



wwPDB X-ray Structure Validation Summary Report ⓘ

Jun 16, 2024 – 10:25 PM EDT

PDB ID : 3Q2V
Title : Crystal structure of mouse E-cadherin ectodomain
Authors : Jin, X.; Harrison, O.J.; Shapiro, L.
Deposited on : 2010-12-20
Resolution : 3.40 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 ⓘ 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
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 1.20.1
EDS : 2.37.1
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) : 2.37.1

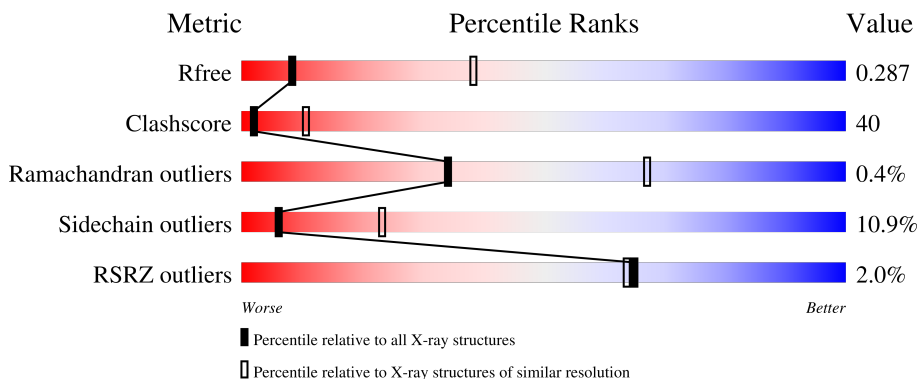
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 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	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

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 $\leq 5\%$. 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	550	
1	B	550	

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	MAN	A	802	X	-	-	-
4	MAN	A	804	X	-	-	-
4	MAN	A	805	X	-	-	-
4	MAN	A	806	X	-	-	-
4	MAN	A	807	X	-	-	-
4	MAN	B	801	X	-	-	-
4	MAN	B	803	X	-	-	-
4	MAN	B	804	X	-	-	X
4	MAN	B	805	X	-	-	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 7871 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 Cadherin-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	532	4113	2581	683	838	11	0	1	0
1	B	440	3399	2138	553	701	7	0	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	545	HIS	-	expression tag	UNP P09803
A	546	HIS	-	expression tag	UNP P09803
A	547	HIS	-	expression tag	UNP P09803
A	548	HIS	-	expression tag	UNP P09803
A	549	HIS	-	expression tag	UNP P09803
A	550	HIS	-	expression tag	UNP P09803
B	545	HIS	-	expression tag	UNP P09803
B	546	HIS	-	expression tag	UNP P09803
B	547	HIS	-	expression tag	UNP P09803
B	548	HIS	-	expression tag	UNP P09803
B	549	HIS	-	expression tag	UNP P09803
B	550	HIS	-	expression tag	UNP P09803

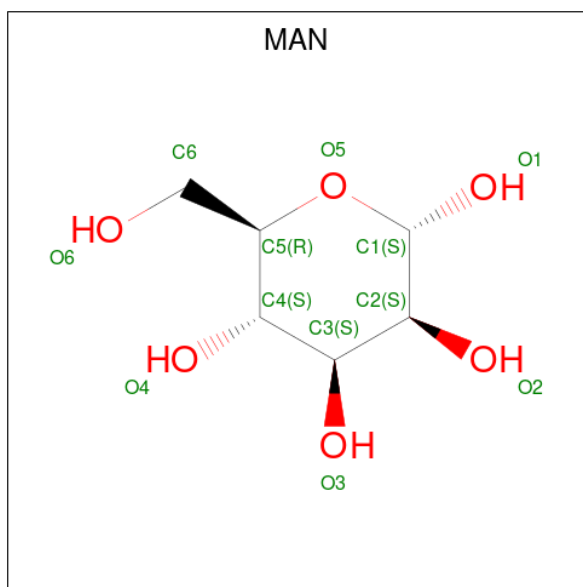
- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	12	Total 12	Ca 12	0	0
2	B	12	Total 12	Ca 12	0	0

- Molecule 3 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

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

- Molecule 4 is alpha-D-mannopyranose (three-letter code: MAN) (formula: C₆H₁₂O₆).



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

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	O	0	0
			11	6	5		
4	B	1	Total	C	O	0	0
			11	6	5		
4	B	1	Total	C	O	0	0
			11	6	5		
4	B	1	Total	C	O	0	0
			11	6	5		
4	B	1	Total	C	O	0	0
			11	6	5		
4	B	1	Total	C	O	0	0
			11	6	5		

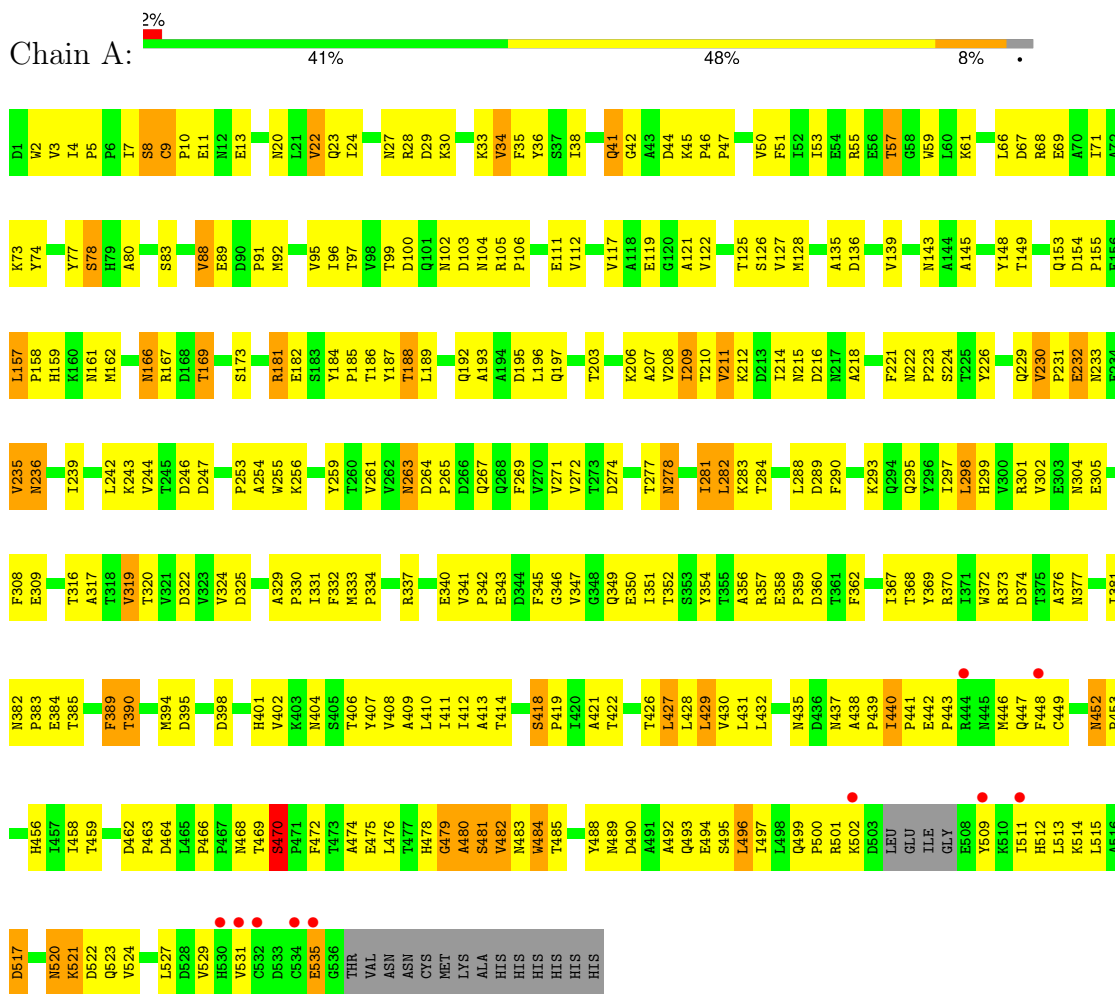
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	55	Total	O	0	0
			55	55		
5	B	80	Total	O	0	0
			80	80		

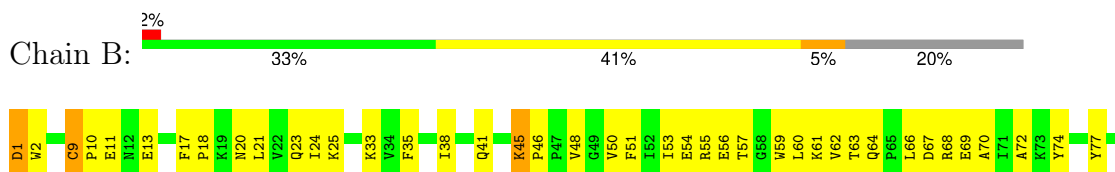
3 Residue-property plots

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: Cadherin-1



• Molecule 1: Cadherin-1



LEU	PRO	E380	V313	R238	V171	V88
LYS	GLN	I381	F314	I239	I175	T99
LEU	PRO	N382	S315	A240	T241	D100
ALA	HIS	P383	T316	A241	T176	Q101
ASP	ILE	E384	A317	L242	S177	Q101
ASN	ILE	T385	T320	K243	R105	R105
GLN	THR	G386	V321	V244	P106	P106
ASN	ILE	A387	V322	T245	E107	E107
ASN	LEU	I388	D322	D246	F108	F108
ASP	D462	F389	V323	D247	G111	G111
ASP	P463	T390	V324	D248	E111	E111
VAL	D464	R391	D325	A249	V112	V112
THR	L465	A392	V326	F250	F113	F113
THR	P466	E393	N327	N251	E114	E114
LEU	P467	N394	E328	T252	V117	V117
LEU	ASN	D395	A329	T253	A118	A118
ASP	THR	R396	P330	A254	E119	E119
VAL	THR	E397	I331	W255	G120	G120
HIS	PRO	D398	F332	K256	Q121	Q121
VAL	PHE			T260	A121	A121
CYS	THR	T406	R337	V261	V122	V122
ASP	THR		R338	V262	P123	P123
ASP	ALA	L410	V339	N263	G124	G124
CYS	ALA	L411	E340	V271	T125	T125
GLU	LEU	I412	V341	D274	M128	M128
GLY	THR	A413	P342	T277	K129	K129
THR	HIS	T414	E343	N278	A132	A132
VAL	HIS	D415	D344	D279	D136	D136
ASN	GLY	D416	F345	G280	D137	D137
ASN	ALA	D417	G346	I281	D138	D138
ASN	ALA	S418	V347	L282	V139	V139
ALA	TRP	P419	G348	G287	N140	N140
HIS	THR	L420	Q349	L288	A144	A144
HIS	ILE	A421	E350	D289	A145	A145
HIS	GLU	T422	I351	F290	I146	I146
HIS	TYR		T352	K293	A147	A147
HIS	ASN	L429	S353	Q294	Y148	Y148
HIS	ASP	V430	Y354	Q295	I150	I150
HIS	ALA	L431	T355	G296	T149	T149
HIS	ALA	L432	A356	L298	N215	N215
HIS	GLN	D433	E358	H299	D216	D216
HIS	GLU	V434	P359	V300	N217	N217
HIS	SER	ASN	D360	R301	A218	A218
HIS	ASP	ASP	T361	V302	P219	P219
HIS	LEU	ASN	F362	N222	Q153	Q153
HIS	ILE	ALA	M363	P223	D154	D154
HIS	LEU	PRO	D364	Y226	P158	P158
HIS	PRO	ILE	Q365	Q227	H159	H159
HIS	ARG	PRO	T366	G228	M162	M162
HIS	LYS	ASP	Y369	Q229	F163	F163
HIS	LEU	ARG	R370	V230	T164	T164
HIS	GLU	ASN	I371	P231	V165	V165
HIS	ILE	MET	T372	E232	M166	M166
HIS	ILE	GLN	R373	V235	R167	R167
HIS	GLY	PHE	D374		G170	G170
HIS	TYR	CYS				
HIS	LYS	GLN	W378			
HIS	ILE	ARG	L379			
HIS	HIS	ASN				

4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	119.14Å 79.70Å 176.00Å 90.00° 98.56° 90.00°	Depositor
Resolution (Å)	19.92 – 3.40 29.78 – 3.30	Depositor EDS
% Data completeness (in resolution range)	99.8 (19.92-3.40) 99.6 (29.78-3.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.40 (at 3.31Å)	Xtrriage
Refinement program	PHENIX (phenix.refine: 1.6_289)	Depositor
R, R_{free}	0.230 , 0.293 0.229 , 0.287	Depositor DCC
R_{free} test set	1254 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å ²)	69.5	Xtrriage
Anisotropy	0.638	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 71.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	7871	wwPDB-VP
Average B, all atoms (Å ²)	67.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 15.30% 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: MAN, CA, MN

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	0.45	0/4200	0.71	10/5755 (0.2%)
1	B	0.47	1/3469 (0.0%)	0.67	3/4752 (0.1%)
All	All	0.46	1/7669 (0.0%)	0.69	13/10507 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	419	PRO	N-CD	5.03	1.54	1.47

The worst 5 of 13 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	492	ALA	N-CA-CB	-11.52	93.98	110.10
1	A	452	ASN	N-CA-CB	7.71	124.47	110.60
1	A	452	ASN	N-CA-C	-7.34	91.18	111.00
1	B	419	PRO	N-CA-C	-6.72	94.62	112.10
1	B	418	SER	C-N-CD	-5.80	107.84	120.60

There are no chirality outliers.

There are no planarity outliers.

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	4113	0	3949	353	0
1	B	3399	0	3284	269	0
2	A	12	0	0	0	0
2	B	12	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	99	0	90	1	0
4	B	99	0	90	5	0
5	A	55	0	0	1	0
5	B	80	0	0	0	0
All	All	7871	0	7413	612	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 40.

The worst 5 of 612 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:483:ASN:CG	1:A:502:LYS:HB2	1.46	1.33
1:A:483:ASN:OD1	1:A:502:LYS:HB2	1.23	1.31
1:B:418:SER:HB2	1:B:419:PRO:CD	1.61	1.30
1:A:483:ASN:OD1	1:A:502:LYS:CB	1.81	1.29
1:B:418:SER:HB2	1:B:419:PRO:HD2	1.23	1.15

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	529/550 (96%)	454 (86%)	72 (14%)	3 (1%)	25 57
1	B	436/550 (79%)	387 (89%)	48 (11%)	1 (0%)	47 78
All	All	965/1100 (88%)	841 (87%)	120 (12%)	4 (0%)	34 67

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	480	ALA
1	A	481	SER
1	A	482	VAL
1	B	419	PRO

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	458/482 (95%)	410 (90%)	48 (10%)	7	25
1	B	381/482 (79%)	337 (88%)	44 (12%)	5	20
All	All	839/964 (87%)	747 (89%)	92 (11%)	6	23

5 of 92 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	154	ASP
1	B	260	THR
1	B	166	ASN
1	B	222	ASN
1	B	290	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 26 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	489	ASN
1	B	64	GLN
1	B	263	ASN
1	A	520	ASN
1	B	110	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](#)

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](#)

Of 44 ligands modelled in this entry, 26 are monoatomic - leaving 18 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	MAN	A	803	1	11,11,12	0.70	0	15,15,17	0.80	1 (6%)
4	MAN	A	801	1	11,11,12	0.53	0	15,15,17	1.12	1 (6%)
4	MAN	A	802	1	11,11,12	0.62	0	15,15,17	0.76	0
4	MAN	B	804	1	11,11,12	0.71	0	15,15,17	1.17	1 (6%)
4	MAN	B	808	1	11,11,12	0.61	0	15,15,17	0.65	0
4	MAN	B	809	1	11,11,12	0.57	0	15,15,17	0.73	0
4	MAN	A	805	1	11,11,12	0.58	0	15,15,17	0.68	0
4	MAN	B	806	1	11,11,12	0.61	0	15,15,17	0.80	0
4	MAN	A	808	1	11,11,12	0.55	0	15,15,17	0.90	1 (6%)
4	MAN	A	807	1	11,11,12	0.56	0	15,15,17	1.03	2 (13%)
4	MAN	B	803	1	11,11,12	0.67	0	15,15,17	0.72	0
4	MAN	A	806	1	11,11,12	0.55	0	15,15,17	0.81	1 (6%)
4	MAN	A	804	1	11,11,12	0.54	0	15,15,17	0.87	1 (6%)
4	MAN	B	801	1	11,11,12	0.62	0	15,15,17	0.61	0
4	MAN	B	805	1	11,11,12	0.59	0	15,15,17	0.65	0
4	MAN	A	809	1	11,11,12	0.56	0	15,15,17	0.86	1 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	MAN	B	807	1	11,11,12	0.64	0	15,15,17	0.72	0
4	MAN	B	802	1	11,11,12	0.55	0	15,15,17	0.85	1 (6%)

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	MAN	A	801	1	-	2/2/19/22	0/1/1/1
4	MAN	A	803	1	-	2/2/19/22	0/1/1/1
4	MAN	A	802	1	1/1/4/5	0/2/19/22	0/1/1/1
4	MAN	B	804	1	1/1/4/5	0/2/19/22	0/1/1/1
4	MAN	B	808	1	-	0/2/19/22	0/1/1/1
4	MAN	B	809	1	-	2/2/19/22	0/1/1/1
4	MAN	A	805	1	1/1/4/5	2/2/19/22	0/1/1/1
4	MAN	B	806	1	-	2/2/19/22	0/1/1/1
4	MAN	A	808	1	-	0/2/19/22	0/1/1/1
4	MAN	A	807	1	1/1/4/5	0/2/19/22	0/1/1/1
4	MAN	B	803	1	1/1/4/5	2/2/19/22	0/1/1/1
4	MAN	A	806	1	1/1/4/5	2/2/19/22	0/1/1/1
4	MAN	A	804	1	1/1/4/5	0/2/19/22	0/1/1/1
4	MAN	B	801	1	1/1/4/5	2/2/19/22	0/1/1/1
4	MAN	B	805	1	1/1/4/5	0/2/19/22	0/1/1/1
4	MAN	A	809	1	-	2/2/19/22	0/1/1/1
4	MAN	B	807	1	-	2/2/19/22	0/1/1/1
4	MAN	B	802	1	-	2/2/19/22	0/1/1/1

There are no bond length outliers.

The worst 5 of 10 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	801	MAN	C1-O5-C5	3.77	117.24	112.19
4	B	804	MAN	C1-C2-C3	3.27	114.41	109.64
4	A	808	MAN	C1-O5-C5	2.57	115.63	112.19
4	A	809	MAN	C1-O5-C5	2.52	115.57	112.19
4	B	802	MAN	C1-O5-C5	2.38	115.37	112.19

5 of 9 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
4	A	802	MAN	C1
4	A	804	MAN	C1
4	A	805	MAN	C1
4	A	806	MAN	C1
4	A	807	MAN	C1

5 of 22 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	806	MAN	O5-C5-C6-O6
4	B	807	MAN	O5-C5-C6-O6
4	A	806	MAN	C4-C5-C6-O6
4	A	805	MAN	C4-C5-C6-O6
4	B	806	MAN	O5-C5-C6-O6

There are no ring outliers.

3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	804	MAN	4	0
4	A	804	MAN	1	0
4	B	805	MAN	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.

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	532/550 (96%)	-0.23	10 (1%) 66 65	25, 59, 123, 157	0
1	B	440/550 (80%)	-0.16	9 (2%) 65 64	32, 61, 112, 131	0
All	All	972/1100 (88%)	-0.19	19 (1%) 65 64	25, 60, 116, 157	0

The worst 5 of 19 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	509	TYR	4.9
1	A	448	PHE	3.2
1	A	532	CYS	3.0
1	A	534	CYS	3.0
1	B	467	PRO	2.9

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](#)

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	MAN	B	804	11/12	0.69	0.46	91,100,120,132	0
4	MAN	B	806	11/12	0.79	0.28	99,109,124,129	0
2	CA	B	609	1/1	0.80	0.12	105,105,105,105	0
4	MAN	A	806	11/12	0.80	0.32	73,88,105,107	0
2	CA	B	610	1/1	0.81	0.09	93,93,93,93	0
4	MAN	A	808	11/12	0.81	0.23	72,85,90,98	0
2	CA	B	611	1/1	0.82	0.17	104,104,104,104	0
2	CA	B	612	1/1	0.82	0.09	89,89,89,89	0
2	CA	A	610	1/1	0.82	0.16	74,74,74,74	0
4	MAN	A	807	11/12	0.83	0.26	74,85,90,91	0
2	CA	A	605	1/1	0.83	0.16	31,31,31,31	0
4	MAN	B	807	11/12	0.83	0.33	106,117,122,129	0
2	CA	A	608	1/1	0.84	0.11	58,58,58,58	0
4	MAN	B	805	11/12	0.85	0.27	79,84,96,96	0
2	CA	B	607	1/1	0.85	0.07	87,87,87,87	0
4	MAN	A	805	11/12	0.85	0.28	66,69,89,95	0
4	MAN	B	808	11/12	0.87	0.21	114,123,126,127	0
4	MAN	B	802	11/12	0.88	0.18	67,71,81,83	0
4	MAN	A	802	11/12	0.88	0.42	59,63,79,91	0
4	MAN	A	803	11/12	0.88	0.21	50,69,77,78	0
4	MAN	B	809	11/12	0.88	0.19	95,99,112,113	0
4	MAN	A	809	11/12	0.89	0.38	87,91,98,112	0
2	CA	A	607	1/1	0.89	0.10	72,72,72,72	0
4	MAN	B	803	11/12	0.90	0.31	72,93,114,121	0
2	CA	A	612	1/1	0.91	0.16	74,74,74,74	0
4	MAN	B	801	11/12	0.91	0.19	55,60,72,73	0
2	CA	B	602	1/1	0.92	0.12	38,38,38,38	0
2	CA	B	605	1/1	0.93	0.14	38,38,38,38	0
2	CA	B	606	1/1	0.93	0.07	55,55,55,55	0
2	CA	B	601	1/1	0.93	0.18	44,44,44,44	0
2	CA	B	608	1/1	0.93	0.10	81,81,81,81	0
2	CA	A	606	1/1	0.94	0.09	35,35,35,35	0
4	MAN	A	801	11/12	0.94	0.20	44,48,59,71	0
2	CA	A	603	1/1	0.94	0.11	39,39,39,39	0
2	CA	A	604	1/1	0.95	0.20	35,35,35,35	0
4	MAN	A	804	11/12	0.95	0.18	47,60,76,80	0
2	CA	A	601	1/1	0.96	0.22	41,41,41,41	0
2	CA	A	609	1/1	0.96	0.04	87,87,87,87	0
2	CA	A	611	1/1	0.97	0.09	81,81,81,81	0
2	CA	B	604	1/1	0.97	0.12	37,37,37,37	0
2	CA	B	603	1/1	0.98	0.09	38,38,38,38	0
2	CA	A	602	1/1	0.98	0.13	35,35,35,35	0
3	MN	B	901	1/1	0.98	0.22	54,54,54,54	0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	MN	A	901	1/1	0.99	0.26	59,59,59,59	0

6.5 Other polymers [i](#)

There are no such residues in this entry.