WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Oct 10, 2023 – 04:58 PM EDT

PDB ID	:	6WH4
Title	:	Crystal structure of HTR2A with inverse agonist
Authors	:	Kim, K.L.; Che, T.; Krumm, B.E.; Roth, B.L.
Deposited on	:	2020-04-07
Resolution	:	3.40 Å(reported)

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

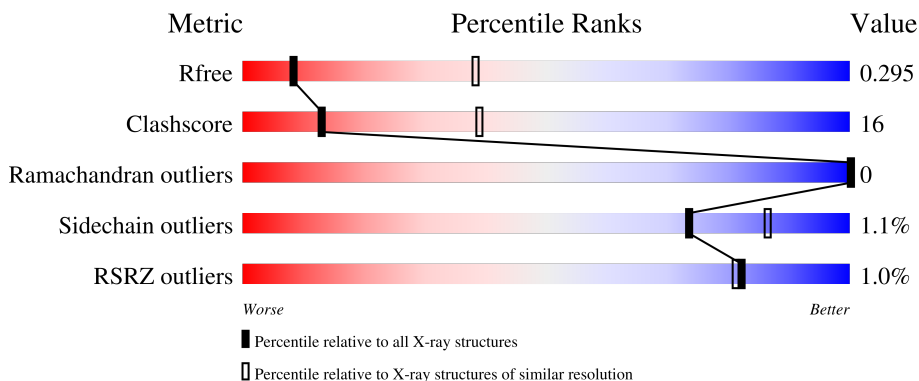|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

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 3.40 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		0.295
Clashscore		16
Ramachandran outliers		0
Sidechain outliers		1.1%
RSRZ outliers		1.0%

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$_{free}$	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

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	448	% 59% 25% • 16%
1	B	448	% 57% 23% 20%
1	C	448	62% 21% • 16%

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 8108 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 5-hydroxytryptamine receptor 2A,Soluble cytochrome b562 fusion.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	378	Total	C	N	O	S	0	0	0
			2687	1752	429	486	20			
1	B	358	Total	C	N	O	S	0	0	0
			2480	1613	402	446	19			
1	C	375	Total	C	N	O	S	0	0	0
			2696	1755	432	489	20			

There are 156 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	40	MET	-	initiating methionine	UNP P28223
A	41	LYS	-	expression tag	UNP P28223
A	42	THR	-	expression tag	UNP P28223
A	43	ILE	-	expression tag	UNP P28223
A	44	ILE	-	expression tag	UNP P28223
A	45	ALA	-	expression tag	UNP P28223
A	46	LEU	-	expression tag	UNP P28223
A	47	SER	-	expression tag	UNP P28223
A	48	TYR	-	expression tag	UNP P28223
A	49	ILE	-	expression tag	UNP P28223
A	50	PHE	-	expression tag	UNP P28223
A	51	CYS	-	expression tag	UNP P28223
A	52	LEU	-	expression tag	UNP P28223
A	53	VAL	-	expression tag	UNP P28223
A	54	PHE	-	expression tag	UNP P28223
A	55	ALA	-	expression tag	UNP P28223
A	56	ASP	-	expression tag	UNP P28223
A	57	TYR	-	expression tag	UNP P28223
A	58	LYS	-	expression tag	UNP P28223
A	59	ASP	-	expression tag	UNP P28223
A	60	ASP	-	expression tag	UNP P28223
A	61	ASP	-	expression tag	UNP P28223

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Chain	Residue	Modelled	Actual	Comment	Reference
A	62	ASP	-	expression tag	UNP P28223
A	63	GLY	-	expression tag	UNP P28223
A	64	ALA	-	expression tag	UNP P28223
A	65	PRO	-	expression tag	UNP P28223
A	247	ALA	LEU	conflict	UNP P28223
A	1007	TRP	MET	conflict	UNP P0ABE7
A	1102	ILE	HIS	conflict	UNP P0ABE7
A	1106	LEU	ARG	conflict	UNP P0ABE7
A	371	ALA	LEU	conflict	UNP P28223
A	406	GLY	-	expression tag	UNP P28223
A	407	ARG	-	expression tag	UNP P28223
A	408	PRO	-	expression tag	UNP P28223
A	409	LEU	-	expression tag	UNP P28223
A	410	GLU	-	expression tag	UNP P28223
A	411	VAL	-	expression tag	UNP P28223
A	412	LEU	-	expression tag	UNP P28223
A	413	PHE	-	expression tag	UNP P28223
A	414	GLN	-	expression tag	UNP P28223
A	415	GLY	-	expression tag	UNP P28223
A	416	PRO	-	expression tag	UNP P28223
A	417	HIS	-	expression tag	UNP P28223
A	418	HIS	-	expression tag	UNP P28223
A	419	HIS	-	expression tag	UNP P28223
A	420	HIS	-	expression tag	UNP P28223
A	421	HIS	-	expression tag	UNP P28223
A	422	HIS	-	expression tag	UNP P28223
A	423	HIS	-	expression tag	UNP P28223
A	424	HIS	-	expression tag	UNP P28223
A	425	HIS	-	expression tag	UNP P28223
A	426	HIS	-	expression tag	UNP P28223
B	40	MET	-	initiating methionine	UNP P28223
B	41	LYS	-	expression tag	UNP P28223
B	42	THR	-	expression tag	UNP P28223
B	43	ILE	-	expression tag	UNP P28223
B	44	ILE	-	expression tag	UNP P28223
B	45	ALA	-	expression tag	UNP P28223
B	46	LEU	-	expression tag	UNP P28223
B	47	SER	-	expression tag	UNP P28223
B	48	TYR	-	expression tag	UNP P28223
B	49	ILE	-	expression tag	UNP P28223
B	50	PHE	-	expression tag	UNP P28223
B	51	CYS	-	expression tag	UNP P28223

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Chain	Residue	Modelled	Actual	Comment	Reference
B	52	LEU	-	expression tag	UNP P28223
B	53	VAL	-	expression tag	UNP P28223
B	54	PHE	-	expression tag	UNP P28223
B	55	ALA	-	expression tag	UNP P28223
B	56	ASP	-	expression tag	UNP P28223
B	57	TYR	-	expression tag	UNP P28223
B	58	LYS	-	expression tag	UNP P28223
B	59	ASP	-	expression tag	UNP P28223
B	60	ASP	-	expression tag	UNP P28223
B	61	ASP	-	expression tag	UNP P28223
B	62	ASP	-	expression tag	UNP P28223
B	63	GLY	-	expression tag	UNP P28223
B	64	ALA	-	expression tag	UNP P28223
B	65	PRO	-	expression tag	UNP P28223
B	247	ALA	LEU	conflict	UNP P28223
B	1007	TRP	MET	conflict	UNP P0ABE7
B	1102	ILE	HIS	conflict	UNP P0ABE7
B	1106	LEU	ARG	conflict	UNP P0ABE7
B	371	ALA	LEU	conflict	UNP P28223
B	406	GLY	-	expression tag	UNP P28223
B	407	ARG	-	expression tag	UNP P28223
B	408	PRO	-	expression tag	UNP P28223
B	409	LEU	-	expression tag	UNP P28223
B	410	GLU	-	expression tag	UNP P28223
B	411	VAL	-	expression tag	UNP P28223
B	412	LEU	-	expression tag	UNP P28223
B	413	PHE	-	expression tag	UNP P28223
B	414	GLN	-	expression tag	UNP P28223
B	415	GLY	-	expression tag	UNP P28223
B	416	PRO	-	expression tag	UNP P28223
B	417	HIS	-	expression tag	UNP P28223
B	418	HIS	-	expression tag	UNP P28223
B	419	HIS	-	expression tag	UNP P28223
B	420	HIS	-	expression tag	UNP P28223
B	421	HIS	-	expression tag	UNP P28223
B	422	HIS	-	expression tag	UNP P28223
B	423	HIS	-	expression tag	UNP P28223
B	424	HIS	-	expression tag	UNP P28223
B	425	HIS	-	expression tag	UNP P28223
B	426	HIS	-	expression tag	UNP P28223
C	40	MET	-	initiating methionine	UNP P28223
C	41	LYS	-	expression tag	UNP P28223

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Chain	Residue	Modelled	Actual	Comment	Reference
C	42	THR	-	expression tag	UNP P28223
C	43	ILE	-	expression tag	UNP P28223
C	44	ILE	-	expression tag	UNP P28223
C	45	ALA	-	expression tag	UNP P28223
C	46	LEU	-	expression tag	UNP P28223
C	47	SER	-	expression tag	UNP P28223
C	48	TYR	-	expression tag	UNP P28223
C	49	ILE	-	expression tag	UNP P28223
C	50	PHE	-	expression tag	UNP P28223
C	51	CYS	-	expression tag	UNP P28223
C	52	LEU	-	expression tag	UNP P28223
C	53	VAL	-	expression tag	UNP P28223
C	54	PHE	-	expression tag	UNP P28223
C	55	ALA	-	expression tag	UNP P28223
C	56	ASP	-	expression tag	UNP P28223
C	57	TYR	-	expression tag	UNP P28223
C	58	LYS	-	expression tag	UNP P28223
C	59	ASP	-	expression tag	UNP P28223
C	60	ASP	-	expression tag	UNP P28223
C	61	ASP	-	expression tag	UNP P28223
C	62	ASP	-	expression tag	UNP P28223
C	63	GLY	-	expression tag	UNP P28223
C	64	ALA	-	expression tag	UNP P28223
C	65	PRO	-	expression tag	UNP P28223
C	247	ALA	LEU	conflict	UNP P28223
C	1007	TRP	MET	conflict	UNP P0ABE7
C	1102	ILE	HIS	conflict	UNP P0ABE7
C	1106	LEU	ARG	conflict	UNP P0ABE7
C	371	ALA	LEU	conflict	UNP P28223
C	406	GLY	-	expression tag	UNP P28223
C	407	ARG	-	expression tag	UNP P28223
C	408	PRO	-	expression tag	UNP P28223
C	409	LEU	-	expression tag	UNP P28223
C	410	GLU	-	expression tag	UNP P28223
C	411	VAL	-	expression tag	UNP P28223
C	412	LEU	-	expression tag	UNP P28223
C	413	PHE	-	expression tag	UNP P28223
C	414	GLN	-	expression tag	UNP P28223
C	415	GLY	-	expression tag	UNP P28223
C	416	PRO	-	expression tag	UNP P28223
C	417	HIS	-	expression tag	UNP P28223
C	418	HIS	-	expression tag	UNP P28223

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Chain	Residue	Modelled	Actual	Comment	Reference
C	419	HIS	-	expression tag	UNP P28223
C	420	HIS	-	expression tag	UNP P28223
C	421	HIS	-	expression tag	UNP P28223
C	422	HIS	-	expression tag	UNP P28223
C	423	HIS	-	expression tag	UNP P28223
C	424	HIS	-	expression tag	UNP P28223
C	425	HIS	-	expression tag	UNP P28223
C	426	HIS	-	expression tag	UNP P28223

- Molecule 2 is 1-methyl-4-[(5 {S})-3-methylsulfanyl-5,6-dihydrobenzo[b][1]benzothiepin-5-yl]piperazine (three-letter code: 89F) (formula: $C_{20}H_{24}N_2S_2$) (labeled as "Ligand of Interest" by depositor).
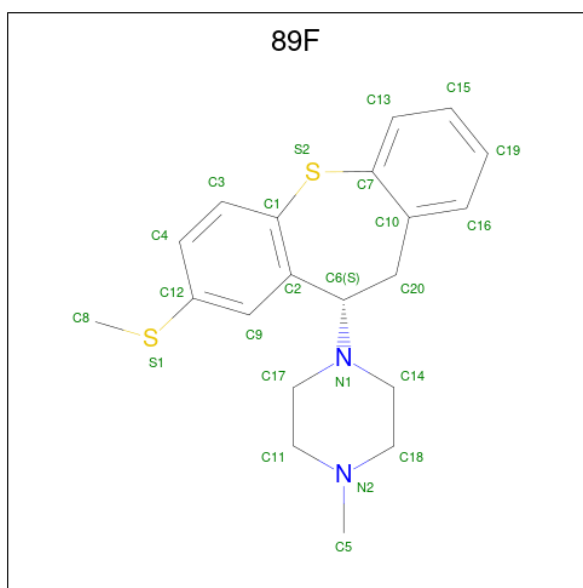
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	S	0	0
			24	20	2	2		
2	B	1	Total	C	N	S	0	0
			24	20	2	2		
2	C	1	Total	C	N	S	0	0
			24	20	2	2		

- Molecule 3 is OLEIC ACID (three-letter code: OLA) (formula: $C_{18}H_{34}O_2$).

OLA
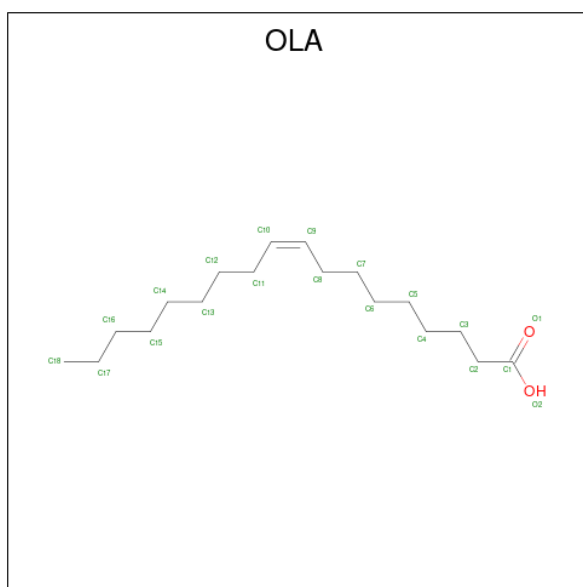
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 20	C 18	O 2	0	0
3	A	1	Total 9	C 7	O 2	0	0
3	B	1	Total 12	C 10	O 2	0	0
3	C	1	Total 20	C 18	O 2	0	0

- Molecule 4 is CHOLESTEROL (three-letter code: CLR) (formula: $C_{27}H_{46}O$).

CLR
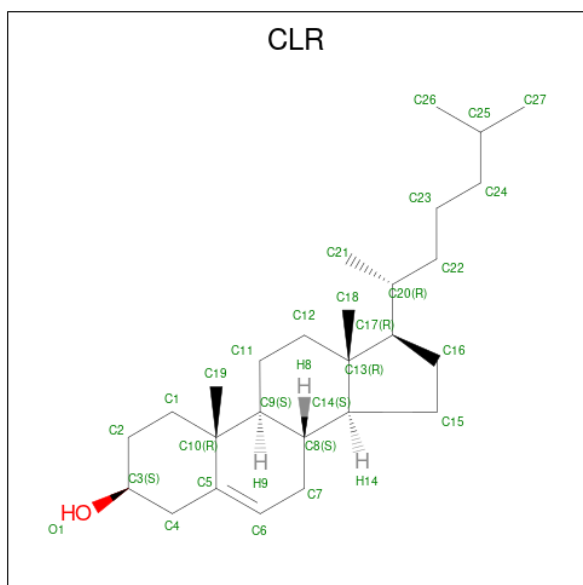
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 28	C 27	O 1	0	0
4	C	1	Total 28	C 27	O 1	0	0

- Molecule 5 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).
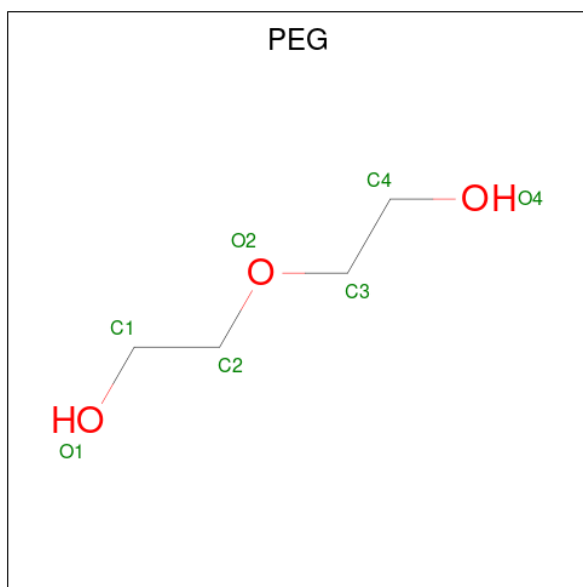
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 7	C 4	O 3	0	0
5	B	1	Total 7	C 4	O 3	0	0
5	C	1	Total 7	C 4	O 3	0	0
5	C	1	Total 7	C 4	O 3	0	0

- Molecule 6 is ETHYL DIMETHYL AMMONIO PROPANE SULFONATE (three-letter code: NDS) (formula: $C_7H_{17}NO_3S$).

NDS
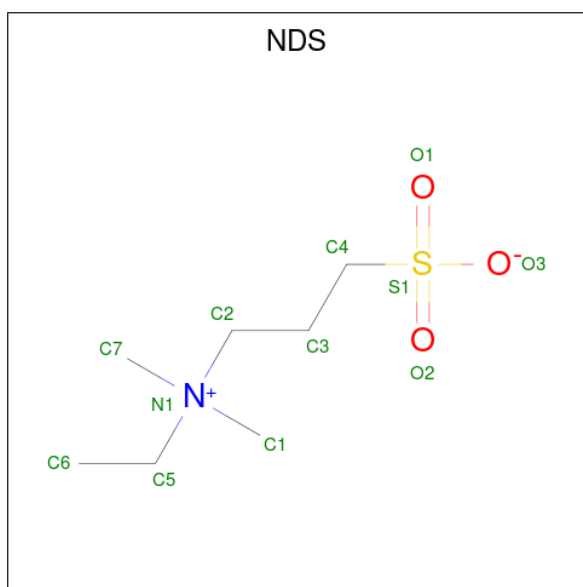
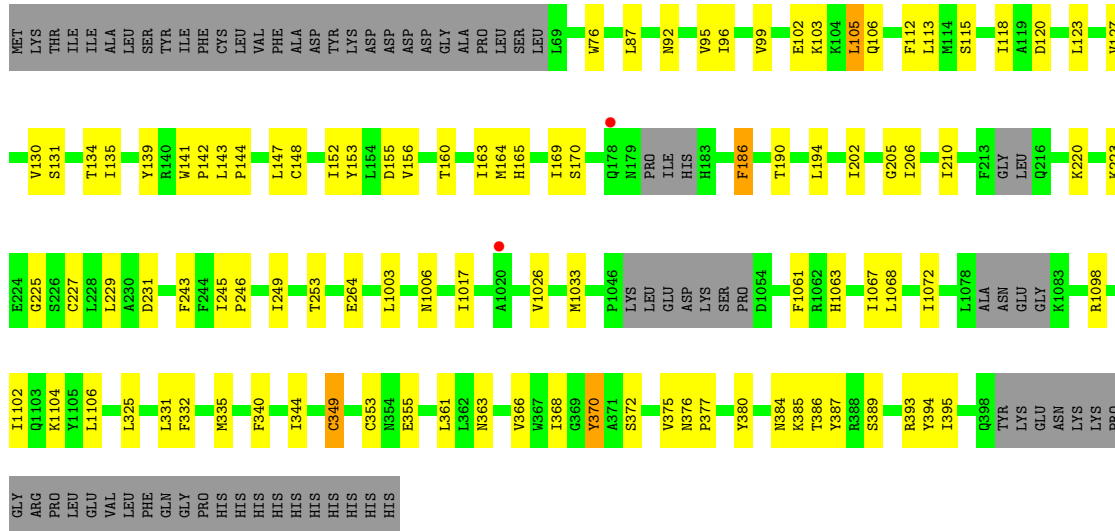| Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
6	C	1	12	7	1	3	1	0	0

- Molecule 7 is PENTAETHYLENE GLYCOL (three-letter code: 1PE) (formula: $C_{10}H_{22}O_6$).

1PE

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
7	C	1	16	10	6	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: 5-hydroxytryptamine receptor 2A,Soluble cytochrome b562 fusion

• Molecule 1: 5-hydroxytryptamine receptor 2A,Soluble cytochrome b562 fusion

T381 L382 F383 N384 K385 R388 F391 I395 Q396 K400 GLU ASN LYS LYS PRO GLY ARG PRO LEU GLU VAL LEU PHE GLN GLY PRO HIS HIS HIS HIS HIS HIS HIS HIS HIS

• Molecule 1: 5-hydroxytryptamine receptor 2A,Soluble cytochrome b562 fusion

Chain C:

62%   21%   •   16%

MET LYS THR ILE ILE ALA LEU SER TYR ILE PHE CYS LEU VAL PHE ALA ASP TYR LYS ASP ASP ASP GLY ALA PRO LEU SER LEU L69 W76 L87 N92 V95 I96 V99 E102 K103 K104 L105 Q106 F112 L113 M114 S115 I118 A119 D120 L123 V127

V130 S131 T134 I135 Y139 R140 W141 P142 L143 P144 L147 C148 I152 Y153 L154 D155 V156 T160 I163 M164 H165 I169 S170 Q178 N179 PRO ILE HIS H183 F186 T190 L194 I202 G205 I206 I210 F213 GLY LEU Q216 K220 K223

E224 G225 S226 C227 L228 L229 A230 D231 F243 F244 I245 P246 I249 T253 E264 L1003 N1006 I1017 A1020 V1026 M1033 P1046 LYS LEU GLU ASP LYS SER PRO D1054 F1061 R1062 H1063 I1067 L1068 I1072 L1078 ALA ASN GLU GLY K1083 R1098

I1102 Q1103 K1104 Y1105 L1106 L325 L331 F332 M335 F340 I344 C349 C353 N354 E355 L361 L362 N363 V366 W367 I368 G369 Y370 A371 S372 V375 N376 P377 Y380 N384 K385 T386 Y387 R388 S389 R393 Y394 I395 Q398 TYR LYS GLU ASN LYS LYS PRO

GLY ARG PRO LEU GLU VAL LEU PHE GLN GLY PRO HIS HIS HIS HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	82.38Å 177.31Å 280.59Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	33.50 – 3.40 34.78 – 2.98	Depositor EDS
% Data completeness (in resolution range)	90.8 (33.50-3.40) 66.5 (34.78-2.98)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.13 (at 3.00Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.258 , 0.304 0.258 , 0.295	Depositor DCC
R_{free} test set	1448 reflections (5.13%)	wwPDB-VP
Wilson B-factor (Å^2)	69.4	Xtriage
Anisotropy	0.085	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 79.4	EDS
L-test for twinning[2]	$< |L| > = 0.46, < L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.87	EDS
Total number of atoms	8108	wwPDB-VP
Average B, all atoms (Å^2)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.16% 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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: NDS, 1PE, 89F, CLR, OLA, 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	0.59	1/2740 (0.0%)	0.82	5/3760 (0.1%)
1	B	0.54	0/2526	0.77	1/3467 (0.0%)
1	C	0.58	1/2748 (0.0%)	0.83	6/3758 (0.2%)
All	All	0.57	2/8014 (0.0%)	0.81	12/10985 (0.1%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	349	CYS	CB-SG	-5.99	1.72	1.82
1	A	337	CYS	CB-SG	-5.22	1.73	1.81

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	113	LEU	CB-CG-CD2	-12.08	90.47	111.00
1	A	148	CYS	CA-CB-SG	-10.60	94.92	114.00
1	C	105	LEU	CB-CG-CD2	-10.01	93.99	111.00
1	C	227	CYS	CA-CB-SG	-9.43	97.03	114.00
1	C	148	CYS	CA-CB-SG	-8.63	98.47	114.00
1	C	380	TYR	CB-CG-CD2	-6.40	117.16	121.00
1	A	331	LEU	CB-CG-CD2	-6.07	100.67	111.00
1	A	147	LEU	CA-CB-CG	5.89	128.85	115.30
1	C	380	TYR	CB-CG-CD1	5.82	124.49	121.00
1	A	243	PHE	CB-CG-CD2	-5.72	116.80	120.80
1	A	243	PHE	CB-CG-CD1	5.68	124.78	120.80
1	B	349	CYS	CA-CB-SG	5.03	123.05	114.00

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	2687	0	2479	88	1
1	B	2480	0	2223	85	0
1	C	2696	0	2495	81	1
2	A	24	0	0	1	0
2	B	24	0	0	0	0
2	C	24	0	0	0	0
3	A	29	0	43	7	0
3	B	12	0	15	1	0
3	C	20	0	33	2	0
4	A	28	0	46	3	0
4	C	28	0	46	2	0
5	A	7	0	10	0	0
5	B	7	0	10	0	0
5	C	14	0	20	0	0
6	C	12	0	17	1	0
7	C	16	0	22	3	0
All	All	8108	0	7459	255	1

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 16.

All (255) 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:1065:PHE:CE1	1:A:1094:LEU:HD13	1.93	1.04
1:A:1068:LEU:HD12	1:A:1094:LEU:HD23	1.47	0.95
1:A:1068:LEU:HD12	1:A:1094:LEU:CD2	2.00	0.91
1:C:1068:LEU:H	1:C:1068:LEU:HD12	1.39	0.87
1:B:92:ASN:HB3	1:B:117:ALA:HB1	1.59	0.83
1:B:144:PRO:HB2	1:B:147:LEU:HB2	1.60	0.83
1:A:358:ILE:HG22	3:A:1202:OLA:H41	1.60	0.81
1:C:384:ASN:HD22	1:C:387:TYR:HD2	1.25	0.81
1:A:126:LEU:HD23	1:A:154:LEU:HD13	1.67	0.76
1:A:1065:PHE:HE1	1:A:1094:LEU:HD13	1.48	0.75
1:A:1068:LEU:CD1	1:A:1094:LEU:HD23	2.16	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1017:ILE:HG23	1:C:1026:VAL:HG13	1.67	0.75
1:B:94:LEU:HB3	1:B:391:PHE:CD1	2.21	0.75
1:B:367:TRP:HA	1:B:370:TYR:HB2	1.70	0.73
1:C:220:LYS:HG3	1:C:231:ASP:HB2	1.71	0.70
1:A:197:ILE:O	1:A:201:THR:HG23	1.91	0.70
1:C:155:ASP:OD2	1:C:370:TYR:OH	2.07	0.69
1:A:1065:PHE:CZ	1:A:1094:LEU:HD13	2.28	0.69
1:A:229:LEU:HB3	1:A:235:VAL:HG12	1.76	0.68
1:A:163:ILE:HD11	2:A:1201:89F:C15	2.24	0.68
1:B:1075:ALA:HB3	1:B:1090:ALA:HB2	1.76	0.68
1:C:331:LEU:HD13	1:C:375:VAL:HG21	1.77	0.67
1:C:165:HIS:O	1:C:169:ILE:HG23	1.96	0.66
1:B:327:ILE:HD11	1:B:379:VAL:HG13	1.78	0.66
1:A:376:ASN:HA	1:A:379:VAL:HG12	1.78	0.65
1:A:137:TYR:CD2	1:A:142:PRO:HB3	2.32	0.65
1:A:147:LEU:O	1:A:150:VAL:HG22	1.97	0.65
1:C:105:LEU:HD21	1:C:386:THR:OG1	1.97	0.64
1:C:245:ILE:HG12	1:C:246:PRO:HD3	1.78	0.64
1:B:124:GLY:HA2	1:B:128:MET:SD	2.38	0.64
1:C:120:ASP:OD2	1:C:376:ASN:ND2	2.31	0.64
1:B:382:LEU:HB3	1:B:383:PHE:CD1	2.33	0.64
1:A:345:MET:SD	3:A:1202:OLA:H62	2.38	0.63
1:C:156:VAL:O	1:C:160:THR:HG22	1.99	0.63
1:A:1068:LEU:HB2	1:A:1094:LEU:HD21	1.82	0.62
1:B:381:THR:HG22	1:B:391:PHE:CE2	2.34	0.62
1:B:135:ILE:HA	1:B:139:TYR:CE1	2.35	0.62
1:A:206:ILE:O	1:A:209:PRO:HD2	2.00	0.61
1:B:1098:ARG:HD3	1:B:1098:ARG:N	2.15	0.61
1:A:1060:ASP:O	1:A:1064:GLY:N	2.29	0.61
1:B:157:LEU:HB2	1:B:207:SER:HB2	1.83	0.60
1:A:120:ASP:OD2	1:A:373:SER:HA	2.02	0.60
1:A:342:THR:HG22	3:A:1202:OLA:H81	1.84	0.60
1:B:1105:TYR:O	1:B:313:GLN:HB2	2.02	0.60
1:A:155:ASP:OD2	1:A:370:TYR:OH	2.21	0.59
1:B:112:PHE:CD1	1:B:196:ILE:HG22	2.37	0.59
1:B:200:TRP:O	1:B:204:VAL:HG23	2.03	0.59
1:C:394:TYR:O	4:C:1202:CLR:O1	2.19	0.59
1:A:358:ILE:HG22	3:A:1202:OLA:C4	2.33	0.59
1:B:72:GLN:HA	1:B:75:ASN:HB2	1.84	0.59
1:A:139:TYR:O	1:A:226:SER:HB3	2.03	0.58
1:A:160:THR:O	1:A:164:MET:HG2	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:133:LEU:HD22	1:B:142:PRO:HG3	1.85	0.58
1:B:149:ALA:HB2	1:B:214:GLY:HA3	1.86	0.57
1:B:245:ILE:HG12	1:B:246:PRO:HD3	1.87	0.57
1:A:188:SER:O	1:A:188:SER:OG	2.17	0.57
1:B:135:ILE:HG12	1:B:139:TYR:OH	2.04	0.57
1:A:1086:GLU:H	1:A:1086:GLU:CD	2.08	0.56
1:A:157:LEU:O	1:A:160:THR:HG22	2.06	0.56
1:B:88:THR:HG22	1:B:374:ALA:N	2.20	0.56
1:C:1033:MET:HB3	1:C:1068:LEU:CD2	2.36	0.56
1:C:1063:HIS:O	1:C:1067:ILE:HG13	2.06	0.56
1:B:152:ILE:HD12	1:B:221:VAL:HG13	1.88	0.56
1:A:97:MET:HE1	4:A:1204:CLR:H42	1.87	0.55
1:B:382:LEU:HD23	1:B:383:PHE:HE1	1.71	0.55
1:A:352:SER:OG	3:A:1203:OLA:O2	2.24	0.55
1:B:107:ASN:OD1	1:B:107:ASN:N	2.36	0.55
1:B:1075:ALA:HB3	1:B:1090:ALA:CB	2.35	0.55
1:B:314:SER:HA	1:B:317:ASN:HB2	1.88	0.55
1:C:152:ILE:HD13	1:C:229:LEU:HD22	1.89	0.55
1:A:259:LYS:HE2	1:A:259:LYS:HA	1.89	0.54
1:A:99:VAL:O	1:A:106:GLN:NE2	2.39	0.54
1:A:1093:GLN:OE1	1:A:1093:GLN:HA	2.08	0.54
1:B:221:VAL:HG12	1:B:227:CYS:SG	2.48	0.54
1:C:163:ILE:HD12	1:C:332:PHE:CE2	2.42	0.54
1:C:349:CYS:O	1:C:353:CYS:HB2	2.08	0.54
1:A:1105:TYR:CD2	1:A:1106:LEU:HD12	2.42	0.54
1:A:192:ALA:O	1:A:196:ILE:HG23	2.07	0.54
1:A:1003:LEU:HD21	1:A:1043:ALA:HB3	1.90	0.54
1:C:139:TYR:HE2	1:C:363:ASN:ND2	2.05	0.54
1:A:1003:LEU:HD21	1:A:1043:ALA:CB	2.38	0.54
1:C:1063:HIS:O	1:C:1067:ILE:N	2.39	0.54
1:B:170:SER:HB2	1:B:329:PHE:CE2	2.43	0.53
1:B:382:LEU:HB3	1:B:383:PHE:HD1	1.74	0.53
1:A:170:SER:HB2	1:A:329:PHE:CE2	2.42	0.53
1:B:208:MET:O	1:B:211:PRO:HD2	2.08	0.53
1:A:123:LEU:HD13	1:A:158:PHE:HB2	1.91	0.53
1:A:200:TRP:HA	1:A:203:SER:HB3	1.90	0.53
1:A:1065:PHE:CE1	1:A:1094:LEU:CD1	2.80	0.53
1:A:390:ALA:HB1	1:A:394:TYR:CE2	2.44	0.53
1:B:381:THR:HG22	1:B:391:PHE:HE2	1.72	0.53
1:B:346:ALA:HA	1:B:358:ILE:HD11	1.91	0.52
1:A:212:VAL:HG12	1:A:213:PHE:CD2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:391:PHE:O	1:B:395:ILE:HG13	2.08	0.52
1:C:130:VAL:O	1:C:134:THR:HG23	2.09	0.52
1:C:1068:LEU:HD12	1:C:1068:LEU:N	2.17	0.52
1:B:193:PHE:O	1:B:196:ILE:HG13	2.10	0.52
1:C:1033:MET:HB3	1:C:1068:LEU:HD23	1.92	0.52
1:B:385:LYS:HA	1:B:388:ARG:NE	2.25	0.52
1:B:135:ILE:HA	1:B:139:TYR:HE1	1.74	0.51
1:C:76:TRP:HA	1:C:76:TRP:CE3	2.45	0.51
1:C:368:ILE:HG12	3:C:1206:OLA:H71	1.91	0.51
1:B:1074:ASP:OD1	1:B:1075:ALA:N	2.43	0.50
1:B:202:ILE:O	1:B:206:ILE:HG13	2.12	0.50
1:B:197:ILE:O	1:B:201:THR:HG23	2.12	0.50
1:A:133:LEU:HD23	1:A:143:LEU:HD11	1.94	0.49
1:A:112:PHE:HB3	1:A:169:ILE:HD11	1.94	0.49
1:C:368:ILE:HA	3:C:1206:OLA:H82	1.94	0.49
1:C:115:SER:O	1:C:118:ILE:HG12	2.13	0.49
1:C:131:SER:O	1:C:135:ILE:HD13	2.11	0.49
1:C:170:SER:OG	1:C:253:THR:OG1	2.14	0.49
1:C:95:VAL:O	1:C:99:VAL:HG23	2.12	0.49
1:C:112:PHE:CG	1:C:169:ILE:HG22	2.48	0.49
1:C:249:ILE:O	1:C:253:THR:HG23	2.13	0.49
1:C:385:LYS:H	1:C:385:LYS:HD2	1.77	0.49
1:A:171:LEU:HA	1:A:174:TYR:HB3	1.95	0.49
1:C:223:LYS:NZ	7:C:1207:1PE:OH3	2.46	0.49
1:C:376:ASN:HB2	1:C:377:PRO:HD3	1.95	0.49
1:C:103:LYS:HA	1:C:106:GLN:HG3	1.96	0.48
1:C:389:SER:O	1:C:393:ARG:HG3	2.14	0.48
1:B:89:ILE:O	1:B:93:ILE:HG13	2.13	0.48
1:C:190:THR:O	1:C:194:LEU:HD13	2.14	0.48
1:C:366:VAL:HG22	1:C:370:TYR:CD2	2.49	0.48
1:A:170:SER:HB2	1:A:329:PHE:CZ	2.48	0.48
1:B:149:ALA:CB	1:B:214:GLY:HA3	2.43	0.48
1:B:89:ILE:HG21	3:B:1203:OLA:C10	2.44	0.48
1:B:128:MET:HE2	1:B:370:TYR:HB3	1.96	0.48
1:B:327:ILE:O	1:B:331:LEU:HG	2.13	0.48
1:B:245:ILE:CG1	1:B:246:PRO:HD3	2.43	0.48
1:C:102:GLU:OE2	1:C:393:ARG:NH2	2.47	0.48
1:A:223:LYS:HG3	1:A:230:ALA:HB2	1.96	0.48
1:A:165:HIS:CD2	1:A:199:VAL:HG11	2.48	0.48
1:A:126:LEU:HD23	1:A:154:LEU:CD1	2.40	0.47
1:B:84:VAL:O	1:B:88:THR:HG23	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:139:TYR:O	1:B:226:SER:HB3	2.14	0.47
1:B:366:VAL:O	1:B:370:TYR:N	2.31	0.47
1:B:112:PHE:HB2	1:B:169:ILE:HD11	1.95	0.47
1:C:96:ILE:HD13	1:C:118:ILE:HG22	1.97	0.47
1:A:223:LYS:HD2	1:A:228:LEU:HD11	1.95	0.47
1:A:1014:LEU:HA	1:A:1033:MET:HE1	1.96	0.47
1:A:1056:PRO:O	1:A:1060:ASP:N	2.30	0.47
1:B:240:PHE:O	1:B:245:ILE:HG23	2.14	0.47
1:B:396:GLN:HE21	1:B:396:GLN:HB3	1.56	0.47
1:C:141:TRP:CE3	1:C:141:TRP:HA	2.50	0.47
1:C:1006:ASN:N	1:C:1006:ASN:HD22	2.10	0.47
1:A:1062:ARG:HA	1:A:1062:ARG:HD3	1.68	0.47
1:A:330:PHE:CZ	1:A:334:VAL:HG21	2.49	0.47
1:C:123:LEU:HD22	1:C:127:VAL:HG21	1.96	0.47
1:C:1068:LEU:O	1:C:1072:ILE:N	2.48	0.47
1:C:331:LEU:O	1:C:335:MET:HG3	2.14	0.47
1:A:88:THR:HG22	1:A:374:ALA:N	2.30	0.46
1:C:202:ILE:O	1:C:206:ILE:HG13	2.15	0.46
1:A:245:ILE:HB	1:A:246:PRO:HD3	1.97	0.46
1:B:330:PHE:CE1	1:B:334:VAL:HG21	2.51	0.46
1:B:133:LEU:HD22	1:B:142:PRO:CG	2.45	0.46
1:B:138:GLY:O	1:B:139:TYR:HB2	2.16	0.46
1:B:141:TRP:CE3	1:B:142:PRO:HD2	2.51	0.46
1:B:170:SER:OG	1:B:253:THR:OG1	2.26	0.46
1:C:153:TYR:HA	1:C:210:ILE:HD12	1.98	0.46
1:A:349:CYS:SG	3:A:1203:OLA:H41	2.56	0.46
4:A:1204:CLR:H193	4:A:1204:CLR:H111	1.70	0.46
1:C:340:PHE:O	1:C:344:ILE:HG23	2.15	0.46
1:C:325:LEU:HD12	1:C:325:LEU:HA	1.69	0.46
1:B:168:ALA:HB2	1:B:199:VAL:HG21	1.98	0.45
1:A:354:ASN:HB3	1:A:357:VAL:HG12	1.98	0.45
1:B:123:LEU:HD12	1:B:127:VAL:HG22	1.99	0.45
1:B:127:VAL:HG21	1:B:155:ASP:HB2	1.98	0.45
4:A:1204:CLR:H162	4:A:1204:CLR:H221	1.68	0.45
1:C:1102:ILE:O	1:C:1106:LEU:HG	2.17	0.45
1:A:345:MET:O	1:A:349:CYS:HB3	2.17	0.45
1:B:333:VAL:O	1:B:337:CYS:HB2	2.17	0.45
1:B:254:TYR:O	1:B:258:ILE:HD13	2.17	0.44
1:B:358:ILE:O	1:B:362:LEU:HD13	2.17	0.44
1:B:377:PRO:O	1:B:381:THR:HG23	2.17	0.44
1:B:75:ASN:ND2	1:C:205:GLY:O	2.44	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:193:PHE:CD1	1:B:193:PHE:C	2.91	0.44
1:C:92:ASN:O	1:C:96:ILE:HG13	2.18	0.44
1:C:1104:LYS:NZ	6:C:1205:NDS:H22	2.33	0.44
1:A:231:ASP:CB	1:A:234:PHE:HB2	2.48	0.44
1:A:1104:LYS:O	1:A:312:MET:HG2	2.18	0.44
1:C:264:GLU:O	1:C:1003:LEU:HG	2.18	0.44
1:C:143:LEU:HB3	1:C:144:PRO:CD	2.48	0.44
1:C:355:GLU:O	7:C:1207:1PE:H141	2.18	0.44
1:C:395:ILE:HA	4:C:1202:CLR:O1	2.17	0.44
1:C:1006:ASN:N	1:C:1006:ASN:ND2	2.66	0.43
1:C:169:ILE:HG21	1:C:169:ILE:HD13	1.58	0.43
1:C:229:LEU:O	7:C:1207:1PE:H221	2.18	0.43
1:C:331:LEU:HD13	1:C:375:VAL:CG2	2.45	0.43
1:C:363:ASN:HA	1:C:366:VAL:HG12	2.00	0.43
1:A:115:SER:HG	1:A:165:HIS:CD2	2.35	0.43
1:B:170:SER:HG	1:B:253:THR:HG1	1.54	0.43
1:B:254:TYR:O	1:B:257:THR:HG22	2.18	0.43
1:A:143:LEU:HB3	1:A:144:PRO:HD2	2.00	0.43
1:A:212:VAL:HG12	1:A:213:PHE:CE2	2.53	0.43
1:A:331:LEU:HD11	1:A:375:VAL:HG11	2.01	0.43
1:C:160:THR:O	1:C:164:MET:HG2	2.19	0.43
1:A:1079:ALA:HB1	1:A:1085:LYS:CB	2.48	0.43
1:B:239:SER:HB2	1:B:344:ILE:HD11	1.99	0.43
1:C:332:PHE:CD2	1:C:332:PHE:C	2.92	0.43
1:A:328:VAL:HG13	1:A:376:ASN:HB3	2.00	0.43
1:B:334:VAL:O	1:B:338:PRO:HD3	2.18	0.43
1:A:122:LEU:O	1:A:126:LEU:HB2	2.19	0.42
1:A:381:THR:HG22	1:A:391:PHE:CD2	2.54	0.42
1:B:112:PHE:CB	1:B:169:ILE:HD11	2.49	0.42
1:B:139:TYR:N	1:B:139:TYR:CD1	2.88	0.42
1:A:1065:PHE:CZ	1:A:1094:LEU:CD1	3.02	0.42
1:A:376:ASN:HA	1:A:379:VAL:CG1	2.45	0.42
1:A:152:ILE:HD13	1:A:229:LEU:HG	2.00	0.42
1:A:1003:LEU:N	1:A:1003:LEU:HD23	2.34	0.42
1:C:147:LEU:HD23	1:C:147:LEU:HA	1.72	0.42
1:C:123:LEU:HD22	1:C:127:VAL:CG2	2.50	0.42
1:C:243:PHE:O	1:C:246:PRO:HD2	2.20	0.42
1:C:1068:LEU:H	1:C:1068:LEU:CD1	2.20	0.42
1:C:372:SER:O	1:C:375:VAL:HG22	2.19	0.42
1:B:382:LEU:HD23	1:B:383:PHE:CE1	2.51	0.42
1:C:361:LEU:HA	1:C:361:LEU:HD23	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:258:ILE:CD1	1:A:322:CYS:SG	3.07	0.41
1:C:141:TRP:HA	1:C:142:PRO:HD3	1.93	0.41
1:C:163:ILE:HD12	1:C:332:PHE:HE2	1.83	0.41
1:C:349:CYS:HB3	1:C:353:CYS:HB2	1.26	0.41
1:B:94:LEU:HD13	1:B:391:PHE:HB3	2.02	0.41
1:B:331:LEU:CD1	1:B:375:VAL:HG11	2.50	0.41
1:A:134:THR:HG23	1:A:139:TYR:HA	2.01	0.41
1:A:1065:PHE:HB2	1:A:1099:ASN:ND2	2.34	0.41
1:A:393:ARG:HB3	1:A:398:GLN:O	2.21	0.41
1:B:337:CYS:O	1:B:341:ILE:HG12	2.20	0.41
1:B:381:THR:HG22	1:B:391:PHE:CD2	2.56	0.41
1:A:163:ILE:HD12	1:A:242:SER:O	2.20	0.41
1:A:223:LYS:HB2	1:A:228:LEU:HD11	2.02	0.41
1:B:139:TYR:N	1:B:139:TYR:HD1	2.18	0.41
1:B:1106:LEU:HD23	1:B:1106:LEU:HA	1.93	0.41
1:C:1003:LEU:HD23	1:C:1003:LEU:HA	1.90	0.41
1:A:109:THR:O	1:A:113:LEU:HD13	2.21	0.41
1:A:143:LEU:HB3	1:A:144:PRO:CD	2.51	0.41
1:A:229:LEU:HB3	1:A:235:VAL:CG1	2.49	0.41
1:A:239:SER:HB3	1:A:244:PHE:HE2	1.86	0.41
1:A:357:VAL:HG11	3:A:1202:OLA:O1	2.20	0.41
1:A:374:ALA:O	1:A:377:PRO:HD2	2.21	0.41
1:C:87:LEU:N	1:C:87:LEU:HD23	2.36	0.41
1:C:156:VAL:HG11	1:C:210:ILE:HD11	2.03	0.41
1:A:101:LEU:HB2	1:A:394:TYR:OH	2.21	0.41
1:B:133:LEU:HD23	1:B:133:LEU:O	2.20	0.40
1:B:1096:THR:O	1:B:1096:THR:HG22	2.21	0.40
1:C:1098:ARG:H	1:C:1098:ARG:HG2	1.71	0.40
1:B:124:GLY:HA2	1:B:128:MET:HB2	2.02	0.40
1:B:332:PHE:CD1	1:B:332:PHE:C	2.95	0.40
1:C:135:ILE:HD11	1:C:363:ASN:HD21	1.85	0.40
1:C:139:TYR:CE2	1:C:363:ASN:ND2	2.89	0.40
1:B:339:PHE:O	1:B:343:ASN:HB2	2.22	0.40
1:A:258:ILE:HD11	1:A:322:CYS:SG	2.62	0.40
1:B:249:ILE:O	1:B:252:ILE:N	2.54	0.40
1:C:366:VAL:O	1:C:370:TYR:N	2.45	0.40
1:A:236:LEU:HD12	1:A:236:LEU:HA	1.84	0.40
1:B:87:LEU:O	1:B:91:GLY:N	2.45	0.40
1:C:186:PHE:O	1:C:190:THR:HG23	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:351:GLU:O	1:C:225:GLY:N[7_555]	2.19	0.01

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	370/448 (83%)	359 (97%)	11 (3%)	0	100	100
1	B	346/448 (77%)	334 (96%)	12 (4%)	0	100	100
1	C	365/448 (82%)	351 (96%)	14 (4%)	0	100	100
All	All	1081/1344 (80%)	1044 (97%)	37 (3%)	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	248/390 (64%)	247 (100%)	1 (0%)	91	95
1	B	216/390 (55%)	212 (98%)	4 (2%)	57	78
1	C	251/390 (64%)	248 (99%)	3 (1%)	71	85
All	All	715/1170 (61%)	707 (99%)	8 (1%)	73	86

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	370	TYR
1	B	111	TYR
1	B	231	ASP
1	B	1099	ASN
1	B	1101	TYR
1	C	186	PHE
1	C	1061	PHE
1	C	370	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	1099	ASN
1	C	363	ASN

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 ⓘ

15 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	$\#\|Z\| > 2$
5	PEG	A	1205	-	6,6,6	0.29	0	5,5,5	0.22	0
2	89F	A	1201	-	26,27,27	0.31	0	29,38,38	0.89	1 (3%)
3	OLA	A	1203	-	8,8,19	0.68	0	8,8,19	1.50	1 (12%)
4	CLR	C	1202	-	31,31,31	0.64	0	48,48,48	1.48	9 (18%)
5	PEG	B	1202	-	6,6,6	0.13	0	5,5,5	0.16	0
7	1PE	C	1207	-	15,15,15	0.54	0	14,14,14	0.51	0
2	89F	B	1201	-	26,27,27	0.41	0	29,38,38	1.07	2 (6%)
4	CLR	A	1204	-	31,31,31	0.62	0	48,48,48	1.61	10 (20%)
3	OLA	B	1203	-	11,11,19	1.10	1 (9%)	11,11,19	0.89	0
3	OLA	A	1202	-	19,19,19	0.80	1 (5%)	19,19,19	1.00	0
6	NDS	C	1205	-	11,11,11	0.46	0	15,16,16	0.40	0
2	89F	C	1201	-	26,27,27	0.30	0	29,38,38	0.92	1 (3%)
3	OLA	C	1206	-	19,19,19	0.86	1 (5%)	19,19,19	0.81	1 (5%)
5	PEG	C	1203	-	6,6,6	0.13	0	5,5,5	0.13	0
5	PEG	C	1204	-	6,6,6	0.13	0	5,5,5	0.13	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
5	PEG	A	1205	-	-	2/4/4/4	-
2	89F	A	1201	-	-	2/6/28/28	0/3/4/4
3	OLA	A	1203	-	-	5/6/6/17	-
4	CLR	C	1202	-	-	2/10/68/68	0/4/4/4
5	PEG	B	1202	-	-	1/4/4/4	-
7	1PE	C	1207	-	-	6/13/13/13	-
2	89F	B	1201	-	-	5/6/28/28	0/3/4/4
4	CLR	A	1204	-	-	7/10/68/68	0/4/4/4
3	OLA	B	1203	-	-	4/9/9/17	-
3	OLA	A	1202	-	-	7/17/17/17	-
6	NDS	C	1205	-	-	0/11/11/11	-
2	89F	C	1201	-	-	1/6/28/28	0/3/4/4
3	OLA	C	1206	-	-	9/17/17/17	-
5	PEG	C	1203	-	-	2/4/4/4	-
5	PEG	C	1204	-	-	1/4/4/4	-

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PROTEIN DATA BANK

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1203	OLA	C10-C9	2.80	1.47	1.28
3	C	1206	OLA	C10-C9	2.75	1.47	1.31
3	A	1202	OLA	C10-C9	2.69	1.47	1.31

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1204	CLR	C17-C13-C14	3.80	104.57	100.07
4	C	1202	CLR	C17-C13-C14	3.53	104.26	100.07
4	C	1202	CLR	C13-C14-C8	-3.46	109.26	114.38
4	A	1204	CLR	C13-C14-C8	-3.29	109.50	114.38
4	A	1204	CLR	C8-C7-C6	-3.20	108.13	112.73
3	A	1203	OLA	C3-C2-C1	-3.14	106.55	114.47
4	A	1204	CLR	C19-C10-C9	-3.12	107.96	111.68
4	A	1204	CLR	C13-C17-C20	-3.10	114.64	119.49
2	B	1201	89F	C3-C1-S2	2.93	124.87	118.58
4	C	1202	CLR	C8-C7-C6	-2.63	108.96	112.73
4	A	1204	CLR	C18-C13-C17	-2.62	106.82	111.71
3	C	1206	OLA	C3-C2-C1	-2.61	107.90	114.47
4	C	1202	CLR	C9-C10-C5	2.52	113.60	109.65
4	A	1204	CLR	C12-C11-C9	2.46	117.38	113.11
4	A	1204	CLR	C10-C9-C8	-2.45	109.06	112.73
4	C	1202	CLR	C11-C9-C10	-2.45	109.86	113.08
2	B	1201	89F	C17-N1-C6	-2.40	108.99	113.40
4	C	1202	CLR	C14-C8-C9	-2.37	105.92	109.09
4	C	1202	CLR	C18-C13-C14	-2.29	107.44	111.71
4	A	1204	CLR	C2-C3-C4	-2.23	107.24	110.31
2	C	1201	89F	C13-C7-S2	-2.16	113.94	118.58
4	C	1202	CLR	C10-C9-C8	2.09	115.87	112.73
2	A	1201	89F	C13-C7-S2	-2.08	114.10	118.58
4	C	1202	CLR	C21-C20-C17	2.03	116.03	112.92
4	A	1204	CLR	C3-C4-C5	-2.02	108.60	112.03

There are no chirality outliers.

All (54) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	1201	89F	C2-C6-N1-C17
2	B	1201	89F	C20-C6-N1-C14
7	C	1207	1PE	C24-C14-OH5-C25
3	C	1206	OLA	C11-C10-C9-C8

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Mol	Chain	Res	Type	Atoms
4	A	1204	CLR	C17-C20-C22-C23
3	B	1203	OLA	C3-C4-C5-C6
4	A	1204	CLR	C21-C20-C22-C23
3	A	1202	OLA	C1-C2-C3-C4
3	B	1203	OLA	C4-C5-C6-C7
3	C	1206	OLA	C2-C3-C4-C5
3	A	1203	OLA	C4-C5-C6-C7
3	A	1203	OLA	C3-C4-C5-C6
4	C	1202	CLR	C23-C24-C25-C27
3	C	1206	OLA	C6-C7-C8-C9
7	C	1207	1PE	OH6-C15-C25-OH5
4	A	1204	CLR	C13-C17-C20-C22
3	A	1203	OLA	C1-C2-C3-C4
3	C	1206	OLA	C9-C10-C11-C12
3	C	1206	OLA	C15-C16-C17-C18
5	A	1205	PEG	O1-C1-C2-O2
4	A	1204	CLR	C16-C17-C20-C22
3	A	1202	OLA	C3-C4-C5-C6
4	C	1202	CLR	C23-C24-C25-C26
7	C	1207	1PE	OH5-C14-C24-OH4
7	C	1207	1PE	C25-C15-OH6-C26
5	B	1202	PEG	C4-C3-O2-C2
3	B	1203	OLA	C7-C8-C9-C10
2	A	1201	89F	C4-C12-S1-C8
3	A	1202	OLA	C2-C3-C4-C5
5	C	1203	PEG	C4-C3-O2-C2
3	B	1203	OLA	C5-C6-C7-C8
2	B	1201	89F	C20-C6-N1-C17
4	A	1204	CLR	C13-C17-C20-C21
5	C	1203	PEG	O1-C1-C2-O2
5	C	1204	PEG	C1-C2-O2-C3
3	A	1202	OLA	C11-C12-C13-C14
3	A	1202	OLA	C7-C8-C9-C10
7	C	1207	1PE	C16-C26-OH6-C15
2	A	1201	89F	C9-C12-S1-C8
3	A	1202	OLA	C11-C10-C9-C8
4	A	1204	CLR	C16-C17-C20-C21
3	C	1206	OLA	C13-C14-C15-C16
3	A	1203	OLA	O2-C1-C2-C3
2	B	1201	89F	C4-C12-S1-C8
3	A	1202	OLA	C9-C10-C11-C12
3	C	1206	OLA	O2-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
3	A	1203	OLA	O1-C1-C2-C3
7	C	1207	1PE	C12-C22-OH3-C23
3	C	1206	OLA	O1-C1-C2-C3
3	C	1206	OLA	C7-C8-C9-C10
2	C	1201	89F	C20-C6-N1-C17
4	A	1204	CLR	C22-C23-C24-C25
5	A	1205	PEG	C4-C3-O2-C2
2	B	1201	89F	C9-C12-S1-C8

There are no ring outliers.

9 monomers are involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1201	89F	1	0
3	A	1203	OLA	2	0
4	C	1202	CLR	2	0
7	C	1207	1PE	3	0
4	A	1204	CLR	3	0
3	B	1203	OLA	1	0
3	A	1202	OLA	5	0
6	C	1205	NDS	1	0
3	C	1206	OLA	2	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 89F A 1201

Bond lengths

Bond angles

Torsions

Rings

Ligand OLA A 1203

Bond lengths

Bond angles

Torsions

Rings

Ligand CLR C 1202

Bond lengths

Bond angles

Torsions

Rings

Ligand 89F B 1201

Bond lengths

Bond angles

Torsions

Rings

Ligand CLR A 1204

Bond lengths

Bond angles

Torsions

Rings

Ligand OLA B 1203

Bond lengths

Bond angles

Torsions

Rings

Ligand OLA A 1202

Bond lengths

Bond angles

Torsions

Rings

Ligand 89F C 1201

Bond lengths

Bond angles

Torsions

Rings

Ligand OLA C 1206

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

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	378/448 (84%)	-0.44	5 (1%)	77	76	16, 39, 89, 112	0
1	B	358/448 (79%)	-0.33	4 (1%)	80	79	23, 56, 98, 121	0
1	C	375/448 (83%)	-0.45	2 (0%)	91	90	17, 42, 76, 104	0
All	All	1111/1344 (82%)	-0.41	11 (0%)	82	81	16, 46, 90, 121	0

All (11) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	178	GLN	3.7
1	A	1029	ALA	3.2
1	C	1020	ALA	2.9
1	B	1025	GLN	2.7
1	A	1021	ASP	2.5
1	B	1029	ALA	2.5
1	B	353	CYS	2.4
1	A	181	ILE	2.4
1	A	1045	PRO	2.3
1	A	184	SER	2.1
1	B	1024	ALA	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
4	CLR	C	1202	28/28	0.83	0.42	66,91,105,105	0
5	PEG	C	1203	7/7	0.84	0.22	44,56,64,76	0
6	NDS	C	1205	12/12	0.84	0.23	51,61,82,90	0
3	OLA	A	1203	9/20	0.85	0.21	41,50,69,69	0
4	CLR	A	1204	28/28	0.86	0.39	64,74,83,84	0
3	OLA	B	1203	12/20	0.86	0.26	38,47,61,61	0
7	1PE	C	1207	16/16	0.89	0.24	37,47,73,80	0
3	OLA	C	1206	20/20	0.90	0.25	29,36,48,50	0
3	OLA	A	1202	20/20	0.91	0.27	25,36,59,60	0
5	PEG	B	1202	7/7	0.92	0.18	34,43,50,52	0
2	89F	B	1201	24/24	0.92	0.22	34,46,52,55	0
5	PEG	A	1205	7/7	0.93	0.17	25,30,35,36	0
5	PEG	C	1204	7/7	0.95	0.27	52,52,56,57	0
2	89F	A	1201	24/24	0.96	0.16	25,28,31,36	0
2	89F	C	1201	24/24	0.97	0.16	16,21,27,30	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 CLR C 1202:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
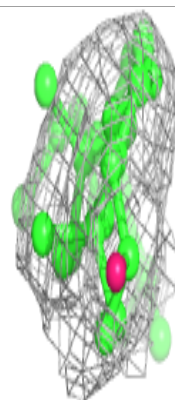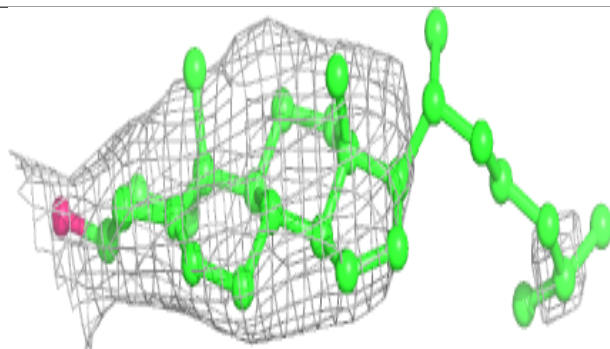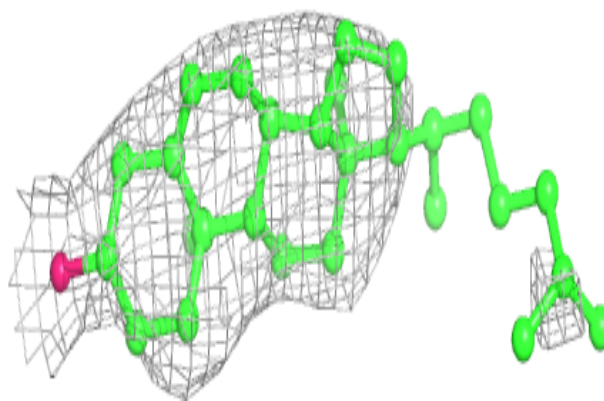
Electron density around OLA A 1203:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
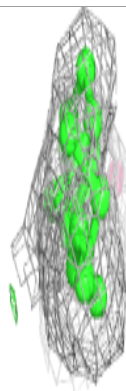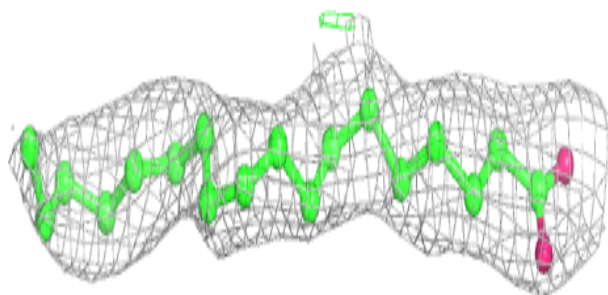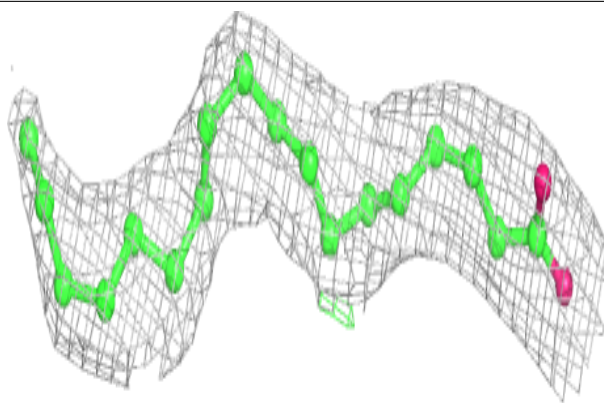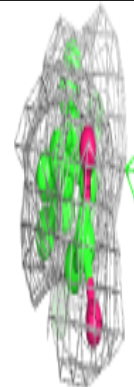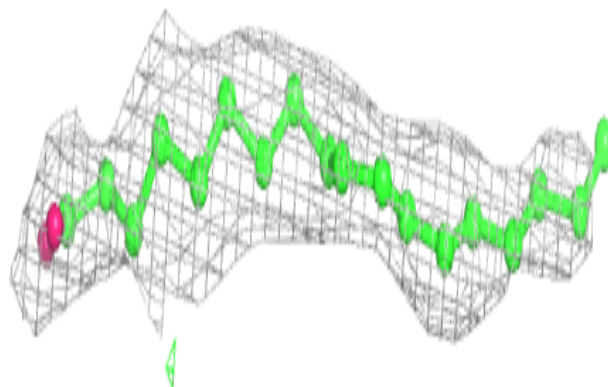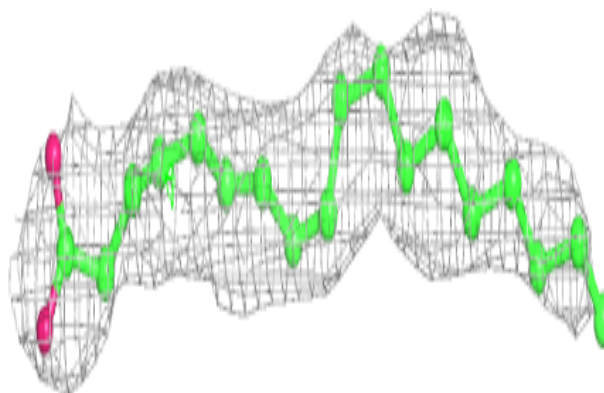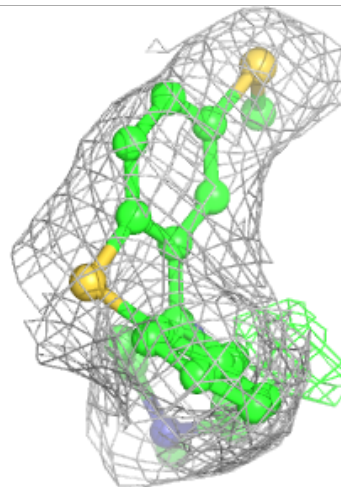and green (positive)
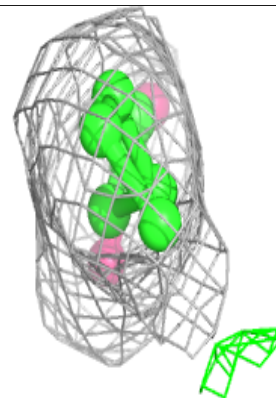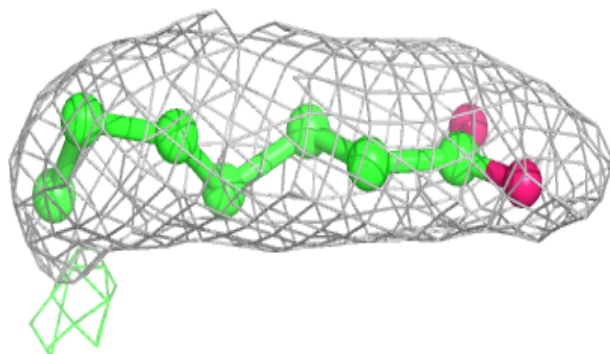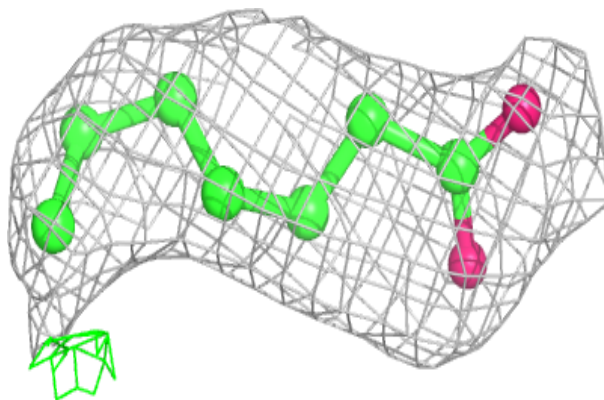
Electron density around CLR A 1204:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
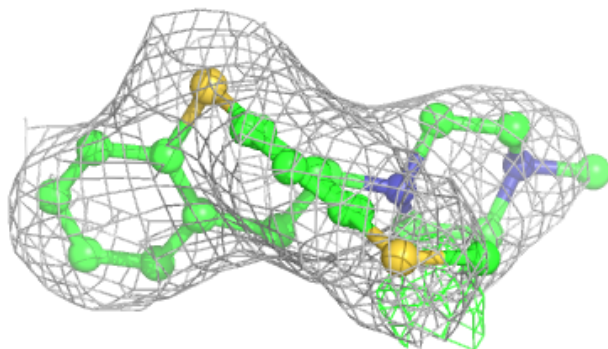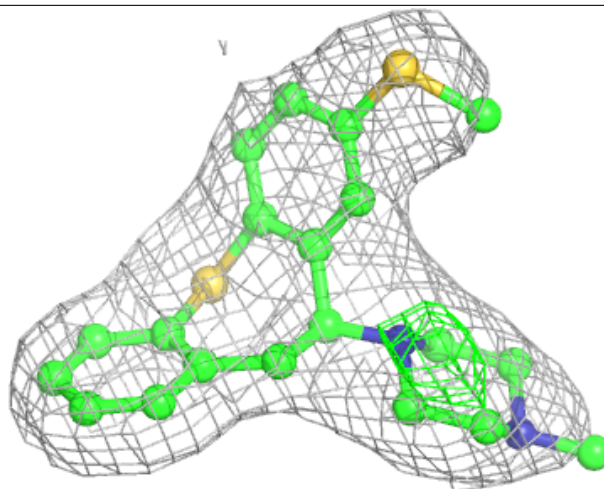and green (positive)
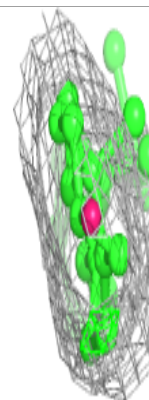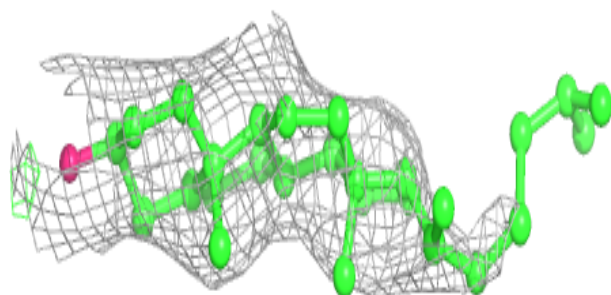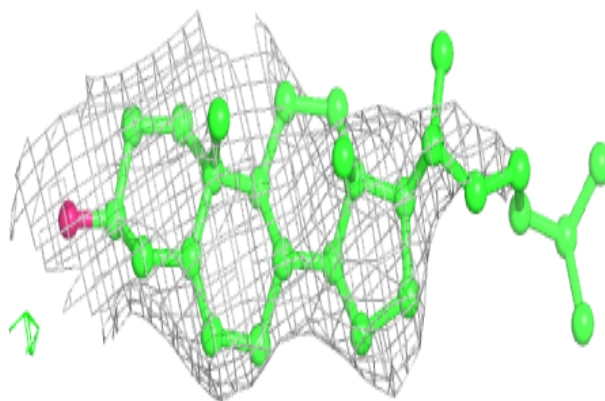
Electron density around OLA B 1203:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
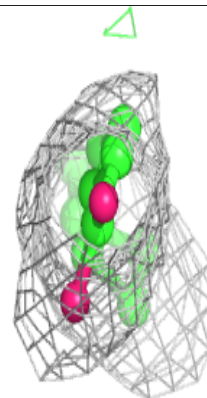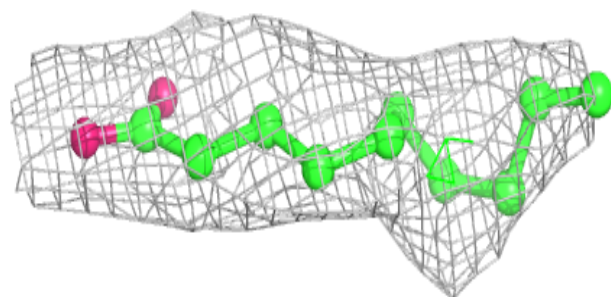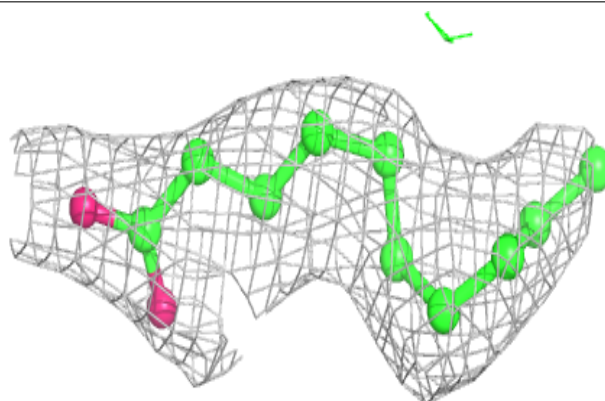
Electron density around OLA C 1206:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
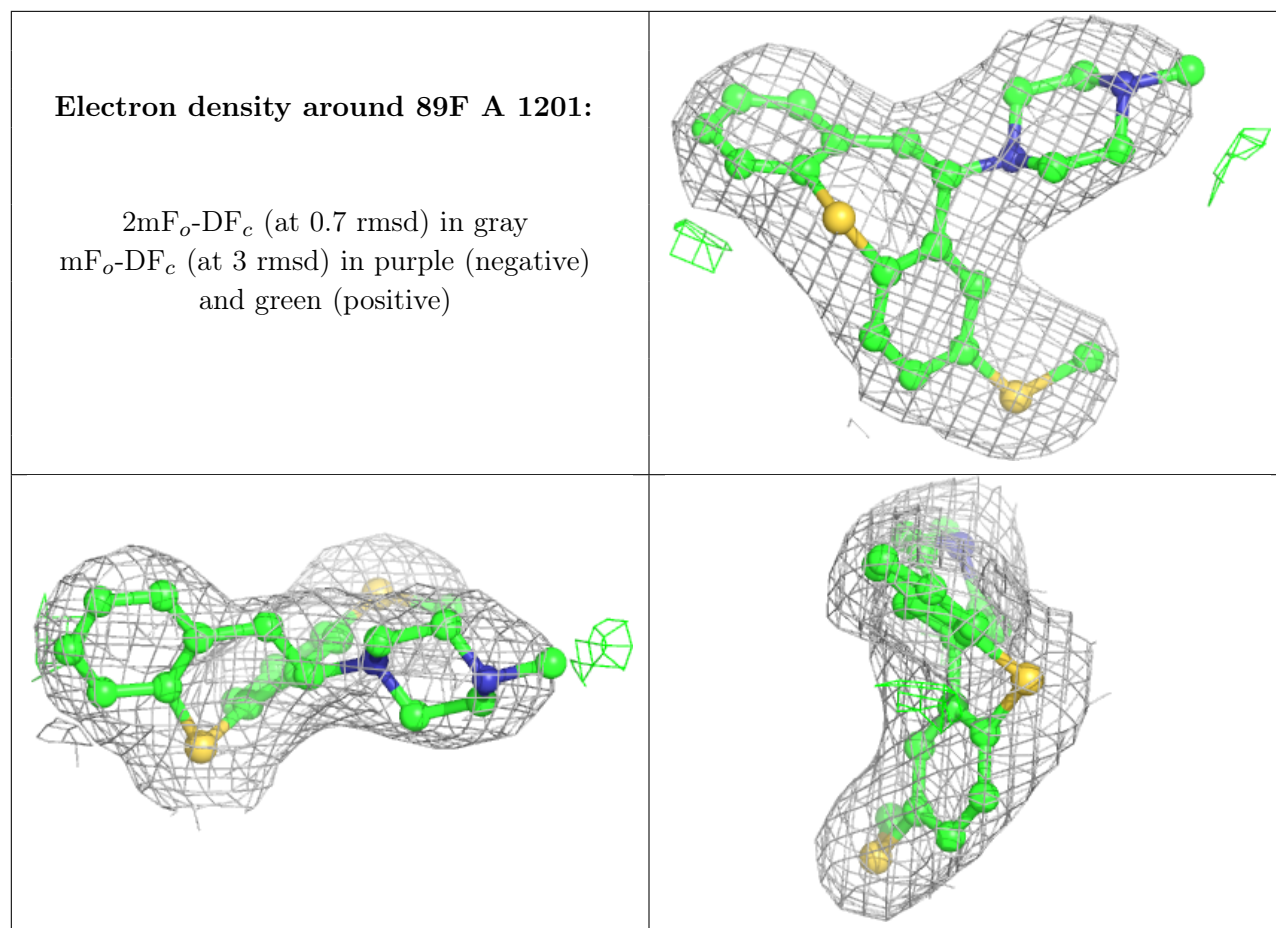
Electron density around OLA A 1202:

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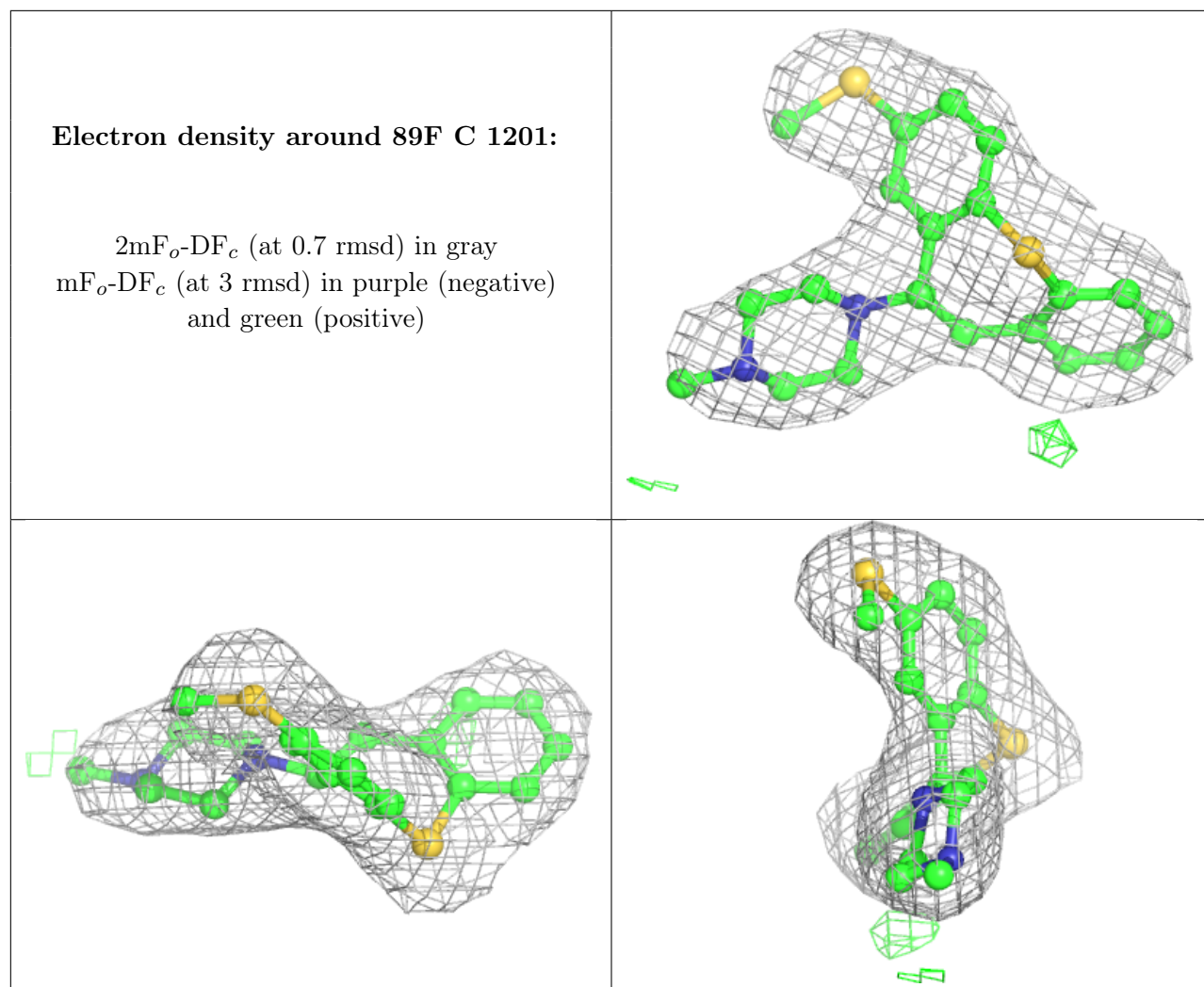$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around 89F B 1201:

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

Electron density around 89F A 1201:

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

Electron density around 89F C 1201:

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