W O R L D W I D E
wwPDB
PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report ⓘ

Nov 13, 2023 – 03:52 PM EST

PDB ID	:	8CVG
Title	:	Structure of L289F Hyoscyamine 6-beta Hydroxylase in complex with iron, 2-oxoglutarate, and 6-OH-hyoscyamine
Authors	:	Wenger, E.W.; Boal, A.K.; Bollinger, J.M.; Krebs, C.
Deposited on	:	2022-05-18
Resolution	:	1.56 Å(reported)

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

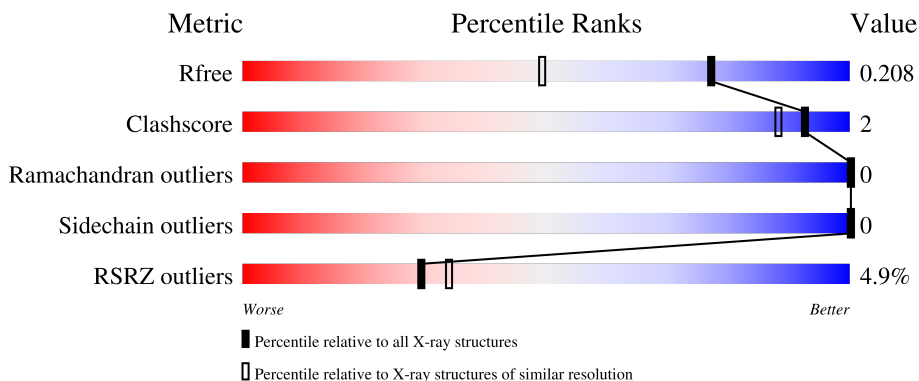|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 1.56 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		0.208
Clashscore		2
Ramachandran outliers		0
Sidechain outliers		0
RSRZ outliers		4.9%

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$_{free}$	130704	1483 (1.56-1.56)
Clashscore	141614	1529 (1.56-1.56)
Ramachandran outliers	138981	1498 (1.56-1.56)
Sidechain outliers	138945	1495 (1.56-1.56)
RSRZ outliers	127900	1465 (1.56-1.56)

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	385	4% ··· 82% · 15%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	FMT	A	418	-	-	-	X

2 Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 2948 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 Hyoscyamine 6-beta-hydroxylase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	327	2597	1673	415	498	11	0	0	0

There are 43 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	289	PHE	LEU	engineered mutation	UNP Q9XJ43
A	344	GLY	-	expression tag	UNP Q9XJ43
A	345	GLY	-	expression tag	UNP Q9XJ43
A	346	LYS	-	expression tag	UNP Q9XJ43
A	347	GLY	-	expression tag	UNP Q9XJ43
A	348	PRO	-	expression tag	UNP Q9XJ43
A	349	GLY	-	expression tag	UNP Q9XJ43
A	350	ASP	-	expression tag	UNP Q9XJ43
A	351	GLY	-	expression tag	UNP Q9XJ43
A	352	PRO	-	expression tag	UNP Q9XJ43
A	353	GLY	-	expression tag	UNP Q9XJ43
A	354	GLY	-	expression tag	UNP Q9XJ43
A	355	SER	-	expression tag	UNP Q9XJ43
A	356	GLY	-	expression tag	UNP Q9XJ43
A	357	GLY	-	expression tag	UNP Q9XJ43
A	358	PRO	-	expression tag	UNP Q9XJ43
A	359	ARG	-	expression tag	UNP Q9XJ43
A	360	GLY	-	expression tag	UNP Q9XJ43
A	361	GLY	-	expression tag	UNP Q9XJ43
A	362	GLU	-	expression tag	UNP Q9XJ43
A	363	ASN	-	expression tag	UNP Q9XJ43
A	364	LEU	-	expression tag	UNP Q9XJ43
A	365	TYR	-	expression tag	UNP Q9XJ43
A	366	PHE	-	expression tag	UNP Q9XJ43
A	367	GLN	-	expression tag	UNP Q9XJ43
A	368	SER	-	expression tag	UNP Q9XJ43
A	369	GLY	-	expression tag	UNP Q9XJ43

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Chain	Residue	Modelled	Actual	Comment	Reference
A	370	HIS	-	expression tag	UNP Q9XJ43
A	371	HIS	-	expression tag	UNP Q9XJ43
A	372	HIS	-	expression tag	UNP Q9XJ43
A	373	HIS	-	expression tag	UNP Q9XJ43
A	374	HIS	-	expression tag	UNP Q9XJ43
A	375	HIS	-	expression tag	UNP Q9XJ43
A	376	HIS	-	expression tag	UNP Q9XJ43
A	377	HIS	-	expression tag	UNP Q9XJ43
A	378	GLY	-	expression tag	UNP Q9XJ43
A	379	GLY	-	expression tag	UNP Q9XJ43
A	380	ARG	-	expression tag	UNP Q9XJ43
A	381	GLY	-	expression tag	UNP Q9XJ43
A	382	GLY	-	expression tag	UNP Q9XJ43
A	383	ALA	-	expression tag	UNP Q9XJ43
A	384	ALA	-	expression tag	UNP Q9XJ43
A	385	ALA	-	expression tag	UNP Q9XJ43

- Molecule 2 is FE (II) ION (three-letter code: FE2) (formula: Fe) (labeled as "Ligand of Interest" by depositor).

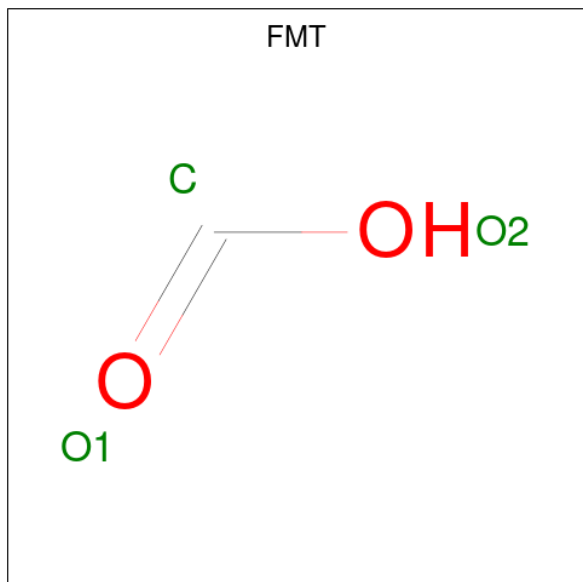| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Fe		
2	A	1	1	1	0	0

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

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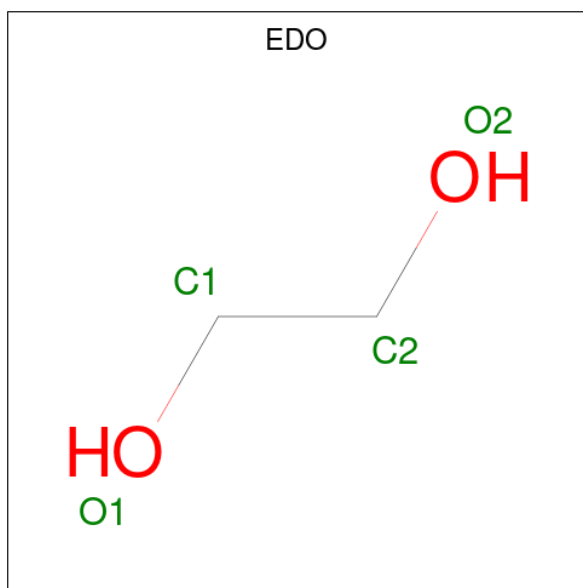
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0

- Molecule 4 is FORMIC ACID (three-letter code: FMT) (formula: CH_2O_2).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0
4	A	1	Total 3	C 1	O 2	0	0

- Molecule 5 is 2-OXOGLUTARIC ACID (three-letter code: AKG) (formula: $C_5H_6O_5$) (labeled as "Ligand of Interest" by depositor).
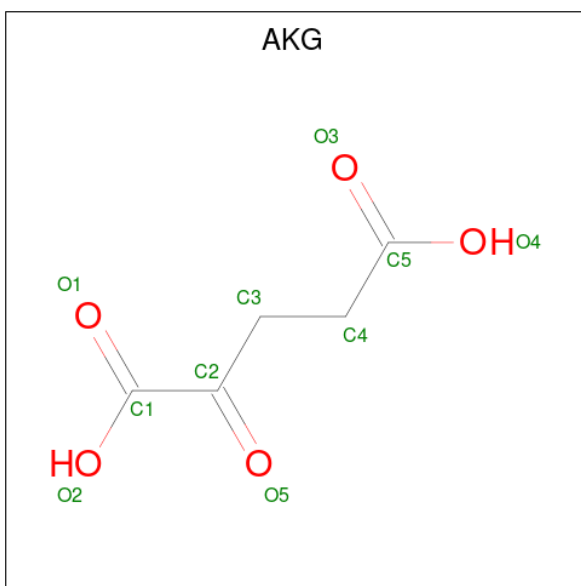
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 10	C 5	O 5	0	0

- Molecule 6 is (1R,3S,5R,6S)-6-hydroxy-8-methyl-8-azabicyclo[3.2.1]octan-3-yl (2S)-3-hydroxy-2-phenylpropanoate (three-letter code: OVR) (formula: $C_{17}H_{23}NO_4$) (labeled as "Ligand of Interest" by depositor).

OVR

C8
N N1(R)
H7
H
C6 C5(R) C4
C1(R)
C7(S) C2
HO H
O1 H1 C3(S)
O4
C9 O
O2 O3
OH
C16 C10(S) C17
C11
C15 C12
C14 C13
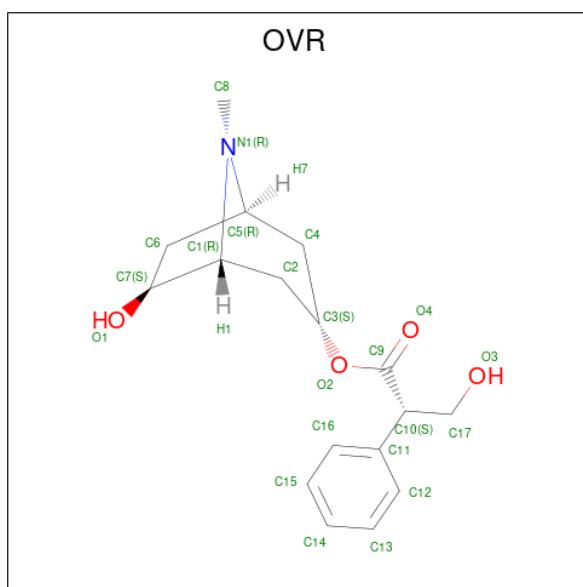
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
6	A	1	22	17	1	4	0	0

- Molecule 7 is STRONTIUM ION (three-letter code: SR) (formula: Sr).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Sr		
7	A	2	2	2	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
8	A	262	262	262	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: Hyoscyamine 6-beta-hydroxylase

Chain A:

4   Data and refinement statistics   ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	44.72Å 79.23Å 55.82Å 90.00° 111.03° 90.00°	Depositor
Resolution (Å)	43.57 – 1.56 43.53 – 1.56	Depositor EDS
% Data completeness (in resolution range)	99.6 (43.57-1.56) 99.6 (43.53-1.56)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.10 (at 1.56Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.182 , 0.201 0.191 , 0.208	Depositor DCC
R_{free} test set	2668 reflections (5.18%)	wwPDB-VP
Wilson B-factor (Å^2)	12.5	Xtriage
Anisotropy	0.047	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 39.5	EDS
L-test for twinning[2]	$< \lvert L \rvert > = 0.50, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.024 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	2948	wwPDB-VP
Average B, all atoms (Å^2)	15.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.27% 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 $< \lvert L \rvert >$, $< L^2 >$ 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: OVR, FMT, SR, AKG, EDO, FE2

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	0.59	0/2659	0.66	0/3615

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	217	HIS	Peptide

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	2597	0	2572	8	0
2	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	24	0	36	1	0
4	A	30	0	10	0	0
5	A	10	0	4	0	0
6	A	22	0	0	0	0
7	A	2	0	0	0	0
8	A	262	0	0	1	0
All	All	2948	0	2622	8	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 2.

The worst 5 of 8 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:79:VAL:HG22	1:A:151:PRO:HG2	1.92	0.50
1:A:55:CYS:SG	1:A:256:LEU:HD11	2.52	0.50
1:A:79:VAL:HG21	1:A:154:TYR:HA	1.99	0.44
1:A:166:ARG:O	1:A:170:MET:HG2	2.18	0.42
1:A:55:CYS:HB3	1:A:268:PHE:CD2	2.54	0.42

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	321/385 (83%)	313 (98%)	8 (2%)	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	289/326 (89%)	289 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 21 ligands modelled in this entry, 3 are monoatomic - leaving 18 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	FMT	A	416	-	2,2,2	0.30	0	1,1,1	0.16	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	FMT	A	407	-	2,2,2	0.29	0	1,1,1	0.16	0
4	FMT	A	414	-	2,2,2	0.26	0	1,1,1	0.17	0
3	EDO	A	413	-	3,3,3	0.07	0	2,2,2	0.19	0
4	FMT	A	415	-	2,2,2	0.27	0	1,1,1	0.17	0
4	FMT	A	404	-	2,2,2	0.24	0	1,1,1	0.18	0
4	FMT	A	412	-	2,2,2	0.27	0	1,1,1	0.17	0
4	FMT	A	418	-	2,2,2	0.24	0	1,1,1	0.16	0
3	EDO	A	403	-	3,3,3	0.04	0	2,2,2	0.20	0
4	FMT	A	410	-	2,2,2	0.33	0	1,1,1	0.17	0
6	OVR	A	409	-	24,24,24	0.33	0	26,34,34	0.43	0
4	FMT	A	419	-	2,2,2	0.26	0	1,1,1	0.16	0
3	EDO	A	417	-	3,3,3	0.04	0	2,2,2	0.16	0
3	EDO	A	406	-	3,3,3	0.04	0	2,2,2	0.24	0
5	AKG	A	405	2	9,9,9	5.90	1 (11%)	11,11,11	1.86	3 (27%)
3	EDO	A	411	-	3,3,3	0.08	0	2,2,2	0.23	0
4	FMT	A	408	-	2,2,2	0.27	0	1,1,1	0.17	0
3	EDO	A	402	-	3,3,3	0.05	0	2,2,2	0.09	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	EDO	A	413	-	-	1/1/1/1	-
6	OVR	A	409	-	-	1/14/38/38	0/4/3/3
3	EDO	A	403	-	-	0/1/1/1	-
3	EDO	A	417	-	-	1/1/1/1	-
3	EDO	A	406	-	-	1/1/1/1	-
5	AKG	A	405	2	-	2/9/9/9	-
3	EDO	A	411	-	-	0/1/1/1	-
3	EDO	A	402	-	-	0/1/1/1	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	405	AKG	C2-C1	-17.48	1.30	1.53

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	405	AKG	O1-C1-C2	-3.64	116.86	121.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	405	AKG	C3-C2-C1	3.42	122.33	115.97
5	A	405	AKG	O2-C1-C2	2.18	119.92	113.97

There are no chirality outliers.
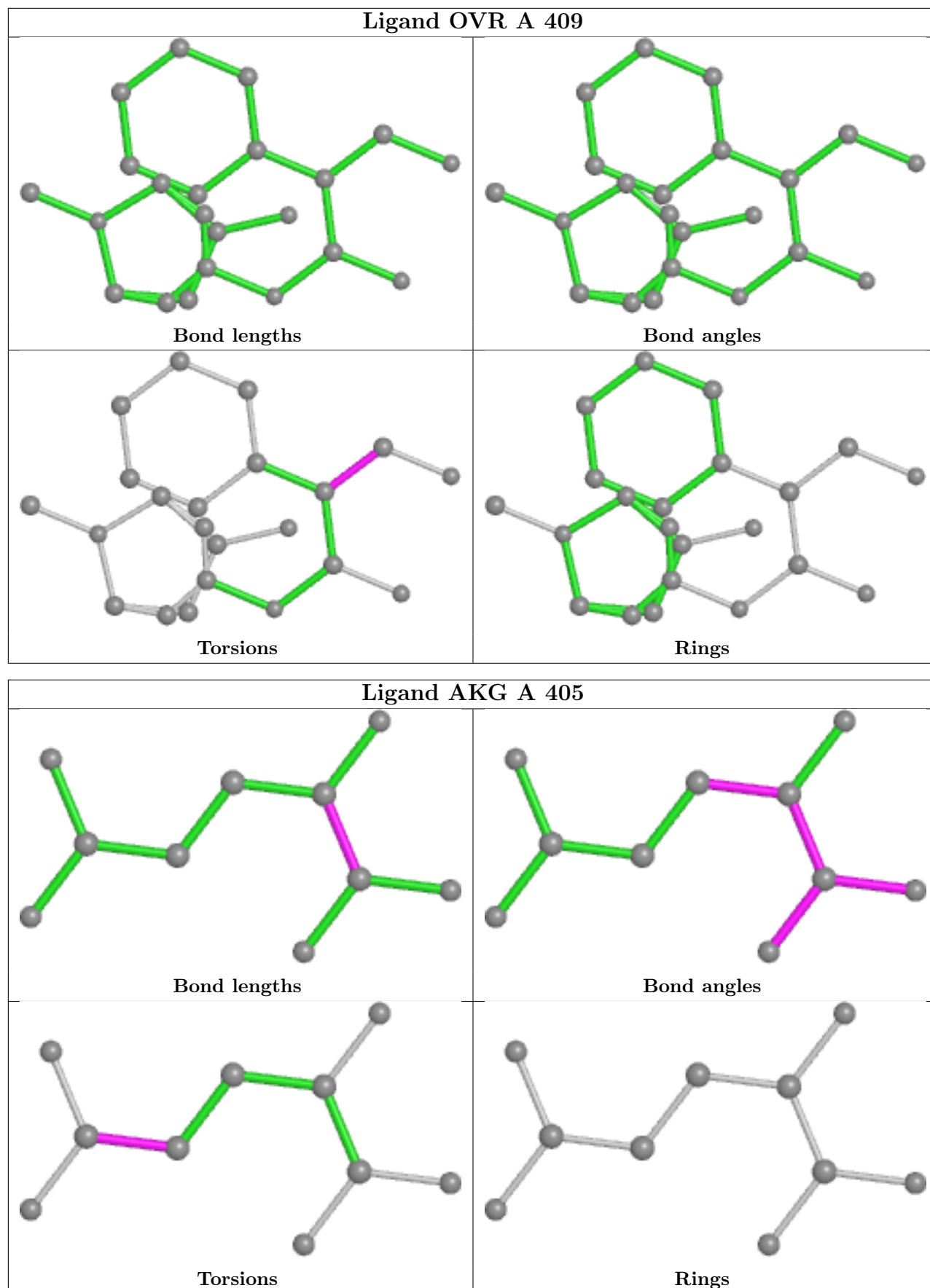
5 of 6 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	406	EDO	O1-C1-C2-O2
3	A	413	EDO	O1-C1-C2-O2
3	A	417	EDO	O1-C1-C2-O2
5	A	405	AKG	C3-C4-C5-O3
5	A	405	AKG	C3-C4-C5-O4

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	406	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 then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand OVR A 409

Bond lengths

Bond angles

Torsions

Rings

Ligand AKG A 405

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	327/385 (84%)	0.39	16 (4%)	29	34	7, 13, 27, 40	0

The worst 5 of 16 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	120	LEU	4.6
1	A	239	ASP	4.5
1	A	58	PHE	4.4
1	A	119	GLN	3.1
1	A	123	GLU	3.0

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
4	FMT	A	416	3/3	0.66	0.18	41,41,42,43	0
3	EDO	A	411	4/4	0.68	0.19	34,34,34,35	0

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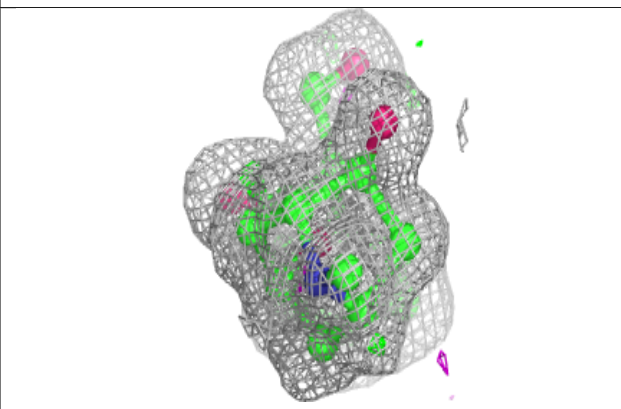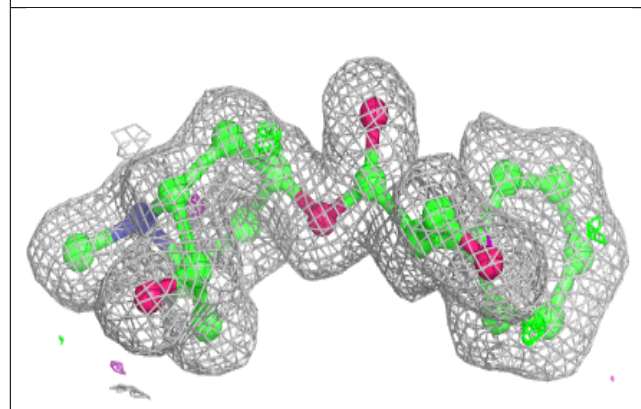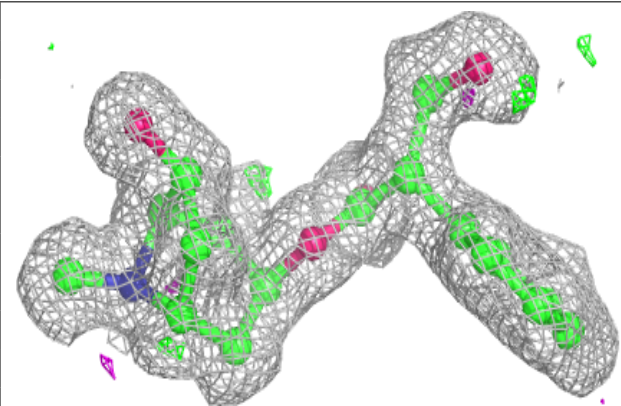| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	FMT	A	418	3/3	0.72	0.41	44,44,46,46	0
4	FMT	A	412	3/3	0.73	0.34	53,53,54,55	0
4	FMT	A	415	3/3	0.75	0.19	45,45,46,47	0
3	EDO	A	406	4/4	0.76	0.23	29,29,30,30	0
3	EDO	A	413	4/4	0.76	0.15	37,37,37,37	0
4	FMT	A	414	3/3	0.80	0.31	47,47,47,48	0
4	FMT	A	407	3/3	0.80	0.12	38,38,38,38	0
4	FMT	A	404	3/3	0.81	0.21	35,35,36,36	0
3	EDO	A	417	4/4	0.82	0.26	41,41,41,41	0
4	FMT	A	419	3/3	0.83	0.25	43,43,44,44	0
4	FMT	A	410	3/3	0.84	0.20	26,26,27,27	0
4	FMT	A	408	3/3	0.93	0.12	43,43,43,43	0
3	EDO	A	403	4/4	0.94	0.09	19,19,19,20	0
3	EDO	A	402	4/4	0.95	0.09	24,25,25,25	0
5	AKG	A	405	10/10	0.95	0.11	8,10,10,11	0
6	OVR	A	409	22/22	0.95	0.09	9,10,11,13	0
7	SR	A	421	1/1	0.98	0.04	24,24,24,24	1
7	SR	A	420	1/1	1.00	0.07	10,10,10,10	0
2	FE2	A	401	1/1	1.00	0.08	7,7,7,7	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.
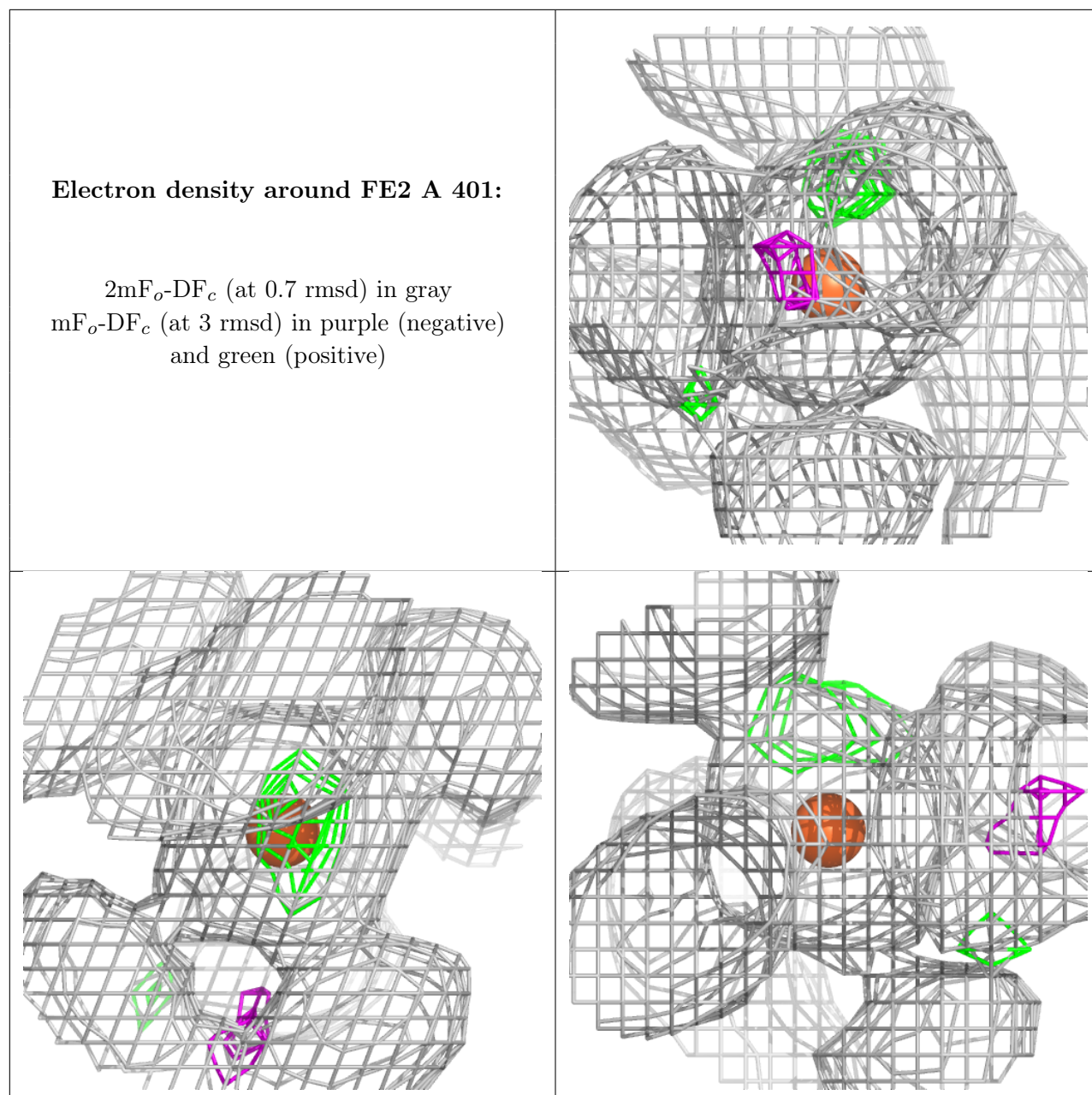
Electron density around AKG A 405:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
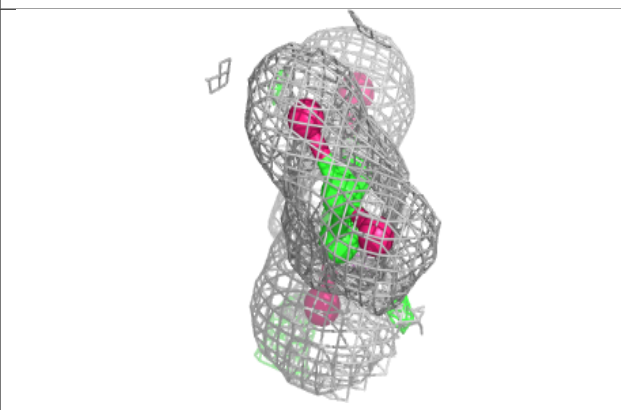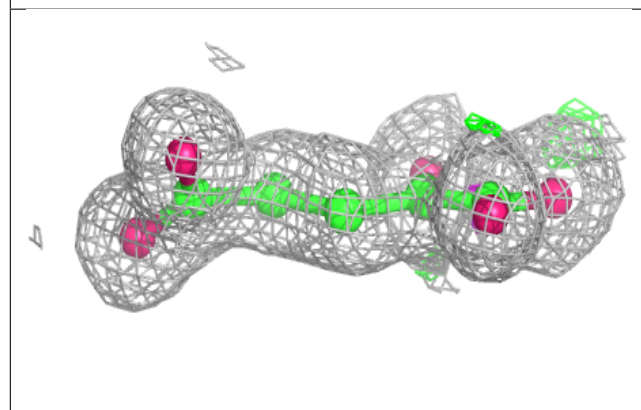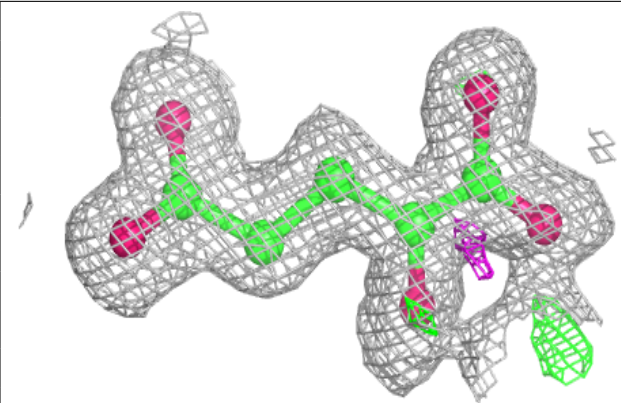
Electron density around OVR A 409:

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

Electron density around FE2 A 401:

$2mF_o\text{-}DF_c$ (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.