



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2018 – 07:56 pm GMT

PDB ID : 3NCE
Title : A mutant human Prolactin receptor antagonist H27A in complex with the mutant extracellular domain H188A of the human prolactin receptor
Authors : Kulkarni, M.V.; Tettamanzi, M.C.; Murphy, J.W.; Keeler, C.; Myszka, D.G.; Chayen, N.E.; Lolis, E.J.; Hodsdon, M.E.
Deposited on : 2010-06-04
Resolution : 2.00 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.7.3 (157068), CSD as539be (2018)
Xtriage (Phenix) : 1.13
EDS : trunk30967
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)
Refmac : 5.8.0158
CCP4 : 7.0 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk30967

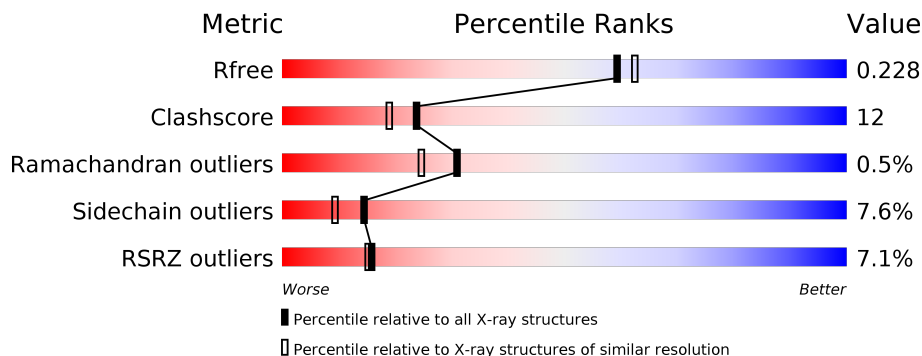
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 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}	111664	7193 (2.00-2.00)
Clashscore	122126	8267 (2.00-2.00)
Ramachandran outliers	120053	8166 (2.00-2.00)
Sidechain outliers	120020	8165 (2.00-2.00)
RSRZ outliers	108989	7011 (2.00-2.00)

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 $\leq 5\%$. 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	A	186	 10% 74% 22% 5%
2	B	210	 5% 73% 21% . . .

2 Entry composition i

There are 6 unique types of molecules in this entry. The entry contains 3727 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 Prolactin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	186	1561	983	270	298	10	0	10	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	14	MET	-	INITIATING METHIONINE	UNP P01236
A	27	ALA	HIS	ENGINEERED MUTATION	UNP P01236
A	129	ARG	GLY	ENGINEERED MUTATION	UNP P01236

- Molecule 2 is a protein called Prolactin receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	206	1700	1107	276	306	11	0	4	0

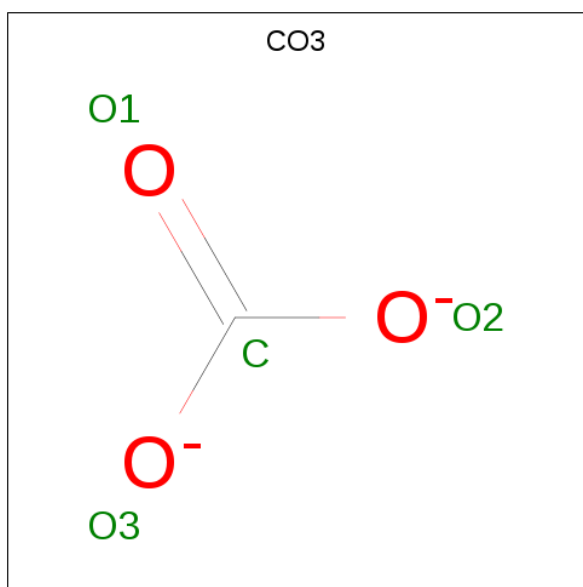
There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1	MET	-	INITIATING METHIONINE	UNP P16471
B	188	ALA	HIS	ENGINEERED MUTATION	UNP P16471

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	4	Total	Na	0	0
			4	4		
3	A	1	Total	Na	0	0
			1	1		

- Molecule 4 is CARBONATE ION (three-letter code: CO3) (formula: CO₃).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 4 1 3	0	0
4	A	1	Total C O 4 1 3	0	0

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total Cl 1 1	0	0

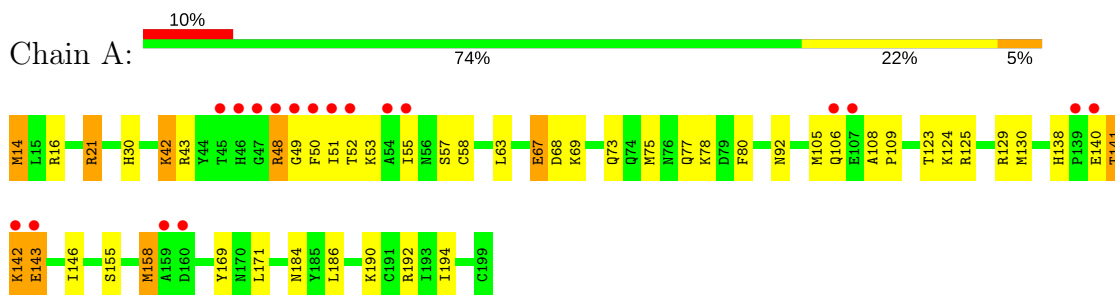
- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	209	Total O 209 209	0	0
6	B	243	Total O 243 243	0	0

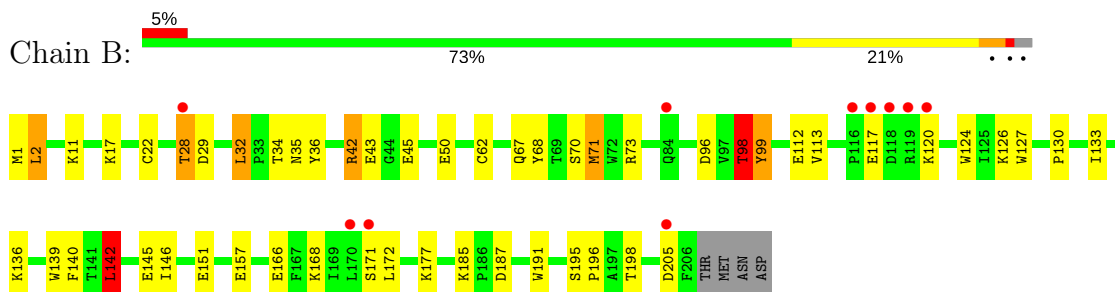
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of 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: Prolactin



- Molecule 2: Prolactin receptor



4 Data and refinement statistics i

Property	Value	Source
Space group	P 65	Depositor
Cell constants a, b, c, α , β , γ	123.28Å 123.28Å 72.49Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	31.95 – 2.00 31.24 – 2.00	Depositor EDS
% Data completeness (in resolution range)	99.9 (31.95-2.00) 99.9 (31.24-2.00)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	7.68 (at 2.00Å)	Xtrriage
Refinement program	REFMAC 5.5.0109	Depositor
R, R_{free}	0.177 , 0.227 0.177 , 0.228	Depositor DCC
R_{free} test set	2160 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å ²)	27.9	Xtrriage
Anisotropy	0.623	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.38 , 60.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	0.029 for h,-h-k,-l	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	3727	wwPDB-VP
Average B, all atoms (Å ²)	36.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.35% 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](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NA, CO3, 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	1.20	2/1621 (0.1%)	1.32	10/2186 (0.5%)
2	B	1.33	7/1776 (0.4%)	1.10	9/2424 (0.4%)
All	All	1.27	9/3397 (0.3%)	1.21	19/4610 (0.4%)

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

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	98	THR	CB-OG1	8.20	1.59	1.43
2	B	98	THR	CA-CB	6.59	1.70	1.53
2	B	145	GLU	CB-CG	-6.22	1.40	1.52
2	B	50	GLU	CD-OE2	5.97	1.32	1.25
2	B	22	CYS	CB-SG	5.82	1.92	1.82
2	B	68	TYR	CD2-CE2	5.47	1.47	1.39
1	A	169	TYR	CE2-CZ	-5.41	1.31	1.38
1	A	21	ARG	CG-CD	5.23	1.65	1.51
2	B	151	GLU	CB-CG	5.02	1.61	1.52

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	16	ARG	NE-CZ-NH2	-23.68	108.46	120.30
1	A	16	ARG	NE-CZ-NH1	22.36	131.48	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	192	ARG	NE-CZ-NH2	-14.83	112.88	120.30
1	A	192	ARG	NE-CZ-NH1	8.07	124.33	120.30
1	A	16	ARG	CD-NE-CZ	7.63	134.29	123.60
2	B	98	THR	CA-CB-CG2	-7.45	101.97	112.40
2	B	187	ASP	CB-CG-OD1	7.41	124.97	118.30
2	B	142	LEU	CB-CG-CD1	6.86	122.66	111.00
1	A	192	ARG	CB-CG-CD	-6.57	94.52	111.60
1	A	57	SER	N-CA-CB	-6.27	101.09	110.50
2	B	96	ASP	CB-CG-OD2	5.98	123.68	118.30
2	B	32	LEU	CA-CB-CG	5.88	128.82	115.30
2	B	2	LEU	CA-CB-CG	5.58	128.14	115.30
2	B	99	TYR	CA-CB-CG	-5.50	102.94	113.40
2	B	71	MET	CG-SD-CE	-5.45	91.48	100.20
1	A	21	ARG	NE-CZ-NH2	5.42	123.01	120.30
2	B	62	CYS	CA-CB-SG	-5.20	104.64	114.00
1	A	124	LYS	CD-CE-NZ	-5.19	99.77	111.70
1	A	68	ASP	CB-CG-OD2	5.08	122.87	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	141	THR	Peptide

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	1561	0	1564	31	0
2	B	1700	0	1642	50	0
3	A	1	0	0	0	0
3	B	4	0	0	0	0
4	A	8	0	0	0	0
5	B	1	0	0	0	0
6	A	209	0	0	9	1
6	B	243	0	0	15	1
All	All	3727	0	3206	78	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 12.

All (78) 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:155[A]:SER:OG	6:A:317:HOH:O	1.71	1.08
2:B:42[B]:ARG:HG2	2:B:42[B]:ARG:NH1	1.50	1.08
2:B:42[B]:ARG:HG2	2:B:42[B]:ARG:HH11	0.87	1.04
2:B:42[B]:ARG:CG	2:B:42[B]:ARG:HH11	1.70	1.02
1:A:105:MET:HE2	6:A:232:HOH:O	1.65	0.93
1:A:51:ILE:HD11	6:B:227:HOH:O	1.72	0.88
2:B:71:MET:HE3	2:B:98:THR:HG23	1.58	0.86
1:A:105:MET:CE	6:A:232:HOH:O	2.22	0.84
2:B:71:MET:CE	2:B:98:THR:HG23	2.11	0.80
2:B:45:GLU:HG3	2:B:73:ARG:HH11	1.48	0.78
2:B:171:SER:O	2:B:172:LEU:HD23	1.87	0.73
2:B:140:PHE:HE1	2:B:142:LEU:HD13	1.57	0.69
1:A:130:MET:SD	1:A:186[A]:LEU:HD21	2.33	0.68
2:B:130:PRO:HG2	2:B:133:ILE:HD12	1.76	0.68
1:A:92[A]:ASN:OD1	6:A:257:HOH:O	2.12	0.68
2:B:124:TRP:CZ3	2:B:168:LYS:HE3	2.29	0.68
1:A:14:MET:N	6:A:436:HOH:O	2.26	0.67
2:B:157:GLU:HG3	6:B:262:HOH:O	1.95	0.66
1:A:63:LEU:O	6:A:273:HOH:O	2.11	0.66
2:B:36:TYR:O	6:B:425:HOH:O	2.14	0.65
2:B:11:LYS:NZ	6:B:444:HOH:O	2.32	0.63
2:B:45:GLU:HG3	2:B:73:ARG:NH1	2.13	0.63
1:A:48:ARG:NH1	1:A:49:GLY:H	1.98	0.62
1:A:14:MET:HB3	6:A:243:HOH:O	2.00	0.62
1:A:67:GLU:HG2	2:B:70:SER:HB2	1.83	0.61
2:B:124:TRP:HZ3	2:B:168:LYS:HG3	1.67	0.58
2:B:42[B]:ARG:CG	2:B:42[B]:ARG:NH1	2.35	0.58
2:B:124:TRP:CZ3	2:B:168:LYS:HG3	2.37	0.58
2:B:117:GLU:H	2:B:117:GLU:CD	2.07	0.58
2:B:45:GLU:CG	2:B:73:ARG:NH1	2.67	0.57
1:A:58:CYS:HB3	6:A:213:HOH:O	2.05	0.57
2:B:45:GLU:CD	2:B:73:ARG:HH12	2.09	0.56
2:B:198:THR:HG22	6:B:408:HOH:O	2.07	0.55
1:A:69:LYS:O	1:A:73:GLN:HG3	2.06	0.55
1:A:138:HIS:O	1:A:141:THR:HG23	2.06	0.55
2:B:140:PHE:CE1	2:B:142:LEU:HD13	2.40	0.54
2:B:29:ASP:N	6:B:432:HOH:O	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:45:GLU:CG	2:B:73:ARG:HH11	2.20	0.53
2:B:34:THR:O	2:B:35[B]:ASN:ND2	2.42	0.53
1:A:49:GLY:O	1:A:53:LYS:HD2	2.09	0.52
1:A:48:ARG:HB2	1:A:50:PHE:CE2	2.45	0.52
2:B:126:LYS:NZ	6:B:436:HOH:O	2.43	0.51
2:B:177:LYS:NZ	6:B:311:HOH:O	2.45	0.50
2:B:45:GLU:CD	2:B:73:ARG:NH1	2.65	0.49
2:B:67[B]:GLN:NE2	6:B:248:HOH:O	2.45	0.49
1:A:190:LYS:HG3	1:A:194:ILE:HD12	1.94	0.49
1:A:48:ARG:HB2	1:A:50:PHE:HE2	1.78	0.48
1:A:21:ARG:O	1:A:21:ARG:HD2	2.15	0.47
1:A:143:GLU:HG2	1:A:143:GLU:O	2.15	0.47
2:B:177:LYS:HE2	6:B:311:HOH:O	2.14	0.47
2:B:124:TRP:CH2	2:B:166:GLU:CD	2.89	0.46
2:B:195:SER:HB2	2:B:196:PRO:HD2	1.96	0.46
2:B:42[A]:ARG:HG3	2:B:42[A]:ARG:NH1	2.30	0.45
2:B:17:LYS:HD2	2:B:71:MET:HE2	1.99	0.45
1:A:69:LYS:HB3	2:B:139:TRP:CD2	2.51	0.45
1:A:78:LYS:NZ	1:A:141:THR:HG22	2.31	0.45
2:B:17:LYS:HD2	2:B:71:MET:CE	2.47	0.44
2:B:124:TRP:CE3	2:B:168:LYS:HG2	2.52	0.44
2:B:124:TRP:CZ3	2:B:168:LYS:CG	3.00	0.44
2:B:28:THR:HG23	2:B:29:ASP:OD1	2.17	0.44
2:B:198:THR:HG23	6:B:457:HOH:O	2.17	0.43
1:A:77:GLN:HE21	1:A:138:HIS:CE1	2.37	0.43
2:B:42[A]:ARG:HH11	2:B:42[A]:ARG:HG3	1.85	0.42
1:A:55:ILE:HG21	6:B:271:HOH:O	2.19	0.42
1:A:123:THR:HG22	6:A:257:HOH:O	2.20	0.42
2:B:42[A]:ARG:HH11	2:B:42[A]:ARG:CG	2.33	0.41
2:B:127:TRP:CZ3	2:B:146:ILE:HD11	2.55	0.41
1:A:108:ALA:HA	1:A:109:PRO:HD2	1.90	0.41
1:A:158:MET:HE3	1:A:158:MET:HB3	1.83	0.41
1:A:42:LYS:HE3	1:A:43:ARG:HB2	2.02	0.41
2:B:136:LYS:HG3	6:B:288:HOH:O	2.21	0.41
2:B:185:LYS:HD2	2:B:191:TRP:CE2	2.56	0.41
1:A:30:HIS:HE1	2:B:99:TYR:OH	2.04	0.41
1:A:43:ARG:O	1:A:43:ARG:HG2	2.21	0.41
2:B:177:LYS:CE	6:B:311:HOH:O	2.69	0.41
2:B:42[B]:ARG:NH2	2:B:70:SER:OG	2.53	0.40
2:B:28:THR:C	6:B:432:HOH:O	2.60	0.40
1:A:171:LEU:HD23	1:A:171:LEU:C	2.42	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)
6:A:208:HOH:O	6:B:349:HOH:O[4_445]	2.04	0.16

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	194/186 (104%)	182 (94%)	10 (5%)	2 (1%)	17	10
2	B	208/210 (99%)	203 (98%)	5 (2%)	0	100	100
All	All	402/396 (102%)	385 (96%)	15 (4%)	2 (0%)	31	25

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	48	ARG
1	A	142	LYS

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	182/172 (106%)	167 (92%)	15 (8%)	12	8
2	B	187/189 (99%)	174 (93%)	13 (7%)	16	11
All	All	369/361 (102%)	341 (92%)	28 (8%)	14	9

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	14	MET
1	A	42	LYS
1	A	52	THR
1	A	67	GLU
1	A	75	MET
1	A	80	PHE
1	A	106	GLN
1	A	125	ARG
1	A	129	ARG
1	A	140	GLU
1	A	142	LYS
1	A	143	GLU
1	A	146	ILE
1	A	158	MET
1	A	184	ASN
2	B	1	MET
2	B	2	LEU
2	B	28	THR
2	B	32	LEU
2	B	42[A]	ARG
2	B	42[B]	ARG
2	B	43	GLU
2	B	98	THR
2	B	112	GLU
2	B	113	VAL
2	B	120	LYS
2	B	142	LEU
2	B	205	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	30	HIS
1	A	138	HIS
1	A	173	HIS

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 6 are monoatomic - leaving 2 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	$\# Z > 2$
4	CO3	A	6	-	0,3,3	0.00	-	0,3,3	0.00	-
4	CO3	A	7	-	0,3,3	0.00	-	0,3,3	0.00	-

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
4	CO3	A	6	-	-	0/0/0/0	0/0/0/0
4	CO3	A	7	-	-	0/0/0/0	0/0/0/0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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	A	186/186 (100%)	0.12	18 (9%) 8 7	17, 32, 73, 95	1 (0%)
2	B	206/210 (98%)	-0.30	10 (4%) 29 29	19, 30, 54, 74	0
All	All	392/396 (98%)	-0.10	28 (7%) 16 15	17, 31, 66, 95	1 (0%)

All (28) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	49	GLY	6.1
1	A	48	ARG	5.6
1	A	47	GLY	5.1
2	B	28	THR	4.6
1	A	46	HIS	4.4
1	A	54	ALA	3.7
2	B	118	ASP	3.6
2	B	116	PRO	3.4
1	A	51	ILE	3.3
1	A	143	GLU	3.2
1	A	140	GLU	3.2
2	B	205	ASP	3.1
2	B	171	SER	3.0
1	A	52	THR	2.9
1	A	45	THR	2.8
1	A	159	ALA	2.7
2	B	170	LEU	2.6
1	A	160	ASP	2.5
1	A	142	LYS	2.5
1	A	55	ILE	2.4
1	A	50	PHE	2.4
2	B	119	ARG	2.3
1	A	107	GLU	2.3
1	A	106	GLN	2.3

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Mol	Chain	Res	Type	RSRZ
2	B	117	GLU	2.3
2	B	120	LYS	2.2
1	A	139	PRO	2.2
2	B	84[A]	GLN	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 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. 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	CO3	A	7	4/4	0.92	0.13	63,63,64,64	0
4	CO3	A	6	4/4	0.96	0.18	43,44,47,48	0
3	NA	B	215	1/1	0.96	0.14	55,55,55,55	0
3	NA	B	214	1/1	0.98	0.05	33,33,33,33	0
5	CL	B	213	1/1	0.99	0.05	30,30,30,30	0
3	NA	B	211	1/1	0.99	0.16	19,19,19,19	0
3	NA	A	5	1/1	0.99	0.20	23,23,23,23	0
3	NA	B	212	1/1	1.00	0.05	26,26,26,26	0

6.5 Other polymers [i](#)

There are no such residues in this entry.