Full wwPDB X-ray Structure Validation Report (i)

Oct 22, 2024 – 09:45 AM JST

PDB ID	:	8WV3
Title	:	NUDIX hydrolase from Bacillus methanolicus
Authors	:	Ma, B.D.; Kong, X.D.
Deposited on	:	2023-10-23
Resolution	:	1.98 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

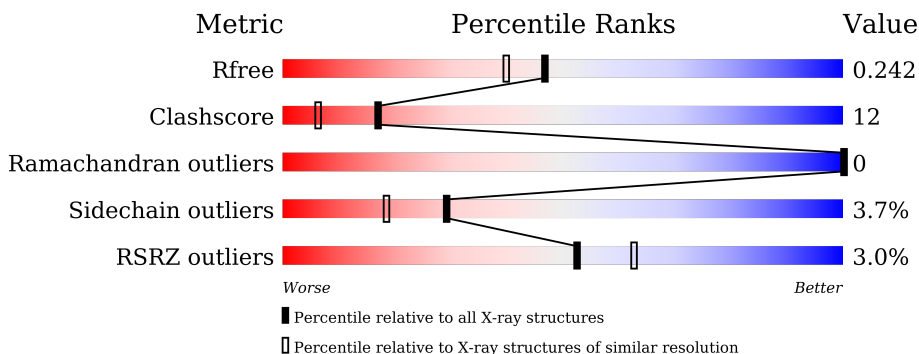|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.98 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
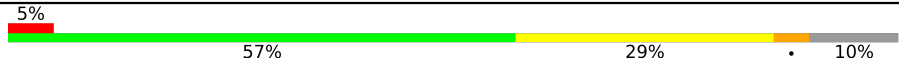
Metric	Percentile Ranks	Value
Rfree		0.242
Clashscore		12
Ramachandran outliers		0
Sidechain outliers		3.7%
RSRZ outliers		3.0%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1356 (1.98-1.98)
Clashscore	180529	1437 (1.98-1.98)
Ramachandran outliers	177936	1426 (1.98-1.98)
Sidechain outliers	177891	1426 (1.98-1.98)
RSRZ outliers	164620	1356 (1.98-1.98)

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	187	2% / 81% / 10% · 8%
1	B	187	2% / 68% / 22% · 8%
1	C	187	% / 68% / 21% · 9%
1	D	187	% / 70% / 19% · 10%
1	E	187	% / 84% / 15% ··
1	F	187	3% / 67% / 20% · 10%

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Mol	Chain	Length	Quality of chain
1	G	187	5% 57% 29% 10%
1	H	187	7% 52% 34% 13%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 11458 atoms, of which 26 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 ADP-ribose pyrophosphatase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	172	Total	C	N	O	S	0	0	0
			1385	882	226	274	3			
1	B	172	Total	C	N	O	S	0	0	0
			1378	879	228	268	3			
1	C	170	Total	C	N	O	S	0	0	0
			1368	876	224	265	3			
1	D	169	Total	C	N	O	S	0	0	0
			1359	870	222	264	3			
1	E	186	Total	C	N	O	S	0	0	0
			1488	946	244	295	3			
1	F	168	Total	C	N	O	S	0	0	0
			1359	868	222	266	3			
1	G	169	Total	C	N	O	S	0	0	0
			1352	863	222	264	3			
1	H	163	Total	C	N	O	S	0	0	0
			1308	834	214	257	3			

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	186	LEU	-	expression tag	UNP I3EA59
A	187	GLU	-	expression tag	UNP I3EA59
B	186	LEU	-	expression tag	UNP I3EA59
B	187	GLU	-	expression tag	UNP I3EA59
C	186	LEU	-	expression tag	UNP I3EA59
C	187	GLU	-	expression tag	UNP I3EA59
D	186	LEU	-	expression tag	UNP I3EA59
D	187	GLU	-	expression tag	UNP I3EA59
E	186	LEU	-	expression tag	UNP I3EA59
E	187	GLU	-	expression tag	UNP I3EA59
F	186	LEU	-	expression tag	UNP I3EA59
F	187	GLU	-	expression tag	UNP I3EA59
G	186	LEU	-	expression tag	UNP I3EA59

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Chain	Residue	Modelled	Actual	Comment	Reference
G	187	GLU	-	expression tag	UNP I3EA59
H	186	LEU	-	expression tag	UNP I3EA59
H	187	GLU	-	expression tag	UNP I3EA59

- Molecule 2 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).
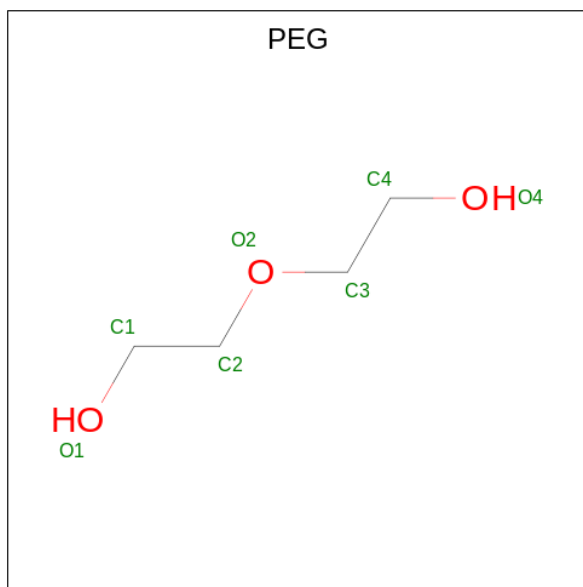
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	D	1	Total 7	C 4	O 3	0	0
2	E	1	Total 7	C 4	O 3	0	0

- Molecule 3 is HEXAETHYLENE GLYCOL (three-letter code: P6G) (formula: $C_{12}H_{26}O_7$).

P6G
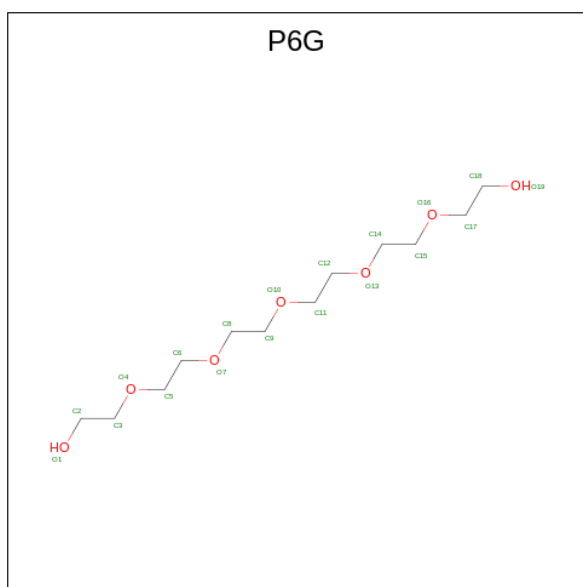
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	F	1	Total C O	19 12 7		0	0
3	H	1	Total C H O	45 12 26 7		0	0

• Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	66	Total O	66 66	0	0
4	B	45	Total O	45 45	0	0
4	C	55	Total O	55 55	0	0
4	D	65	Total O	65 65	0	0
4	E	64	Total O	64 64	0	0
4	F	43	Total O	43 43	0	0
4	G	29	Total O	29 29	0	0
4	H	16	Total O	16 16	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises 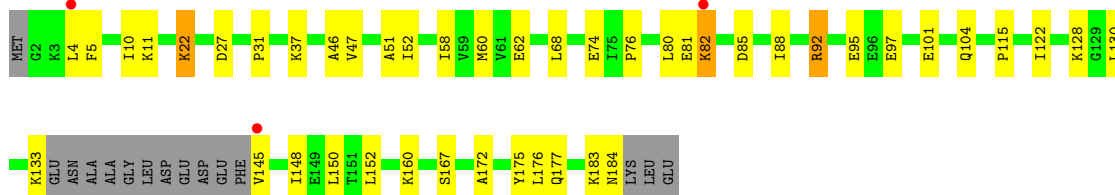the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.
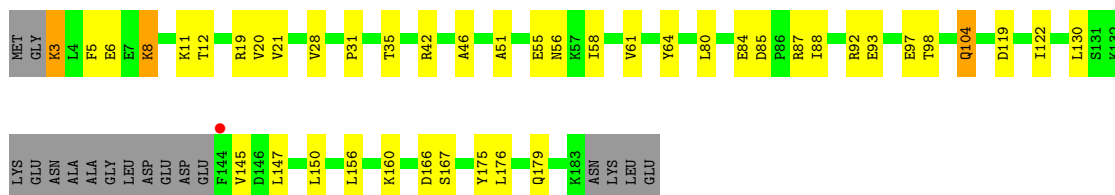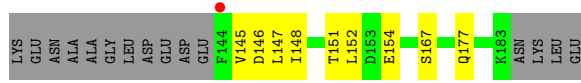
- Molecule 1: ADP-ribose pyrophosphatase

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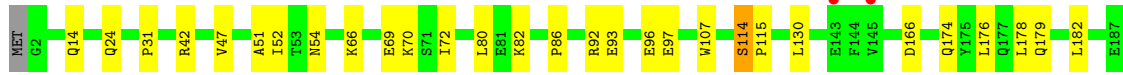

- Molecule 1: ADP-ribose pyrophosphatase

- Molecule 1: ADP-ribose pyrophosphatase

LYS GLU ASN ALA ALA GLY LEU ASP GLU ASP GLU F144 V145 D146 L147 I148 T151 L152 D153 E154 S167 Q177 K183 ASN LYS LEU GLU

• Molecule 1: ADP-ribose pyrophosphatase

Chain E:

MET G2 Q14 Q24 P31 R42 V47 A51 I52 T53 N54 K66 E69 K70 S71 I72 L80 E81 K82 P86 R92 E93 E96 E97 W107 S114 P115 L130 E143 F144 V145 D166 Q174 Y175 L176 Q177 L178 Q179 L182 E187

• Molecule 1: ADP-ribose pyrophosphatase

Chain F:

MET GLY LYS LEU F5 E6 E7 K8 T9 I10 K11 T12 E13 Q14 I15 F16 S17 D27 V28 E29 L30 PRO ASN GLN THR S36 R42 H43 P44 A51 E55 L68 E69 K70 K79 K82 R92 E95 E96 E103 Q104 D119 E120 K128 G129 L130 S131

K132 K133 E134 N135 ALA ALA GLY LEU ASP GLU ASP E143 F144 L147 I148 L152 D166 L176 Q179 L182 K183 N184 LYS LEU GLU

• Molecule 1: ADP-ribose pyrophosphatase

Chain G:

MET G2 K3 L4 F5 E6 T9 T12 E13 Q14 R19 V20 V21 K22 E29 L30 P31 T35 S36 K37 R38 E39 R42 H43 P44 V47 A48 A51 E55 V61 E62 Q63 Y64 R65 K66 K70 S71 A77 G78 K79 L80 E81 LYS G83 E84 D85 P86 R87

I88 L91 R92 E93 Y100 E101 C102 E103 Q104 M105 Y125 K128 G129 L130 S131 K132 LYS GLU ASN ALA ALA GLY LEU ASP GLU ASP GLU PHE V145 D146 L150 T151 L152 D153 E154 R163 D166 S167 L176 Q179 L182 K183 ASN LYS LEU GLU

• Molecule 1: ADP-ribose pyrophosphatase

Chain H:

MET GLY LYS LEU PHE E6 E7 K8 T12 E13 Q14 I15 R19 V28 E29 L30 P31 N32 Q34 T35 E39 H43 P44 G45 A46 A51 I52 T53 N54 E55 N56 V59 M60 V61 L68 E69 K70 K79 G83 E84 D85 P86 R87 I88 T89 E93 L94 E95

E96 E97 T98 G99 Y100 E103 Q104 M105 E106 W107 G116 I122 H123 I124 Y125 V126 A127 K128 G129 LEU SER LYS LYS GLU ASN ALA ALA GLY LEU ASP GLU ASP GLU F144 V145 D146 L147 I148 E149 L150 T151 L152 D153 E154 A155 L156 I159 R163 I164 Y165 D166 S167 L176 Q177

L178 Q179 E180 A181 L182 LYS ASN LYS LEU GLU

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	76.83Å 96.88Å 103.99Å 90.00° 98.15° 90.00°	Depositor
Resolution (Å)	34.13 – 1.98 34.13 – 1.98	Depositor EDS
% Data completeness (in resolution range)	97.1 (34.13-1.98) 97.1 (34.13-1.98)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.24 (at 1.98Å)	Xtriage
Refinement program	PHENIX (1.19.2_4158: ???)	Depositor
R, R_{free}	0.199 , 0.244 0.198 , 0.242	Depositor DCC
R_{free} test set	5293 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å^2)	38.5	Xtriage
Anisotropy	0.069	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 34.4	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	0.96	EDS
Total number of atoms	11458	wwPDB-VP
Average B, all atoms (Å^2)	47.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.61% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< \|L\| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: P6G, PEG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	A	0.45	0/1404	0.63	0/1894
1	B	0.45	0/1396	0.61	0/1881
1	C	0.45	0/1387	0.65	0/1870
1	D	0.46	0/1378	0.62	0/1859
1	E	0.47	0/1508	0.63	0/2033
1	F	0.45	0/1376	0.65	1/1852 (0.1%)
1	G	0.41	1/1369 (0.1%)	0.61	0/1845
1	H	0.35	0/1326	0.59	0/1791
All	All	0.44	1/11144 (0.0%)	0.62	1/15025 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	101	GLU	CG-CD	-5.19	1.44	1.51

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	8	LYS	CA-CB-CG	-6.50	99.10	113.40

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	1385	0	1400	18	0
1	B	1378	0	1415	38	0
1	C	1368	0	1402	33	0
1	D	1359	0	1389	35	0
1	E	1488	0	1511	25	0
1	F	1359	0	1383	33	0
1	G	1352	0	1382	66	0
1	H	1308	0	1327	55	0
2	D	7	0	10	2	0
2	E	7	0	10	3	0
3	F	19	0	26	0	0
3	H	19	26	26	2	0
4	A	66	0	0	1	0
4	B	45	0	0	0	0
4	C	55	0	0	2	0
4	D	65	0	0	5	0
4	E	64	0	0	6	0
4	F	43	0	0	2	0
4	G	29	0	0	2	0
4	H	16	0	0	1	0
All	All	11432	26	11281	279	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 (279) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:161:GLU:HG2	1:H:107:TRP:HB3	1.30	1.07
1:A:82:LYS:H	1:A:82:LYS:HD2	1.23	0.98
1:B:58:ILE:HD12	1:B:176:LEU:HD11	1.46	0.98
1:F:152:LEU:HD13	1:F:176:LEU:HG	1.48	0.95
1:B:82:LYS:HD3	1:B:82:LYS:H	1.31	0.93
1:B:101:GLU:HG3	1:B:133:LYS:HB3	1.51	0.92
1:G:101:GLU:O	1:G:130:LEU:HA	1.69	0.92
1:G:22:LYS:NZ	4:G:201:HOH:O	2.05	0.88
1:G:55:GLU:OE1	1:G:55:GLU:N	2.06	0.88
1:G:78:GLY:HA3	1:G:93:GLU:HG3	1.55	0.86
1:A:181:ALA:O	1:A:182:LEU:HD13	1.75	0.86
1:D:11:LYS:HG2	1:D:27:ASP:HB2	1.56	0.86
1:E:24:GLN:OE1	4:E:301:HOH:O	1.94	0.84
1:B:82:LYS:H	1:B:82:LYS:CD	1.92	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:70:LYS:NZ	4:D:301:HOH:O	2.12	0.83
1:F:103:GLU:HG3	1:F:129:GLY:HA3	1.62	0.82
1:C:58:ILE:HD11	1:C:176:LEU:HD22	1.61	0.82
1:D:82:LYS:NZ	1:E:31:PRO:O	2.15	0.80
1:D:73:VAL:HG13	1:D:148:ILE:HD11	1.62	0.80
1:G:4:LEU:HD22	1:G:5:PHE:CD1	2.17	0.79
1:C:58:ILE:HD11	1:C:176:LEU:CD2	2.11	0.79
1:D:47:VAL:HG13	1:D:80:LEU:HD11	1.63	0.79
1:G:163:ARG:HD3	4:G:221:HOH:O	1.84	0.77
1:H:152:LEU:HD11	1:H:177:GLN:HG3	1.65	0.77
1:B:82:LYS:HD3	1:B:82:LYS:N	2.00	0.77
1:E:47:VAL:HG23	1:E:80:LEU:HD12	1.68	0.76
1:A:167:SER:HB2	1:B:167:SER:HB2	1.66	0.75
1:D:6:GLU:CD	1:D:8:LYS:HE2	2.06	0.75
1:D:47:VAL:HG13	1:D:80:LEU:CD1	2.17	0.74
1:G:9:THR:HG21	1:G:12:THR:CG2	2.17	0.74
1:B:183:LYS:O	1:B:184:ASN:ND2	2.21	0.73
1:G:128:LYS:HD2	1:G:129:GLY:N	2.03	0.73
1:G:91:LEU:CD2	1:G:105:MET:HG2	2.19	0.73
1:F:95:GLU:OE1	1:F:133:LYS:HD3	1.88	0.73
1:F:28:VAL:O	1:F:36:SER:N	2.22	0.72
1:D:86:PRO:HG2	2:D:201:PEG:H11	1.71	0.72
1:F:9:THR:HA	1:F:28:VAL:HG12	1.72	0.72
1:C:156:LEU:O	1:C:160:LYS:HG2	1.90	0.71
1:B:183:LYS:O	1:B:183:LYS:HG3	1.90	0.71
1:G:9:THR:HG21	1:G:12:THR:HG22	1.72	0.70
1:G:91:LEU:HD21	1:G:105:MET:HG2	1.71	0.70
1:E:47:VAL:HG23	1:E:80:LEU:CD1	2.21	0.70
1:H:93:GLU:O	1:H:97:GLU:HB2	1.92	0.70
1:F:51:ALA:HB1	1:F:130:LEU:HD11	1.74	0.69
1:A:82:LYS:HD2	1:A:82:LYS:N	2.04	0.69
1:D:10:ILE:HG12	1:D:27:ASP:O	1.91	0.69
1:E:14:GLN:NE2	4:E:301:HOH:O	2.18	0.69
1:F:104:GLN:OE1	1:F:104:GLN:HA	1.93	0.68
1:H:147:LEU:HD12	1:H:147:LEU:H	1.58	0.68
1:H:84:GLU:OE2	1:H:89:THR:OG1	2.10	0.68
1:H:87:ARG:NH2	4:H:301:HOH:O	2.26	0.67
1:H:95:GLU:O	1:H:99:GLY:N	2.23	0.67
1:G:51:ALA:HB1	1:G:130:LEU:HD21	1.76	0.67
1:C:93:GLU:OE2	1:C:97:GLU:HG3	1.95	0.66
1:B:58:ILE:CD1	1:B:176:LEU:HD11	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:86:PRO:HB2	1:G:125:TYR:OH	1.96	0.66
1:G:167:SER:HB2	1:H:167:SER:HB2	1.78	0.66
1:B:176:LEU:N	1:B:176:LEU:HD23	2.10	0.66
1:D:87:ARG:HD3	4:D:302:HOH:O	1.95	0.66
1:B:81:GLU:HG3	1:B:92:ARG:HH22	1.60	0.65
1:B:104:GLN:HA	1:B:104:GLN:OE1	1.95	0.65
1:G:150:LEU:HD23	1:G:154:GLU:HB3	1.79	0.65
1:D:151:THR:OG1	1:D:154:GLU:HG3	1.97	0.65
1:B:60:MET:HB3	1:B:74:GLU:O	1.96	0.65
1:C:58:ILE:HD12	1:C:150:LEU:O	1.97	0.65
1:G:81:GLU:C	1:G:84:GLU:HB2	2.17	0.65
1:C:58:ILE:CD1	1:C:176:LEU:HD22	2.27	0.64
1:C:167:SER:HB2	1:D:167:SER:HB2	1.79	0.63
1:H:151:THR:OG1	1:H:154:GLU:HG3	1.98	0.63
1:E:174:GLN:NE2	4:E:303:HOH:O	2.31	0.63
1:G:19:ARG:N	1:G:19:ARG:HD2	2.14	0.62
1:D:103:GLU:HG2	1:D:128:LYS:O	2.01	0.61
1:C:98:THR:HA	1:C:147:LEU:HD13	1.83	0.60
1:G:3:LYS:O	1:G:3:LYS:HD3	2.00	0.60
1:G:4:LEU:HD22	1:G:5:PHE:CE1	2.36	0.60
1:C:104:GLN:OE1	1:C:104:GLN:HA	2.02	0.60
1:D:73:VAL:CG1	1:D:148:ILE:HD11	2.31	0.60
1:H:19:ARG:H	1:H:19:ARG:HD2	1.66	0.60
1:E:179:GLN:OE1	4:E:302:HOH:O	2.17	0.60
1:A:68:LEU:HD11	1:B:115:PRO:HB3	1.85	0.59
1:H:43:HIS:ND1	1:H:44:PRO:HD2	2.19	0.58
1:C:46:ALA:HB3	1:C:122:ILE:HD13	1.85	0.58
1:C:58:ILE:CG1	1:C:176:LEU:HD22	2.33	0.58
1:C:51:ALA:HB1	1:C:130:LEU:HD11	1.85	0.58
1:D:91:LEU:O	1:D:95:GLU:HG3	2.04	0.58
1:B:62:GLU:O	1:B:145:VAL:HA	2.03	0.57
1:B:183:LYS:O	1:B:183:LYS:CG	2.53	0.57
1:G:100:TYR:CD2	1:G:132:LYS:HG3	2.39	0.57
1:E:114:SER:OG	1:F:120:GLU:OE1	2.15	0.56
1:G:100:TYR:CZ	1:G:132:LYS:HD2	2.40	0.56
1:B:27:ASP:OD1	1:B:37:LYS:HD3	2.05	0.56
1:E:93:GLU:O	1:E:97:GLU:HB2	2.06	0.56
1:E:54:ASN:ND2	4:E:304:HOH:O	2.35	0.55
1:C:5:PHE:CE2	1:C:31:PRO:HG2	2.41	0.55
1:H:123:HIS:CE1	3:H:201:P6G:H21	2.41	0.55
1:G:91:LEU:HD23	1:G:91:LEU:N	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:60:MET:CE	1:H:150:LEU:HD12	2.37	0.55
1:G:91:LEU:HD23	1:G:105:MET:HE3	1.89	0.55
1:G:84:GLU:OE2	1:G:85:ASP:N	2.40	0.54
1:H:152:LEU:CD1	1:H:177:GLN:HG3	2.34	0.54
1:G:3:LYS:HE3	1:G:6:GLU:OE1	2.07	0.54
1:H:43:HIS:CG	1:H:44:PRO:HD2	2.43	0.54
1:A:84:GLU:OE1	1:A:92:ARG:NH2	2.41	0.53
1:C:6:GLU:HB2	4:C:207:HOH:O	2.09	0.53
1:D:128:LYS:HE2	4:D:314:HOH:O	2.08	0.53
1:F:14:GLN:OE1	1:F:17:SER:OG	2.26	0.53
1:F:128:LYS:HG3	4:F:327:HOH:O	2.07	0.53
1:H:13:GLU:OE1	1:H:15:ILE:HD11	2.09	0.53
1:G:37:LYS:HD2	1:H:19:ARG:NH2	2.24	0.53
1:B:101:GLU:HG3	1:B:133:LYS:CB	2.32	0.53
1:D:59:VAL:HG13	1:D:147:LEU:HD11	1.90	0.53
1:D:35:THR:HG23	4:D:327:HOH:O	2.09	0.52
1:G:87:ARG:O	1:G:91:LEU:HG	2.10	0.52
1:F:6:GLU:OE2	1:F:8:LYS:CE	2.57	0.52
1:G:20:VAL:HG12	1:H:39:GLU:OE1	2.11	0.52
1:G:81:GLU:C	1:G:84:GLU:H	2.13	0.51
1:B:148:ILE:HD11	1:B:150:LEU:HD21	1.92	0.51
1:G:70:LYS:HG3	1:G:71:SER:N	2.25	0.51
1:G:37:LYS:HD2	1:H:19:ARG:HH21	1.74	0.51
1:A:81:GLU:HB2	1:A:84:GLU:HB2	1.93	0.51
1:E:178:LEU:O	1:E:182:LEU:HG	2.10	0.51
1:C:6:GLU:O	1:C:31:PRO:HD3	2.11	0.51
1:G:22:LYS:HB2	1:G:42:ARG:HB2	1.91	0.51
1:C:19:ARG:NH2	1:D:37:LYS:HB2	2.26	0.51
1:G:128:LYS:HD2	1:G:129:GLY:H	1.75	0.51
1:E:51:ALA:HB1	1:E:130:LEU:HD11	1.93	0.51
1:F:55:GLU:N	1:F:55:GLU:OE1	2.44	0.51
1:G:48:ALA:HA	1:G:77:ALA:HA	1.93	0.50
1:C:84:GLU:OE2	1:C:92:ARG:NH2	2.39	0.50
1:D:51:ALA:HB1	1:D:130:LEU:HD11	1.94	0.50
1:G:22:LYS:HD3	1:G:22:LYS:N	2.26	0.50
1:G:21:VAL:C	1:G:22:LYS:HD3	2.31	0.50
1:E:107:TRP:CD2	2:E:201:PEG:H42	2.46	0.50
1:C:20:VAL:HG12	1:C:21:VAL:HG13	1.93	0.50
1:C:11:LYS:HG3	1:C:12:THR:N	2.27	0.50
1:E:66:LYS:NZ	1:E:69:GLU:OE2	2.34	0.49
1:G:102:CYS:HB2	1:G:104:GLN:O	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:78:GLY:HA3	1:G:93:GLU:CG	2.34	0.49
1:G:20:VAL:O	1:G:44:PRO:HD3	2.12	0.49
1:H:32:ASN:ND2	1:H:34:GLN:OE1	2.45	0.49
1:G:100:TYR:O	1:G:101:GLU:HG2	2.12	0.49
1:A:82:LYS:H	1:A:82:LYS:CD	2.08	0.49
1:H:60:MET:HE1	1:H:164:ILE:HD11	1.94	0.49
1:H:182:LEU:HD12	1:H:182:LEU:C	2.32	0.49
1:G:20:VAL:HG13	1:G:21:VAL:HG13	1.95	0.49
1:G:19:ARG:HD2	1:G:19:ARG:H	1.78	0.49
1:F:10:ILE:HG22	1:F:27:ASP:HB2	1.94	0.48
1:G:2:GLY:O	1:G:3:LYS:HB3	2.12	0.48
1:H:98:THR:CG2	1:H:100:TYR:HD2	2.25	0.48
1:F:6:GLU:CD	1:F:8:LYS:HG3	2.34	0.48
1:G:39:GLU:OE2	1:H:19:ARG:HD2	2.12	0.48
1:C:55:GLU:O	1:C:56:ASN:HB2	2.13	0.48
1:D:145:VAL:HG23	1:D:146:ASP:OD1	2.13	0.48
1:H:60:MET:HE3	1:H:150:LEU:HD12	1.94	0.48
1:D:6:GLU:CG	1:D:8:LYS:HE2	2.44	0.48
1:B:85:ASP:HB3	1:B:88:ILE:HG12	1.95	0.48
1:F:147:LEU:HD13	1:F:148:ILE:N	2.29	0.48
1:G:100:TYR:C	1:G:101:GLU:CG	2.81	0.48
1:B:51:ALA:HB1	1:B:130:LEU:HD11	1.95	0.47
1:H:148:ILE:HG22	1:H:149:GLU:N	2.29	0.47
1:F:143:GLU:HB3	1:F:144:PHE:CD1	2.49	0.47
1:H:68:LEU:O	1:H:70:LYS:HG3	2.15	0.47
1:B:47:VAL:HG13	1:B:80:LEU:HD13	1.95	0.47
1:E:52:ILE:HD12	1:E:176:LEU:HD13	1.96	0.47
1:H:152:LEU:HD12	1:H:156:LEU:HD13	1.97	0.47
1:C:6:GLU:OE1	1:C:8:LYS:NZ	2.41	0.47
1:D:95:GLU:HG2	4:D:345:HOH:O	2.14	0.47
1:E:24:GLN:HE22	1:E:42:ARG:HH21	1.63	0.46
1:H:150:LEU:HB3	1:H:154:GLU:HB2	1.96	0.46
1:F:10:ILE:HD12	1:F:10:ILE:HA	1.64	0.46
1:A:180:GLU:C	1:A:182:LEU:H	2.17	0.46
1:E:86:PRO:HG2	2:E:201:PEG:H12	1.97	0.46
1:C:19:ARG:HH21	1:D:37:LYS:H	1.62	0.46
1:H:105:MET:HE2	1:H:125:TYR:HB3	1.98	0.46
1:F:29:GLU:CG	1:F:30:LEU:N	2.78	0.46
1:G:150:LEU:CD2	1:G:154:GLU:HB3	2.43	0.46
1:D:31:PRO:O	1:E:82:LYS:HG2	2.15	0.46
1:F:82:LYS:HA	1:F:82:LYS:HD2	1.76	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:182:LEU:HD23	1:F:182:LEU:HA	1.64	0.46
1:H:46:ALA:HB3	1:H:122:ILE:HD13	1.98	0.46
1:A:34:GLN:HA	1:A:34:GLN:OE1	2.15	0.46
1:C:42:ARG:HD3	1:C:119:ASP:OD2	2.15	0.46
1:H:61:VAL:HA	1:H:146:ASP:O	2.16	0.46
1:C:3:LYS:O	1:C:3:LYS:HD3	2.16	0.45
1:C:160:LYS:HG2	1:C:160:LYS:H	1.60	0.45
1:B:95:GLU:OE2	1:B:101:GLU:HG2	2.16	0.45
1:D:113:THR:HG23	1:D:122:ILE:HG12	1.98	0.45
1:F:131:SER:OG	4:F:301:HOH:O	2.21	0.45
1:A:115:PRO:HB3	1:B:68:LEU:HD11	1.98	0.45
1:A:135:ASN:OD1	1:A:135:ASN:C	2.54	0.45
1:F:6:GLU:HG3	1:F:7:GLU:N	2.31	0.45
1:H:105:MET:HE3	1:H:127:ALA:HB2	1.98	0.45
1:G:176:LEU:HD12	1:G:176:LEU:O	2.17	0.45
1:G:100:TYR:C	1:G:101:GLU:HG3	2.37	0.45
1:F:15:ILE:HD13	1:F:15:ILE:N	2.31	0.45
1:H:98:THR:O	1:H:98:THR:HG22	2.16	0.45
1:B:82:LYS:H	1:B:82:LYS:CE	2.31	0.44
1:H:103:GLU:HG2	1:H:129:GLY:HA3	1.98	0.44
1:A:157:GLN:NE2	4:A:206:HOH:O	2.49	0.44
1:C:80:LEU:HD12	4:C:222:HOH:O	2.17	0.44
1:E:179:GLN:HG2	4:E:302:HOH:O	2.18	0.44
1:H:105:MET:CE	1:H:125:TYR:HB3	2.48	0.44
1:A:144:PHE:CZ	1:B:31:PRO:HD2	2.52	0.44
1:F:152:LEU:HD13	1:F:176:LEU:CG	2.32	0.44
1:G:91:LEU:HD23	1:G:105:MET:HG2	1.98	0.44
1:B:46:ALA:HB3	1:B:122:ILE:HD13	2.00	0.44
1:H:8:LYS:O	1:H:28:VAL:HA	2.17	0.44
1:B:22:LYS:CD	1:B:22:LYS:N	2.81	0.43
1:G:183:LYS:HB3	1:G:183:LYS:NZ	2.33	0.43
1:H:98:THR:HG21	1:H:100:TYR:HD2	1.83	0.43
1:A:167:SER:CB	1:B:167:SER:HB2	2.43	0.43
1:G:63:GLN:OE1	1:G:65:ARG:NH2	2.51	0.43
1:B:4:LEU:HG	1:B:5:PHE:CE2	2.53	0.43
1:D:42:ARG:HD3	1:D:119:ASP:OD2	2.19	0.43
1:H:55:GLU:O	1:H:56:ASN:HB2	2.18	0.43
1:H:153:ASP:OD1	1:H:153:ASP:N	2.51	0.43
1:B:175:TYR:CD2	1:B:176:LEU:HD23	2.53	0.43
1:C:28:VAL:O	1:C:35:THR:HA	2.18	0.43
1:D:152:LEU:HD11	1:D:177:GLN:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:59:VAL:HG11	1:H:98:THR:HG21	2.00	0.43
1:D:47:VAL:HG13	1:D:80:LEU:HD12	1.96	0.43
1:E:47:VAL:CG2	1:E:80:LEU:CD1	2.96	0.43
1:B:152:LEU:HD11	1:B:177:GLN:HG3	2.00	0.43
1:G:61:VAL:HG13	1:G:146:ASP:CB	2.49	0.43
1:G:66:LYS:HE2	1:H:28:VAL:HG11	2.00	0.43
1:G:84:GLU:OE1	1:G:92:ARG:NH2	2.34	0.43
1:E:31:PRO:HG2	1:F:144:PHE:CD2	2.54	0.43
1:A:20:VAL:HG12	1:A:21:VAL:HG13	2.01	0.42
1:F:92:ARG:O	1:F:96:GLU:HG3	2.19	0.42
1:F:179:GLN:O	1:F:182:LEU:HB2	2.19	0.42
1:C:64:TYR:HB2	1:D:5:PHE:HB3	2.00	0.42
1:B:76:PRO:HB3	1:B:97:GLU:OE2	2.19	0.42
1:D:86:PRO:HG2	2:D:201:PEG:C1	2.45	0.42
1:F:42:ARG:HD3	1:F:119:ASP:OD2	2.19	0.42
1:G:63:GLN:O	1:G:71:SER:HA	2.20	0.42
1:A:142:ASP:O	1:A:144:PHE:N	2.47	0.42
1:G:65:ARG:HA	1:G:65:ARG:HD3	1.71	0.42
1:D:86:PRO:HB2	1:D:125:TYR:OH	2.19	0.42
1:F:6:GLU:OE2	1:F:8:LYS:HE3	2.19	0.42
1:E:70:LYS:HE2	1:E:72:ILE:HG22	2.01	0.42
1:G:9:THR:CG2	1:G:12:THR:HG22	2.44	0.42
1:F:44:PRO:HG3	1:F:79:LYS:HE2	2.02	0.41
1:H:12:THR:HG22	1:H:13:GLU:N	2.35	0.41
1:H:159:ILE:HG13	1:H:164:ILE:HB	2.03	0.41
1:C:19:ARG:NH2	1:D:37:LYS:H	2.18	0.41
1:G:85:ASP:OD2	1:G:85:ASP:C	2.59	0.41
1:B:76:PRO:HA	1:B:97:GLU:OE2	2.21	0.41
1:H:178:LEU:C	1:H:178:LEU:HD23	2.40	0.41
1:B:52:ILE:HD11	1:B:176:LEU:CD2	2.51	0.41
1:C:61:VAL:HB	1:C:145:VAL:CG1	2.50	0.41
1:D:59:VAL:CG1	1:D:147:LEU:HD11	2.51	0.41
1:G:104:GLN:OE1	1:G:104:GLN:HA	2.20	0.41
1:H:163:ARG:HE	1:H:163:ARG:HB3	1.66	0.41
1:E:115:PRO:HB3	1:F:68:LEU:HD11	2.02	0.41
1:F:6:GLU:OE2	1:F:8:LYS:HE2	2.21	0.41
1:H:60:MET:HE1	1:H:150:LEU:HD12	2.01	0.41
1:G:64:TYR:HA	1:G:71:SER:HA	2.03	0.41
1:G:81:GLU:HB2	1:G:84:GLU:HG3	2.03	0.41
1:H:103:GLU:N	1:H:128:LYS:O	2.49	0.41
1:B:10:ILE:O	1:D:84:GLU:HA	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:175:TYR:HD2	1:B:176:LEU:HD23	1.85	0.41
1:E:92:ARG:O	1:E:96:GLU:HB3	2.21	0.41
1:G:3:LYS:O	1:G:3:LYS:CD	2.69	0.41
1:G:35:THR:HG22	1:G:36:SER:N	2.36	0.41
1:H:30:LEU:HB2	1:H:32:ASN:OD1	2.21	0.41
1:H:152:LEU:O	1:H:156:LEU:HD13	2.20	0.41
1:C:3:LYS:CE	1:C:3:LYS:HA	2.49	0.41
1:B:172:ALA:O	1:B:176:LEU:HG	2.21	0.40
1:G:47:VAL:O	1:G:78:GLY:N	2.40	0.40
1:H:86:PRO:HG2	3:H:201:P6G:H22	2.02	0.40
1:C:85:ASP:HB3	1:C:88:ILE:HG12	2.02	0.40
1:C:175:TYR:O	1:C:179:GLN:HG2	2.21	0.40
1:E:107:TRP:CG	2:E:201:PEG:H42	2.57	0.40
1:G:100:TYR:CE2	1:G:132:LYS:HG3	2.56	0.40
1:H:98:THR:HG22	1:H:100:TYR:CD2	2.57	0.40
1:F:144:PHE:CD1	1:F:144:PHE:N	2.89	0.40
1:G:65:ARG:HH11	1:H:116:GLY:HA2	1.87	0.40
1:H:52:ILE:HD12	1:H:176:LEU:HD13	2.02	0.40
1:H:106:GLU:OE1	1:H:128:LYS:HE2	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	168/187 (90%)	161 (96%)	7 (4%)	0	100	100
1	B	168/187 (90%)	164 (98%)	4 (2%)	0	100	100
1	C	166/187 (89%)	162 (98%)	4 (2%)	0	100	100
1	D	165/187 (88%)	158 (96%)	7 (4%)	0	100	100
1	E	184/187 (98%)	178 (97%)	6 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	F	162/187 (87%)	156 (96%)	6 (4%)	0	100	100
1	G	163/187 (87%)	155 (95%)	8 (5%)	0	100	100
1	H	159/187 (85%)	148 (93%)	11 (7%)	0	100	100
All	All	1335/1496 (89%)	1282 (96%)	53 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2　Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	153/164 (93%)	150 (98%)	3 (2%)	50	43
1	B	152/164 (93%)	146 (96%)	6 (4%)	27	16
1	C	151/164 (92%)	146 (97%)	5 (3%)	33	22
1	D	150/164 (92%)	147 (98%)	3 (2%)	50	43
1	E	163/164 (99%)	161 (99%)	2 (1%)	67	65
1	F	150/164 (92%)	144 (96%)	6 (4%)	27	16
1	G	149/164 (91%)	136 (91%)	13 (9%)	8	2
1	H	144/164 (88%)	137 (95%)	7 (5%)	21	10
All	All	1212/1312 (92%)	1167 (96%)	45 (4%)	29	18

All (45) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	70	LYS
1	A	79	LYS
1	A	142	ASP
1	B	11	LYS
1	B	22	LYS
1	B	82	LYS
1	B	92	ARG
1	B	128	LYS

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Mol	Chain	Res	Type
1	B	160	LYS
1	C	3	LYS
1	C	8	LYS
1	C	87	ARG
1	C	104	GLN
1	C	166	ASP
1	D	27	ASP
1	D	82	LYS
1	D	128	LYS
1	E	114	SER
1	E	166	ASP
1	F	10	ILE
1	F	70	LYS
1	F	79	LYS
1	F	82	LYS
1	F	95	GLU
1	F	166	ASP
1	G	3	LYS
1	G	14	GLN
1	G	22	LYS
1	G	29	GLU
1	G	36	SER
1	G	70	LYS
1	G	80	LEU
1	G	84	GLU
1	G	104	GLN
1	G	131	SER
1	G	152	LEU
1	G	166	ASP
1	G	179	GLN
1	H	19	ARG
1	H	35	THR
1	H	79	LYS
1	H	144	PHE
1	H	153	ASP
1	H	166	ASP
1	H	180	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	54	ASN

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Mol	Chain	Res	Type
1	B	184	ASN
1	D	14	GLN
1	E	14	GLN
1	E	24	GLN

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 ⓘ

4 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	$\#|Z| > 2$
2	PEG	D	201	-	6,6,6	0.16	0	5,5,5	0.12	0
3	P6G	H	201	-	18,18,18	0.24	0	17,17,17	0.18	0
2	PEG	E	201	-	6,6,6	0.15	0	5,5,5	0.09	0
3	P6G	F	201	-	18,18,18	0.18	0	17,17,17	0.19	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
2	PEG	D	201	-	-	3/4/4/4	-
3	P6G	H	201	-	-	10/16/16/16	-
2	PEG	E	201	-	-	0/4/4/4	-
3	P6G	F	201	-	-	9/16/16/16	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	H	201	P6G	O4-C5-C6-O7
3	F	201	P6G	O7-C8-C9-O10
3	F	201	P6G	O1-C2-C3-O4
3	F	201	P6G	C15-C14-O13-C12
3	H	201	P6G	O7-C8-C9-O10
2	D	201	PEG	O2-C3-C4-O4
3	H	201	P6G	O16-C17-C18-O19
2	D	201	PEG	O1-C1-C2-O2
3	F	201	P6G	C18-C17-O16-C15
3	H	201	P6G	O1-C2-C3-O4
3	F	201	P6G	C6-C5-O4-C3
3	F	201	P6G	C5-C6-O7-C8
3	H	201	P6G	C18-C17-O16-C15
3	H	201	P6G	C8-C9-O10-C11
3	H	201	P6G	C2-C3-O4-C5
2	D	201	PEG	C4-C3-O2-C2
3	F	201	P6G	O13-C14-C15-O16
3	H	201	P6G	O10-C11-C12-O13
3	H	201	P6G	C12-C11-O10-C9
3	F	201	P6G	O4-C5-C6-O7
3	F	201	P6G	O10-C11-C12-O13
3	H	201	P6G	O13-C14-C15-O16

There are no ring outliers.

3 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	201	PEG	2	0
3	H	201	P6G	2	0
2	E	201	PEG	3	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.
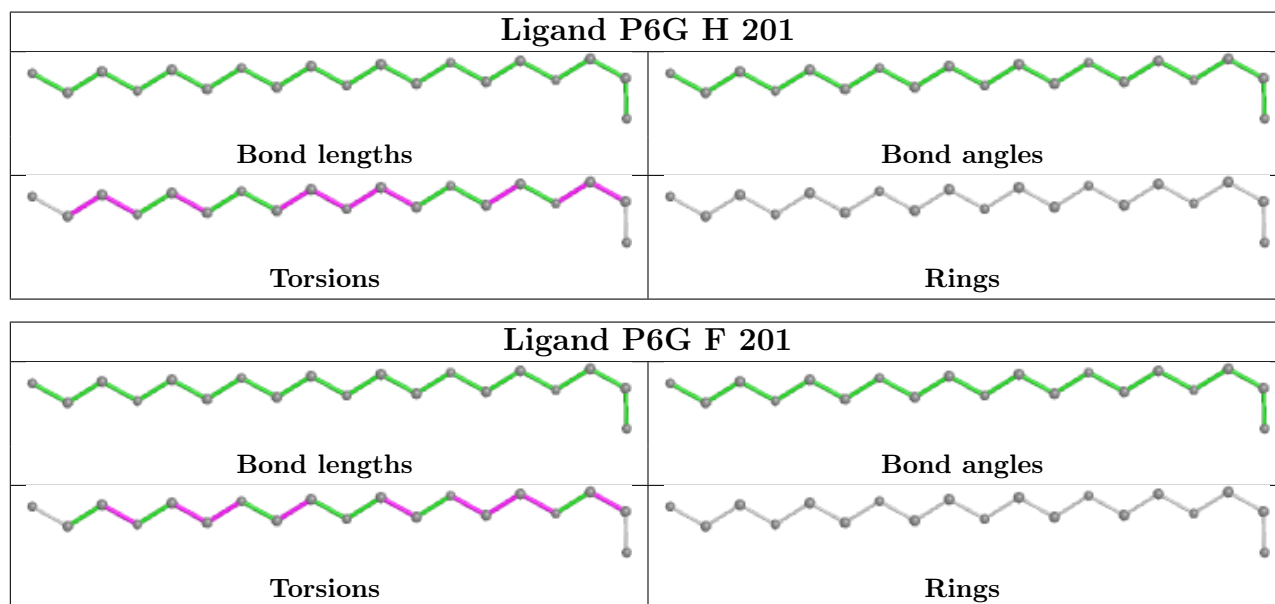
5.7 Other polymers (i)

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	172/187 (91%)	0.18	4 (2%)	61	70	27, 40, 62, 77	0
1	B	172/187 (91%)	0.24	3 (1%)	69	77	27, 43, 65, 75	0
1	C	170/187 (90%)	0.12	1 (0%)	85	89	24, 40, 61, 70	0
1	D	169/187 (90%)	0.08	2 (1%)	76	83	24, 38, 61, 68	0
1	E	186/187 (99%)	0.13	2 (1%)	77	84	26, 43, 58, 70	0
1	F	168/187 (89%)	0.25	6 (3%)	46	56	25, 44, 75, 85	0
1	G	169/187 (90%)	0.67	10 (5%)	29	41	35, 57, 81, 90	0
1	H	163/187 (87%)	0.78	13 (7%)	20	29	35, 58, 80, 89	0
All	All	1369/1496 (91%)	0.30	41 (2%)	52	63	24, 45, 73, 90	0

All (41) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	9	THR	4.5
1	F	10	ILE	4.1
1	H	144	PHE	4.1
1	F	30	LEU	3.7
1	G	88	ILE	3.3
1	E	145	VAL	3.1
1	E	143	GLU	3.0
1	B	145	VAL	3.0
1	G	4	LEU	2.9
1	H	178	LEU	2.9
1	G	145	VAL	2.9
1	G	2	GLY	2.8
1	F	12	THR	2.8
1	H	147	LEU	2.7
1	A	5	PHE	2.7
1	H	52	ILE	2.7

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Mol	Chain	Res	Type	RSRZ
1	H	129	GLY	2.6
1	F	28	VAL	2.6
1	G	182	LEU	2.5
1	G	102	CYS	2.5
1	H	53	THR	2.4
1	H	148	ILE	2.4
1	A	35	THR	2.4
1	H	12	THR	2.4
1	H	51	ALA	2.4
1	G	29	GLU	2.3
1	G	21	VAL	2.3
1	A	182	LEU	2.3
1	B	82	LYS	2.3
1	H	98	THR	2.3
1	G	80	LEU	2.3
1	G	31	PRO	2.2
1	D	4	LEU	2.2
1	H	59	VAL	2.1
1	F	27	ASP	2.1
1	A	144	PHE	2.1
1	H	83	GLY	2.1
1	D	144	PHE	2.1
1	H	28	VAL	2.0
1	B	4	LEU	2.0
1	C	144	PHE	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

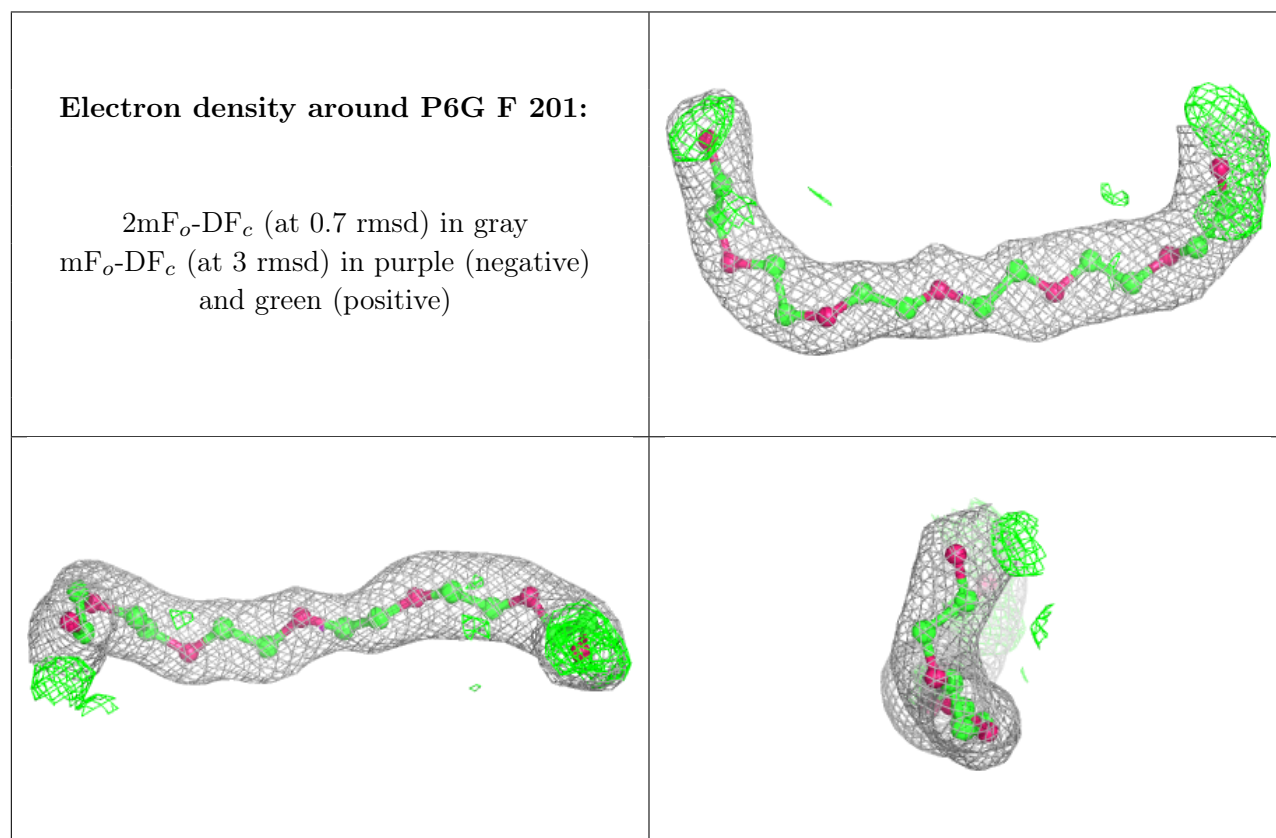There are no non-standard protein/DNA/RNA residues in this entry.

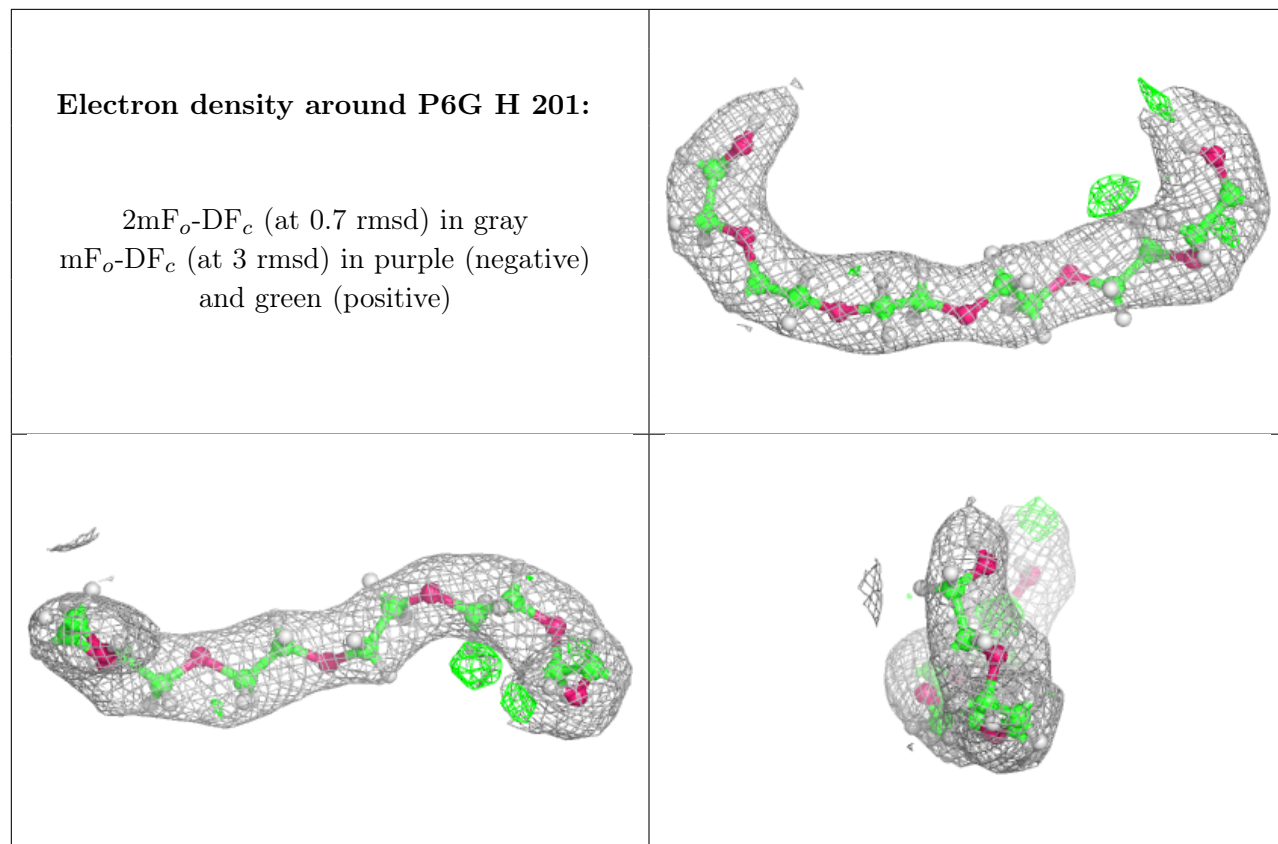## 6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	P6G	F	201	19/19	0.90	0.11	33,39,47,52	0
3	P6G	H	201	19/19	0.90	0.10	37,48,59,73	0
2	PEG	D	201	7/7	0.92	0.10	41,45,56,57	0
2	PEG	E	201	7/7	0.92	0.09	45,50,57,64	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 P6G F 201:

$2mF_o\text{-DF}_c$ (at 0.7 rmsd) in gray
$mF_o\text{-DF}_c$ (at 3 rmsd) in purple (negative) and green (positive)

Electron density around P6G H 201:

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

6.5　Other polymers　ⓘ

There are no such residues in this entry.