Full wwPDB X-ray Structure Validation Report (i)

Mar 11, 2025 – 06:12 PM EDT

PDB ID	:	8UTC
Title	:	HUMAN LEUKOCYTE ANTIGEN B*07:02 IN COMPLEX WITH SARS-COV2 EPITOPE N105-113 (Y111F mutant)
Authors	:	Oltean, N.; Nyovanie, S.; Hashem, A.; Patskovska, L.; Patskovsky, Y.; Krogsgaard, M.
Deposited on	:	2023-10-30
Resolution	:	2.40 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

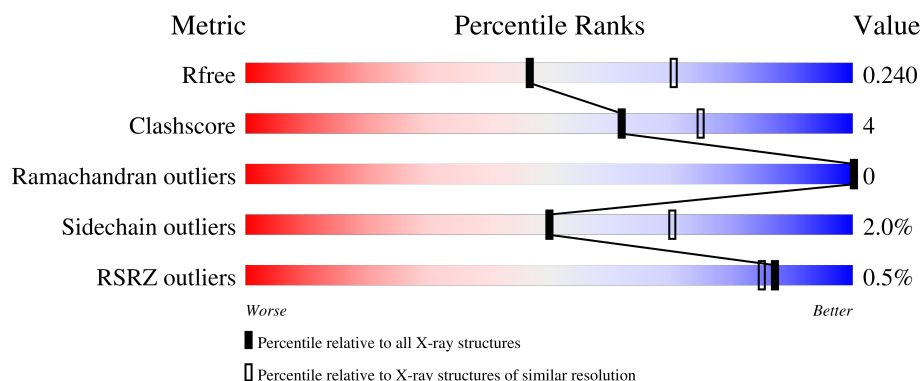|		
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41.4

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 2.40 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.
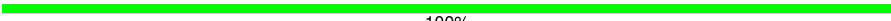
Metric	Percentile Ranks	Value
Rfree		0.240
Clashscore		4
Ramachandran outliers		0
Sidechain outliers		2.0%
RSRZ outliers		0.5%

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}	164625	4642 (2.40-2.40)
Clashscore	180529	5218 (2.40-2.40)
Ramachandran outliers	177936	5158 (2.40-2.40)
Sidechain outliers	177891	5159 (2.40-2.40)
RSRZ outliers	164620	4642 (2.40-2.40)

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	276	92% 7%
1	C	276	86% 14%
2	B	100	90% 10%
2	D	100	86% 14%
3	E	9	89% 11%

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Mol	Chain	Length	Quality of chain
3	F	9	100%

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 6652 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called HLA class I histocompatibility antigen, B alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	275	Total 2238	C 1386	N 412	O 434	S 6	0	1	0
1	C	275	Total 2244	C 1392	N 409	O 437	S 6	0	1	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	MET	-	initiating methionine	UNP P01889
C	0	MET	-	initiating methionine	UNP P01889

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	100	Total 837	C 533	N 141	O 159	S 4	0	0	0
2	D	100	Total 821	C 521	N 137	O 159	S 4	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	0	MET	-	initiating methionine	UNP P61769
D	0	MET	-	initiating methionine	UNP P61769

- Molecule 3 is a protein called Nucleoprotein.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	E	9	Total 93	C 67	N 13	O 13	0	0	0
3	F	9	Total 93	C 67	N 13	O 13	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	7	PHE	TYR	engineered mutation	UNP P0DTC9
F	7	PHE	TYR	engineered mutation	UNP P0DTC9

- Molecule 4 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: $C_6H_{14}O_4$).
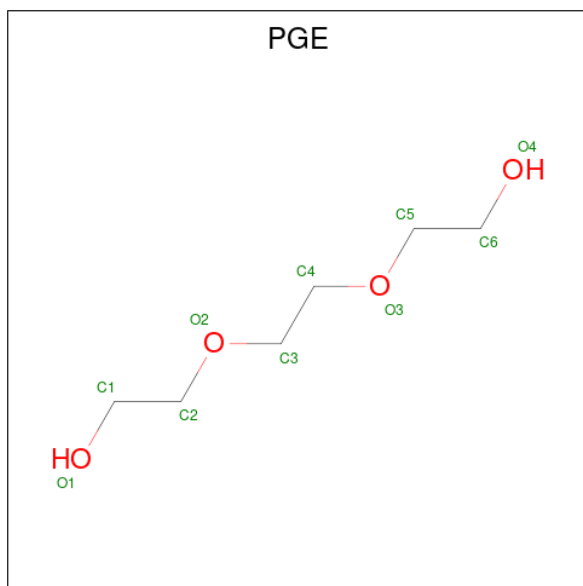
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 10	C 6	O 4	0	0

- Molecule 5 is TETRAETHYLENE GLYCOL (three-letter code: PG4) (formula: $C_8H_{18}O_5$).
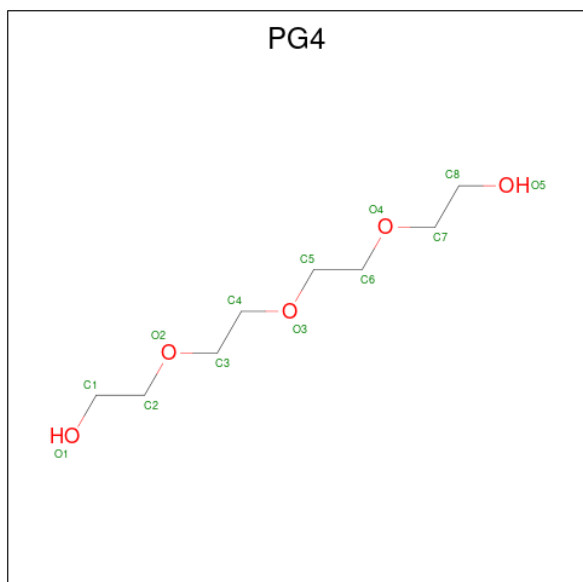
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 13	C 8	O 5	0	0
5	C	1	Total 13	C 8	O 5	0	0

- Molecule 6 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	1	Total 1	Cl 1	0	0
6	B	2	Total 2	Cl 2	0	0

- Molecule 7 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	111	Total 111	O 111	0	0
7	B	82	Total 82	O 82	0	0
7	C	62	Total 62	O 62	0	0
7	D	25	Total 25	O 25	0	0
7	E	3	Total 3	O 3	0	0
7	F	4	Total 4	O 4	0	0

3　Residue-property plots ⓘ

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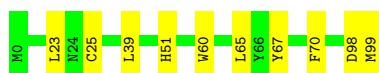
• Molecule 1: HLA class I histocompatibility antigen, B alpha chain
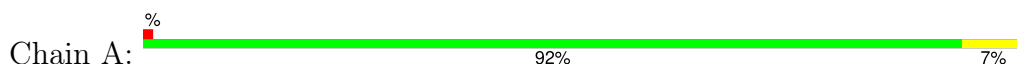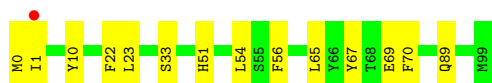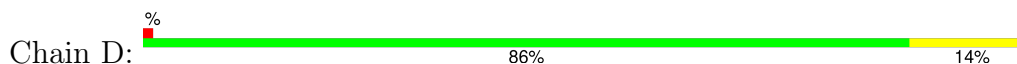
Chain A:

• Molecule 1: HLA class I histocompatibility antigen, B alpha chain

Chain C:

• Molecule 2: Beta-2-microglobulin
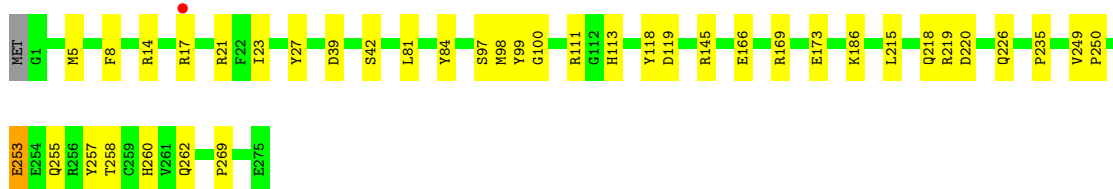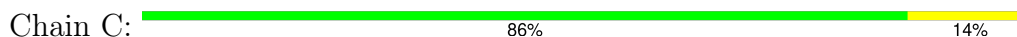
Chain B:

• Molecule 2: Beta-2-microglobulin

Chain D:

• Molecule 3: Nucleoprotein

Chain E:

• Molecule 3: Nucleoprotein

Chain F:　　100%

There are no outlier residues recorded for this chain.

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	70.07Å 84.74Å 154.19Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	44.23 – 2.40 44.23 – 2.40	Depositor EDS
% Data completeness (in resolution range)	100.0 (44.23-2.40) 100.0 (44.23-2.40)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.00 (at 2.39Å)	Xtriage
Refinement program	REFMAC 5.8.0257	Depositor
R, R_{free}	0.183 , 0.240 0.193 , 0.240	Depositor DCC
R_{free} test set	1114 reflections (3.04%)	wwPDB-VP
Wilson B-factor (Å^2)	40.5	Xtriage
Anisotropy	0.430	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 44.5	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	0.95	EDS
Total number of atoms	6652	wwPDB-VP
Average B, all atoms (Å^2)	52.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 15.31% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: PGE, PG4, CL

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	0.78	2/2302 (0.1%)	0.96	1/3126 (0.0%)
1	C	0.75	0/2306	0.92	2/3135 (0.1%)
2	B	0.76	0/860	0.92	0/1162
2	D	0.74	0/844	0.92	0/1146
3	E	0.63	0/99	1.00	1/133 (0.8%)
3	F	0.68	0/99	1.06	0/133
All	All	0.76	2/6510 (0.0%)	0.94	4/8835 (0.0%)

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
1	A	0	1
1	C	0	1
All	All	0	2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	82[A]	ARG	C-O	5.26	1.33	1.23
1	A	82[B]	ARG	C-O	5.26	1.33	1.23

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	84	TYR	CB-CG-CD1	5.60	124.36	121.00
3	E	3	ARG	NE-CZ-NH2	-5.14	117.73	120.30
1	C	145	ARG	NE-CZ-NH2	-5.11	117.75	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	84	TYR	CB-CG-CD1	5.08	124.05	121.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	27	TYR	Peptide
1	C	27	TYR	Peptide

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	2238	0	2066	10	1
1	C	2244	0	2064	28	1
2	B	837	0	803	5	0
2	D	821	0	759	9	0
3	E	93	0	84	0	0
3	F	93	0	84	0	0
4	A	10	0	14	1	0
5	A	13	0	18	0	0
5	C	13	0	18	0	0
6	A	1	0	0	0	0
6	B	2	0	0	0	0
7	A	111	0	0	5	0
7	B	82	0	0	0	0
7	C	62	0	0	0	0
7	D	25	0	0	1	0
7	E	3	0	0	0	0
7	F	4	0	0	0	0
All	All	6652	0	5910	49	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 4.

All (49) 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:A:268:LYS:NZ	7:A:401:HOH:O	2.07	0.87
1:C:249:VAL:HG23	1:C:250:PRO:HD2	1.66	0.76
1:C:249:VAL:CG2	1:C:257:TYR:CE1	2.68	0.76
1:C:249:VAL:HG23	1:C:257:TYR:CE1	2.20	0.76
1:C:249:VAL:CG2	1:C:250:PRO:HD2	2.27	0.64
2:D:0:MET:O	2:D:0:MET:HG3	1.99	0.60
1:C:249:VAL:HG21	1:C:257:TYR:CE1	2.37	0.60
1:C:111:ARG:HD3	1:C:113:HIS:NE2	2.19	0.58
1:C:111:ARG:HD3	1:C:113:HIS:CE1	2.43	0.54
7:A:434:HOH:O	1:C:255:GLN:HG3	2.06	0.54
1:A:109:LEU:HD22	1:A:161:GLU:HA	1.91	0.52
2:B:25:CYS:HB2	2:B:39:LEU:HD21	1.91	0.51
1:A:166:GLU:OE1	1:A:169:ARG:NH2	2.44	0.51
4:A:301:PGE:H6	7:A:481:HOH:O	2.11	0.51
2:D:51:HIS:HA	2:D:65:LEU:O	2.13	0.49
1:C:14:ARG:HB3	1:C:17:ARG:HB2	1.93	0.49
1:A:82[A]:ARG:HD3	7:A:444:HOH:O	2.12	0.49
1:C:21:ARG:NE	1:C:23:ILE:HD11	2.28	0.48
1:C:173:GLU:HA	1:C:173:GLU:OE1	2.13	0.48
1:C:14:ARG:CZ	1:C:21:ARG:HB2	2.44	0.48
2:B:51:HIS:HA	2:B:65:LEU:O	2.14	0.48
2:D:33:SER:HB2	2:D:54:LEU:HD21	1.96	0.48
1:C:235:PRO:O	2:D:10:TYR:OH	2.31	0.47
1:A:117:ALA:HB2	2:B:60:TRP:CE2	2.50	0.47
1:C:249:VAL:HG23	1:C:257:TYR:HE1	1.74	0.46
2:D:23:LEU:O	2:D:67:TYR:HA	2.15	0.46
1:C:253:GLU:HA	1:C:253:GLU:OE1	2.17	0.45
1:C:250:PRO:HG2	1:C:253:GLU:CB	2.47	0.44
1:C:5:MET:O	1:C:100:GLY:HA3	2.17	0.44
2:D:89:GLN:NE2	7:D:102:HOH:O	2.50	0.44
2:D:22:PHE:CE1	2:D:69:GLU:HG2	2.52	0.44
1:A:191:HIS:HB2	1:A:274:TRP:CH2	2.53	0.44
1:A:99:TYR:HA	1:A:113:HIS:O	2.18	0.44
1:A:5:MET:O	1:A:100:GLY:HA3	2.18	0.44
1:C:219:ARG:HG3	1:C:257:TYR:CZ	2.53	0.44
1:C:262:GLN:HG2	1:C:269:PRO:HB3	2.01	0.43
1:C:99:TYR:HA	1:C:113:HIS:O	2.17	0.43
1:A:123:TYR:CZ	1:A:140:ALA:HA	2.54	0.43
2:B:23:LEU:O	2:B:67:TYR:HA	2.19	0.42
2:B:98:ASP:C	2:B:99:MET:HG2	2.40	0.42
1:C:8:PHE:HD2	2:D:56:PHE:CE1	2.37	0.42
1:C:218:GLN:O	1:C:257:TYR:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:82[A]:ARG:NH1	7:A:413:HOH:O	2.52	0.42
1:C:81:LEU:HD13	1:C:118:TYR:CD1	2.55	0.42
1:C:21:ARG:NH2	1:C:23:ILE:HD11	2.36	0.41
1:C:258:THR:OG1	1:C:260:HIS:NE2	2.49	0.41
1:C:119:ASP:HB3	2:D:0:MET:HA	2.03	0.41
1:C:219:ARG:NH1	1:C:220:ASP:OD2	2.55	0.40
1:C:166:GLU:OE1	1:C:169:ARG:NH2	2.55	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)
1:A:256:ARG:NH2	1:C:39:ASP:O[1_565]	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	A	274/276 (99%)	265 (97%)	9 (3%)	0	100	100
1	C	274/276 (99%)	267 (97%)	7 (3%)	0	100	100
2	B	98/100 (98%)	96 (98%)	2 (2%)	0	100	100
2	D	98/100 (98%)	95 (97%)	3 (3%)	0	100	100
3	E	7/9 (78%)	7 (100%)	0	0	100	100
3	F	7/9 (78%)	7 (100%)	0	0	100	100
All	All	758/770 (98%)	737 (97%)	21 (3%)	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	228/234 (97%)	225 (99%)	3 (1%)	65	81
1	C	229/234 (98%)	222 (97%)	7 (3%)	35	56
2	B	95/95 (100%)	94 (99%)	1 (1%)	70	84
2	D	91/95 (96%)	89 (98%)	2 (2%)	47	67
3	E	9/9 (100%)	9 (100%)	0	100	100
3	F	9/9 (100%)	9 (100%)	0	100	100
All	All	661/676 (98%)	648 (98%)	13 (2%)	50	70

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	97	SER
1	A	98	MET
1	A	223	ASP
2	B	70	PHE
1	C	42	SER
1	C	97	SER
1	C	98	MET
1	C	186	LYS
1	C	215	LEU
1	C	226	GLN
1	C	253	GLU
2	D	1	ILE
2	D	70	PHE

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

Mol	Chain	Res	Type
1	A	86	ASN
2	B	13	HIS
1	C	86	ASN
1	C	226	GLN

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Mol	Chain	Res	Type
2	D	2	GLN

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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 6 ligands modelled in this entry, 3 are monoatomic - leaving 3 for Mogul analysis.

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	$\#|Z| > 2$
5	PG4	C	301	-	12,12,12	0.33	0	11,11,11	0.16	0
5	PG4	A	302	-	12,12,12	0.38	0	11,11,11	0.51	0
4	PGE	A	301	-	9,9,9	0.16	0	8,8,8	0.20	0

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
5	PG4	C	301	-	-	4/10/10/10	-
5	PG4	A	302	-	-	4/10/10/10	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	PGE	A	301	-	-	1/7/7/7	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	302	PG4	O1-C1-C2-O2
5	A	302	PG4	O2-C3-C4-O3
5	C	301	PG4	O2-C3-C4-O3
5	C	301	PG4	C1-C2-O2-C3
5	A	302	PG4	C1-C2-O2-C3
5	C	301	PG4	C5-C6-O4-C7
5	A	302	PG4	C3-C4-O3-C5
4	A	301	PGE	O3-C5-C6-O4
5	C	301	PG4	C3-C4-O3-C5

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	301	PGE	1	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.

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

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	A	275/276 (99%)	-0.31	2 (0%)	84	81	27, 44, 88, 106	1 (0%)
1	C	275/276 (99%)	-0.07	1 (0%)	89	87	16, 54, 93, 119	1 (0%)
2	B	100/100 (100%)	-0.66	0	100	100	28, 36, 64, 75	0
2	D	100/100 (100%)	-0.08	1 (1%)	79	76	33, 55, 86, 103	0
3	E	9/9 (100%)	-0.62	0	100	100	33, 39, 43, 47	0
3	F	9/9 (100%)	-0.49	0	100	100	37, 42, 47, 55	0
All	All	768/770 (99%)	-0.25	4 (0%)	87	85	16, 48, 88, 119	2 (0%)

All (4) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	17	ARG	2.5
1	A	274	TRP	2.4
1	A	194	ILE	2.2
2	D	1	ILE	2.1

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 ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum,

median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	PGE	A	301	10/10	0.80	0.15	77,87,101,111	0
5	PG4	C	301	13/13	0.85	0.13	89,103,126,126	0
6	CL	B	102	1/1	0.91	0.17	65,65,65,65	0
5	PG4	A	302	13/13	0.93	0.09	37,48,60,62	0
6	CL	A	303	1/1	0.96	0.10	69,69,69,69	0
6	CL	B	101	1/1	0.97	0.05	59,59,59,59	0

6.5 Other polymers ⓘ

There are no such residues in this entry.