



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 09:29 PM UTC

PDB ID : 7KRY / pdb_00007kry
Title : Co-crystal structure of alpha glucosidase with compound 11
Authors : Karade, S.S.; Mariuzza, R.A.
Deposited on : 2020-11-20
Resolution : 2.55 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	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

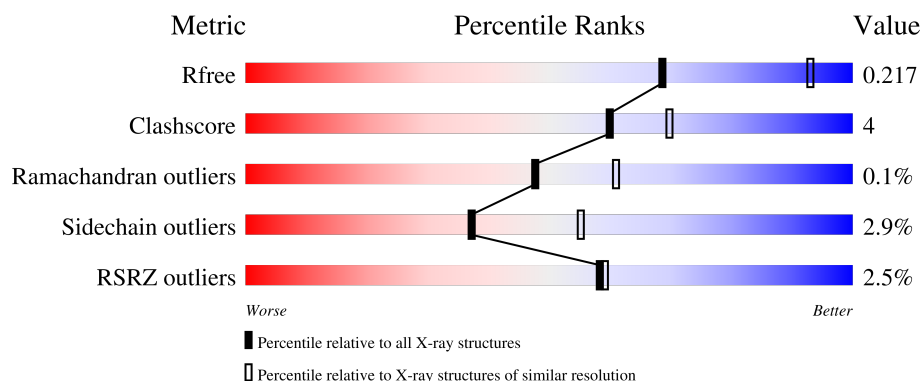
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.55 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}	180053	1091 (2.54-2.54)
Clashscore	190562	1120 (2.54-2.54)
Ramachandran outliers	187476	1106 (2.54-2.54)
Sidechain outliers	187428	1106 (2.54-2.54)
RSRZ outliers	180081	1091 (2.54-2.54)

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	955	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> % 77% 12% 11% </div> </div>
1	C	955	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> 2% 80% 9% 10% </div> </div>
2	B	554	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> % 14% 85% </div> </div>
2	D	554	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> % 14% 85% </div> </div>

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 15587 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 Neutral alpha-glucosidase AB.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	854	Total	C	N	O	S	0	5	0
			6865	4402	1181	1252	30			
1	C	857	Total	C	N	O	S	0	4	0
			6892	4413	1186	1265	28			

There are 88 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2	MET	-	initiating methionine	UNP Q8BHN3
A	3	GLY	-	expression tag	UNP Q8BHN3
A	4	ILE	-	expression tag	UNP Q8BHN3
A	5	LEU	-	expression tag	UNP Q8BHN3
A	6	PRO	-	expression tag	UNP Q8BHN3
A	7	SER	-	expression tag	UNP Q8BHN3
A	8	PRO	-	expression tag	UNP Q8BHN3
A	9	GLY	-	expression tag	UNP Q8BHN3
A	10	MET	-	expression tag	UNP Q8BHN3
A	11	PRO	-	expression tag	UNP Q8BHN3
A	12	ALA	-	expression tag	UNP Q8BHN3
A	13	LEU	-	expression tag	UNP Q8BHN3
A	14	LEU	-	expression tag	UNP Q8BHN3
A	15	SER	-	expression tag	UNP Q8BHN3
A	16	LEU	-	expression tag	UNP Q8BHN3
A	17	VAL	-	expression tag	UNP Q8BHN3
A	18	SER	-	expression tag	UNP Q8BHN3
A	19	LEU	-	expression tag	UNP Q8BHN3
A	20	LEU	-	expression tag	UNP Q8BHN3
A	21	SER	-	expression tag	UNP Q8BHN3
A	22	VAL	-	expression tag	UNP Q8BHN3
A	23	LEU	-	expression tag	UNP Q8BHN3
A	24	LEU	-	expression tag	UNP Q8BHN3
A	25	MET	-	expression tag	UNP Q8BHN3
A	26	GLY	-	expression tag	UNP Q8BHN3

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Chain	Residue	Modelled	Actual	Comment	Reference
A	27	CYS	-	expression tag	UNP Q8BHN3
A	28	VAL	-	expression tag	UNP Q8BHN3
A	29	ALA	-	expression tag	UNP Q8BHN3
A	30	GLU	-	expression tag	UNP Q8BHN3
A	31	THR	-	expression tag	UNP Q8BHN3
A	32	GLY	-	expression tag	UNP Q8BHN3
A	97	ASP	ASN	engineered mutation	UNP Q8BHN3
A	967	SER	-	expression tag	UNP Q8BHN3
A	968	ALA	-	expression tag	UNP Q8BHN3
A	969	TRP	-	expression tag	UNP Q8BHN3
A	970	SER	-	expression tag	UNP Q8BHN3
A	971	HIS	-	expression tag	UNP Q8BHN3
A	972	PRO	-	expression tag	UNP Q8BHN3
A	973	GLN	-	expression tag	UNP Q8BHN3
A	974	PHE	-	expression tag	UNP Q8BHN3
A	975	GLU	-	expression tag	UNP Q8BHN3
A	976	LYS	-	expression tag	UNP Q8BHN3
A	977	LEU	-	expression tag	UNP Q8BHN3
A	978	GLU	-	expression tag	UNP Q8BHN3
C	2	MET	-	initiating methionine	UNP Q8BHN3
C	3	GLY	-	expression tag	UNP Q8BHN3
C	4	ILE	-	expression tag	UNP Q8BHN3
C	5	LEU	-	expression tag	UNP Q8BHN3
C	6	PRO	-	expression tag	UNP Q8BHN3
C	7	SER	-	expression tag	UNP Q8BHN3
C	8	PRO	-	expression tag	UNP Q8BHN3
C	9	GLY	-	expression tag	UNP Q8BHN3
C	10	MET	-	expression tag	UNP Q8BHN3
C	11	PRO	-	expression tag	UNP Q8BHN3
C	12	ALA	-	expression tag	UNP Q8BHN3
C	13	LEU	-	expression tag	UNP Q8BHN3
C	14	LEU	-	expression tag	UNP Q8BHN3
C	15	SER	-	expression tag	UNP Q8BHN3
C	16	LEU	-	expression tag	UNP Q8BHN3
C	17	VAL	-	expression tag	UNP Q8BHN3
C	18	SER	-	expression tag	UNP Q8BHN3
C	19	LEU	-	expression tag	UNP Q8BHN3
C	20	LEU	-	expression tag	UNP Q8BHN3
C	21	SER	-	expression tag	UNP Q8BHN3
C	22	VAL	-	expression tag	UNP Q8BHN3
C	23	LEU	-	expression tag	UNP Q8BHN3
C	24	LEU	-	expression tag	UNP Q8BHN3

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Chain	Residue	Modelled	Actual	Comment	Reference
C	25	MET	-	expression tag	UNP Q8BHN3
C	26	GLY	-	expression tag	UNP Q8BHN3
C	27	CYS	-	expression tag	UNP Q8BHN3
C	28	VAL	-	expression tag	UNP Q8BHN3
C	29	ALA	-	expression tag	UNP Q8BHN3
C	30	GLU	-	expression tag	UNP Q8BHN3
C	31	THR	-	expression tag	UNP Q8BHN3
C	32	GLY	-	expression tag	UNP Q8BHN3
C	97	ASP	ASN	engineered mutation	UNP Q8BHN3
C	967	SER	-	expression tag	UNP Q8BHN3
C	968	ALA	-	expression tag	UNP Q8BHN3
C	969	TRP	-	expression tag	UNP Q8BHN3
C	970	SER	-	expression tag	UNP Q8BHN3
C	971	HIS	-	expression tag	UNP Q8BHN3
C	972	PRO	-	expression tag	UNP Q8BHN3
C	973	GLN	-	expression tag	UNP Q8BHN3
C	974	PHE	-	expression tag	UNP Q8BHN3
C	975	GLU	-	expression tag	UNP Q8BHN3
C	976	LYS	-	expression tag	UNP Q8BHN3
C	977	LEU	-	expression tag	UNP Q8BHN3
C	978	GLU	-	expression tag	UNP Q8BHN3

- Molecule 2 is a protein called Glucosidase 2 subunit beta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	84	Total	C	N	O	S	0	0	0
			585	343	99	133	10			
2	D	84	Total	C	N	O	S	0	0	0
			601	359	97	135	10			

There are 102 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-16	MET	-	initiating methionine	UNP O08795
B	-15	GLY	-	expression tag	UNP O08795
B	-14	ILE	-	expression tag	UNP O08795
B	-13	LEU	-	expression tag	UNP O08795
B	-12	PRO	-	expression tag	UNP O08795
B	-11	SER	-	expression tag	UNP O08795
B	-10	PRO	-	expression tag	UNP O08795
B	-9	GLY	-	expression tag	UNP O08795
B	-8	MET	-	expression tag	UNP O08795

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-7	PRO	-	expression tag	UNP O08795
B	-6	ALA	-	expression tag	UNP O08795
B	-5	LEU	-	expression tag	UNP O08795
B	-4	LEU	-	expression tag	UNP O08795
B	-3	SER	-	expression tag	UNP O08795
B	-2	LEU	-	expression tag	UNP O08795
B	-1	VAL	-	expression tag	UNP O08795
B	0	SER	-	expression tag	UNP O08795
B	1	LEU	-	expression tag	UNP O08795
B	2	LEU	-	expression tag	UNP O08795
B	3	SER	-	expression tag	UNP O08795
B	4	VAL	-	expression tag	UNP O08795
B	5	LEU	-	expression tag	UNP O08795
B	6	LEU	-	expression tag	UNP O08795
B	7	MET	-	expression tag	UNP O08795
B	8	GLY	-	expression tag	UNP O08795
B	9	CYS	-	expression tag	UNP O08795
B	10	VAL	-	expression tag	UNP O08795
B	11	ALA	-	expression tag	UNP O08795
B	12	GLU	-	expression tag	UNP O08795
B	13	THR	-	expression tag	UNP O08795
B	14	GLY	-	expression tag	UNP O08795
B	518	SER	-	expression tag	UNP O08795
B	519	ALA	-	expression tag	UNP O08795
B	520	TRP	-	expression tag	UNP O08795
B	521	SER	-	expression tag	UNP O08795
B	522	HIS	-	expression tag	UNP O08795
B	523	PRO	-	expression tag	UNP O08795
B	524	GLN	-	expression tag	UNP O08795
B	525	PHE	-	expression tag	UNP O08795
B	526	GLU	-	expression tag	UNP O08795
B	527	LYS	-	expression tag	UNP O08795
B	528	LEU	-	expression tag	UNP O08795
B	529	GLU	-	expression tag	UNP O08795
B	530	THR	-	expression tag	UNP O08795
B	531	LYS	-	expression tag	UNP O08795
B	532	HIS	-	expression tag	UNP O08795
B	533	HIS	-	expression tag	UNP O08795
B	534	HIS	-	expression tag	UNP O08795
B	535	HIS	-	expression tag	UNP O08795
B	536	HIS	-	expression tag	UNP O08795
B	537	HIS	-	expression tag	UNP O08795

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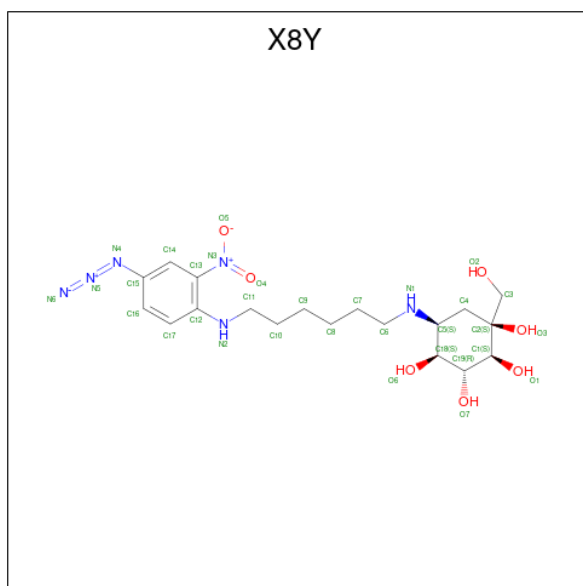
Chain	Residue	Modelled	Actual	Comment	Reference
D	-16	MET	-	initiating methionine	UNP O08795
D	-15	GLY	-	expression tag	UNP O08795
D	-14	ILE	-	expression tag	UNP O08795
D	-13	LEU	-	expression tag	UNP O08795
D	-12	PRO	-	expression tag	UNP O08795
D	-11	SER	-	expression tag	UNP O08795
D	-10	PRO	-	expression tag	UNP O08795
D	-9	GLY	-	expression tag	UNP O08795
D	-8	MET	-	expression tag	UNP O08795
D	-7	PRO	-	expression tag	UNP O08795
D	-6	ALA	-	expression tag	UNP O08795
D	-5	LEU	-	expression tag	UNP O08795
D	-4	LEU	-	expression tag	UNP O08795
D	-3	SER	-	expression tag	UNP O08795
D	-2	LEU	-	expression tag	UNP O08795
D	-1	VAL	-	expression tag	UNP O08795
D	0	SER	-	expression tag	UNP O08795
D	1	LEU	-	expression tag	UNP O08795
D	2	LEU	-	expression tag	UNP O08795
D	3	SER	-	expression tag	UNP O08795
D	4	VAL	-	expression tag	UNP O08795
D	5	LEU	-	expression tag	UNP O08795
D	6	LEU	-	expression tag	UNP O08795
D	7	MET	-	expression tag	UNP O08795
D	8	GLY	-	expression tag	UNP O08795
D	9	CYS	-	expression tag	UNP O08795
D	10	VAL	-	expression tag	UNP O08795
D	11	ALA	-	expression tag	UNP O08795
D	12	GLU	-	expression tag	UNP O08795
D	13	THR	-	expression tag	UNP O08795
D	14	GLY	-	expression tag	UNP O08795
D	518	SER	-	expression tag	UNP O08795
D	519	ALA	-	expression tag	UNP O08795
D	520	TRP	-	expression tag	UNP O08795
D	521	SER	-	expression tag	UNP O08795
D	522	HIS	-	expression tag	UNP O08795
D	523	PRO	-	expression tag	UNP O08795
D	524	GLN	-	expression tag	UNP O08795
D	525	PHE	-	expression tag	UNP O08795
D	526	GLU	-	expression tag	UNP O08795
D	527	LYS	-	expression tag	UNP O08795
D	528	LEU	-	expression tag	UNP O08795

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Chain	Residue	Modelled	Actual	Comment	Reference
D	529	GLU	-	expression tag	UNP O08795
D	530	THR	-	expression tag	UNP O08795
D	531	LYS	-	expression tag	UNP O08795
D	532	HIS	-	expression tag	UNP O08795
D	533	HIS	-	expression tag	UNP O08795
D	534	HIS	-	expression tag	UNP O08795
D	535	HIS	-	expression tag	UNP O08795
D	536	HIS	-	expression tag	UNP O08795
D	537	HIS	-	expression tag	UNP O08795

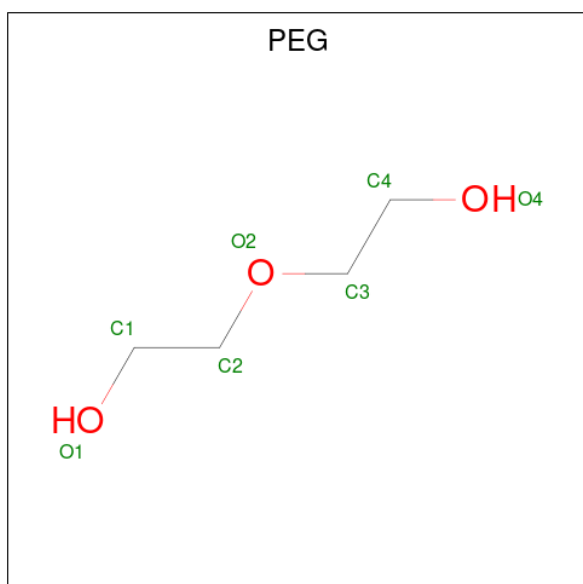
- Molecule 3 is (1S,2S,3R,4S,5S)-5-({6-[(4-azido-2-nitrophenyl)amino]hexyl}amino)-1-(hydroxymethyl)cyclohexane-1,2,3,4-tetrol (CCD ID: X8Y) (formula: C₁₉H₃₀N₆O₇) (labeled as "Ligand of Interest" by depositor).





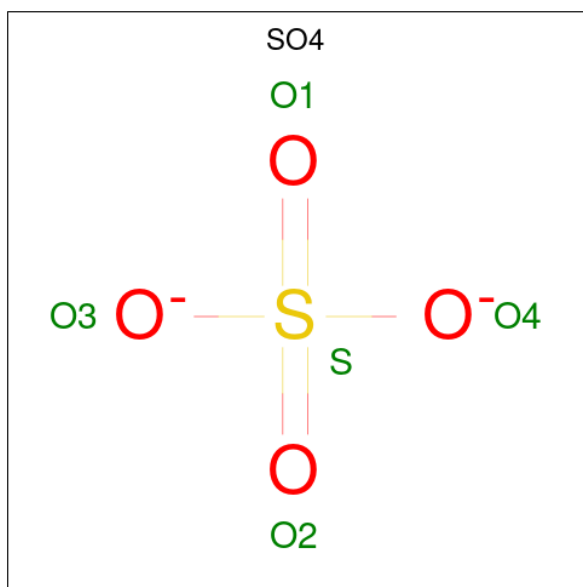
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			4	2	2		
4	A	1	Total	C	O	0	0
			4	2	2		
4	A	1	Total	C	O	0	0
			4	2	2		
4	A	1	Total	C	O	0	0
			4	2	2		
4	C	1	Total	C	O	0	0
			4	2	2		

- Molecule 5 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			7	4	3		
5	C	1	Total	C	O	0	0
			7	4	3		

- Molecule 6 is SULFATE ION (CCD ID: SO4) (formula: O₄S).

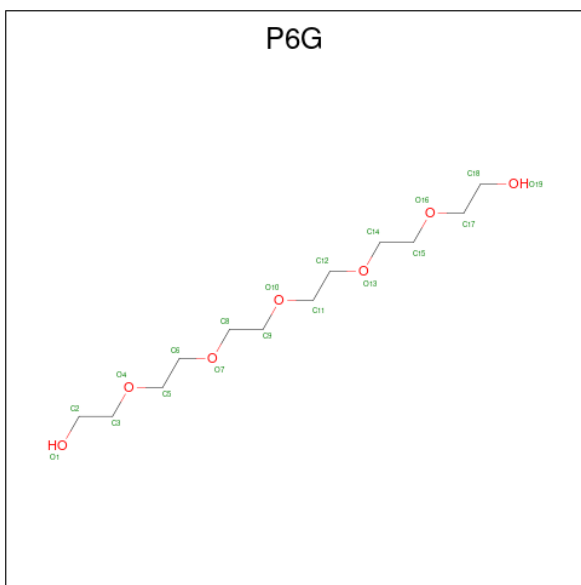


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	O	S	0	0
			5	4	1		
6	A	1	Total	O	S	0	0
			5	4	1		

- Molecule 7 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	B	2	Total	Ca	0	0
			2	2		
7	D	2	Total	Ca	0	0
			2	2		

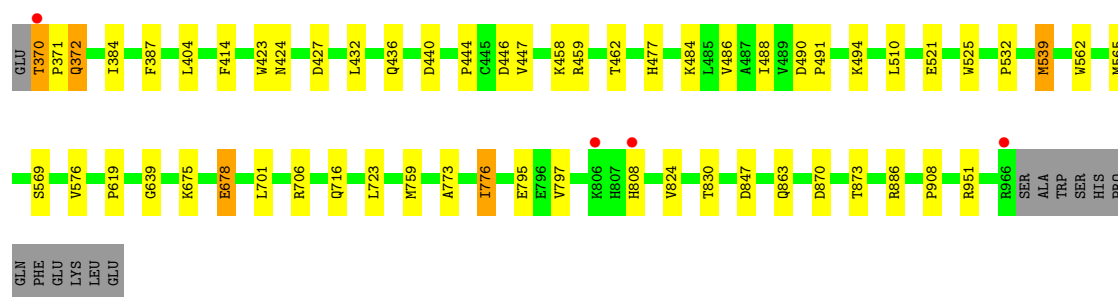
- Molecule 8 is HEXAETHYLENE GLYCOL (CCD ID: P6G) (formula: C₁₂H₂₆O₇).



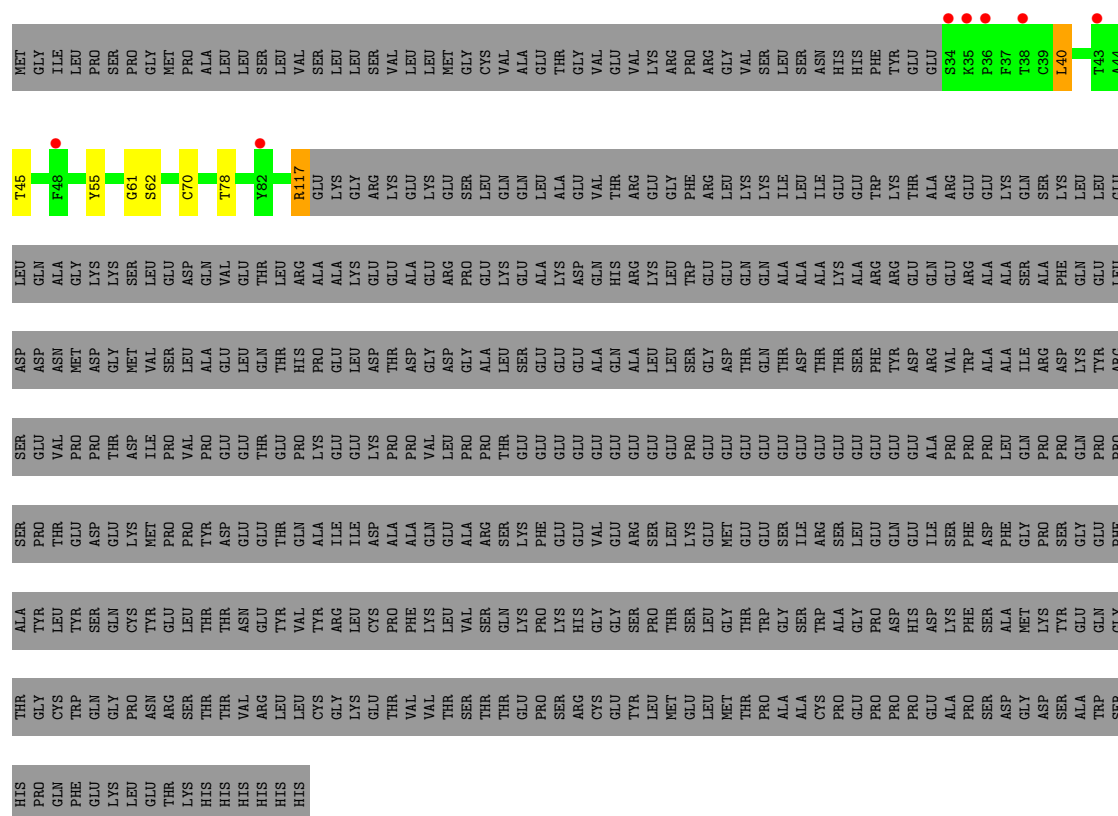
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	C	1	Total	C	O	0	0
			19	12	7		

- Molecule 9 is water.

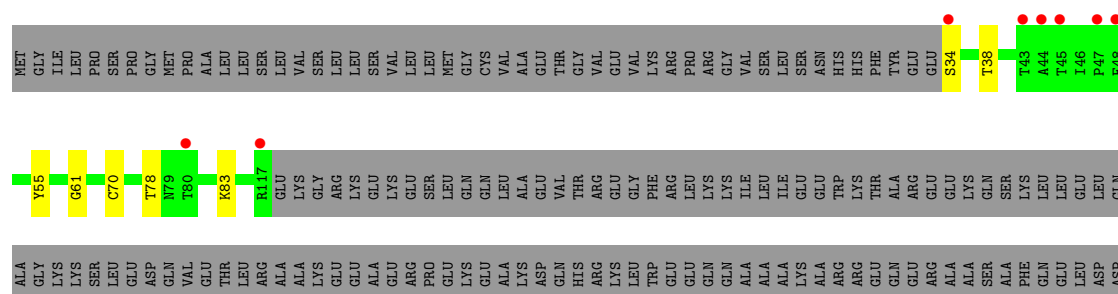
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	271	Total O 271 271	0	0
9	B	11	Total O 11 11	0	0
9	C	217	Total O 217 217	0	0
9	D	14	Total O 14 14	0	0



- Molecule 2: Glucosidase 2 subunit beta



- Molecule 2: Glucosidase 2 subunit beta



ASN	VAL	THR	LEU	CYS	GLN
MET	PRO	GLU	TYR	TRP	PHE
ASP	PRO	ASP	SER	GLN	GLU
GLY	THR	GLU	GLY	GLY	LYS
MET	ILE	LYS	CYS	PRO	LEU
VAL	PRO	MET	TYR	ASN	GLU
SER	VAL	PRO	GLU	ARG	THR
LEU	VAL	PRO	LEU	SER	LYS
ALA	PRO	TYR	THR	THR	HIS
GLU	GLU	ASP	THR	THR	HIS
LEU	GLU	GLU	ASN	VAL	HIS
GLN	THR	GLU	GLU	ARG	HIS
THR	GLU	TYR	TYR	LEU	HIS
HIS	PRO	GLN	VAL	LEU	HIS
PRO	LYS	ALA	TYR	CYS	
GLU	GLU	ILE	ARG	GLY	
LEU	LYS	ILE	LEU	LYS	
ASP	LYS	ASP	CYS	THR	
THR	PRO	ALA	GLU	VAL	
ASP	PRO	ALA	PHE	VAL	
GLY	VAL	GLN	LYS	THR	
GLY	PRO	GLU	LEU	SER	
ALA	PRO	ARG	THR	THR	
GLN	THR	SER	GLN	THR	
ALA	GLU	LYS	LYS	GLU	
LEU	GLU	PHE	PRO	PRO	
LEU	GLU	LEU	LYS	SER	
SER	GLU	GLU	THR	GLY	
GLY	PRO	GLU	SER	GLU	
GLY	GLY	LEU	HIS	ARG	
ASP	GLU	VAL	GLY	CYS	
THR	GLU	GLY	GLY	GLU	
THR	GLU	ARG	SER	TYR	
GLN	GLU	GLY	PRO	LEU	
ALA	GLU	THR	SER	THR	
LEU	GLU	LEU	GLY	GLU	
SER	GLU	SER	LEU	PRO	
THR	GLU	GLU	GLY	GLY	
THR	GLU	GLU	THR	ALA	
GLN	GLU	GLU	TRP	ALA	
THR	GLU	GLU	GLY	PRO	
THR	GLU	GLU	GLY	GLU	
SER	GLU	LEU	ASP	ALA	
PHE	GLU	GLU	PRO	PRO	
TYR	GLU	GLN	ASP	PRO	
ASP	GLU	GLU	HIS	PRO	
ARG	ALA	ILE	ASP	GLU	
VAL	PRO	SER	LYS	ALA	
TRP	PRO	PHE	PHE	SER	
ALA	PRO	ASP	SER	ASP	
ALA	PRO	PHE	ASP	GLY	
LEU	PRO	PHE	ASP	MET	
GLN	PRO	GLY	GLY	GLY	
ARG	PRO	PRO	LYS	ASP	
LYS	PRO	SER	TYR	SER	
ASP	GLN	GLY	GLU	ALA	
TYR	PRO	GLU	GLN	TRP	
ARG	PRO	PHE	GLY	SER	
SER	PRO	ALA	THR	HIS	
GLU	PRO	TYR	GLY	PRO	

4 Data and refinement statistics

Property	Value	Source
Space group	P 32	Depositor
Cell constants a, b, c, α , β , γ	102.92Å 102.92Å 240.22Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	49.80 – 2.55 49.80 – 2.55	Depositor EDS
% Data completeness (in resolution range)	100.0 (49.80-2.55) 93.4 (49.80-2.55)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.90 (at 2.54Å)	Xtriage
Refinement program	PHENIX 1.18.2_3874	Depositor
R, R_{free}	0.181 , 0.219 0.182 , 0.217	Depositor DCC
R_{free} test set	1989 reflections (2.15%)	wwPDB-VP
Wilson B-factor (Å ²)	43.1	Xtriage
Anisotropy	0.008	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 34.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	0.014 for -h,-k,l 0.043 for h,-h-k,-l 0.025 for -k,-h,-l	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	15587	wwPDB-VP
Average B, all atoms (Å ²)	51.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.63% 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: PEG, EDO, P6G, SO4, CA, X8Y

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	0.36	0/7090	0.57	0/9658
1	C	0.34	0/7112	0.56	0/9690
2	B	0.32	0/595	0.61	0/815
2	D	0.33	0/613	0.54	0/838
All	All	0.35	0/15410	0.57	0/21001

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 [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	6865	0	6591	66	0
1	C	6892	0	6600	51	0
2	B	585	0	468	4	0
2	D	601	0	490	3	0
3	A	32	0	0	0	0
3	C	32	0	0	1	0
4	A	16	0	23	5	0
4	C	4	0	6	0	0
5	A	7	0	10	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	C	7	0	10	1	0
6	A	10	0	0	1	0
7	B	2	0	0	0	0
7	D	2	0	0	0	0
8	C	19	0	26	0	0
9	A	271	0	0	14	0
9	B	11	0	0	0	0
9	C	217	0	0	11	0
9	D	14	0	0	1	0
All	All	15587	0	14224	125	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 4.

All (125) 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:619:PRO:O	9:C:1201:HOH:O	1.91	0.89
1:A:159:ASP:OD2	9:A:1101:HOH:O	1.93	0.85
1:A:167:LEU:O	9:A:1102:HOH:O	2.00	0.80
1:A:134:ASP:O	9:A:1103:HOH:O	2.01	0.79
1:C:180:HIS:O	9:C:1202:HOH:O	2.03	0.76
1:C:104:ASP:OD2	9:C:1203:HOH:O	2.05	0.73
1:A:682:LEU:HD23	1:A:711:LEU:HD11	1.72	0.72
1:A:826:GLN:OE1	9:A:1104:HOH:O	2.08	0.70
2:D:34:SER:N	9:D:701:HOH:O	2.25	0.69
1:C:521:GLU:OE1	9:C:1204:HOH:O	2.11	0.69
1:C:108:PRO:HA	9:C:1212:HOH:O	1.93	0.68
1:C:113:TYR:O	9:C:1205:HOH:O	2.12	0.68
1:A:257:ASP:OD2	9:A:1105:HOH:O	2.13	0.67
1:C:716:GLN:OE1	9:C:1206:HOH:O	2.12	0.66
1:A:426:ARG:NH1	6:A:1008:SO4:O4	2.23	0.66
1:A:515:ARG:HG3	4:A:1004:EDO:H21	1.77	0.65
1:A:523:TRP:CG	4:A:1003:EDO:H22	2.31	0.65
1:A:288:LEU:O	9:A:1106:HOH:O	2.14	0.65
1:C:678[B]:GLU:H	1:C:678[B]:GLU:CD	2.07	0.61
1:A:806:LYS:NZ	9:A:1120:HOH:O	2.34	0.61
1:C:423:TRP:O	1:C:701:LEU:HA	2.01	0.61
1:A:423:TRP:O	1:A:701:LEU:HA	2.01	0.61
1:A:259:LYS:HD2	9:A:1307:HOH:O	2.01	0.60
1:C:292:VAL:HG12	1:C:294:GLU:H	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:VAL:HG23	1:A:290:LEU:HB2	1.84	0.59
4:A:1002:EDO:H12	1:C:427:ASP:OD2	2.03	0.58
1:C:490:ASP:OD2	9:C:1208:HOH:O	2.17	0.58
1:C:510:LEU:HB3	1:C:539:MET:HG2	1.85	0.58
1:A:478:LEU:CD1	1:A:485:LEU:HD12	2.33	0.57
1:C:776:ILE:HG23	1:C:824:VAL:HG22	1.88	0.55
1:C:847:ASP:HB3	1:C:908:PRO:HG2	1.88	0.55
1:A:458:LYS:HG2	1:A:525:TRP:HB3	1.88	0.55
1:C:338:LEU:O	9:C:1209:HOH:O	2.18	0.55
1:C:447:VAL:HG11	1:C:486:VAL:HG23	1.89	0.54
3:C:1102:X8Y:C16	5:C:1103:PEG:H32	2.38	0.53
1:A:459:ARG:NH1	1:A:494:LYS:HE2	2.23	0.53
1:C:336:PHE:HB3	1:C:387:PHE:HB2	1.91	0.53
1:A:932:SER:OG	9:A:1107:HOH:O	2.19	0.53
1:A:80:HIS:CE1	1:A:82:VAL:HB	2.45	0.52
1:A:478:LEU:HD12	1:A:485:LEU:HD12	1.92	0.52
1:C:863:GLN:OE1	1:C:886:ARG:NH1	2.43	0.52
1:C:370:THR:N	1:C:371:PRO:HD2	2.25	0.52
1:A:171:ASN:HA	1:A:269:ASP:OD1	2.11	0.51
1:A:515:ARG:HG3	4:A:1004:EDO:C2	2.39	0.51
1:C:951:ARG:HG3	2:D:55:TYR:CE2	2.46	0.50
1:A:951:ARG:HG3	2:B:55:TYR:CE2	2.46	0.50
1:C:458:LYS:HG2	1:C:525:TRP:HB3	1.94	0.49
1:A:33:VAL:HG12	1:A:310:GLU:HG3	1.94	0.49
1:A:421:SER:HB2	1:A:449:TRP:HB2	1.94	0.49
1:C:318:TYR:CE2	1:C:639:GLY:HA3	2.48	0.48
1:A:292:VAL:HG12	1:A:294:GLU:H	1.77	0.48
1:C:120:VAL:HG22	1:C:404:LEU:O	2.13	0.48
2:D:61:GLY:HA2	2:D:70:CYS:SG	2.54	0.48
1:A:491:PRO:O	1:A:532:PRO:HD2	2.14	0.48
1:A:767:GLN:HG2	1:A:777:HIS:HB2	1.96	0.47
1:C:565:MET:HE3	1:C:569:SER:HB3	1.96	0.47
1:A:62:ALA:HB3	1:A:153:ALA:HA	1.97	0.47
1:A:847:ASP:HB3	1:A:908:PRO:HG2	1.95	0.47
1:C:285:ALA:O	1:C:312:ASN:N	2.46	0.47
1:A:447:VAL:HG11	1:A:486:VAL:HG23	1.97	0.47
1:C:244:GLU:HB3	1:C:245:PRO:HD3	1.95	0.47
1:C:171:ASN:HA	1:C:269:ASP:OD1	2.15	0.46
1:A:342:GLU:OE1	1:A:580:LYS:NZ	2.48	0.46
1:A:112:ARG:NH2	1:A:179:GLU:O	2.48	0.46
1:A:648:LEU:HD13	1:A:685:TRP:CG	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:41:CYS:SG	1:C:51:ARG:HD2	2.56	0.46
1:C:102:ARG:HA	1:C:384:ILE:O	2.16	0.45
1:C:273:PRO:HA	1:C:372:GLN:HB2	1.99	0.45
1:A:331:ARG:HG2	1:A:332:ASP:H	1.81	0.45
1:A:884:LEU:HG	1:A:899:ALA:HB3	1.98	0.45
1:C:491:PRO:O	1:C:532:PRO:HD2	2.16	0.45
1:C:678[B]:GLU:OE1	1:C:678[B]:GLU:N	2.40	0.45
1:C:759:MET:HE2	1:C:759:MET:HB3	1.79	0.45
1:A:318:TYR:CE2	1:A:639:GLY:HA3	2.51	0.45
1:A:336:PHE:HB3	1:A:387:PHE:HB2	1.99	0.45
1:A:78:LEU:HB2	1:A:87:LEU:HB2	1.99	0.44
1:C:72:ASP:O	1:C:92:GLN:HG2	2.18	0.44
1:C:112:ARG:NH2	1:C:179:GLU:O	2.50	0.44
1:C:432:LEU:HD22	1:C:477[A]:HIS:ND1	2.33	0.44
1:A:89:LEU:HD22	1:A:156:PHE:CZ	2.53	0.44
1:A:494:LYS:HB2	1:A:526:PRO:HB2	1.99	0.44
1:A:432:LEU:HD22	1:A:477[A]:HIS:ND1	2.33	0.44
1:A:567:GLU:N	1:A:568:PRO:HA	2.34	0.43
1:A:603:MET:HG3	1:A:633:PHE:CE1	2.53	0.43
1:C:436:GLN:NE2	1:C:440:ASP:OD1	2.39	0.43
1:C:494:LYS:NZ	9:C:1232:HOH:O	2.51	0.43
5:A:1005:PEG:H12	5:A:1005:PEG:H31	1.79	0.43
1:C:63:LEU:O	1:C:66:THR:OG1	2.34	0.43
1:C:414:PHE:CD1	1:C:484:LYS:HG3	2.54	0.43
1:A:742:LYS:HA	1:A:742:LYS:HD2	1.90	0.43
1:A:769:MET:HE2	1:A:769:MET:HB3	1.88	0.43
1:A:829:GLY:HA2	1:A:862:ALA:HA	2.01	0.43
1:A:424:ASN:OD1	1:A:451:ASP:HB3	2.18	0.43
1:A:80:HIS:HE1	1:A:82:VAL:HB	1.82	0.43
1:A:158:LEU:HB2	1:A:170:VAL:HB	2.00	0.43
1:A:419:HIS:HB3	1:A:449:TRP:NE1	2.34	0.42
1:C:62:ALA:HB3	1:C:153:ALA:HA	2.00	0.42
1:C:61:ARG:HG2	1:C:79:ILE:HG22	2.01	0.42
2:B:61:GLY:HA2	2:B:70:CYS:SG	2.60	0.42
1:A:312:ASN:OD1	9:A:1108:HOH:O	2.21	0.42
1:A:516:ASP:OD1	1:A:518:SER:OG	2.38	0.42
1:A:881:GLU:HA	1:A:904:HIS:O	2.18	0.42
1:C:870:ASP:OD2	1:C:873:THR:OG1	2.22	0.42
1:A:485:LEU:HD23	1:A:486:VAL:N	2.35	0.41
2:B:117:ARG:H	2:B:117:ARG:HG3	1.50	0.41
1:A:50:GLN:OE1	9:A:1110:HOH:O	2.22	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1006:EDO:O1	9:A:1109:HOH:O	2.22	0.41
1:A:105:GLU:HB2	1:A:108:PRO:HB3	2.02	0.41
1:A:656:LEU:HA	1:A:656:LEU:HD23	1.80	0.41
1:C:773:ALA:HA	1:C:830:THR:HG21	2.03	0.41
1:A:534:PHE:HB3	1:A:600:TYR:HB3	2.02	0.41
1:A:755:TYR:CE2	1:A:792:PRO:HG2	2.55	0.41
1:C:444:PRO:HG2	1:C:723:LEU:HB3	2.03	0.41
1:C:488:ILE:HD12	1:C:562:TRP:CE3	2.55	0.41
1:A:281:ILE:HA	1:A:321:VAL:O	2.21	0.41
1:A:913:ARG:NH2	9:A:1141:HOH:O	2.49	0.41
1:C:423:TRP:CD2	1:C:701:LEU:HB2	2.56	0.41
1:A:444:PRO:HG2	1:A:723:LEU:HB3	2.03	0.40
1:C:619:PRO:HD2	9:C:1358:HOH:O	2.21	0.40
1:C:159:ASP:OD1	1:C:169:SER:HB3	2.21	0.40
1:A:486:VAL:HA	1:A:560:TYR:O	2.22	0.40
1:C:459:ARG:O	1:C:462:THR:OG1	2.35	0.40
1:A:172:ALA:N	9:A:1113:HOH:O	2.27	0.40
1:A:879:ARG:NH1	1:A:881:GLU:OE1	2.48	0.40
2:B:40:LEU:HD22	2:B:62:SER:CB	2.51	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	853/955 (89%)	826 (97%)	26 (3%)	1 (0%)	48	61
1	C	855/955 (90%)	824 (96%)	30 (4%)	1 (0%)	48	61
2	B	82/554 (15%)	78 (95%)	4 (5%)	0	100	100
2	D	82/554 (15%)	77 (94%)	5 (6%)	0	100	100
All	All	1872/3018 (62%)	1805 (96%)	65 (4%)	2 (0%)	48	61

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	576	VAL
1	C	576	VAL

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	740/826 (90%)	720 (97%)	20 (3%)	39	58
1	C	743/826 (90%)	723 (97%)	20 (3%)	39	58
2	B	64/485 (13%)	60 (94%)	4 (6%)	16	23
2	D	67/485 (14%)	64 (96%)	3 (4%)	24	38
All	All	1614/2622 (62%)	1567 (97%)	47 (3%)	37	55

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	67	LEU
1	A	133	ARG
1	A	135	ASP
1	A	137	SER
1	A	259	LYS
1	A	370	THR
1	A	424	ASN
1	A	446	ASP
1	A	500	ARG
1	A	576	VAL
1	A	706	ARG
1	A	714	GLN
1	A	776	ILE
1	A	788	GLN
1	A	863	GLN
1	A	886	ARG
1	A	888	SER
1	A	927	LEU

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Mol	Chain	Res	Type
1	A	940	GLN
1	A	944	GLU
2	B	40	LEU
2	B	45	THR
2	B	78	THR
2	B	117	ARG
1	C	79	ILE
1	C	110	ARG
1	C	129	SER
1	C	137	SER
1	C	163	ASP
1	C	169	SER
1	C	259	LYS
1	C	370	THR
1	C	372	GLN
1	C	424	ASN
1	C	446	ASP
1	C	539	MET
1	C	675	LYS
1	C	678[A]	GLU
1	C	678[B]	GLU
1	C	706	ARG
1	C	776	ILE
1	C	795	GLU
1	C	797	VAL
1	C	808	HIS
2	D	38	THR
2	D	78	THR
2	D	83	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	545	ASN
1	C	77	HIS
1	C	312	ASN
1	C	350	ASN
1	C	545	ASN
1	C	563	ASN
1	C	754	GLN
1	C	805	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 ⓘ

Of 16 ligands modelled in this entry, 4 are monoatomic - leaving 12 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	EDO	A	1004	-	3,3,3	0.56	0	2,2,2	0.57	0
3	X8Y	A	1001	-	33,33,33	3.18	7 (21%)	37,45,45	1.53	4 (10%)
4	EDO	A	1003	-	3,3,3	0.66	0	2,2,2	0.38	0
8	P6G	C	1101	-	18,18,18	0.55	0	17,17,17	0.26	0
3	X8Y	C	1102	-	33,33,33	3.09	6 (18%)	37,45,45	1.32	5 (13%)
4	EDO	C	1104	-	3,3,3	0.45	0	2,2,2	0.25	0
6	SO4	A	1007	-	4,4,4	0.36	0	6,6,6	0.32	0
4	EDO	A	1006	-	3,3,3	0.80	0	2,2,2	0.58	0
6	SO4	A	1008	-	4,4,4	0.30	0	6,6,6	0.30	0
5	PEG	A	1005	-	6,6,6	0.50	0	5,5,5	0.50	0
5	PEG	C	1103	-	6,6,6	0.51	0	5,5,5	0.32	0
4	EDO	A	1002	-	3,3,3	0.64	0	2,2,2	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
4	EDO	A	1004	-	-	1/1/1/1	-
3	X8Y	A	1001	-	-	14/19/44/44	0/2/2/2
4	EDO	A	1003	-	-	1/1/1/1	-
8	P6G	C	1101	-	-	7/16/16/16	-
3	X8Y	C	1102	-	-	10/19/44/44	0/2/2/2
4	EDO	C	1104	-	-	1/1/1/1	-
4	EDO	A	1006	-	-	0/1/1/1	-
5	PEG	A	1005	-	-	2/4/4/4	-
5	PEG	C	1103	-	-	2/4/4/4	-
4	EDO	A	1002	-	-	1/1/1/1	-

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1001	X8Y	O4-N3	11.49	1.42	1.22
3	C	1102	X8Y	O4-N3	11.01	1.41	1.22
3	C	1102	X8Y	N6-N5	9.91	1.43	1.23
3	A	1001	X8Y	N6-N5	9.41	1.42	1.23
3	A	1001	X8Y	N5-N4	6.76	1.46	1.24
3	C	1102	X8Y	N5-N4	6.11	1.44	1.24
3	A	1001	X8Y	C12-N2	4.43	1.49	1.37
3	C	1102	X8Y	C12-N2	4.08	1.48	1.37
3	A	1001	X8Y	C16-C17	2.68	1.43	1.38
3	C	1102	X8Y	O3-C2	-2.48	1.40	1.44
3	A	1001	X8Y	C11-N2	2.21	1.50	1.45
3	C	1102	X8Y	C13-N3	2.07	1.49	1.45
3	A	1001	X8Y	O3-C2	-2.05	1.41	1.44

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1001	X8Y	C6-N1-C5	-6.23	104.97	114.05
3	C	1102	X8Y	C17-C12-N2	-3.08	116.66	121.75
3	C	1102	X8Y	C18-C5-N1	-3.05	104.10	109.66
3	A	1001	X8Y	C11-N2-C12	-3.05	115.96	123.35
3	C	1102	X8Y	C11-N2-C12	-2.89	116.33	123.35
3	A	1001	X8Y	C13-C12-N2	-2.88	118.44	123.38
3	C	1102	X8Y	C14-C13-C12	-2.70	119.08	121.55
3	A	1001	X8Y	C4-C5-N1	-2.61	106.27	112.03
3	C	1102	X8Y	O1-C1-C19	-2.04	105.40	110.00

There are no chirality outliers.

All (39) torsion outliers are listed below:

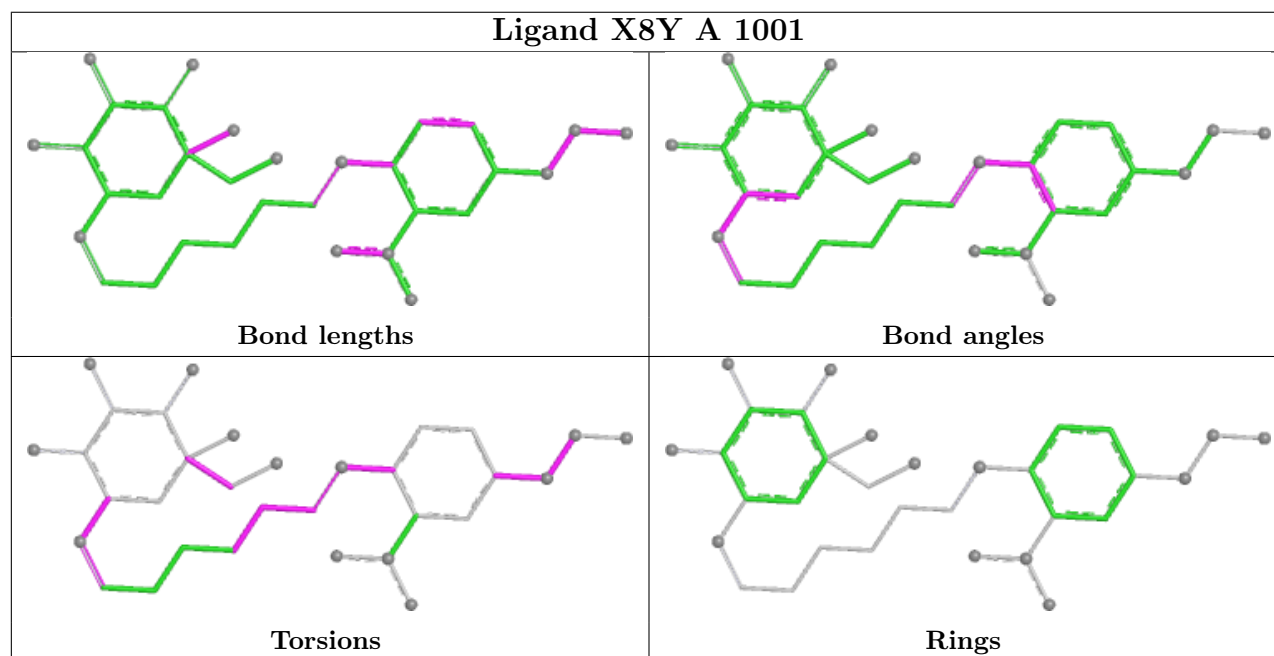
Mol	Chain	Res	Type	Atoms
3	A	1001	X8Y	C18-C5-N1-C6
3	A	1001	X8Y	C14-C15-N4-N5
3	A	1001	X8Y	C16-C15-N4-N5
3	A	1001	X8Y	C13-C12-N2-C11
3	A	1001	X8Y	C1-C2-C3-O2
3	A	1001	X8Y	O3-C2-C3-O2
3	C	1102	X8Y	C18-C5-N1-C6
3	C	1102	X8Y	C14-C15-N4-N5
3	C	1102	X8Y	C16-C15-N4-N5
3	C	1102	X8Y	C1-C2-C3-O2
3	C	1102	X8Y	O3-C2-C3-O2
3	C	1102	X8Y	C9-C10-C11-N2
3	A	1001	X8Y	C9-C10-C11-N2
3	A	1001	X8Y	C17-C12-N2-C11
3	C	1102	X8Y	N1-C6-C7-C8
5	A	1005	PEG	C1-C2-O2-C3
3	A	1001	X8Y	C4-C5-N1-C6
3	C	1102	X8Y	C4-C5-N1-C6
8	C	1101	P6G	O13-C14-C15-O16
5	C	1103	PEG	O1-C1-C2-O2
8	C	1101	P6G	O16-C17-C18-O19
3	A	1001	X8Y	C11-C10-C9-C8
3	A	1001	X8Y	C4-C2-C3-O2
3	C	1102	X8Y	C4-C2-C3-O2
5	C	1103	PEG	C4-C3-O2-C2
8	C	1101	P6G	C15-C14-O13-C12
5	A	1005	PEG	C4-C3-O2-C2
3	C	1102	X8Y	C11-C10-C9-C8
8	C	1101	P6G	C12-C11-O10-C9
3	A	1001	X8Y	C10-C11-N2-C12
3	A	1001	X8Y	C7-C6-N1-C5
8	C	1101	P6G	C6-C5-O4-C3
4	A	1003	EDO	O1-C1-C2-O2
3	A	1001	X8Y	C15-N4-N5-N6
4	A	1002	EDO	O1-C1-C2-O2
4	C	1104	EDO	O1-C1-C2-O2
8	C	1101	P6G	C14-C15-O16-C17
8	C	1101	P6G	C8-C9-O10-C11
4	A	1004	EDO	O1-C1-C2-O2

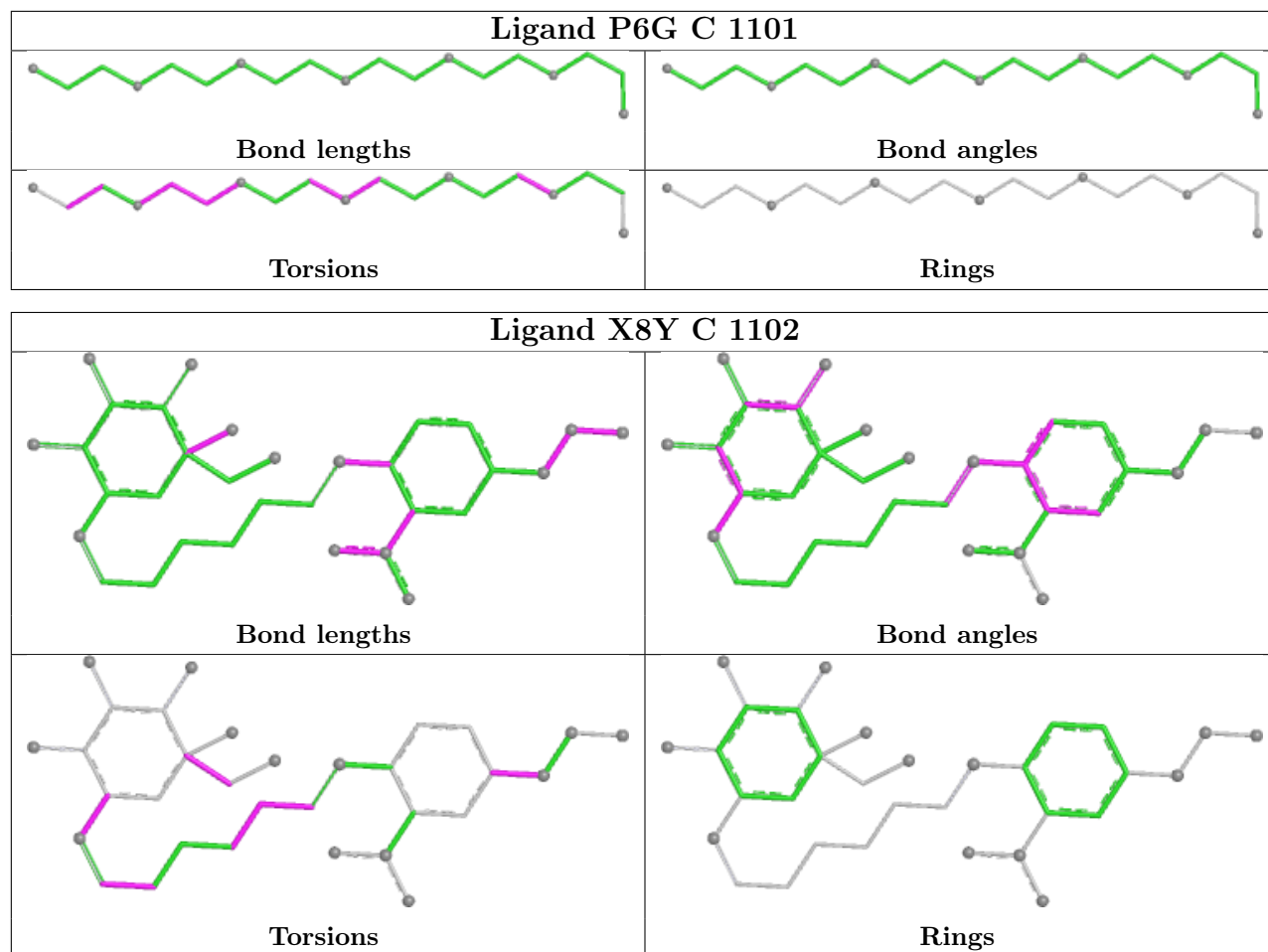
There are no ring outliers.

8 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1004	EDO	2	0
4	A	1003	EDO	1	0
3	C	1102	X8Y	1	0
4	A	1006	EDO	1	0
6	A	1008	SO4	1	0
5	A	1005	PEG	1	0
5	C	1103	PEG	1	0
4	A	1002	EDO	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	854/955 (89%)	-0.27	10 (1%) 76 77	27, 45, 67, 104	5 (0%)
1	C	857/955 (89%)	0.02	22 (2%) 57 58	25, 50, 88, 103	4 (0%)
2	B	84/554 (15%)	0.40	7 (8%) 17 17	42, 60, 91, 96	0
2	D	84/554 (15%)	0.51	8 (9%) 14 13	43, 59, 91, 96	0
All	All	1879/3018 (62%)	-0.07	47 (2%) 58 59	25, 48, 84, 104	9 (0%)

All (47) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	184	PRO	4.3
2	D	43	THR	4.2
2	D	80	THR	4.0
2	B	38	THR	4.0
2	B	48	PHE	3.9
2	B	43	THR	3.9
1	C	76	VAL	3.8
2	D	48	PHE	3.5
1	A	247	ALA	3.3
1	C	82	VAL	3.0
1	A	183	ALA	3.0
1	A	350	ASN	2.8
1	C	57	LEU	2.8
2	D	117	ARG	2.8
1	A	248	TRP	2.7
1	A	82	VAL	2.7
2	D	45	THR	2.7
2	D	44	ALA	2.7
1	C	85	VAL	2.7
2	B	82	TYR	2.6
2	D	34	SER	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	170	VAL	2.6
1	C	168	LEU	2.5
1	A	33	VAL	2.5
1	A	246	GLY	2.5
1	C	63	LEU	2.5
1	C	350	ASN	2.5
1	A	253	LYS	2.4
1	C	143	ALA	2.4
1	C	184	PRO	2.4
1	C	67	LEU	2.4
1	A	370	THR	2.3
1	C	185	ARG	2.3
1	C	806	LYS	2.3
1	C	966	ARG	2.3
2	B	34	SER	2.3
1	C	130	VAL	2.2
1	C	370	THR	2.2
1	C	267	GLY	2.2
1	C	133	ARG	2.2
1	C	156	PHE	2.2
2	D	47	PRO	2.2
1	C	138	VAL	2.2
2	B	36	PRO	2.1
1	C	808	HIS	2.1
1	C	154	GLN	2.0
2	B	35	LYS	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

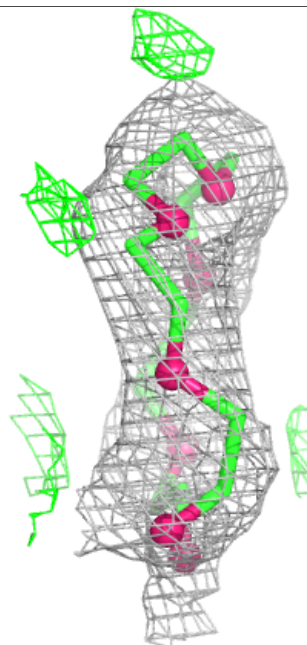
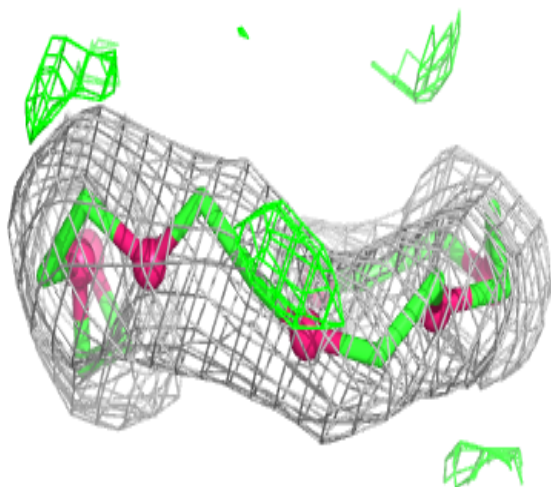
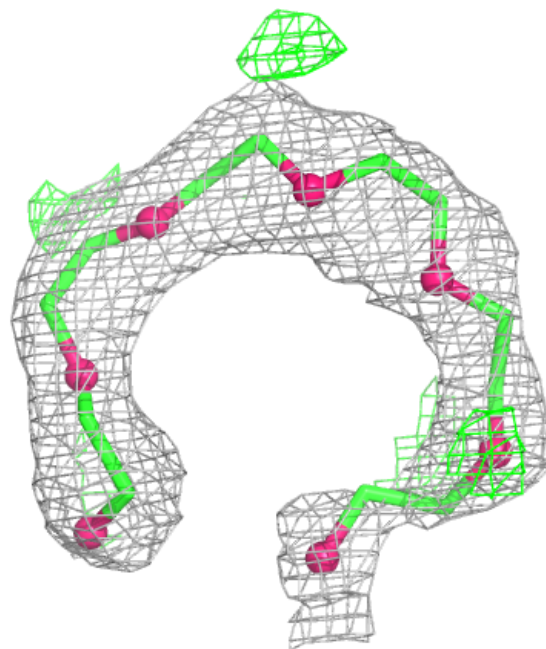
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	EDO	C	1104	4/4	0.77	0.16	62,63,64,65	0
4	EDO	A	1006	4/4	0.80	0.20	57,62,69,70	0
8	P6G	C	1101	19/19	0.86	0.18	63,72,76,76	0
4	EDO	A	1004	4/4	0.87	0.18	62,65,66,70	0
5	PEG	A	1005	7/7	0.88	0.14	62,65,74,74	0
5	PEG	C	1103	7/7	0.89	0.15	61,70,73,74	0
4	EDO	A	1003	4/4	0.90	0.13	63,64,68,72	0
6	SO4	A	1008	5/5	0.91	0.25	66,68,73,83	0
6	SO4	A	1007	5/5	0.91	0.18	64,64,67,91	0
3	X8Y	C	1102	32/32	0.93	0.12	37,49,71,74	0
3	X8Y	A	1001	32/32	0.95	0.10	36,44,65,68	0
4	EDO	A	1002	4/4	0.97	0.09	44,45,48,53	0
7	CA	D	601	1/1	0.99	0.02	55,55,55,55	0
7	CA	B	601	1/1	1.00	0.02	58,58,58,58	0
7	CA	D	602	1/1	1.00	0.02	46,46,46,46	0
7	CA	B	602	1/1	1.00	0.02	43,43,43,43	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.

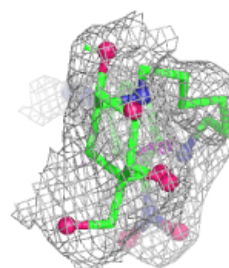
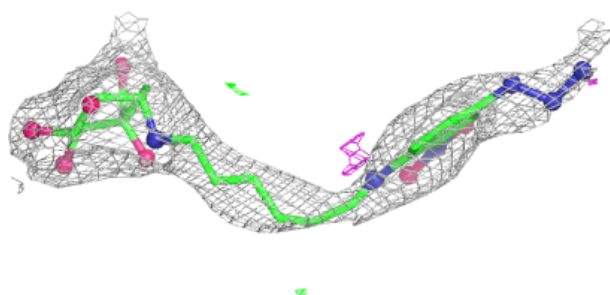
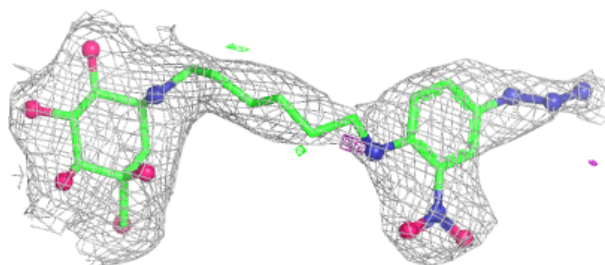
Electron density around P6G C 1101:

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

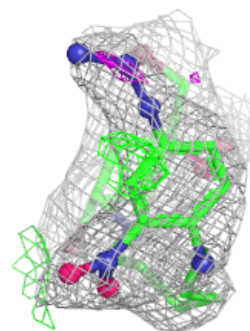
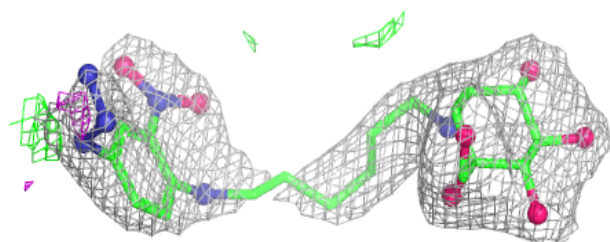
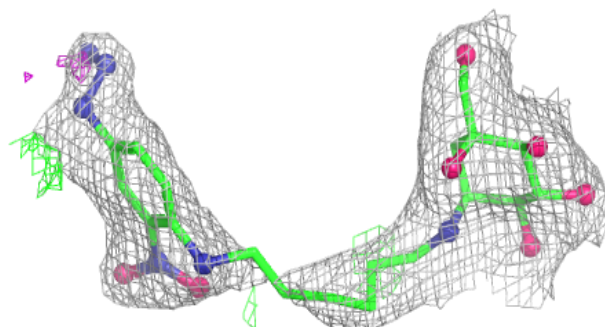


Electron density around X8Y C 1102:

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

**Electron density around X8Y A 1001:**

$2mF_o - DF_c$ (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.