



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 23, 2023 – 03:36 PM EDT

PDB ID : 3BX8
Title : Engineered Human Lipocalin 2 (LCN2), apo-form
Authors : Schonfeld, D.L.; Chatwell, L.; Skerra, A.
Deposited on : 2008-01-11
Resolution : 2.00 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The 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 : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35
buster-report : 1.1.7 (2018)
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) : 2.35

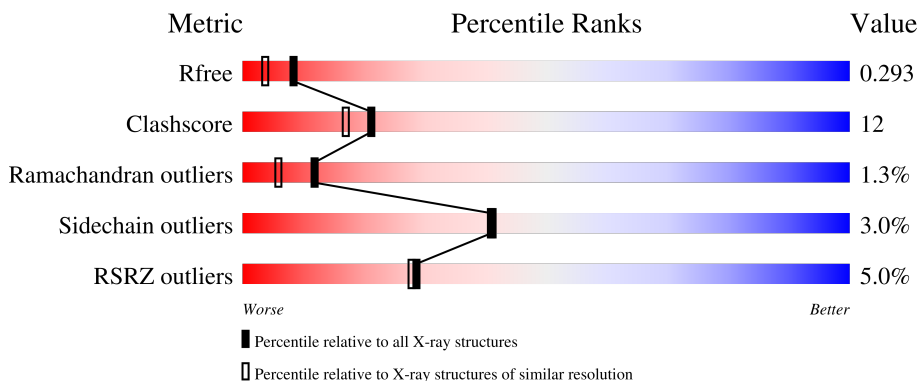
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



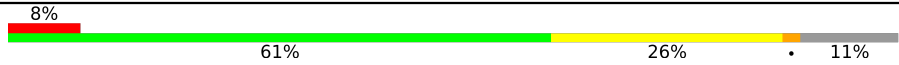

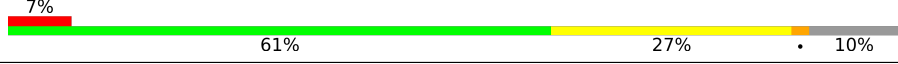
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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	178	
1	B	178	
1	C	178	
1	D	178	
1	E	178	

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Mol	Chain	Length	Quality of chain
1	F	178	
1	G	178	
1	H	178	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 11039 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 ENGINEERED HUMAN LIPOCALIN 2.

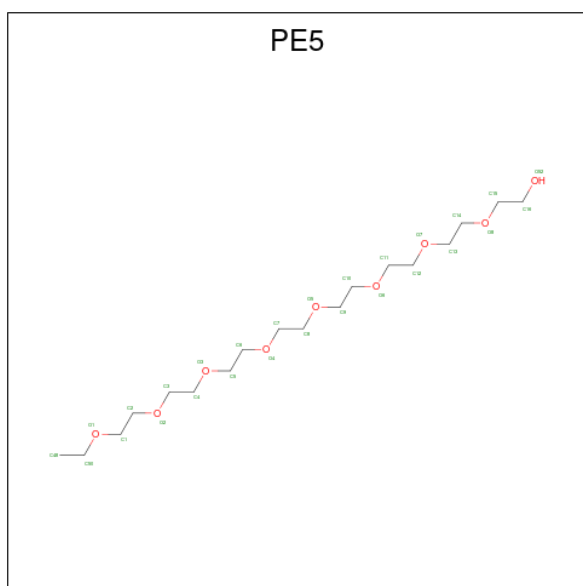
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	167	1344	871	218	251	4	37	0	0
1	B	166	1333	860	218	251	4	40	0	0
1	C	167	1344	871	218	251	4	33	0	0
1	D	168	1350	871	220	255	4	44	0	0
1	E	162	1307	846	212	245	4	57	0	0
1	F	158	1270	825	204	237	4	60	0	0
1	G	161	1294	838	209	243	4	61	0	0
1	H	161	1298	842	210	242	4	64	0	0

- Molecule 2 is PENTAETHYLENE GLYCOL (three-letter code: 1PE) (formula: C₁₀H₂₂O₆).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	C O	0	0
			14	10 4		
2	E	1	Total	C O	0	0
			14	10 4		
2	G	1	Total	C O	0	0
			14	10 4		

- Molecule 3 is 3,6,9,12,15,18,21,24-OCTAOXAHEXACOSAN-1-OL (three-letter code: PE5) (formula: $C_{18}H_{38}O_9$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	B	1	Total	C	O	0	0
			26	18	8		
3	C	1	Total	C	O	0	0
			26	18	8		
3	D	1	Total	C	O	0	0
			26	18	8		
3	F	1	Total	C	O	0	0
			26	18	8		
3	H	1	Total	C	O	0	0
			26	18	8		

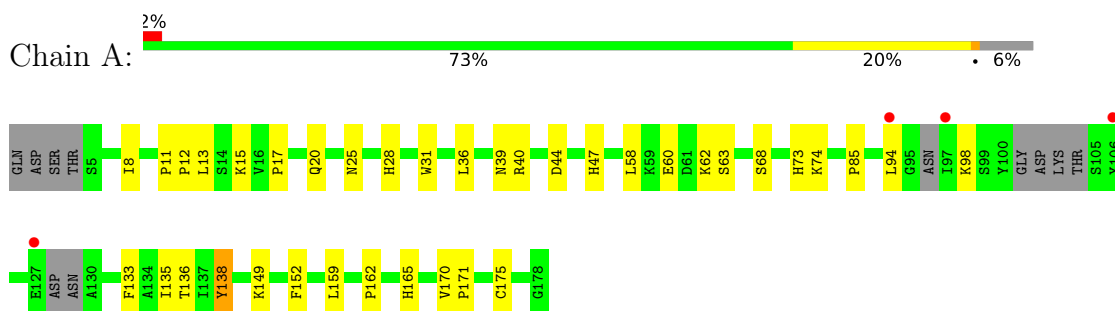
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	69	Total	O	0	0
			69	69		
4	B	78	Total	O	0	0
			78	78		
4	C	60	Total	O	0	0
			60	60		
4	D	78	Total	O	0	0
			78	78		
4	E	10	Total	O	0	0
			10	10		
4	F	9	Total	O	0	0
			9	9		
4	G	15	Total	O	0	0
			15	15		
4	H	8	Total	O	0	0
			8	8		

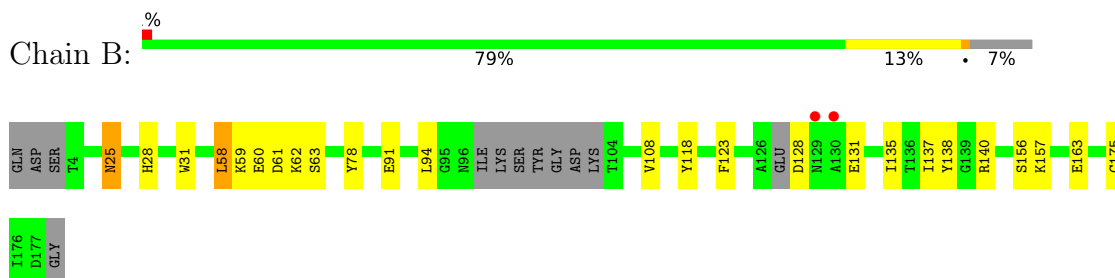
3 Residue-property plots [i](#)

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.

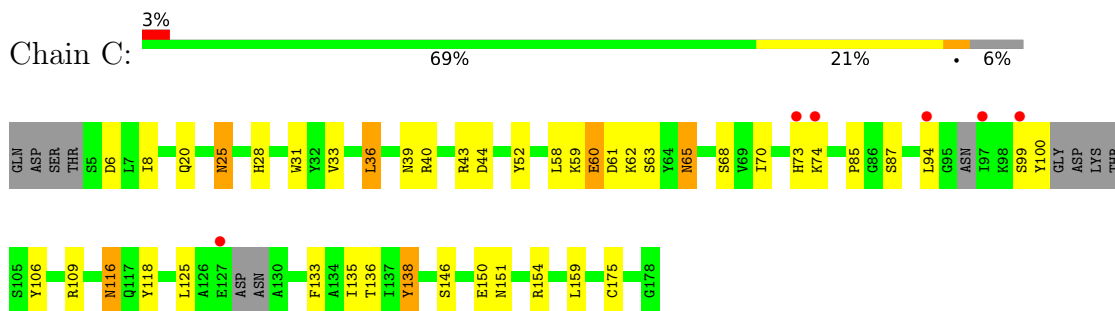
- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2



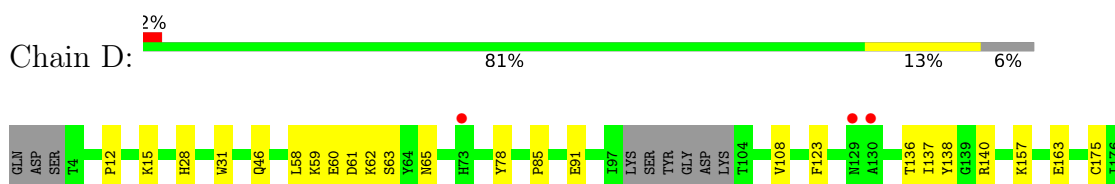
- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2



- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2



- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2



D177
GLY

- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2

Chain E: 6% 58% 30% 9%

GLN ASP ASP SER THR S5 D6 L7 A10 P12 P11 P12 P12 L13 L14 S105 S106 K15 V16 P17 P17 L18 Q19 Q23 Q24 N25 Q26 F27 F27 H28 W31 Y32 V33 V34 G35 L36 A37 G38 N39 R40 I41 N50 M51 Y52 L58 K59 E60 D61 K62 M65 V66 V69 I80 I80 F83 F84 F92 T93

L94 GLY ASN ILE LYS SER TYR GLY ASP ASP LYS S104 S105 S106 R109 V110 V111 D114 Y115 M116 Q117 Y118 A119 L125 A126 E127 ASP ASN ALA E131 F132 F133 A134 N135 T136 T137 Y138 L144 A145 K149 F152 S156 L159 G160 L161 I172 D173 D174 C175 G178

- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2

Chain F: 8% 61% 26% 11%

GLN ASP SER T4 I8 P12 L13 K15 K15 V16 V17 L18 Q19 Q20 F22 F27 H28 W31 Y32 Y33 K34 G35 L36 R43 D44 D45 Y52 Y56 E57 L58 K59 D61 K62 M65 I70 S71 S72 HIS LYS K75 I80 A81 I81 P85 G86 L94 G95

ASN ILE SER TYR ASP LYS THR Y105 Y106 L107 V108 V111 S112 D114 Y115 M116 A118 V120 L125 A126 GLU ASP ASN ALA F131 F132 T136 I137 Y138 G139 A145 L148 K149 F152 G160 L161 P162 H165 I172 D173 I176 D177 GLY

- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2

Chain G: 6% 57% 32% 10%

GLN ASP SER T4 I8 P12 L13 K15 K15 V16 V17 L18 Q19 Q20 ASN F22 Q23 D24 F27 H28 Y32 V33 G35 L36 R43 D44 D45 M51 Y52 Y56 E57 L58 K59 D61 K62 S63 Y64 N65 H73 LYS K75 I80 A81 I81 G86 P89 G90 E91

L94 G95 ILE SER TYR LYS THR S105 S106 Y107 V108 R109 V110 T113 D114 M116 Q117 Y118 A119 V120 L125 A126 F127 ASP ASN ALA F131 F132 I135 T136 I137 Y138 K142 A145 L148 K149 F152 I153 R154 F155 S156 K157 S158 L159 G160 P162

H165 I172 D173 I176 D177 G178

- Molecule 1: ENGINEERED HUMAN LIPOCALIN 2

Chain H: 7% 61% 27% 10%

GLN ASP THR S5 D6 L7 P12 L13 S14 K15 V16 V17 L18 Q19 Q20 ASN F22 Q23 Q26 F27 H28 W31 Y32 V33 L36 A37 G38 N39 R40 I41 Y52 Y56 E57 L58 D61 K62 S63 Y64 N65 V66 H73 F83 W84 P85 T93 L94 G95 ASN ILE

LYS SER TYR GLY ASP LYS T104 S105 Y106 R109 V110 V111 S112 D114 Y115 Q117 Y118 A119 E127 ASP ASN ALA E131 F132 F133 A134 I135 T136 I137 Y138 R140 R140 L144 A145 K149 E150 F152 I153 R154 D173 C175 I176 D177 GLY

4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	61.48Å 92.86Å 98.83Å 110.77° 90.00° 109.36°	Depositor
Resolution (Å)	20.00 – 2.00 19.82 – 2.00	Depositor EDS
% Data completeness (in resolution range)	83.4 (20.00-2.00) 83.0 (19.82-2.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	3.20	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.81 (at 1.99Å)	Xtrriage
Refinement program	CNS	Depositor
R, R_{free}	0.251 , 0.282 0.265 , 0.293	Depositor DCC
R_{free} test set	5538 reflections (5.13%)	wwPDB-VP
Wilson B-factor (Å ²)	29.9	Xtrriage
Anisotropy	0.760	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 42.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	0.477 for h,-h-k,-l	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	11039	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.42% 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: PE5, 1PE

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	0.40	0/1377	0.66	0/1863
1	B	0.45	0/1366	0.66	0/1854
1	C	0.41	0/1377	0.66	1/1863 (0.1%)
1	D	0.48	0/1384	0.66	0/1880
1	E	0.38	0/1340	0.59	2/1816 (0.1%)
1	F	0.39	0/1300	0.62	2/1761 (0.1%)
1	G	0.43	0/1325	0.62	2/1793 (0.1%)
1	H	0.37	0/1330	0.59	2/1802 (0.1%)
All	All	0.42	0/10799	0.63	9/14632 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
1	C	0	2
All	All	0	4

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	173	ASP	CB-CG-OD2	5.23	123.01	118.30
1	G	173	ASP	CB-CG-OD2	5.21	122.99	118.30
1	E	173	ASP	CB-CG-OD2	5.18	122.96	118.30
1	H	173	ASP	CB-CG-OD2	5.15	122.94	118.30
1	G	65	ASN	N-CA-C	-5.09	97.25	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	65	ASN	N-CA-C	-5.08	97.28	111.00
1	H	65	ASN	N-CA-C	-5.06	97.33	111.00
1	F	65	ASN	N-CA-C	-5.04	97.40	111.00
1	C	65	ASN	N-CA-C	-5.01	97.46	111.00

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	138	TYR	Sidechain
1	B	118	TYR	Sidechain
1	C	118	TYR	Sidechain
1	C	138	TYR	Sidechain

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	1344	0	1316	25	0
1	B	1333	0	1300	18	0
1	C	1344	0	1316	37	0
1	D	1350	0	1318	19	0
1	E	1307	0	1277	37	0
1	F	1270	0	1244	39	0
1	G	1294	0	1260	45	0
1	H	1298	0	1271	32	0
2	A	14	0	16	1	0
2	E	14	0	16	0	0
2	G	14	0	16	1	0
3	B	26	0	35	4	0
3	C	26	0	35	4	0
3	D	26	0	35	3	0
3	F	26	0	35	1	0
3	H	26	0	35	0	0
4	A	69	0	0	1	0
4	B	78	0	0	0	0
4	C	60	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	D	78	0	0	0	0
4	E	10	0	0	0	0
4	F	9	0	0	1	0
4	G	15	0	0	0	0
4	H	8	0	0	0	0
All	All	11039	0	10525	246	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 12.

All (246) 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:C:70:ILE:HD11	3:C:179:PE5:H112	1.35	1.08
1:E:12:PRO:HG2	1:E:15:LYS:HG3	1.58	0.85
1:F:13:LEU:HD12	1:F:13:LEU:H	1.41	0.83
3:C:179:PE5:H41	4:C:237:HOH:O	1.81	0.81
1:G:145:ALA:HB3	1:G:148:LEU:HG	1.67	0.75
1:G:145:ALA:H	1:G:148:LEU:HD12	1.52	0.74
1:F:60:GLU:CD	1:F:60:GLU:H	1.91	0.74
1:G:60:GLU:H	1:G:60:GLU:CD	1.90	0.73
1:G:119:ALA:HB3	1:G:138:TYR:HB2	1.73	0.71
1:D:157:LYS:HE2	1:D:163:GLU:HG3	1.73	0.71
1:A:68:SER:OG	2:A:179:1PE:H221	1.90	0.70
1:F:12:PRO:HG2	1:F:15:LYS:HG3	1.72	0.69
1:F:125:LEU:HD12	1:F:126:ALA:N	2.07	0.69
1:A:36:LEU:HD13	1:A:136:THR:HG22	1.75	0.69
1:G:12:PRO:HG2	1:G:15:LYS:HG3	1.76	0.68
1:H:84:VAL:CG2	1:H:93:THR:HG23	2.23	0.68
1:C:70:ILE:CD1	3:C:179:PE5:H112	2.18	0.67
1:B:135:ILE:HD11	1:B:156:SER:OG	1.95	0.67
1:C:39:ASN:ND2	1:C:133:PHE:CD1	2.63	0.67
1:F:43:ARG:HD2	1:F:45:ASP:OD2	1.94	0.67
1:B:60:GLU:H	1:B:60:GLU:CD	1.99	0.65
3:F:179:PE5:H41	3:F:179:PE5:O4	1.96	0.65
1:A:162:PRO:HG2	1:A:165:HIS:HD2	1.62	0.65
1:C:39:ASN:ND2	1:C:133:PHE:HD1	1.93	0.65
1:D:60:GLU:CD	1:D:60:GLU:H	2.00	0.64
1:A:60:GLU:CD	1:A:60:GLU:H	1.98	0.64
1:E:23:GLN:HG3	1:E:26:GLN:NE2	2.13	0.64
1:G:8:ILE:HD13	1:G:160:GLY:O	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:23:GLN:HG3	1:E:26:GLN:HE21	1.63	0.62
1:C:62:LYS:HE2	1:C:62:LYS:HA	1.81	0.62
1:H:23:GLN:HG3	1:H:26:GLN:HE21	1.64	0.62
1:H:135:ILE:HG22	1:H:152:PHE:HE2	1.64	0.61
1:H:39:ASN:HD21	1:H:132:PHE:HA	1.65	0.61
1:F:107:LEU:HD12	1:F:108:VAL:H	1.66	0.60
1:H:134:ALA:C	1:H:135:ILE:HD12	2.21	0.60
1:H:19:GLN:NE2	1:H:113:THR:H	1.98	0.60
1:C:6:ASP:HB2	1:E:58:LEU:O	2.02	0.60
1:C:40:ARG:HB2	4:C:239:HOH:O	2.01	0.60
1:F:8:ILE:HD13	1:F:160:GLY:O	2.02	0.60
1:D:46:GLN:O	1:H:15:LYS:HE3	2.01	0.59
1:F:105:SER:HB3	1:F:126:ALA:HB3	1.83	0.59
1:E:105:SER:HB3	1:E:126:ALA:HB3	1.85	0.59
1:H:31:TRP:HB3	1:H:138:TYR:HB3	1.83	0.59
1:C:8:ILE:HD12	1:C:8:ILE:H	1.67	0.58
1:H:23:GLN:HG3	1:H:26:GLN:NE2	2.17	0.58
1:C:60:GLU:CD	1:C:60:GLU:H	2.06	0.58
1:H:94:LEU:HD23	1:H:106:TYR:CD2	2.38	0.58
1:F:119:ALA:HB3	1:F:138:TYR:HB2	1.86	0.58
1:F:33:VAL:HG21	1:F:52:TYR:CZ	2.40	0.57
1:G:35:GLY:CA	1:G:137:ILE:HG22	2.34	0.57
1:H:15:LYS:O	1:H:17:PRO:HD3	2.05	0.57
1:A:39:ASN:ND2	1:A:133:PHE:CD1	2.72	0.57
1:G:43:ARG:HD2	1:G:45:ASP:OD2	2.04	0.57
1:C:31:TRP:HB3	1:C:138:TYR:HB3	1.87	0.56
1:F:31:TRP:HB3	1:F:138:TYR:HB3	1.87	0.56
1:E:39:ASN:HD21	1:E:132:PHE:HA	1.70	0.56
1:F:18:LEU:HD23	1:F:19:GLN:O	2.04	0.56
1:D:157:LYS:CE	1:D:163:GLU:HG3	2.34	0.56
1:A:39:ASN:ND2	1:A:133:PHE:HD1	2.03	0.56
1:G:162:PRO:HG2	1:G:165:HIS:HD2	1.70	0.56
1:B:157:LYS:HE2	1:B:163:GLU:HG3	1.87	0.56
1:E:31:TRP:HB3	1:E:138:TYR:HB3	1.88	0.56
1:G:61:ASP:O	1:G:62:LYS:HB2	2.06	0.56
1:G:107:LEU:HD12	1:G:108:VAL:H	1.71	0.56
1:G:35:GLY:HA3	1:G:137:ILE:HG22	1.88	0.55
1:A:31:TRP:HB3	1:A:138:TYR:HB3	1.88	0.55
1:C:106:TYR:HD2	1:C:125:LEU:HD13	1.72	0.55
1:G:33:VAL:HG21	1:G:52:TYR:CZ	2.42	0.54
1:E:17:PRO:O	1:E:111:VAL:HA	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:172:ILE:O	1:G:176:ILE:HD11	2.08	0.54
1:A:8:ILE:N	1:A:8:ILE:HD12	2.23	0.54
1:H:36:LEU:HD23	1:H:37:ALA:N	2.23	0.54
1:C:59:LYS:HD3	1:C:65:ASN:OD1	2.08	0.54
1:E:33:VAL:HG21	1:E:52:TYR:CZ	2.42	0.54
1:A:62:LYS:N	1:A:62:LYS:HD2	2.22	0.54
1:C:135:ILE:HD11	1:C:159:LEU:HD22	1.89	0.54
1:F:162:PRO:HG2	1:F:165:HIS:HD2	1.73	0.54
1:E:69:VAL:HG11	1:E:175:CYS:O	2.08	0.53
1:A:12:PRO:HD2	1:A:15:LYS:HD2	1.90	0.53
1:A:36:LEU:CD1	1:A:136:THR:HG22	2.38	0.53
1:E:7:LEU:HD11	1:E:39:ASN:ND2	2.24	0.53
1:D:123:PHE:CE2	3:D:179:PE5:H52A	2.43	0.53
1:G:149:LYS:O	1:G:153:ILE:HG13	2.08	0.53
1:D:78:TYR:CG	1:G:43:ARG:HG2	2.44	0.53
1:F:22:PHE:HA	1:F:115:TYR:OH	2.08	0.53
1:B:78:TYR:CG	1:F:43:ARG:HG2	2.44	0.53
1:F:172:ILE:O	1:F:176:ILE:HD11	2.09	0.53
1:D:136:THR:HG21	3:D:179:PE5:H51	1.90	0.52
1:E:18:LEU:O	1:E:19:GLN:C	2.48	0.52
1:D:123:PHE:CZ	3:D:179:PE5:H52A	2.45	0.52
1:G:13:LEU:HA	1:G:16:VAL:HG12	1.92	0.52
1:E:36:LEU:HD23	1:E:37:ALA:N	2.24	0.52
1:H:66:VAL:HG21	1:H:83:PHE:CD1	2.44	0.52
1:A:8:ILE:HD12	1:A:8:ILE:H	1.75	0.51
1:F:137:ILE:O	1:F:137:ILE:HG23	2.10	0.51
1:C:151:ASN:HD22	1:C:154:ARG:NH1	2.08	0.51
1:F:15:LYS:O	1:F:17:PRO:HD3	2.11	0.51
1:A:162:PRO:CG	1:A:165:HIS:HD2	2.23	0.51
1:F:12:PRO:HD2	1:F:15:LYS:HD3	1.91	0.51
1:C:8:ILE:HD12	1:C:8:ILE:N	2.26	0.51
1:F:113:THR:HB	1:F:119:ALA:HA	1.92	0.51
1:H:33:VAL:HG21	1:H:52:TYR:CZ	2.46	0.51
1:G:58:LEU:HD21	1:G:62:LYS:HA	1.93	0.51
1:G:155:PHE:O	1:G:159:LEU:HG	2.10	0.51
1:C:43:ARG:O	1:E:80:ILE:HD11	2.11	0.51
1:E:137:ILE:HG23	1:E:137:ILE:O	2.11	0.50
1:H:7:LEU:HD11	1:H:39:ASN:ND2	2.26	0.50
1:H:137:ILE:HG23	1:H:137:ILE:O	2.11	0.50
1:E:18:LEU:HD13	1:E:109:ARG:HG3	1.91	0.50
1:C:87:SER:HB3	1:G:157:LYS:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:44:ASP:HB2	1:E:80:ILE:HD12	1.93	0.50
1:F:107:LEU:HD12	1:F:108:VAL:N	2.27	0.50
1:C:146:SER:O	1:C:150:GLU:HG3	2.11	0.50
1:G:145:ALA:N	1:G:148:LEU:HD12	2.22	0.50
1:G:137:ILE:HG23	1:G:137:ILE:O	2.11	0.50
1:C:99:SER:O	1:C:100:TYR:C	2.50	0.50
1:H:151:ASN:HA	1:H:154:ARG:NH1	2.27	0.49
1:F:13:LEU:HD12	1:F:13:LEU:N	2.21	0.49
1:E:135:ILE:HD11	1:E:156:SER:OG	2.12	0.49
1:E:13:LEU:C	1:E:15:LYS:H	2.15	0.49
1:G:91:GLU:HG3	1:G:107:LEU:HD11	1.94	0.49
1:B:61:ASP:O	1:B:62:LYS:HB2	2.13	0.49
1:E:149:LYS:O	1:E:152:PHE:HB3	2.12	0.49
1:G:51:MET:HE1	1:G:142:LYS:O	2.13	0.49
1:A:15:LYS:O	1:A:17:PRO:HD3	2.13	0.49
1:E:61:ASP:O	1:E:62:LYS:HB2	2.13	0.48
1:F:13:LEU:H	1:F:13:LEU:CD1	2.17	0.48
2:G:179:1PE:H141	2:G:179:1PE:OH6	2.13	0.48
1:B:128:ASP:O	1:B:131:GLU:HB3	2.13	0.48
1:E:131:GLU:O	1:E:132:PHE:HB3	2.13	0.48
1:H:144:LEU:O	1:H:149:LYS:HE3	2.13	0.48
1:C:135:ILE:HD11	1:C:159:LEU:CD2	2.43	0.48
1:C:61:ASP:O	1:C:62:LYS:HB2	2.13	0.48
1:E:133:PHE:CZ	1:E:161:LEU:HD21	2.50	0.47
1:A:20:GLN:HG3	1:B:140:ARG:HG3	1.95	0.47
1:C:68:SER:OG	3:C:179:PE5:H12	2.14	0.47
1:H:18:LEU:HD13	1:H:109:ARG:HG3	1.96	0.47
1:D:59:LYS:HD3	1:D:65:ASN:OD1	2.14	0.47
1:H:61:ASP:O	1:H:62:LYS:HB2	2.15	0.47
1:D:31:TRP:HB3	1:D:138:TYR:HB3	1.96	0.47
1:E:66:VAL:HG21	1:E:83:PHE:CD1	2.49	0.47
1:C:25:ASN:C	1:C:25:ASN:HD22	2.18	0.47
1:G:113:THR:HB	1:G:119:ALA:HA	1.97	0.47
1:H:84:VAL:HG23	1:H:93:THR:HG23	1.95	0.47
1:H:36:LEU:HD22	1:H:41:ILE:HG13	1.96	0.46
1:D:91:GLU:HA	1:D:108:VAL:O	2.14	0.46
1:H:135:ILE:HD12	1:H:135:ILE:N	2.31	0.46
1:G:61:ASP:OD1	1:G:63:SER:HB3	2.16	0.46
3:B:179:PE5:H51	3:B:179:PE5:H72	1.77	0.46
1:G:118:TYR:HA	1:G:138:TYR:O	2.15	0.46
1:E:60:GLU:C	1:E:62:LYS:H	2.19	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:125:LEU:HD12	1:G:126:ALA:N	2.31	0.45
1:D:61:ASP:O	1:D:62:LYS:HB2	2.17	0.45
1:A:40:ARG:HB2	4:A:244:HOH:O	2.15	0.45
1:G:60:GLU:CD	1:G:60:GLU:N	2.65	0.45
3:B:179:PE5:H51	3:B:179:PE5:H32	1.75	0.45
1:B:94:LEU:HD11	3:B:179:PE5:H11	1.99	0.45
1:B:157:LYS:CE	1:B:163:GLU:HG3	2.47	0.45
1:H:131:GLU:O	1:H:132:PHE:HB3	2.17	0.45
1:H:12:PRO:HG2	1:H:15:LYS:HG3	1.99	0.45
1:A:94:LEU:C	1:A:94:LEU:HD13	2.37	0.45
1:B:58:LEU:HD22	1:B:59:LYS:O	2.16	0.45
1:A:63:SER:HA	1:A:85:PRO:HD3	1.99	0.44
1:G:94:LEU:HD13	1:G:94:LEU:C	2.37	0.44
1:D:78:TYR:CD1	1:G:43:ARG:HG2	2.52	0.44
1:E:23:GLN:C	1:E:25:ASN:H	2.19	0.44
1:G:32:TYR:HE1	1:G:176:ILE:HB	1.82	0.44
1:H:149:LYS:O	1:H:152:PHE:HB3	2.17	0.44
1:A:11:PRO:HG3	1:A:159:LEU:HG	1.99	0.44
1:D:59:LYS:CB	1:D:59:LYS:HZ2	2.30	0.44
1:C:62:LYS:HE2	1:C:62:LYS:CA	2.45	0.44
1:G:35:GLY:HA3	1:G:137:ILE:CG2	2.48	0.44
1:B:78:TYR:CD1	1:F:43:ARG:HG2	2.53	0.44
1:F:120:VAL:HA	1:F:136:THR:O	2.17	0.44
1:C:135:ILE:CD1	1:C:159:LEU:HD22	2.48	0.44
1:F:36:LEU:HD23	1:F:136:THR:HG22	2.00	0.43
1:G:114:ASP:O	1:G:116:ASN:N	2.51	0.43
1:C:106:TYR:CD2	1:C:125:LEU:HD13	2.52	0.43
1:G:135:ILE:HG22	1:G:152:PHE:HE2	1.82	0.43
1:F:118:TYR:HA	1:F:138:TYR:O	2.19	0.43
1:G:120:VAL:HA	1:G:136:THR:O	2.17	0.43
1:A:44:ASP:OD2	1:A:47:HIS:ND1	2.51	0.43
1:A:60:GLU:CD	1:A:60:GLU:N	2.68	0.43
1:C:36:LEU:HD23	1:C:136:THR:HG22	2.01	0.43
1:E:11:PRO:HG2	1:E:159:LEU:HB3	2.01	0.43
1:B:25:ASN:HD22	1:B:25:ASN:C	2.20	0.43
1:G:135:ILE:N	1:G:135:ILE:HD12	2.32	0.43
1:H:151:ASN:HA	1:H:154:ARG:HH11	1.83	0.43
1:D:63:SER:HA	1:D:85:PRO:HD3	2.01	0.43
1:F:61:ASP:O	1:F:62:LYS:HB2	2.19	0.43
1:E:10:ALA:HA	1:E:133:PHE:CD1	2.54	0.42
1:H:63:SER:HA	1:H:85:PRO:HD3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:31:TRP:HB3	1:B:138:TYR:HB3	2.00	0.42
1:F:94:LEU:C	1:F:94:LEU:HD13	2.39	0.42
1:C:33:VAL:HG21	1:C:52:TYR:CZ	2.53	0.42
1:A:149:LYS:O	1:A:152:PHE:HB3	2.19	0.42
1:E:118:TYR:CD1	1:E:119:ALA:N	2.88	0.42
1:F:80:ILE:HG22	1:F:81:ALA:N	2.34	0.42
1:E:144:LEU:O	1:E:149:LYS:HE3	2.19	0.42
1:C:150:GLU:O	1:C:154:ARG:HG3	2.19	0.42
1:G:65:ASN:HD22	1:G:65:ASN:HA	1.65	0.42
1:B:123:PHE:CD1	3:B:179:PE5:H81	2.54	0.42
1:F:43:ARG:NH1	1:F:45:ASP:OD1	2.52	0.42
1:D:137:ILE:HG23	1:D:137:ILE:O	2.20	0.42
1:E:34:VAL:HA	1:E:51:MET:HE2	2.02	0.42
1:F:149:LYS:O	1:F:152:PHE:HB3	2.20	0.42
1:A:170:VAL:HA	1:A:171:PRO:HD3	1.94	0.41
1:F:145:ALA:O	1:F:148:LEU:N	2.53	0.41
1:G:118:TYR:CD1	1:G:118:TYR:C	2.92	0.41
1:C:60:GLU:CD	1:C:60:GLU:N	2.73	0.41
1:F:8:ILE:HG13	4:F:183:HOH:O	2.21	0.41
1:F:43:ARG:HH11	1:F:45:ASP:CG	2.23	0.41
1:F:113:THR:O	1:F:113:THR:HG23	2.20	0.41
1:C:63:SER:HA	1:C:85:PRO:HD3	2.02	0.41
1:E:50:ASN:HB3	1:E:172:ILE:HD13	2.02	0.41
1:C:33:VAL:HG21	1:C:52:TYR:CE2	2.55	0.41
1:F:59:LYS:HE2	1:F:65:ASN:ND2	2.35	0.41
1:G:80:ILE:HG22	1:G:81:ALA:N	2.35	0.41
1:H:114:ASP:OD2	1:H:117:GLN:HB3	2.20	0.41
1:C:59:LYS:HE2	1:C:63:SER:OG	2.19	0.41
1:D:12:PRO:HG2	1:D:15:LYS:HG3	2.03	0.41
1:E:114:ASP:OD2	1:E:117:GLN:HB3	2.21	0.41
1:A:135:ILE:HD11	1:A:159:LEU:CD2	2.50	0.41
1:E:13:LEU:C	1:E:15:LYS:N	2.73	0.41
1:F:35:GLY:HA3	1:F:137:ILE:CG2	2.50	0.41
1:G:18:LEU:HD13	1:G:109:ARG:HG3	2.01	0.41
1:H:56:TYR:HE1	1:H:83:PHE:CE1	2.39	0.41
1:A:73:HIS:O	1:A:74:LYS:HB2	2.21	0.41
1:B:157:LYS:HE2	1:B:163:GLU:CG	2.50	0.41
1:C:116:ASN:HD22	1:C:116:ASN:C	2.24	0.41
1:F:118:TYR:CD1	1:F:118:TYR:C	2.93	0.41
1:B:59:LYS:CE	1:B:63:SER:OG	2.69	0.41
1:C:20:GLN:HG3	1:D:140:ARG:HG3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:137:ILE:HG12	1:E:144:LEU:CD1	2.51	0.41
1:G:114:ASP:C	1:G:116:ASN:H	2.23	0.41
1:G:35:GLY:N	1:G:137:ILE:CG2	2.84	0.41
1:C:73:HIS:O	1:C:74:LYS:HB2	2.21	0.41
1:E:36:LEU:CD2	1:E:41:ILE:HG13	2.51	0.40
1:E:92:PHE:CD1	1:E:92:PHE:N	2.88	0.40
1:G:24:ASP:OD2	1:G:58:LEU:HD11	2.20	0.40
1:B:91:GLU:HA	1:B:108:VAL:O	2.20	0.40
1:B:137:ILE:O	1:B:137:ILE:HG23	2.21	0.40
1:D:59:LYS:NZ	1:D:63:SER:OG	2.44	0.40
1:G:56:TYR:HB3	1:G:64:TYR:CE2	2.57	0.40
1:H:13:LEU:C	1:H:15:LYS:N	2.75	0.40
1:H:118:TYR:CD1	1:H:119:ALA:N	2.90	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	159/178 (89%)	153 (96%)	4 (2%)	2 (1%)	12	6
1	B	160/178 (90%)	151 (94%)	8 (5%)	1 (1%)	25	19
1	C	159/178 (89%)	151 (95%)	7 (4%)	1 (1%)	25	19
1	D	164/178 (92%)	156 (95%)	7 (4%)	1 (1%)	25	19
1	E	156/178 (88%)	139 (89%)	13 (8%)	4 (3%)	5	2
1	F	148/178 (83%)	139 (94%)	7 (5%)	2 (1%)	11	5
1	G	151/178 (85%)	138 (91%)	10 (7%)	3 (2%)	7	3
1	H	153/178 (86%)	138 (90%)	13 (8%)	2 (1%)	12	6
All	All	1250/1424 (88%)	1165 (93%)	69 (6%)	16 (1%)	12	6

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	175	CYS
1	G	115	TYR
1	A	175	CYS
1	D	175	CYS
1	E	19	GLN
1	A	98	LYS
1	C	175	CYS
1	E	105	SER
1	E	115	TYR
1	F	115	TYR
1	G	28	HIS
1	F	117	GLN
1	H	61	ASP
1	E	61	ASP
1	H	175	CYS
1	G	89	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	149/159 (94%)	145 (97%)	4 (3%)	44	46
1	B	149/159 (94%)	146 (98%)	3 (2%)	55	58
1	C	149/159 (94%)	141 (95%)	8 (5%)	22	18
1	D	151/159 (95%)	149 (99%)	2 (1%)	69	74
1	E	146/159 (92%)	143 (98%)	3 (2%)	53	57
1	F	142/159 (89%)	139 (98%)	3 (2%)	53	57
1	G	144/159 (91%)	140 (97%)	4 (3%)	43	44
1	H	145/159 (91%)	137 (94%)	8 (6%)	21	17
All	All	1175/1272 (92%)	1140 (97%)	35 (3%)	41	41

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	LEU
1	A	25	ASN
1	A	28	HIS
1	A	58	LEU
1	B	25	ASN
1	B	28	HIS
1	B	58	LEU
1	C	25	ASN
1	C	28	HIS
1	C	36	LEU
1	C	58	LEU
1	C	60	GLU
1	C	94	LEU
1	C	109	ARG
1	C	116	ASN
1	D	28	HIS
1	D	58	LEU
1	E	6	ASP
1	E	28	HIS
1	E	58	LEU
1	F	28	HIS
1	F	36	LEU
1	F	58	LEU
1	G	36	LEU
1	G	58	LEU
1	G	60	GLU
1	G	65	ASN
1	H	6	ASP
1	H	28	HIS
1	H	58	LEU
1	H	65	ASN
1	H	93	THR
1	H	94	LEU
1	H	116	ASN
1	H	140	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	25	ASN
1	A	28	HIS
1	A	65	ASN
1	A	117	GLN

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Mol	Chain	Res	Type
1	A	165	HIS
1	B	25	ASN
1	B	117	GLN
1	C	25	ASN
1	C	28	HIS
1	C	50	ASN
1	C	116	ASN
1	C	117	GLN
1	C	151	ASN
1	D	21	ASN
1	D	50	ASN
1	E	26	GLN
1	E	46	GLN
1	E	65	ASN
1	E	117	GLN
1	F	26	GLN
1	F	28	HIS
1	F	46	GLN
1	F	117	GLN
1	F	151	ASN
1	G	65	ASN
1	G	151	ASN
1	H	26	GLN
1	H	28	HIS
1	H	65	ASN
1	H	117	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

8 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
3	PE5	C	179	-	25,25,26	0.55	0	24,24,25	0.54	0
2	1PE	E	179	-	13,13,15	0.56	0	12,12,14	0.53	0
2	1PE	A	179	-	13,13,15	0.56	0	12,12,14	0.58	0
3	PE5	B	179	-	25,25,26	0.55	0	24,24,25	0.51	0
3	PE5	D	179	-	25,25,26	0.55	0	24,24,25	0.59	0
3	PE5	F	179	-	25,25,26	0.55	0	24,24,25	0.45	0
3	PE5	H	179	-	25,25,26	0.55	0	24,24,25	0.57	0
2	1PE	G	179	-	13,13,15	0.57	0	12,12,14	0.45	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
3	PE5	C	179	-	-	5/23/23/24	-
2	1PE	E	179	-	-	1/11/11/13	-
2	1PE	A	179	-	-	3/11/11/13	-
3	PE5	B	179	-	-	10/23/23/24	-
3	PE5	D	179	-	-	4/23/23/24	-
3	PE5	F	179	-	-	6/23/23/24	-
3	PE5	H	179	-	-	4/23/23/24	-
2	1PE	G	179	-	-	5/11/11/13	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (38) torsion outliers are listed below:

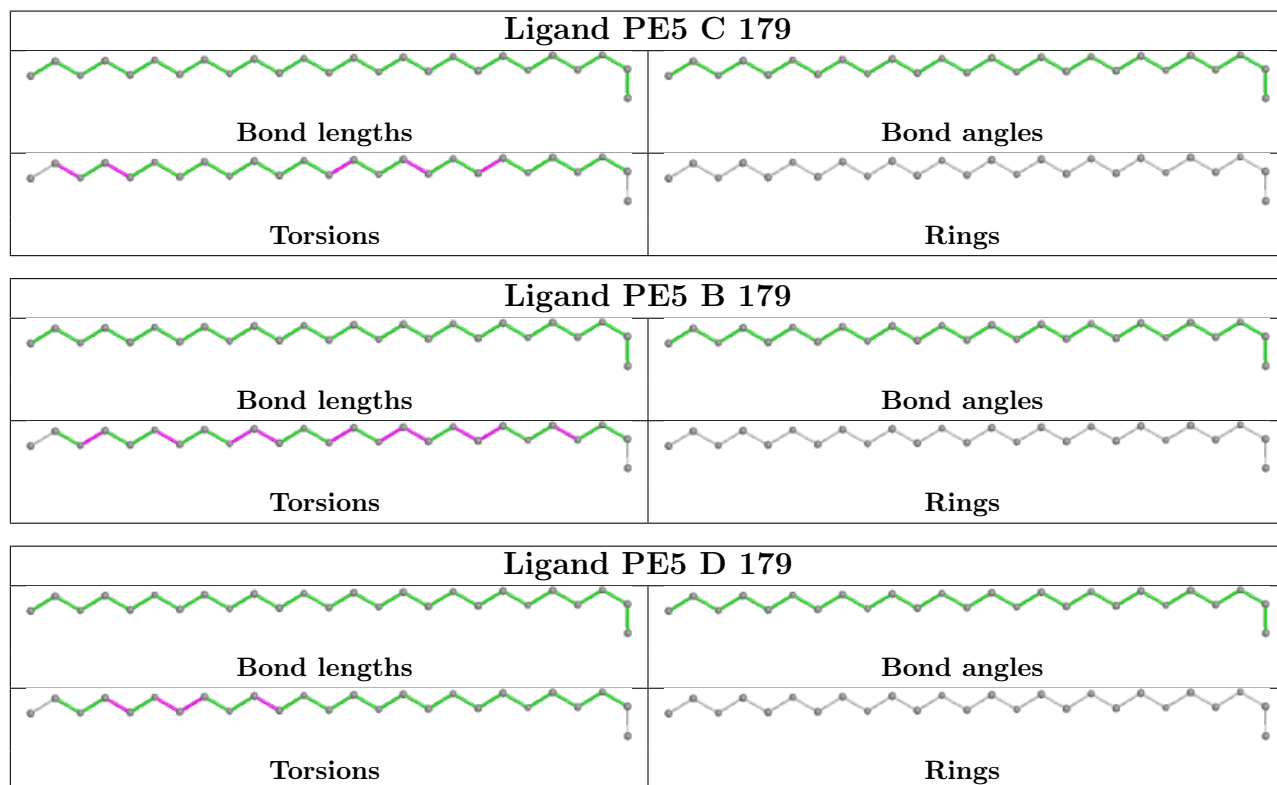
Mol	Chain	Res	Type	Atoms
3	B	179	PE5	C11-C12-O7-C13
3	B	179	PE5	C13-C14-O8-C15
3	D	179	PE5	C11-C12-O7-C13
2	A	179	1PE	C23-C13-OH4-C24
2	G	179	1PE	C16-C26-OH6-C15
3	B	179	PE5	C3-C4-O3-C5
3	D	179	PE5	O6-C11-C12-O7
3	C	179	PE5	C16-C15-O8-C14
3	C	179	PE5	O3-C5-C6-O4
3	H	179	PE5	C4-C3-O2-C2
3	B	179	PE5	C5-C6-O4-C7
2	G	179	1PE	C12-C22-OH3-C23
3	F	179	PE5	O1-C1-C2-O2
2	G	179	1PE	OH4-C13-C23-OH3
3	C	179	PE5	O7-C13-C14-O8
3	F	179	PE5	C8-C7-O4-C6
3	B	179	PE5	O4-C7-C8-O5
3	H	179	PE5	O7-C13-C14-O8
3	B	179	PE5	O2-C3-C4-O3
2	E	179	1PE	OH6-C15-C25-OH5
3	B	179	PE5	O6-C10-C9-O5
3	F	179	PE5	O4-C7-C8-O5
3	F	179	PE5	O7-C13-C14-O8
3	H	179	PE5	O1-C1-C2-O2
2	A	179	1PE	OH4-C13-C23-OH3
3	B	179	PE5	C9-C10-O6-C11
3	D	179	PE5	O7-C13-C14-O8
3	F	179	PE5	O2-C3-C4-O3
2	G	179	1PE	OH5-C14-C24-OH4
3	D	179	PE5	O6-C10-C9-O5
3	H	179	PE5	O4-C7-C8-O5
3	B	179	PE5	O1-C1-C2-O2
2	A	179	1PE	OH6-C15-C25-OH5
3	B	179	PE5	O3-C5-C6-O4
2	G	179	1PE	C14-C24-OH4-C13
3	F	179	PE5	C13-C14-O8-C15
3	C	179	PE5	O4-C7-C8-O5
3	C	179	PE5	O2-C3-C4-O3

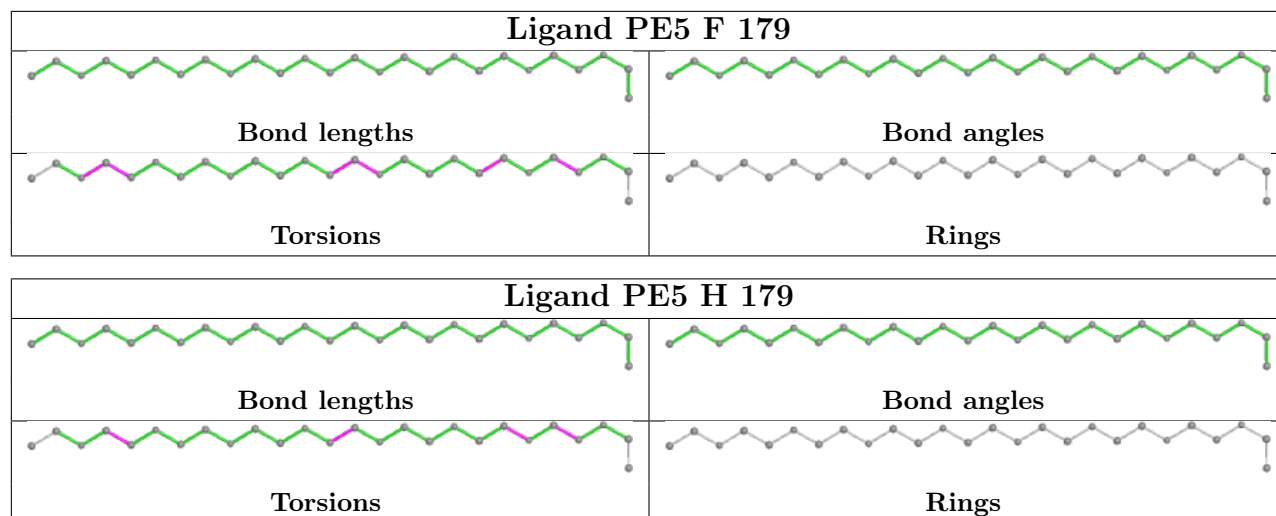
There are no ring outliers.

6 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	179	PE5	4	0
2	A	179	1PE	1	0
3	B	179	PE5	4	0
3	D	179	PE5	3	0
3	F	179	PE5	1	0
2	G	179	1PE	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 than 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.





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	167/178 (93%)	0.23	4 (2%) 59 57	23, 36, 54, 76	11 (6%)
1	B	166/178 (93%)	0.13	2 (1%) 79 78	20, 33, 52, 69	12 (7%)
1	C	167/178 (93%)	0.30	6 (3%) 42 42	23, 36, 54, 78	10 (5%)
1	D	168/178 (94%)	0.15	3 (1%) 68 66	21, 33, 53, 74	13 (7%)
1	E	162/178 (91%)	0.57	11 (6%) 17 16	25, 52, 72, 77	15 (9%)
1	F	158/178 (88%)	0.61	15 (9%) 8 7	26, 48, 76, 81	18 (11%)
1	G	161/178 (90%)	0.64	11 (6%) 17 16	26, 50, 78, 86	17 (10%)
1	H	161/178 (90%)	0.63	13 (8%) 12 11	25, 52, 71, 76	17 (10%)
All	All	1310/1424 (91%)	0.40	65 (4%) 28 28	20, 42, 71, 86	113 (8%)

All (65) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	86	GLY	4.7
1	F	94	LEU	4.6
1	E	106	TYR	4.4
1	G	94	LEU	3.6
1	H	27	PHE	3.5
1	G	62	LYS	3.4
1	G	27	PHE	3.2
1	F	75	LYS	3.2
1	G	106	TYR	3.2
1	F	27	PHE	3.2
1	E	27	PHE	3.1
1	E	84	VAL	3.1
1	E	58	LEU	3.1
1	B	130	ALA	3.0
1	G	148	LEU	3.0
1	C	97	ILE	3.0

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Mol	Chain	Res	Type	RSRZ
1	G	176	ILE	2.9
1	H	18	LEU	2.9
1	C	99	SER	2.8
1	D	130	ALA	2.8
1	H	22	PHE	2.7
1	E	104	THR	2.7
1	A	94	LEU	2.7
1	C	73	HIS	2.7
1	F	176	ILE	2.7
1	H	132	PHE	2.7
1	F	111	VAL	2.6
1	H	106	TYR	2.6
1	H	145	ALA	2.6
1	G	132	PHE	2.6
1	G	86	GLY	2.6
1	F	18	LEU	2.6
1	H	62	LYS	2.6
1	A	127	GLU	2.5
1	H	104	THR	2.5
1	E	127	GLU	2.5
1	G	107	LEU	2.5
1	F	62	LYS	2.4
1	B	129	ASN	2.4
1	F	85	PRO	2.4
1	H	73	HIS	2.4
1	F	145	ALA	2.4
1	G	145	ALA	2.4
1	A	106	TYR	2.3
1	E	62	LYS	2.3
1	F	56	TYR	2.3
1	D	129	ASN	2.3
1	C	127	GLU	2.3
1	E	132	PHE	2.2
1	E	145	ALA	2.2
1	F	132	PHE	2.2
1	C	74	LYS	2.2
1	F	139	GLY	2.2
1	C	94	LEU	2.2
1	H	105	SER	2.1
1	F	125	LEU	2.1
1	H	111	VAL	2.1
1	H	154	ARG	2.1

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Mol	Chain	Res	Type	RSRZ
1	E	126	ALA	2.1
1	A	97	ILE	2.1
1	D	73	HIS	2.1
1	F	70	ILE	2.0
1	H	84	VAL	2.0
1	E	125	LEU	2.0
1	G	110	VAL	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](#)

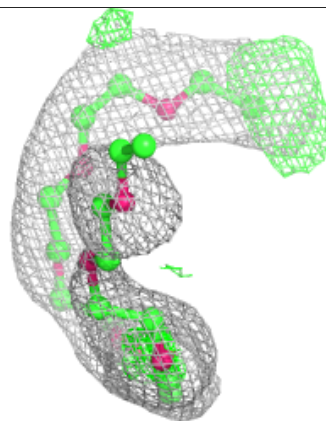
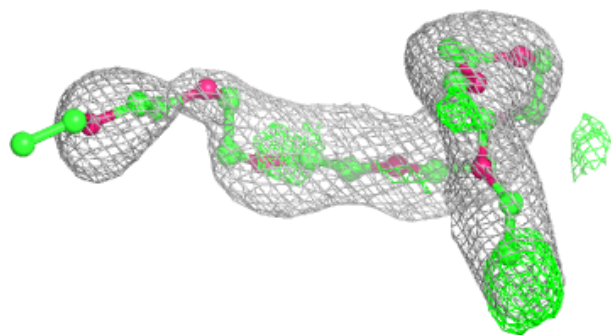
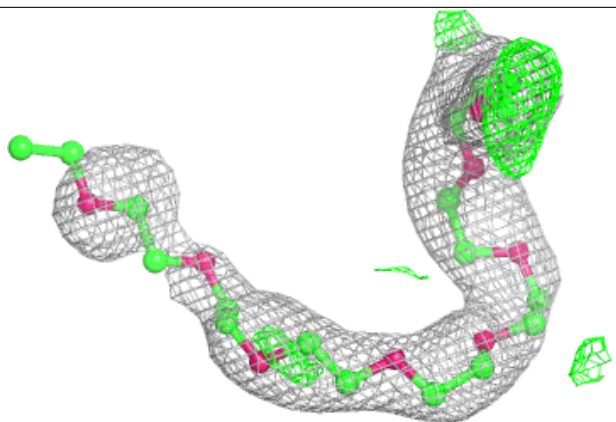
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	PE5	D	179	26/27	0.75	0.22	64,70,83,85	0
3	PE5	F	179	26/27	0.76	0.26	82,86,88,88	0
3	PE5	C	179	26/27	0.80	0.20	59,77,94,94	0
2	1PE	G	179	14/16	0.84	0.19	79,81,87,88	0
3	PE5	B	179	26/27	0.85	0.17	61,66,70,71	0
3	PE5	H	179	26/27	0.85	0.19	67,77,85,86	0
2	1PE	A	179	14/16	0.87	0.18	57,65,70,71	0
2	1PE	E	179	14/16	0.91	0.14	61,64,67,68	0

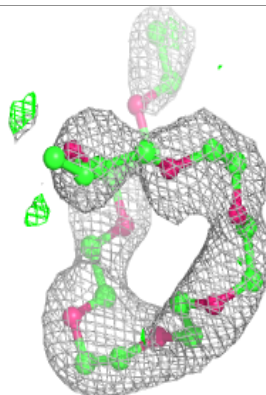
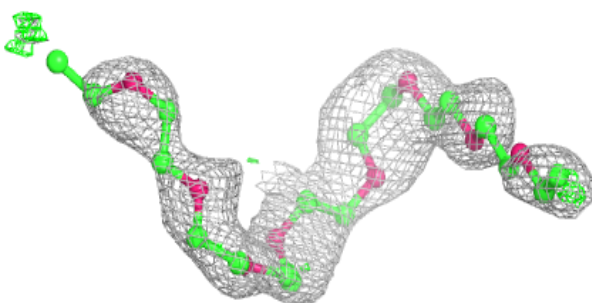
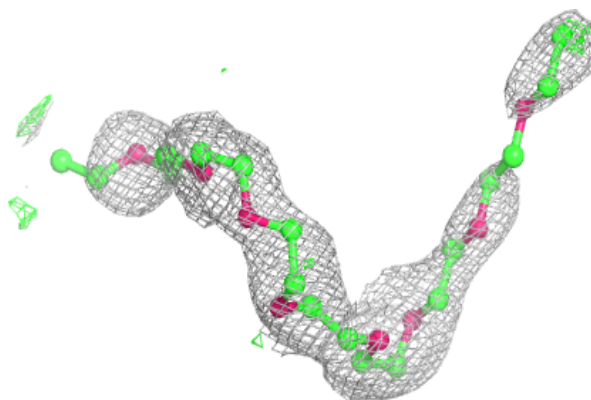
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around PE5 D 179:

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

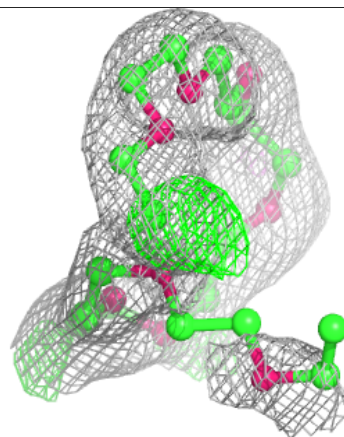
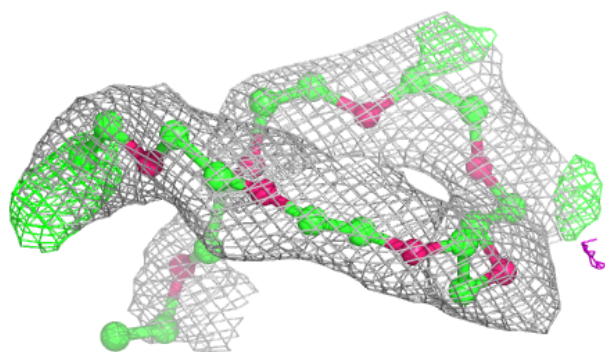
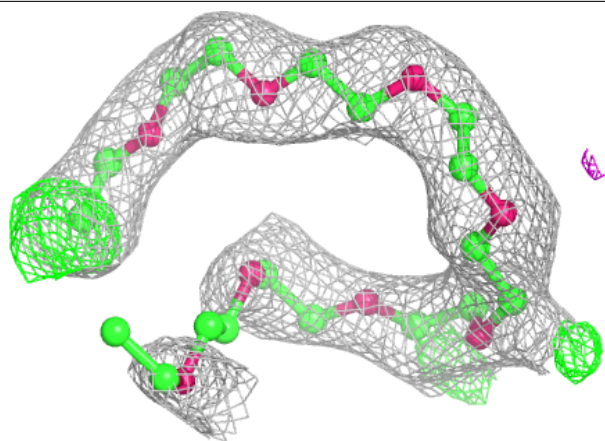
**Electron density around PE5 F 179:**

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



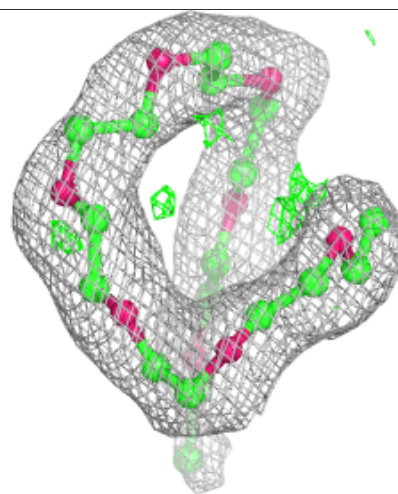
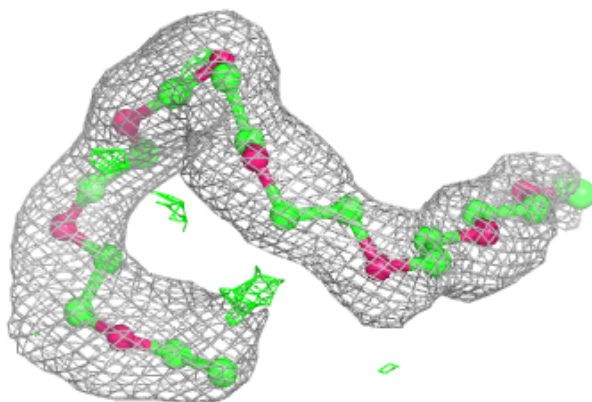
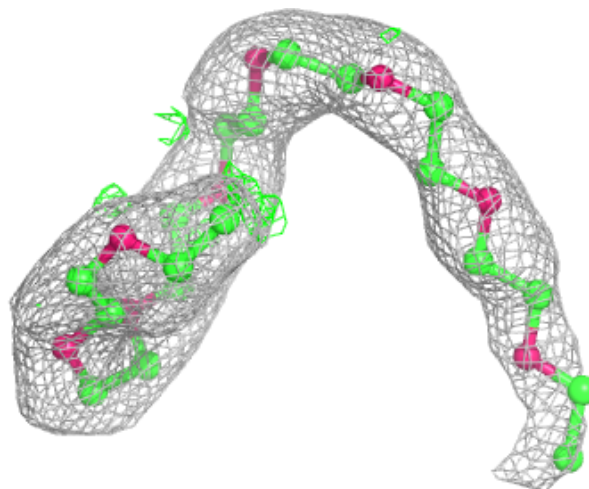
Electron density around PE5 C 179:

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



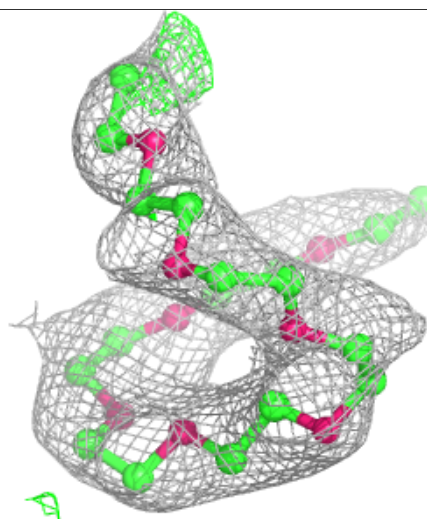
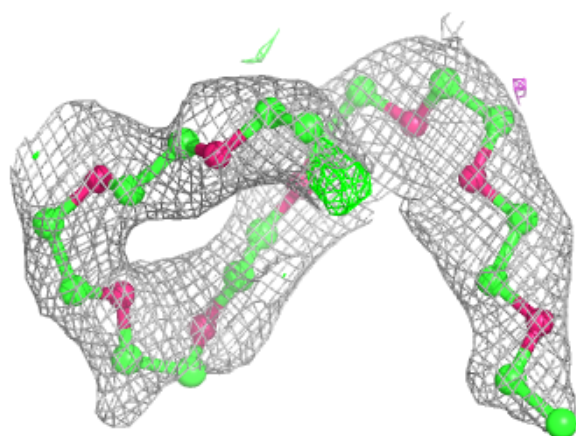
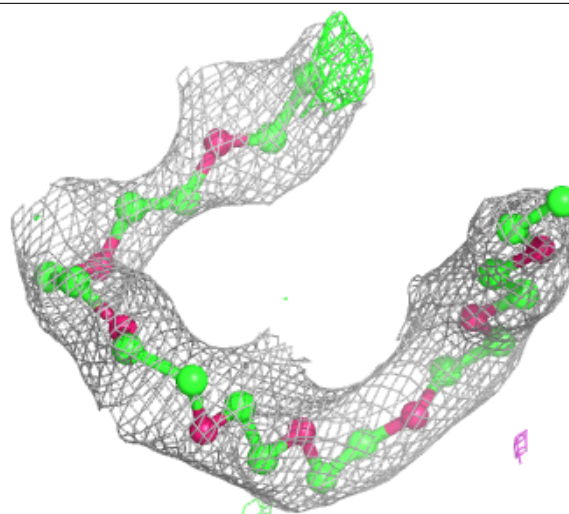
Electron density around PE5 B 179:

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



Electron density around PE5 H 179:

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



6.5 Other polymers [i](#)

There are no such residues in this entry.