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

wwPDB X-ray Structure Validation Summary Report ⓘ

Sep 16, 2023 – 11:27 PM EDT

PDB ID	:	4X2T
Title	:	X-ray crystal structure of the orally available aminopeptidase inhibitor, Tosedostat, bound to the M17 Leucyl Aminopeptidase from P. falciparum
Authors	:	Drinkwater, N.; McGowan, S.
Deposited on	:	2014-11-27
Resolution	:	2.73 Å(reported)

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

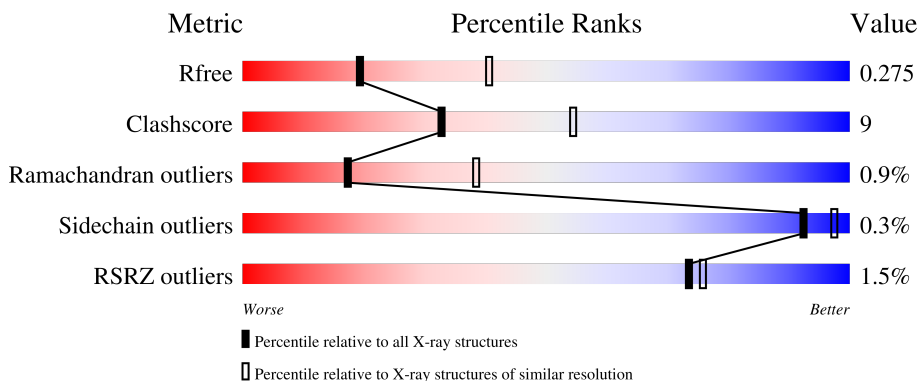|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & 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 2.73 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		0.275
Clashscore		9
Ramachandran outliers		0.9%
Sidechain outliers		0.3%
RSRZ outliers		1.5%

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	3359 (2.74-2.70)
Clashscore	141614	3686 (2.74-2.70)
Ramachandran outliers	138981	3622 (2.74-2.70)
Sidechain outliers	138945	3623 (2.74-2.70)
RSRZ outliers	127900	3276 (2.74-2.70)

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	519	% 87% 12% •
1	B	519	3% 81% 14% • • •
1	C	519	83% 14% •
1	D	519	% 83% 15% •
1	E	519	83% 14% • •

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Mol	Chain	Length	Quality of chain
1	F	519	3% ... 80% ... 16%
1	G	519	2% ... 88% ... 10%
1	H	519	5% ... 81% ... 15%
1	I	519	2% ... 83% ... 15%
1	J	519	82% ... 16%
1	K	519	82% ... 16%
1	L	519	.% ... 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	CO3	A	704	-	-	X	-
4	CO3	G	704	-	-	X	-
4	CO3	J	704	-	-	X	-
4	CO3	K	704	-	-	X	-
6	1PE	C	706	-	-	X	-

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 48055 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 M17 leucyl aminopeptidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	516	Total 3928	C 2527	N 628	O 754	S 19	0	1	0
1	B	510	Total 3837	C 2475	N 619	O 724	S 19	0	0	0
1	C	517	Total 3942	C 2537	N 636	O 750	S 19	0	0	0
1	D	511	Total 3899	C 2511	N 628	O 741	S 19	0	0	0
1	E	509	Total 3884	C 2500	N 622	O 743	S 19	0	0	0
1	F	509	Total 3762	C 2421	N 606	O 716	S 19	0	0	0
1	G	519	Total 3979	C 2554	N 637	O 768	S 20	0	0	0
1	H	510	Total 3855	C 2480	N 621	O 735	S 19	0	0	0
1	I	515	Total 3912	C 2520	N 631	O 742	S 19	0	0	0
1	J	511	Total 3875	C 2499	N 624	O 733	S 19	0	0	0
1	K	509	Total 3878	C 2496	N 621	O 742	S 19	0	0	0
1	L	508	Total 3806	C 2447	N 612	O 728	S 19	0	0	0

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	152	GLN	ASN	engineered mutation	UNP Q8IL11
A	515	GLN	ASN	engineered mutation	UNP Q8IL11
A	546	GLN	ASN	engineered mutation	UNP Q8IL11
B	152	GLN	ASN	engineered mutation	UNP Q8IL11
B	515	GLN	ASN	engineered mutation	UNP Q8IL11

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Chain	Residue	Modelled	Actual	Comment	Reference
B	546	GLN	ASN	engineered mutation	UNP Q8IL11
C	152	GLN	ASN	engineered mutation	UNP Q8IL11
C	515	GLN	ASN	engineered mutation	UNP Q8IL11
C	546	GLN	ASN	engineered mutation	UNP Q8IL11
D	152	GLN	ASN	engineered mutation	UNP Q8IL11
D	515	GLN	ASN	engineered mutation	UNP Q8IL11
D	546	GLN	ASN	engineered mutation	UNP Q8IL11
E	152	GLN	ASN	engineered mutation	UNP Q8IL11
E	515	GLN	ASN	engineered mutation	UNP Q8IL11
E	546	GLN	ASN	engineered mutation	UNP Q8IL11
F	152	GLN	ASN	engineered mutation	UNP Q8IL11
F	515	GLN	ASN	engineered mutation	UNP Q8IL11
F	546	GLN	ASN	engineered mutation	UNP Q8IL11
G	152	GLN	ASN	engineered mutation	UNP Q8IL11
G	515	GLN	ASN	engineered mutation	UNP Q8IL11
G	546	GLN	ASN	engineered mutation	UNP Q8IL11
H	152	GLN	ASN	engineered mutation	UNP Q8IL11
H	515	GLN	ASN	engineered mutation	UNP Q8IL11
H	546	GLN	ASN	engineered mutation	UNP Q8IL11
I	152	GLN	ASN	engineered mutation	UNP Q8IL11
I	515	GLN	ASN	engineered mutation	UNP Q8IL11
I	546	GLN	ASN	engineered mutation	UNP Q8IL11
J	152	GLN	ASN	engineered mutation	UNP Q8IL11
J	515	GLN	ASN	engineered mutation	UNP Q8IL11
J	546	GLN	ASN	engineered mutation	UNP Q8IL11
K	152	GLN	ASN	engineered mutation	UNP Q8IL11
K	515	GLN	ASN	engineered mutation	UNP Q8IL11
K	546	GLN	ASN	engineered mutation	UNP Q8IL11
L	152	GLN	ASN	engineered mutation	UNP Q8IL11
L	515	GLN	ASN	engineered mutation	UNP Q8IL11
L	546	GLN	ASN	engineered mutation	UNP Q8IL11

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	2	Total 2	Zn 2	0	0
2	B	2	Total 2	Zn 2	0	0
2	C	2	Total 2	Zn 2	0	0
2	D	2	Total 2	Zn 2	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	E	2	Total 2	Zn 2	0	0
2	F	2	Total 2	Zn 2	0	0
2	G	2	Total 2	Zn 2	0	0
2	H	2	Total 2	Zn 2	0	0
2	I	2	Total 2	Zn 2	0	0
2	J	2	Total 2	Zn 2	0	0
2	K	2	Total 2	Zn 2	0	0
2	L	2	Total 2	Zn 2	0	0

- Molecule 3 is (2S)-({(2R)-2-[(1S)-1-hydroxy-2-(hydroxyamino)-2-oxoethyl]-4-methylpentan oyl}amino)(phenyl)ethanoic acid (three-letter code: TOD) (formula: $C_{16}H_{22}N_2O_6$).
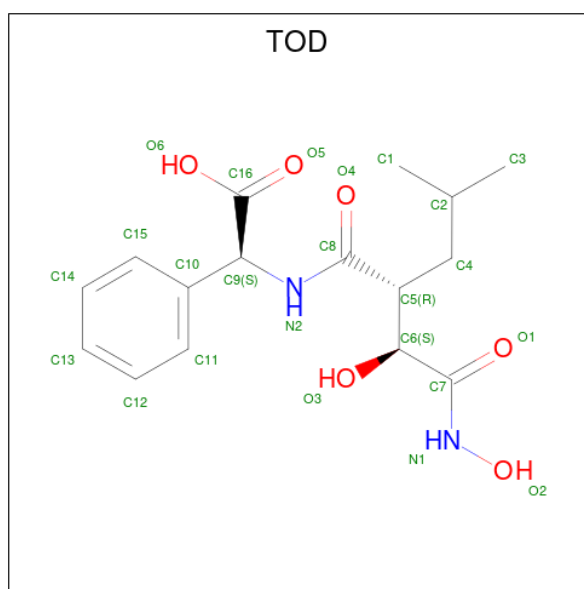
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 24	C 16	N 2	O 6	0	0
3	B	1	Total 24	C 16	N 2	O 6	0	0
3	C	1	Total 17	C 11	N 2	O 4	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	E	1	Total 15	C 9	N 2	O 4	0	0
3	F	1	Total 24	C 16	N 2	O 6	0	0
3	G	1	Total 22	C 16	N 2	O 4	0	0
3	H	1	Total 14	C 8	N 2	O 4	0	0
3	I	1	Total 24	C 16	N 2	O 6	0	0
3	J	1	Total 22	C 16	N 2	O 4	0	0
3	K	1	Total 22	C 16	N 2	O 4	0	0
3	L	1	Total 24	C 16	N 2	O 6	0	0

- Molecule 4 is CARBONATE ION (three-letter code: CO3) (formula: CO_3).
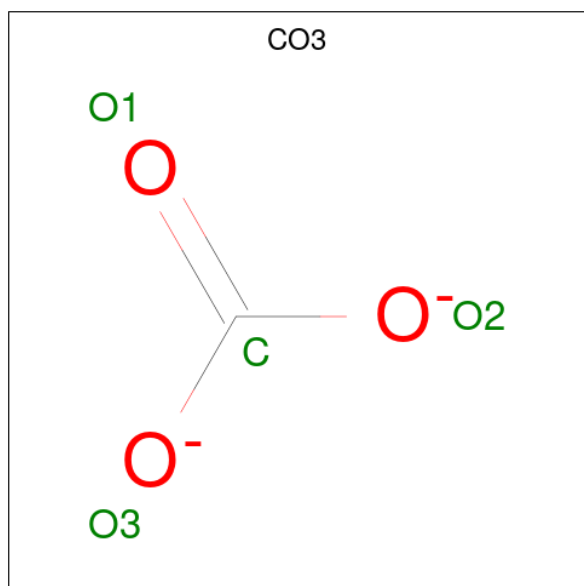
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 4	C 1	O 3	0	0
4	B	1	Total 4	C 1	O 3	0	0
4	C	1	Total 4	C 1	O 3	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	D	1	Total 4	C 1	O 3		0	0
4	E	1	Total 4	C 1	O 3		0	0
4	F	1	Total 4	C 1	O 3		0	0
4	G	1	Total 4	C 1	O 3		0	0
4	H	1	Total 4	C 1	O 3		0	0
4	I	1	Total 4	C 1	O 3		0	0
4	J	1	Total 4	C 1	O 3		0	0
4	K	1	Total 4	C 1	O 3		0	0
4	L	1	Total 4	C 1	O 3		0	0

- Molecule 5 is SULFATE ION (three-letter code: SO4) (formula: O_4S).

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

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total O S 5 4 1			0	0
5	B	1	Total O S 5 4 1			0	0
5	C	1	Total O S 5 4 1			0	0
5	D	1	Total O S 5 4 1			0	0
5	E	1	Total O S 5 4 1			0	0
5	E	1	Total O S 5 4 1			0	0
5	G	1	Total O S 5 4 1			0	0
5	G	1	Total O S 5 4 1			0	0
5	I	1	Total O S 5 4 1			0	0
5	L	1	Total O S 5 4 1			0	0
5	L	1	Total O S 5 4 1			0	0

- Molecule 6 is PENTAETHYLENE GLYCOL (three-letter code: 1PE) (formula: $C_{10}H_{22}O_6$).
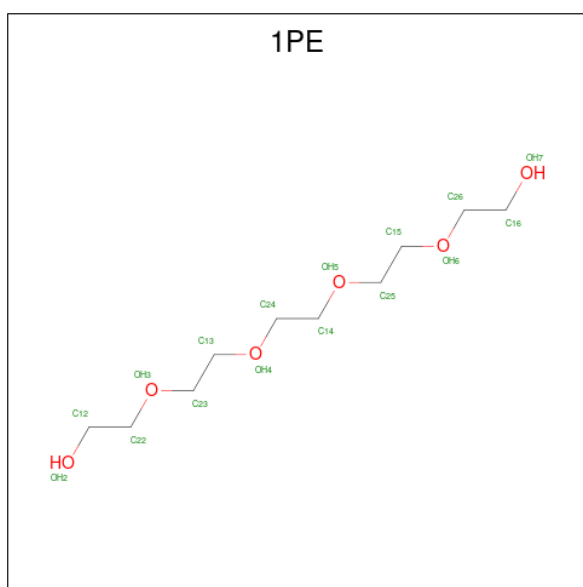
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total 9	C 6	O 3	0	0
6	B	1	Total 7	C 5	O 2	0	0
6	C	1	Total 13	C 9	O 4	0	0
6	C	1	Total 9	C 6	O 3	0	0
6	D	1	Total 10	C 7	O 3	0	0
6	D	1	Total 10	C 7	O 3	0	0
6	E	1	Total 12	C 8	O 4	0	0
6	G	1	Total 9	C 6	O 3	0	0
6	G	1	Total 9	C 6	O 3	0	0
6	H	1	Total 10	C 7	O 3	0	0

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	102	Total 102	O 102	0	0
7	B	74	Total 74	O 74	0	0
7	C	70	Total 70	O 70	0	0
7	D	80	Total 80	O 80	0	0
7	E	113	Total 113	O 113	0	0
7	F	88	Total 88	O 88	0	0
7	G	93	Total 93	O 93	0	0
7	H	74	Total 74	O 74	0	0
7	I	91	Total 91	O 91	0	0
7	J	86	Total 86	O 86	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	K	91	Total 91	O 91	0	0
7	L	69	Total 69	O 69	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.
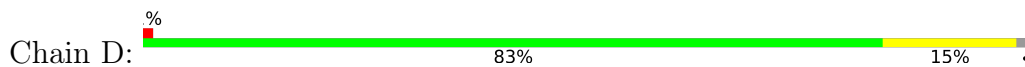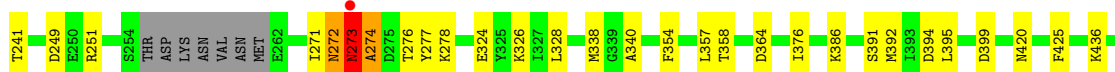
- Molecule 1: M17 leucyl aminopeptidase
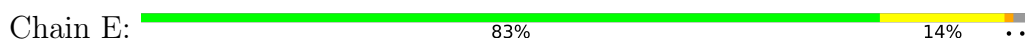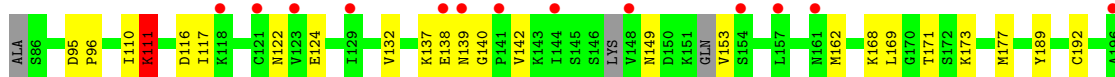

Chain A:
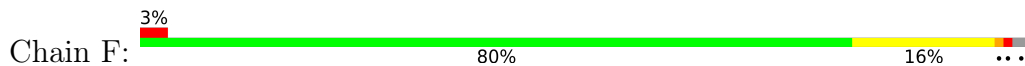
- Molecule 1: M17 leucyl aminopeptidase

Chain B:

- Molecule 1: M17 leucyl aminopeptidase

Chain C:

• Molecule 1: M17 leucyl aminopeptidase

Chain D:
83%   15%

• Molecule 1: M17 leucyl aminopeptidase

Chain E:
83%   14%

• Molecule 1: M17 leucyl aminopeptidase

Chain F:
80%   16%

• Molecule 1: M17 leucyl aminopeptidase

Chain G:

• Molecule 1: M17 leucyl aminopeptidase

Chain H:

• Molecule 1: M17 leucyl aminopeptidase

Chain I:

• Molecule 1: M17 leucyl aminopeptidase

Chain J:
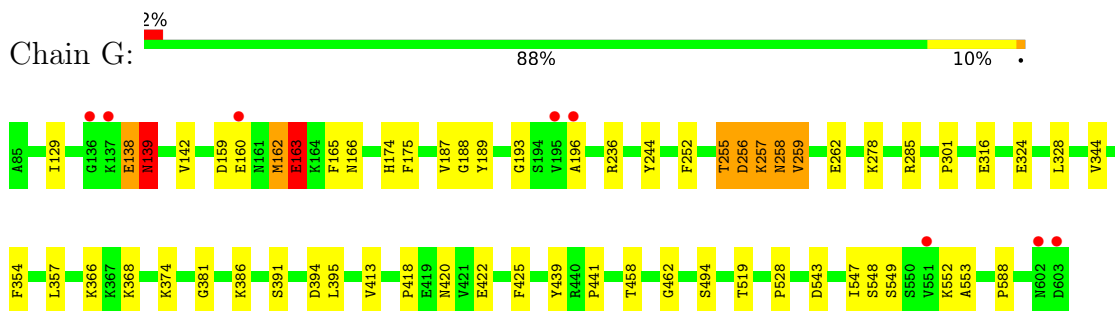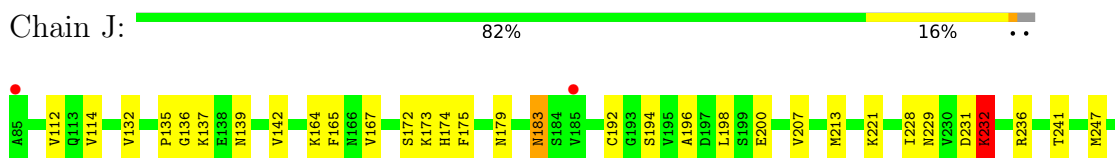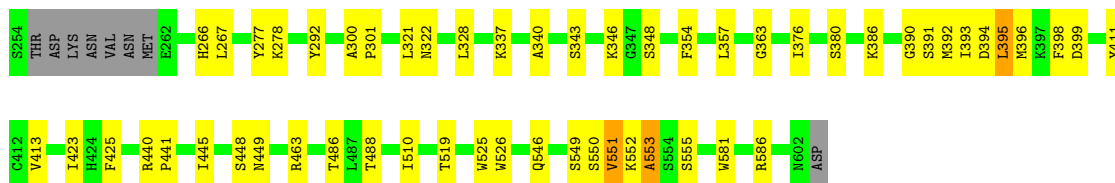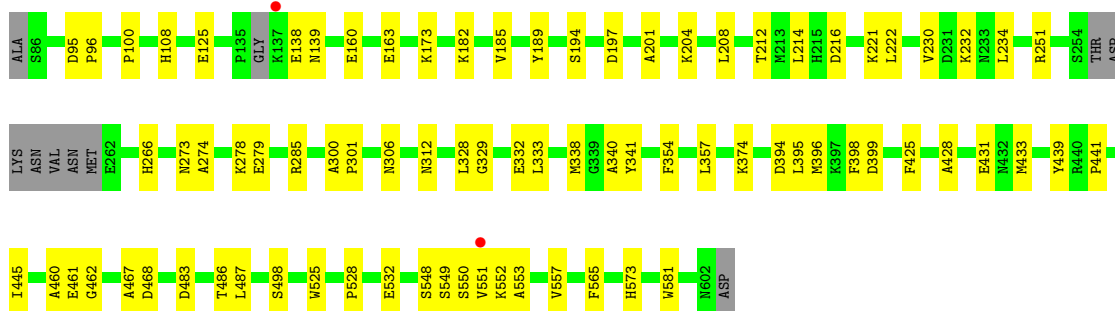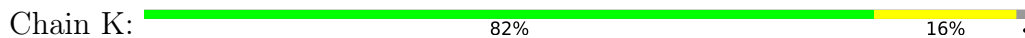
S254 THR ASP LYS ASN VAL ASN MET E262 H266 L267 Y277 K278 Y292 A300 P301 L321 N322 L328 K337 A340 S343 K346 G347 S348 F354 L357 G363 I376 S380 K386 G390 S391 M392 I393 D394 L395 M396 K397 F398 D399 Y411

C412 V413 I423 H424 F425 R440 P441 I445 S448 N449 R463 T486 L487 T488 I510 T519 W525 W526 Q546 S549 S550 V551 K552 A553 S554 S555 W581 R586 N602 ASP

● Molecule 1: M17 leucyl aminopeptidase

Chain K:

82%   16%   •

ALA S86 D95 P96 P100 H108 E125 P135 GLY K137 E138 N139 E160 E163 K173 K182 V185 Y189 S194 D197 A201 K204 L208 T212 M213 L214 H215 D216 K221 L222 V230 D231 K232 N233 L234 R251 S254 THR ASP

LYS ASN VAL ASN MET E262 H266 N273 A274 K278 E279 R285 A300 P301 N306 N312 L328 G329 E332 L333 M338 G339 A340 Y341 F354 L357 K374 D394 L395 M396 K397 F398 D399 F425 A428 E431 N432 M433 Y439 R440 P441

I445 A460 E461 G462 A467 D468 D483 T486 L487 S498 W525 P528 E532 S548 S549 S550 V551 K552 A553 V557 F565 H573 W581 N602 ASP

● Molecule 1: M17 leucyl aminopeptidase

Chain L:

%

82%   15%   • •

ALA S86 V112 Q113 V114 C121 E124 L127 T128 I129 V132 N133 M134 P135 GLY LYS GLU N139 G140 P141 V142 S145 V148 K151 S154 E155 F156 L157 K158 D159 V167 F175 Y176 V195 A196 E200 V207 L208 S209 L210 M213 L214 N217 K218

L219 L222 R236 F237 T241 S254 THR ASP LYS ASN VAL ASN MET E262 L267 N272 N273 V286 L328 M338 G339 A340 S343 K346 Y350 P351 F354 L357 S361 K362 K366 V372 F378 K386 S391 L395 M396 K397 F398

D399 C403 L407 G414 T415 L416 K417 P418 F425 L426 K436 N437 P441 I445 D468 L476 D483 T486 G489 S494 G504 I510 T519 S520 N521 W525 S549 S550 V551 K552 A553 S554 L601 N602 D603

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	173.72Å 176.70Å 223.98Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.75 – 2.73 48.75 – 2.73	Depositor EDS
% Data completeness (in resolution range)	99.0 (48.75-2.73) 94.1 (48.75-2.73)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.09 (at 2.73Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.4_1496)	Depositor
R, R_{free}	0.220 , 0.274 0.223 , 0.275	Depositor DCC
R_{free} test set	9021 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å^2)	24.6	Xtriage
Anisotropy	0.500	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 41.5	EDS
L-test for twinning[2]	$< |L| > = 0.46, < L^2 > = 0.29$	Xtriage
Estimated twinning fraction	0.000 for k,h,-l	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	48055	wwPDB-VP
Average B, all atoms (Å^2)	31.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 30.77 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.2380e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 1PE, CO3, SO4, ZN, TOD

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	0.38	2/4007 (0.0%)	0.58	3/5440 (0.1%)
1	B	0.57	10/3913 (0.3%)	0.70	15/5316 (0.3%)
1	C	0.43	5/4019 (0.1%)	0.70	8/5453 (0.1%)
1	D	0.32	0/3976	0.58	2/5395 (0.0%)
1	E	0.32	0/3960	0.59	9/5375 (0.2%)
1	F	0.39	3/3835 (0.1%)	0.65	10/5222 (0.2%)
1	G	0.35	1/4057 (0.0%)	0.65	9/5505 (0.2%)
1	H	0.38	1/3931 (0.0%)	0.62	2/5340 (0.0%)
1	I	0.38	1/3989 (0.0%)	0.64	6/5414 (0.1%)
1	J	0.38	0/3952	0.63	3/5366 (0.1%)
1	K	0.42	2/3954 (0.1%)	0.55	1/5367 (0.0%)
1	L	0.41	1/3881 (0.0%)	0.63	3/5282 (0.1%)
All	All	0.40	26/47474 (0.1%)	0.63	71/64475 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	9
1	C	0	5
1	D	0	2
1	E	0	2
1	F	0	6
1	G	0	3
1	H	0	3
1	I	0	4
1	J	0	3
1	K	0	1
1	L	0	5

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Mol	Chain	#Chirality outliers	#Planarity outliers
All	All	0	43

The worst 5 of 26 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	439	TYR	CE2-CZ	-13.71	1.20	1.38
1	B	439	TYR	CG-CD1	-13.27	1.21	1.39
1	L	418	PRO	N-CD	11.39	1.63	1.47
1	B	549	SER	CB-OG	-10.96	1.27	1.42
1	F	488	THR	C-O	-10.84	1.02	1.23

The worst 5 of 71 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	124	GLU	O-C-N	-26.02	81.06	122.70
1	C	123	VAL	C-N-CA	-14.52	85.40	121.70
1	G	139	ASN	CA-C-N	-13.54	89.11	116.20
1	B	151	LYS	C-N-CA	-11.96	91.81	121.70
1	G	163	GLU	CA-C-N	-9.24	96.86	117.20

There are no chirality outliers.

5 of 43 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	145	SER	Mainchain
1	B	152	GLN	Mainchain
1	B	164	LYS	Mainchain
1	B	181	ASN	Mainchain
1	B	199	SER	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	3928	0	3824	47	1
1	B	3837	0	3716	63	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	3942	0	3864	90	0
1	D	3899	0	3817	65	0
1	E	3884	0	3789	64	0
1	F	3762	0	3570	76	0
1	G	3979	0	3890	46	1
1	H	3855	0	3732	72	0
1	I	3912	0	3831	86	0
1	J	3875	0	3773	69	1
1	K	3878	0	3776	66	1
1	L	3806	0	3638	80	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
2	C	2	0	0	0	0
2	D	2	0	0	0	0
2	E	2	0	0	0	0
2	F	2	0	0	0	0
2	G	2	0	0	0	0
2	H	2	0	0	0	0
2	I	2	0	0	0	0
2	J	2	0	0	0	0
2	K	2	0	0	0	0
2	L	2	0	0	0	0
3	A	24	0	20	0	0
3	B	24	0	21	4	0
3	C	17	0	15	0	0
3	E	15	0	14	3	0
3	F	24	0	20	1	0
3	G	22	0	20	0	0
3	H	14	0	13	0	0
3	I	24	0	21	2	0
3	J	22	0	20	2	0
3	K	22	0	20	3	0
3	L	24	0	20	1	0
4	A	4	0	0	3	0
4	B	4	0	0	0	0
4	C	4	0	0	0	0
4	D	4	0	0	1	0
4	E	4	0	0	0	0
4	F	4	0	0	0	0
4	G	4	0	0	2	0
4	H	4	0	0	1	0
4	I	4	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	J	4	0	0	3	0
4	K	4	0	0	3	0
4	L	4	0	0	0	0
5	A	15	0	0	0	0
5	B	5	0	0	0	0
5	C	5	0	0	1	0
5	D	5	0	0	1	0
5	E	10	0	0	0	0
5	G	10	0	0	1	0
5	I	5	0	0	0	0
5	L	10	0	0	1	0
6	A	9	0	10	1	0
6	B	7	0	6	0	0
6	C	22	0	24	12	0
6	D	20	0	20	5	0
6	E	12	0	14	0	0
6	G	18	0	18	4	0
6	H	10	0	10	1	0
7	A	102	0	0	5	0
7	B	74	0	0	4	0
7	C	70	0	0	5	0
7	D	80	0	0	7	0
7	E	113	0	0	6	0
7	F	88	0	0	11	0
7	G	93	0	0	6	0
7	H	74	0	0	5	0
7	I	91	0	0	6	0
7	J	86	0	0	15	0
7	K	91	0	0	4	0
7	L	69	0	0	4	0
All	All	48055	0	45526	803	2

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 9.

The worst 5 of 803 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)
7:G:885:HOH:O	1:L:551:VAL:HG22	1.25	1.35
1:C:331:LYS:CG	1:C:334:GLU:OE1	1.75	1.34
1:C:331:LYS:HG3	1:C:334:GLU:OE1	1.16	1.29

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:278:LYS:HG3	7:J:865:HOH:O	1.29	1.27
1:D:320:LYS:NZ	6:D:706:1PE:H142	1.48	1.25

All (2) 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:181:ASN:OD1	1:G:278:LYS:NZ[2_564]	1.65	0.55
1:J:229:ASN:ND2	1:K:273:ASN:ND2[4_456]	2.12	0.08

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	511/519 (98%)	492 (96%)	16 (3%)	3 (1%)	25	48
1	B	504/519 (97%)	479 (95%)	19 (4%)	6 (1%)	13	30
1	C	513/519 (99%)	499 (97%)	12 (2%)	2 (0%)	34	58
1	D	507/519 (98%)	490 (97%)	11 (2%)	6 (1%)	13	30
1	E	503/519 (97%)	489 (97%)	10 (2%)	4 (1%)	19	41
1	F	501/519 (96%)	478 (95%)	19 (4%)	4 (1%)	19	41
1	G	517/519 (100%)	491 (95%)	19 (4%)	7 (1%)	11	26
1	H	504/519 (97%)	480 (95%)	18 (4%)	6 (1%)	13	30
1	I	511/519 (98%)	489 (96%)	17 (3%)	5 (1%)	15	35
1	J	507/519 (98%)	486 (96%)	13 (3%)	8 (2%)	9	23
1	K	503/519 (97%)	486 (97%)	15 (3%)	2 (0%)	34	58
1	L	502/519 (97%)	484 (96%)	15 (3%)	3 (1%)	25	48
All	All	6083/6228 (98%)	5843 (96%)	184 (3%)	56 (1%)	17	38

5 of 56 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	124	GLU
1	A	139	ASN
1	B	196	ALA
1	B	199	SER
1	C	196	ALA

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	414/447 (93%)	414 (100%)	0	100	100
1	B	396/447 (89%)	394 (100%)	2 (0%)	88	95
1	C	417/447 (93%)	416 (100%)	1 (0%)	93	98
1	D	411/447 (92%)	410 (100%)	1 (0%)	93	98
1	E	411/447 (92%)	411 (100%)	0	100	100
1	F	379/447 (85%)	377 (100%)	2 (0%)	88	95
1	G	424/447 (95%)	424 (100%)	0	100	100
1	H	402/447 (90%)	398 (99%)	4 (1%)	76	90
1	I	412/447 (92%)	411 (100%)	1 (0%)	93	98
1	J	402/447 (90%)	402 (100%)	0	100	100
1	K	409/447 (92%)	409 (100%)	0	100	100
1	L	391/447 (88%)	389 (100%)	2 (0%)	88	95
All	All	4868/5364 (91%)	4855 (100%)	13 (0%)	92	97

5 of 13 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	152	GLN
1	H	419	GLU
1	L	134	ASN
1	I	93	SER

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Mol	Chain	Res	Type
1	L	114	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 6 such sidechains are listed below:

Mol	Chain	Res	Type
1	H	122	ASN
1	H	139	ASN
1	H	152	GLN
1	E	567	GLN
1	A	437	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 ⓘ

Of 70 ligands modelled in this entry, 24 are monoatomic - leaving 46 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	$\#|Z| > 2$
6	1PE	H	705	-	9,9,15	0.52	0	8,8,14	0.56	0
6	1PE	B	1006	-	6,6,15	0.45	0	5,5,14	0.66	0
4	CO3	H	704	-	2,3,3	0.12	0	2,3,3	1.37	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\lvert Z\rvert>2$	Counts	RMSZ	$\#\lvert Z\rvert>2$
4	CO3	G	704	-	2,3,3	0.13	0	2,3,3	1.37	0
5	SO4	A	707	-	4,4,4	0.15	0	6,6,6	0.08	0
4	CO3	C	704	-	2,3,3	0.13	0	2,3,3	1.37	0
3	TOD	H	703	2	13,13,24	0.96	1 (7%)	12,17,32	0.71	0
4	CO3	A	704	-	2,3,3	0.12	0	2,3,3	1.37	0
4	CO3	L	704	-	2,3,3	0.13	0	2,3,3	1.36	0
5	SO4	A	706	-	4,4,4	0.14	0	6,6,6	0.09	0
5	SO4	L	706	-	4,4,4	0.14	0	6,6,6	0.09	0
4	CO3	K	704	-	2,3,3	0.12	0	2,3,3	1.38	0
4	CO3	J	704	-	2,3,3	0.12	0	2,3,3	1.39	0
3	TOD	E	703	2	14,14,24	0.91	1 (7%)	12,18,32	0.56	0
5	SO4	E	705	-	4,4,4	0.14	0	6,6,6	0.13	0
5	SO4	G	706	-	4,4,4	0.12	0	6,6,6	0.25	0
5	SO4	I	705	-	4,4,4	0.15	0	6,6,6	0.14	0
6	1PE	G	707	-	8,8,15	0.57	0	7,7,14	0.37	0
3	TOD	J	703	2	22,22,24	1.35	2 (9%)	23,29,32	1.60	3 (13%)
6	1PE	D	705	-	9,9,15	0.47	0	8,8,14	0.30	0
6	1PE	D	706	-	9,9,15	0.74	0	8,8,14	0.80	0
5	SO4	A	705	-	4,4,4	0.15	0	6,6,6	0.09	0
4	CO3	D	703	-	2,3,3	0.13	0	2,3,3	1.37	0
4	CO3	I	704	-	2,3,3	0.12	0	2,3,3	1.37	0
6	1PE	C	707	-	8,8,15	0.53	0	7,7,14	0.42	0
3	TOD	F	703	2	24,24,24	1.91	4 (16%)	24,32,32	1.65	3 (12%)
6	1PE	A	708	-	8,8,15	0.51	0	7,7,14	0.25	0
4	CO3	B	1001	-	2,3,3	0.53	0	2,3,3	2.21	2 (100%)
3	TOD	G	703	2	22,22,24	1.14	1 (4%)	23,29,32	1.45	6 (26%)
5	SO4	D	704	-	4,4,4	0.15	0	6,6,6	0.08	0
5	SO4	L	705	-	4,4,4	0.19	0	6,6,6	0.10	0
4	CO3	E	704	-	2,3,3	0.13	0	2,3,3	1.37	0
5	SO4	C	705	-	4,4,4	0.14	0	6,6,6	0.07	0
3	TOD	L	703	2	24,24,24	1.82	2 (8%)	24,32,32	1.29	4 (16%)
5	SO4	B	1005	-	4,4,4	0.14	0	6,6,6	0.11	0
3	TOD	I	703	2	24,24,24	1.82	2 (8%)	24,32,32	1.08	4 (16%)
6	1PE	C	706	-	12,12,15	0.56	0	11,11,14	0.49	0
3	TOD	B	1004	2	24,24,24	2.06	5 (20%)	24,32,32	1.57	5 (20%)
5	SO4	G	705	-	4,4,4	0.14	0	6,6,6	0.07	0
3	TOD	A	703	2	24,24,24	1.90	2 (8%)	24,32,32	1.01	2 (8%)
3	TOD	C	703	2	16,16,24	1.74	2 (12%)	15,21,32	1.48	1 (6%)
3	TOD	K	703	2	22,22,24	1.20	1 (4%)	23,29,32	1.50	2 (8%)
6	1PE	G	708	-	8,8,15	0.71	0	7,7,14	0.65	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
4	CO3	F	704	-	2,3,3	0.12	0	2,3,3	1.37	0
5	SO4	E	706	-	4,4,4	0.98	0	6,6,6	1.66	1 (16%)
6	1PE	E	707	-	11,11,15	0.38	0	10,10,14	0.53	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
6	1PE	H	705	-	-	2/7/7/13	-
6	1PE	B	1006	-	-	2/4/4/13	-
3	TOD	H	703	2	-	4/18/18/30	-
3	TOD	E	703	2	-	2/20/20/30	-
6	1PE	G	707	-	-	6/6/6/13	-
3	TOD	J	703	2	-	6/26/26/30	0/1/1/1
6	1PE	D	705	-	-	6/7/7/13	-
6	1PE	D	706	-	-	3/7/7/13	-
6	1PE	C	707	-	-	4/6/6/13	-
3	TOD	F	703	2	-	5/30/30/30	0/1/1/1
6	1PE	A	708	-	-	2/6/6/13	-
3	TOD	G	703	2	-	6/26/26/30	0/1/1/1
3	TOD	L	703	2	-	5/30/30/30	0/1/1/1
3	TOD	I	703	2	-	6/30/30/30	0/1/1/1
6	1PE	C	706	-	-	2/10/10/13	-
3	TOD	B	1004	2	-	8/30/30/30	0/1/1/1
3	TOD	A	703	2	-	4/30/30/30	0/1/1/1
3	TOD	C	703	2	-	4/22/22/30	-
3	TOD	K	703	2	-	7/26/26/30	0/1/1/1
6	1PE	G	708	-	-	3/6/6/13	-
6	1PE	E	707	-	-	0/9/9/13	-

The worst 5 of 23 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	703	TOD	C10-C9	-8.12	1.39	1.52
3	L	703	TOD	C10-C9	-7.90	1.39	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1004	TOD	C10-C9	-7.18	1.41	1.52
3	F	703	TOD	C10-C9	-7.16	1.41	1.52
3	I	703	TOD	C10-C9	-7.06	1.41	1.52

The worst 5 of 33 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	K	703	TOD	C5-C8-N2	-5.73	109.17	116.00
3	J	703	TOD	C5-C8-N2	-5.10	109.91	116.00
3	F	703	TOD	C9-N2-C8	4.59	130.69	121.17
3	C	703	TOD	C5-C8-N2	-4.43	110.72	116.00
3	F	703	TOD	C5-C8-N2	-4.20	110.99	116.00

There are no chirality outliers.

5 of 87 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	1004	TOD	C4-C5-C6-C7
3	B	1004	TOD	C4-C5-C6-O3
3	B	1004	TOD	C10-C9-N2-C8
3	C	703	TOD	C4-C5-C6-O3
3	C	703	TOD	O3-C6-C7-O1

There are no ring outliers.

25 monomers are involved in 54 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	H	705	1PE	1	0
4	H	704	CO3	1	0
4	G	704	CO3	2	0
4	A	704	CO3	3	0
4	K	704	CO3	3	0
4	J	704	CO3	3	0
3	E	703	TOD	3	0
5	G	706	SO4	1	0
3	J	703	TOD	2	0
6	D	705	1PE	1	0
6	D	706	1PE	4	0
4	D	703	CO3	1	0
4	I	704	CO3	1	0
6	C	707	1PE	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	F	703	TOD	1	0
6	A	708	1PE	1	0
5	D	704	SO4	1	0
5	L	705	SO4	1	0
5	C	705	SO4	1	0
3	L	703	TOD	1	0
3	I	703	TOD	2	0
6	C	706	1PE	11	0
3	B	1004	TOD	4	0
3	K	703	TOD	3	0
6	G	708	1PE	4	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 TOD H 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD E 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD J 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD F 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD G 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD L 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD I 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD B 1004

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD A 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD C 703

Bond lengths

Bond angles

Torsions

Rings

Ligand TOD K 703

Bond lengths

Bond angles

Torsions

Rings

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	516/519 (99%)	-0.12	7 (1%)	75	77	20, 28, 50, 96	0
1	B	510/519 (98%)	0.15	15 (2%)	51	52	19, 29, 61, 79	0
1	C	517/519 (99%)	-0.11	2 (0%)	92	93	18, 27, 50, 82	0
1	D	511/519 (98%)	-0.14	3 (0%)	89	90	15, 24, 46, 70	0
1	E	509/519 (98%)	-0.24	2 (0%)	92	93	14, 25, 42, 63	0
1	F	509/519 (98%)	0.03	15 (2%)	51	52	15, 31, 59, 73	0
1	G	519/519 (100%)	-0.02	8 (1%)	73	76	22, 30, 53, 94	0
1	H	510/519 (98%)	0.21	25 (4%)	29	28	20, 32, 63, 78	1 (0%)
1	I	515/519 (99%)	-0.03	8 (1%)	72	74	18, 28, 53, 80	0
1	J	511/519 (98%)	-0.15	2 (0%)	92	93	15, 27, 46, 65	0
1	K	509/519 (98%)	-0.17	2 (0%)	92	93	17, 26, 44, 78	5 (0%)
1	L	508/519 (97%)	-0.04	6 (1%)	79	80	18, 31, 54, 70	2 (0%)
All	All	6144/6228 (98%)	-0.05	95 (1%)	73	76	14, 28, 54, 96	8 (0%)

The worst 5 of 95 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	136	GLY	6.7
1	A	603	ASP	4.9
1	G	603	ASP	4.7
1	B	196	ALA	4.7
1	H	122	ASN	4.1

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
6	1PE	C	706	13/16	0.81	0.26	35,48,54,58	0
6	1PE	H	705	10/16	0.82	0.28	47,52,55,56	0
6	1PE	A	708	9/16	0.83	0.30	38,43,54,58	0
6	1PE	D	705	10/16	0.83	0.24	34,46,52,52	0
6	1PE	G	708	9/16	0.83	0.24	39,48,57,57	0
6	1PE	B	1006	7/16	0.83	0.32	44,48,55,58	0
4	CO3	I	704	4/4	0.84	0.33	28,34,37,41	0
6	1PE	G	707	9/16	0.85	0.25	31,35,47,48	0
4	CO3	J	704	4/4	0.86	0.28	33,38,42,43	0
4	CO3	E	704	4/4	0.86	0.25	30,31,33,38	0
6	1PE	D	706	10/16	0.88	0.22	40,49,56,56	0
5	SO4	A	705	5/5	0.88	0.18	57,59,65,65	0
6	1PE	E	707	12/16	0.89	0.22	30,40,51,53	0
5	SO4	C	705	5/5	0.89	0.20	79,80,81,82	0
5	SO4	G	706	5/5	0.90	0.23	52,57,66,70	0
3	TOD	B	1004	24/24	0.90	0.22	27,37,52,63	0
6	1PE	C	707	9/16	0.90	0.16	29,34,42,51	0
3	TOD	I	703	24/24	0.91	0.22	23,35,43,55	0
4	CO3	G	704	4/4	0.92	0.25	35,36,38,40	0
3	TOD	C	703	17/24	0.92	0.18	20,29,39,46	0
3	TOD	J	703	22/24	0.93	0.20	27,35,42,51	0
3	TOD	L	703	24/24	0.93	0.17	19,38,46,48	0
5	SO4	E	706	5/5	0.93	0.29	71,72,77,78	0
5	SO4	G	705	5/5	0.93	0.16	61,63,66,68	0
3	TOD	A	703	24/24	0.93	0.20	25,49,58,61	0
3	TOD	E	703	15/24	0.94	0.18	26,41,51,51	0
5	SO4	L	706	5/5	0.94	0.18	53,60,63,65	0
5	SO4	A	707	5/5	0.94	0.29	65,66,72,77	0
4	CO3	A	704	4/4	0.94	0.21	19,20,20,20	0
3	TOD	F	703	24/24	0.94	0.19	33,46,59,64	0
4	CO3	K	704	4/4	0.94	0.16	17,22,23,30	0
4	CO3	B	1001	4/4	0.95	0.18	18,19,20,29	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	TOD	K	703	22/24	0.95	0.20	32,44,54,58	0
4	CO3	L	704	4/4	0.95	0.19	27,35,37,37	0
3	TOD	G	703	22/24	0.95	0.16	21,28,36,40	0
3	TOD	H	703	14/24	0.95	0.17	20,33,39,43	0
4	CO3	F	704	4/4	0.96	0.18	15,16,24,29	0
5	SO4	D	704	5/5	0.96	0.27	44,50,51,62	0
5	SO4	A	706	5/5	0.97	0.18	37,44,49,62	0
4	CO3	C	704	4/4	0.97	0.14	25,27,27,30	0
2	ZN	B	1002	1/1	0.97	0.04	19,19,19,19	0
2	ZN	I	702	1/1	0.97	0.05	27,27,27,27	0
2	ZN	A	702	1/1	0.97	0.07	27,27,27,27	0
4	CO3	H	704	4/4	0.97	0.18	20,20,20,27	0
2	ZN	E	702	1/1	0.98	0.04	30,30,30,30	0
2	ZN	D	701	1/1	0.98	0.10	26,26,26,26	0
2	ZN	J	701	1/1	0.98	0.07	30,30,30,30	0
2	ZN	K	702	1/1	0.98	0.09	32,32,32,32	0
5	SO4	E	705	5/5	0.98	0.08	12,22,26,33	0
2	ZN	L	701	1/1	0.98	0.04	21,21,21,21	0
2	ZN	L	702	1/1	0.98	0.06	24,24,24,24	0
4	CO3	D	703	4/4	0.98	0.13	15,19,20,23	0
5	SO4	L	705	5/5	0.98	0.10	21,26,32,36	0
2	ZN	E	701	1/1	0.98	0.06	30,30,30,30	0
5	SO4	I	705	5/5	0.99	0.11	23,23,23,28	0
2	ZN	F	702	1/1	0.99	0.06	32,32,32,32	0
2	ZN	G	701	1/1	0.99	0.04	23,23,23,23	0
2	ZN	G	702	1/1	0.99	0.08	23,23,23,23	0
2	ZN	H	701	1/1	0.99	0.03	27,27,27,27	0
2	ZN	H	702	1/1	0.99	0.05	21,21,21,21	0
5	SO4	B	1005	5/5	0.99	0.11	21,21,21,25	0
2	ZN	I	701	1/1	0.99	0.05	19,19,19,19	0
2	ZN	D	702	1/1	0.99	0.06	23,23,23,23	0
2	ZN	B	1003	1/1	0.99	0.07	29,29,29,29	0
2	ZN	J	702	1/1	0.99	0.14	51,51,51,51	0
2	ZN	A	701	1/1	0.99	0.06	19,19,19,19	0
2	ZN	F	701	1/1	0.99	0.04	14,14,14,14	0
2	ZN	C	702	1/1	1.00	0.04	27,27,27,27	0
2	ZN	K	701	1/1	1.00	0.06	19,19,19,19	0
2	ZN	C	701	1/1	1.00	0.06	23,23,23,23	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 TOD B 1004:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
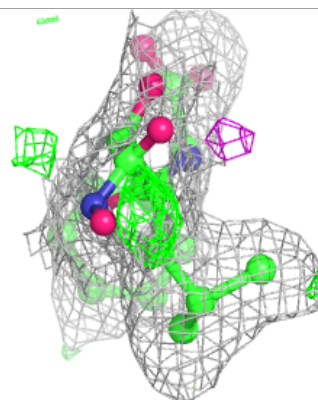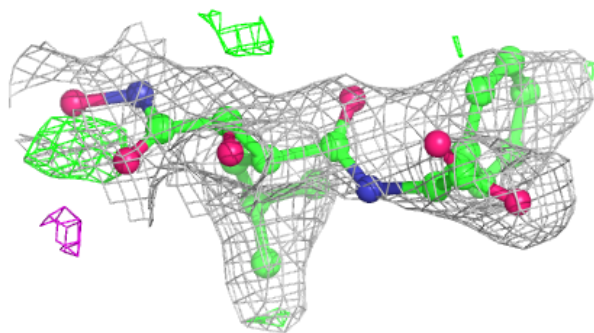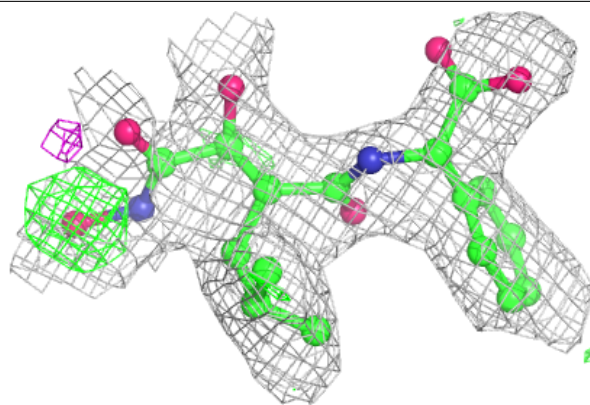
Electron density around TOD I 703:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
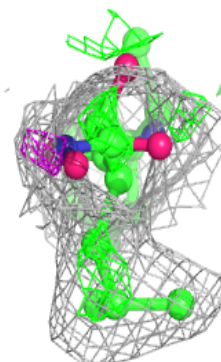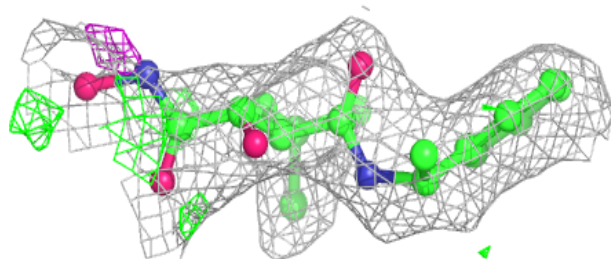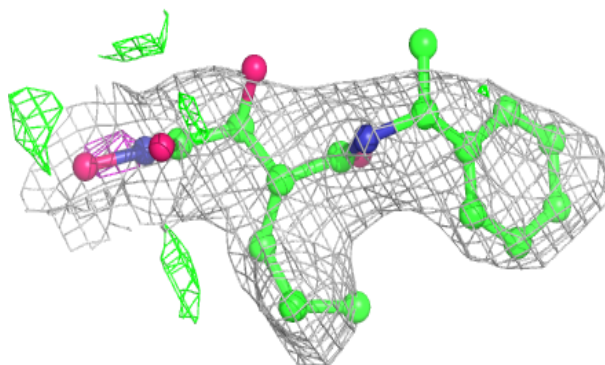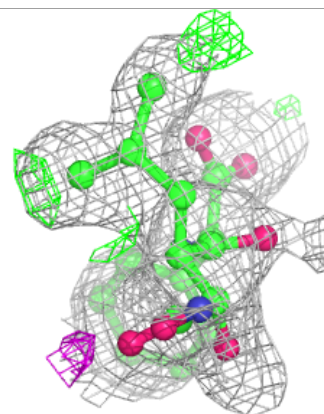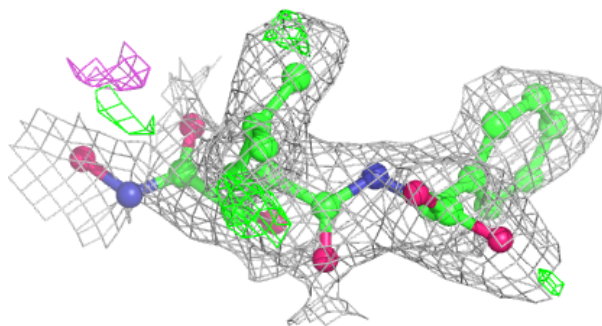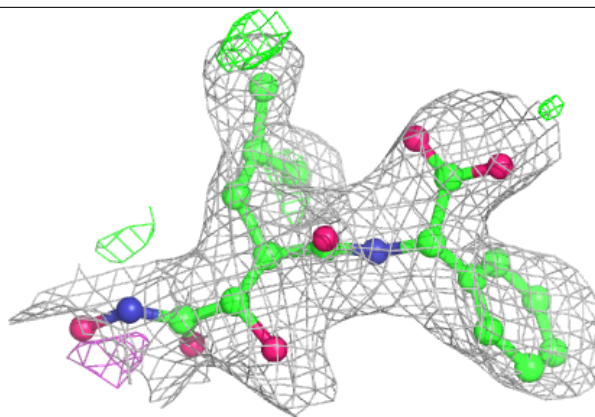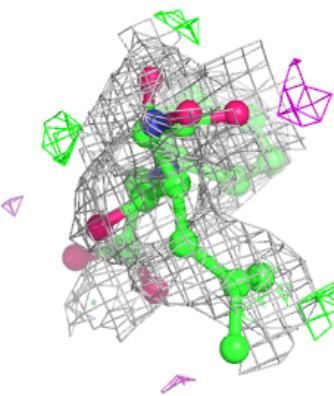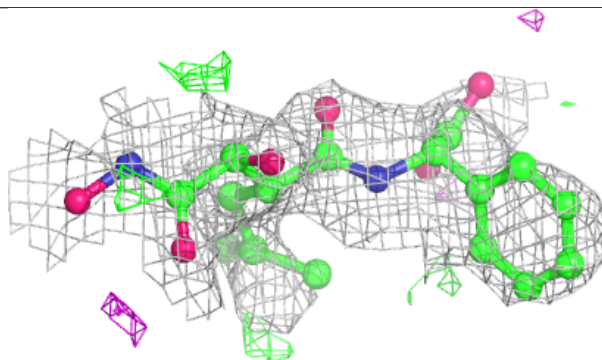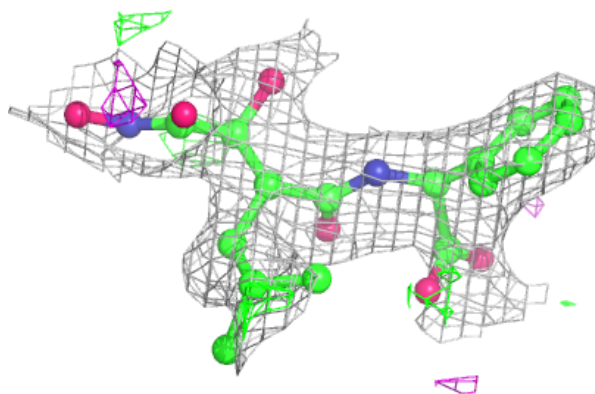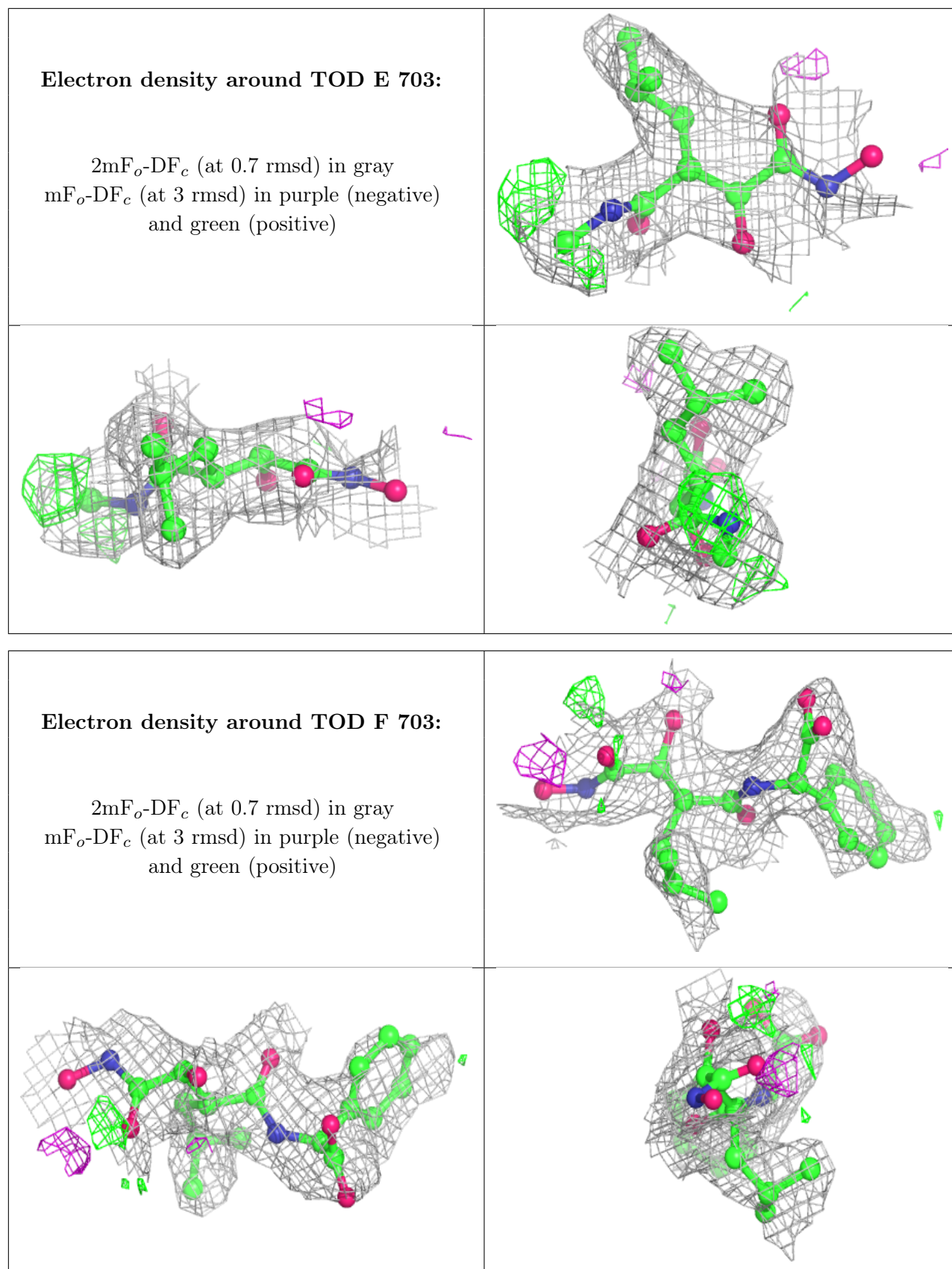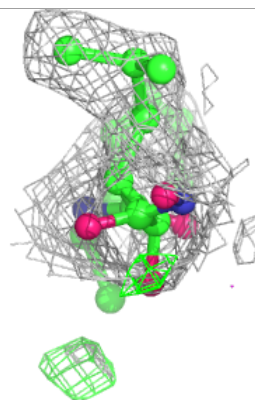and green (positive)
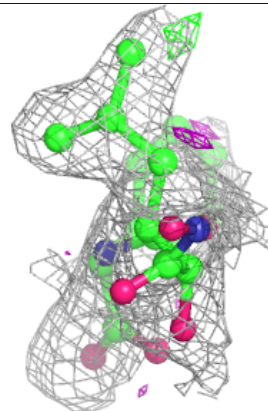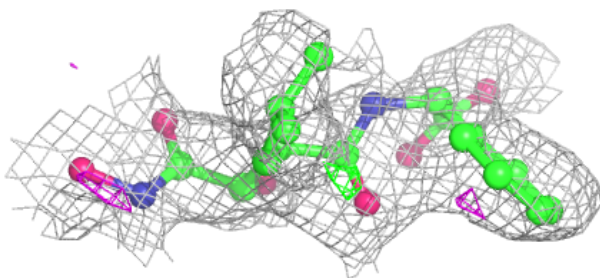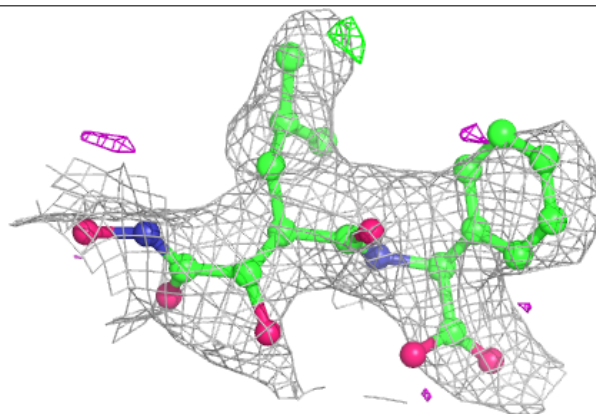
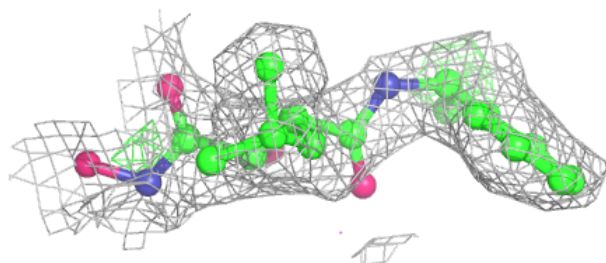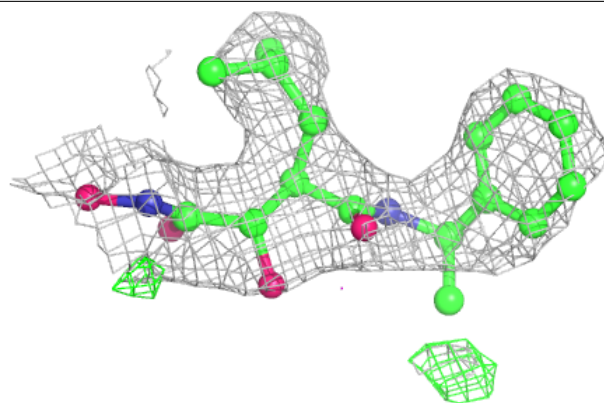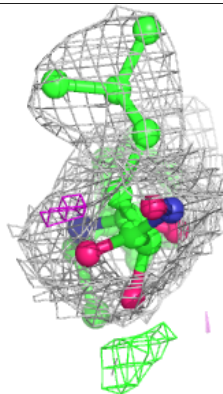**Electron density around TOD C 703:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
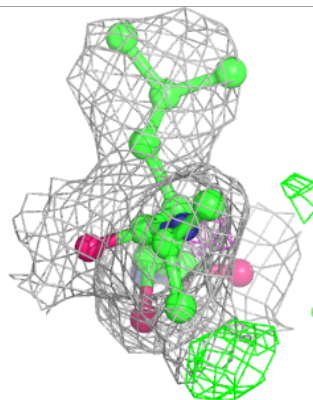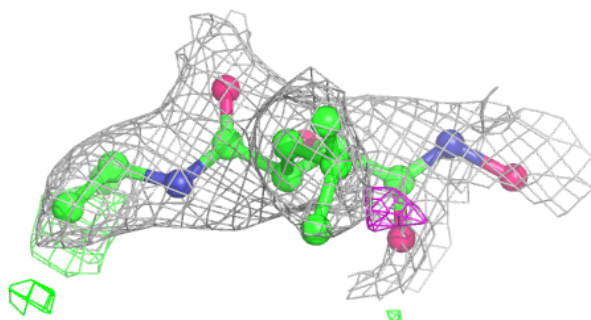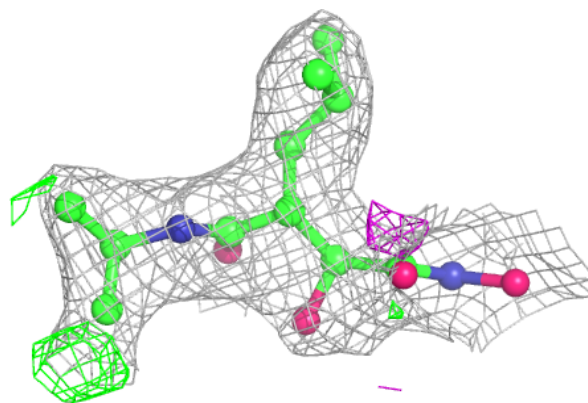
Electron density around TOD J 703:

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

Electron density around TOD L 703:

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

Electron density around TOD A 703:

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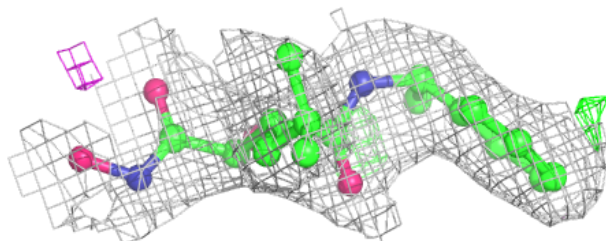$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
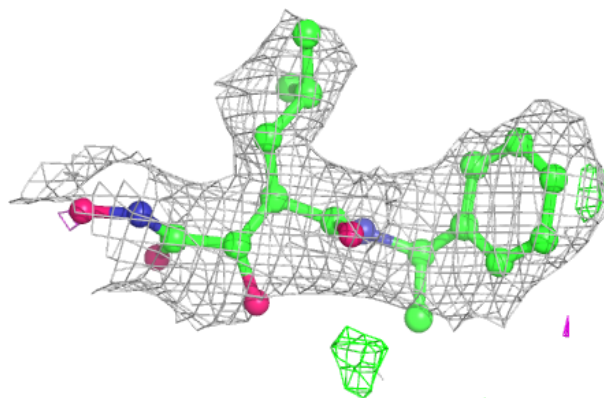and green (positive)

Electron density around TOD E 703:

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

Electron density around TOD F 703:

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

Electron density around TOD K 703:

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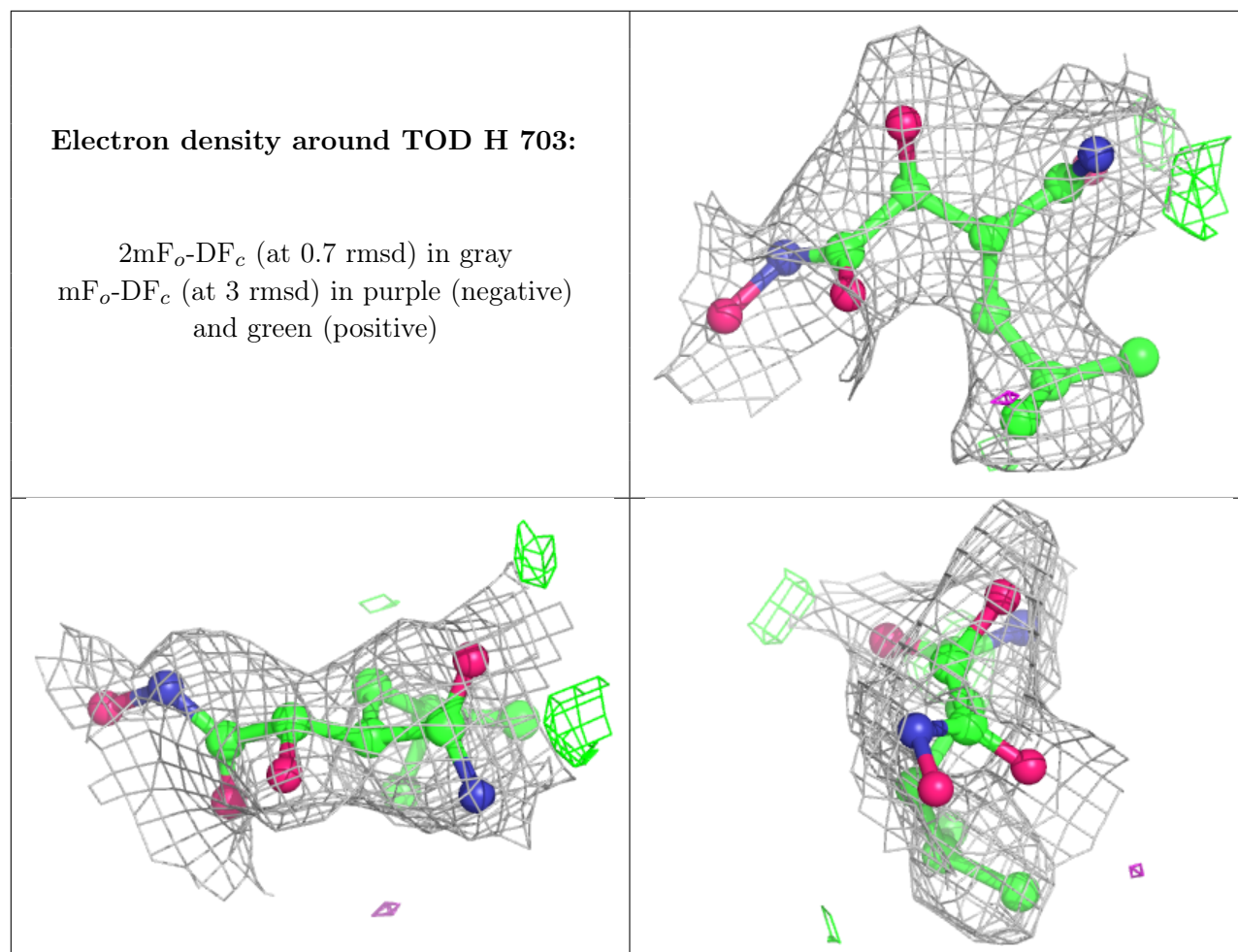mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around TOD G 703:

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

Electron density around TOD H 703:

$2mF_o$-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 ⓘ

There are no such residues in this entry.