Full wwPDB X-ray Structure Validation Report (i)

Nov 22, 2023 – 03:29 PM JST

PDB ID	:	8GVI
Title	:	The complex between H25-11 TCR and HLA-A24 bound to HIV-1 Nef138-8 peptide
Authors	:	Gao, G.F.; Shi, Y.; Tan, S.; Ma, K.; Chai, Y.; Qi, J.; Kawana-Tachikawa, A.; Iwamoto, A.; Dong, T.; Guan, J.
Deposited on	:	2022-09-15
Resolution	:	3.30 Å(reported)

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

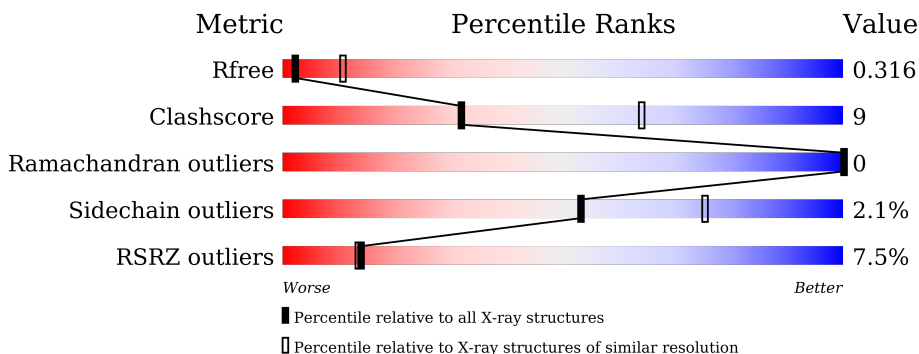|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 3.30 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		0.316
Clashscore		9
Ramachandran outliers		0
Sidechain outliers		2.1%
RSRZ outliers		7.5%

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	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)

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	209	9% / 84% / 13% / •
2	B	246	13% / 75% / 23% / •
3	H	275	4% / 72% / 26% / •
4	L	100	74% / 25% / •
5	P	8	62% / 38%

WORLDWIDE wwPDB PROTEIN DATA BANK

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 6666 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 H25-11 TCR alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	203	Total 1589	C 1006	N 260	O 316	S 7	0	0	0

- Molecule 2 is a protein called H25-11 TCR beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	241	Total 1952	C 1228	N 350	O 368	S 6	0	0	0

- Molecule 3 is a protein called MHC class I antigen.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	H	274	Total 2222	C 1382	N 403	O 427	S 10	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	0	MET	-	initiating methionine	UNP F6IQZ4

- Molecule 4 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	L	99	Total 828	C 528	N 140	O 157	S 3	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	0	MET	-	expression tag	UNP P61769

- Molecule 5 is a protein called 8-mer peptide from Protein Nef.

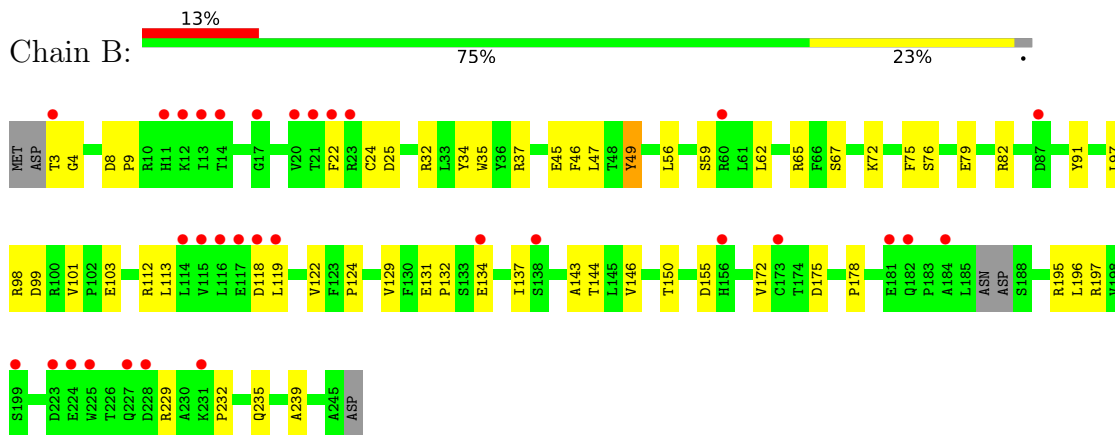| Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
5	P	8	75	52	12	11	0	0	0

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: H25-11 TCR alpha chain
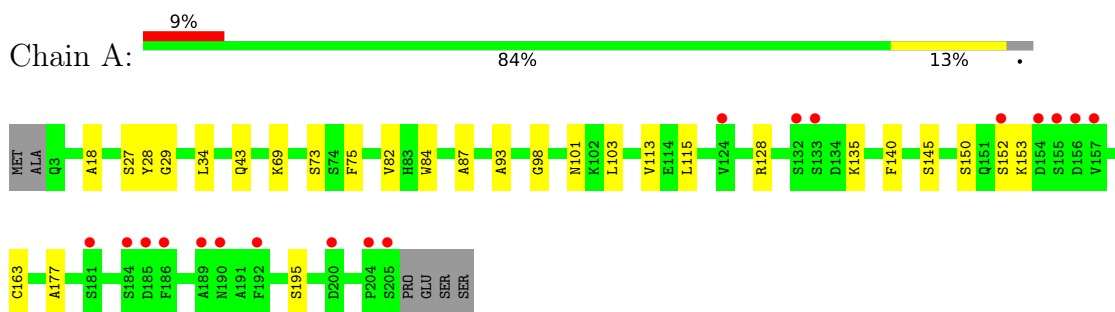
- Molecule 2: H25-11 TCR beta chain

- Molecule 3: MHC class I antigen

T240 F241 Q242 K243 W244 A245 A246 V247 V248 V249 P250 S251 E254 Q255 R256 Y257 T258 L266 P267 K268 P269 L270 W274
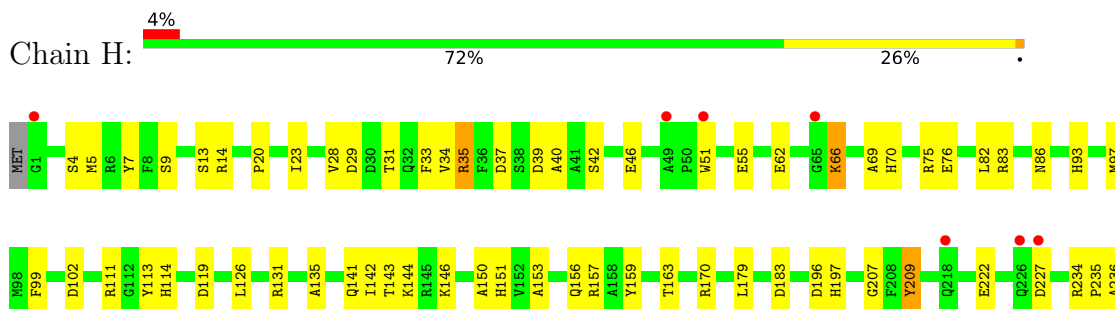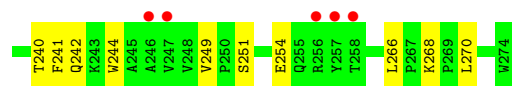
• Molecule 4: Beta-2-microglobulin

Chain L:

74%   25%

MET I1 P5 H13 N17 N21 N24 F30 E36 V37 D38 L39 I46 S52 D53 L54 S55 F56 F62 L65 F70 T73 V82 N83 W95 D96 R97 D98 M99
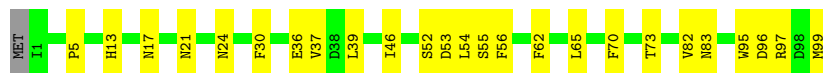
• Molecule 5: 8-mer peptide from Protein Nef

Chain P:

62%   38%

R1 Y2 P3 W8

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	70.52Å 70.52Å 384.25Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	47.81 – 3.30 47.81 – 3.30	Depositor EDS
% Data completeness (in resolution range)	89.6 (47.81-3.30) 89.6 (47.81-3.30)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	0.16	Depositor
$< I/\sigma(I) >$ [1]	2.52 (at 3.33Å)	Xtriage
Refinement program	REFMAC 5, PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.286 , 0.314 0.296 , 0.316	Depositor DCC
R_{free} test set	793 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å^2)	64.3	Xtriage
Anisotropy	0.039	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.26 , 23.2	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.033 for -h,-k,l	Xtriage
F_o,F_c correlation	0.83	EDS
Total number of atoms	6666	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 5.18% 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 ⓘ

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	0.25	0/1627	0.47	0/2206
2	B	0.26	0/2003	0.55	0/2719
3	H	0.24	0/2282	0.50	0/3092
4	L	0.24	0/851	0.48	0/1152
5	P	0.29	0/79	0.45	0/106
All	All	0.25	0/6842	0.51	0/9275

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	A	1589	0	1508	20	0
2	B	1952	0	1873	39	0
3	H	2222	0	2082	52	0
4	L	828	0	794	15	0
5	P	75	0	71	5	0
All	All	6666	0	6328	115	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 9.

All (115) 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)
3:H:234:ARG:NH1	3:H:244:TRP:CZ3	2.31	0.98
3:H:234:ARG:NH1	3:H:244:TRP:HZ3	1.65	0.94
3:H:66:LYS:NZ	5:P:2:TYR:O	2.12	0.82
3:H:99:PHE:HB3	3:H:114:HIS:HA	1.62	0.82
2:B:22:PHE:HZ	2:B:113:LEU:HD22	1.50	0.77
3:H:5:MET:CE	3:H:7:TYR:CE2	2.72	0.72
3:H:234:ARG:NH1	3:H:244:TRP:CE3	2.57	0.71
3:H:5:MET:HE1	3:H:7:TYR:HE2	1.56	0.70
3:H:5:MET:HE2	3:H:7:TYR:CE2	2.27	0.70
3:H:23:ILE:HG21	4:L:54:LEU:HB3	1.72	0.70
2:B:144:THR:HG23	2:B:197:ARG:HB2	1.75	0.68
4:L:96:ASP:HB3	4:L:99:MET:HB2	1.75	0.68
2:B:65:ARG:HG2	2:B:82:ARG:HH21	1.59	0.67
1:A:163:CYS:SG	2:B:195:ARG:NH2	2.67	0.67
3:H:5:MET:CE	3:H:7:TYR:HE2	2.09	0.66
1:A:128:ARG:NH1	2:B:131:GLU:OE1	2.28	0.66
2:B:134:GLU:HA	2:B:137:ILE:HB	1.78	0.66
1:A:140:PHE:HB3	1:A:177:ALA:HB3	1.80	0.63
3:H:234:ARG:NH2	3:H:242:GLN:OE1	2.33	0.61
1:A:128:ARG:HB2	2:B:131:GLU:HB2	1.83	0.61
1:A:150:SER:HB2	1:A:195:SER:HA	1.82	0.61
2:B:132:PRO:HG2	2:B:143:ALA:HB1	1.83	0.60
4:L:73:THR:O	4:L:97:ARG:NH2	2.34	0.59
2:B:65:ARG:NH1	2:B:82:ARG:O	2.35	0.59
4:L:95:TRP:NE1	4:L:97:ARG:HA	2.18	0.59
3:H:197:HIS:O	3:H:251:SER:N	2.34	0.58
1:A:101:ASN:OD1	2:B:34:TYR:OH	2.20	0.58
2:B:47:LEU:HD22	2:B:62:LEU:HD21	1.87	0.57
2:B:37:ARG:O	2:B:45:GLU:N	2.33	0.57
3:H:93:HIS:ND1	3:H:119:ASP:OD2	2.38	0.57
3:H:62:GLU:O	3:H:66:LYS:HG2	2.05	0.56
3:H:141:GLN:HA	3:H:144:LYS:HB3	1.87	0.56
3:H:236:ALA:O	4:L:24:ASN:ND2	2.32	0.56
4:L:37:VAL:HG22	4:L:82:VAL:HG22	1.88	0.55
2:B:37:ARG:HD3	2:B:91:TYR:CE1	2.42	0.55
4:L:13:HIS:HB2	4:L:21:ASN:HD21	1.71	0.55
2:B:22:PHE:CZ	2:B:113:LEU:HD22	2.37	0.54
1:A:87:ALA:HB2	1:A:113:VAL:HG22	1.89	0.54
3:H:102:ASP:OD2	3:H:111:ARG:NH2	2.40	0.54
3:H:135:ALA:HB3	3:H:141:GLN:HG3	1.90	0.54
1:A:98:GLY:HA3	3:H:163:THR:HG21	1.91	0.53
3:H:4:SER:N	3:H:29:ASP:OD1	2.34	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:98:ARG:HG2	2:B:98:ARG:O	2.09	0.53
2:B:124:PRO:HD3	2:B:232:PRO:HB3	1.90	0.53
2:B:59:SER:HB3	2:B:62:LEU:HD13	1.89	0.53
2:B:67:SER:O	2:B:79:GLU:N	2.42	0.53
2:B:98:ARG:NH1	3:H:76:GLU:OE2	2.41	0.52
1:A:150:SER:O	1:A:195:SER:OG	2.24	0.51
3:H:70:HIS:HE1	3:H:97:MET:SD	2.33	0.51
3:H:114:HIS:HB3	3:H:126:LEU:HB2	1.91	0.51
2:B:101:VAL:HG21	3:H:151:HIS:C	2.31	0.51
3:H:31:THR:OG1	3:H:209:TYR:OH	2.28	0.51
1:A:93:ALA:HB1	1:A:103:LEU:HG	1.92	0.51
1:A:18:ALA:H	1:A:82:VAL:HG12	1.75	0.51
1:A:115:LEU:O	1:A:145:SER:OG	2.28	0.51
3:H:13:SER:HA	3:H:20:PRO:HB3	1.93	0.50
3:H:196:ASP:OD1	3:H:196:ASP:N	2.45	0.50
2:B:35:TRP:HE1	2:B:76:SER:HG	1.57	0.50
2:B:101:VAL:HG23	3:H:150:ALA:HB1	1.94	0.50
4:L:17:ASN:OD1	4:L:97:ARG:NH1	2.38	0.50
3:H:28:VAL:HG12	3:H:29:ASP:H	1.75	0.50
1:A:34:LEU:HD13	1:A:75:PHE:HB2	1.93	0.50
2:B:146:VAL:HG22	2:B:195:ARG:HG2	1.93	0.49
3:H:142:ILE:O	3:H:146:LYS:HG2	2.13	0.49
2:B:175:ASP:OD1	2:B:195:ARG:NH2	2.46	0.49
3:H:55:GLU:OE1	3:H:170:ARG:NH2	2.40	0.49
3:H:51:TRP:CE2	3:H:179:LEU:HD11	2.48	0.49
4:L:36:GLU:HB3	4:L:83:ASN:HB3	1.95	0.49
3:H:35:ARG:NH2	3:H:46:GLU:OE1	2.41	0.48
3:H:207:GLY:HA2	3:H:240:THR:HB	1.94	0.48
1:A:69:LYS:O	1:A:73:SER:N	2.47	0.48
3:H:20:PRO:HD2	3:H:75:ARG:HD3	1.95	0.47
2:B:172:VAL:HG22	2:B:196:LEU:HD13	1.95	0.47
2:B:118:ASP:OD1	2:B:119:LEU:N	2.46	0.47
3:H:97:MET:SD	3:H:99:PHE:HE1	2.37	0.47
1:A:135:LYS:HE2	2:B:150:THR:HG21	1.97	0.47
3:H:266:LEU:HD13	3:H:270:LEU:HG	1.95	0.47
1:A:84:TRP:HA	1:A:113:VAL:HG21	1.96	0.47
3:H:82:LEU:O	3:H:86:ASN:N	2.48	0.47
2:B:34:TYR:CD2	2:B:49:TYR:HB2	2.49	0.47
4:L:55:SER:OG	4:L:56:PHE:N	2.48	0.46
3:H:42:SER:OG	3:H:46:GLU:OE2	2.24	0.46
1:A:27:SER:O	1:A:29:GLY:N	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:39:LEU:HB3	4:L:46:ILE:HD12	1.98	0.45
3:H:235:PRO:HA	3:H:241:PHE:HD1	1.81	0.45
2:B:129:VAL:HG23	2:B:239:ALA:HB3	1.99	0.44
3:H:37:ASP:HB3	3:H:40:ALA:HB2	1.99	0.44
4:L:52:SER:HB3	4:L:65:LEU:H	1.83	0.43
2:B:155:ASP:HB2	2:B:178:PRO:HG2	1.99	0.43
3:H:33:PHE:CD2	3:H:34:VAL:HG13	2.52	0.43
4:L:56:PHE:HA	4:L:62:PHE:HA	1.99	0.43
3:H:268:LYS:HD2	3:H:268:LYS:HA	1.83	0.43
4:L:52:SER:OG	4:L:53:ASP:N	2.51	0.43
1:A:140:PHE:O	1:A:177:ALA:N	2.52	0.43
2:B:122:VAL:O	2:B:229:ARG:NH2	2.51	0.43
3:H:99:PHE:CZ	5:P:3:PRO:HG2	2.54	0.43
2:B:56:LEU:HD23	3:H:69:ALA:HB2	1.99	0.43
2:B:8:ASP:HA	2:B:9:PRO:HA	1.85	0.42
3:H:99:PHE:HB2	3:H:113:TYR:O	2.19	0.42
2:B:46:PHE:HE1	2:B:49:TYR:HB3	1.85	0.42
3:H:131:ARG:HA	3:H:153:ALA:HB1	2.00	0.42
3:H:143:THR:OG1	5:P:8:TRP:HB3	2.19	0.42
2:B:24:CYS:SG	2:B:25:ASP:N	2.93	0.42
2:B:72:LYS:HB2	2:B:75:PHE:HE1	1.84	0.42
3:H:14:ARG:NH2	3:H:39:ASP:OD2	2.50	0.41
3:H:249:VAL:HG21	3:H:254:GLU:HG3	2.01	0.41
1:A:43:GLN:OE1	1:A:43:GLN:N	2.53	0.41
3:H:159:TYR:CZ	5:P:3:PRO:HG3	2.55	0.41
3:H:131:ARG:NH2	3:H:157:ARG:HH12	2.18	0.41
4:L:5:PRO:HA	4:L:30:PHE:HB3	2.03	0.41
2:B:32:ARG:CZ	2:B:98:ARG:HG3	2.49	0.41
1:A:152:SER:OG	1:A:153:LYS:N	2.54	0.41
2:B:3:THR:HA	2:B:4:GLY:HA2	1.80	0.41
2:B:97:LEU:C	2:B:99:ASP:H	2.23	0.41
5:P:2:TYR:HA	5:P:3:PRO:HD3	1.87	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	201/209 (96%)	196 (98%)	5 (2%)	0	100	100
2	B	237/246 (96%)	226 (95%)	11 (5%)	0	100	100
3	H	272/275 (99%)	262 (96%)	10 (4%)	0	100	100
4	L	97/100 (97%)	94 (97%)	3 (3%)	0	100	100
5	P	6/8 (75%)	5 (83%)	1 (17%)	0	100	100
All	All	813/838 (97%)	783 (96%)	30 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	179/184 (97%)	178 (99%)	1 (1%)	86	91
2	B	213/218 (98%)	209 (98%)	4 (2%)	57	77
3	H	230/231 (100%)	221 (96%)	9 (4%)	32	62
4	L	94/95 (99%)	93 (99%)	1 (1%)	73	85
5	P	7/7 (100%)	7 (100%)	0	100	100
All	All	723/735 (98%)	708 (98%)	15 (2%)	53	75

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	28	TYR
2	B	49	TYR
2	B	103	GLU
2	B	112	ARG
2	B	235	GLN
3	H	9	SER

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Mol	Chain	Res	Type
3	H	35	ARG
3	H	66	LYS
3	H	83	ARG
3	H	156	GLN
3	H	183	ASP
3	H	209	TYR
3	H	222	GLU
3	H	227	ASP
4	L	70	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	208	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

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(Å²)	Q<0.9
1	A	203/209 (97%)	0.52	18 (8%)	9	10	16, 55, 147, 166	0
2	B	241/246 (97%)	0.84	32 (13%)	3	3	21, 82, 141, 161	0
3	H	274/275 (99%)	0.36	12 (4%)	34	33	29, 62, 112, 144	0
4	L	99/100 (99%)	0.01	0	100	100	38, 66, 89, 105	0
5	P	8/8 (100%)	0.31	0	100	100	36, 43, 50, 56	0
All	All	825/838 (98%)	0.50	62 (7%)	14	13	16, 69, 133, 166	0

All (62) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	118	ASP	6.5
2	B	116	LEU	5.0
3	H	258	THR	4.9
1	A	190	ASN	4.7
3	H	1	GLY	4.7
2	B	13	ILE	4.5
2	B	228	ASP	4.5
3	H	226	GLN	4.5
1	A	204	PRO	4.3
2	B	12	LYS	4.1
2	B	117	GLU	4.1
1	A	205	SER	4.1
2	B	14	THR	3.9
2	B	3	THR	3.7
1	A	192	PHE	3.6
2	B	20	VAL	3.2
1	A	184	SER	3.2
1	A	154	ASP	3.2
1	A	189	ALA	3.2
2	B	223	ASP	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	132	SER	3.1
1	A	156	ASP	3.0
3	H	256	ARG	2.9
1	A	133	SER	2.9
2	B	11	HIS	2.9
3	H	257	TYR	2.9
1	A	200	ASP	2.9
3	H	227	ASP	2.8
2	B	199	SER	2.8
2	B	17	GLY	2.7
2	B	184	ALA	2.7
2	B	156	HIS	2.7
2	B	21	THR	2.6
2	B	182	GLN	2.6
2	B	22	PHE	2.6
2	B	114	LEU	2.6
1	A	155	SER	2.6
2	B	23	ARG	2.5
3	H	246	ALA	2.5
2	B	134	GLU	2.5
2	B	224	GLU	2.5
1	A	124	VAL	2.4
1	A	157	VAL	2.4
1	A	181	SER	2.4
2	B	87	ASP	2.4
3	H	247	VAL	2.4
1	A	152	SER	2.4
1	A	186	PHE	2.3
2	B	119	LEU	2.3
3	H	49	ALA	2.3
3	H	65	GLY	2.3
1	A	185	ASP	2.3
3	H	218	GLN	2.3
2	B	181	GLU	2.2
2	B	225	TRP	2.2
2	B	173	CYS	2.2
2	B	115	VAL	2.2
2	B	227	GLN	2.1
2	B	231	LYS	2.1
3	H	51	TRP	2.0
2	B	60	ARG	2.0
2	B	138	SER	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.