



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 15, 2023 – 06:24 pm GMT

PDB ID : 8BBN
Title : SARS-CoV-2 Delta-RBD complexed with BA.2-10 and EY6A Fabs
Authors : Zhou, D.; Ren, J.; Stuart, D.I.
Deposited on : 2022-10-14
Resolution : 3.58 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 : 4.02b-467
Xtriage (Phenix) : 1.13
EDS : 2.32.1
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) : 2.32.1

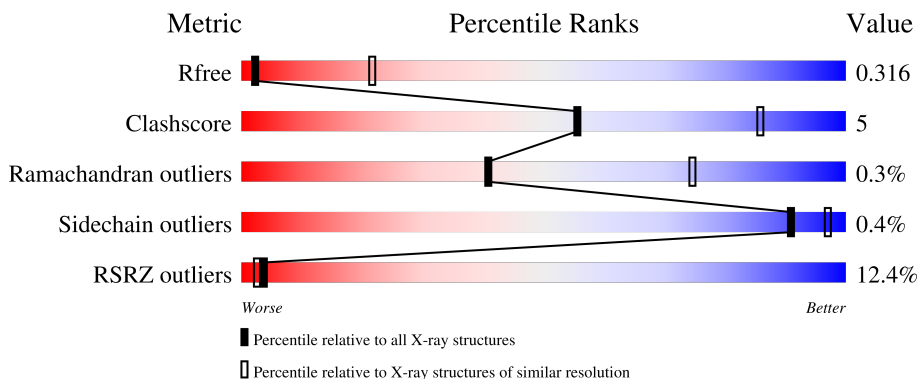
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.58 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	1094 (3.66-3.50)
Clashscore	141614	1181 (3.66-3.50)
Ramachandran outliers	138981	1143 (3.66-3.50)
Sidechain outliers	138945	1143 (3.66-3.50)
RSRZ outliers	127900	1012 (3.66-3.50)

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	E	226	 8% 82% 13% 5%
1	J	226	 8% 81% 14% 5%
1	M	226	 3% 81% 15% 5%
2	F	215	 7% 88% 11% 5%
2	K	215	 13% 86% 13% 5%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	N	215	 10% 90% 9% •
3	R	202	 12% 88% 8% •
3	X	202	 8% 86% 10% •
3	Y	202	 12% 88% 8% •
4	B	214	 17% 87% 12%
4	D	214	 14% 82% 16% •
4	L	214	 6% 84% 15%
5	A	230	 29% 80% 16% ••
5	C	230	 26% 80% 16% ••
5	H	230	 7% 82% 14% ••

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 24354 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 EY6A Heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	M	215	1637	1041	273	317	6	0	0	0
1	J	215	1637	1041	273	317	6	0	0	0
1	E	215	1637	1041	273	317	6	0	0	0

- Molecule 2 is a protein called EY6A light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	N	212	1618	1012	270	331	5	0	0	0
2	K	212	1618	1012	270	331	5	0	0	0
2	F	212	1618	1012	270	331	5	0	0	0

- Molecule 3 is a protein called Spike protein S1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	R	194	1547	990	263	286	8	0	1	0
3	Y	194	1547	990	263	286	8	0	1	0
3	X	194	1547	990	263	286	8	0	1	0

There are 27 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	327	HIS	-	expression tag	UNP P0DTC2
R	328	HIS	-	expression tag	UNP P0DTC2

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
R	329	HIS	-	expression tag	UNP P0DTC2
R	330	HIS	-	expression tag	UNP P0DTC2
R	331	HIS	-	expression tag	UNP P0DTC2
R	332	HIS	-	expression tag	UNP P0DTC2
R	452	ARG	LEU	variant	UNP P0DTC2
R	478	LYS	THR	variant	UNP P0DTC2
R	527	LYS	PRO	variant	UNP P0DTC2
Y	327	HIS	-	expression tag	UNP P0DTC2
Y	328	HIS	-	expression tag	UNP P0DTC2
Y	329	HIS	-	expression tag	UNP P0DTC2
Y	330	HIS	-	expression tag	UNP P0DTC2
Y	331	HIS	-	expression tag	UNP P0DTC2
Y	332	HIS	-	expression tag	UNP P0DTC2
Y	452	ARG	LEU	variant	UNP P0DTC2
Y	478	LYS	THR	variant	UNP P0DTC2
Y	527	LYS	PRO	variant	UNP P0DTC2
X	327	HIS	-	expression tag	UNP P0DTC2
X	328	HIS	-	expression tag	UNP P0DTC2
X	329	HIS	-	expression tag	UNP P0DTC2
X	330	HIS	-	expression tag	UNP P0DTC2
X	331	HIS	-	expression tag	UNP P0DTC2
X	332	HIS	-	expression tag	UNP P0DTC2
X	452	ARG	LEU	variant	UNP P0DTC2
X	478	LYS	THR	variant	UNP P0DTC2
X	527	LYS	PRO	variant	UNP P0DTC2

- Molecule 4 is a protein called BA.2-10 light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	L	213	Total	C	N	O	S	0	0	0
			1642	1028	274	336	4			
4	D	213	Total	C	N	O	S	0	0	0
			1642	1028	274	336	4			
4	B	213	Total	C	N	O	S	0	0	0
			1642	1028	274	336	4			

- Molecule 5 is a protein called BA.2-10 heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	H	223	Total	C	N	O	S	0	0	0
			1674	1057	286	323	8			

Continued on next page...


Continued from previous page...

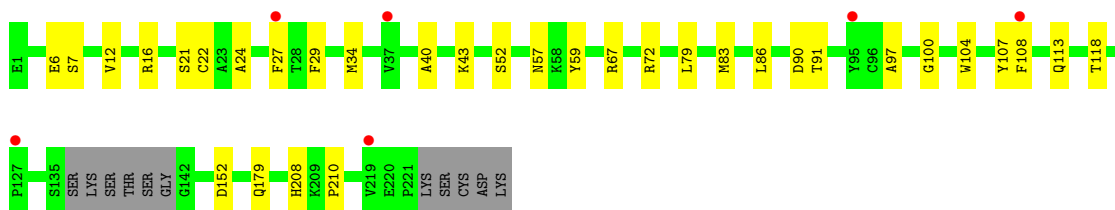
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	C	223	Total	C	N	O	S	0	0	0
			1674	1057	286	323	8			
5	A	223	Total	C	N	O	S	0	0	0
			1674	1057	286	323	8			

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.

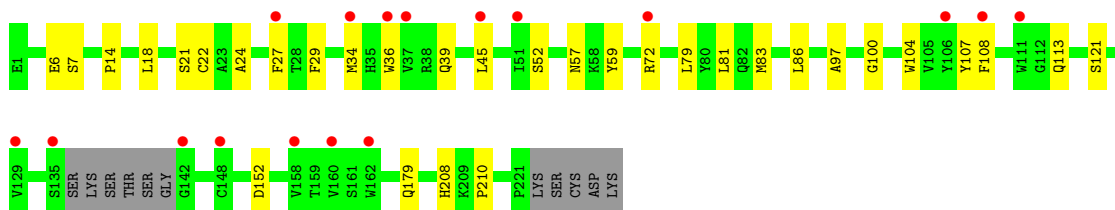
- Molecule 1: EY6A Heavy chain

Chain M: 




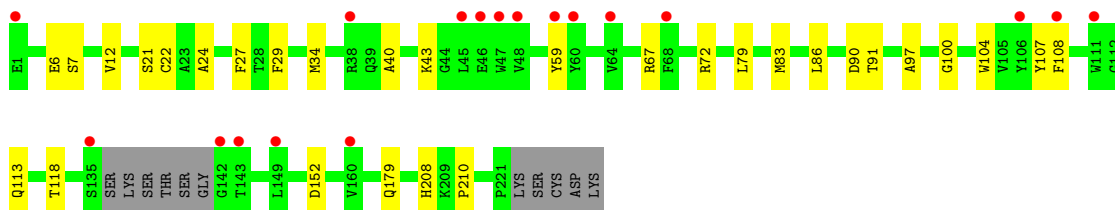
- Molecule 1: EY6A Heavy chain

Chain J: 

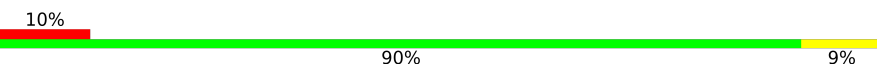


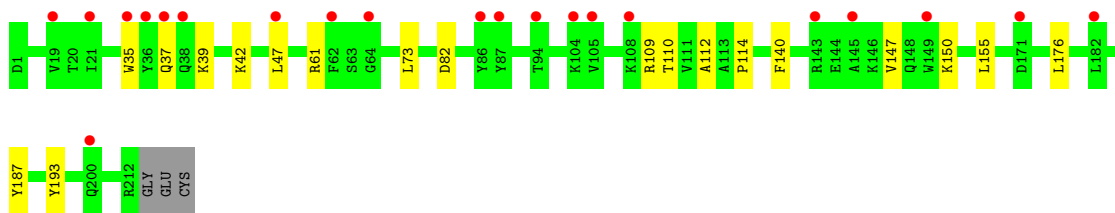
- Molecule 1: EY6A Heavy chain

Chain E: 

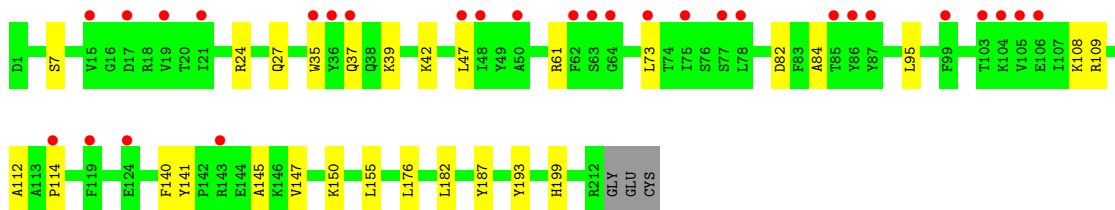
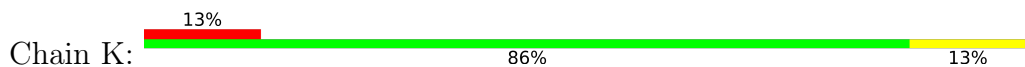


- Molecule 2: EY6A light chain

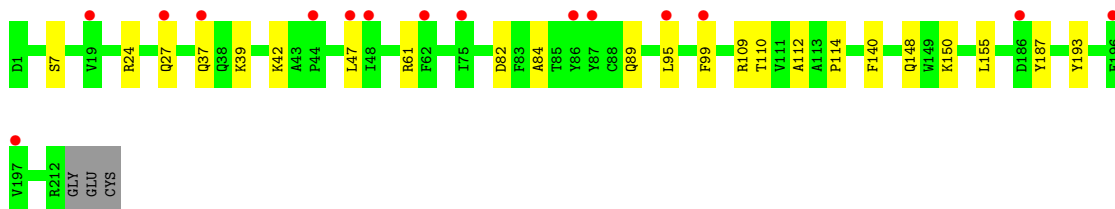
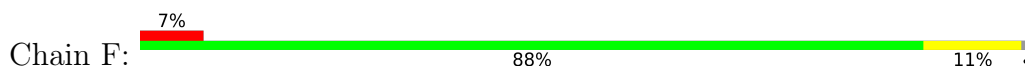
Chain N: 



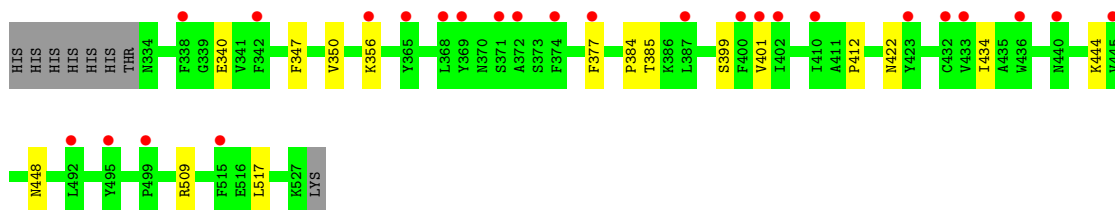
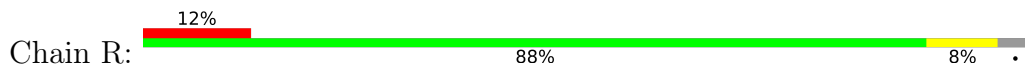
• Molecule 2: EY6A light chain



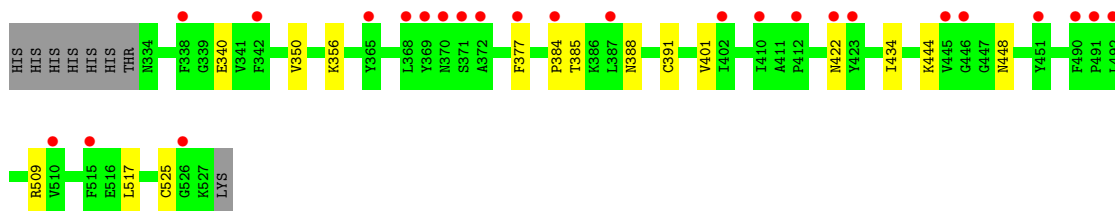
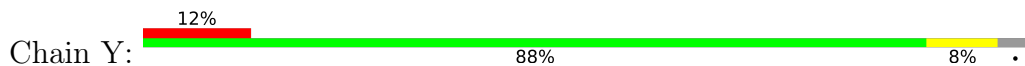
• Molecule 2: EY6A light chain



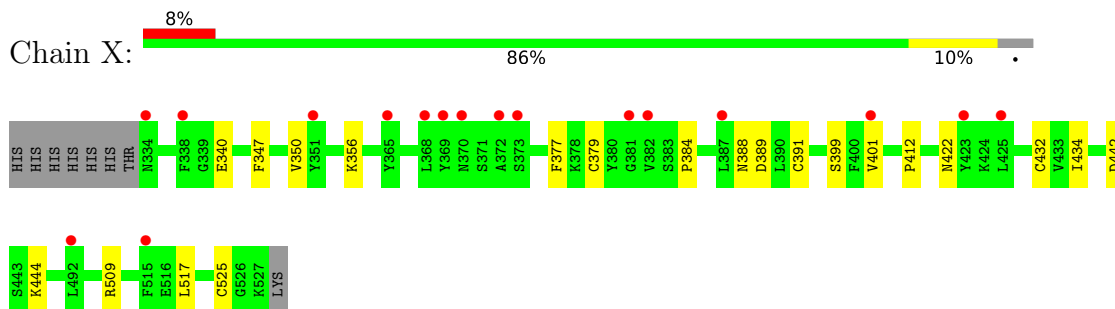
• Molecule 3: Spike protein S1



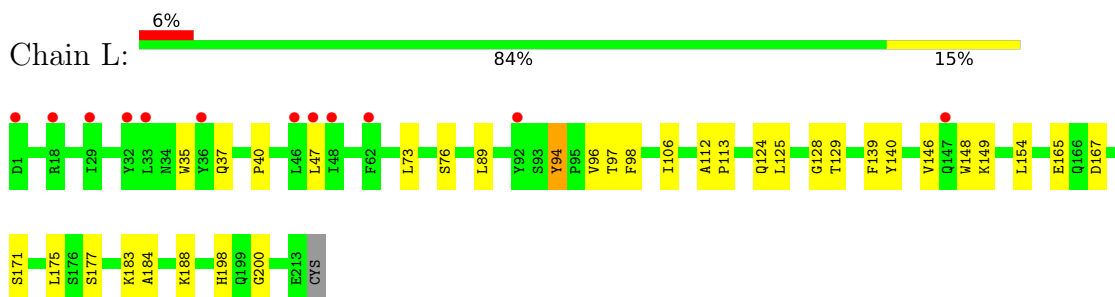
• Molecule 3: Spike protein S1



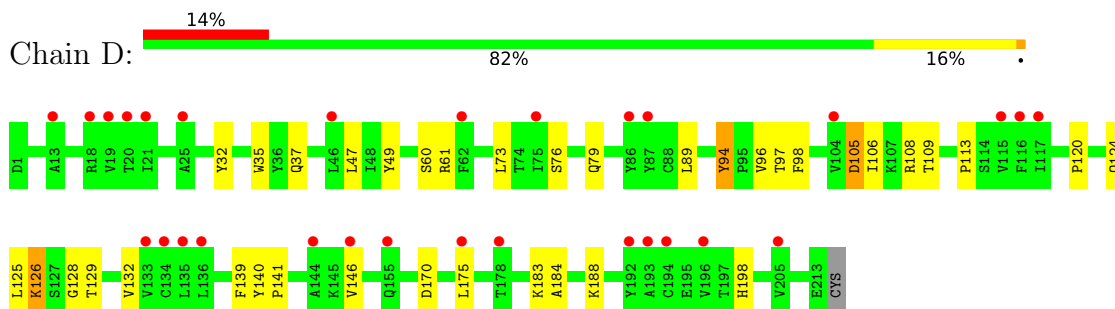
- Molecule 3: Spike protein S1



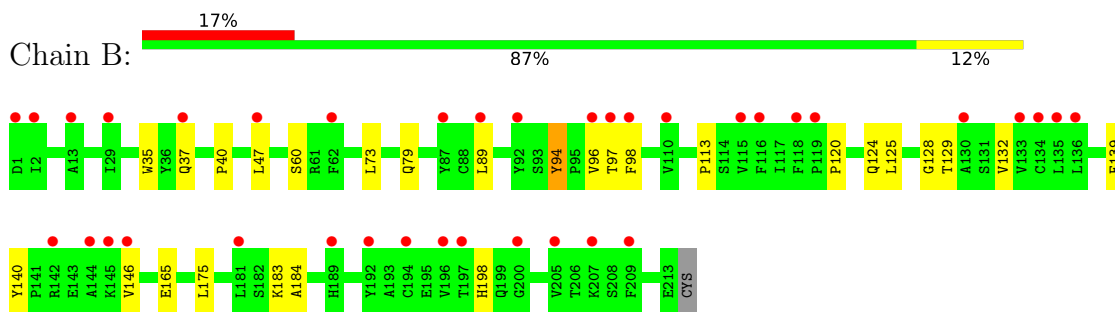
- Molecule 4: BA.2-10 light chain



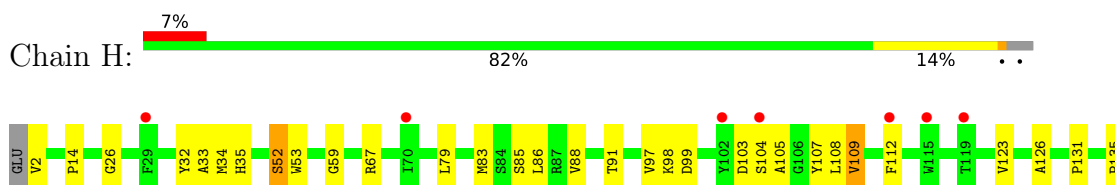
- Molecule 4: BA.2-10 light chain

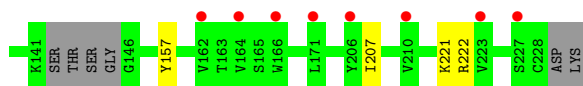


- Molecule 4: BA.2-10 light chain

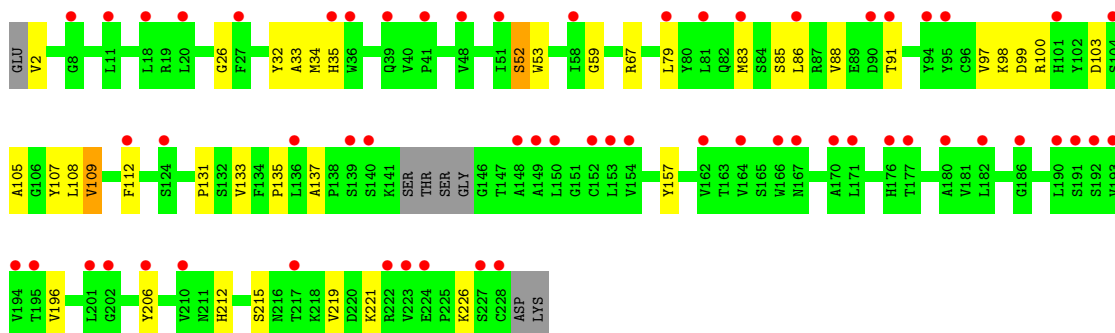
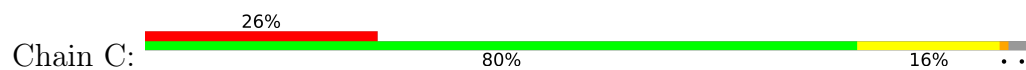


- Molecule 5: BA.2-10 heavy chain

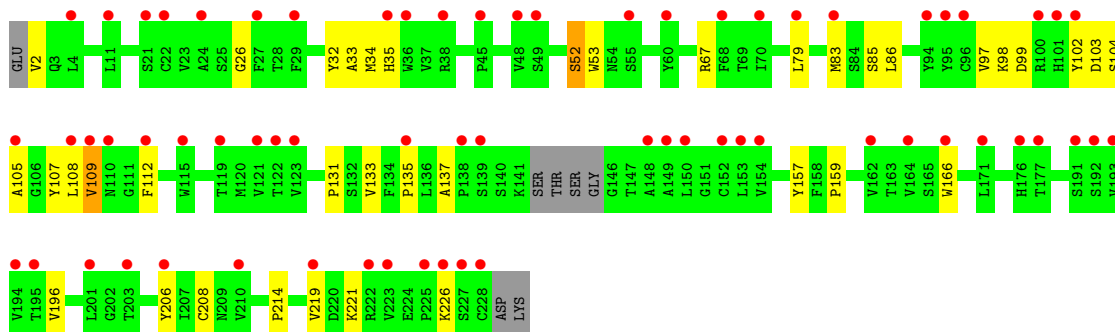
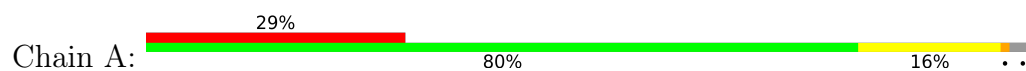




- Molecule 5: BA.2-10 heavy chain



- Molecule 5: BA.2-10 heavy chain



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	170.66Å 171.69Å 176.99Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	55.79 – 3.58 56.89 – 3.58	Depositor EDS
% Data completeness (in resolution range)	89.6 (55.79-3.58) 90.0 (56.89-3.58)	Depositor EDS
R_{merge}	0.47	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.06 (at 3.57Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.265 , 0.314 0.273 , 0.316	Depositor DCC
R_{free} test set	2853 reflections (5.13%)	wwPDB-VP
Wilson B-factor (Å ²)	126.7	Xtriage
Anisotropy	0.520	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 107.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.30$, $\langle L^2 \rangle = 0.15$	Xtriage
Estimated twinning fraction	0.218 for -h,l,k 0.109 for -l,-k,-h 0.105 for k,h,-l 0.098 for k,l,h 0.098 for l,h,k	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	24354	wwPDB-VP
Average B, all atoms (Å ²)	173.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.64% 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 [i](#)

5.1 Standard geometry [i](#)

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	E	0.24	0/1679	0.48	0/2288
1	J	0.25	0/1679	0.47	0/2288
1	M	0.24	0/1679	0.48	0/2288
2	F	0.26	0/1651	0.50	0/2241
2	K	0.26	0/1651	0.50	0/2241
2	N	0.26	0/1651	0.50	0/2241
3	R	0.25	0/1593	0.46	0/2164
3	X	0.25	0/1593	0.47	0/2164
3	Y	0.25	0/1593	0.46	0/2164
4	B	0.26	0/1677	0.51	0/2281
4	D	0.27	0/1677	0.53	1/2281 (0.0%)
4	L	0.27	0/1677	0.52	0/2281
5	A	0.26	0/1716	0.50	0/2337
5	C	0.26	0/1716	0.51	0/2337
5	H	0.27	0/1716	0.50	0/2337
All	All	0.26	0/24948	0.49	1/33933 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
4	D	126	LYS	CD-CE-NZ	5.10	123.43	111.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	1637	0	1591	19	0
1	J	1637	0	1591	21	0
1	M	1637	0	1591	22	0
2	F	1618	0	1582	15	0
2	K	1618	0	1582	15	0
2	N	1618	0	1582	11	0
3	R	1547	0	1469	13	0
3	X	1547	0	1469	16	0
3	Y	1547	0	1469	14	0
4	B	1642	0	1596	21	0
4	D	1642	0	1596	27	1
4	L	1642	0	1596	23	1
5	A	1674	0	1621	24	0
5	C	1674	0	1621	21	0
5	H	1674	0	1621	19	0
All	All	24354	0	23577	246	1

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 5.

All (246) 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)
4:D:79:GLN:NE2	3:X:391:CYS:SG	2.35	1.00
4:D:79:GLN:NE2	3:X:525:CYS:SG	2.49	0.85
3:Y:525:CYS:SG	4:B:79:GLN:NE2	2.49	0.85
3:Y:391:CYS:SG	4:B:79:GLN:NE2	2.59	0.76
5:A:131:PRO:HB3	5:A:157:TYR:HB3	1.72	0.72
5:H:131:PRO:HB3	5:H:157:TYR:HB3	1.76	0.68
4:L:37:GLN:HB2	4:L:47:LEU:HD11	1.76	0.67
4:D:37:GLN:HB2	4:D:47:LEU:HD11	1.77	0.67
4:D:60:SER:OG	3:X:388:ASN:O	2.12	0.67
3:X:444:LYS:HE2	5:A:103:ASP:HB2	1.77	0.66
4:B:37:GLN:HB2	4:B:47:LEU:HD11	1.78	0.65
2:F:150:LYS:HG2	2:F:155:LEU:HD23	1.80	0.63
4:L:76:SER:HB2	4:B:184:ALA:HB1	1.80	0.63
5:A:135:PRO:HD3	5:A:221:LYS:HE2	1.81	0.62
5:C:131:PRO:HB3	5:C:157:TYR:HB3	1.81	0.61
5:A:34:MET:HB3	5:A:79:LEU:HD22	1.83	0.61
5:A:133:VAL:HB	5:A:219:VAL:HG11	1.82	0.60
5:H:34:MET:HB3	5:H:79:LEU:HD22	1.83	0.60
5:C:34:MET:HB3	5:C:79:LEU:HD22	1.83	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:7:SER:OG	1:J:21:SER:OG	2.20	0.59
1:E:83:MET:HB3	1:E:86:LEU:HD21	1.84	0.58
5:H:83:MET:HB3	5:H:86:LEU:HD21	1.85	0.58
3:Y:340:GLU:OE1	3:Y:356:LYS:NZ	2.37	0.58
5:C:83:MET:HB3	5:C:86:LEU:HD21	1.85	0.58
2:K:37:GLN:HB2	2:K:47:LEU:HD11	1.86	0.58
3:R:444:LYS:HE2	5:H:103:ASP:HB2	1.84	0.58
1:E:6:GLU:H	1:E:113:GLN:HE22	1.52	0.58
1:M:104:TRP:HH2	3:Y:517:LEU:HD22	1.69	0.57
3:X:340:GLU:OE1	3:X:356:LYS:NZ	2.37	0.57
1:M:29:PHE:O	1:M:72:ARG:NH2	2.37	0.57
2:F:37:GLN:HB2	2:F:47:LEU:HD11	1.86	0.57
3:R:340:GLU:OE1	3:R:356:LYS:NZ	2.37	0.57
4:L:146:VAL:HG21	4:L:175:LEU:HD22	1.86	0.57
1:E:104:TRP:HH2	3:R:517:LEU:HD22	1.70	0.57
5:C:2:VAL:HA	5:C:26:GLY:HA3	1.87	0.57
5:A:83:MET:HB3	5:A:86:LEU:HD21	1.86	0.56
4:L:167:ASP:O	4:L:171:SER:HA	2.05	0.56
2:F:27:GLN:NE2	3:R:412:PRO:O	2.37	0.56
1:M:83:MET:HB3	1:M:86:LEU:HD21	1.88	0.55
5:H:2:VAL:HA	5:H:26:GLY:HA3	1.87	0.55
4:L:40:PRO:HG2	4:L:165:GLU:OE2	2.07	0.55
1:J:100:GLY:HA3	1:J:107:TYR:CZ	2.41	0.55
1:J:83:MET:HB3	1:J:86:LEU:HD21	1.88	0.55
1:M:52:SER:O	1:M:72:ARG:NH1	2.40	0.55
1:E:100:GLY:HA3	1:E:107:TYR:CZ	2.42	0.55
2:N:109:ARG:NH1	2:N:110:THR:O	2.40	0.55
5:A:2:VAL:HA	5:A:26:GLY:HA3	1.88	0.55
4:L:94:TYR:CE1	5:H:59:GLY:HA3	2.42	0.54
1:M:67:ARG:NH1	1:M:90:ASP:OD2	2.33	0.54
2:F:95:LEU:HD11	3:R:384:PRO:HG3	1.90	0.54
1:M:6:GLU:H	1:M:113:GLN:HE22	1.53	0.54
4:D:113:PRO:HB3	4:D:139:PHE:HB3	1.90	0.54
3:Y:444:LYS:HE2	5:C:103:ASP:HB2	1.90	0.53
4:B:146:VAL:HG21	4:B:175:LEU:HD22	1.90	0.53
1:J:104:TRP:HH2	3:X:517:LEU:HD22	1.73	0.53
1:E:7:SER:OG	1:E:21:SER:OG	2.23	0.53
1:E:152:ASP:OD1	1:E:179:GLN:NE2	2.41	0.53
2:N:150:LYS:HG2	2:N:155:LEU:HD23	1.90	0.53
2:F:109:ARG:HH12	2:F:112:ALA:HB2	1.73	0.53
2:F:109:ARG:NH1	2:F:110:THR:O	2.42	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:59:TYR:CE2	3:X:384:PRO:HG2	2.45	0.52
1:E:34:MET:HB3	1:E:79:LEU:HD22	1.92	0.52
5:A:67:ARG:NH1	5:A:85:SER:O	2.43	0.52
5:C:97:VAL:HG11	5:C:112:PHE:HD2	1.75	0.52
4:L:149:LYS:HE2	4:L:154:LEU:HD11	1.91	0.52
1:J:6:GLU:H	1:J:113:GLN:HE22	1.57	0.51
4:D:94:TYR:CE1	5:C:59:GLY:HA3	2.45	0.51
4:D:146:VAL:HG21	4:D:175:LEU:HD22	1.92	0.51
5:C:67:ARG:NH1	5:C:85:SER:O	2.44	0.51
1:M:16:ARG:HH11	1:J:18:LEU:HD13	1.76	0.51
4:L:113:PRO:HB3	4:L:139:PHE:HB3	1.93	0.51
4:D:128:GLY:O	4:D:183:LYS:N	2.39	0.51
1:J:29:PHE:O	1:J:72:ARG:NH2	2.44	0.51
1:J:97:ALA:HB1	1:J:108:PHE:HB3	1.92	0.51
1:E:59:TYR:HE2	3:R:385:THR:HG23	1.74	0.51
5:C:108:LEU:HD12	5:C:109:VAL:HG13	1.93	0.51
2:K:150:LYS:HG2	2:K:155:LEU:HD23	1.92	0.51
2:N:37:GLN:HB2	2:N:47:LEU:HD11	1.92	0.50
5:H:67:ARG:NH1	5:H:85:SER:O	2.44	0.50
5:H:108:LEU:HD12	5:H:109:VAL:HG13	1.94	0.50
2:K:145:ALA:HB2	2:K:199:HIS:HD2	1.76	0.50
1:M:208:HIS:CD2	1:M:210:PRO:HD2	2.47	0.50
1:M:100:GLY:HA3	1:M:107:TYR:CZ	2.47	0.50
1:J:152:ASP:OD1	1:J:179:GLN:NE2	2.45	0.50
2:N:109:ARG:HH12	2:N:112:ALA:HB2	1.77	0.49
5:H:97:VAL:HG11	5:H:112:PHE:HD2	1.76	0.49
4:L:124:GLN:HG2	4:L:129:THR:O	2.12	0.49
3:Y:388:ASN:O	4:B:60:SER:OG	2.30	0.49
5:A:103:ASP:HB3	5:A:107:TYR:CD2	2.47	0.49
2:K:109:ARG:HH12	2:K:112:ALA:HB2	1.77	0.49
2:F:109:ARG:NH1	2:F:112:ALA:HB2	2.27	0.49
1:J:34:MET:HB3	1:J:79:LEU:HD22	1.93	0.49
5:A:97:VAL:HG11	5:A:112:PHE:HD2	1.76	0.49
5:A:35:HIS:CD2	5:A:99:ASP:HB2	2.48	0.49
2:N:109:ARG:NH1	2:N:112:ALA:HB2	2.28	0.49
5:C:35:HIS:CD2	5:C:99:ASP:HB2	2.47	0.49
5:C:135:PRO:HD3	5:C:221:LYS:HE2	1.94	0.49
5:A:97:VAL:HG11	5:A:112:PHE:HB3	1.95	0.49
4:B:124:GLN:HG2	4:B:129:THR:O	2.13	0.48
1:E:97:ALA:HB1	1:E:108:PHE:HB3	1.94	0.48
5:H:97:VAL:HG11	5:H:112:PHE:HB3	1.96	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:187:TYR:O	2:F:193:TYR:OH	2.32	0.48
1:E:91:THR:HG23	1:E:118:THR:HA	1.96	0.48
2:F:7:SER:HB3	2:F:24:ARG:HH22	1.77	0.48
3:X:377:PHE:CD1	3:X:434:ILE:HG12	2.48	0.48
5:H:35:HIS:CD2	5:H:99:ASP:HB2	2.48	0.48
5:C:33:ALA:HB3	5:C:99:ASP:HB3	1.96	0.48
2:K:39:LYS:HD3	2:K:84:ALA:HB2	1.96	0.48
2:N:187:TYR:O	2:N:193:TYR:OH	2.31	0.48
4:B:120:PRO:HD3	4:B:132:VAL:HG22	1.96	0.47
1:M:59:TYR:CZ	3:Y:384:PRO:HG2	2.49	0.47
1:M:40:ALA:HB3	1:M:43:LYS:HB2	1.96	0.47
4:L:128:GLY:O	4:L:183:LYS:N	2.40	0.47
1:M:22:CYS:HB3	1:M:79:LEU:HB3	1.95	0.47
4:L:184:ALA:O	4:L:188:LYS:HG3	2.15	0.47
2:N:114:PRO:HB3	2:N:140:PHE:HB3	1.97	0.47
5:A:33:ALA:HB3	5:A:99:ASP:HB3	1.97	0.47
4:L:148:TRP:NE1	4:L:177:SER:OG	2.35	0.46
4:B:125:LEU:O	4:B:183:LYS:HD2	2.16	0.46
1:M:7:SER:OG	1:M:21:SER:OG	2.30	0.46
5:H:33:ALA:HB3	5:H:99:ASP:HB3	1.97	0.46
4:D:89:LEU:HD12	4:D:97:THR:O	2.16	0.46
2:K:7:SER:HB3	2:K:24:ARG:HH22	1.81	0.46
5:C:137:ALA:HB3	5:C:226:LYS:HE3	1.97	0.46
1:E:29:PHE:O	1:E:72:ARG:NH2	2.49	0.46
5:A:108:LEU:HD12	5:A:109:VAL:HG13	1.96	0.46
5:C:97:VAL:HG11	5:C:112:PHE:HB3	1.97	0.46
3:X:442:ASP:OD1	5:A:102:TYR:OH	2.33	0.46
4:L:89:LEU:HD13	4:L:98:PHE:CD2	2.51	0.45
4:D:124:GLN:HG2	4:D:129:THR:O	2.16	0.45
1:M:59:TYR:CE2	3:Y:384:PRO:HG2	2.51	0.45
4:B:113:PRO:HB3	4:B:139:PHE:HB3	1.98	0.45
4:B:89:LEU:HD12	4:B:97:THR:O	2.16	0.45
4:B:89:LEU:HD13	4:B:98:PHE:CD2	2.51	0.45
4:B:140:TYR:O	4:B:198:HIS:HE1	2.00	0.45
1:M:152:ASP:OD1	1:M:179:GLN:NE2	2.48	0.45
4:L:94:TYR:OH	5:H:104:SER:HB3	2.17	0.45
5:H:33:ALA:HA	5:H:52:SER:O	2.16	0.45
1:M:34:MET:HB3	1:M:79:LEU:HD22	1.99	0.45
1:M:52:SER:HB3	3:Y:385:THR:HG21	1.99	0.45
4:L:76:SER:HB2	4:B:184:ALA:CB	2.46	0.45
5:H:135:PRO:HD3	5:H:221:LYS:HE2	1.99	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:89:LEU:HD12	4:L:97:THR:O	2.16	0.45
4:D:61:ARG:CZ	4:D:79:GLN:HG3	2.47	0.45
5:C:33:ALA:HA	5:C:52:SER:O	2.17	0.45
5:A:137:ALA:HB3	5:A:226:LYS:HE3	1.99	0.45
4:D:49:TYR:CB	5:C:100:ARG:HH12	2.29	0.44
4:D:89:LEU:HD13	4:D:98:PHE:CD2	2.52	0.44
5:A:33:ALA:HA	5:A:52:SER:O	2.17	0.44
1:J:208:HIS:CD2	1:J:210:PRO:HD2	2.53	0.44
1:E:59:TYR:CE2	3:R:384:PRO:HG2	2.52	0.44
1:J:36:TRP:CE2	1:J:81:LEU:HB2	2.53	0.44
2:K:147:VAL:HG21	2:K:176:LEU:HD22	2.00	0.44
4:D:120:PRO:HD3	4:D:132:VAL:HG22	1.99	0.44
4:L:140:TYR:O	4:L:198:HIS:HE1	1.99	0.44
4:D:105:ASP:OD1	4:D:106:ILE:N	2.50	0.44
1:J:22:CYS:HB3	1:J:79:LEU:HB3	2.00	0.44
5:H:14:PRO:HG3	5:H:123:VAL:HG12	1.99	0.44
4:B:40:PRO:HG2	4:B:165:GLU:OE2	2.18	0.44
2:K:61:ARG:NE	2:K:82:ASP:OD2	2.50	0.43
1:E:208:HIS:CD2	1:E:210:PRO:HD2	2.53	0.43
4:D:108:ARG:NE	4:D:109:THR:O	2.50	0.43
5:A:103:ASP:HB3	5:A:107:TYR:CG	2.53	0.43
1:E:22:CYS:HB3	1:E:79:LEU:HB3	2.00	0.43
4:B:89:LEU:HD11	4:B:96:VAL:CG1	2.49	0.43
1:J:39:GLN:HB2	1:J:45:LEU:HD23	1.99	0.43
1:J:52:SER:O	1:J:72:ARG:NH1	2.50	0.43
1:J:57:ASN:HB3	1:J:59:TYR:OH	2.18	0.43
2:K:35:TRP:CE2	2:K:73:LEU:HB2	2.53	0.43
2:F:61:ARG:NE	2:F:82:ASP:OD2	2.48	0.43
5:A:166:TRP:CH2	5:A:208:CYS:HB3	2.53	0.43
2:K:27:GLN:NE2	3:X:412:PRO:O	2.47	0.43
1:E:104:TRP:CH2	3:R:517:LEU:HD22	2.51	0.43
4:D:89:LEU:HD11	4:D:96:VAL:CG1	2.48	0.43
5:C:32:TYR:CD2	5:C:98:LYS:HE2	2.53	0.43
5:C:196:VAL:HG11	5:C:206:TYR:CE1	2.54	0.43
1:J:24:ALA:HB1	1:J:27:PHE:CE1	2.54	0.43
3:Y:377:PHE:CD1	3:Y:434:ILE:HG12	2.54	0.43
4:D:184:ALA:O	4:D:188:LYS:HG3	2.19	0.43
4:B:89:LEU:HD11	4:B:96:VAL:HG12	2.01	0.43
5:A:159:PRO:HD2	5:A:214:PRO:HB3	2.00	0.43
1:E:40:ALA:HB3	1:E:43:LYS:HB2	2.01	0.42
5:A:32:TYR:CD2	5:A:98:LYS:HE2	2.54	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:35:TRP:CD2	4:L:73:LEU:HB2	2.53	0.42
4:D:89:LEU:HD11	4:D:96:VAL:HG12	2.01	0.42
4:D:108:ARG:HD2	4:D:170:ASP:O	2.19	0.42
4:B:35:TRP:CD2	4:B:73:LEU:HB2	2.54	0.42
1:E:24:ALA:HB1	1:E:27:PHE:CE1	2.55	0.42
2:F:89:GLN:HB2	2:F:99:PHE:CD2	2.54	0.42
2:F:148:GLN:HG3	2:F:155:LEU:HD22	2.01	0.42
3:R:350:VAL:HG22	3:R:422:ASN:HB3	2.01	0.42
4:D:76:SER:OG	3:X:389:ASP:HB3	2.18	0.42
1:E:67:ARG:NH1	1:E:90:ASP:OD2	2.37	0.42
4:L:89:LEU:HD11	4:L:96:VAL:CG1	2.49	0.42
5:A:196:VAL:HG11	5:A:206:TYR:CE1	2.54	0.42
2:K:114:PRO:HB3	2:K:140:PHE:HB3	2.01	0.42
2:F:42:LYS:HB3	2:F:42:LYS:HE2	1.87	0.42
5:H:207:ILE:HG12	5:H:222:ARG:HA	2.02	0.42
3:Y:401:VAL:HG22	3:Y:509:ARG:HG2	2.01	0.42
4:D:35:TRP:CD2	4:D:73:LEU:HB2	2.55	0.42
3:X:379:CYS:HA	3:X:432:CYS:HA	2.02	0.42
2:N:61:ARG:NE	2:N:82:ASP:OD2	2.51	0.42
2:F:114:PRO:HB3	2:F:140:PHE:HB3	2.01	0.42
3:R:347:PHE:CE2	3:R:399:SER:HB2	2.54	0.42
5:H:32:TYR:CD2	5:H:98:LYS:HE2	2.53	0.42
4:D:140:TYR:CD1	4:D:141:PRO:HA	2.55	0.42
2:K:39:LYS:HB2	2:K:42:LYS:HB2	2.02	0.42
4:B:94:TYR:CZ	5:A:104:SER:HB3	2.55	0.42
4:B:128:GLY:O	4:B:183:LYS:N	2.38	0.42
3:R:401:VAL:HG22	3:R:509:ARG:HG2	2.01	0.42
4:L:89:LEU:HD11	4:L:96:VAL:HG12	2.01	0.42
3:X:347:PHE:CE2	3:X:399:SER:HB2	2.55	0.42
3:R:444:LYS:HD2	3:R:448:ASN:HA	2.02	0.42
4:D:61:ARG:NE	4:D:79:GLN:HG3	2.35	0.42
1:M:57:ASN:HB2	3:Y:385:THR:HG22	2.02	0.41
4:L:148:TRP:O	4:L:154:LEU:HA	2.19	0.41
3:Y:350:VAL:HG22	3:Y:422:ASN:HB3	2.02	0.41
3:X:401:VAL:HG22	3:X:509:ARG:HG2	2.01	0.41
1:M:24:ALA:HB1	1:M:27:PHE:CE1	2.53	0.41
1:M:97:ALA:HB1	1:M:108:PHE:HB3	2.02	0.41
2:N:39:LYS:HB2	2:N:42:LYS:HB2	2.01	0.41
1:E:12:VAL:HG11	1:E:86:LEU:HD13	2.02	0.41
3:Y:444:LYS:HD2	3:Y:448:ASN:HA	2.02	0.41
3:R:377:PHE:CD1	3:R:434:ILE:HG12	2.55	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:14:PRO:HD2	1:J:121:SER:HB3	2.02	0.41
2:K:95:LEU:HD12	3:X:379:CYS:H	1.85	0.41
5:C:133:VAL:HB	5:C:219:VAL:HG11	2.02	0.41
5:C:212:HIS:CE1	5:C:215:SER:HG	2.32	0.41
3:X:350:VAL:HG22	3:X:422:ASN:HB3	2.02	0.41
2:N:147:VAL:HG21	2:N:176:LEU:HD22	2.03	0.41
4:L:125:LEU:O	4:L:183:LYS:HD2	2.20	0.41
4:D:125:LEU:O	4:D:183:LYS:HD2	2.21	0.41
4:D:140:TYR:O	4:D:198:HIS:HE1	2.04	0.41
1:M:12:VAL:HG11	1:M:86:LEU:HD13	2.01	0.41
4:L:112:ALA:HB2	4:L:200:GLY:O	2.21	0.41
5:H:88:VAL:O	5:H:91:THR:HG22	2.20	0.41
1:M:91:THR:HG23	1:M:118:THR:HA	2.03	0.41
4:D:140:TYR:CG	4:D:141:PRO:HA	2.56	0.41
1:J:57:ASN:HB3	1:J:59:TYR:CZ	2.55	0.40
2:F:39:LYS:HD3	2:F:84:ALA:HB2	2.03	0.40
1:J:6:GLU:H	1:J:113:GLN:NE2	2.19	0.40
2:K:187:TYR:O	2:K:193:TYR:OH	2.38	0.40
4:B:94:TYR:OH	5:A:104:SER:HB3	2.21	0.40
2:N:35:TRP:CE2	2:N:73:LEU:HB2	2.57	0.40
2:K:108:LYS:HA	2:K:141:TYR:OH	2.22	0.40
5:C:88:VAL:O	5:C:91:THR:HG22	2.22	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:106:ILE:O	4:D:126:LYS:NZ[3_454]	1.99	0.21

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	E	211/226 (93%)	201 (95%)	10 (5%)	0	100	100
1	J	211/226 (93%)	201 (95%)	10 (5%)	0	100	100
1	M	211/226 (93%)	200 (95%)	11 (5%)	0	100	100
2	F	210/215 (98%)	204 (97%)	6 (3%)	0	100	100
2	K	210/215 (98%)	203 (97%)	7 (3%)	0	100	100
2	N	210/215 (98%)	204 (97%)	6 (3%)	0	100	100
3	R	193/202 (96%)	186 (96%)	7 (4%)	0	100	100
3	X	193/202 (96%)	186 (96%)	7 (4%)	0	100	100
3	Y	193/202 (96%)	186 (96%)	7 (4%)	0	100	100
4	B	211/214 (99%)	202 (96%)	9 (4%)	0	100	100
4	D	211/214 (99%)	202 (96%)	9 (4%)	0	100	100
4	L	211/214 (99%)	202 (96%)	9 (4%)	0	100	100
5	A	219/230 (95%)	200 (91%)	16 (7%)	3 (1%)	11	48
5	C	219/230 (95%)	201 (92%)	15 (7%)	3 (1%)	11	48
5	H	219/230 (95%)	201 (92%)	14 (6%)	4 (2%)	8	43
All	All	3132/3261 (96%)	2979 (95%)	143 (5%)	10 (0%)	41	74

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	H	52	SER
5	H	105	ALA
5	C	52	SER
5	C	53	TRP
5	C	105	ALA
5	A	52	SER
5	A	105	ALA
5	H	53	TRP
5	A	53	TRP
5	H	126	ALA

5.3.2 Protein sidechains [i](#)

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	E	181/191 (95%)	181 (100%)	0	100	100
1	J	181/191 (95%)	181 (100%)	0	100	100
1	M	181/191 (95%)	181 (100%)	0	100	100
2	F	186/188 (99%)	186 (100%)	0	100	100
2	K	186/188 (99%)	185 (100%)	1 (0%)	88	95
2	N	186/188 (99%)	186 (100%)	0	100	100
3	R	167/175 (95%)	167 (100%)	0	100	100
3	X	167/175 (95%)	167 (100%)	0	100	100
3	Y	167/175 (95%)	167 (100%)	0	100	100
4	B	189/190 (100%)	188 (100%)	1 (0%)	88	95
4	D	189/190 (100%)	186 (98%)	3 (2%)	62	83
4	L	189/190 (100%)	188 (100%)	1 (0%)	88	95
5	A	187/195 (96%)	186 (100%)	1 (0%)	88	95
5	C	187/195 (96%)	185 (99%)	2 (1%)	73	88
5	H	187/195 (96%)	185 (99%)	2 (1%)	73	88
All	All	2730/2817 (97%)	2719 (100%)	11 (0%)	91	97

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	K	182	LEU
4	L	94	TYR
5	H	107	TYR
5	H	109	VAL
4	D	32	TYR
4	D	94	TYR
4	D	105	ASP
5	C	107	TYR
5	C	109	VAL
4	B	94	TYR
5	A	109	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
2	N	148	GLN
3	R	501	ASN
4	L	38	GLN
5	H	39	GLN
3	Y	501	ASN

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 monosaccharides 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](#)

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	E	215/226 (95%)	0.37	18 (8%) 11 6	115, 164, 214, 296	0
1	J	215/226 (95%)	0.44	17 (7%) 12 6	125, 168, 216, 285	0
1	M	215/226 (95%)	0.25	6 (2%) 53 35	127, 158, 212, 270	0
2	F	212/215 (98%)	0.53	15 (7%) 16 8	106, 153, 197, 252	0
2	K	212/215 (98%)	0.86	29 (13%) 3 2	124, 172, 229, 312	0
2	N	212/215 (98%)	0.58	21 (9%) 7 4	112, 150, 192, 249	0
3	R	194/202 (96%)	0.63	25 (12%) 3 2	119, 163, 244, 339	0
3	X	194/202 (96%)	0.63	17 (8%) 10 5	123, 166, 228, 366	0
3	Y	194/202 (96%)	0.82	25 (12%) 3 2	113, 159, 230, 310	0
4	B	213/214 (99%)	0.81	37 (17%) 1 0	116, 174, 246, 335	0
4	D	213/214 (99%)	0.64	29 (13%) 3 2	141, 194, 247, 292	0
4	L	213/214 (99%)	0.53	12 (5%) 24 13	122, 170, 207, 265	0
5	A	223/230 (96%)	1.57	66 (29%) 0 0	137, 187, 254, 324	0
5	C	223/230 (96%)	1.19	60 (26%) 0 0	139, 206, 270, 337	0
5	H	223/230 (96%)	0.43	15 (6%) 17 9	105, 160, 217, 284	0
All	All	3171/3261 (97%)	0.69	392 (12%) 4 2	105, 168, 236, 366	0

All (392) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
5	A	149	ALA	9.3
5	C	150	LEU	7.8
5	A	222	ARG	7.7
5	A	194	VAL	7.6
5	C	149	ALA	7.4
2	K	86	TYR	7.1
5	A	223	VAL	7.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
5	A	193	VAL	6.6
4	D	144	ALA	6.3
5	A	138	PRO	6.1
4	B	144	ALA	6.0
5	C	171	LEU	6.0
5	A	150	LEU	5.8
5	A	171	LEU	5.7
3	Y	423	TYR	5.6
5	C	193	VAL	5.6
2	K	103	THR	5.6
2	K	62	PHE	5.5
5	A	162	VAL	5.3
5	A	225	PRO	5.3
4	B	192	TYR	5.1
5	C	124	SER	5.0
5	A	36	TRP	5.0
5	A	94	TYR	4.9
4	B	13	ALA	4.9
5	A	206	TYR	4.9
4	B	1	ASP	4.9
4	B	115	VAL	4.9
3	Y	372	ALA	4.8
2	K	85	THR	4.8
1	E	45	LEU	4.8
5	C	152	CYS	4.7
5	A	11	LEU	4.7
5	C	140	SER	4.7
4	D	116	PHE	4.7
5	C	223	VAL	4.7
4	B	136	LEU	4.6
2	K	87	TYR	4.6
1	E	135	SER	4.6
1	E	47	TRP	4.6
2	K	19	VAL	4.5
4	D	133	VAL	4.5
2	K	35	TRP	4.5
5	C	186	GLY	4.5
5	A	70	ILE	4.5
4	B	209	PHE	4.4
5	A	79	LEU	4.4
4	D	135	LEU	4.4
5	C	164	VAL	4.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	B	197	THR	4.4
4	B	116	PHE	4.4
2	N	86	TYR	4.3
3	R	402	ILE	4.3
5	C	112	PHE	4.3
5	A	176	HIS	4.3
4	D	136	LEU	4.3
5	A	102	TYR	4.3
4	D	117	ILE	4.3
2	N	36	TYR	4.3
5	C	86	LEU	4.3
2	K	75	ILE	4.3
5	A	122	THR	4.2
2	N	19	VAL	4.1
4	B	92	TYR	4.1
4	D	115	VAL	4.1
5	A	101	HIS	4.1
5	A	192	SER	4.0
3	R	369	TYR	4.0
5	A	153	LEU	4.0
1	M	108	PHE	4.0
4	B	98	PHE	4.0
5	C	191	SER	4.0
5	A	135	PRO	4.0
5	C	48	VAL	4.0
5	C	192	SER	4.0
5	A	227	SER	4.0
5	A	29	PHE	4.0
5	A	191	SER	3.9
3	R	365	TYR	3.9
4	L	92	TYR	3.9
5	C	166	TRP	3.9
2	K	78	LEU	3.9
5	A	21	SER	3.9
2	K	47	LEU	3.9
5	C	136	LEU	3.8
4	B	207	LYS	3.8
1	E	106	TYR	3.8
5	C	206	TYR	3.8
5	H	171	LEU	3.8
5	A	24	ALA	3.8
2	K	37	GLN	3.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
5	A	119	THR	3.8
5	A	4	LEU	3.7
5	A	112	PHE	3.7
2	N	143	ARG	3.7
2	F	86	TYR	3.7
1	E	108	PHE	3.7
5	A	228	CYS	3.7
3	Y	369	TYR	3.7
5	C	153	LEU	3.7
3	X	382	VAL	3.6
2	K	21	ILE	3.6
1	J	148	CYS	3.6
3	R	410	ILE	3.6
4	B	205	VAL	3.6
3	Y	445	VAL	3.5
4	D	193	ALA	3.5
3	R	338	PHE	3.5
5	C	11	LEU	3.5
5	H	227	SER	3.5
3	X	423	TYR	3.5
4	B	135	LEU	3.5
5	A	22	CYS	3.5
3	R	401	VAL	3.5
4	B	2	ILE	3.5
5	A	45	PRO	3.5
5	C	35	HIS	3.4
5	C	139	SER	3.4
2	K	105	VAL	3.4
5	A	152	CYS	3.4
3	Y	515	PHE	3.4
4	L	33	LEU	3.4
5	A	96	CYS	3.4
3	R	371	SER	3.4
5	C	162	VAL	3.4
5	A	166	TRP	3.4
5	A	164	VAL	3.4
3	X	351	TYR	3.4
2	F	37	GLN	3.4
4	B	87	TYR	3.4
2	N	149	TRP	3.3
3	R	387	LEU	3.3
1	J	37	VAL	3.3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
5	C	18	LEU	3.3
4	D	134	CYS	3.3
5	A	115	TRP	3.3
4	B	134	CYS	3.3
2	N	145	ALA	3.2
4	D	146	VAL	3.2
2	N	35	TRP	3.2
5	A	226	LYS	3.2
2	F	48	ILE	3.2
4	D	19	VAL	3.2
3	Y	365	TYR	3.2
3	X	369	TYR	3.2
2	F	62	PHE	3.2
2	K	63	SER	3.2
3	R	342	PHE	3.2
5	C	104	SER	3.2
1	J	72	ARG	3.2
5	A	195	THR	3.1
5	C	222	ARG	3.1
5	A	105	ALA	3.1
3	Y	384	PRO	3.1
3	Y	371	SER	3.1
4	B	194	CYS	3.1
5	C	190	LEU	3.1
3	Y	490	PHE	3.1
3	Y	387	LEU	3.1
5	C	154	VAL	3.1
3	R	374	PHE	3.1
4	L	18	ARG	3.0
4	D	86	TYR	3.0
5	H	164	VAL	3.0
1	J	142	GLY	3.0
4	B	196	VAL	3.0
3	R	445	VAL	3.0
1	J	135	SER	3.0
4	B	118	PHE	3.0
3	R	499	PRO	3.0
3	X	373	SER	3.0
5	A	177	THR	3.0
3	Y	491	PRO	3.0
3	X	381	GLY	3.0
5	C	194	VAL	3.0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
2	F	99	PHE	3.0
3	Y	370	ASN	3.0
1	E	64	VAL	3.0
2	K	15	VAL	3.0
2	N	37	GLN	3.0
5	C	180	ALA	2.9
1	J	45	LEU	2.9
4	B	47	LEU	2.9
1	J	111	TRP	2.9
3	X	370	ASN	2.9
4	B	119	PRO	2.9
1	E	68	PHE	2.9
5	C	202	GLY	2.9
1	E	46	GLU	2.9
3	X	515	PHE	2.9
5	A	38	ARG	2.8
4	B	96	VAL	2.8
5	C	95	TYR	2.8
5	H	210	VAL	2.8
2	N	21	ILE	2.8
5	A	139	SER	2.8
1	J	129	VAL	2.8
1	J	158	VAL	2.8
3	Y	410	ILE	2.8
1	M	219	VAL	2.8
5	A	154	VAL	2.8
2	K	77	SER	2.7
5	A	121	VAL	2.7
2	N	47	LEU	2.7
3	R	377	PHE	2.7
5	H	115	TRP	2.7
4	D	75	ILE	2.7
5	A	48	VAL	2.7
5	C	36	TRP	2.7
4	L	32	TYR	2.7
3	R	515	PHE	2.7
5	A	27	PHE	2.7
1	E	48	VAL	2.7
5	C	217	THR	2.7
5	C	201	LEU	2.7
5	A	55	SER	2.7
4	D	194	CYS	2.7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	J	34	MET	2.6
2	F	196	GLU	2.6
5	A	123	VAL	2.6
2	K	50	ALA	2.6
3	Y	342	PHE	2.6
5	A	60	TYR	2.6
5	C	20	LEU	2.6
2	N	105	VAL	2.6
3	Y	338	PHE	2.6
2	F	19	VAL	2.6
5	H	223	VAL	2.6
2	N	182	LEU	2.6
3	X	425	LEU	2.6
5	C	94	TYR	2.6
5	C	210	VAL	2.6
2	F	87	TYR	2.6
4	B	89	LEU	2.6
1	J	108	PHE	2.5
4	B	62	PHE	2.5
4	D	62	PHE	2.5
4	B	146	VAL	2.5
4	L	1	ASP	2.5
3	Y	451	TYR	2.5
5	C	167	ASN	2.5
4	B	130	ALA	2.5
5	C	195	THR	2.5
4	D	155	GLN	2.5
3	R	432	CYS	2.5
3	X	365	TYR	2.5
4	D	192	TYR	2.5
3	R	440	ASN	2.5
4	D	87	TYR	2.5
5	A	148	ALA	2.5
5	A	108	LEU	2.5
4	L	36	TYR	2.5
2	F	47	LEU	2.5
4	D	13	ALA	2.5
5	C	41	PRO	2.4
2	N	104	LYS	2.4
5	C	58	ILE	2.4
3	X	387	LEU	2.4
5	C	81	LEU	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	L	48	ILE	2.4
4	D	196	VAL	2.4
5	A	203	THR	2.4
2	N	38	GLN	2.4
2	N	64	GLY	2.4
2	N	87	TYR	2.4
2	K	36	TYR	2.4
4	B	110	VAL	2.4
3	R	400	PHE	2.4
1	M	27	PHE	2.4
2	K	73	LEU	2.4
5	C	148	ALA	2.4
1	J	106	TYR	2.4
2	K	64	GLY	2.4
5	C	27	PHE	2.4
1	E	1	GLU	2.4
1	E	143	THR	2.4
3	X	338	PHE	2.4
4	B	142	ARG	2.4
5	A	201	LEU	2.4
1	M	127	PRO	2.4
5	H	166	TRP	2.4
3	Y	377	PHE	2.4
5	H	112	PHE	2.4
5	C	83	MET	2.3
5	C	170	ALA	2.3
3	Y	492	LEU	2.3
5	H	119	THR	2.3
5	A	219	VAL	2.3
5	H	104	SER	2.3
1	M	37	VAL	2.3
3	R	436	TRP	2.3
5	H	206	TYR	2.3
2	F	186	ASP	2.3
5	A	100	ARG	2.3
4	B	37	GLN	2.3
5	A	109	VAL	2.3
2	F	75	ILE	2.3
3	Y	422	ASN	2.3
3	R	433	VAL	2.3
3	R	495	TYR	2.3
2	N	94	THR	2.3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	D	178	THR	2.3
3	Y	510	VAL	2.3
4	D	104	VAL	2.3
5	C	182	LEU	2.3
2	K	106	GLU	2.3
3	Y	412	PRO	2.3
4	D	18	ARG	2.3
1	J	27	PHE	2.3
4	D	21	ILE	2.2
1	E	160	VAL	2.2
2	F	27	GLN	2.2
4	B	181	LEU	2.2
1	M	95	TYR	2.2
1	E	142	GLY	2.2
2	N	200	GLN	2.2
2	K	17	ASP	2.2
3	R	492	LEU	2.2
2	K	99	PHE	2.2
2	K	143	ARG	2.2
5	A	35	HIS	2.2
3	X	368	LEU	2.2
4	D	205	VAL	2.2
5	C	39	GLN	2.2
5	C	228	CYS	2.2
1	J	162	TRP	2.2
1	E	111	TRP	2.2
4	L	62	PHE	2.2
4	D	20	THR	2.2
5	C	51	ILE	2.2
5	C	224	GLU	2.2
2	K	104	LYS	2.2
5	C	8	GLY	2.2
5	C	177	THR	2.2
3	R	423	TYR	2.2
3	Y	446	GLY	2.2
5	A	110	ASN	2.2
3	Y	368	LEU	2.2
3	X	372	ALA	2.1
2	K	119	PHE	2.1
4	B	29	ILE	2.1
2	F	95	LEU	2.1
2	K	124	GLU	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
5	H	29	PHE	2.1
3	R	372	ALA	2.1
5	A	210	VAL	2.1
3	Y	402	ILE	2.1
5	A	49	SER	2.1
1	E	38	ARG	2.1
4	B	189	HIS	2.1
5	C	176	HIS	2.1
4	L	147	GLN	2.1
3	X	492	LEU	2.1
5	C	227	SER	2.1
3	X	401	VAL	2.1
2	N	62	PHE	2.1
1	E	59	TYR	2.1
5	H	70	ILE	2.1
3	Y	526	GLY	2.1
2	K	48	ILE	2.1
5	A	95	TYR	2.1
2	K	114	PRO	2.1
2	F	197	VAL	2.1
4	B	97	THR	2.1
4	D	46	LEU	2.1
5	C	101	HIS	2.1
3	R	356	LYS	2.1
5	A	83	MET	2.1
3	R	368	LEU	2.1
2	N	108	LYS	2.0
4	L	29	ILE	2.0
4	D	25	ALA	2.0
5	C	90	ASP	2.0
4	L	46	LEU	2.0
4	L	47	LEU	2.0
5	H	162	VAL	2.0
5	C	79	LEU	2.0
1	J	51	ILE	2.0
5	H	102	TYR	2.0
1	J	36	TRP	2.0
1	E	149	LEU	2.0
4	B	145	LYS	2.0
5	C	91	THR	2.0
1	J	160	VAL	2.0
1	E	60	TYR	2.0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	D	175	LEU	2.0
2	N	171	ASP	2.0
4	B	200	GLY	2.0
2	F	44	PRO	2.0
3	X	334	ASN	2.0
4	B	133	VAL	2.0
5	A	68	PHE	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 monosaccharides 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.