Full wwPDB X-ray Structure Validation Report ⓘ

Nov 13, 2024 – 11:16 AM EST

PDB ID	:	4RDQ
Title	:	Calcium-activated chloride channel bestrophin-1, from chicken, in complex with Fab antibody fragments, chloride and calcium
Authors	:	Dickson, V.K.; Pedi, L.; Long, S.B.
Deposited on	:	2014-09-19
Resolution	:	2.85 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 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:

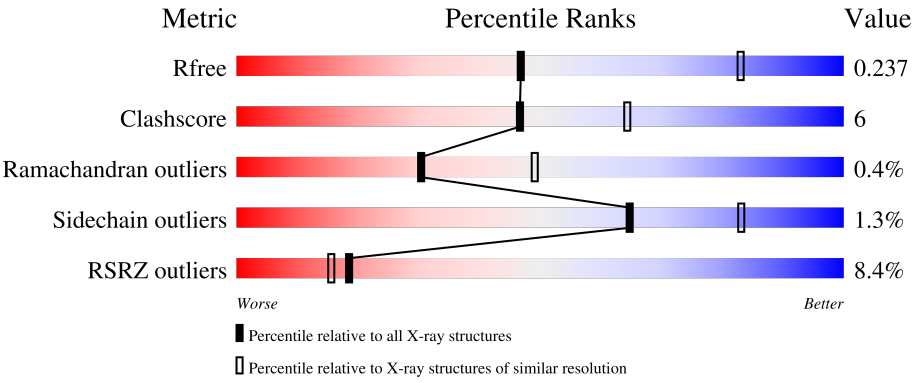
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 2.85 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}	164625	1268 (2.88-2.84)
Clashscore	180529	1351 (2.88-2.84)
Ramachandran outliers	177936	1318 (2.88-2.84)
Sidechain outliers	177891	1319 (2.88-2.84)
RSRZ outliers	164620	1269 (2.88-2.84)

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	409	3% 74% 14% • 11%
1	B	409	% 75% 14% • 11%
1	C	409	2% 74% 15% • 11%
1	D	409	2% 74% 15% • 11%
1	E	409	4% 74% 15% • 11%

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Mol	Chain	Length	Quality of chain
2	F	212	7% 87% 13%
2	H	212	8% 83% 17%
2	J	212	22% 85% 15%
2	L	212	9% 84% 16%
2	N	212	18% 84% 16%
3	G	217	11% 86% 12%
3	I	217	7% 86% 12%
3	K	217	20% 85% 12%
3	M	217	9% 86% 12%
3	O	217	19% 87% 10%

2 Entry composition (i)

There are 9 unique types of molecules in this entry. The entry contains 31125 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 Bestrophin-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	366	Total	C	N	O	S	0	0	0
			2994	1962	484	535	13			
1	B	366	Total	C	N	O	S	0	0	0
			2994	1962	484	535	13			
1	C	366	Total	C	N	O	S	0	0	0
			2994	1962	484	535	13			
1	D	366	Total	C	N	O	S	0	0	0
			2994	1962	484	535	13			
1	E	366	Total	C	N	O	S	0	0	0
			2994	1962	484	535	13			

There are 25 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	406	GLU	-	expression tag	UNP E1C3A0
A	407	GLY	-	expression tag	UNP E1C3A0
A	408	GLU	-	expression tag	UNP E1C3A0
A	409	GLU	-	expression tag	UNP E1C3A0
A	410	PHE	-	expression tag	UNP E1C3A0
B	406	GLU	-	expression tag	UNP E1C3A0
B	407	GLY	-	expression tag	UNP E1C3A0
B	408	GLU	-	expression tag	UNP E1C3A0
B	409	GLU	-	expression tag	UNP E1C3A0
B	410	PHE	-	expression tag	UNP E1C3A0
C	406	GLU	-	expression tag	UNP E1C3A0
C	407	GLY	-	expression tag	UNP E1C3A0
C	408	GLU	-	expression tag	UNP E1C3A0
C	409	GLU	-	expression tag	UNP E1C3A0
C	410	PHE	-	expression tag	UNP E1C3A0
D	406	GLU	-	expression tag	UNP E1C3A0
D	407	GLY	-	expression tag	UNP E1C3A0
D	408	GLU	-	expression tag	UNP E1C3A0
D	409	GLU	-	expression tag	UNP E1C3A0

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Chain	Residue	Modelled	Actual	Comment	Reference
D	410	PHE	-	expression tag	UNP E1C3A0
E	406	GLU	-	expression tag	UNP E1C3A0
E	407	GLY	-	expression tag	UNP E1C3A0
E	408	GLU	-	expression tag	UNP E1C3A0
E	409	GLU	-	expression tag	UNP E1C3A0
E	410	PHE	-	expression tag	UNP E1C3A0

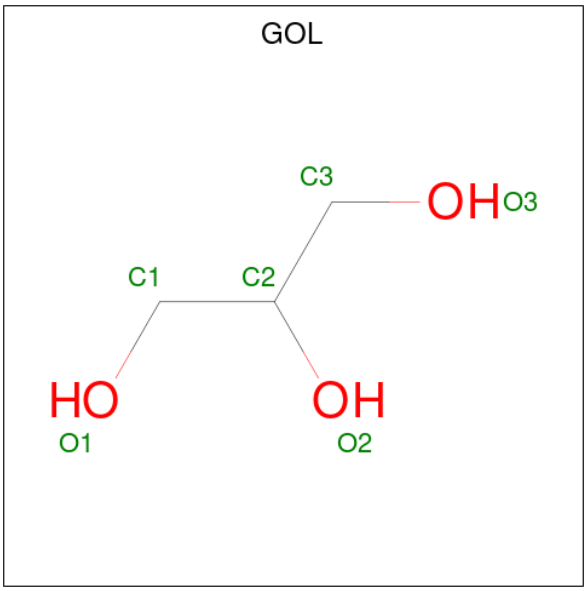
- Molecule 2 is a protein called Fab antibody fragment, light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	F	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	H	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	J	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	L	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	N	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			

- Molecule 3 is a protein called Fab antibody fragment, heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	G	211	Total	C	N	O	S	0	0	0
			1558	991	254	305	8			
3	I	211	Total	C	N	O	S	0	0	0
			1558	991	254	305	8			
3	K	211	Total	C	N	O	S	0	0	0
			1558	991	254	305	8			
3	M	211	Total	C	N	O	S	0	0	0
			1558	991	254	305	8			
3	O	211	Total	C	N	O	S	0	0	0
			1558	991	254	305	8			

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 6 3 3	0	0
4	B	1	Total C O 6 3 3	0	0
4	C	1	Total C O 6 3 3	0	0
4	D	1	Total C O 6 3 3	0	0
4	E	1	Total C O 6 3 3	0	0

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

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	3	Total Cl 3 3	0	0
5	B	3	Total Cl 3 3	0	0
5	C	3	Total Cl 3 3	0	0
5	D	3	Total Cl 3 3	0	0
5	E	3	Total Cl 3 3	0	0

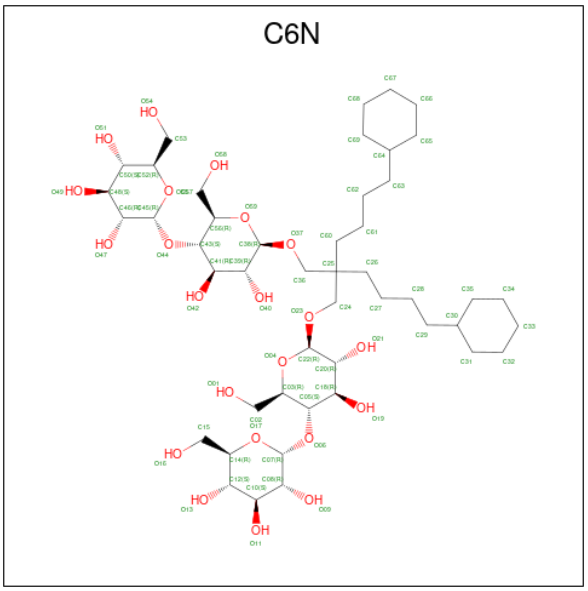
- Molecule 6 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total Ca 1 1	0	0
6	B	1	Total Ca 1 1	0	0
6	C	1	Total Ca 1 1	0	0
6	D	1	Total Ca 1 1	0	0
6	E	1	Total Ca 1 1	0	0

- Molecule 7 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total K 1 1	0	0
7	B	1	Total K 1 1	0	0
7	C	2	Total K 2 2	0	0
7	E	1	Total K 1 1	0	0

- Molecule 8 is 6-cyclohexyl-2-(4-cyclohexylbutyl)-2-({[4-O-(alpha-D-glucopyranosyl)-beta-D-glucopyranosyl]oxy}methyl)hexyl 4-O-alpha-D-glucopyranosyl-beta-D-glucopyranoside (three-letter code: C6N) (formula: $C_{47}H_{84}O_{22}$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	1	Total C O 69 47 22	0	0
8	B	1	Total C O 69 47 22	0	0
8	C	1	Total C O 69 47 22	0	0
8	D	1	Total C O 69 47 22	0	0
8	E	1	Total C O 69 47 22	0	0

- Molecule 9 is water.

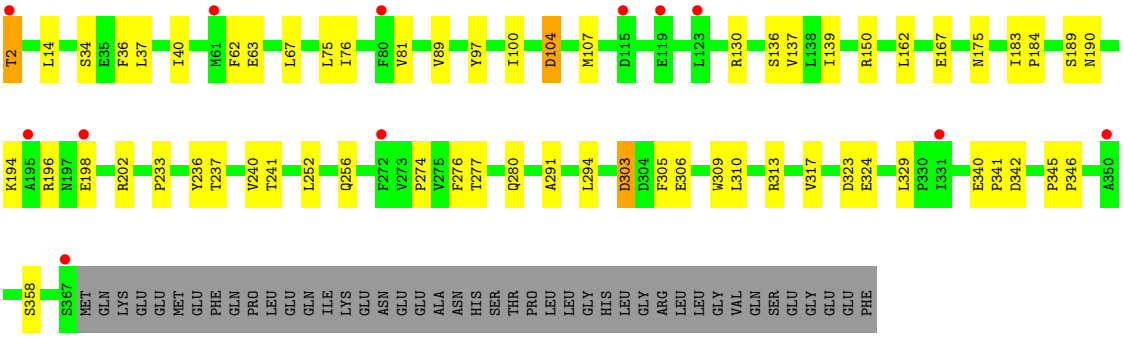
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	2	Total O 2 2	0	0
9	B	2	Total O 2 2	0	0
9	C	2	Total O 2 2	0	0
9	D	2	Total O 2 2	0	0
9	E	2	Total O 2 2	0	0

3 Residue-property plots (i)

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.

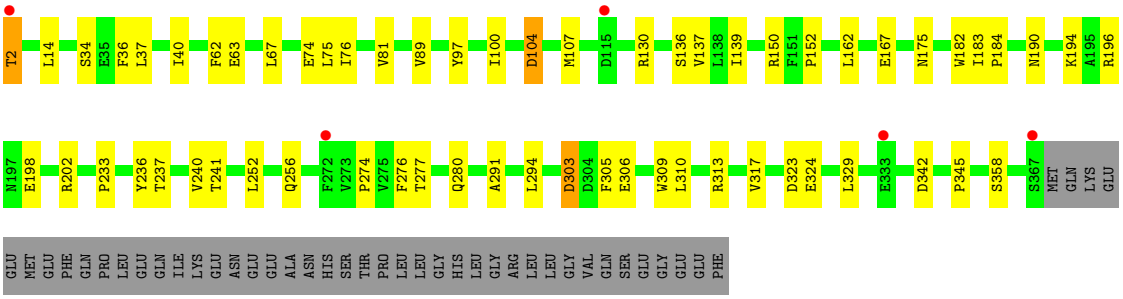
• Molecule 1: Bestrophin-1

Chain A:



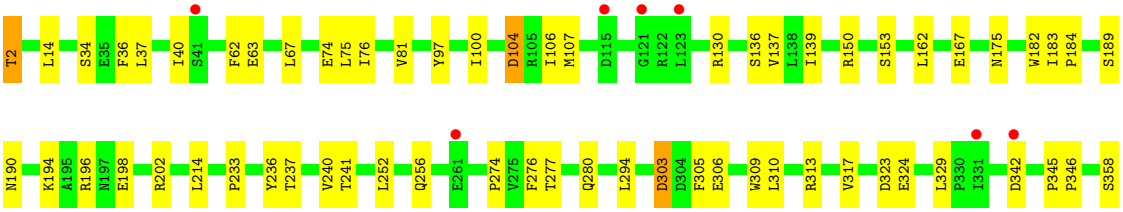
• Molecule 1: Bestrophin-1

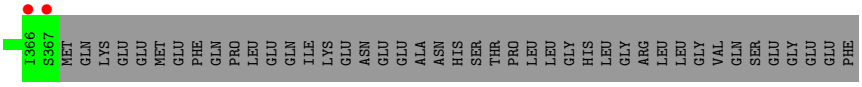
Chain B:



• Molecule 1: Bestrophin-1

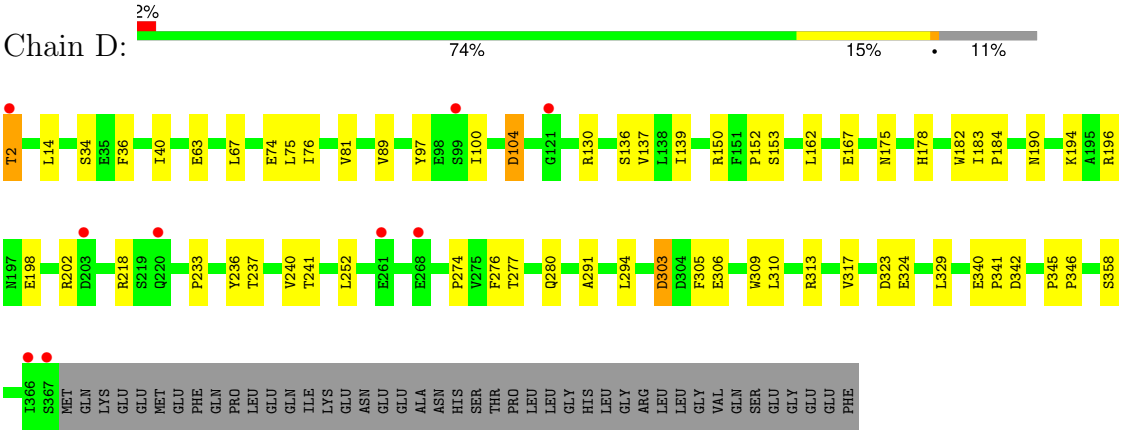
Chain C:





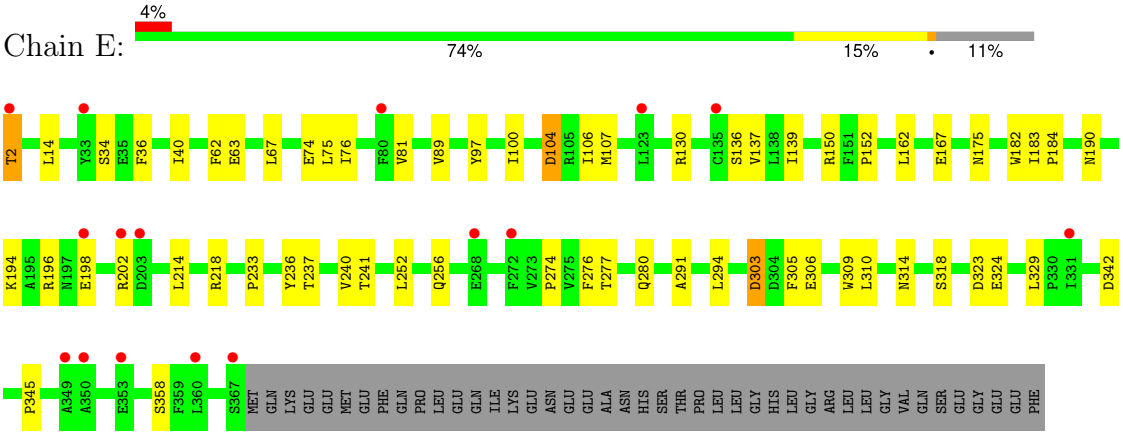
• Molecule 1: Bestrophin-1

Chain D:



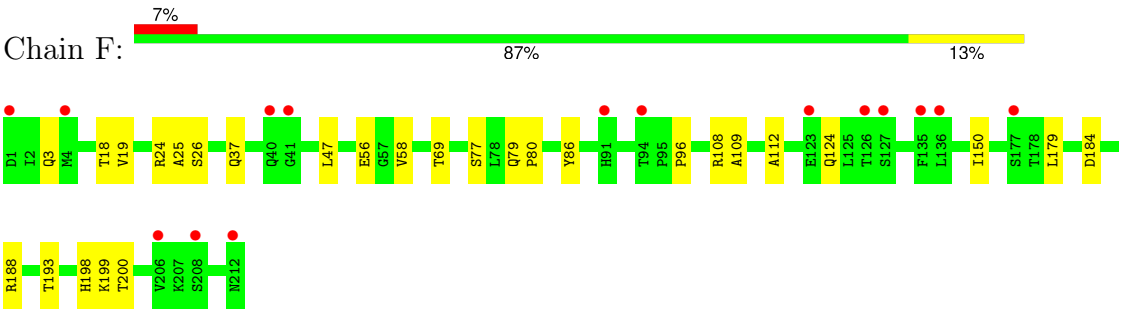
• Molecule 1: Bestrophin-1

Chain E:



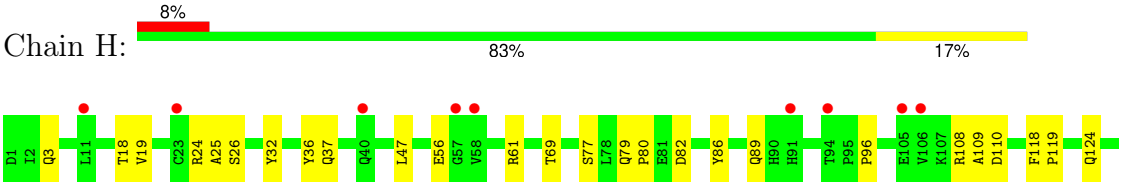
• Molecule 2: Fab antibody fragment, light chain

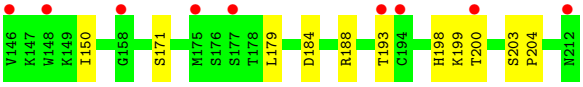
Chain F:



• Molecule 2: Fab antibody fragment, light chain

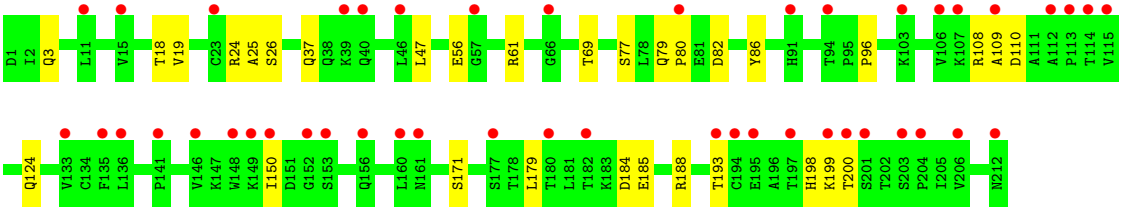
Chain H:





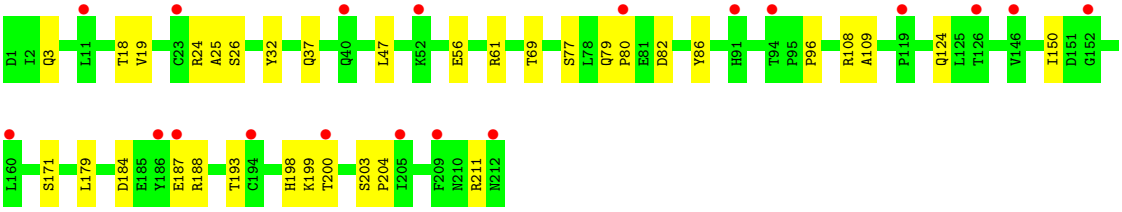
• Molecule 2: Fab antibody fragment, light chain

Chain J:



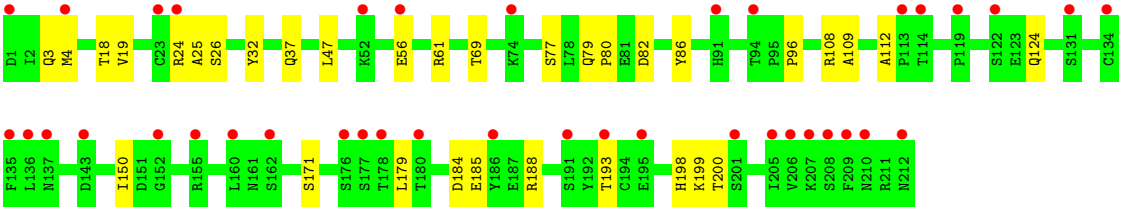
• Molecule 2: Fab antibody fragment, light chain

Chain L:



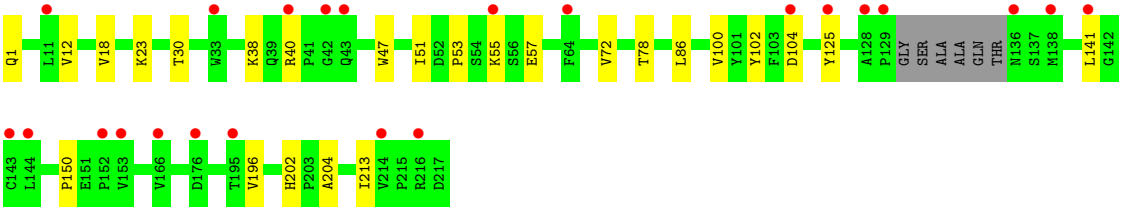
• Molecule 2: Fab antibody fragment, light chain

Chain N:



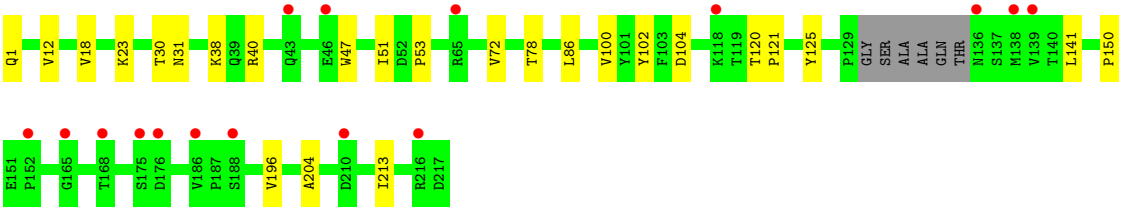
• Molecule 3: Fab antibody fragment, heavy chain

Chain G:

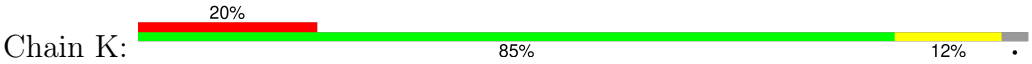


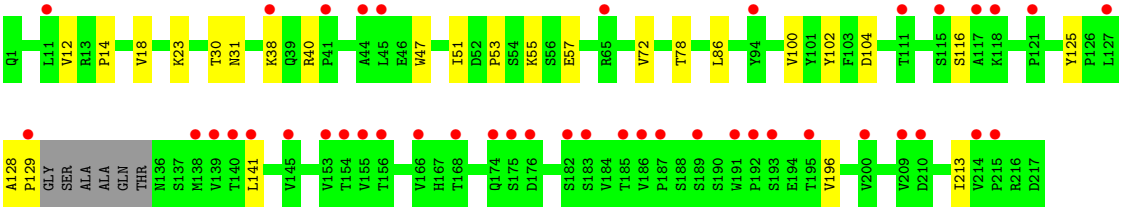
• Molecule 3: Fab antibody fragment, heavy chain

Chain I:

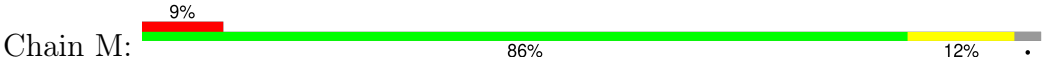


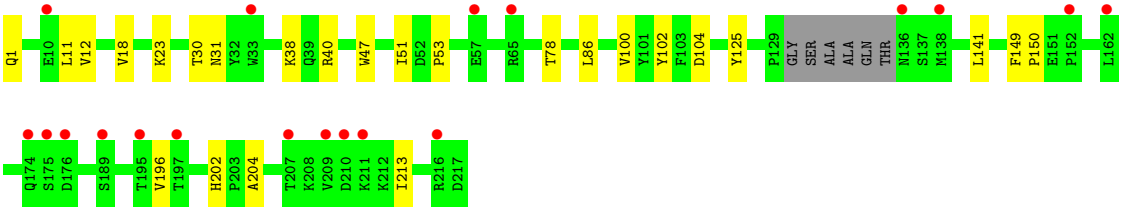
• Molecule 3: Fab antibody fragment, heavy chain



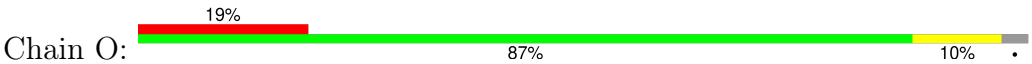


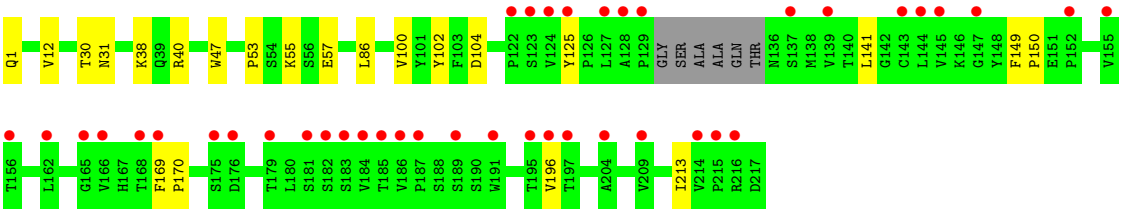
• Molecule 3: Fab antibody fragment, heavy chain





• Molecule 3: Fab antibody fragment, heavy chain





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	98.54Å 242.90Å 172.76Å 90.00° 93.68° 90.00°	Depositor
Resolution (Å)	39.89 – 2.85 39.89 – 2.85	Depositor EDS
% Data completeness (in resolution range)	99.7 (39.89-2.85) 99.9 (39.89-2.85)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.11	Depositor
$< I/\sigma(I) >$ [1]	1.63 (at 2.86Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.9_1678), CNS 1.3, REFMAC	Depositor
R, R_{free}	0.217 , 0.234 0.221 , 0.237	Depositor DCC
R_{free} test set	9458 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å^2)	69.8	Xtriage
Anisotropy	0.587	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 62.8	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	0.93	EDS
Total number of atoms	31125	wwPDB-VP
Average B, all atoms (Å^2)	102.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.05% 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, 0.333 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: CL, GOL, CA, C6N, K

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	0.23	0/3081	0.43	0/4200
1	B	0.23	0/3081	0.43	0/4200
1	C	0.23	0/3081	0.43	0/4200
1	D	0.23	0/3081	0.43	0/4200
1	E	0.23	0/3081	0.43	0/4200
2	F	0.23	0/1630	0.44	0/2225
2	H	0.23	0/1630	0.44	0/2225
2	J	0.23	0/1630	0.44	0/2225
2	L	0.23	0/1630	0.45	0/2225
2	N	0.23	0/1630	0.45	0/2225
3	G	0.22	0/1602	0.45	0/2202
3	I	0.22	0/1602	0.45	0/2202
3	K	0.22	0/1602	0.45	0/2202
3	M	0.22	0/1602	0.45	0/2202
3	O	0.22	0/1602	0.45	0/2202
All	All	0.23	0/31565	0.44	0/43135

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	2994	0	2931	40	0
1	B	2994	0	2931	41	0
1	C	2994	0	2931	44	0
1	D	2994	0	2931	45	0
1	E	2994	0	2931	42	0
2	F	1591	0	1449	16	0
2	H	1591	0	1449	20	0
2	J	1591	0	1449	17	0
2	L	1591	0	1449	19	0
2	N	1591	0	1449	20	0
3	G	1558	0	1441	18	0
3	I	1558	0	1441	18	0
3	K	1558	0	1441	17	0
3	M	1558	0	1441	20	0
3	O	1558	0	1441	14	0
4	A	6	0	8	1	0
4	B	6	0	8	1	0
4	C	6	0	8	1	0
4	D	6	0	8	1	0
4	E	6	0	8	1	0
5	A	3	0	0	0	0
5	B	3	0	0	1	0
5	C	3	0	0	1	0
5	D	3	0	0	1	0
5	E	3	0	0	1	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
6	C	1	0	0	0	0
6	D	1	0	0	0	0
6	E	1	0	0	0	0
7	A	1	0	0	0	0
7	B	1	0	0	0	0
7	C	2	0	0	0	0
7	E	1	0	0	0	0
8	A	69	0	84	1	0
8	B	69	0	84	1	0
8	C	69	0	84	2	0
8	D	69	0	84	1	0
8	E	69	0	84	2	0
9	A	2	0	0	0	0
9	B	2	0	0	0	0
9	C	2	0	0	0	0
9	D	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	E	2	0	0	0	0
All	All	31125	0	29565	338	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 6.

All (338) 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)
2:J:185:GLU:HA	2:J:188:ARG:HD3	1.60	0.83
2:N:108:ARG:HG3	2:N:109:ALA:H	1.44	0.81
1:A:294:LEU:HD11	1:B:233:PRO:HG2	1.70	0.73
1:B:294:LEU:HD11	1:C:233:PRO:HG2	1.71	0.72
1:D:294:LEU:HD11	1:E:233:PRO:HG2	1.72	0.71
3:M:38:LYS:HE2	3:M:40:ARG:HD2	1.73	0.71
3:K:38:LYS:HE2	3:K:40:ARG:HD2	1.73	0.71
1:C:294:LEU:HD11	1:D:233:PRO:HG2	1.73	0.70
3:O:38:LYS:HE2	3:O:40:ARG:HD2	1.74	0.70
1:A:233:PRO:HG2	1:E:294:LEU:HD11	1.72	0.70
3:G:38:LYS:HE2	3:G:40:ARG:HD2	1.74	0.69
3:I:196:VAL:HB	3:I:213:ILE:HD11	1.75	0.69
3:G:12:VAL:HG21	3:G:86:LEU:HD13	1.76	0.68
3:M:196:VAL:HB	3:M:213:ILE:HD11	1.76	0.68
1:B:76:ILE:HG12	1:C:76:ILE:HG21	1.76	0.68
3:G:196:VAL:HB	3:G:213:ILE:HD11	1.76	0.67
3:K:196:VAL:HB	3:K:213:ILE:HD11	1.77	0.67
3:I:38:LYS:HE2	3:I:40:ARG:HD2	1.76	0.66
3:K:30:THR:HA	3:K:53:PRO:HB2	1.78	0.66
3:O:30:THR:HA	3:O:53:PRO:HB2	1.77	0.66
1:A:76:ILE:HG12	1:B:76:ILE:HG21	1.77	0.65
3:O:196:VAL:HB	3:O:213:ILE:HD11	1.76	0.65
3:I:30:THR:HA	3:I:53:PRO:HB2	1.78	0.65
3:M:30:THR:HA	3:M:53:PRO:HB2	1.79	0.65
1:A:76:ILE:HG21	1:E:76:ILE:HG12	1.79	0.65
1:D:76:ILE:HG12	1:E:76:ILE:HG21	1.78	0.64
1:C:76:ILE:HG12	1:D:76:ILE:HG21	1.79	0.64
3:G:30:THR:HA	3:G:53:PRO:HB2	1.79	0.63
3:I:12:VAL:HG21	3:I:86:LEU:HD13	1.80	0.63
3:G:102:TYR:CE1	3:G:104:ASP:HB3	2.36	0.60
3:K:12:VAL:HG21	3:K:86:LEU:HD13	1.82	0.60
2:J:108:ARG:HD2	2:J:171:SER:HB2	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:141:LEU:HD13	3:G:213:ILE:HD13	1.86	0.58
3:M:141:LEU:HD13	3:M:213:ILE:HD13	1.85	0.58
2:L:150:ILE:HD11	2:L:179:LEU:HD21	1.86	0.58
3:I:141:LEU:HD13	3:I:213:ILE:HD13	1.86	0.57
3:O:12:VAL:HG21	3:O:86:LEU:HD13	1.86	0.57
1:B:342:ASP:OD2	1:D:175:ASN:ND2	2.37	0.57
3:K:14:PRO:HD2	3:K:116:SER:OG	2.05	0.57
1:A:183:ILE:HB	1:A:184:PRO:HD3	1.87	0.57
1:B:183:ILE:HB	1:B:184:PRO:HD3	1.87	0.57
1:C:183:ILE:HB	1:C:184:PRO:HD3	1.87	0.57
1:E:183:ILE:HB	1:E:184:PRO:HD3	1.87	0.56
3:K:141:LEU:HD13	3:K:213:ILE:HD13	1.87	0.56
8:A:507:C6N:H69	8:A:507:C6N:O23	2.05	0.56
8:B:507:C6N:H69	8:B:507:C6N:O23	2.05	0.56
3:G:102:TYR:HE1	3:G:104:ASP:HB3	1.70	0.56
3:O:141:LEU:HD13	3:O:213:ILE:HD13	1.88	0.56
1:B:175:ASN:ND2	1:E:342:ASP:OD2	2.38	0.56
8:C:508:C6N:H69	8:C:508:C6N:O23	2.05	0.55
1:D:183:ILE:HB	1:D:184:PRO:HD3	1.87	0.55
8:D:506:C6N:O23	8:D:506:C6N:H69	2.05	0.55
8:E:507:C6N:H69	8:E:507:C6N:O23	2.05	0.55
3:M:12:VAL:HG21	3:M:86:LEU:HD13	1.89	0.55
2:F:150:ILE:HD11	2:F:179:LEU:HD21	1.88	0.54
2:H:198:HIS:HB3	2:H:200:THR:HG22	1.89	0.54
1:D:237:THR:O	1:D:241:THR:HG23	2.08	0.54
2:J:25:ALA:HB3	2:J:69:THR:HA	1.90	0.54
1:E:237:THR:O	1:E:241:THR:HG23	2.08	0.53
1:A:342:ASP:OD2	1:C:175:ASN:ND2	2.41	0.53
2:N:150:ILE:HD11	2:N:179:LEU:HD21	1.91	0.53
1:C:237:THR:O	1:C:241:THR:HG23	2.09	0.53
1:C:342:ASP:OD2	1:E:175:ASN:ND2	2.41	0.53
1:A:81:VAL:HG22	1:A:240:VAL:HG12	1.91	0.53
2:J:150:ILE:HD11	2:J:179:LEU:HD21	1.91	0.53
2:L:79:GLN:HB3	2:L:80:PRO:HD2	1.92	0.52
1:A:175:ASN:ND2	1:D:342:ASP:OD2	2.41	0.52
2:H:79:GLN:HB3	2:H:80:PRO:HD2	1.92	0.52
2:N:79:GLN:HB3	2:N:80:PRO:HD2	1.92	0.52
2:H:150:ILE:HD11	2:H:179:LEU:HD21	1.91	0.52
1:B:237:THR:O	1:B:241:THR:HG23	2.10	0.51
1:C:14:LEU:HD13	1:D:34:SER:HB2	1.92	0.51
2:J:3:GLN:H	2:J:26:SER:HB3	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:47:LEU:HD11	2:J:86:TYR:HE1	1.75	0.51
2:J:108:ARG:NH1	2:J:109:ALA:O	2.44	0.51
2:L:108:ARG:NH1	2:L:109:ALA:O	2.43	0.51
1:A:237:THR:O	1:A:241:THR:HG23	2.09	0.51
1:D:274:PRO:HB2	1:D:277:THR:HB	1.92	0.51
1:A:14:LEU:HD13	1:B:34:SER:HB2	1.92	0.51
1:E:81:VAL:HG22	1:E:240:VAL:HG12	1.92	0.51
1:B:81:VAL:HG22	1:B:240:VAL:HG12	1.92	0.51
1:D:81:VAL:HG22	1:D:240:VAL:HG12	1.92	0.51
2:L:3:GLN:H	2:L:26:SER:HB3	1.75	0.51
2:F:25:ALA:HB3	2:F:69:THR:HA	1.92	0.51
2:L:47:LEU:HD11	2:L:86:TYR:HE1	1.76	0.51
1:A:274:PRO:HB2	1:A:277:THR:HB	1.93	0.51
1:E:274:PRO:HB2	1:E:277:THR:HB	1.93	0.51
1:A:190:ASN:HB3	1:E:329:LEU:HD11	1.93	0.50
1:D:14:LEU:HD13	1:E:34:SER:HB2	1.93	0.50
2:F:47:LEU:HD11	2:F:86:TYR:HE1	1.77	0.50
2:J:79:GLN:HB3	2:J:80:PRO:HD2	1.92	0.50
2:L:25:ALA:HB3	2:L:69:THR:HA	1.93	0.50
2:N:3:GLN:H	2:N:26:SER:HB3	1.76	0.50
1:A:36:PHE:CZ	1:A:40:ILE:HD11	2.47	0.50
2:H:108:ARG:NH1	2:H:109:ALA:O	2.45	0.50
2:H:184:ASP:O	2:H:188:ARG:HG3	2.11	0.50
1:A:329:LEU:HD11	1:B:190:ASN:HB3	1.94	0.50
1:C:276:PHE:O	1:C:280:GLN:HG3	2.12	0.50
2:F:79:GLN:HB3	2:F:80:PRO:HD2	1.92	0.50
2:F:198:HIS:HB3	2:F:200:THR:HG22	1.93	0.50
1:C:81:VAL:HG22	1:C:240:VAL:HG12	1.93	0.50
1:C:329:LEU:HD11	1:D:190:ASN:HB3	1.93	0.50
2:N:47:LEU:HD11	2:N:86:TYR:HE1	1.76	0.50
2:F:184:ASP:O	2:F:188:ARG:HG3	2.11	0.50
2:J:198:HIS:HB3	2:J:200:THR:HG22	1.93	0.50
2:N:4:MET:HE1	2:N:25:ALA:HA	1.94	0.50
2:H:108:ARG:HD2	2:H:171:SER:HB2	1.94	0.49
1:A:276:PHE:O	1:A:280:GLN:HG3	2.12	0.49
1:B:14:LEU:HD13	1:C:34:SER:HB2	1.94	0.49
2:L:198:HIS:HB3	2:L:200:THR:HG22	1.93	0.49
1:B:329:LEU:HD11	1:C:190:ASN:HB3	1.94	0.49
1:D:152:PRO:HB2	3:M:31:ASN:O	2.13	0.49
1:B:276:PHE:O	1:B:280:GLN:HG3	2.13	0.49
1:B:358:SER:HA	1:C:309:TRP:NE1	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:47:LEU:HD11	2:H:86:TYR:HE1	1.78	0.49
2:N:184:ASP:O	2:N:188:ARG:HG3	2.13	0.49
1:B:36:PHE:CZ	1:B:40:ILE:HD11	2.48	0.49
1:D:130:ARG:NH2	1:D:167:GLU:OE2	2.46	0.49
1:E:130:ARG:NH2	1:E:167:GLU:OE2	2.45	0.49
1:B:130:ARG:NH2	1:B:167:GLU:OE2	2.45	0.49
1:D:276:PHE:O	1:D:280:GLN:HG3	2.12	0.49
1:E:36:PHE:CZ	1:E:40:ILE:HD11	2.48	0.49
2:J:184:ASP:O	2:J:188:ARG:HG3	2.12	0.49
2:L:124:GLN:HG3	3:M:125:TYR:CE2	2.48	0.49
2:N:25:ALA:HB3	2:N:69:THR:HA	1.94	0.49
2:J:18:THR:HG22	2:J:77:SER:H	1.78	0.49
3:M:18:VAL:HG12	3:M:86:LEU:HD11	1.94	0.49
2:N:108:ARG:HD2	2:N:171:SER:HB2	1.95	0.49
1:B:306:GLU:HA	4:B:501:GOL:H12	1.94	0.48
2:F:3:GLN:H	2:F:26:SER:HB3	1.77	0.48
2:N:18:THR:HG22	2:N:77:SER:H	1.78	0.48
2:N:198:HIS:HB3	2:N:200:THR:HG22	1.94	0.48
1:D:306:GLU:HA	4:D:501:GOL:H12	1.96	0.48
2:H:3:GLN:H	2:H:26:SER:HB3	1.76	0.48
2:N:124:GLN:HG3	3:O:125:TYR:CE2	2.49	0.48
1:D:345:PRO:HB2	1:E:150:ARG:NH2	2.29	0.48
2:H:25:ALA:HB3	2:H:69:THR:HA	1.95	0.48
2:J:124:GLN:HG3	3:K:125:TYR:CE2	2.49	0.48
2:L:184:ASP:O	2:L:188:ARG:HG3	2.14	0.48
1:C:36:PHE:CZ	1:C:40:ILE:HD11	2.48	0.48
1:E:75:LEU:HD21	1:E:280:GLN:NE2	2.29	0.48
2:L:18:THR:HG22	2:L:77:SER:H	1.78	0.48
2:L:108:ARG:HD2	2:L:171:SER:HB2	1.95	0.48
1:A:100:ILE:HG21	1:A:310:LEU:HD23	1.96	0.47
1:C:345:PRO:HB2	1:D:150:ARG:NH2	2.29	0.47
2:F:18:THR:HG22	2:F:77:SER:H	1.79	0.47
1:D:36:PHE:CZ	1:D:40:ILE:HD11	2.49	0.47
2:H:18:THR:HG22	2:H:77:SER:H	1.78	0.47
1:A:306:GLU:HA	4:A:501:GOL:H12	1.96	0.47
3:M:11:LEU:HD11	3:M:149:PHE:CE2	2.48	0.47
1:E:276:PHE:O	1:E:280:GLN:HG3	2.14	0.47
3:O:102:TYR:CE1	3:O:104:ASP:HB3	2.50	0.47
1:A:309:TRP:NE1	1:E:358:SER:HA	2.30	0.47
2:H:124:GLN:HG3	3:I:125:TYR:CE2	2.50	0.47
1:A:130:ARG:NH2	1:A:167:GLU:OE2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:274:PRO:HB2	1:B:277:THR:HB	1.95	0.47
1:B:345:PRO:HB2	1:C:150:ARG:NH2	2.29	0.47
1:C:130:ARG:NH2	1:C:167:GLU:OE2	2.47	0.47
1:C:137:VAL:HG21	1:C:162:LEU:HD13	1.97	0.47
1:C:274:PRO:HB2	1:C:277:THR:HB	1.95	0.47
1:E:194:LYS:O	1:E:198:GLU:HG3	2.15	0.47
2:L:198:HIS:CD2	2:L:199:LYS:H	2.33	0.47
1:A:358:SER:HA	1:B:309:TRP:NE1	2.30	0.47
1:C:100:ILE:HG21	1:C:310:LEU:HD23	1.97	0.47
1:A:34:SER:HB2	1:E:14:LEU:HD13	1.96	0.46
1:C:75:LEU:HD21	1:C:280:GLN:NE2	2.30	0.46
1:D:329:LEU:HD11	1:E:190:ASN:HB3	1.95	0.46
2:F:124:GLN:HG3	3:G:125:TYR:CE2	2.50	0.46
1:D:100:ILE:HG21	1:D:310:LEU:HD23	1.97	0.46
1:A:150:ARG:NH2	1:E:345:PRO:HB2	2.30	0.46
3:M:202:HIS:CE1	3:M:204:ALA:HB3	2.51	0.46
2:N:37:GLN:HB2	2:N:47:LEU:HD11	1.97	0.46
1:C:306:GLU:HA	4:C:501:GOL:H12	1.97	0.46
3:G:18:VAL:HG12	3:G:86:LEU:HD11	1.97	0.46
1:A:346:PRO:HA	2:H:32:TYR:CE2	2.51	0.46
1:E:306:GLU:HA	4:E:501:GOL:H12	1.97	0.46
1:D:75:LEU:HD21	1:D:280:GLN:NE2	2.31	0.46
1:D:137:VAL:HG21	1:D:162:LEU:HD13	1.97	0.46
1:B:100:ILE:HG21	1:B:310:LEU:HD23	1.97	0.46
1:D:97:TYR:HB2	1:D:305:PHE:CZ	2.51	0.45
1:E:100:ILE:HG21	1:E:310:LEU:HD23	1.97	0.45
2:F:198:HIS:CD2	2:F:199:LYS:H	2.34	0.45
2:H:198:HIS:CD2	2:H:199:LYS:H	2.34	0.45
2:J:37:GLN:HB2	2:J:47:LEU:HD11	1.99	0.45
2:N:198:HIS:CD2	2:N:199:LYS:H	2.34	0.45
2:H:118:PHE:HA	2:H:119:PRO:HD3	1.83	0.45
2:J:198:HIS:CD2	2:J:199:LYS:H	2.34	0.45
2:L:203:SER:HA	2:L:204:PRO:HD3	1.88	0.45
1:B:36:PHE:O	1:B:40:ILE:HG12	2.17	0.45
1:B:137:VAL:HG21	1:B:162:LEU:HD13	1.97	0.45
1:A:75:LEU:HD21	1:A:280:GLN:NE2	2.31	0.45
1:C:97:TYR:HB2	1:C:305:PHE:CZ	2.52	0.45
1:B:152:PRO:HB2	3:I:31:ASN:O	2.17	0.45
2:N:24:ARG:HG2	2:N:24:ARG:HH11	1.82	0.45
1:C:2:THR:OG1	1:C:303:ASP:HA	2.17	0.44
1:A:194:LYS:O	1:A:198:GLU:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:194:LYS:O	1:C:198:GLU:HG3	2.17	0.44
1:D:194:LYS:O	1:D:198:GLU:HG3	2.17	0.44
3:M:102:TYR:CE1	3:M:104:ASP:HB3	2.52	0.44
3:I:102:TYR:CE1	3:I:104:ASP:HB3	2.52	0.44
1:A:345:PRO:HB2	1:B:150:ARG:NH2	2.32	0.44
1:B:97:TYR:HB2	1:B:305:PHE:CZ	2.53	0.44
1:D:346:PRO:HA	2:N:32:TYR:CE2	2.53	0.44
1:B:63:GLU:O	1:B:67:LEU:HG	2.18	0.44
1:B:75:LEU:HD21	1:B:280:GLN:NE2	2.32	0.44
1:C:36:PHE:O	1:C:40:ILE:HG12	2.16	0.44
1:C:153:SER:HB3	3:K:31:ASN:HB3	2.00	0.44
2:F:108:ARG:NH1	2:F:109:ALA:O	2.50	0.44
2:H:203:SER:HA	2:H:204:PRO:HD3	1.89	0.44
1:B:104:ASP:HA	1:B:107:MET:HB3	2.00	0.44
1:E:36:PHE:O	1:E:40:ILE:HG12	2.18	0.44
3:M:1:GLN:OE1	3:M:1:GLN:N	2.44	0.44
1:C:358:SER:HA	1:D:309:TRP:NE1	2.32	0.43
1:E:136:SER:O	1:E:139:ILE:HG22	2.18	0.43
2:F:37:GLN:HB2	2:F:47:LEU:HD11	2.00	0.43
2:H:37:GLN:HB2	2:H:47:LEU:HD11	2.00	0.43
3:M:11:LEU:HD11	3:M:149:PHE:CZ	2.53	0.43
2:N:112:ALA:HA	2:N:200:THR:HG21	2.00	0.43
2:N:185:GLU:HA	2:N:188:ARG:HD3	1.98	0.43
1:A:89:VAL:HG11	1:A:291:ALA:HA	2.00	0.43
1:D:136:SER:O	1:D:139:ILE:HG22	2.18	0.43
1:D:252:LEU:HD23	1:D:252:LEU:HA	1.83	0.43
1:E:62:PHE:HZ	1:E:256:GLN:HG3	1.84	0.43
1:E:97:TYR:HB2	1:E:305:PHE:CZ	2.53	0.43
3:M:150:PRO:HD2	3:M:204:ALA:HB1	1.99	0.43
1:B:194:LYS:O	1:B:198:GLU:HG3	2.18	0.43
2:H:96:PRO:HD2	3:I:47:TRP:CD2	2.54	0.43
1:A:97:TYR:HB2	1:A:305:PHE:CZ	2.54	0.43
1:A:137:VAL:HG21	1:A:162:LEU:HD13	2.00	0.43
1:A:317:VAL:HG13	1:B:182:TRP:CZ2	2.53	0.43
1:D:2:THR:OG1	1:D:303:ASP:HA	2.19	0.43
1:D:358:SER:HA	1:E:309:TRP:NE1	2.34	0.43
2:N:96:PRO:HD2	3:O:47:TRP:CD2	2.54	0.43
1:C:323:ASP:HB3	1:C:324:GLU:OE1	2.19	0.43
2:L:96:PRO:HD2	3:M:47:TRP:CD2	2.54	0.43
1:A:2:THR:OG1	1:A:303:ASP:HA	2.19	0.43
1:A:63:GLU:O	1:A:67:LEU:HG	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:252:LEU:HD23	1:C:252:LEU:HA	1.83	0.43
1:D:36:PHE:O	1:D:40:ILE:HG12	2.18	0.43
1:E:137:VAL:HG21	1:E:162:LEU:HD13	2.00	0.43
2:L:187:GLU:OE1	2:L:211:ARG:NH2	2.51	0.43
1:A:36:PHE:O	1:A:40:ILE:HG12	2.19	0.43
1:E:323:ASP:HB3	1:E:324:GLU:OE1	2.19	0.43
1:A:252:LEU:HD23	1:A:252:LEU:HA	1.83	0.43
1:E:63:GLU:O	1:E:67:LEU:HG	2.19	0.43
1:B:136:SER:O	1:B:139:ILE:HG22	2.19	0.43
1:B:323:ASP:HB3	1:B:324:GLU:OE1	2.19	0.43
1:E:252:LEU:HD23	1:E:252:LEU:HA	1.83	0.43
3:M:51:ILE:O	3:M:53:PRO:HD3	2.19	0.43
1:A:136:SER:O	1:A:139:ILE:HG22	2.18	0.42
1:B:252:LEU:HD23	1:B:252:LEU:HA	1.83	0.42
1:D:63:GLU:O	1:D:67:LEU:HG	2.19	0.42
1:A:62:PHE:HZ	1:A:256:GLN:HG3	1.85	0.42
1:C:136:SER:O	1:C:139:ILE:HG22	2.19	0.42
1:D:89:VAL:HG11	1:D:291:ALA:HA	2.01	0.42
1:E:152:PRO:HB2	3:O:31:ASN:O	2.19	0.42
3:G:150:PRO:HD2	3:G:204:ALA:HB1	2.01	0.42
3:I:23:LYS:HG3	3:I:78:THR:HG22	2.02	0.42
1:A:313:ARG:HD3	1:A:313:ARG:C	2.40	0.42
1:B:317:VAL:HG13	1:C:182:TRP:CZ2	2.55	0.42
1:E:2:THR:OG1	1:E:303:ASP:HA	2.19	0.42
1:E:104:ASP:HA	1:E:107:MET:HB3	2.01	0.42
3:K:102:TYR:CE1	3:K:104:ASP:HB3	2.54	0.42
1:A:340:GLU:HA	1:A:341:PRO:HD2	1.94	0.42
1:C:63:GLU:O	1:C:67:LEU:HG	2.20	0.42
3:I:18:VAL:HG12	3:I:86:LEU:HD11	2.01	0.42
2:J:96:PRO:HD2	3:K:47:TRP:CD2	2.55	0.42
2:L:61:ARG:HD2	2:L:82:ASP:OD2	2.20	0.42
3:O:1:GLN:OE1	3:O:1:GLN:N	2.44	0.42
1:B:2:THR:OG1	1:B:303:ASP:HA	2.19	0.42
1:E:106:ILE:HD11	1:E:214:LEU:HA	2.01	0.42
3:G:23:LYS:HG3	3:G:78:THR:HG22	2.01	0.42
2:H:24:ARG:HG2	2:H:24:ARG:HH11	1.85	0.42
3:I:120:THR:HA	3:I:121:PRO:HD3	1.89	0.42
3:O:55:LYS:HB2	3:O:57:GLU:HG3	2.02	0.42
1:D:323:ASP:HB3	1:D:324:GLU:OE1	2.20	0.42
3:I:213:ILE:HD12	3:I:213:ILE:O	2.20	0.42
2:L:37:GLN:HB2	2:L:47:LEU:HD11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:313:ARG:HD3	1:C:313:ARG:C	2.41	0.41
1:E:89:VAL:HG11	1:E:291:ALA:HA	2.02	0.41
8:E:507:C6N:H6	8:E:507:C6N:H4	1.80	0.41
3:G:1:GLN:OE1	3:G:1:GLN:N	2.45	0.41
1:D:313:ARG:HD3	1:D:313:ARG:C	2.40	0.41
1:D:340:GLU:HA	1:D:341:PRO:HD2	1.94	0.41
2:J:24:ARG:HG2	2:J:24:ARG:HH11	1.85	0.41
8:C:508:C6N:H6	8:C:508:C6N:H4	1.79	0.41
2:J:61:ARG:HD2	2:J:82:ASP:OD2	2.20	0.41
3:M:213:ILE:HD12	3:M:213:ILE:O	2.20	0.41
3:O:169:PHE:HA	3:O:170:PRO:HD3	1.92	0.41
3:K:55:LYS:HB2	3:K:57:GLU:HG3	2.02	0.41
3:M:213:ILE:H	3:M:213:ILE:HG13	1.64	0.41
3:O:213:ILE:HD12	3:O:213:ILE:O	2.21	0.41
1:C:313:ARG:HA	1:D:178:HIS:NE2	2.36	0.41
3:G:213:ILE:HD12	3:G:213:ILE:O	2.21	0.41
2:H:61:ARG:HD2	2:H:82:ASP:OD2	2.20	0.41
3:I:53:PRO:HA	3:I:72:VAL:HG21	2.03	0.41
3:K:213:ILE:HD12	3:K:213:ILE:O	2.20	0.41
1:A:104:ASP:HA	1:A:107:MET:HB3	2.03	0.41
1:C:62:PHE:HZ	1:C:256:GLN:HG3	1.85	0.41
1:C:104:ASP:HA	1:C:107:MET:HB3	2.02	0.41
1:C:106:ILE:HD11	1:C:214:LEU:HA	2.02	0.41
1:C:317:VAL:HG13	1:D:182:TRP:CZ2	2.56	0.41
3:G:150:PRO:O	3:G:202:HIS:HE1	2.04	0.41
2:L:24:ARG:HG2	2:L:24:ARG:HH11	1.85	0.41
1:B:313:ARG:HD3	1:B:313:ARG:C	2.40	0.41
1:C:346:PRO:HA	2:L:32:TYR:CE2	2.56	0.41
1:D:317:VAL:HG13	1:E:182:TRP:CZ2	2.56	0.41
1:E:74:GLU:HB3	5:E:505:CL:CL	2.57	0.41
2:F:96:PRO:HD2	3:G:47:TRP:CD2	2.56	0.41
3:G:53:PRO:HA	3:G:72:VAL:HG21	2.03	0.41
2:H:36:TYR:HE2	2:H:89:GLN:HE21	1.69	0.41
3:I:51:ILE:O	3:I:53:PRO:HD3	2.21	0.41
3:K:18:VAL:HG12	3:K:86:LEU:HD11	2.01	0.41
2:N:61:ARG:HD2	2:N:82:ASP:OD2	2.21	0.41
1:A:323:ASP:HB3	1:A:324:GLU:OE1	2.20	0.41
1:D:74:GLU:HB3	5:D:505:CL:CL	2.58	0.41
3:K:53:PRO:HA	3:K:72:VAL:HG21	2.02	0.41
1:B:62:PHE:HZ	1:B:256:GLN:HG3	1.86	0.40
1:B:89:VAL:HG11	1:B:291:ALA:HA	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:74:GLU:HB3	5:C:505:CL:CL	2.58	0.40
1:D:153:SER:HB3	3:M:31:ASN:HB3	2.03	0.40
2:F:24:ARG:HH11	2:F:24:ARG:HG2	1.85	0.40
3:I:1:GLN:OE1	3:I:1:GLN:N	2.44	0.40
3:K:23:LYS:HG3	3:K:78:THR:HG22	2.03	0.40
1:B:74:GLU:HB3	5:B:505:CL:CL	2.58	0.40
1:C:104:ASP:OD2	1:D:218:ARG:NH2	2.51	0.40
1:D:104:ASP:OD2	1:E:218:ARG:NH2	2.48	0.40
1:E:314:ASN:O	1:E:318:SER:OG	2.30	0.40
2:F:112:ALA:HA	2:F:200:THR:HG21	2.02	0.40
3:G:55:LYS:HB2	3:G:57:GLU:HG3	2.03	0.40
3:I:150:PRO:HD2	3:I:204:ALA:HB1	2.03	0.40
3:M:23:LYS:HG3	3:M:78:THR:HG22	2.01	0.40
3:G:51:ILE:O	3:G:53:PRO:HD3	2.21	0.40
3:O:149:PHE:HA	3:O:150:PRO:HA	1.90	0.40
2:F:47:LEU:HA	2:F:58:VAL:HG21	2.04	0.40
3:K:51:ILE:O	3:K:53:PRO:HD3	2.20	0.40
3:I:213:ILE:H	3:I:213:ILE:HG13	1.65	0.40
3:K:128:ALA:HA	3:K:129:PRO:HD3	1.97	0.40

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	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	37	55
1	B	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	37	55
1	C	364/409 (89%)	348 (96%)	15 (4%)	1 (0%)	37	55
1	D	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	37	55
1	E	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	37	55

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	F	210/212 (99%)	192 (91%)	17 (8%)	1 (0%)	25	43
2	H	210/212 (99%)	192 (91%)	17 (8%)	1 (0%)	25	43
2	J	210/212 (99%)	191 (91%)	18 (9%)	1 (0%)	25	43
2	L	210/212 (99%)	192 (91%)	17 (8%)	1 (0%)	25	43
2	N	210/212 (99%)	192 (91%)	17 (8%)	1 (0%)	25	43
3	G	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	25	43
3	I	207/217 (95%)	200 (97%)	6 (3%)	1 (0%)	25	43
3	K	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	25	43
3	M	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	25	43
3	O	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	25	43
All	All	3905/4190 (93%)	3707 (95%)	183 (5%)	15 (0%)	30	49

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	202	ARG
1	B	202	ARG
1	C	202	ARG
1	D	202	ARG
1	E	202	ARG
2	F	56	GLU
2	H	56	GLU
2	J	56	GLU
2	L	56	GLU
2	N	56	GLU
3	G	100	VAL
3	I	100	VAL
3	K	100	VAL
3	M	100	VAL
3	O	100	VAL

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	327/370 (88%)	320 (98%)	7 (2%)	48	72
1	B	327/370 (88%)	321 (98%)	6 (2%)	54	76
1	C	327/370 (88%)	320 (98%)	7 (2%)	48	72
1	D	327/370 (88%)	322 (98%)	5 (2%)	60	81
1	E	327/370 (88%)	322 (98%)	5 (2%)	60	81
2	F	173/187 (92%)	171 (99%)	2 (1%)	67	84
2	H	173/187 (92%)	170 (98%)	3 (2%)	56	78
2	J	173/187 (92%)	170 (98%)	3 (2%)	56	78
2	L	173/187 (92%)	171 (99%)	2 (1%)	67	84
2	N	173/187 (92%)	171 (99%)	2 (1%)	67	84
3	G	166/190 (87%)	166 (100%)	0	100	100
3	I	166/190 (87%)	166 (100%)	0	100	100
3	K	166/190 (87%)	166 (100%)	0	100	100
3	M	166/190 (87%)	166 (100%)	0	100	100
3	O	166/190 (87%)	166 (100%)	0	100	100
All	All	3330/3735 (89%)	3288 (99%)	42 (1%)	65	83

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	THR
1	A	37	LEU
1	A	104	ASP
1	A	189	SER
1	A	196	ARG
1	A	236	TYR
1	A	303	ASP
1	B	2	THR
1	B	37	LEU
1	B	104	ASP
1	B	196	ARG
1	B	236	TYR
1	B	303	ASP
1	C	2	THR
1	C	37	LEU
1	C	104	ASP
1	C	189	SER
1	C	196	ARG

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Mol	Chain	Res	Type
1	C	236	TYR
1	C	303	ASP
1	D	2	THR
1	D	104	ASP
1	D	196	ARG
1	D	236	TYR
1	D	303	ASP
1	E	2	THR
1	E	104	ASP
1	E	196	ARG
1	E	236	TYR
1	E	303	ASP
2	F	19	VAL
2	F	193	THR
2	H	19	VAL
2	H	110	ASP
2	H	193	THR
2	J	19	VAL
2	J	110	ASP
2	J	193	THR
2	L	19	VAL
2	L	193	THR
2	N	19	VAL
2	N	193	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	175	ASN
1	A	326	HIS
1	B	175	ASN
1	B	326	HIS
1	C	175	ASN
1	C	326	HIS
1	D	175	ASN
1	D	326	HIS
1	E	175	ASN
1	E	326	HIS
2	F	3	GLN
2	F	38	GLN
2	F	50	ASN
2	F	89	GLN

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Mol	Chain	Res	Type
2	F	124	GLN
2	F	198	HIS
3	G	39	GLN
3	G	136	ASN
3	G	202	HIS
2	H	3	GLN
2	H	38	GLN
2	H	50	ASN
2	H	79	GLN
2	H	89	GLN
2	H	124	GLN
2	H	198	HIS
3	I	39	GLN
3	I	136	ASN
3	I	202	HIS
2	J	3	GLN
2	J	38	GLN
2	J	50	ASN
2	J	79	GLN
2	J	89	GLN
2	J	124	GLN
3	K	39	GLN
3	K	136	ASN
3	K	202	HIS
2	L	3	GLN
2	L	38	GLN
2	L	50	ASN
2	L	79	GLN
2	L	89	GLN
2	L	124	GLN
3	M	39	GLN
3	M	136	ASN
3	M	202	HIS
2	N	3	GLN
2	N	38	GLN
2	N	50	ASN
2	N	79	GLN
2	N	89	GLN
2	N	124	GLN
3	O	39	GLN
3	O	136	ASN
3	O	202	HIS

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 35 ligands modelled in this entry, 25 are monoatomic - leaving 10 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	GOL	C	501	-	5,5,5	0.38	0	5,5,5	0.31	0
8	C6N	C	508	-	74,74,74	0.49	0	98,104,104	1.45	13 (13%)
4	GOL	B	501	-	5,5,5	0.37	0	5,5,5	0.29	0
8	C6N	B	507	-	74,74,74	0.49	0	98,104,104	1.45	12 (12%)
8	C6N	D	506	-	74,74,74	0.49	0	98,104,104	1.45	12 (12%)
4	GOL	A	501	-	5,5,5	0.37	0	5,5,5	0.30	0
4	GOL	E	501	-	5,5,5	0.38	0	5,5,5	0.30	0
8	C6N	E	507	-	74,74,74	0.48	0	98,104,104	1.45	13 (13%)
4	GOL	D	501	-	5,5,5	0.37	0	5,5,5	0.31	0
8	C6N	A	507	-	74,74,74	0.49	0	98,104,104	1.45	13 (13%)

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	GOL	C	501	-	-	0/4/4/4	-
8	C6N	C	508	-	-	27/44/140/140	0/6/6/6
4	GOL	B	501	-	-	1/4/4/4	-
8	C6N	B	507	-	-	28/44/140/140	0/6/6/6
8	C6N	D	506	-	-	28/44/140/140	0/6/6/6
4	GOL	A	501	-	-	0/4/4/4	-
4	GOL	E	501	-	-	0/4/4/4	-
8	C6N	E	507	-	-	27/44/140/140	0/6/6/6
4	GOL	D	501	-	-	0/4/4/4	-
8	C6N	A	507	-	-	28/44/140/140	0/6/6/6

There are no bond length outliers.

All (63) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	E	507	C6N	C45-O44-C43	-4.69	106.86	117.98
8	B	507	C6N	C45-O44-C43	-4.68	106.88	117.98
8	A	507	C6N	C45-O44-C43	-4.62	107.02	117.98
8	C	508	C6N	C45-O44-C43	-4.62	107.03	117.98
8	D	506	C6N	C45-O44-C43	-4.58	107.11	117.98
8	D	506	C6N	C38-O59-C56	3.82	121.19	113.72
8	E	507	C6N	O55-C52-C50	3.82	116.58	109.70
8	C	508	C6N	C38-O59-C56	3.79	121.12	113.72
8	A	507	C6N	C38-O59-C56	3.76	121.07	113.72
8	B	507	C6N	C38-O59-C56	3.73	121.00	113.72
8	E	507	C6N	C38-O59-C56	3.72	120.99	113.72
8	A	507	C6N	O55-C52-C50	3.72	116.40	109.70
8	C	508	C6N	O55-C52-C50	3.72	116.39	109.70
8	D	506	C6N	O55-C52-C50	3.71	116.39	109.70
8	B	507	C6N	O55-C52-C50	3.69	116.36	109.70
8	A	507	C6N	C24-O23-C22	3.43	122.02	113.31
8	B	507	C6N	C24-O23-C22	3.42	122.00	113.31
8	C	508	C6N	O37-C38-C39	3.42	113.47	108.27
8	E	507	C6N	O37-C38-C39	3.39	113.42	108.27
8	D	506	C6N	O59-C56-C43	3.38	116.72	109.72
8	D	506	C6N	C24-O23-C22	3.38	121.88	113.31
8	A	507	C6N	O37-C38-C39	3.37	113.39	108.27
8	C	508	C6N	C24-O23-C22	3.37	121.87	113.31
8	D	506	C6N	O37-C38-C39	3.37	113.39	108.27
8	E	507	C6N	C24-O23-C22	3.37	121.86	113.31
8	A	507	C6N	O59-C56-C43	3.35	116.64	109.72
8	B	507	C6N	O37-C38-C39	3.35	113.36	108.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	B	507	C6N	O59-C56-C43	3.25	116.45	109.72
8	E	507	C6N	O59-C56-C43	3.25	116.44	109.72
8	C	508	C6N	O59-C56-C43	3.24	116.41	109.72
8	E	507	C6N	O06-C05-C03	2.91	117.10	109.48
8	D	506	C6N	O06-C05-C03	2.90	117.09	109.48
8	C	508	C6N	O06-C05-C03	2.89	117.06	109.48
8	B	507	C6N	O06-C05-C03	2.85	116.95	109.48
8	A	507	C6N	O06-C05-C03	2.84	116.94	109.48
8	C	508	C6N	C67-C66-C65	-2.47	106.33	111.42
8	D	506	C6N	C26-C27-C28	-2.46	105.87	113.19
8	C	508	C6N	C26-C27-C28	-2.44	105.92	113.19
8	E	507	C6N	C26-C27-C28	-2.44	105.93	113.19
8	B	507	C6N	C26-C27-C28	-2.42	105.99	113.19
8	B	507	C6N	C67-C66-C65	-2.42	106.45	111.42
8	A	507	C6N	C26-C27-C28	-2.41	106.01	113.19
8	E	507	C6N	C67-C66-C65	-2.41	106.47	111.42
8	D	506	C6N	C67-C66-C65	-2.40	106.48	111.42
8	A	507	C6N	C67-C66-C65	-2.40	106.48	111.42
8	C	508	C6N	C22-O04-C03	2.31	118.22	113.72
8	A	507	C6N	C22-O04-C03	2.30	118.20	113.72
8	E	507	C6N	C22-O04-C03	2.27	118.16	113.72
8	B	507	C6N	C22-O04-C03	2.25	118.12	113.72
8	D	506	C6N	C22-O04-C03	2.25	118.11	113.72
8	B	507	C6N	O04-C03-C05	2.24	114.35	109.72
8	E	507	C6N	C38-C39-C41	-2.22	105.33	110.01
8	A	507	C6N	O04-C03-C05	2.22	114.32	109.72
8	C	508	C6N	O04-C03-C05	2.22	114.31	109.72
8	D	506	C6N	O04-C03-C05	2.19	114.25	109.72
8	E	507	C6N	O04-C03-C05	2.19	114.24	109.72
8	B	507	C6N	C38-C39-C41	-2.18	105.42	110.01
8	A	507	C6N	C38-C39-C41	-2.15	105.49	110.01
8	D	506	C6N	C38-C39-C41	-2.13	105.53	110.01
8	C	508	C6N	C38-C39-C41	-2.10	105.59	110.01
8	E	507	C6N	C48-C50-C52	2.05	113.95	110.23
8	C	508	C6N	O17-C14-C15	2.02	111.43	106.44
8	A	507	C6N	C48-C50-C52	2.00	113.86	110.23

There are no chirality outliers.

All (139) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	A	507	C6N	C25-C24-O23-C22

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Mol	Chain	Res	Type	Atoms
8	A	507	C6N	C24-C25-C60-C61
8	A	507	C6N	C26-C25-C60-C61
8	A	507	C6N	C36-C25-C60-C61
8	A	507	C6N	O59-C38-O37-C36
8	B	507	C6N	C25-C24-O23-C22
8	B	507	C6N	C60-C25-C26-C27
8	B	507	C6N	C24-C25-C60-C61
8	B	507	C6N	C26-C25-C60-C61
8	B	507	C6N	C36-C25-C60-C61
8	B	507	C6N	O59-C38-O37-C36
8	C	508	C6N	C25-C24-O23-C22
8	C	508	C6N	C60-C25-C26-C27
8	C	508	C6N	C24-C25-C60-C61
8	C	508	C6N	C26-C25-C60-C61
8	C	508	C6N	C36-C25-C60-C61
8	C	508	C6N	O59-C38-O37-C36
8	D	506	C6N	C25-C24-O23-C22
8	D	506	C6N	C60-C25-C26-C27
8	D	506	C6N	C24-C25-C60-C61
8	D	506	C6N	C26-C25-C60-C61
8	D	506	C6N	C36-C25-C60-C61
8	D	506	C6N	O59-C38-O37-C36
8	E	507	C6N	C25-C24-O23-C22
8	E	507	C6N	C60-C25-C26-C27
8	E	507	C6N	C24-C25-C60-C61
8	E	507	C6N	C26-C25-C60-C61
8	E	507	C6N	C36-C25-C60-C61
8	E	507	C6N	O59-C38-O37-C36
8	A	507	C6N	C03-C05-O06-C07
8	B	507	C6N	C03-C05-O06-C07
8	C	508	C6N	C03-C05-O06-C07
8	D	506	C6N	C03-C05-O06-C07
8	E	507	C6N	C03-C05-O06-C07
8	C	508	C6N	O01-C02-C03-O04
8	D	506	C6N	O01-C02-C03-O04
8	A	507	C6N	O01-C02-C03-O04
8	B	507	C6N	O01-C02-C03-O04
8	B	507	C6N	O59-C56-C57-O58
8	C	508	C6N	O59-C56-C57-O58
8	E	507	C6N	O01-C02-C03-O04
8	E	507	C6N	O59-C56-C57-O58
8	A	507	C6N	O59-C56-C57-O58

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Mol	Chain	Res	Type	Atoms
8	D	506	C6N	O59-C56-C57-O58
8	A	507	C6N	O04-C22-O23-C24
8	B	507	C6N	O04-C22-O23-C24
8	C	508	C6N	O04-C22-O23-C24
8	D	506	C6N	O04-C22-O23-C24
8	E	507	C6N	O04-C22-O23-C24
8	B	507	C6N	O01-C02-C03-C05
8	A	507	C6N	O01-C02-C03-C05
8	C	508	C6N	O01-C02-C03-C05
8	E	507	C6N	O01-C02-C03-C05
8	A	507	C6N	C43-C56-C57-O58
8	D	506	C6N	O01-C02-C03-C05
8	D	506	C6N	C43-C56-C57-O58
8	A	507	C6N	C20-C22-O23-C24
8	B	507	C6N	C20-C22-O23-C24
8	C	508	C6N	C20-C22-O23-C24
8	D	506	C6N	C20-C22-O23-C24
8	E	507	C6N	C20-C22-O23-C24
8	A	507	C6N	C25-C26-C27-C28
8	D	506	C6N	C25-C26-C27-C28
8	E	507	C6N	C25-C26-C27-C28
8	B	507	C6N	C43-C56-C57-O58
8	C	508	C6N	C43-C56-C57-O58
8	E	507	C6N	C43-C56-C57-O58
8	B	507	C6N	C25-C26-C27-C28
8	C	508	C6N	C25-C26-C27-C28
8	E	507	C6N	C61-C62-C63-C64
8	C	508	C6N	C61-C62-C63-C64
8	B	507	C6N	C61-C62-C63-C64
8	A	507	C6N	C61-C62-C63-C64
8	D	506	C6N	C61-C62-C63-C64
8	C	508	C6N	C26-C27-C28-C29
8	D	506	C6N	C26-C27-C28-C29
8	A	507	C6N	C26-C27-C28-C29
8	E	507	C6N	C26-C27-C28-C29
8	B	507	C6N	C26-C27-C28-C29
8	B	507	C6N	C28-C29-C30-C35
8	C	508	C6N	C28-C29-C30-C35
8	D	506	C6N	C28-C29-C30-C35
8	E	507	C6N	C28-C29-C30-C35
8	A	507	C6N	C28-C29-C30-C35
8	E	507	C6N	O55-C52-C53-O54

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Mol	Chain	Res	Type	Atoms
8	C	508	C6N	O55-C52-C53-O54
8	B	507	C6N	O55-C52-C53-O54
8	A	507	C6N	O55-C52-C53-O54
8	D	506	C6N	O55-C52-C53-O54
8	A	507	C6N	C25-C60-C61-C62
8	C	508	C6N	C28-C29-C30-C31
8	D	506	C6N	C25-C60-C61-C62
8	A	507	C6N	C39-C38-O37-C36
8	E	507	C6N	C39-C38-O37-C36
8	D	506	C6N	O17-C14-C15-O16
8	B	507	C6N	C28-C29-C30-C31
8	D	506	C6N	C28-C29-C30-C31
8	E	507	C6N	C28-C29-C30-C31
8	B	507	C6N	O17-C14-C15-O16
8	C	508	C6N	O17-C14-C15-O16
8	B	507	C6N	C25-C60-C61-C62
8	C	508	C6N	C25-C60-C61-C62
8	E	507	C6N	C25-C60-C61-C62
8	A	507	C6N	O17-C14-C15-O16
8	E	507	C6N	O17-C14-C15-O16
8	A	507	C6N	C60-C25-C26-C27
8	A	507	C6N	C28-C29-C30-C31
8	B	507	C6N	C39-C38-O37-C36
8	D	506	C6N	C39-C38-O37-C36
8	C	508	C6N	C39-C38-O37-C36
8	B	507	C6N	C60-C25-C36-O37
8	C	508	C6N	C26-C25-C36-O37
8	C	508	C6N	C60-C25-C36-O37
8	E	507	C6N	C60-C25-C36-O37
8	C	508	C6N	C36-C25-C26-C27
8	E	507	C6N	C36-C25-C26-C27
8	B	507	C6N	O23-C24-C25-C36
8	C	508	C6N	O23-C24-C25-C36
8	D	506	C6N	O23-C24-C25-C36
4	B	501	GOL	O1-C1-C2-O2
8	E	507	C6N	O23-C24-C25-C36
8	A	507	C6N	O23-C24-C25-C36
8	A	507	C6N	C36-C25-C26-C27
8	B	507	C6N	C36-C25-C26-C27
8	D	506	C6N	C36-C25-C26-C27
8	D	506	C6N	C27-C28-C29-C30
8	A	507	C6N	C27-C28-C29-C30

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Mol	Chain	Res	Type	Atoms
8	A	507	C6N	O23-C24-C25-C60
8	A	507	C6N	C26-C25-C36-O37
8	A	507	C6N	C60-C25-C36-O37
8	B	507	C6N	O23-C24-C25-C60
8	B	507	C6N	C26-C25-C36-O37
8	C	508	C6N	O23-C24-C25-C60
8	D	506	C6N	O23-C24-C25-C60
8	D	506	C6N	C26-C25-C36-O37
8	D	506	C6N	C60-C25-C36-O37
8	E	507	C6N	O23-C24-C25-C60
8	E	507	C6N	C26-C25-C36-O37
8	B	507	C6N	C27-C28-C29-C30

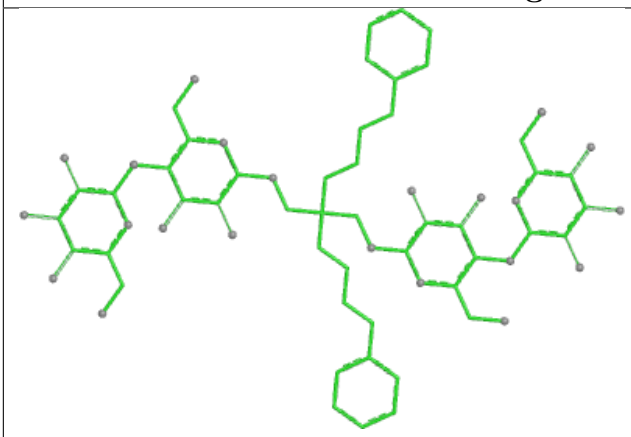
There are no ring outliers.

10 monomers are involved in 12 short contacts:

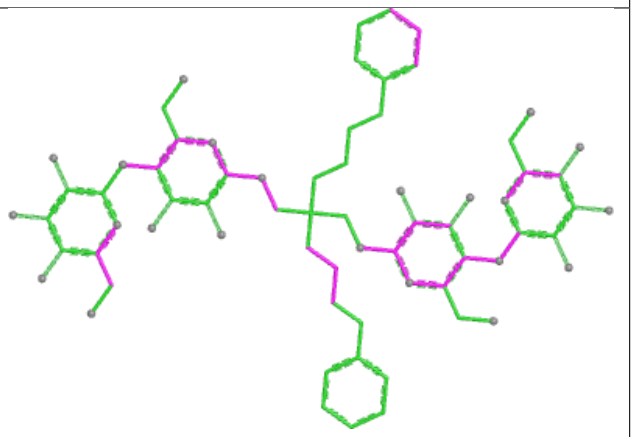
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	501	GOL	1	0
8	C	508	C6N	2	0
4	B	501	GOL	1	0
8	B	507	C6N	1	0
8	D	506	C6N	1	0
4	A	501	GOL	1	0
4	E	501	GOL	1	0
8	E	507	C6N	2	0
4	D	501	GOL	1	0
8	A	507	C6N	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

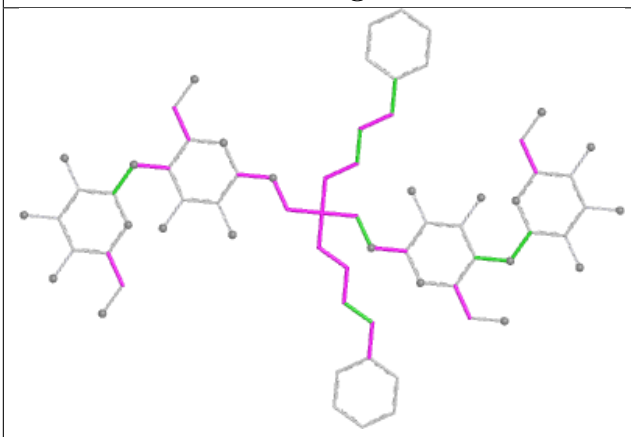
Ligand C6N C 508



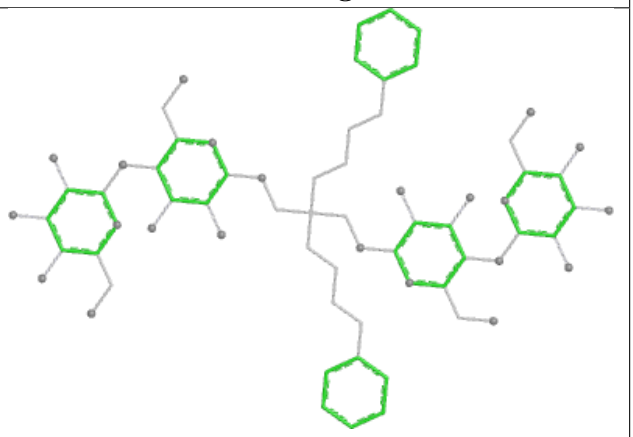
Bond lengths



Bond angles

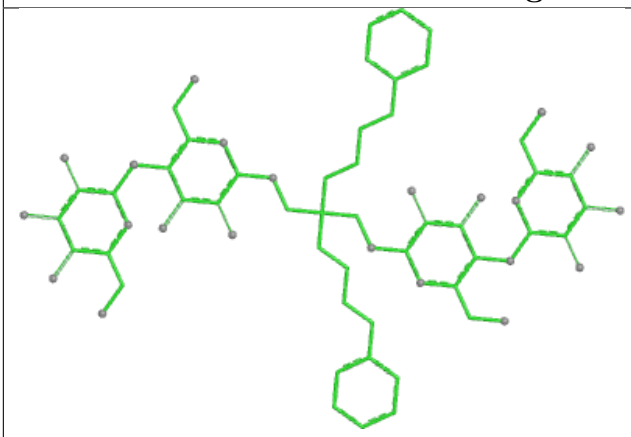


Torsions

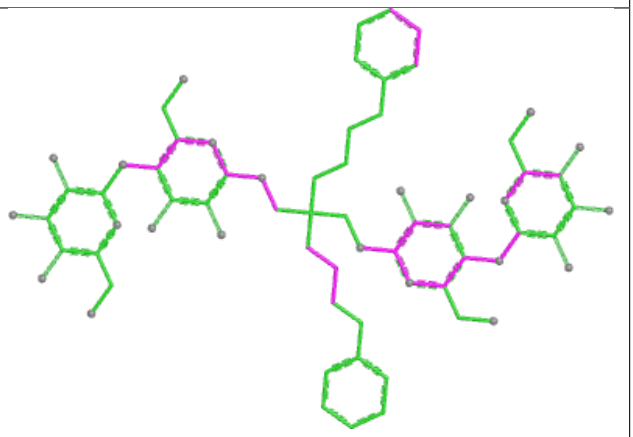


Rings

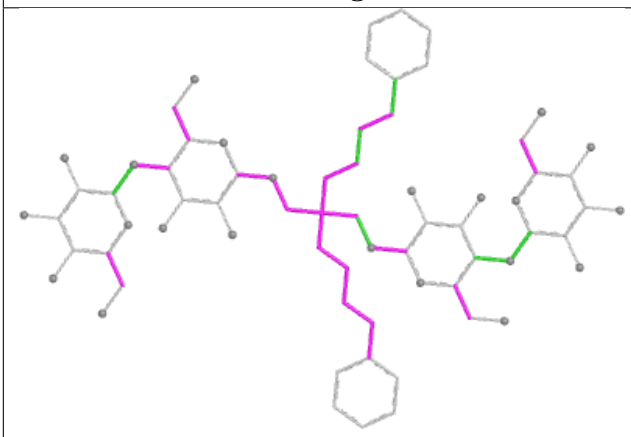
Ligand C6N B 507



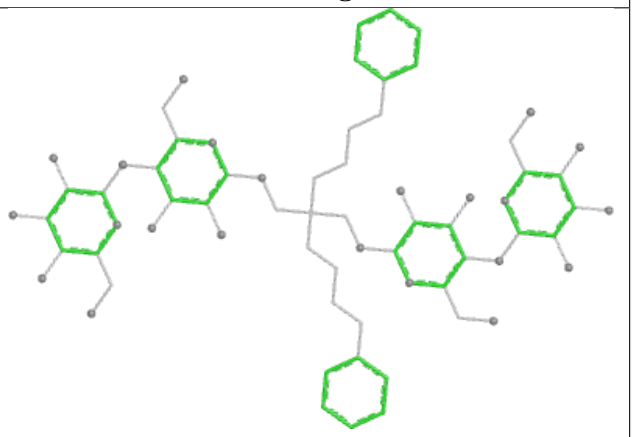
Bond lengths



Bond angles

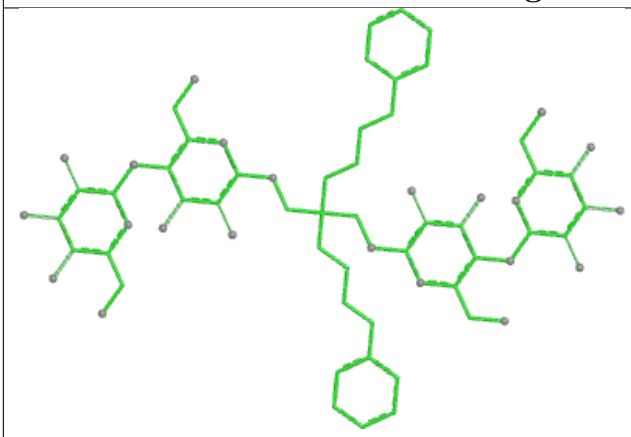


Torsions

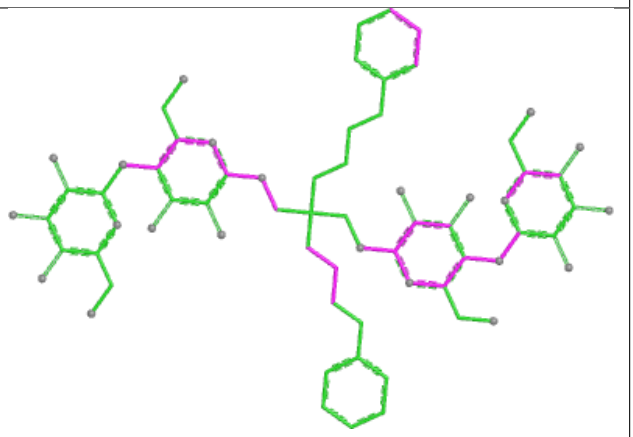


Rings

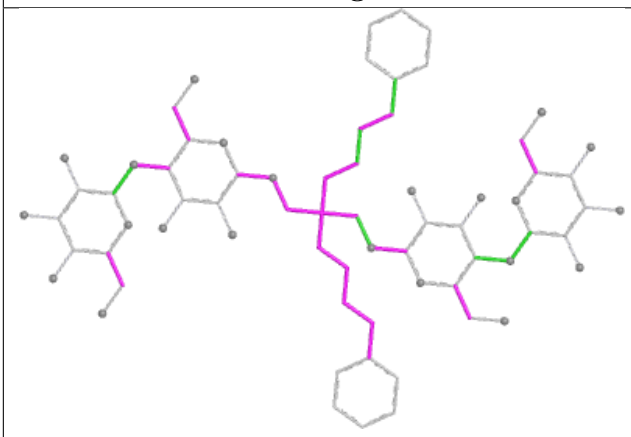
Ligand C6N D 506



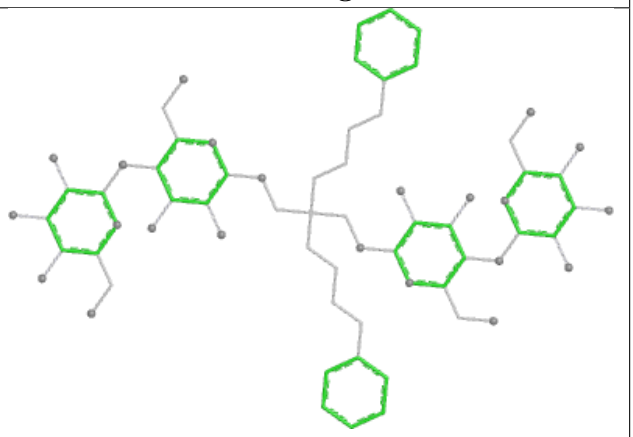
Bond lengths



Bond angles

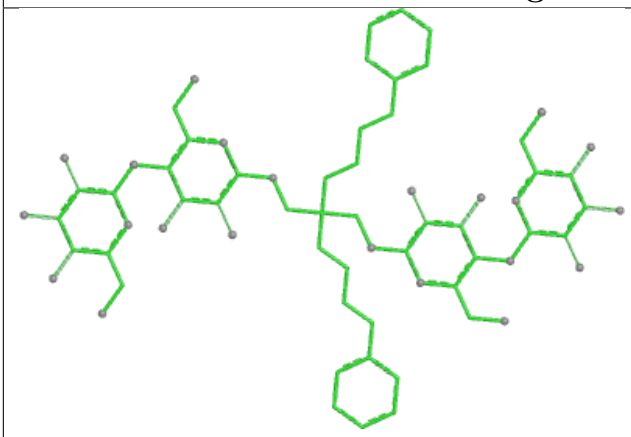


Torsions

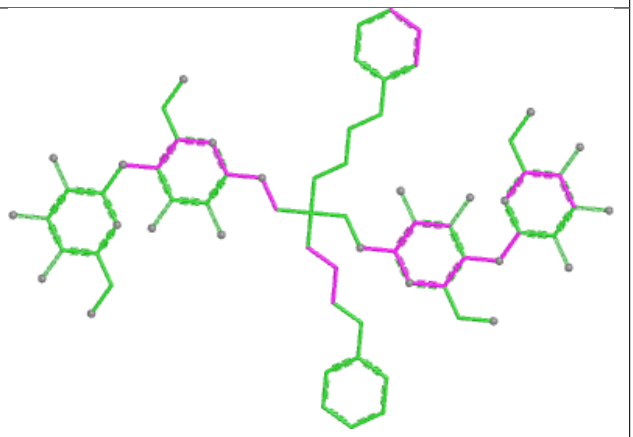


Rings

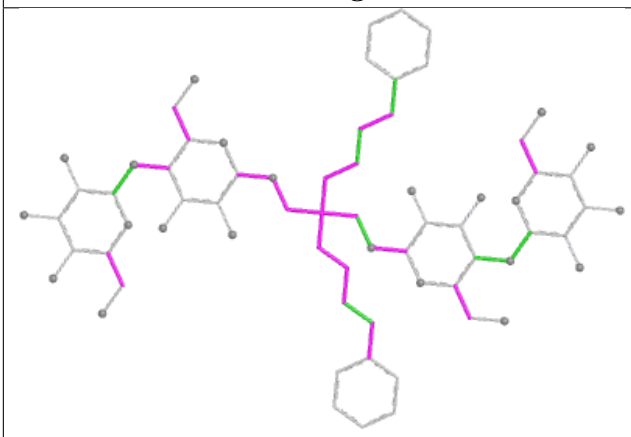
Ligand C6N E 507



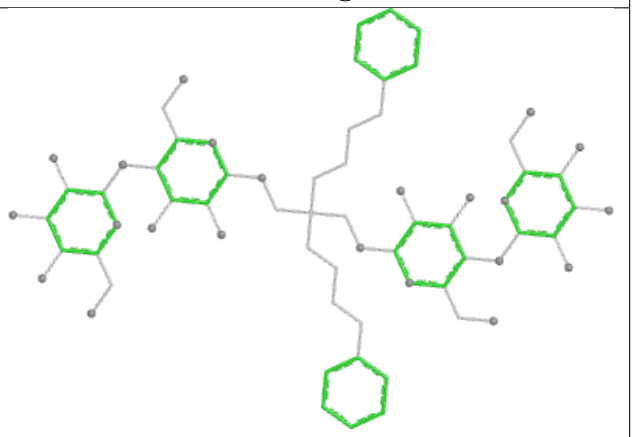
Bond lengths



Bond angles

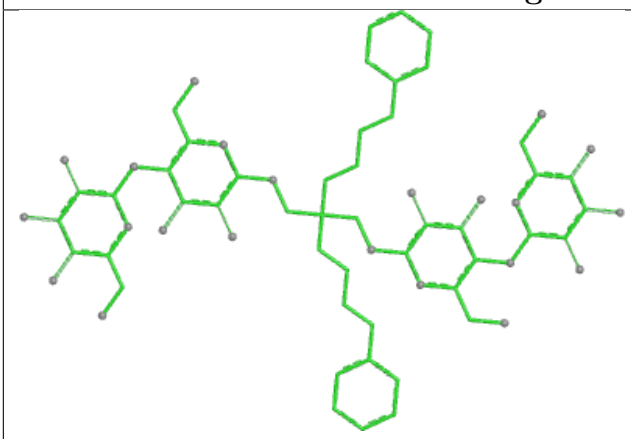


Torsions

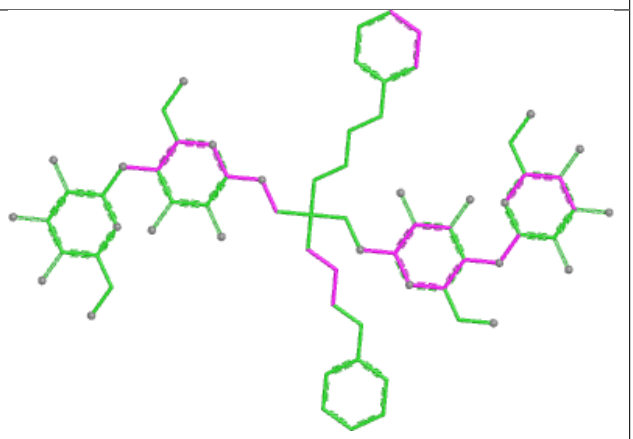


Rings

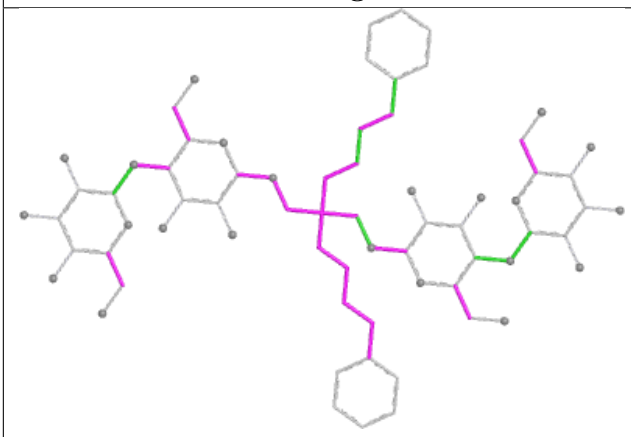
Ligand C6N A 507



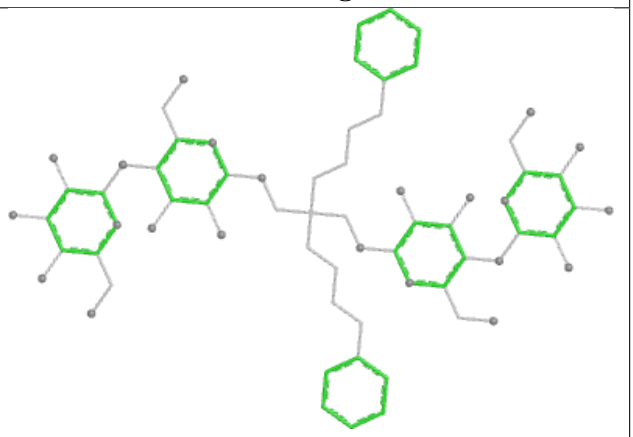
Bond lengths



Bond angles



Torsions



Rings

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, 95^{th} 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	366/409 (89%)	0.11	12 (3%) 49 44	45, 69, 98, 187	0
1	B	366/409 (89%)	0.12	5 (1%) 73 70	47, 71, 100, 171	0
1	C	366/409 (89%)	0.09	9 (2%) 58 55	44, 69, 94, 174	0
1	D	366/409 (89%)	0.07	9 (2%) 58 55	44, 64, 94, 193	0
1	E	366/409 (89%)	0.10	16 (4%) 39 35	42, 66, 99, 170	0
2	F	212/212 (100%)	0.72	15 (7%) 23 19	73, 115, 148, 168	0
2	H	212/212 (100%)	0.65	18 (8%) 18 15	72, 106, 141, 164	0
2	J	212/212 (100%)	1.23	46 (21%) 3 3	75, 190, 288, 332	0
2	L	212/212 (100%)	0.61	19 (8%) 17 14	59, 98, 132, 142	0
2	N	212/212 (100%)	1.11	39 (18%) 4 4	67, 148, 256, 333	0
3	G	211/217 (97%)	0.87	23 (10%) 12 11	62, 119, 165, 200	0
3	I	211/217 (97%)	0.59	16 (7%) 21 18	70, 106, 151, 172	0
3	K	211/217 (97%)	1.18	43 (20%) 3 4	74, 160, 282, 318	0
3	M	211/217 (97%)	0.66	19 (9%) 17 14	55, 96, 157, 181	0
3	O	211/217 (97%)	1.05	41 (19%) 4 4	58, 120, 269, 333	0
All	All	3945/4190 (94%)	0.51	330 (8%) 18 15	42, 88, 228, 333	0

All (330) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	O	144	LEU	7.2
3	O	182	SER	6.2
3	K	166	VAL	5.6
3	M	176	ASP	5.5
3	K	168	THR	5.2
3	O	129	PRO	5.2
2	N	178	THR	5.2

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Mol	Chain	Res	Type	RSRZ
2	J	106	VAL	4.9
3	K	129	PRO	4.9
3	O	181	SER	4.8
3	O	176	ASP	4.7
2	H	40	GLN	4.7
2	N	177	SER	4.6
2	N	206	VAL	4.5
3	O	143	CYS	4.5
3	K	176	ASP	4.5
3	O	209	VAL	4.4
1	C	367	SER	4.3
3	G	152	PRO	4.3
2	J	91	HIS	4.3
3	K	155	VAL	4.3
2	N	135	PHE	4.3
3	G	176	ASP	4.3
2	J	146	VAL	4.2
3	O	155	VAL	4.1
2	N	195	GLU	4.1
1	E	367	SER	4.0
3	G	143	CYS	4.0
2	N	207	LYS	3.9
3	O	214	VAL	3.9
2	L	205	ILE	3.9
1	B	367	SER	3.9
2	J	135	PHE	3.9
3	K	182	SER	3.8
3	I	138	MET	3.7
2	F	212	ASN	3.7
2	F	40	GLN	3.7
2	F	127	SER	3.7
3	K	183	SER	3.7
2	J	193	THR	3.7
1	E	350	ALA	3.7
2	L	187	GLU	3.6
1	D	367	SER	3.6
2	J	136	LEU	3.6
3	K	139	VAL	3.6
3	K	175	SER	3.6
3	O	124	VAL	3.6
2	N	180	THR	3.5
3	M	174	GLN	3.5

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Mol	Chain	Res	Type	RSRZ
2	N	24	ARG	3.5
3	O	195	THR	3.5
2	J	11	LEU	3.5
2	N	1	ASP	3.5
3	I	176	ASP	3.5
3	O	186	VAL	3.5
3	M	175	SER	3.5
3	O	187	PRO	3.4
2	J	114	THR	3.4
2	J	197	THR	3.4
2	J	153	SER	3.4
2	F	94	THR	3.4
3	O	204	ALA	3.4
2	J	195	GLU	3.4
3	I	168	THR	3.4
3	K	193	SER	3.4
3	G	40	ARG	3.3
3	M	138	MET	3.3
2	N	131	SER	3.3
3	G	128	ALA	3.3
3	G	43	GLN	3.3
3	K	200	VAL	3.3
3	G	64	PHE	3.3
3	K	156	THR	3.3
3	G	141	LEU	3.3
2	J	40	GLN	3.2
2	J	200	THR	3.2
2	N	143	ASP	3.2
2	J	109	ALA	3.2
2	F	126	THR	3.2
3	K	209	VAL	3.2
3	G	138	MET	3.2
2	H	148	TRP	3.2
2	N	160	LEU	3.2
3	K	189	SER	3.2
1	D	220	GLN	3.2
3	O	127	LEU	3.1
2	N	191	SER	3.1
3	G	129	PRO	3.1
3	K	215	PRO	3.1
3	K	186	VAL	3.1
3	O	189	SER	3.1

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Mol	Chain	Res	Type	RSRZ
2	J	94	THR	3.1
3	K	65	ARG	3.1
3	K	111	THR	3.1
1	A	115	ASP	3.1
3	G	33	TRP	3.1
2	L	91	HIS	3.0
3	M	216	ARG	3.0
3	K	185	THR	3.0
2	J	160	LEU	3.0
3	K	117	ALA	3.0
3	K	192	PRO	3.0
2	N	176	SER	3.0
3	M	10	GLU	3.0
3	K	195	THR	2.9
2	F	123	GLU	2.9
2	H	177	SER	2.9
2	L	152	GLY	2.9
2	N	52	LYS	2.9
2	H	106	VAL	2.9
3	I	136	ASN	2.9
2	N	91	HIS	2.9
2	J	150	ILE	2.9
2	N	186	TYR	2.9
3	K	187	PRO	2.8
3	O	215	PRO	2.8
2	H	94	THR	2.8
2	L	212	ASN	2.8
2	J	148	TRP	2.8
2	H	58	VAL	2.8
3	O	162	LEU	2.8
3	O	191	TRP	2.8
2	N	122	SER	2.8
3	I	43	GLN	2.8
3	I	216	ARG	2.8
2	L	94	THR	2.8
2	F	41	GLY	2.8
2	J	107	LYS	2.8
3	G	195	THR	2.8
3	O	165	GLY	2.8
3	O	183	SER	2.7
3	M	210	ASP	2.7
2	N	114	THR	2.7

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Mol	Chain	Res	Type	RSRZ
2	J	206	VAL	2.7
2	J	103	LYS	2.7
2	H	105	GLU	2.7
1	B	2	THR	2.7
3	O	197	THR	2.7
2	J	66	GLY	2.7
3	K	41	PRO	2.7
2	N	23	CYS	2.7
3	K	153	VAL	2.7
2	N	137	ASN	2.7
2	F	177	SER	2.7
2	N	208	SER	2.7
2	N	193	THR	2.7
3	O	168	THR	2.7
2	N	152	GLY	2.7
1	D	2	THR	2.6
2	F	1	ASP	2.6
3	M	195	THR	2.6
3	O	156	THR	2.6
1	B	272	PHE	2.6
3	M	57	GLU	2.6
3	G	125	TYR	2.6
1	E	203	ASP	2.6
3	K	118	LYS	2.6
2	J	180	THR	2.6
2	N	94	THR	2.6
3	O	125	TYR	2.6
3	K	145	VAL	2.6
3	K	214	VAL	2.6
2	N	212	ASN	2.6
1	E	198	GLU	2.6
2	L	200	THR	2.6
2	H	146	VAL	2.6
3	O	123	SER	2.6
3	O	139	VAL	2.6
2	J	194	CYS	2.5
1	E	353	GLU	2.5
2	J	141	PRO	2.5
1	A	367	SER	2.5
3	I	175	SER	2.5
3	I	210	ASP	2.5
3	K	138	MET	2.5

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Mol	Chain	Res	Type	RSRZ
2	H	23	CYS	2.5
2	N	134	CYS	2.5
2	F	91	HIS	2.5
1	E	123	LEU	2.5
2	J	15	VAL	2.5
3	I	139	VAL	2.5
3	K	141	LEU	2.5
3	K	154	THR	2.5
3	K	44	ALA	2.5
2	N	162	SER	2.5
2	J	39	LYS	2.5
2	H	194	CYS	2.5
2	H	91	HIS	2.5
3	M	136	ASN	2.5
2	J	112	ALA	2.5
1	D	99	SER	2.5
2	J	199	LYS	2.5
1	D	268	GLU	2.5
3	K	127	LEU	2.5
2	H	212	ASN	2.5
3	O	145	VAL	2.5
3	K	140	THR	2.5
2	J	149	LYS	2.4
2	F	136	LEU	2.4
3	K	11	LEU	2.4
3	O	184	VAL	2.4
2	J	161	ASN	2.4
1	A	272	PHE	2.4
3	O	179	THR	2.4
2	H	11	LEU	2.4
2	J	57	GLY	2.4
3	G	144	LEU	2.4
3	M	209	VAL	2.4
2	J	23	CYS	2.4
3	M	197	THR	2.4
3	M	211	LYS	2.4
3	O	216	ARG	2.4
1	C	115	ASP	2.4
1	C	121	GLY	2.4
1	C	342	ASP	2.4
2	J	201	SER	2.4
3	I	46	GLU	2.4

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Mol	Chain	Res	Type	RSRZ
1	E	33	TYR	2.3
2	N	119	PRO	2.3
2	J	152	GLY	2.3
2	F	206	VAL	2.3
2	L	52	LYS	2.3
3	K	38	LYS	2.3
3	K	115	SER	2.3
1	D	366	ILE	2.3
3	O	169	PHE	2.3
1	A	2	THR	2.3
3	O	185	THR	2.3
2	J	113	PRO	2.3
2	L	80	PRO	2.3
3	K	94	TYR	2.3
1	D	121	GLY	2.3
3	O	166	VAL	2.3
1	A	331	ILE	2.3
1	D	261	GLU	2.3
2	N	209	PHE	2.3
2	J	204	PRO	2.3
2	L	23	CYS	2.3
2	N	74	LYS	2.3
2	N	56	GLU	2.3
1	A	350	ALA	2.3
3	K	210	ASP	2.3
3	M	189	SER	2.3
3	O	128	ALA	2.3
2	H	175	MET	2.3
3	O	122	PRO	2.3
2	L	40	GLN	2.3
2	L	209	PHE	2.3
1	A	195	ALA	2.3
2	N	4	MET	2.3
3	I	186	VAL	2.2
3	I	65	ARG	2.2
2	F	208	SER	2.2
2	N	136	LEU	2.2
1	C	331	ILE	2.2
2	J	115	VAL	2.2
3	O	147	GLY	2.2
1	A	198	GLU	2.2
3	K	191	TRP	2.2

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Mol	Chain	Res	Type	RSRZ
2	L	119	PRO	2.2
1	E	2	THR	2.2
2	N	205	ILE	2.2
2	H	57	GLY	2.2
3	O	196	VAL	2.2
1	E	80	PHE	2.2
1	B	333	GLU	2.2
2	F	4	MET	2.2
1	C	123	LEU	2.2
3	O	152	PRO	2.2
3	O	137	SER	2.2
3	K	174	GLN	2.2
1	E	272	PHE	2.2
2	F	135	PHE	2.2
3	G	216	ARG	2.2
1	E	268	GLU	2.2
3	M	33	TRP	2.2
2	N	113	PRO	2.2
1	C	366	ILE	2.2
2	J	203	SER	2.2
2	H	158	GLY	2.1
2	J	46	LEU	2.1
2	L	11	LEU	2.1
3	G	55	LYS	2.1
3	M	162	LEU	2.1
2	J	80	PRO	2.1
3	M	152	PRO	2.1
3	G	166	VAL	2.1
2	H	200	THR	2.1
3	I	165	GLY	2.1
3	M	65	ARG	2.1
1	A	80	PHE	2.1
1	A	123	LEU	2.1
2	L	186	TYR	2.1
3	G	11	LEU	2.1
2	L	194	CYS	2.1
1	E	331	ILE	2.1
2	L	146	VAL	2.1
1	B	115	ASP	2.1
1	E	202	ARG	2.1
3	G	42	GLY	2.1
2	H	193	THR	2.1

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Mol	Chain	Res	Type	RSRZ
2	N	201	SER	2.1
3	M	207	THR	2.1
2	J	212	ASN	2.1
3	K	121	PRO	2.1
2	J	133	VAL	2.1
2	N	210	ASN	2.1
2	N	155	ARG	2.1
1	E	360	LEU	2.0
2	J	156	GLN	2.0
2	J	182	THR	2.0
1	E	349	ALA	2.0
3	I	188	SER	2.0
3	I	152	PRO	2.0
1	A	61	MET	2.0
3	G	214	VAL	2.0
3	I	118	LYS	2.0
2	L	160	LEU	2.0
2	L	126	THR	2.0
1	D	203	ASP	2.0
3	G	104	ASP	2.0
1	C	41	SER	2.0
2	J	177	SER	2.0
3	O	175	SER	2.0
1	A	119	GLU	2.0
1	C	261	GLU	2.0
3	G	136	ASN	2.0
3	G	153	VAL	2.0
3	K	45	LEU	2.0
1	E	135	CYS	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 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, 95^{th} 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.

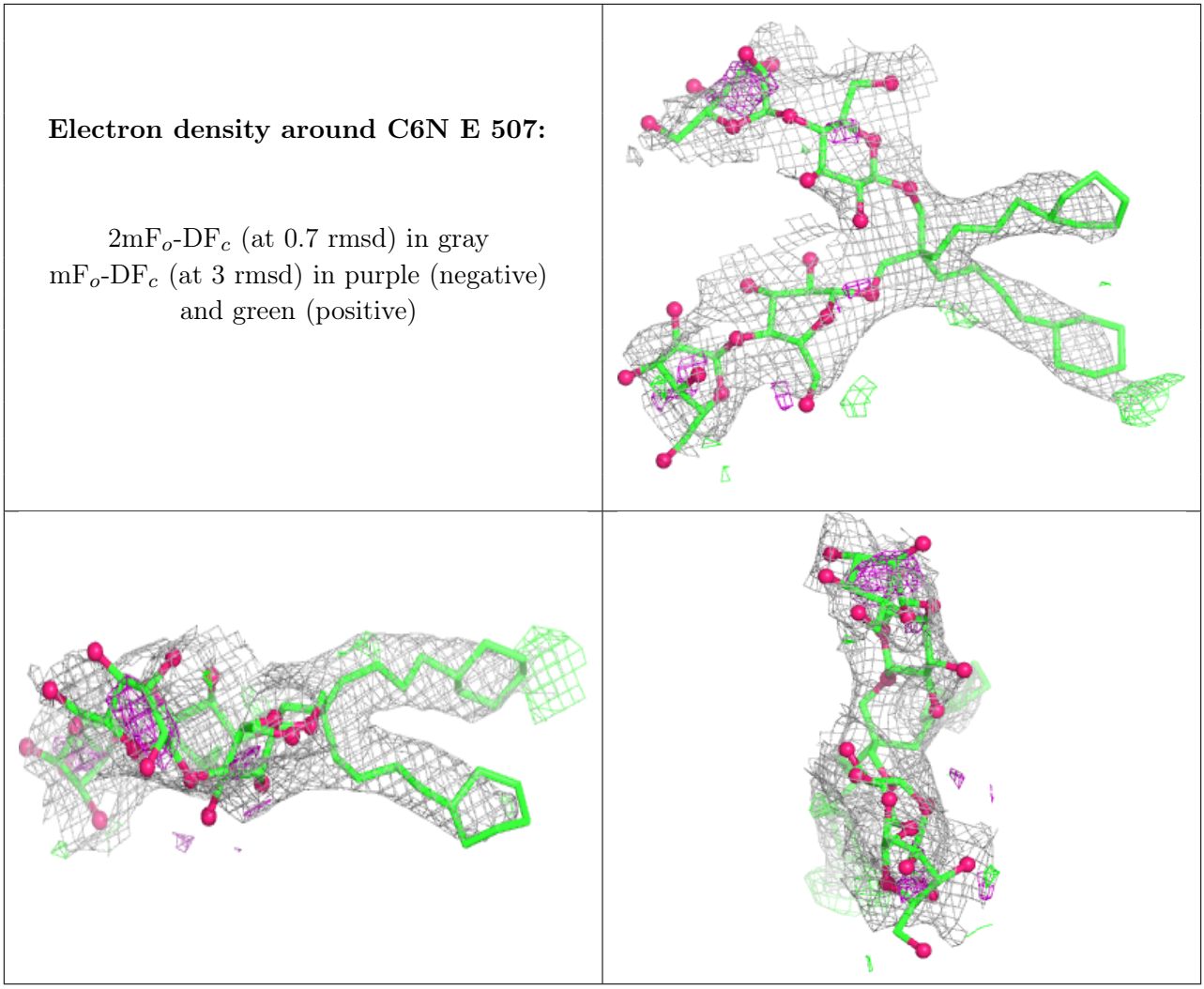
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	CL	B	505	1/1	0.47	0.22	128,128,128,128	0
4	GOL	C	501	6/6	0.76	0.33	95,99,110,116	0
5	CL	C	505	1/1	0.76	0.14	111,111,111,111	0
8	C6N	E	507	69/69	0.76	0.19	113,142,162,166	0
8	C6N	D	506	69/69	0.78	0.17	97,125,145,148	0
8	C6N	B	507	69/69	0.79	0.18	116,145,167,171	0
8	C6N	C	508	69/69	0.79	0.17	105,132,154,158	0
4	GOL	A	501	6/6	0.80	0.29	104,108,118,123	0
8	C6N	A	507	69/69	0.80	0.17	107,137,158,162	0
5	CL	D	505	1/1	0.81	0.12	110,110,110,110	0
4	GOL	D	501	6/6	0.81	0.30	81,87,97,102	0
4	GOL	E	501	6/6	0.82	0.27	78,82,93,98	0
4	GOL	B	501	6/6	0.83	0.30	100,107,116,122	0
5	CL	B	503	1/1	0.86	0.29	110,110,110,110	0
5	CL	C	503	1/1	0.87	0.22	109,109,109,109	0
5	CL	E	503	1/1	0.88	0.23	128,128,128,128	0
5	CL	D	503	1/1	0.88	0.22	124,124,124,124	0
5	CL	A	503	1/1	0.89	0.10	105,105,105,105	0
5	CL	A	505	1/1	0.89	0.20	112,112,112,112	0
7	K	B	506	1/1	0.90	0.11	88,88,88,88	0
5	CL	E	505	1/1	0.91	0.10	101,101,101,101	0
7	K	C	507	1/1	0.94	0.15	86,86,86,86	0
7	K	A	506	1/1	0.94	0.12	87,87,87,87	0
7	K	E	506	1/1	0.95	0.12	79,79,79,79	0
7	K	C	506	1/1	0.95	0.09	88,88,88,88	0
5	CL	B	504	1/1	0.95	0.20	69,69,69,69	0
5	CL	E	504	1/1	0.96	0.12	65,65,65,65	0
5	CL	A	502	1/1	0.97	0.09	67,67,67,67	0
5	CL	D	504	1/1	0.97	0.09	58,58,58,58	0
5	CL	C	504	1/1	0.98	0.06	66,66,66,66	0
6	CA	C	502	1/1	0.99	0.03	64,64,64,64	0
6	CA	D	502	1/1	1.00	0.02	52,52,52,52	0
6	CA	E	502	1/1	1.00	0.03	54,54,54,54	0
6	CA	B	502	1/1	1.00	0.04	62,62,62,62	0
6	CA	A	504	1/1	1.00	0.03	59,59,59,59	0

The following is a graphical depiction of the model fit to experimental electron density of all

instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

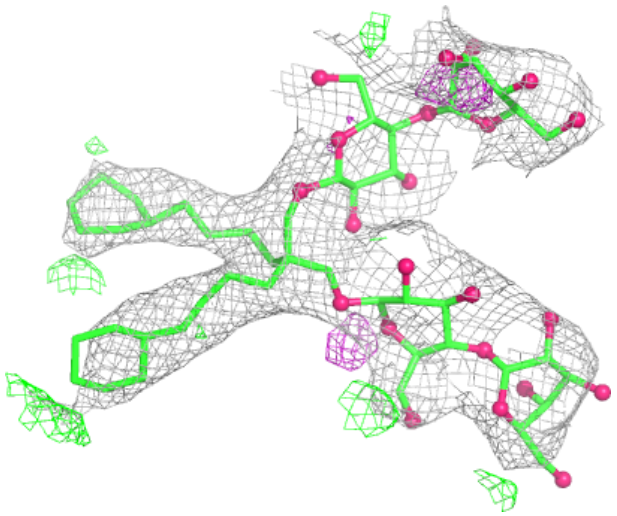
Electron density around C6N E 507:

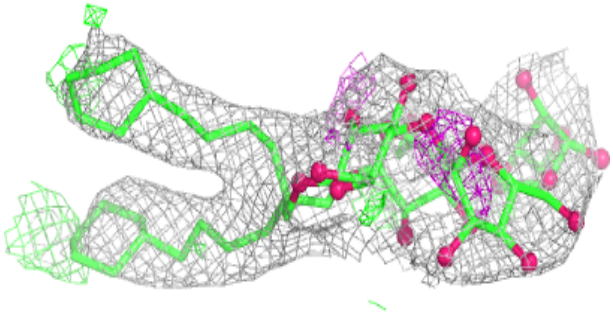
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

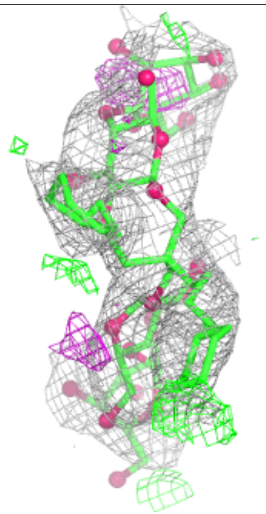


Electron density around C6N D 506:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

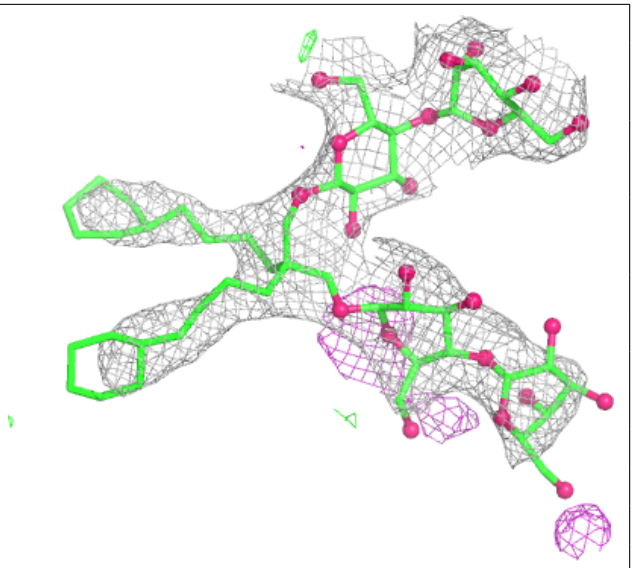


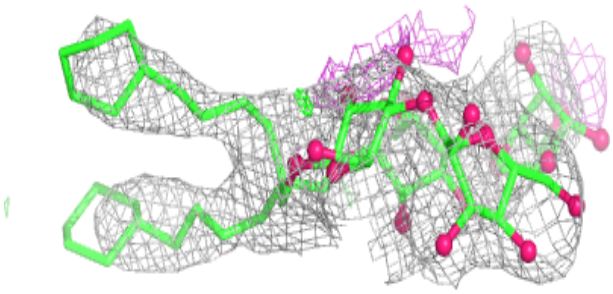


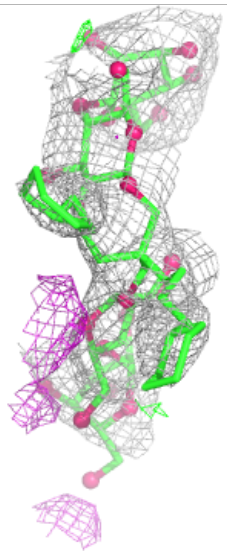


Electron density around C6N B 507:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

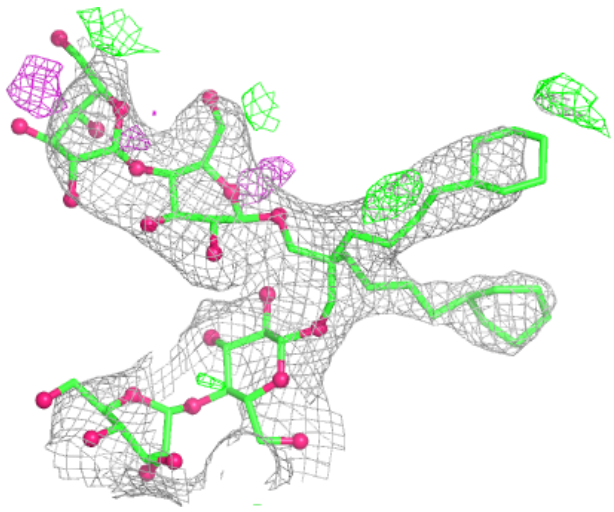


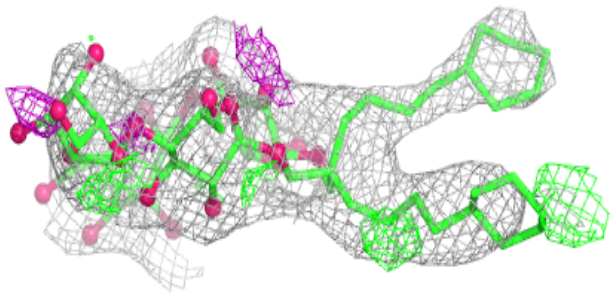


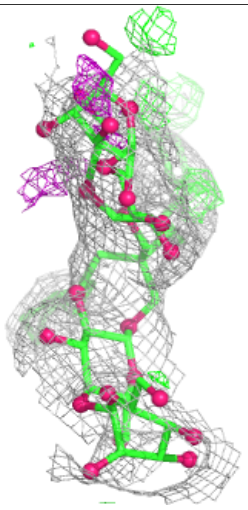


Electron density around C6N C 508:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

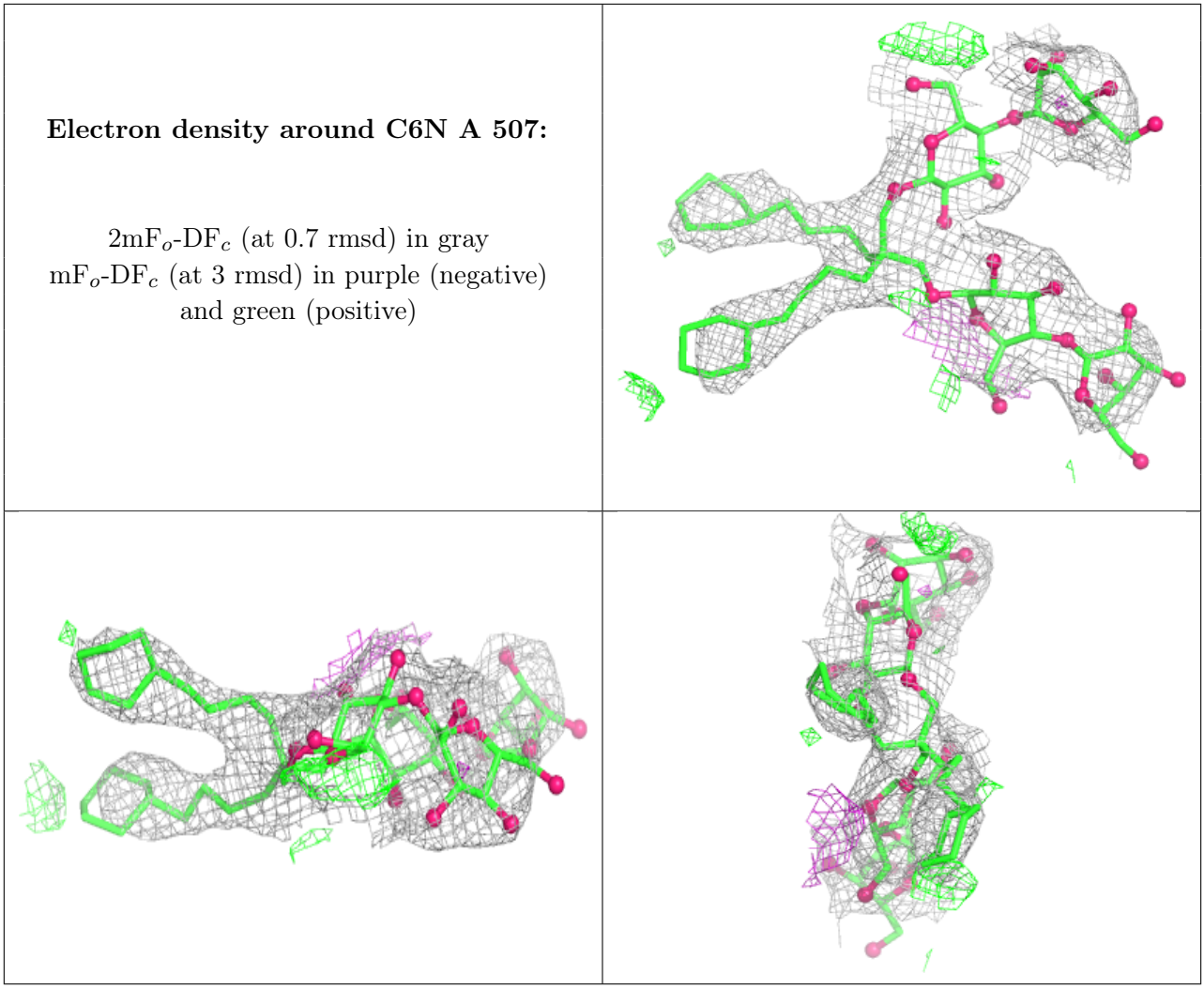






Electron density around C6N A 507:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.