Full wwPDB X-ray Structure Validation Report ⓘ

Nov 22, 2023 – 10:17 PM JST

PDB ID	:	7X7D
Title	:	SARS-CoV-2 Delta RBD and Nb22
Authors	:	Wang, Y.; Ye, S.
Deposited on	:	2022-03-09
Resolution	:	2.92 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:

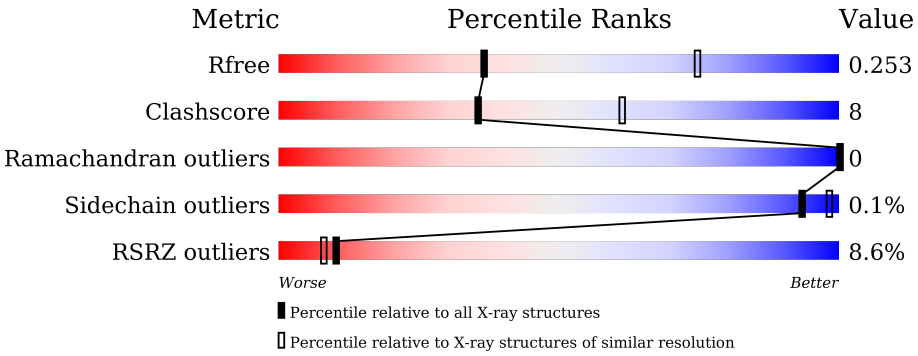
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 2.92 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	2307 (2.94-2.90)
Clashscore	141614	2531 (2.94-2.90)
Ramachandran outliers	138981	2462 (2.94-2.90)
Sidechain outliers	138945	2464 (2.94-2.90)
RSRZ outliers	127900	2248 (2.94-2.90)

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	194	14% 80% 20%
1	D	194	4% 82% 18%
1	E	194	21% 81% 18%
2	B	130	2% 79% 20%
2	C	130	3% 82% 18%
2	F	130	2% 79% 20%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 7539 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 Spike protein S1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	D	194	Total	C	N	O	S	0	0	0
			1541	987	260	286	8			
1	A	194	Total	C	N	O	S	0	0	0
			1541	987	260	286	8			
1	E	194	Total	C	N	O	S	0	0	0
			1541	987	260	286	8			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	452	ARG	LEU	variant	UNP P0DTC2
D	478	LYS	THR	variant	UNP P0DTC2
A	452	ARG	LEU	variant	UNP P0DTC2
A	478	LYS	THR	variant	UNP P0DTC2
E	452	ARG	LEU	variant	UNP P0DTC2
E	478	LYS	THR	variant	UNP P0DTC2

- Molecule 2 is a protein called Nb22.

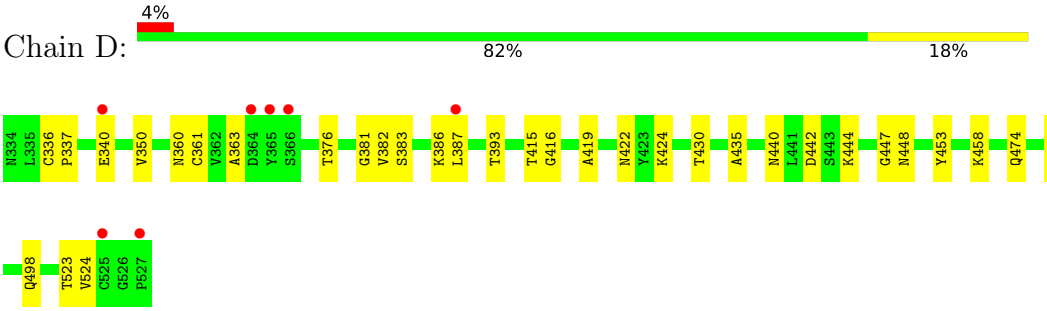
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	C	130	Total	C	N	O	S	0	0	0
			972	603	175	189	5			
2	B	130	Total	C	N	O	S	0	0	0
			972	603	175	189	5			
2	F	130	Total	C	N	O	S	0	0	0
			972	603	175	189	5			

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.

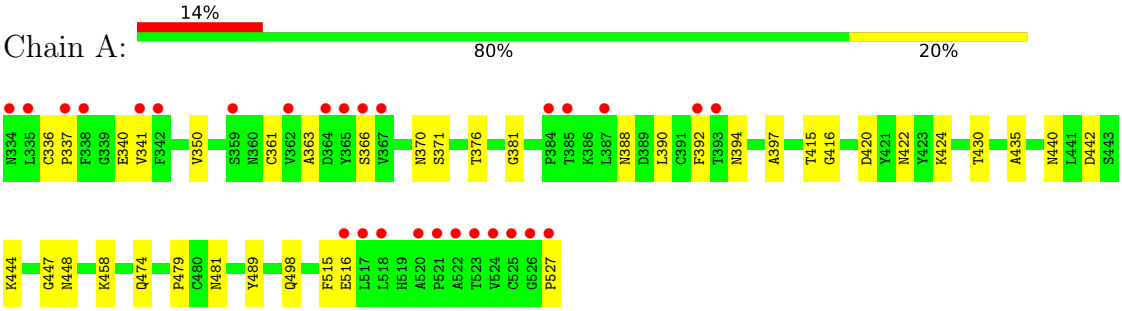
• Molecule 1: Spike protein S1

Chain D:



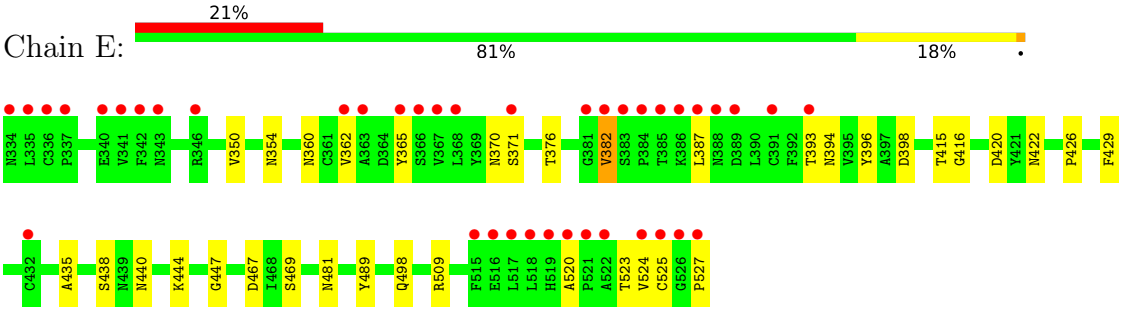
• Molecule 1: Spike protein S1

Chain A:



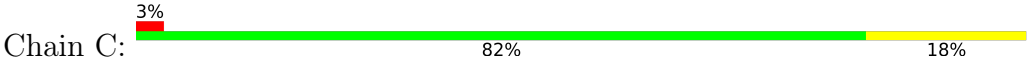
• Molecule 1: Spike protein S1

Chain E:

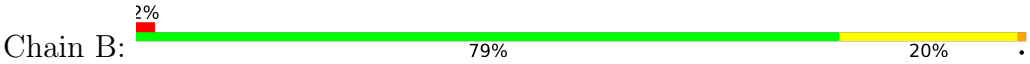


• Molecule 2: Nb22

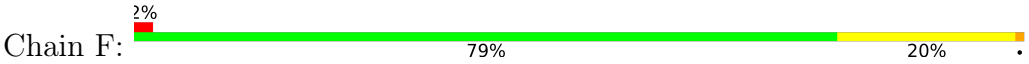
Chain C:

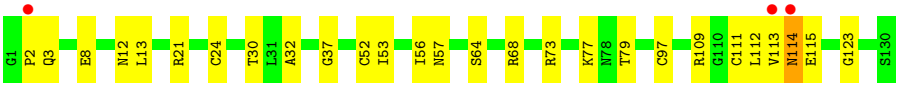


• Molecule 2: Nb22



• Molecule 2: Nb22





4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	151.82Å 108.56Å 115.31Å 90.00° 126.23° 90.00°	Depositor
Resolution (Å)	61.23 – 2.92 93.01 – 2.92	Depositor EDS
% Data completeness (in resolution range)	93.8 (61.23-2.92) 93.9 (93.01-2.92)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.01 (at 2.91Å)	Xtriage
Refinement program	PHENIX 1.20-4459	Depositor
R, R_{free}	0.205 , 0.256 0.206 , 0.253	Depositor DCC
R_{free} test set	1498 reflections (4.86%)	wwPDB-VP
Wilson B-factor (Å^2)	67.8	Xtriage
Anisotropy	0.615	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 68.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	7539	wwPDB-VP
Average B, all atoms (Å^2)	85.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.32% of the height of the origin peak. No significant pseudotranslation is detected.*

[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	0.47	0/1585	0.65	0/2155
1	D	0.49	0/1585	0.65	0/2155
1	E	0.45	0/1585	0.66	1/2155 (0.0%)
2	B	0.53	2/991 (0.2%)	0.73	0/1345
2	C	0.52	0/991	0.72	0/1345
2	F	0.54	1/991 (0.1%)	0.72	0/1345
All	All	0.49	3/7728 (0.0%)	0.68	1/10500 (0.0%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	97	CYS	CB-SG	-6.02	1.72	1.82
2	B	97	CYS	CB-SG	-5.23	1.73	1.81
2	B	113	VAL	CB-CG1	-5.08	1.42	1.52

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	382	VAL	C-N-CA	5.67	135.88	121.70

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	1541	0	1465	28	0
1	D	1541	0	1461	26	0
1	E	1541	0	1465	22	0
2	B	972	0	942	18	0
2	C	972	0	944	19	0
2	F	972	0	944	21	0
All	All	7539	0	7221	119	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 8.

All (119) 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)
2:C:112:LEU:HD12	2:C:115:GLU:HG2	1.63	0.81
1:D:336:CYS:HB2	1:D:363:ALA:HA	1.63	0.80
2:C:89:PRO:HA	2:C:128:VAL:HG23	1.66	0.77
2:F:112:LEU:HD12	2:F:115:GLU:HG2	1.71	0.72
1:E:393:THR:HG21	1:E:520:ALA:HB3	1.72	0.70
1:D:360:ASN:H	1:D:523:THR:HB	1.57	0.69
1:E:376:THR:HB	1:E:435:ALA:HB3	1.75	0.68
2:F:52:CYS:SG	2:F:112:LEU:HB2	2.34	0.68
1:D:444:LYS:NZ	2:C:3:GLN:HB3	2.09	0.67
1:E:362:VAL:HA	1:E:525:CYS:HB2	1.77	0.65
1:A:376:THR:HB	1:A:435:ALA:HB3	1.78	0.64
1:A:336:CYS:HB2	1:A:361:CYS:HB3	1.79	0.64
1:A:394:ASN:HB2	1:A:516:GLU:HB3	1.81	0.63
2:B:111:CYS:O	2:B:113:VAL:HG23	1.99	0.62
2:C:84:MET:HE2	2:C:87:LEU:HD21	1.81	0.62
1:D:381:GLY:HA3	1:D:430:THR:HG22	1.83	0.61
2:B:12:ASN:OD1	2:B:13:LEU:N	2.34	0.60
2:C:2:PRO:HG3	1:A:481:ASN:HB3	1.84	0.59
1:A:458:LYS:HZ1	1:A:474:GLN:H	1.49	0.59
1:D:444:LYS:HZ3	2:C:3:GLN:HB3	1.68	0.58
2:C:52:CYS:SG	2:C:112:LEU:HB2	2.45	0.56
2:F:114:ASN:O	2:F:114:ASN:ND2	2.32	0.56
2:C:40:ARG:HD3	2:C:50:VAL:HG11	1.87	0.55
1:D:337:PRO:HB2	1:D:340:GLU:CD	2.27	0.55
1:E:444:LYS:NZ	2:F:3:GLN:HG2	2.22	0.55
2:B:40:ARG:HD3	2:B:50:VAL:HG21	1.89	0.54
1:D:492:LEU:O	1:D:493:GLN:NE2	2.39	0.54
1:A:381:GLY:HA3	1:A:430:THR:HG22	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:365:TYR:H	1:E:527:PRO:HG3	1.73	0.54
1:E:467:ASP:OD1	1:E:469:SER:OG	2.24	0.54
1:D:447:GLY:HA2	1:D:498:GLN:HG2	1.89	0.54
1:E:360:ASN:H	1:E:523:THR:HB	1.73	0.53
1:E:440:ASN:N	1:E:440:ASN:OD1	2.40	0.53
2:F:109:ARG:NH2	2:F:113:VAL:HG12	2.23	0.53
2:C:57:ASN:OD1	2:C:73:ARG:HD2	2.09	0.53
2:F:111:CYS:C	2:F:113:VAL:H	2.11	0.53
1:D:382:VAL:HG11	1:D:387:LEU:HD21	1.92	0.52
2:C:77:LYS:O	2:C:79:THR:HG23	2.10	0.52
1:A:489:TYR:OH	2:B:56:ILE:HG23	2.10	0.52
1:D:481:ASN:O	2:F:2:PRO:HD3	2.10	0.51
1:A:440:ASN:N	1:A:440:ASN:OD1	2.44	0.51
2:B:57:ASN:OD1	2:B:73:ARG:HD2	2.11	0.51
2:F:12:ASN:OD1	2:F:13:LEU:N	2.42	0.51
1:A:444:LYS:NZ	2:B:3:GLN:HB3	2.27	0.50
1:D:350:VAL:HG22	1:D:422:ASN:HB3	1.94	0.50
2:C:88:GLU:O	2:C:128:VAL:HG21	2.11	0.50
1:D:458:LYS:NZ	1:D:474:GLN:H	2.09	0.50
1:A:447:GLY:HA2	1:A:498:GLN:HG2	1.94	0.50
1:E:350:VAL:HG22	1:E:422:ASN:HB3	1.94	0.50
2:C:14:VAL:CG2	2:C:128:VAL:HG12	2.43	0.49
2:B:7:VAL:HG11	2:F:21:ARG:NH2	2.28	0.49
2:F:64:SER:O	2:F:68:ARG:NH2	2.46	0.49
1:A:458:LYS:NZ	1:A:474:GLN:H	2.11	0.48
1:E:444:LYS:HZ2	2:F:3:GLN:HG2	1.79	0.48
1:D:383:SER:HB3	1:D:386:LYS:HG3	1.95	0.48
1:A:341:VAL:HG11	1:A:397:ALA:HB1	1.95	0.48
2:B:52:CYS:SG	2:B:112:LEU:HB2	2.53	0.48
1:E:394:ASN:HB3	1:E:396:TYR:CE2	2.48	0.48
1:A:350:VAL:HG22	1:A:422:ASN:HB3	1.96	0.47
2:B:46:GLU:OE1	2:B:46:GLU:N	2.46	0.47
1:A:415:THR:HG22	1:A:416:GLY:N	2.30	0.47
1:D:458:LYS:HZ1	1:D:474:GLN:H	1.60	0.47
2:C:30:THR:HG22	2:C:32:ALA:H	1.80	0.47
2:F:57:ASN:OD1	2:F:73:ARG:HD2	2.15	0.47
1:E:489:TYR:OH	2:F:56:ILE:HG23	2.14	0.47
2:F:8:GLU:CD	2:F:123:GLY:H	2.19	0.46
1:D:361:CYS:O	1:D:524:VAL:HA	2.15	0.46
1:A:370:ASN:OD1	1:A:371:SER:N	2.48	0.46
1:A:442:ASP:O	1:A:448:ASN:ND2	2.36	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:77:LYS:O	2:F:79:THR:HG23	2.15	0.46
1:E:370:ASN:OD1	1:E:371:SER:N	2.49	0.46
2:B:54:ASP:O	2:B:73:ARG:NH1	2.42	0.46
1:A:444:LYS:HZ3	2:B:3:GLN:HB3	1.81	0.46
1:E:447:GLY:HA2	1:E:498:GLN:HG2	1.97	0.45
1:D:419:ALA:O	1:D:424:LYS:HE2	2.17	0.44
1:D:444:LYS:HZ1	2:C:3:GLN:HB3	1.80	0.44
2:B:2:PRO:HD3	1:E:481:ASN:O	2.18	0.44
2:B:8:GLU:CD	2:B:123:GLY:H	2.21	0.44
2:C:118:ASN:HB2	2:C:119:TYR:CD2	2.53	0.44
1:A:415:THR:HG22	1:A:416:GLY:H	1.82	0.44
1:D:376:THR:HB	1:D:435:ALA:HB3	1.99	0.44
1:D:440:ASN:N	1:D:440:ASN:OD1	2.51	0.44
1:A:415:THR:HG23	1:A:420:ASP:OD2	2.18	0.44
2:F:24:CYS:O	2:F:79:THR:HA	2.17	0.43
1:A:336:CYS:HB2	1:A:361:CYS:CB	2.46	0.43
2:B:30:THR:HG22	2:B:32:ALA:H	1.83	0.43
1:E:523:THR:OG1	1:E:524:VAL:HG23	2.18	0.43
1:A:366:SER:OG	1:A:388:ASN:ND2	2.49	0.43
1:A:392:PHE:CG	1:A:515:PHE:HB3	2.54	0.43
2:F:30:THR:HG22	2:F:32:ALA:H	1.83	0.43
1:E:438:SER:HB3	1:E:509:ARG:HG3	2.02	0.42
2:F:53:ILE:HG23	2:F:73:ARG:HH12	1.84	0.42
1:D:419:ALA:O	1:D:424:LYS:HB2	2.20	0.42
1:A:363:ALA:O	1:A:527:PRO:HD3	2.19	0.42
1:D:336:CYS:HA	1:D:337:PRO:HD3	1.89	0.42
1:D:453:TYR:CZ	1:D:493:GLN:HB2	2.54	0.42
2:C:55:VAL:HA	2:C:73:ARG:HH12	1.85	0.42
1:A:390:LEU:HD12	1:A:390:LEU:HA	1.72	0.42
2:B:77:LYS:O	2:B:79:THR:HG23	2.20	0.42
1:E:382:VAL:HG11	1:E:387:LEU:HG	2.02	0.42
1:A:337:PRO:O	1:A:340:GLU:HG2	2.19	0.41
2:B:98:ALA:HA	2:B:119:TYR:O	2.20	0.41
1:A:420:ASP:HA	1:A:424:LYS:HE2	2.03	0.41
2:C:2:PRO:HG3	1:A:481:ASN:CB	2.48	0.41
2:B:53:ILE:HD13	2:B:73:ARG:HG3	2.02	0.41
1:E:415:THR:HG22	1:E:416:GLY:N	2.35	0.41
1:D:415:THR:HG22	1:D:416:GLY:N	2.35	0.41
1:D:442:ASP:O	1:D:448:ASN:ND2	2.54	0.41
1:A:474:GLN:OE1	1:A:479:PRO:HA	2.20	0.41
1:E:415:THR:HG23	1:E:420:ASP:OD2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:393:THR:O	1:D:523:THR:OG1	2.24	0.41
2:C:125:GLN:OE1	2:B:15:GLN:HG3	2.20	0.40
1:E:426:PRO:HD2	1:E:429:PHE:HB2	2.02	0.40
2:F:8:GLU:OE1	2:F:8:GLU:N	2.52	0.40
2:F:111:CYS:C	2:F:113:VAL:N	2.74	0.40
1:D:336:CYS:HB2	1:D:363:ALA:CA	2.43	0.40
2:C:112:LEU:HD12	2:C:115:GLU:CG	2.44	0.40
1:E:354:ASN:O	1:E:398:ASP:HA	2.21	0.40
2:F:37:GLY:HA2	2:F:52:CYS:HA	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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	192/194 (99%)	180 (94%)	12 (6%)	0	100	100
1	D	192/194 (99%)	180 (94%)	12 (6%)	0	100	100
1	E	192/194 (99%)	182 (95%)	10 (5%)	0	100	100
2	B	128/130 (98%)	123 (96%)	5 (4%)	0	100	100
2	C	128/130 (98%)	119 (93%)	9 (7%)	0	100	100
2	F	128/130 (98%)	121 (94%)	7 (6%)	0	100	100
All	All	960/972 (99%)	905 (94%)	55 (6%)	0	100	100

There are no Ramachandran outliers to report.

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	A	167/167 (100%)	167 (100%)	0	100 100
1	D	167/167 (100%)	167 (100%)	0	100 100
1	E	167/167 (100%)	167 (100%)	0	100 100
2	B	104/104 (100%)	104 (100%)	0	100 100
2	C	104/104 (100%)	104 (100%)	0	100 100
2	F	104/104 (100%)	103 (99%)	1 (1%)	76 91
All	All	813/813 (100%)	812 (100%)	1 (0%)	93 98

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	F	114	ASN

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

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, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	194/194 (100%)	1.03	28 (14%) 2 2	48, 78, 189, 249	0
1	D	194/194 (100%)	0.51	7 (3%) 42 39	48, 74, 134, 160	0
1	E	194/194 (100%)	1.39	40 (20%) 1 0	53, 86, 208, 243	0
2	B	130/130 (100%)	0.50	2 (1%) 73 73	47, 64, 96, 120	0
2	C	130/130 (100%)	0.44	4 (3%) 49 45	46, 63, 91, 125	0
2	F	130/130 (100%)	0.45	3 (2%) 60 59	48, 66, 98, 132	0
All	All	972/972 (100%)	0.77	84 (8%) 10 8	46, 72, 182, 249	0

All (84) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	365	TYR	15.6
1	A	522	ALA	12.6
1	E	519	HIS	11.5
1	E	520	ALA	10.2
1	E	521	PRO	8.9
1	E	518	LEU	8.7
1	E	522	ALA	8.7
1	E	367	VAL	8.1
1	A	525	CYS	7.9
1	E	516	GLU	7.3
2	C	113	VAL	7.3
1	E	525	CYS	6.9
1	E	388	ASN	6.9
1	A	517	LEU	6.8
1	E	387	LEU	6.8
1	E	517	LEU	6.7
1	A	526	GLY	6.5
1	E	526	GLY	6.4
1	D	387	LEU	6.4

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Mol	Chain	Res	Type	RSRZ
2	F	113	VAL	6.3
1	A	365	TYR	6.1
1	E	366	SER	6.1
1	A	335	LEU	6.1
2	B	114	ASN	6.0
2	F	114	ASN	6.0
1	A	521	PRO	5.8
1	E	341	VAL	5.5
2	B	113	VAL	5.5
1	E	393	THR	5.3
1	A	393	THR	5.1
1	A	527	PRO	5.1
1	A	518	LEU	4.8
1	A	392	PHE	4.8
2	C	114	ASN	4.5
1	E	527	PRO	4.3
1	A	387	LEU	4.2
1	A	341	VAL	4.1
1	A	338	PHE	4.1
1	A	516	GLU	4.1
1	E	337	PRO	3.9
1	A	359	SER	3.9
1	E	340	GLU	3.9
1	A	524	VAL	3.7
1	A	385	THR	3.7
1	A	337	PRO	3.7
1	E	383	SER	3.6
1	A	520	ALA	3.6
1	E	336	CYS	3.5
1	D	365	TYR	3.5
1	E	368	LEU	3.3
1	E	362	VAL	3.3
1	E	391	CYS	3.3
1	E	384	PRO	3.3
1	A	362	VAL	3.2
1	A	364	ASP	3.1
1	D	340	GLU	3.1
1	E	432	CYS	3.1
1	A	523	THR	3.1
1	E	524	VAL	3.0
1	E	335	LEU	3.0
1	D	525	CYS	3.0

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Mol	Chain	Res	Type	RSRZ
1	D	364	ASP	3.0
1	A	366	SER	3.0
1	E	385	THR	2.9
1	E	371	SER	2.8
1	A	367	VAL	2.8
1	E	363	ALA	2.8
1	E	381	GLY	2.7
1	E	334	ASN	2.7
1	E	386	LYS	2.7
1	D	366	SER	2.7
1	D	527	PRO	2.6
1	A	384	PRO	2.6
1	E	382	VAL	2.5
2	F	2	PRO	2.4
1	E	515	PHE	2.4
1	E	346	ARG	2.4
2	C	2	PRO	2.3
1	A	334	ASN	2.2
1	E	389	ASP	2.2
1	E	342	PHE	2.1
1	A	342	PHE	2.1
1	E	343	ASN	2.0
2	C	128	VAL	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.