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P R O T E I N   D A T A   B A N K

wwPDB X-ray Structure Validation Summary Report (i)

Oct 23, 2023 – 06:12 PM EDT

PDB ID	:	3C09
Title	:	Crystal structure the Fab fragment of matuzumab (Fab72000) in complex with domain III of the extracellular region of EGFR
Authors	:	Ferguson, K.M.; Schmiedel, J.; Knoechel, T.
Deposited on	:	2008-01-18
Resolution	:	3.20 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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:

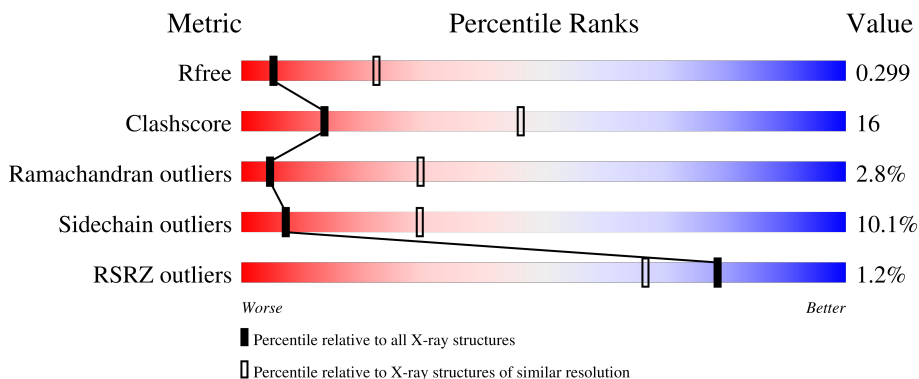|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 3.20 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		0.299
Clashscore		16
Ramachandran outliers		2.8%
Sidechain outliers		10.1%
RSRZ outliers		1.2%

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$_{free}$	130704	1133 (3.20-3.20)
Clashscore	141614	1253 (3.20-3.20)
Ramachandran outliers	138981	1234 (3.20-3.20)
Sidechain outliers	138945	1233 (3.20-3.20)
RSRZ outliers	127900	1095 (3.20-3.20)

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	B	212	2% 54% 26% • 17%
1	L	212	71% 27% •
2	C	223	4% 61% 20% • 14%
2	H	223	66% 27% • •
3	A	214	58% 27% • 11%

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Mol	Chain	Length	Quality of chain
3	D	214	62% 26% • 11%

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
4	NAG	A	4202	-	-	-	X

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 8532 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 Matuzumab Fab Light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	L	211	Total 1533	C 959	N 252	O 316	S 6	0	0	0
1	B	175	Total 1239	C 772	N 204	O 258	S 5	0	0	0

- Molecule 2 is a protein called Matuzumab Fab Heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	216	Total 1573	C 996	N 259	O 311	S 7	0	0	0
2	C	191	Total 1347	C 846	N 224	O 270	S 7	0	0	0

- Molecule 3 is a protein called Epidermal growth factor receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	A	191	Total 1371	C 857	N 237	O 269	S 8	0	0	0
3	D	191	Total 1296	C 807	N 226	O 255	S 8	0	0	0

There are 22 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	307	LEU	-	expression tag	UNP P00533
A	308	GLU	-	expression tag	UNP P00533
A	309	GLU	-	expression tag	UNP P00533
A	310	LYS	-	expression tag	UNP P00533
A	311	LYS	-	expression tag	UNP P00533
A	515	HIS	-	expression tag	UNP P00533
A	516	HIS	-	expression tag	UNP P00533
A	517	HIS	-	expression tag	UNP P00533

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Chain	Residue	Modelled	Actual	Comment	Reference
A	518	HIS	-	expression tag	UNP P00533
A	519	HIS	-	expression tag	UNP P00533
A	520	HIS	-	expression tag	UNP P00533
D	307	LEU	-	expression tag	UNP P00533
D	308	GLU	-	expression tag	UNP P00533
D	309	GLU	-	expression tag	UNP P00533
D	310	LYS	-	expression tag	UNP P00533
D	311	LYS	-	expression tag	UNP P00533
D	515	HIS	-	expression tag	UNP P00533
D	516	HIS	-	expression tag	UNP P00533
D	517	HIS	-	expression tag	UNP P00533
D	518	HIS	-	expression tag	UNP P00533
D	519	HIS	-	expression tag	UNP P00533
D	520	HIS	-	expression tag	UNP P00533

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 14	C 8	N 1 O 5	0	0
4	A	1	Total 14	C 8	N 1 O 5	0	0
4	A	1	Total 14	C 8	N 1 O 5	0	0
4	A	1	Total 14	C 8	N 1 O 5	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total 14	C 8	N 1	O 5	0	0
4	A	1	Total 14	C 8	N 1	O 5	0	0
4	D	1	Total 14	C 8	N 1	O 5	0	0
4	D	1	Total 14	C 8	N 1	O 5	0	0
4	D	1	Total 14	C 8	N 1	O 5	0	0
4	D	1	Total 14	C 8	N 1	O 5	0	0

- Molecule 5 is beta-D-mannopyranose (three-letter code: BMA) (formula: $C_6H_{12}O_6$).
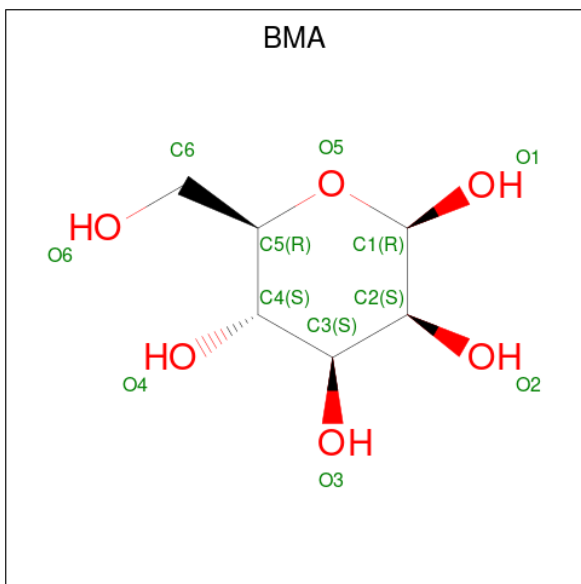
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 11	C 6	O 5	0	0
5	D	1	Total 11	C 6	O 5	0	0

- Molecule 6 is alpha-D-mannopyranose (three-letter code: MAN) (formula: $C_6H_{12}O_6$).

MAN

C6   O5   O1

HO   O   OH

O6   C5(R)   C1(S)

C4(S)   C2(S)

C3(S)

HO   OH

O4   O2

OH

O3
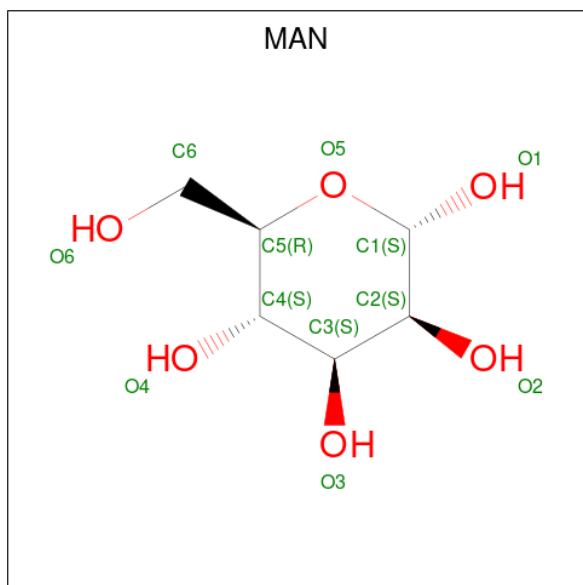
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total 11	C 6	O 5	0	0

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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: Matuzumab Fab Light chain
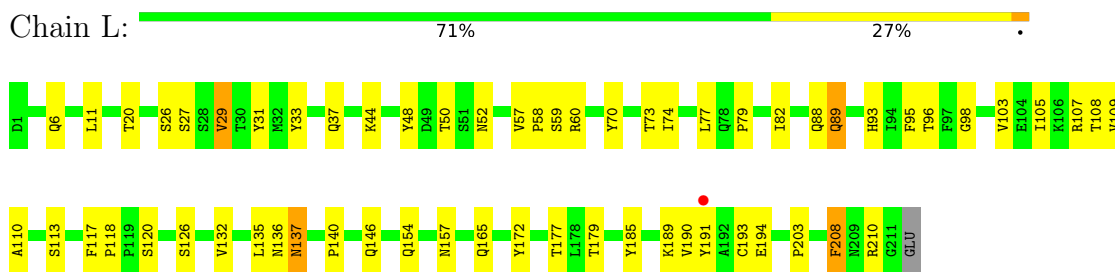
- Molecule 1: Matuzumab Fab Light chain
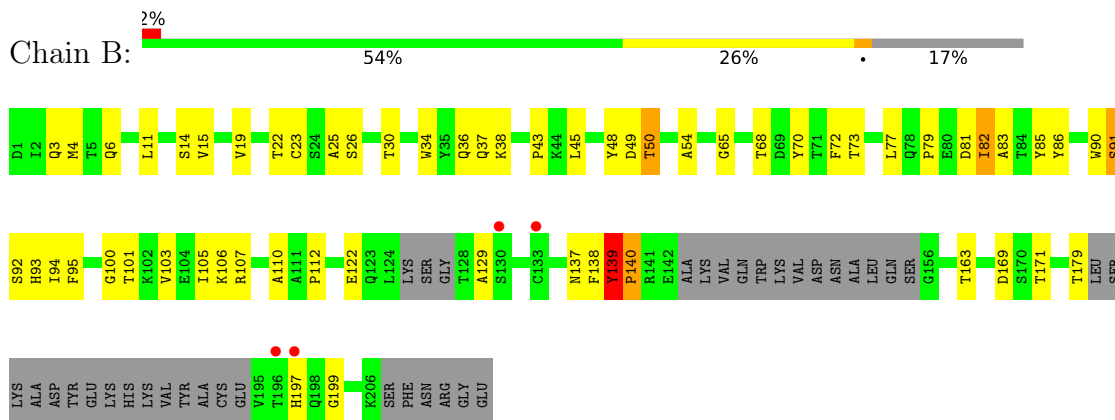
- Molecule 2: Matuzumab Fab Heavy chain

- Molecule 2: Matuzumab Fab Heavy chain

Chain C:

4%

61% 20% • 14%

Q1 V2 Q6 S7 V11 S21 C22 T28 F29 T30 S31 H32 W33 W36 Q39 A40 P41 G42 Q43 G44 W47 E50 F51 N52 P53 S54 N55 N59 N77 M81 S85 L86 T91 C96 A97 S98 R99 D100 Y101 D102 Y103 F108 D109 G112
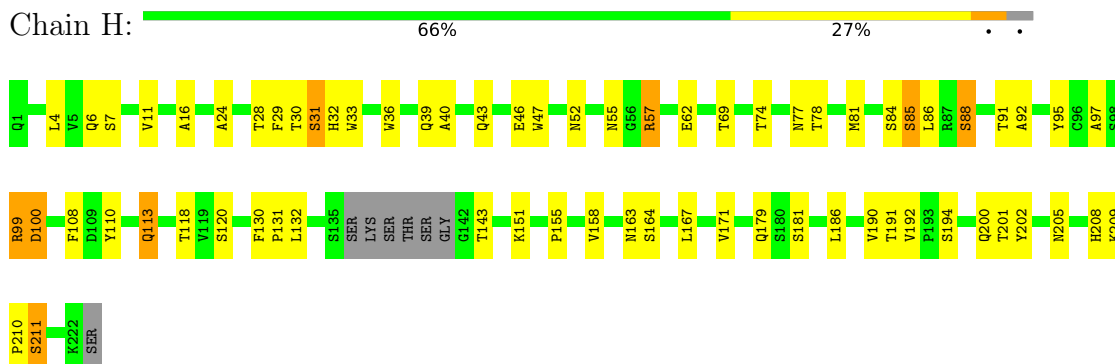
Q113 T118 V119 S120 T124 P127 S128 VAL PHE PRO LEU ALA PRO SER SER LYS THR SER GLY THR ALA ALA LEU G147 C148 L149 V150 P155 E156 W162 N163 S164 G165 S187 S188 V189 V190 T191 V192 PRO SER SER LEU GLY THR GLN THR Y202 I203 C204 N205

H208 K209 P210 S211 N212 V215 D216 K217 K218 VAL GLU PRO LYS SER

• Molecule 3: Epidermal growth factor receptor

Chain A:

58% 27% • 11%

LEU GLU GLU K310 K311 V312 C313 I318 G319 E320 L325 N328 I332 K333 H334 N337 S340 I341 S342 G343 D344 L345 P349 E367 I370 T378 G379 F380 L381 L382 N389 E397 E400 I401 I402 R403 G404 R405 T406 K407 Q411 F412 S413 L414 A415

S418 T422 S428 E431 I432 S433 G441 N442 K443 N444 L445 C446 Y447 A448 N449 T450 I451 N452 W453 K454 K455 G458 T459 S460 G461 Q462 K463 T464 K465 R470 C475 Q480 V481 C482 H483 A484 L485 C486 C491 W492 R497 D498 C499 V500 SER CYS ARG ASN VAL SER

ARG GLY ARG GLU CYS VAL ASP LYS HIS HIS HIS HIS HIS HIS

• Molecule 3: Epidermal growth factor receptor

Chain D:

62% 26% • 11%

LEU GLU GLU K310 K311 E320 S324 N328 N331 T339 S340 I341 D344 L345 S356 L363 D364 P365 Q366 T378 G379 F380 L381 L382 I383 Q384 A385 W386 P387 E388 N389 H394 I401 I402 R403 G404 K407 F412 S413 L414 A415 S418 I421 T422

E431 I432 S433 I438 I439 S440 G441 N442 K443 I451 N452 W453 K454 K455 L456 T459 K463 I467 G471 E472 C482 C486 S487 P488 E489 G490 C491 P494 E495 P496 C499 V500 SER CYS ARG ASN VAL SER ARG GLY ARG GLU CYS VAL ASP LYS HIS HIS HIS

HIS HIS

4   Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	141.07Å 205.03Å 81.58Å 90.00° 117.49° 90.00°	Depositor
Resolution (Å)	36.56 – 3.20 45.47 – 3.20	Depositor EDS
% Data completeness (in resolution range)	99.7 (36.56-3.20) 99.7 (45.47-3.20)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.35 (at 3.19Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.242 , 0.299 0.240 , 0.299	Depositor DCC
R_{free} test set	1709 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	57.8	Xtriage
Anisotropy	0.064	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.28 , 36.7	EDS
L-test for twinning [2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.87	EDS
Total number of atoms	8532	wwPDB-VP
Average B, all atoms (Å^2)	51.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.86% 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: MAN, BMA, NAG

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	B	0.51	1/1266 (0.1%)	0.66	1/1732 (0.1%)
1	L	0.48	0/1570	0.63	0/2152
2	C	0.49	0/1383	0.63	0/1902
2	H	0.49	0/1616	0.61	0/2223
3	A	0.46	0/1396	0.64	0/1907
3	D	0.46	0/1322	0.60	0/1815
All	All	0.48	1/8553 (0.0%)	0.63	1/11731 (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
2	C	0	1
2	H	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	23	CYS	CB-SG	-5.02	1.73	1.81

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	139	TYR	C-N-CD	-5.46	108.59	120.60

There are no chirality outliers.

All (2) planarity outliers are listed below:

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Mol	Chain	Res	Type	Group
2	C	191	THR	Peptide
2	H	99	ARG	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	B	1239	0	1067	56	0
1	L	1533	0	1358	47	0
2	C	1347	0	1109	36	0
2	H	1573	0	1405	39	0
3	A	1371	0	1271	48	0
3	D	1296	0	1101	33	0
4	A	84	0	78	10	0
4	D	56	0	52	4	0
5	A	11	0	10	1	0
5	D	11	0	10	0	0
6	A	11	0	10	1	0
All	All	8532	0	7471	243	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 16.

The worst 5 of 243 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:139:TYR:CD2	1:B:140:PRO:HD3	1.69	1.26
1:B:139:TYR:CG	1:B:140:PRO:HD3	1.74	1.22
1:B:139:TYR:CB	1:B:140:PRO:CD	2.27	1.10
1:B:139:TYR:HB3	1:B:140:PRO:CD	1.82	1.09
1:B:139:TYR:CG	1:B:140:PRO:CD	2.41	1.03

There are no symmetry-related clashes.

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	B	167/212 (79%)	145 (87%)	16 (10%)	6 (4%)	3	23
1	L	209/212 (99%)	189 (90%)	15 (7%)	5 (2%)	6	34
2	C	185/223 (83%)	159 (86%)	21 (11%)	5 (3%)	5	30
2	H	212/223 (95%)	190 (90%)	17 (8%)	5 (2%)	6	34
3	A	189/214 (88%)	153 (81%)	32 (17%)	4 (2%)	7	37
3	D	189/214 (88%)	153 (81%)	29 (15%)	7 (4%)	3	22
All	All	1151/1298 (89%)	989 (86%)	130 (11%)	32 (3%)	5	29

5 of 32 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	L	50	THR
1	B	122	GLU
1	B	139	TYR
1	B	140	PRO
2	H	30	THR

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	B	124/188 (66%)	115 (93%)	9 (7%)	14	46
1	L	158/188 (84%)	146 (92%)	12 (8%)	13	45
2	C	122/190 (64%)	106 (87%)	16 (13%)	4	19

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	H	159/190 (84%)	139 (87%)	20 (13%)	4	21
3	A	142/188 (76%)	125 (88%)	17 (12%)	5	22
3	D	118/188 (63%)	109 (92%)	9 (8%)	13	45
All	All	823/1132 (73%)	740 (90%)	83 (10%)	7	29

5 of 83 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	163	THR
2	C	187	SER
2	C	7	SER
2	C	100	ASP
3	D	324	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such sidechains are listed below:

Mol	Chain	Res	Type
3	A	389	ASN
3	D	384	GLN
3	A	483	HIS
3	D	394	HIS
2	C	77	ASN

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

13 ligands 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	$\#|Z| > 2$
4	NAG	A	4202	-	14,14,15	0.56	0	17,19,21	1.10	1 (5%)
4	NAG	A	3371	-	14,14,15	0.55	0	17,19,21	1.77	4 (23%)
4	NAG	A	4201	-	14,14,15	0.63	0	17,19,21	1.52	3 (17%)
5	BMA	A	3283	-	11,11,12	0.45	0	15,15,17	0.82	0
6	MAN	A	3284	-	11,11,12	0.48	0	15,15,17	1.53	2 (13%)
5	BMA	D	3283	-	11,11,12	0.55	0	15,15,17	1.55	2 (13%)
4	NAG	D	3282	-	14,14,15	0.68	0	17,19,21	1.61	2 (11%)
4	NAG	A	3282	-	14,14,15	0.74	0	17,19,21	1.67	3 (17%)
4	NAG	D	3371	-	14,14,15	0.50	0	17,19,21	1.36	2 (11%)
4	NAG	D	3281	-	14,14,15	0.68	0	17,19,21	1.54	3 (17%)
4	NAG	A	3891	-	14,14,15	0.60	0	17,19,21	1.12	2 (11%)
4	NAG	A	3281	-	14,14,15	0.85	1 (7%)	17,19,21	1.82	3 (17%)
4	NAG	D	3891	-	14,14,15	0.57	0	17,19,21	0.65	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
4	NAG	A	4202	-	-	2/6/23/26	0/1/1/1
4	NAG	A	3371	-	-	2/6/23/26	0/1/1/1
4	NAG	A	4201	-	-	4/6/23/26	0/1/1/1
5	BMA	A	3283	-	-	1/2/19/22	0/1/1/1
6	MAN	A	3284	-	-	1/2/19/22	0/1/1/1
5	BMA	D	3283	-	-	0/2/19/22	0/1/1/1
4	NAG	D	3282	-	-	4/6/23/26	0/1/1/1
4	NAG	A	3282	-	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	D	3371	-	-	3/6/23/26	0/1/1/1
4	NAG	D	3281	-	-	1/6/23/26	0/1/1/1
4	NAG	A	3891	-	-	3/6/23/26	0/1/1/1
4	NAG	A	3281	-	-	2/6/23/26	0/1/1/1
4	NAG	D	3891	-	-	2/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	3281	NAG	O5-C1	-2.28	1.40	1.43

The worst 5 of 27 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	3281	NAG	O5-C1-C2	-5.30	102.92	111.29
4	D	3371	NAG	C1-O5-C5	4.48	118.26	112.19
4	A	4201	NAG	C3-C4-C5	4.39	118.08	110.24
4	A	3371	NAG	C3-C4-C5	4.35	117.99	110.24
5	D	3283	BMA	C3-C4-C5	4.17	117.68	110.24

There are no chirality outliers.

5 of 26 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	3891	NAG	C8-C7-N2-C2
4	A	3891	NAG	O7-C7-N2-C2
4	D	3371	NAG	C8-C7-N2-C2
4	D	3371	NAG	O7-C7-N2-C2
4	D	3282	NAG	C8-C7-N2-C2

There are no ring outliers.

8 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	3371	NAG	3	0
5	A	3283	BMA	1	0
6	A	3284	MAN	1	0
4	D	3282	NAG	1	0
4	A	3282	NAG	3	0
4	D	3281	NAG	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	3891	NAG	1	0
4	A	3281	NAG	6	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	B	175/212 (82%)	0.01	4 (2%)	60	47	27, 40, 96, 100	0
1	L	211/212 (99%)	-0.33	1 (0%)	91	86	25, 42, 73, 83	0
2	C	191/223 (85%)	-0.14	8 (4%)	36	23	34, 51, 81, 83	0
2	H	216/223 (96%)	-0.25	0	100	100	31, 50, 63, 69	0
3	A	191/214 (89%)	-0.33	1 (0%)	91	86	34, 47, 76, 81	0
3	D	191/214 (89%)	-0.30	0	100	100	44, 53, 89, 94	0
All	All	1175/1298 (90%)	-0.23	14 (1%)	79	67	25, 49, 82, 100	0

The worst 5 of 14 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	C	189	VAL	3.4
2	C	128	SER	2.9
2	C	188	SER	2.9
2	C	127	PRO	2.9
1	B	197	HIS	2.5

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
5	BMA	A	3283	11/12	0.70	0.26	108,108,108,109	0
4	NAG	A	4202	14/15	0.72	0.42	102,103,103,103	0
4	NAG	D	3371	14/15	0.74	0.27	104,106,106,107	0
5	BMA	D	3283	11/12	0.74	0.20	111,112,112,112	0
4	NAG	D	3891	14/15	0.78	0.24	96,97,98,98	0
4	NAG	A	3891	14/15	0.80	0.20	99,100,100,100	0
4	NAG	A	3371	14/15	0.83	0.23	82,85,85,86	0
6	MAN	A	3284	11/12	0.86	0.18	91,94,95,95	0
4	NAG	A	4201	14/15	0.89	0.21	76,78,78,78	0
4	NAG	D	3282	14/15	0.93	0.15	67,70,73,74	0
4	NAG	A	3282	14/15	0.93	0.20	52,54,55,57	0
4	NAG	A	3281	14/15	0.96	0.20	31,35,42,42	0
4	NAG	D	3281	14/15	0.97	0.16	33,37,39,41	0

6.5 Other polymers ⓘ

There are no such residues in this entry.