Full wwPDB X-ray Structure Validation Report (i)

Feb 1, 2016 – 01:01 PM GMT

PDB ID	:	3SND
Title	:	Crystal structure of SARS coronavirus main protease complexed with Ac-ESTLQ-H (cocrystallization)
Authors	:	Zhu, L.; Hilgenfeld, R.
Deposited on	:	2011-06-29
Resolution	:	1.89 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
http://wwpdb.org/validation/2016/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

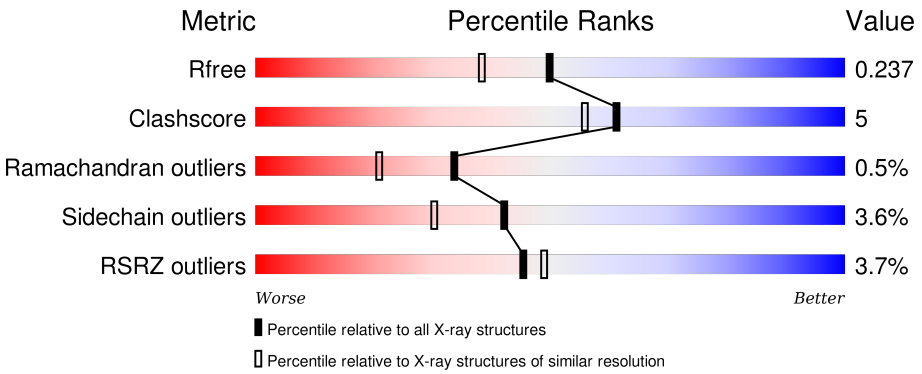
MolProbity	:	4.02b-467
Mogul	:	1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix)	:	1.9-1692
EDS	:	rb-20026688
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac	:	5.8.0135
CCP4	:	6.5.0
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	trunk26865

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 1.89 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}	91344	4755 (1.90-1.90)
Clashscore	102246	5398 (1.90-1.90)
Ramachandran outliers	100387	5338 (1.90-1.90)
Sidechain outliers	100360	5339 (1.90-1.90)
RSRZ outliers	91569	4766 (1.90-1.90)

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 on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. 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	306	4%, 90%, 9%
1	B	306	4%, 83%, 15%
2	C	6	17%, 17%, 67%
2	D	6	17%, 17%, 67%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	MRD	A	307	-	-	-	X

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 5410 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.

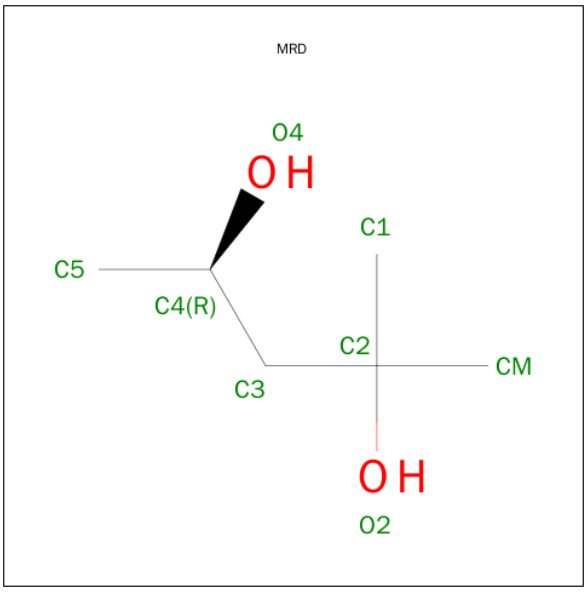
- Molecule 1 is a protein called 3C-like proteinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	306	2379	1504	408	445	22	0	1	0
1	B	306	2385	1508	408	446	23	0	3	0

- Molecule 2 is a protein called Peptide aldehyde inhibitor Ac-ESTLQ-H.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
2	C	2	17	11	3	3	0	0	0
2	D	2	17	11	3	3	0	0	0

- Molecule 3 is (4R)-2-METHYLPENTANE-2,4-DIOL (three-letter code: MRD) (formula: $C_6H_{14}O_2$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
3	A	1	8	6	2	0	0

- Molecule 4 is water.

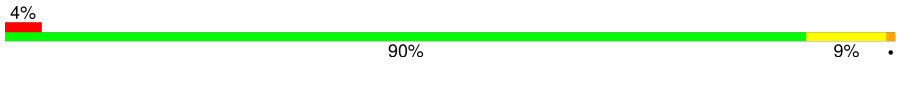
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
4	A	308	308	308	0	0
			Total	O		
4	B	295	295	295	0	0
			Total	O		
4	C	1	1	1	0	0

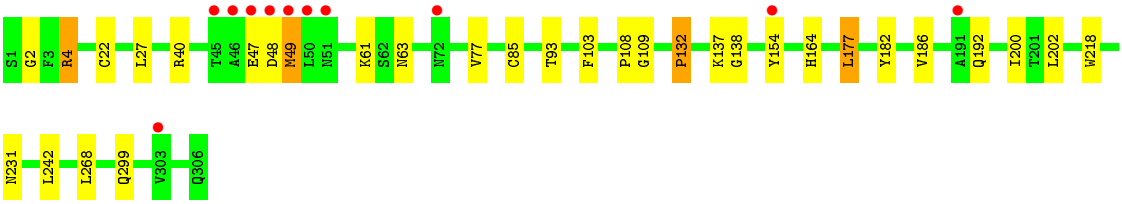
3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: 3C-like proteinase

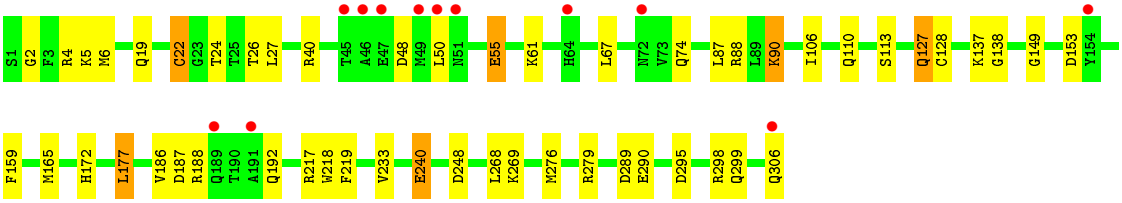
Chain A:





- Molecule 1: 3C-like proteinase

Chain B:



- Molecule 2: Peptide aldehyde inhibitor Ac-ESTLQ-H

Chain C:

- Molecule 2: Peptide aldehyde inhibitor Ac-ESTLQ-H

Chain D:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	52.37Å 96.79Å 68.07Å 90.00° 102.49° 90.00°	Depositor
Resolution (Å)	27.29 – 1.89 27.29 – 1.89	Depositor EDS
% Data completeness (in resolution range)	96.1 (27.29-1.89) 96.1 (27.29-1.89)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.33 (at 1.89Å)	Xtriage
Refinement program	REFMAC 5.0	Depositor
R, R_{free}	0.174 , 0.235 0.177 , 0.237	Depositor DCC
R_{free} test set	2587 reflections (5.35%)	DCC
Wilson B-factor (Å^2)	19.7	Xtriage
Anisotropy	0.032	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 45.5	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Outliers	0 of 50908 reflections	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	5410	wwPDB-VP
Average B, all atoms (Å^2)	22.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.38% 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, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

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

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	1.09	3/2435 (0.1%)	0.87	2/3306 (0.1%)
1	B	1.08	5/2447 (0.2%)	0.90	2/3323 (0.1%)
2	C	1.82	0/7	1.35	0/8
2	D	1.29	0/7	0.98	0/8
All	All	1.09	8/4896 (0.2%)	0.89	4/6645 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	C	0	1
2	D	0	1
All	All	0	2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	55	GLU	CB-CG	5.54	1.62	1.52
1	B	240	GLU	CD-OE2	-5.46	1.19	1.25
1	B	240	GLU	CB-CG	-5.42	1.41	1.52
1	A	177	LEU	CG-CD2	-5.13	1.32	1.51
1	A	182	TYR	CD2-CE2	5.12	1.47	1.39
1	B	128	CYS	CB-SG	-5.02	1.73	1.81
1	B	290	GLU	CG-CD	5.02	1.59	1.51
1	A	218	TRP	CB-CG	5.01	1.59	1.50

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	177	LEU	CA-CB-CG	-7.97	96.97	115.30
1	A	177	LEU	CB-CG-CD2	-7.39	98.44	111.00
1	B	248	ASP	CB-CG-OD1	5.04	122.83	118.30
1	A	202	LEU	CB-CG-CD1	5.03	119.55	111.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	C	4	LEU	Mainchain
2	D	4	LEU	Mainchain

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	A	2379	0	2334	21	0
1	B	2385	0	2344	32	1
2	C	17	0	19	0	0
2	D	17	0	19	3	0
3	A	8	0	14	5	0
4	A	308	0	0	5	1
4	B	295	0	0	8	0
4	C	1	0	0	0	0
All	All	5410	0	4730	52	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 (52) 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:B:4:ARG:H	1:B:299:GLN:HE22	1.13	0.95
1:B:165:MET:HE2	2:D:4:LEU:HD23	1.50	0.94
1:B:165:MET:CE	2:D:4:LEU:HD23	2.04	0.87
1:A:4:ARG:H	1:A:299:GLN:HE22	1.22	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:186:VAL:H	1:B:192:GLN:HE22	1.29	0.79
1:B:165:MET:HE1	1:B:187:ASP:HA	1.64	0.79
1:A:103:PHE:CE1	1:A:177:LEU:HD23	2.20	0.74
1:B:55:GLU:H	1:B:55:GLU:CD	1.93	0.71
1:B:19:GLN:HE21	1:B:26:THR:HG21	1.58	0.69
1:A:231:ASN:HD21	1:A:242:LEU:H	1.39	0.68
1:A:47:GLU:O	1:A:49:MET:N	2.26	0.68
1:A:108:PRO:O	3:A:307:MRD:H1C1	1.95	0.66
1:B:4:ARG:H	1:B:299:GLN:NE2	1.92	0.64
1:B:5:LYS:HD3	4:B:425:HOH:O	1.99	0.62
1:B:165:MET:CE	2:D:4:LEU:CD2	2.80	0.59
1:B:67:LEU:HD11	1:B:74:GLN:OE1	2.03	0.59
1:B:295:ASP:OD1	1:B:298[A]:ARG:NH2	2.35	0.59
1:B:22:CYS:SG	1:B:61:LYS:NZ	2.68	0.59
1:B:138:GLY:H	1:B:172:HIS:HD2	1.50	0.59
3:A:307:MRD:HMC1	4:A:534:HOH:O	2.02	0.58
3:A:307:MRD:HMC3	4:A:322:HOH:O	2.05	0.56
1:A:186:VAL:H	1:A:192:GLN:HE22	1.51	0.56
1:A:4:ARG:HD2	1:B:137:LYS:O	2.05	0.55
1:B:217:ARG:O	1:B:219:PHE:N	2.41	0.54
1:A:137:LYS:NZ	4:A:412:HOH:O	2.42	0.53
1:A:154:TYR:HB2	4:A:585:HOH:O	2.11	0.51
1:A:186:VAL:H	1:A:192:GLN:NE2	2.09	0.51
1:A:200:ILE:HG23	3:A:307:MRD:HMC2	1.93	0.50
1:A:109:GLY:HA2	1:A:200:ILE:HD13	1.96	0.47
1:B:233:VAL:HG11	1:B:269:LYS:HG3	1.97	0.47
1:A:109:GLY:HA3	3:A:307:MRD:H1C1	1.96	0.46
1:B:88:ARG:NH2	4:B:593:HOH:O	2.39	0.46
1:B:90:LYS:HE3	4:B:409:HOH:O	2.15	0.46
1:B:19:GLN:NE2	1:B:26:THR:HG21	2.28	0.45
1:A:40:ARG:HD3	1:A:85:CYS:HA	1.98	0.45
1:B:106:ILE:HG13	1:B:110:GLN:HB2	1.99	0.44
1:B:240:GLU:HG2	4:B:327:HOH:O	2.18	0.43
1:B:279:ARG:HD3	4:B:637:HOH:O	2.17	0.43
1:B:40:ARG:HA	1:B:87:LEU:HG	2.00	0.43
1:B:113:SER:O	1:B:149:GLY:HA2	2.18	0.43
1:B:159:PHE:HB3	1:B:177:LEU:HD13	2.01	0.42
1:B:298[A]:ARG:NH1	4:B:430:HOH:O	2.52	0.42
1:A:108:PRO:HB3	1:A:132:PRO:HA	2.02	0.42
1:A:2:GLY:HA3	1:B:138:GLY:O	2.19	0.42
1:A:164:HIS:HD2	4:A:337:HOH:O	2.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:22:CYS:SG	1:A:61:LYS:HE3	2.60	0.42
1:B:113:SER:OG	1:B:127:GLN:NE2	2.53	0.42
1:B:240:GLU:HG3	4:B:359:HOH:O	2.18	0.42
1:A:47:GLU:C	1:A:49:MET:N	2.73	0.41
1:A:63:ASN:HB3	1:A:77:VAL:O	2.19	0.41
1:B:5:LYS:NZ	4:B:534:HOH:O	2.53	0.41
1:A:138:GLY:O	1:B:2:GLY:HA3	2.21	0.41

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)
1:B:240:GLU:OE2	4:A:601:HOH:O[1_655]	1.99	0.21

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	305/306 (100%)	295 (97%)	9 (3%)	1 (0%)	46 35
1	B	307/306 (100%)	294 (96%)	11 (4%)	2 (1%)	26 14
All	All	612/612 (100%)	589 (96%)	20 (3%)	3 (0%)	34 21

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	48	ASP
1	B	218	TRP
1	B	48	ASP

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	264/263 (100%)	258 (98%)	6 (2%)	58 51
1	B	266/263 (101%)	253 (95%)	13 (5%)	31 18
2	C	1/4 (25%)	1 (100%)	0	100 100
2	D	1/4 (25%)	1 (100%)	0	100 100
All	All	532/534 (100%)	513 (96%)	19 (4%)	42 30

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	ARG
1	A	27	LEU
1	A	49	MET
1	A	93	THR
1	A	132	PRO
1	A	268	LEU
1	B	6	MET
1	B	22	CYS
1	B	24	THR
1	B	27	LEU
1	B	50	LEU
1	B	90	LYS
1	B	127	GLN
1	B	153	ASP
1	B	188	ARG
1	B	268	LEU
1	B	276	MET
1	B	289	ASP
1	B	306	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	41	HIS
1	A	134	HIS
1	A	164	HIS
1	A	192	GLN
1	A	231	ASN
1	A	299	GLN
1	B	19	GLN
1	B	84	ASN
1	B	127	GLN
1	B	164	HIS
1	B	172	HIS
1	B	192	GLN
1	B	299	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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	$\#\|Z\| > 2$
2	ECC	C	5	1,2	8,8,8	0.43	0	6,9,9	0.55	0
2	ECC	D	5	1,2	8,8,8	0.77	0	6,9,9	1.18	1 (16%)

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
2	ECC	C	5	1,2	-	0/7/7/7	0/0/0/0
2	ECC	D	5	1,2	-	0/7/7/7	0/0/0/0

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	5	ECC	CB-CG-CD	-2.51	104.59	112.53

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

1 ligand is 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	MRD	A	307	-	6,7,7	0.86	0	7,10,10	1.71	1 (14%)

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	MRD	A	307	-	-	0/5/5/5	0/0/0/0

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	307	MRD	O2-C2-C1	-2.62	98.49	108.09

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	307	MRD	5	0

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 (i)

6.1 Protein, DNA and RNA chains (i)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	306/306 (100%)	-0.24	11 (3%) 46 50	11, 19, 35, 59	0
1	B	306/306 (100%)	-0.17	12 (3%) 43 47	8, 19, 40, 68	1 (0%)
2	C	1/6 (16%)	1.11	0 100 100	41, 41, 41, 41	0
2	D	1/6 (16%)	1.52	0 100 100	43, 43, 43, 43	0
All	All	614/624 (98%)	-0.20	23 (3%) 45 49	8, 19, 40, 68	1 (0%)

All (23) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	46	ALA	7.8
1	B	47	GLU	6.4
1	B	154	TYR	5.0
1	A	154	TYR	4.7
1	A	191	ALA	4.0
1	B	45	THR	3.8
1	A	50	LEU	3.7
1	B	64	HIS	3.5
1	B	191	ALA	3.0
1	A	46	ALA	2.9
1	A	48	ASP	2.8
1	B	306	GLN	2.7
1	A	47	GLU	2.7
1	A	72	ASN	2.6
1	A	49	MET	2.5
1	B	189	GLN	2.5
1	B	49	MET	2.5
1	B	51	ASN	2.4
1	A	45	THR	2.4
1	A	303	VAL	2.3
1	B	72	ASN	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	51	ASN	2.1
1	B	50	LEU	2.1

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

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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å^2)	Q<0.9
2	ECC	C	5	9/9	0.92	0.14	-	30,36,38,40	0
2	ECC	D	5	9/9	0.89	0.16	-	25,31,34,36	0

6.3 Carbohydrates (i)

There are no carbohydrates in this entry.

6.4 Ligands (i)

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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å^2)	Q<0.9
3	MRD	A	307	8/8	0.86	0.16	6.60	14,22,32,32	0

6.5 Other polymers (i)

There are no such residues in this entry.