	210	VAL	4.5
5	EEE	256	ARG	4.5
2	BBB	60	TRP	4.5
4	DDD	130	ILE	4.5
1	FFF	108	ARG	4.5
1	FFF	5	LEU	4.5
1	FFF	98	MET	4.5
5	EEE	144	PRO	4.4
5	EEE	209	ARG	4.4
5	JJJ	124	LEU	4.4
1	FFF	252	VAL	4.4
5	EEE	207	ARG	4.3
1	AAA	95	LEU	4.3
1	FFF	254	VAL	4.3
5	EEE	183	GLY	4.3
1	FFF	199	ALA	4.3
5	JJJ	237	TRP	4.3
1	FFF	246	PHE	4.2
5	EEE	160	LEU	4.2
1	FFF	264	CYS	4.2
1	AAA	124	LEU	4.2
5	EEE	139	VAL	4.2
1	FFF	220	ASP	4.2
4	DDD	188	ASN	4.1
1	AAA	41	ALA	4.1
3	HHH	7	LEU	4.1
5	EEE	127	LEU	4.1
5	EEE	158	VAL	4.1
1	AAA	94	THR	4.1
5	EEE	184	VAL	4.1

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Mol	Chain	Res	Type	RSRZ
5	EEE	220	ASN	4.1
5	JJJ	126	VAL	4.0
1	FFF	249	TRP	4.0
1	FFF	204	TRP	4.0
1	AAA	136	VAL	4.0
4	DDD	189	SER	4.0
4	DDD	161	ASN	3.9
1	FFF	255	PRO	3.9
4	DDD	202	ALA	3.9
1	FFF	162	ASP	3.9
5	EEE	214	PHE	3.9
5	JJJ	127	LEU	3.9
5	EEE	54	LEU	3.9
5	EEE	126	VAL	3.8
1	AAA	74	PHE	3.8
1	FFF	265	HIS	3.8
5	EEE	171	LEU	3.8
5	EEE	103	PHE	3.8
4	DDD	151	CYS	3.7
1	FFF	192	HIS	3.7
1	FFF	259	GLU	3.7
1	FFF	245	THR	3.7
2	GGG	79	ALA	3.7
1	AAA	42	SER	3.7
1	FFF	262	TYR	3.7
5	EEE	252	GLU	3.7
5	EEE	219	ARG	3.6
1	FFF	3	HIS	3.6
1	FFF	4	SER	3.6
1	AAA	135	ALA	3.6
5	EEE	41	TRP	3.6
1	AAA	114	GLU	3.6
5	EEE	15	LYS	3.6
1	AAA	98	MET	3.6
2	GGG	95	TRP	3.6
1	FFF	104	GLY	3.6
5	EEE	226	VAL	3.5
5	EEE	122	THR	3.5
1	AAA	113	TYR	3.5
4	DDD	138	TYR	3.5
5	EEE	248	ILE	3.5
1	AAA	75	ARG	3.5

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Mol	Chain	Res	Type	RSRZ
1	FFF	6	LYS	3.4
5	EEE	65	LYS	3.4
1	FFF	113	TYR	3.4
5	EEE	191	LEU	3.4
5	EEE	94	ALA	3.4
1	FFF	160	LEU	3.4
1	AAA	96	GLN	3.4
5	JJJ	46	MET	3.3
1	AAA	24	SER	3.3
1	FFF	206	LEU	3.3
1	FFF	97	TRP	3.3
1	AAA	118	TYR	3.3
5	EEE	143	GLU	3.3
5	EEE	174	TRP	3.3
1	FFF	181	HIS	3.3
5	EEE	156	THR	3.2
4	DDD	149	SER	3.2
5	EEE	40	TYR	3.2
1	FFF	130	LEU	3.2
5	JJJ	99	SER	3.2
5	EEE	129	GLU	3.2
1	FFF	189	VAL	3.2
1	AAA	5	LEU	3.2
1	AAA	217	TRP	3.2
1	FFF	115	GLN	3.1
1	AAA	8	PHE	3.1
1	AAA	133	TRP	3.1
5	EEE	203	ALA	3.1
4	DDD	40	TYR	3.1
1	FFF	216	THR	3.1
1	FFF	155	HIS	3.1
2	BBB	31	HIS	3.1
1	AAA	40	ALA	3.1
5	EEE	161	ALA	3.1
1	AAA	143	SER	3.0
5	EEE	78	ALA	3.0
5	EEE	154	LYS	3.0
1	AAA	134	THR	3.0
5	EEE	91	VAL	3.0
5	EEE	93	PRO	3.0
1	AAA	39	ASP	3.0
5	EEE	175	VAL	3.0

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Mol	Chain	Res	Type	RSRZ
1	FFF	205	ALA	3.0
4	DDD	192	ALA	3.0
4	III	193	TRP	3.0
1	FFF	190	THR	3.0
4	III	171	TYR	2.9
1	FFF	233	THR	2.9
5	EEE	96	LEU	2.9
5	EEE	177	GLY	2.9
4	III	150	VAL	2.9
1	AAA	201	LEU	2.9
5	EEE	169	VAL	2.9
1	FFF	235	LEU	2.9
2	BBB	56	PHE	2.9
1	AAA	25	VAL	2.9
1	FFF	180	LEU	2.9
3	CCC	6	THR	2.9
1	FFF	95	LEU	2.9
5	EEE	53	LEU	2.9
5	JJJ	249	VAL	2.8
1	AAA	116	CYS	2.8
1	FFF	131	ARG	2.8
1	AAA	36	PHE	2.8
1	AAA	22	PHE	2.8
1	FFF	275	VAL	2.8
1	FFF	263	THR	2.8
1	AAA	73	ILE	2.8
1	AAA	19	GLU	2.8
1	FFF	247	GLN	2.8
5	EEE	13	ILE	2.8
2	BBB	99	MET	2.8
2	GGG	56	PHE	2.8
1	AAA	120	GLY	2.7
5	EEE	146	GLU	2.7
5	EEE	216	GLN	2.7
1	FFF	123	TYR	2.7
2	GGG	1	ILE	2.7
4	DDD	190	ALA	2.7
4	DDD	199	PHE	2.7
5	JJJ	228	PHE	2.7
1	FFF	271	LEU	2.7
5	JJJ	158	VAL	2.7
4	III	57	LEU	2.7

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Mol	Chain	Res	Type	RSRZ
5	EEE	131	LEU	2.7
1	AAA	156	GLN	2.7
1	AAA	251	VAL	2.7
2	BBB	79	ALA	2.7
2	BBB	62	PHE	2.7
1	AAA	260	ARG	2.7
4	DDD	36	ASN	2.7
2	BBB	54	LEU	2.7
5	EEE	21	LEU	2.7
5	EEE	149	ILE	2.6
4	DDD	136	ALA	2.6
5	EEE	113	ARG	2.6
4	III	54	ILE	2.6
5	EEE	211	SER	2.6
2	GGG	98	ASP	2.6
5	EEE	140	ALA	2.6
1	FFF	157	ARG	2.6
1	FFF	124	LEU	2.6
1	FFF	31	THR	2.6
1	AAA	81	LEU	2.6
2	BBB	39	LEU	2.6
4	DDD	155	ASP	2.6
5	EEE	206	SER	2.6
4	DDD	96	LEU	2.6
1	FFF	28	VAL	2.6
1	FFF	219	GLN	2.5
5	EEE	102	TYR	2.5
5	JJJ	200	SER	2.5
5	EEE	105	ALA	2.5
1	FFF	102	GLU	2.5
1	AAA	6	LYS	2.5
5	EEE	55	HIS	2.5
1	FFF	74	PHE	2.5
5	EEE	72	PRO	2.5
5	JJJ	96	LEU	2.5
4	III	191	VAL	2.5
5	JJJ	12	VAL	2.5
5	EEE	164	PHE	2.5
5	JJJ	192	LYS	2.5
2	GGG	82	VAL	2.5
1	FFF	208	PHE	2.5
1	AAA	117	ALA	2.5

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Mol	Chain	Res	Type	RSRZ
1	AAA	9	HIS	2.5
5	JJJ	53	LEU	2.5
5	JJJ	103	PHE	2.5
1	AAA	197	HIS	2.5
1	FFF	133	TRP	2.5
2	BBB	30	PHE	2.5
4	DDD	118	PHE	2.5
5	JJJ	173	TRP	2.5
1	AAA	261	TYR	2.5
4	DDD	78	LEU	2.5
4	III	178	LEU	2.5
5	EEE	221	HIS	2.4
4	DDD	28	ILE	2.4
5	JJJ	160	LEU	2.4
4	DDD	156	PHE	2.4
5	EEE	76	PHE	2.4
1	FFF	177	GLU	2.4
1	AAA	164	CYS	2.4
1	FFF	188	HIS	2.4
1	FFF	234	GLU	2.4
1	FFF	187	THR	2.4
4	III	38	TYR	2.4
1	FFF	165	VAL	2.4
5	EEE	168	HIS	2.4
1	FFF	278	ARG	2.4
4	DDD	42	TYR	2.4
5	JJJ	139	VAL	2.4
1	FFF	126	LEU	2.4
4	III	153	PHE	2.4
1	FFF	171	TYR	2.4
2	GGG	49	VAL	2.4
1	AAA	43	PRO	2.3
1	AAA	68	ARG	2.3
2	GGG	60	TRP	2.3
1	FFF	258	GLU	2.3
1	FFF	8	PHE	2.3
2	BBB	18	GLY	2.3
1	AAA	12	VAL	2.3
4	DDD	160	THR	2.3
5	JJJ	202	TYR	2.3
4	DDD	187	SER	2.3
1	AAA	204	TRP	2.3

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Mol	Chain	Res	Type	RSRZ
1	AAA	253	VAL	2.3
1	FFF	154	GLU	2.3
4	DDD	50	PRO	2.3
5	EEE	71	MET	2.3
1	AAA	142	ILE	2.3
4	DDD	163	SER	2.3
4	DDD	180	MET	2.3
5	EEE	52	PHE	2.3
5	JJJ	210	VAL	2.2
1	AAA	23	ILE	2.2
4	DDD	39	VAL	2.2
1	AAA	126	LEU	2.2
1	AAA	130	LEU	2.2
4	DDD	41	TRP	2.2
5	EEE	202	TYR	2.2
5	EEE	101	VAL	2.2
1	FFF	186	LYS	2.2
1	FFF	11	SER	2.2
1	AAA	257	GLU	2.2
1	FFF	158	ALA	2.2
1	AAA	150	ALA	2.2
5	JJJ	191	LEU	2.2
5	JJJ	14	GLU	2.2
5	EEE	251	ALA	2.2
4	III	58	LYS	2.2
5	JJJ	93	PRO	2.2
1	FFF	279	TRP	2.2
2	GGG	65	LEU	2.2
5	JJJ	50	ILE	2.2
1	AAA	155	HIS	2.2
2	GGG	23	LEU	2.2
1	AAA	67	ALA	2.2
1	AAA	245	PHE	2.2
5	EEE	39	LEU	2.2
4	III	80	ILE	2.1
5	EEE	137	PRO	2.1
5	EEE	130	ASP	2.1
2	BBB	95	TRP	2.1
4	III	64	ASN	2.1
5	EEE	43	ARG	2.1
5	EEE	124	LEU	2.1
5	EEE	193	GLU	2.1

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Mol	Chain	Res	Type	RSRZ
4	DDD	135	PRO	2.1
2	BBB	58	LYS	2.1
4	III	40	TYR	2.1
1	FFF	241	ALA	2.1
1	AAA	254	PRO	2.1
4	DDD	183	MET	2.1
5	JJJ	198	ASN	2.1
5	JJJ	135	PHE	2.1
2	GGG	55	SER	2.0
3	CCC	5	ARG	2.0
5	JJJ	115	THR	2.0
5	EEE	249	VAL	2.0
2	GGG	7	ILE	2.0
4	III	53	ILE	2.0
1	AAA	159	TYR	2.0
1	AAA	72	GLN	2.0
4	III	149	SER	2.0
1	FFF	70	THR	2.0
3	HHH	6	THR	2.0
1	AAA	76	VAL	2.0
1	AAA	85	TYR	2.0

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

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
3	QM8	CCC	9	10/10	0.88	0.49	64,68,69,72	0
3	QM8	HHH	9	10/10	0.92	0.55	68,72,75,76	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.