Full wwPDB EM Validation Report ⓘ

Apr 6, 2026 – 02:19 AM UTC

PDB ID	:	9R66 / pdb_00009r66
EMDB ID	:	EMD-53604
Title	:	CPS secretion pathway Wza-Wzc_C1 (Conf 1)
Authors	:	Yuan, B.; Heinz, D.W.
Deposited on	:	2025-05-11
Resolution	:	3.80 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

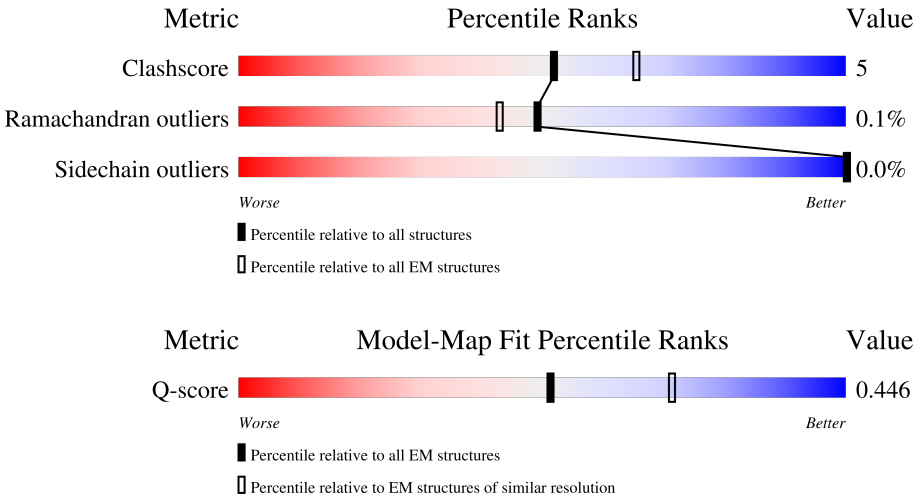
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.80 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	10198 (3.30 - 4.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	394	78% 13% 9%
1	B	394	82% 9% 9%
1	C	394	80% 10% 9%
1	D	394	83% 8% 9%

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Mol	Chain	Length	Quality of chain
1	E	394	80% 11% 9%
1	F	394	81% 9% 9%
1	G	394	79% 11% 9%
1	H	394	81% 10% 9%
2	I	738	79% 11% 9%
2	J	738	80% 11% 9%
2	K	738	80% 10% 9%
2	L	738	80% 10% 9%
2	M	738	82% 9% 9%
2	N	738	78% 13% 9%
2	O	738	79% 11% 9%
2	P	738	78% 12% 9%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 128592 atoms, of which 64632 are hydrogens and 0 are deuteriums.

In the tables below, 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 Putative polysaccharide export protein Wza.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	B	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	C	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	D	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	E	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	F	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	G	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		
1	H	358	Total	C	H	N	O	S	0	0
			5548	1745	2765	486	539	13		

There are 120 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	380	GLU	-	expression tag	UNP P0A930
A	381	ASN	-	expression tag	UNP P0A930
A	382	LEU	-	expression tag	UNP P0A930
A	383	TYR	-	expression tag	UNP P0A930
A	384	PHE	-	expression tag	UNP P0A930
A	385	GLN	-	expression tag	UNP P0A930
A	386	SER	-	expression tag	UNP P0A930
A	387	TRP	-	expression tag	UNP P0A930
A	388	SER	-	expression tag	UNP P0A930
A	389	HIS	-	expression tag	UNP P0A930
A	390	PRO	-	expression tag	UNP P0A930
A	391	GLN	-	expression tag	UNP P0A930
A	392	PHE	-	expression tag	UNP P0A930
A	393	GLU	-	expression tag	UNP P0A930

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Chain	Residue	Modelled	Actual	Comment	Reference
A	394	LYS	-	expression tag	UNP P0A930
B	380	GLU	-	expression tag	UNP P0A930
B	381	ASN	-	expression tag	UNP P0A930
B	382	LEU	-	expression tag	UNP P0A930
B	383	TYR	-	expression tag	UNP P0A930
B	384	PHE	-	expression tag	UNP P0A930
B	385	GLN	-	expression tag	UNP P0A930
B	386	SER	-	expression tag	UNP P0A930
B	387	TRP	-	expression tag	UNP P0A930
B	388	SER	-	expression tag	UNP P0A930
B	389	HIS	-	expression tag	UNP P0A930
B	390	PRO	-	expression tag	UNP P0A930
B	391	GLN	-	expression tag	UNP P0A930
B	392	PHE	-	expression tag	UNP P0A930
B	393	GLU	-	expression tag	UNP P0A930
B	394	LYS	-	expression tag	UNP P0A930
C	380	GLU	-	expression tag	UNP P0A930
C	381	ASN	-	expression tag	UNP P0A930
C	382	LEU	-	expression tag	UNP P0A930
C	383	TYR	-	expression tag	UNP P0A930
C	384	PHE	-	expression tag	UNP P0A930
C	385	GLN	-	expression tag	UNP P0A930
C	386	SER	-	expression tag	UNP P0A930
C	387	TRP	-	expression tag	UNP P0A930
C	388	SER	-	expression tag	UNP P0A930
C	389	HIS	-	expression tag	UNP P0A930
C	390	PRO	-	expression tag	UNP P0A930
C	391	GLN	-	expression tag	UNP P0A930
C	392	PHE	-	expression tag	UNP P0A930
C	393	GLU	-	expression tag	UNP P0A930
C	394	LYS	-	expression tag	UNP P0A930
D	380	GLU	-	expression tag	UNP P0A930
D	381	ASN	-	expression tag	UNP P0A930
D	382	LEU	-	expression tag	UNP P0A930
D	383	TYR	-	expression tag	UNP P0A930
D	384	PHE	-	expression tag	UNP P0A930
D	385	GLN	-	expression tag	UNP P0A930
D	386	SER	-	expression tag	UNP P0A930
D	387	TRP	-	expression tag	UNP P0A930
D	388	SER	-	expression tag	UNP P0A930
D	389	HIS	-	expression tag	UNP P0A930
D	390	PRO	-	expression tag	UNP P0A930

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Chain	Residue	Modelled	Actual	Comment	Reference
D	391	GLN	-	expression tag	UNP P0A930
D	392	PHE	-	expression tag	UNP P0A930
D	393	GLU	-	expression tag	UNP P0A930
D	394	LYS	-	expression tag	UNP P0A930
E	380	GLU	-	expression tag	UNP P0A930
E	381	ASN	-	expression tag	UNP P0A930
E	382	LEU	-	expression tag	UNP P0A930
E	383	TYR	-	expression tag	UNP P0A930
E	384	PHE	-	expression tag	UNP P0A930
E	385	GLN	-	expression tag	UNP P0A930
E	386	SER	-	expression tag	UNP P0A930
E	387	TRP	-	expression tag	UNP P0A930
E	388	SER	-	expression tag	UNP P0A930
E	389	HIS	-	expression tag	UNP P0A930
E	390	PRO	-	expression tag	UNP P0A930
E	391	GLN	-	expression tag	UNP P0A930
E	392	PHE	-	expression tag	UNP P0A930
E	393	GLU	-	expression tag	UNP P0A930
E	394	LYS	-	expression tag	UNP P0A930
F	380	GLU	-	expression tag	UNP P0A930
F	381	ASN	-	expression tag	UNP P0A930
F	382	LEU	-	expression tag	UNP P0A930
F	383	TYR	-	expression tag	UNP P0A930
F	384	PHE	-	expression tag	UNP P0A930
F	385	GLN	-	expression tag	UNP P0A930
F	386	SER	-	expression tag	UNP P0A930
F	387	TRP	-	expression tag	UNP P0A930
F	388	SER	-	expression tag	UNP P0A930
F	389	HIS	-	expression tag	UNP P0A930
F	390	PRO	-	expression tag	UNP P0A930
F	391	GLN	-	expression tag	UNP P0A930
F	392	PHE	-	expression tag	UNP P0A930
F	393	GLU	-	expression tag	UNP P0A930
F	394	LYS	-	expression tag	UNP P0A930
G	380	GLU	-	expression tag	UNP P0A930
G	381	ASN	-	expression tag	UNP P0A930
G	382	LEU	-	expression tag	UNP P0A930
G	383	TYR	-	expression tag	UNP P0A930
G	384	PHE	-	expression tag	UNP P0A930
G	385	GLN	-	expression tag	UNP P0A930
G	386	SER	-	expression tag	UNP P0A930
G	387	TRP	-	expression tag	UNP P0A930

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Chain	Residue	Modelled	Actual	Comment	Reference
G	388	SER	-	expression tag	UNP P0A930
G	389	HIS	-	expression tag	UNP P0A930
G	390	PRO	-	expression tag	UNP P0A930
G	391	GLN	-	expression tag	UNP P0A930
G	392	PHE	-	expression tag	UNP P0A930
G	393	GLU	-	expression tag	UNP P0A930
G	394	LYS	-	expression tag	UNP P0A930
H	380	GLU	-	expression tag	UNP P0A930
H	381	ASN	-	expression tag	UNP P0A930
H	382	LEU	-	expression tag	UNP P0A930
H	383	TYR	-	expression tag	UNP P0A930
H	384	PHE	-	expression tag	UNP P0A930
H	385	GLN	-	expression tag	UNP P0A930
H	386	SER	-	expression tag	UNP P0A930
H	387	TRP	-	expression tag	UNP P0A930
H	388	SER	-	expression tag	UNP P0A930
H	389	HIS	-	expression tag	UNP P0A930
H	390	PRO	-	expression tag	UNP P0A930
H	391	GLN	-	expression tag	UNP P0A930
H	392	PHE	-	expression tag	UNP P0A930
H	393	GLU	-	expression tag	UNP P0A930
H	394	LYS	-	expression tag	UNP P0A930

- Molecule 2 is a protein called Tyrosine-protein kinase wzc.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	I	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	J	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	K	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	L	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	M	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	N	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	O	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		
2	P	668	Total	C	H	N	O	S	0	0
			10487	3278	5302	892	995	20		

There are 152 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	540	MET	LYS	engineered mutation	UNP P76387
I	721	SER	-	expression tag	UNP P76387
I	722	SER	-	expression tag	UNP P76387
I	723	GLY	-	expression tag	UNP P76387
I	724	GLU	-	expression tag	UNP P76387
I	725	ASN	-	expression tag	UNP P76387
I	726	LEU	-	expression tag	UNP P76387
I	727	TYR	-	expression tag	UNP P76387
I	728	PHE	-	expression tag	UNP P76387
I	729	GLN	-	expression tag	UNP P76387
I	730	GLY	-	expression tag	UNP P76387
I	731	TRP	-	expression tag	UNP P76387
I	732	SER	-	expression tag	UNP P76387
I	733	HIS	-	expression tag	UNP P76387
I	734	PRO	-	expression tag	UNP P76387
I	735	GLN	-	expression tag	UNP P76387
I	736	PHE	-	expression tag	UNP P76387
I	737	GLU	-	expression tag	UNP P76387
I	738	LYS	-	expression tag	UNP P76387
J	540	MET	LYS	engineered mutation	UNP P76387
J	721	SER	-	expression tag	UNP P76387
J	722	SER	-	expression tag	UNP P76387
J	723	GLY	-	expression tag	UNP P76387
J	724	GLU	-	expression tag	UNP P76387
J	725	ASN	-	expression tag	UNP P76387
J	726	LEU	-	expression tag	UNP P76387
J	727	TYR	-	expression tag	UNP P76387
J	728	PHE	-	expression tag	UNP P76387
J	729	GLN	-	expression tag	UNP P76387
J	730	GLY	-	expression tag	UNP P76387
J	731	TRP	-	expression tag	UNP P76387
J	732	SER	-	expression tag	UNP P76387
J	733	HIS	-	expression tag	UNP P76387
J	734	PRO	-	expression tag	UNP P76387
J	735	GLN	-	expression tag	UNP P76387
J	736	PHE	-	expression tag	UNP P76387
J	737	GLU	-	expression tag	UNP P76387
J	738	LYS	-	expression tag	UNP P76387
K	540	MET	LYS	engineered mutation	UNP P76387
K	721	SER	-	expression tag	UNP P76387
K	722	SER	-	expression tag	UNP P76387
K	723	GLY	-	expression tag	UNP P76387

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Chain	Residue	Modelled	Actual	Comment	Reference
K	724	GLU	-	expression tag	UNP P76387
K	725	ASN	-	expression tag	UNP P76387
K	726	LEU	-	expression tag	UNP P76387
K	727	TYR	-	expression tag	UNP P76387
K	728	PHE	-	expression tag	UNP P76387
K	729	GLN	-	expression tag	UNP P76387
K	730	GLY	-	expression tag	UNP P76387
K	731	TRP	-	expression tag	UNP P76387
K	732	SER	-	expression tag	UNP P76387
K	733	HIS	-	expression tag	UNP P76387
K	734	PRO	-	expression tag	UNP P76387
K	735	GLN	-	expression tag	UNP P76387
K	736	PHE	-	expression tag	UNP P76387
K	737	GLU	-	expression tag	UNP P76387
K	738	LYS	-	expression tag	UNP P76387
L	540	MET	LYS	engineered mutation	UNP P76387
L	721	SER	-	expression tag	UNP P76387
L	722	SER	-	expression tag	UNP P76387
L	723	GLY	-	expression tag	UNP P76387
L	724	GLU	-	expression tag	UNP P76387
L	725	ASN	-	expression tag	UNP P76387
L	726	LEU	-	expression tag	UNP P76387
L	727	TYR	-	expression tag	UNP P76387
L	728	PHE	-	expression tag	UNP P76387
L	729	GLN	-	expression tag	UNP P76387
L	730	GLY	-	expression tag	UNP P76387
L	731	TRP	-	expression tag	UNP P76387
L	732	SER	-	expression tag	UNP P76387
L	733	HIS	-	expression tag	UNP P76387
L	734	PRO	-	expression tag	UNP P76387
L	735	GLN	-	expression tag	UNP P76387
L	736	PHE	-	expression tag	UNP P76387
L	737	GLU	-	expression tag	UNP P76387
L	738	LYS	-	expression tag	UNP P76387
M	540	MET	LYS	engineered mutation	UNP P76387
M	721	SER	-	expression tag	UNP P76387
M	722	SER	-	expression tag	UNP P76387
M	723	GLY	-	expression tag	UNP P76387
M	724	GLU	-	expression tag	UNP P76387
M	725	ASN	-	expression tag	UNP P76387
M	726	LEU	-	expression tag	UNP P76387
M	727	TYR	-	expression tag	UNP P76387

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Chain	Residue	Modelled	Actual	Comment	Reference
M	728	PHE	-	expression tag	UNP P76387
M	729	GLN	-	expression tag	UNP P76387
M	730	GLY	-	expression tag	UNP P76387
M	731	TRP	-	expression tag	UNP P76387
M	732	SER	-	expression tag	UNP P76387
M	733	HIS	-	expression tag	UNP P76387
M	734	PRO	-	expression tag	UNP P76387
M	735	GLN	-	expression tag	UNP P76387
M	736	PHE	-	expression tag	UNP P76387
M	737	GLU	-	expression tag	UNP P76387
M	738	LYS	-	expression tag	UNP P76387
N	540	MET	LYS	engineered mutation	UNP P76387
N	721	SER	-	expression tag	UNP P76387
N	722	SER	-	expression tag	UNP P76387
N	723	GLY	-	expression tag	UNP P76387
N	724	GLU	-	expression tag	UNP P76387
N	725	ASN	-	expression tag	UNP P76387
N	726	LEU	-	expression tag	UNP P76387
N	727	TYR	-	expression tag	UNP P76387
N	728	PHE	-	expression tag	UNP P76387
N	729	GLN	-	expression tag	UNP P76387
N	730	GLY	-	expression tag	UNP P76387
N	731	TRP	-	expression tag	UNP P76387
N	732	SER	-	expression tag	UNP P76387
N	733	HIS	-	expression tag	UNP P76387
N	734	PRO	-	expression tag	UNP P76387
N	735	GLN	-	expression tag	UNP P76387
N	736	PHE	-	expression tag	UNP P76387
N	737	GLU	-	expression tag	UNP P76387
N	738	LYS	-	expression tag	UNP P76387
O	540	MET	LYS	engineered mutation	UNP P76387
O	721	SER	-	expression tag	UNP P76387
O	722	SER	-	expression tag	UNP P76387
O	723	GLY	-	expression tag	UNP P76387
O	724	GLU	-	expression tag	UNP P76387
O	725	ASN	-	expression tag	UNP P76387
O	726	LEU	-	expression tag	UNP P76387
O	727	TYR	-	expression tag	UNP P76387
O	728	PHE	-	expression tag	UNP P76387
O	729	GLN	-	expression tag	UNP P76387
O	730	GLY	-	expression tag	UNP P76387
O	731	TRP	-	expression tag	UNP P76387

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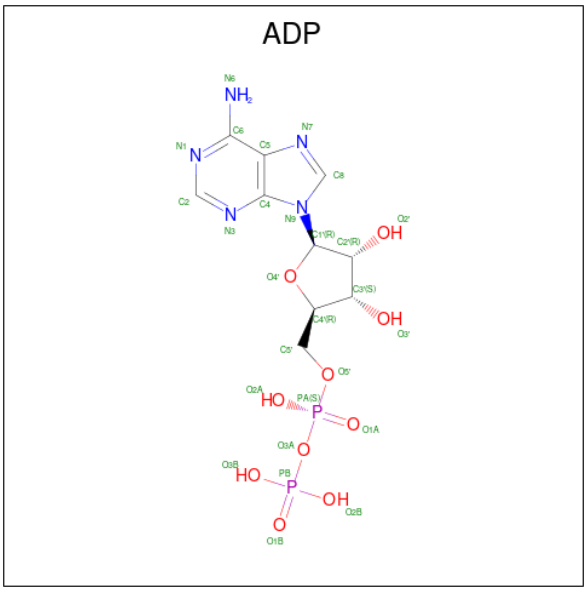
Chain	Residue	Modelled	Actual	Comment	Reference
O	732	SER	-	expression tag	UNP P76387
O	733	HIS	-	expression tag	UNP P76387
O	734	PRO	-	expression tag	UNP P76387
O	735	GLN	-	expression tag	UNP P76387
O	736	PHE	-	expression tag	UNP P76387
O	737	GLU	-	expression tag	UNP P76387
O	738	LYS	-	expression tag	UNP P76387
P	540	MET	LYS	engineered mutation	UNP P76387
P	721	SER	-	expression tag	UNP P76387
P	722	SER	-	expression tag	UNP P76387
P	723	GLY	-	expression tag	UNP P76387
P	724	GLU	-	expression tag	UNP P76387
P	725	ASN	-	expression tag	UNP P76387
P	726	LEU	-	expression tag	UNP P76387
P	727	TYR	-	expression tag	UNP P76387
P	728	PHE	-	expression tag	UNP P76387
P	729	GLN	-	expression tag	UNP P76387
P	730	GLY	-	expression tag	UNP P76387
P	731	TRP	-	expression tag	UNP P76387
P	732	SER	-	expression tag	UNP P76387
P	733	HIS	-	expression tag	UNP P76387
P	734	PRO	-	expression tag	UNP P76387
P	735	GLN	-	expression tag	UNP P76387
P	736	PHE	-	expression tag	UNP P76387
P	737	GLU	-	expression tag	UNP P76387
P	738	LYS	-	expression tag	UNP P76387

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



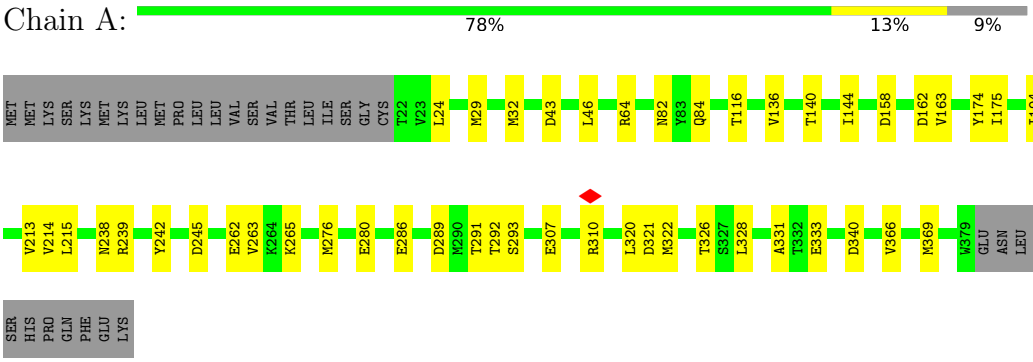
Mol	Chain	Residues	Atoms						AltConf
3	I	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	J	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	K	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	L	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	M	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	N	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	O	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	
3	P	1	Total	C	H	N	O	P	0
			39	10	12	5	10	2	

3 Residue-property plots (i)

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 atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

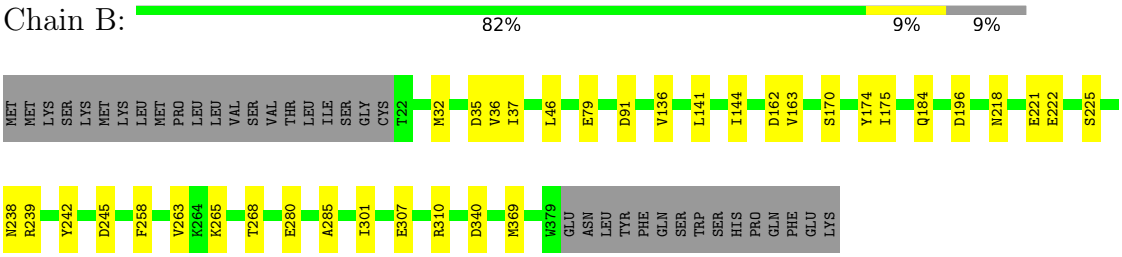
• Molecule 1: Putative polysaccharide export protein Wza

Chain A:



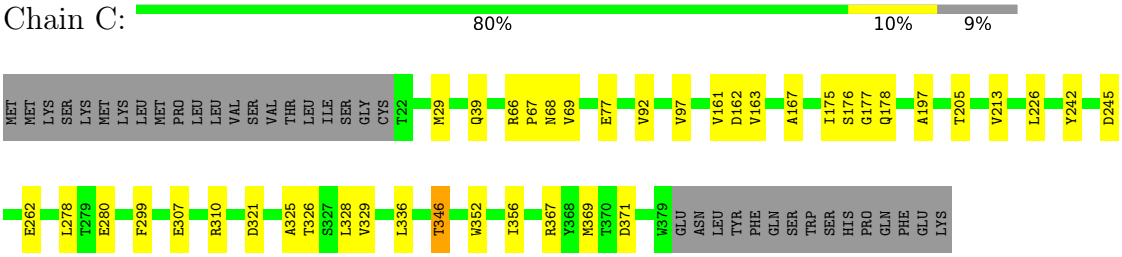
• Molecule 1: Putative polysaccharide export protein Wza

Chain B:



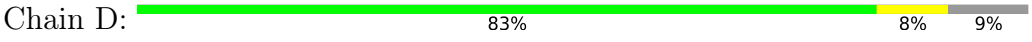
• Molecule 1: Putative polysaccharide export protein Wza

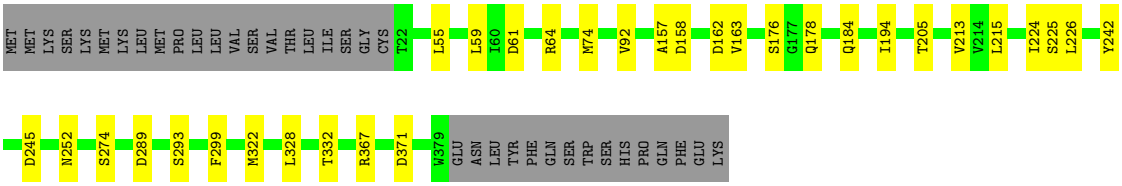
Chain C:



• Molecule 1: Putative polysaccharide export protein Wza

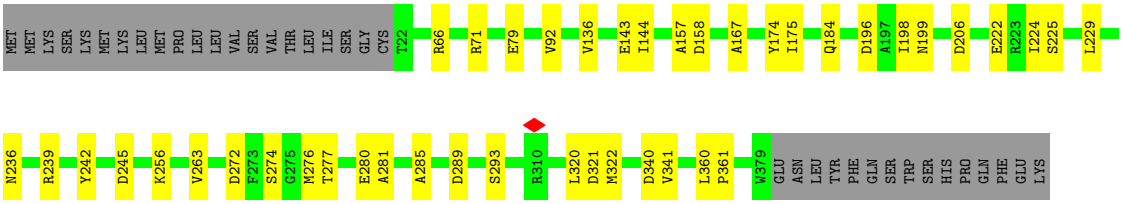
Chain D:





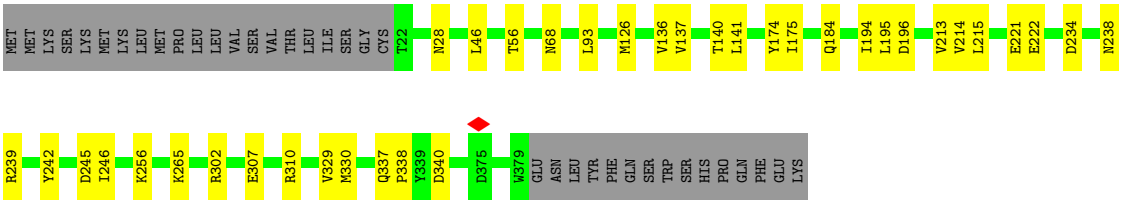
• Molecule 1: Putative polysaccharide export protein Wza

Chain E:



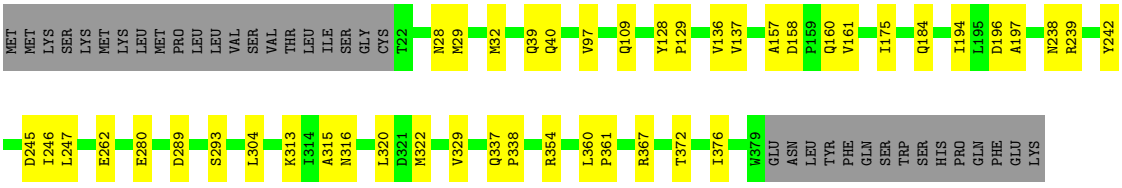
• Molecule 1: Putative polysaccharide export protein Wza

Chain F:



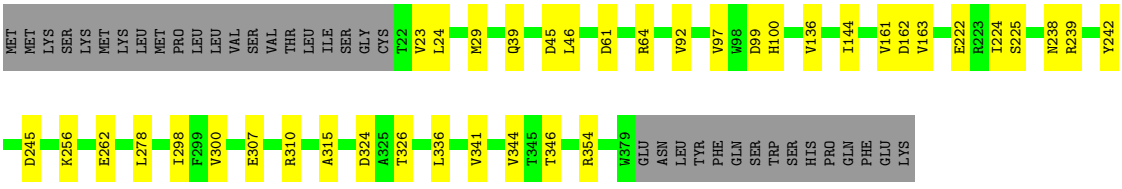
• Molecule 1: Putative polysaccharide export protein Wza

Chain G:



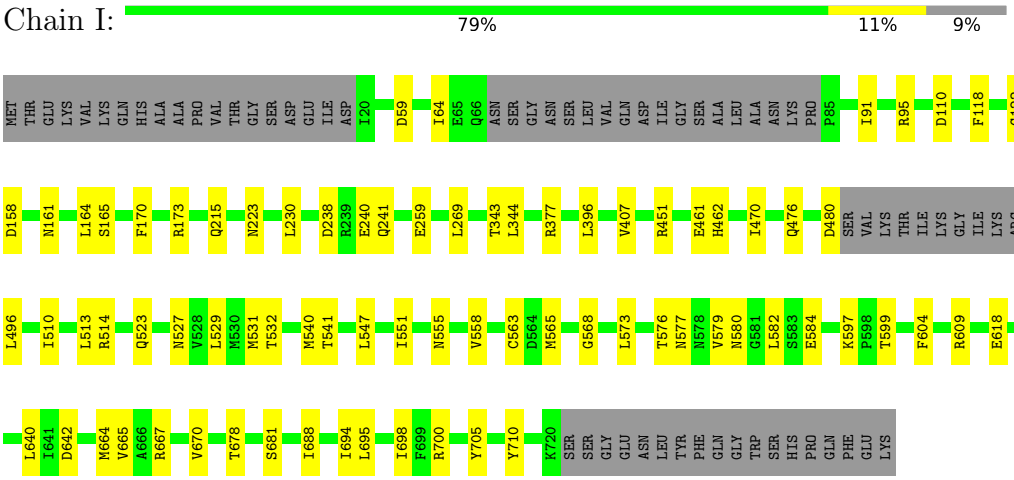
• Molecule 1: Putative polysaccharide export protein Wza

Chain H:



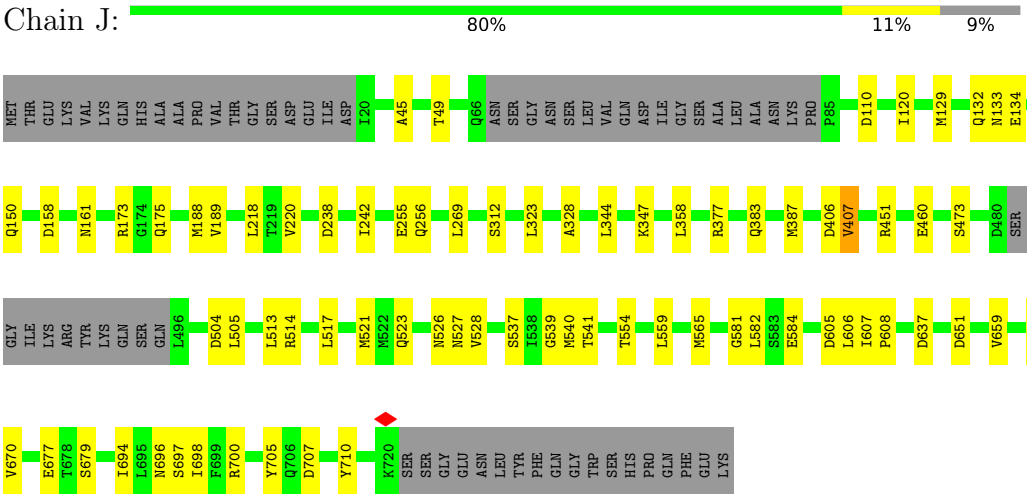
• Molecule 2: Tyrosine-protein kinase wzc

Chain I:



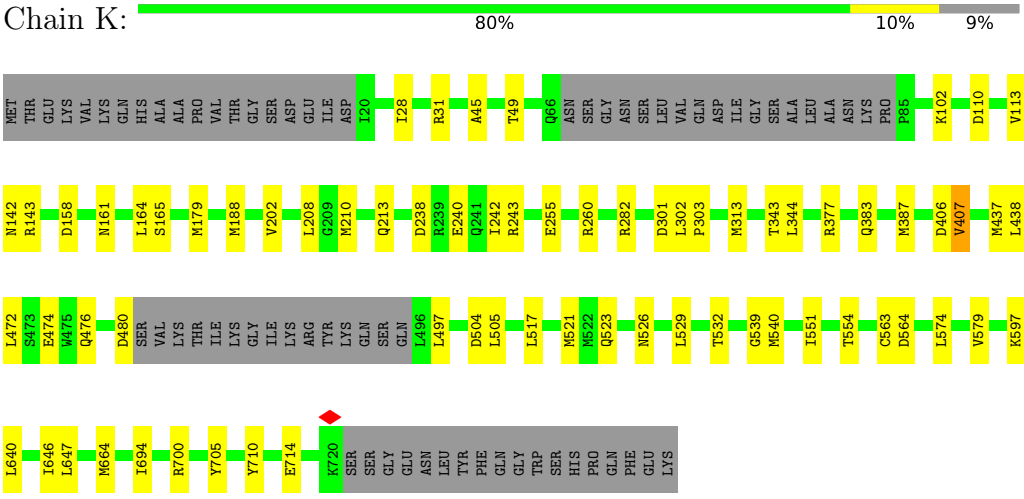
• Molecule 2: Tyrosine-protein kinase wzc

Chain J:



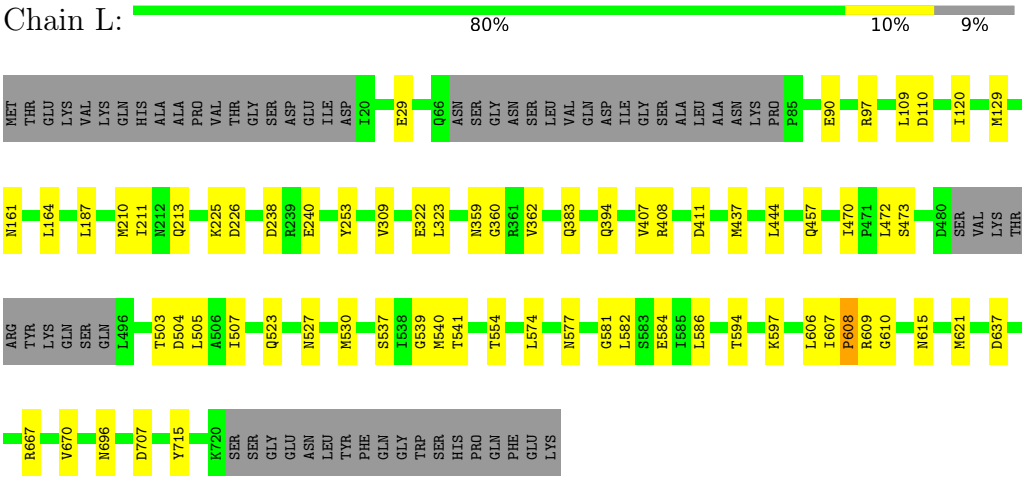
• Molecule 2: Tyrosine-protein kinase wzc

Chain K:



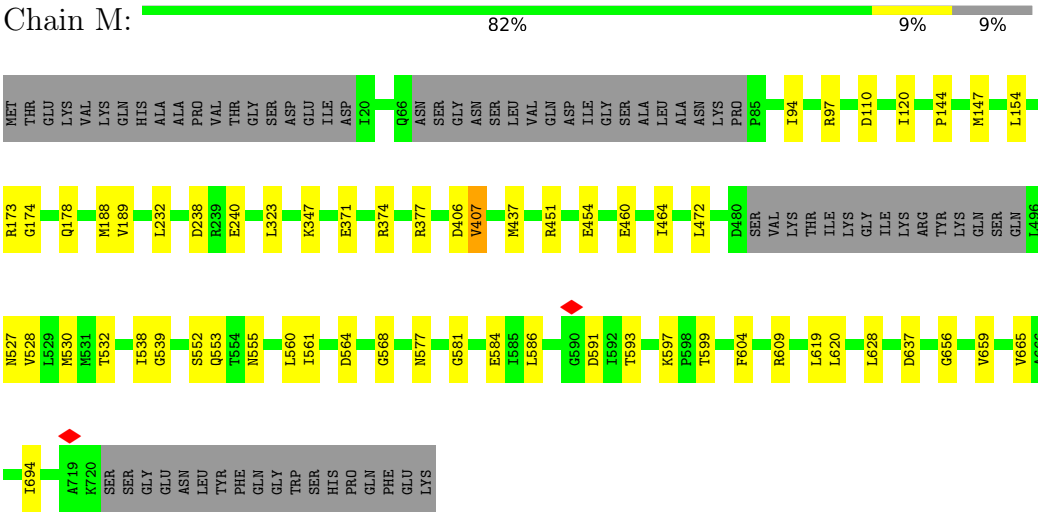
• Molecule 2: Tyrosine-protein kinase wzc

Chain L:



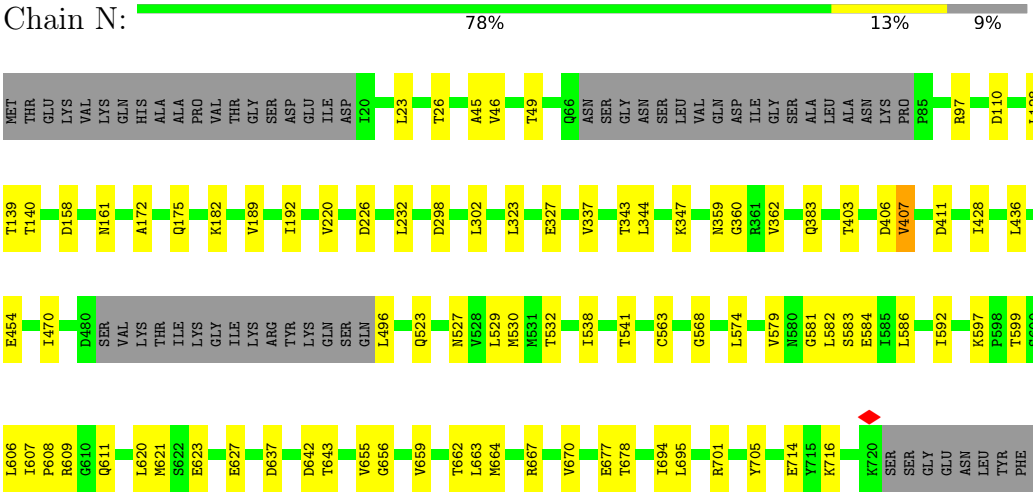
• Molecule 2: Tyrosine-protein kinase wzc

Chain M:



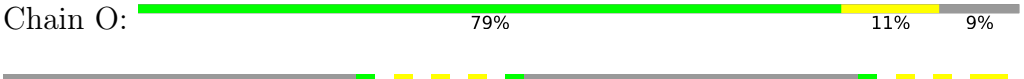
• Molecule 2: Tyrosine-protein kinase wzc

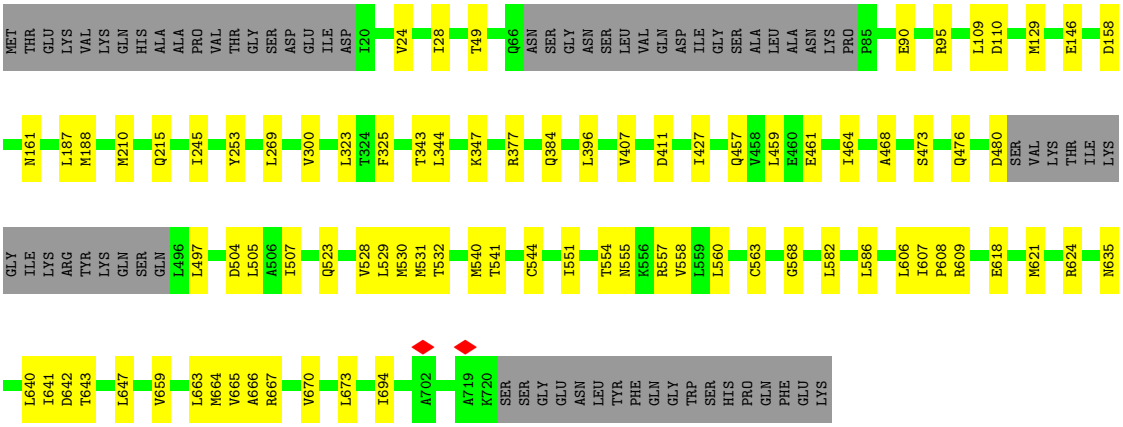
Chain N:



• Molecule 2: Tyrosine-protein kinase wzc

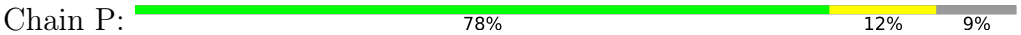
Chain O:

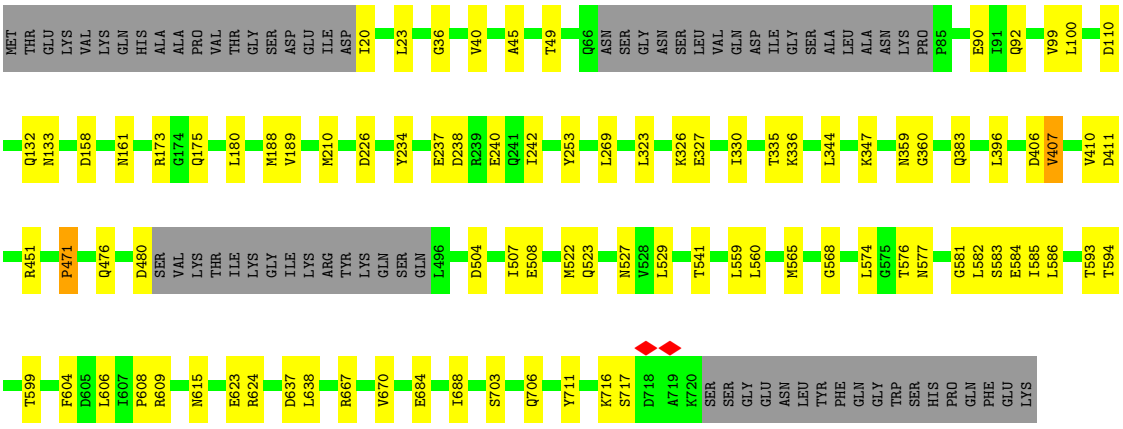




• Molecule 2: Tyrosine-protein kinase wzc

Chain P:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	199355	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.729	Depositor
Minimum map value	-0.393	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	546.0, 546.0, 546.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.91, 0.91, 0.91	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.16	0/2836	0.32	0/3862
1	B	0.16	0/2836	0.31	0/3862
1	C	0.16	0/2836	0.30	0/3862
1	D	0.16	0/2836	0.29	0/3862
1	E	0.16	0/2836	0.30	0/3862
1	F	0.16	0/2836	0.31	0/3862
1	G	0.16	0/2836	0.31	0/3862
1	H	0.16	0/2836	0.31	0/3862
2	I	0.11	0/5260	0.26	0/7126
2	J	0.12	0/5260	0.27	0/7126
2	K	0.12	0/5260	0.27	0/7126
2	L	0.43	4/5260 (0.1%)	0.52	8/7126 (0.1%)
2	M	0.12	0/5260	0.26	0/7126
2	N	0.12	0/5260	0.27	0/7126
2	O	0.13	0/5260	0.28	0/7126
2	P	0.15	0/5260	0.32	1/7126 (0.0%)
All	All	0.18	4/64768 (0.0%)	0.31	9/87904 (0.0%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	608	PRO	CB-CG	22.08	2.60	1.49
2	L	608	PRO	CG-CD	-17.95	0.89	1.50
2	L	608	PRO	CA-CB	-6.16	1.44	1.53
2	L	608	PRO	N-CD	5.17	1.54	1.47

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	L	608	PRO	CB-CG-CD	-29.85	10.57	106.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	P	471	PRO	CA-N-CD	-11.36	96.10	112.00
2	L	608	PRO	N-CA-CB	-10.99	88.91	103.42
2	L	608	PRO	N-CD-CG	-8.60	90.31	103.20
2	L	608	PRO	CA-CB-CG	-8.45	88.45	104.50
2	L	608	PRO	CA-N-CD	-7.88	100.97	112.00
2	L	645	PRO	CA-N-CD	-5.24	104.66	112.00
2	L	645	PRO	N-CD-CG	-5.16	95.46	103.20
2	L	645	PRO	CA-CB-CG	-5.08	94.86	104.50

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2783	2765	2764	39	0
1	B	2783	2765	2764	30	0
1	C	2783	2765	2764	29	0
1	D	2783	2765	2764	23	0
1	E	2783	2765	2764	32	0
1	F	2783	2765	2764	29	0
1	G	2783	2765	2764	33	0
1	H	2783	2765	2764	30	0
2	I	5185	5302	5300	59	0
2	J	5185	5302	5300	63	0
2	K	5185	5302	5300	53	0
2	L	5185	5302	5300	65	0
2	M	5185	5302	5300	45	0
2	N	5185	5302	5300	74	0
2	O	5185	5302	5300	66	0
2	P	5185	5302	5300	68	0
3	I	27	12	12	1	0
3	J	27	12	12	5	0
3	K	27	12	12	1	0
3	L	27	12	12	3	0
3	M	27	12	12	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	N	27	12	12	2	0
3	O	27	12	12	2	0
3	P	27	12	12	2	0
All	All	63960	64632	64608	688	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (688) 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)
2:L:608:PRO:CG	2:L:608:PRO:N	1.79	1.40
2:L:608:PRO:CD	2:L:608:PRO:HG3	1.66	1.17
2:L:608:PRO:CD	2:L:608:PRO:HG2	1.66	1.11
2:L:608:PRO:CG	2:L:608:PRO:HD3	1.57	1.04
2:L:608:PRO:CG	2:L:608:PRO:HD2	1.57	1.02
2:L:608:PRO:CG	2:L:608:PRO:CD	0.89	0.89
2:P:237:GLU:N	2:P:237:GLU:OE1	2.07	0.87
2:O:551:ILE:O	2:O:554:THR:OG1	1.93	0.87
2:O:586:LEU:O	2:O:624:ARG:NH1	2.09	0.85
1:A:289:ASP:O	1:A:293:SER:OG	1.95	0.84
1:D:184:GLN:NE2	1:E:196:ASP:OD1	2.11	0.83
2:P:541:THR:OG1	3:P:1000:ADP:O1A	1.98	0.81
2:I:527:ASN:ND2	2:I:637:ASP:O	2.14	0.81
1:G:40:GLN:OE1	1:G:40:GLN:N	2.14	0.81
2:I:599:THR:OG1	2:I:604:PHE:O	2.00	0.78
2:M:451:ARG:NH2	2:N:705:TYR:O	2.16	0.78
2:P:706:GLN:N	2:P:706:GLN:OE1	2.17	0.78
1:F:196:ASP:OD1	1:G:184:GLN:NE2	2.16	0.78
2:O:531:MET:HE2	2:O:531:MET:HA	1.66	0.78
1:D:176:SER:OG	1:E:199:ASN:OD1	2.01	0.77
1:G:289:ASP:O	1:G:293:SER:OG	2.01	0.77
1:A:32:MET:HA	1:A:32:MET:HE2	1.67	0.76
2:P:568:GLY:O	2:P:609:ARG:NH1	2.19	0.76
2:J:473:SER:OG	2:J:504:ASP:OD2	2.04	0.76
2:O:568:GLY:O	2:O:609:ARG:NH1	2.19	0.75
2:L:607:ILE:C	2:L:608:PRO:CG	2.59	0.75
1:B:196:ASP:OD1	1:E:184:GLN:NE2	2.20	0.74
1:E:289:ASP:O	1:E:293:SER:OG	2.03	0.74
2:P:480:ASP:OD2	3:P:1000:ADP:O2'	2.03	0.74
2:J:554:THR:HG22	2:J:554:THR:O	1.87	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P:508:GLU:OE1	2:P:508:GLU:N	2.20	0.74
2:P:623:GLU:OE1	2:P:623:GLU:N	2.20	0.74
2:L:473:SER:OG	2:L:504:ASP:OD2	2.06	0.74
2:O:541:THR:OG1	3:O:1000:ADP:O1A	2.05	0.72
2:L:523:GLN:N	2:L:523:GLN:OE1	2.22	0.72
2:I:476:GLN:NE2	2:I:480:ASP:OD2	2.23	0.72
2:J:175:GLN:N	2:J:175:GLN:OE1	2.23	0.71
2:L:90:GLU:OE2	2:L:253:TYR:OH	2.07	0.71
2:M:173:ARG:NH1	2:M:174:GLY:O	2.22	0.71
2:L:539:GLY:N	3:L:1000:ADP:O1B	2.23	0.71
2:I:551:ILE:HD12	2:I:558:VAL:HG11	1.73	0.71
2:P:703:SER:OG	2:P:706:GLN:OE1	2.08	0.71
2:J:527:ASN:ND2	2:J:637:ASP:O	2.24	0.71
2:K:539:GLY:N	3:K:1000:ADP:O1A	2.23	0.70
1:B:136:VAL:HG12	1:B:144:ILE:HD11	1.72	0.70
2:N:623:GLU:N	2:N:623:GLU:OE2	2.25	0.70
1:E:79:GLU:OE2	1:E:242:TYR:OH	2.10	0.70
1:H:61:ASP:OD1	1:H:64:ARG:NH2	2.24	0.70
2:O:158:ASP:OD1	2:O:161:ASN:N	2.25	0.69
2:M:539:GLY:N	3:M:1000:ADP:O2B	2.26	0.69
2:I:158:ASP:OD1	2:I:161:ASN:N	2.24	0.69
2:K:523:GLN:N	2:K:523:GLN:OE1	2.27	0.68
2:N:175:GLN:N	2:N:175:GLN:OE1	2.25	0.68
2:P:599:THR:OG1	2:P:604:PHE:O	2.10	0.68
2:L:607:ILE:HA	2:L:608:PRO:CG	2.23	0.68
2:N:403:THR:O	2:N:403:THR:HG22	1.93	0.68
2:N:523:GLN:N	2:N:523:GLN:OE1	2.26	0.68
2:N:568:GLY:O	2:N:609:ARG:NH1	2.27	0.68
1:A:196:ASP:OD1	1:F:184:GLN:NE2	2.27	0.67
1:F:242:TYR:N	1:F:245:ASP:OD2	2.26	0.67
2:L:537:SER:N	3:L:1000:ADP:O2B	2.27	0.67
1:F:238:ASN:OD1	1:F:239:ARG:N	2.27	0.67
2:N:582:LEU:N	2:N:608:PRO:O	2.27	0.67
2:L:621:MET:HE3	2:L:621:MET:O	1.95	0.67
2:O:377:ARG:NH1	2:P:383:GLN:OE1	2.27	0.67
2:P:158:ASP:OD1	2:P:161:ASN:N	2.26	0.66
2:J:539:GLY:N	3:J:1000:ADP:O3B	2.28	0.66
2:N:606:LEU:HD23	2:N:607:ILE:N	2.10	0.66
2:P:36:GLY:O	2:P:40:VAL:HG23	1.95	0.66
2:I:705:TYR:O	2:P:451:ARG:NH2	2.28	0.66
2:K:474:GLU:N	2:K:474:GLU:OE2	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:158:ASP:OD1	2:L:161:ASN:N	2.29	0.65
2:M:158:ASP:OD1	2:M:161:ASN:N	2.27	0.65
2:O:210:MET:HA	2:O:210:MET:HE2	1.79	0.65
2:M:555:ASN:O	2:M:555:ASN:ND2	2.30	0.65
2:N:538:ILE:N	3:N:1000:ADP:O2B	2.29	0.65
2:I:700:ARG:NH1	2:I:710:TYR:O	2.29	0.64
2:J:158:ASP:OD1	2:J:161:ASN:N	2.30	0.64
2:K:142:ASN:OD1	2:K:143:ARG:N	2.30	0.64
2:P:527:ASN:ND2	2:P:637:ASP:O	2.30	0.64
2:I:461:GLU:OE2	2:I:462:HIS:ND1	2.31	0.64
2:P:90:GLU:OE1	2:P:253:TYR:OH	2.14	0.64
2:L:554:THR:HG22	2:L:554:THR:O	1.95	0.64
2:J:606:LEU:HD23	2:J:607:ILE:N	2.13	0.64
2:K:551:ILE:O	2:K:554:THR:HG22	1.98	0.64
1:B:136:VAL:CG1	1:B:144:ILE:HD11	2.28	0.63
1:E:92:VAL:HG23	1:E:92:VAL:O	1.98	0.63
2:J:147:MET:SD	2:J:150:GLN:NE2	2.71	0.63
2:O:530:MET:HB2	2:O:659:VAL:HG21	1.81	0.63
2:J:537:SER:N	3:J:1000:ADP:O1B	2.32	0.63
2:L:606:LEU:HD23	2:L:607:ILE:N	2.14	0.63
2:P:507:ILE:HD12	2:P:507:ILE:H	1.62	0.63
1:C:97:VAL:HG22	1:C:161:VAL:HG22	1.80	0.63
2:P:471:PRO:HD2	2:P:471:PRO:O	1.98	0.62
2:K:377:ARG:NH1	2:L:383:GLN:OE1	2.30	0.62
2:M:538:ILE:HD11	2:M:665:VAL:HG23	1.80	0.62
2:O:476:GLN:NE2	2:O:480:ASP:OD1	2.31	0.62
1:D:92:VAL:HG23	1:D:92:VAL:O	1.99	0.62
1:A:320:LEU:HD23	1:A:321:ASP:N	2.15	0.62
1:G:97:VAL:HG22	1:G:161:VAL:HG22	1.82	0.62
2:P:667:ARG:HD3	2:P:670:VAL:HG21	1.81	0.62
1:B:35:ASP:OD2	1:G:313:LYS:NZ	2.33	0.62
2:M:188:MET:SD	2:M:189:VAL:N	2.72	0.62
2:N:667:ARG:HD3	2:N:670:VAL:HG21	1.82	0.62
1:B:79:GLU:OE2	1:B:242:TYR:OH	2.18	0.62
1:D:194:ILE:HD11	1:D:215:LEU:HD12	1.80	0.62
2:I:531:MET:HA	2:I:531:MET:HE2	1.81	0.61
2:M:568:GLY:O	2:M:609:ARG:NH1	2.32	0.61
2:K:158:ASP:OD1	2:K:161:ASN:N	2.33	0.61
2:L:607:ILE:HA	2:L:608:PRO:HG3	1.83	0.61
2:P:226:ASP:OD1	2:P:226:ASP:O	2.18	0.61
2:P:523:GLN:N	2:P:523:GLN:OE1	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:238:ASP:OD1	2:I:240:GLU:N	2.33	0.61
1:F:222:GLU:OE2	1:F:239:ARG:NH2	2.34	0.60
2:L:164:LEU:HD12	2:L:187:LEU:HD22	1.82	0.60
2:L:594:THR:HG22	2:L:594:THR:O	2.01	0.60
1:D:322:MET:HE3	1:D:328:LEU:HD13	1.83	0.60
1:A:286:GLU:OE1	1:F:265:LYS:NZ	2.34	0.60
2:I:513:LEU:HD23	2:I:547:LEU:HD11	1.83	0.60
2:J:218:LEU:HD21	2:J:220:VAL:HG23	1.84	0.60
2:K:564:ASP:OD2	2:L:715:TYR:OH	2.18	0.60
1:B:222:GLU:OE2	1:B:239:ARG:NH2	2.35	0.60
2:O:110:ASP:OD1	2:O:110:ASP:N	2.35	0.60
2:K:113:VAL:HG22	2:K:202:VAL:HG12	1.84	0.60
2:K:646:ILE:HG23	2:K:647:LEU:HD22	1.82	0.60
2:L:504:ASP:OD1	2:L:505:LEU:N	2.35	0.60
1:D:367:ARG:NH1	1:D:371:ASP:OD2	2.34	0.60
2:I:161:ASN:OD1	2:I:173:ARG:NH2	2.34	0.59
1:H:238:ASN:OD1	1:H:239:ARG:N	2.36	0.59
2:O:642:ASP:OD1	2:O:643:THR:N	2.35	0.59
2:J:523:GLN:N	2:J:523:GLN:OE1	2.35	0.59
1:A:64:ARG:NH2	1:A:333:GLU:OE1	2.35	0.58
1:D:289:ASP:O	1:D:293:SER:OG	2.13	0.58
2:I:95:ARG:O	2:I:215:GLN:NE2	2.36	0.58
2:L:238:ASP:OD1	2:L:240:GLU:N	2.33	0.58
2:K:406:ASP:OD1	2:K:407:VAL:N	2.34	0.58
2:M:97:ARG:NH1	2:N:411:ASP:OD2	2.35	0.58
2:P:161:ASN:OD1	2:P:173:ARG:NH1	2.33	0.58
2:P:559:LEU:HD23	2:P:560:LEU:N	2.17	0.58
1:E:92:VAL:HG22	1:E:167:ALA:HB3	1.85	0.58
1:G:175:ILE:CD1	1:G:197:ALA:HB1	2.33	0.58
2:L:607:ILE:CA	2:L:608:PRO:CG	2.81	0.58
2:N:530:MET:HE3	2:N:659:VAL:HG11	1.85	0.58
2:O:187:LEU:HD23	2:O:188:MET:N	2.18	0.58
2:J:667:ARG:HD3	2:J:670:VAL:HG21	1.85	0.58
1:G:28:ASN:OD1	1:G:29:MET:N	2.36	0.58
2:O:384:GLN:C	2:O:384:GLN:OE1	2.46	0.58
1:A:194:ILE:HD11	1:A:215:LEU:HD12	1.86	0.58
2:J:255:GLU:OE2	2:J:256:GLN:N	2.36	0.58
1:G:238:ASN:OD1	1:G:239:ARG:N	2.37	0.57
2:J:377:ARG:CG	2:K:387:MET:HE1	2.34	0.57
1:A:46:LEU:HD23	1:H:326:THR:HG23	1.85	0.57
2:J:161:ASN:OD1	2:J:173:ARG:NH1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:563:CYS:SG	2:N:620:LEU:HD11	2.44	0.57
2:P:359:ASN:OD1	2:P:360:GLY:N	2.37	0.57
1:E:174:TYR:C	1:E:175:ILE:HD12	2.30	0.57
1:H:298:ILE:HD12	1:H:344:VAL:HG22	1.87	0.57
2:I:164:LEU:HD23	2:I:165:SER:N	2.19	0.57
2:N:530:MET:CE	2:N:655:VAL:HG23	2.35	0.57
2:O:480:ASP:OD2	3:O:1000:ADP:O2'	2.22	0.57
2:N:110:ASP:N	2:N:110:ASP:OD1	2.38	0.57
1:E:242:TYR:N	1:E:245:ASP:OD2	2.37	0.57
2:K:208:LEU:HD23	2:K:208:LEU:O	2.05	0.57
2:L:667:ARG:HD3	2:L:670:VAL:HG21	1.86	0.57
2:O:504:ASP:OD1	2:O:505:LEU:N	2.38	0.57
2:I:551:ILE:HD12	2:I:558:VAL:CG1	2.34	0.56
2:M:538:ILE:N	3:M:1000:ADP:O2B	2.38	0.56
1:E:136:VAL:HB	1:E:144:ILE:HD11	1.87	0.56
1:E:143:GLU:N	1:E:143:GLU:OE2	2.38	0.56
2:O:647:LEU:HD12	2:O:647:LEU:O	2.05	0.56
2:P:476:GLN:NE2	2:P:480:ASP:OD1	2.37	0.56
1:E:274:SER:O	1:E:274:SER:OG	2.19	0.56
1:G:322:MET:O	1:G:322:MET:HG2	2.05	0.56
2:M:599:THR:OG1	2:M:604:PHE:O	2.22	0.56
1:H:300:VAL:HG13	1:H:300:VAL:O	2.04	0.56
2:N:581:GLY:N	2:N:584:GLU:OE1	2.37	0.56
2:L:226:ASP:OD1	2:L:226:ASP:O	2.24	0.56
2:O:95:ARG:O	2:O:215:GLN:NE2	2.38	0.56
2:L:574:LEU:HD12	2:L:606:LEU:HD12	1.88	0.56
1:H:242:TYR:N	1:H:245:ASP:OD2	2.38	0.56
2:O:507:ILE:HD12	2:O:507:ILE:H	1.69	0.56
2:L:646:ILE:HG23	2:L:647:LEU:HD22	1.87	0.56
1:C:352:TRP:CH2	1:C:356:ILE:HD11	2.42	0.55
2:M:532:THR:O	2:M:665:VAL:HG22	2.06	0.55
2:J:565:MET:CE	2:J:582:LEU:HD23	2.36	0.55
2:K:102:LYS:NZ	2:K:255:GLU:OE2	2.39	0.55
2:N:592:ILE:HG21	2:N:627:GLU:OE1	2.06	0.55
2:O:24:VAL:HG12	2:O:28:ILE:HD11	1.88	0.55
2:O:497:LEU:HG	2:O:507:ILE:HD11	1.88	0.55
2:J:540:MET:N	3:J:1000:ADP:O3B	2.39	0.55
2:L:472:LEU:HD12	2:L:473:SER:N	2.22	0.55
2:P:716:LYS:HD2	2:P:716:LYS:C	2.31	0.55
1:A:340:ASP:C	1:A:340:ASP:OD2	2.50	0.55
2:I:523:GLN:N	2:I:523:GLN:OE1	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:667:ARG:HD3	2:O:670:VAL:HG21	1.88	0.55
1:A:328:LEU:O	1:A:331:ALA:N	2.40	0.55
2:I:513:LEU:HD21	2:I:694:ILE:HD11	1.88	0.55
2:O:647:LEU:HD11	2:P:711:TYR:HB2	1.89	0.55
1:H:39:GLN:N	1:H:39:GLN:OE1	2.40	0.55
2:M:667:ARG:HD3	2:M:670:VAL:HG21	1.89	0.55
2:N:470:ILE:HD11	2:N:694:ILE:HG22	1.88	0.54
2:J:581:GLY:N	2:J:584:GLU:OE1	2.40	0.54
2:J:582:LEU:N	2:J:608:PRO:O	2.34	0.54
2:K:476:GLN:NE2	2:K:480:ASP:OD2	2.40	0.54
2:N:530:MET:HE2	2:N:655:VAL:HG23	1.90	0.54
2:N:677:GLU:OE1	2:N:678:THR:N	2.40	0.54
1:E:222:GLU:OE2	1:E:239:ARG:NH2	2.41	0.54
2:O:606:LEU:HD23	2:O:607:ILE:N	2.22	0.54
2:O:618:GLU:O	2:O:621:MET:SD	2.65	0.54
2:L:530:MET:HE2	2:L:659:VAL:HG11	1.89	0.54
2:N:621:MET:SD	2:O:554:THR:HG22	2.47	0.54
2:J:312:SER:OG	2:J:358:LEU:HD11	2.08	0.54
1:G:304:LEU:HD21	1:G:316:ASN:OD1	2.07	0.54
1:H:45:ASP:OD1	1:H:45:ASP:N	2.40	0.54
2:M:527:ASN:ND2	2:M:637:ASP:O	2.40	0.54
2:N:23:LEU:HD12	2:N:23:LEU:H	1.73	0.54
1:A:242:TYR:N	1:A:245:ASP:OD2	2.38	0.54
1:E:320:LEU:HD23	1:E:321:ASP:N	2.22	0.54
2:I:667:ARG:HD3	2:I:670:VAL:HG21	1.90	0.54
1:C:242:TYR:N	1:C:245:ASP:OD2	2.40	0.53
1:G:262:GLU:HA	1:G:262:GLU:OE2	2.08	0.53
1:H:278:LEU:HA	1:H:336:LEU:HD11	1.90	0.53
2:I:579:VAL:O	2:I:597:LYS:NZ	2.41	0.53
2:J:526:ASN:C	2:J:526:ASN:OD1	2.51	0.53
2:J:541:THR:N	3:J:1000:ADP:O2A	2.42	0.53
1:B:242:TYR:N	1:B:245:ASP:OD1	2.41	0.53
2:I:377:ARG:NH1	2:J:383:GLN:OE1	2.40	0.53
2:K:454:GLU:N	2:K:454:GLU:OE2	2.41	0.53
2:L:582:LEU:HD12	2:L:586:LEU:HD23	1.91	0.53
2:N:470:ILE:HD12	2:N:470:ILE:H	1.73	0.53
2:J:696:ASN:O	2:J:697:SER:OG	2.25	0.53
2:L:129:MET:N	2:L:129:MET:HE2	2.23	0.53
2:N:470:ILE:HD12	2:N:695:LEU:O	2.08	0.53
2:K:45:ALA:O	2:K:49:THR:HG23	2.08	0.53
1:C:328:LEU:HD23	1:H:341:VAL:HG11	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:LEU:H	1:A:24:LEU:HD12	1.74	0.52
2:J:664:MET:HE1	2:J:679:SER:OG	2.09	0.52
2:M:94:ILE:HD11	2:M:232:LEU:HD21	1.90	0.52
2:J:328:ALA:O	2:K:343:THR:OG1	2.23	0.52
2:K:714:GLU:HA	2:K:714:GLU:OE1	2.09	0.52
2:N:158:ASP:OD1	2:N:161:ASN:N	2.40	0.52
2:P:581:GLY:N	2:P:584:GLU:OE1	2.43	0.52
2:O:473:SER:OG	2:O:504:ASP:OD2	2.27	0.52
2:J:504:ASP:OD1	2:J:505:LEU:N	2.42	0.52
2:N:23:LEU:O	2:N:26:THR:OG1	2.25	0.52
2:N:97:ARG:NE	2:O:411:ASP:OD2	2.43	0.52
2:P:110:ASP:N	2:P:110:ASP:OD1	2.42	0.52
2:L:322:GLU:OE1	2:L:323:LEU:N	2.42	0.52
1:C:77:GLU:C	1:C:77:GLU:OE1	2.53	0.52
2:I:269:LEU:HD21	2:I:396:LEU:HB2	1.91	0.52
2:O:109:LEU:HD11	2:O:245:ILE:HD12	1.91	0.52
1:D:322:MET:CE	1:D:328:LEU:HD13	2.40	0.52
2:M:161:ASN:OD1	2:M:173:ARG:NH2	2.43	0.52
2:J:517:LEU:HD21	2:J:663:LEU:HD11	1.91	0.52
2:I:110:ASP:N	2:I:110:ASP:OD1	2.42	0.51
2:J:387:MET:HE2	2:J:387:MET:HA	1.92	0.51
1:A:307:GLU:O	1:A:310:ARG:NH1	2.43	0.51
1:B:174:TYR:C	1:B:175:ILE:HD12	2.35	0.51
2:O:129:MET:SD	2:O:129:MET:N	2.83	0.51
2:I:551:ILE:CD1	2:I:558:VAL:HG11	2.39	0.51
2:I:555:ASN:O	2:I:555:ASN:ND2	2.38	0.51
2:I:580:ASN:N	2:I:584:GLU:OE1	2.43	0.51
2:N:172:ALA:HB2	2:N:182:LYS:HD3	1.91	0.51
2:N:496:LEU:HD11	2:N:574:LEU:HD21	1.91	0.51
2:N:298:ASP:OD1	2:N:298:ASP:O	2.27	0.51
2:N:538:ILE:HG22	2:N:667:ARG:HB2	1.92	0.51
2:I:514:ARG:HG3	2:I:551:ILE:HG22	1.93	0.51
2:N:599:THR:OG1	2:N:604:PHE:O	2.20	0.51
1:C:66:ARG:NE	1:C:67:PRO:HD2	2.26	0.50
2:O:557:ARG:NH1	2:O:635:ASN:O	2.44	0.50
1:C:176:SER:OG	1:C:177:GLY:N	2.44	0.50
1:G:109:GLN:N	1:G:109:GLN:OE1	2.44	0.50
1:G:175:ILE:HD11	1:G:197:ALA:HB1	1.91	0.50
2:I:541:THR:OG1	3:I:1000:ADP:O1A	2.26	0.50
2:K:532:THR:C	2:K:540:MET:HE1	2.36	0.50
1:C:329:VAL:HG21	1:H:315:ALA:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:367:ARG:NH2	1:C:371:ASP:OD2	2.44	0.50
2:L:577:ASN:OD1	2:L:597:LYS:NZ	2.30	0.50
2:O:523:GLN:OE1	2:O:523:GLN:N	2.42	0.50
2:O:551:ILE:HG23	2:O:558:VAL:HG21	1.92	0.50
1:A:289:ASP:OD1	1:A:291:THR:HG22	2.11	0.50
1:G:32:MET:SD	1:G:32:MET:C	2.95	0.50
2:I:688:ILE:HD12	2:I:688:ILE:N	2.27	0.50
2:J:513:LEU:CD1	2:J:694:ILE:HD11	2.41	0.50
2:N:139:THR:O	2:N:140:THR:OG1	2.22	0.50
2:P:335:THR:OG1	2:P:336:LYS:N	2.43	0.50
1:A:82:ASN:OD1	1:A:82:ASN:O	2.29	0.50
2:I:59:ASP:OD2	2:I:59:ASP:C	2.55	0.50
2:O:560:LEU:HD13	2:O:640:LEU:HD22	1.93	0.50
2:O:664:MET:C	2:O:664:MET:HE3	2.36	0.50
2:P:582:LEU:HA	2:P:585:ILE:HD12	1.94	0.50
1:A:84:GLN:OE1	1:A:140:THR:HG21	2.11	0.50
1:A:320:LEU:HD22	1:A:322:MET:HG3	1.94	0.49
1:F:307:GLU:O	1:F:310:ARG:NH1	2.45	0.49
2:I:695:LEU:HD23	2:I:698:ILE:HD11	1.93	0.49
1:A:116:THR:HG22	1:A:116:THR:O	2.11	0.49
1:C:175:ILE:HD11	1:C:197:ALA:HB1	1.94	0.49
1:E:263:VAL:HG11	1:E:285:ALA:HB1	1.93	0.49
2:K:700:ARG:NH1	2:K:710:TYR:O	2.45	0.49
1:G:280:GLU:C	1:G:280:GLU:OE1	2.55	0.49
2:J:541:THR:OG1	3:J:1000:ADP:O1A	2.30	0.49
2:O:269:LEU:HD21	2:O:396:LEU:HB2	1.94	0.49
2:O:461:GLU:C	2:O:461:GLU:OE1	2.54	0.49
1:C:262:GLU:CG	1:C:346:THR:HG22	2.43	0.49
2:M:665:VAL:HG12	2:M:694:ILE:HB	1.94	0.49
2:P:582:LEU:HD12	2:P:586:LEU:HD23	1.93	0.49
1:D:213:VAL:HG11	1:D:226:LEU:HD23	1.94	0.49
2:M:238:ASP:OD1	2:M:240:GLU:N	2.39	0.49
2:M:586:LEU:HD13	2:M:619:LEU:HB3	1.95	0.49
2:K:164:LEU:HD12	2:K:165:SER:N	2.27	0.49
1:B:46:LEU:HD23	1:B:46:LEU:O	2.13	0.49
2:M:178:GLN:C	2:M:178:GLN:CD	2.81	0.49
2:J:269:LEU:HD23	2:J:269:LEU:O	2.13	0.49
2:J:651:ASP:OD2	2:J:651:ASP:C	2.55	0.48
2:P:706:GLN:N	2:P:706:GLN:CD	2.70	0.48
1:C:326:THR:HG23	1:H:46:LEU:HD23	1.95	0.48
2:P:606:LEU:C	2:P:606:LEU:HD23	2.37	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:64:ILE:HG23	2:I:64:ILE:O	2.14	0.48
2:J:139:THR:HG22	2:J:139:THR:O	2.12	0.48
2:J:677:GLU:HA	2:J:677:GLU:OE1	2.13	0.48
1:G:39:GLN:OE1	1:G:39:GLN:N	2.47	0.48
2:J:134:GLU:OE1	2:J:134:GLU:N	2.42	0.48
2:N:664:MET:O	2:N:694:ILE:N	2.40	0.48
2:P:45:ALA:O	2:P:49:THR:HG23	2.13	0.48
2:J:377:ARG:HG3	2:K:387:MET:HE1	1.94	0.48
2:K:457:GLN:C	2:K:457:GLN:OE1	2.56	0.48
2:O:468:ALA:HB3	2:O:694:ILE:HD12	1.94	0.48
2:O:528:VAL:HG12	2:O:659:VAL:HG22	1.95	0.48
2:O:563:CYS:HB2	2:O:641:ILE:HD11	1.96	0.48
2:K:521:MET:HE1	2:K:526:ASN:O	2.13	0.48
2:N:532:THR:O	2:N:664:MET:HE3	2.14	0.48
1:F:302:ARG:NH1	1:F:340:ASP:OD2	2.47	0.48
2:L:607:ILE:CA	2:L:608:PRO:HG3	2.44	0.48
2:P:574:LEU:HD12	2:P:606:LEU:HD12	1.96	0.48
2:N:403:THR:O	2:N:403:THR:CG2	2.61	0.48
1:B:218:ASN:OD1	1:B:218:ASN:O	2.31	0.48
1:B:369:MET:SD	1:B:369:MET:C	2.96	0.48
1:F:337:GLN:HG2	1:F:338:PRO:HD2	1.96	0.48
2:J:344:LEU:HD23	2:J:344:LEU:O	2.13	0.48
2:K:301:ASP:OD2	2:K:303:PRO:HD2	2.13	0.48
1:A:136:VAL:HG23	1:A:144:ILE:HD11	1.95	0.48
1:C:178:GLN:O	1:C:205:THR:HG22	2.13	0.48
2:M:406:ASP:OD1	2:M:407:VAL:N	2.39	0.48
2:O:544:CYS:SG	2:O:640:LEU:HD21	2.53	0.48
1:C:278:LEU:HA	1:C:336:LEU:HD11	1.96	0.47
2:O:664:MET:SD	2:O:665:VAL:N	2.87	0.47
2:N:527:ASN:ND2	2:N:637:ASP:O	2.46	0.47
1:C:369:MET:C	1:C:369:MET:SD	2.96	0.47
2:M:591:ASP:OD1	2:M:593:THR:HG22	2.14	0.47
2:J:565:MET:HE2	2:J:565:MET:N	2.30	0.47
2:M:528:VAL:CG1	2:M:659:VAL:HA	2.45	0.47
2:N:604:PHE:CD1	2:N:604:PHE:C	2.93	0.47
2:I:451:ARG:NH2	2:J:705:TYR:O	2.48	0.47
2:I:496:LEU:HD12	2:I:573:LEU:HD11	1.97	0.47
2:M:526:ASN:OD1	2:M:528:VAL:HG12	2.13	0.47
1:E:229:LEU:HD12	1:E:229:LEU:O	2.15	0.47
2:L:608:PRO:N	2:L:608:PRO:HG3	2.05	0.47
2:N:529:LEU:HD23	2:N:530:MET:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:136:VAL:HG12	1:H:144:ILE:HD12	1.95	0.47
2:I:618:GLU:OE2	2:J:514:ARG:NH1	2.44	0.47
2:J:45:ALA:O	2:J:49:THR:HG23	2.15	0.47
2:J:707:ASP:OD1	2:J:707:ASP:O	2.32	0.47
2:O:673:LEU:C	2:O:673:LEU:HD23	2.39	0.47
1:C:280:GLU:OE2	1:H:256:LYS:NZ	2.44	0.47
1:E:272:ASP:OD1	1:E:272:ASP:N	2.44	0.47
2:M:552:SER:OG	2:M:553:GLN:OE1	2.32	0.47
2:P:175:GLN:OE1	2:P:175:GLN:N	2.48	0.47
2:I:565:MET:HE1	2:I:582:LEU:HD23	1.97	0.47
2:J:554:THR:O	2:J:554:THR:CG2	2.58	0.47
2:J:707:ASP:OD1	2:J:707:ASP:C	2.57	0.47
2:N:579:VAL:O	2:N:597:LYS:NZ	2.44	0.47
2:O:457:GLN:C	2:O:457:GLN:OE1	2.58	0.47
1:A:195:LEU:O	1:A:199:ASN:ND2	2.48	0.46
1:C:307:GLU:O	1:C:310:ARG:NH1	2.47	0.46
1:H:324:ASP:OD1	1:H:324:ASP:N	2.46	0.46
2:K:238:ASP:OD1	2:K:240:GLU:N	2.45	0.46
2:O:210:MET:HE2	2:O:210:MET:CA	2.43	0.46
2:I:164:LEU:HD23	2:I:164:LEU:C	2.39	0.46
2:O:529:LEU:HD12	2:O:530:MET:N	2.30	0.46
1:G:194:ILE:HD13	1:G:247:LEU:HD22	1.96	0.46
2:L:97:ARG:HG3	2:L:211:ILE:HG21	1.97	0.46
2:M:464:ILE:HD13	2:M:464:ILE:N	2.29	0.46
1:F:68:ASN:ND2	1:F:234:ASP:OD2	2.44	0.46
2:L:527:ASN:ND2	2:L:637:ASP:O	2.45	0.46
1:E:136:VAL:CB	1:E:144:ILE:HD11	2.45	0.46
2:I:344:LEU:C	2:I:344:LEU:HD23	2.41	0.46
2:N:128:LEU:HD23	2:N:128:LEU:O	2.15	0.46
1:B:91:ASP:OD1	1:B:170:SER:OG	2.22	0.46
1:B:184:GLN:NE2	1:G:196:ASP:OD1	2.48	0.46
1:A:43:ASP:OD1	1:A:43:ASP:N	2.43	0.46
1:C:92:VAL:HG23	1:C:92:VAL:O	2.16	0.46
1:F:337:GLN:O	1:F:340:ASP:OD1	2.33	0.46
2:N:496:LEU:HD11	2:N:574:LEU:CD2	2.44	0.46
1:B:307:GLU:OE1	1:B:310:ARG:NH2	2.48	0.46
1:F:174:TYR:C	1:F:175:ILE:HD12	2.41	0.46
1:H:97:VAL:HG22	1:H:161:VAL:HG22	1.98	0.46
2:L:437:MET:SD	2:L:437:MET:C	2.99	0.46
2:L:615:ASN:N	2:L:615:ASN:OD1	2.48	0.46
2:N:436:LEU:C	2:N:436:LEU:HD23	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:178:GLN:O	1:D:205:THR:HG22	2.16	0.45
1:F:194:ILE:HD11	1:F:215:LEU:HD22	1.98	0.45
1:H:336:LEU:HD12	1:H:336:LEU:H	1.81	0.45
2:L:540:MET:SD	2:L:540:MET:C	2.98	0.45
1:A:326:THR:HG23	1:F:46:LEU:HD23	1.98	0.45
1:B:263:VAL:HG12	1:B:265:LYS:H	1.80	0.45
1:B:280:GLU:OE2	1:E:256:LYS:NZ	2.49	0.45
1:E:322:MET:CG	1:E:322:MET:O	2.63	0.45
2:K:664:MET:O	2:K:694:ILE:N	2.47	0.45
2:N:406:ASP:OD1	2:N:407:VAL:N	2.44	0.45
2:O:640:LEU:C	2:O:640:LEU:HD23	2.41	0.45
1:B:280:GLU:OE2	1:E:256:LYS:CE	2.64	0.45
1:G:158:ASP:O	1:G:160:GLN:NE2	2.47	0.45
2:O:90:GLU:OE1	2:O:253:TYR:OH	2.25	0.45
2:P:615:ASN:OD1	2:P:615:ASN:N	2.50	0.45
2:J:664:MET:O	2:J:694:ILE:N	2.43	0.45
2:L:581:GLY:N	2:L:584:GLU:OE1	2.42	0.45
1:A:158:ASP:CG	1:A:158:ASP:O	2.59	0.45
1:C:92:VAL:HG22	1:C:167:ALA:HB3	1.98	0.45
1:G:262:GLU:OE1	1:G:354:ARG:NH2	2.39	0.45
2:L:210:MET:O	2:L:213:GLN:N	2.49	0.45
2:P:238:ASP:OD1	2:P:240:GLU:N	2.42	0.45
2:M:437:MET:SD	2:M:437:MET:C	3.00	0.45
1:B:32:MET:SD	1:B:32:MET:C	3.00	0.45
2:K:437:MET:SD	2:K:437:MET:C	3.00	0.45
2:M:577:ASN:OD1	2:M:597:LYS:NZ	2.33	0.45
1:D:162:ASP:OD1	1:D:163:VAL:N	2.50	0.45
1:H:262:GLU:OE2	1:H:354:ARG:NH2	2.42	0.45
2:J:559:LEU:HD23	2:J:605:ASP:HB3	1.99	0.45
2:L:444:LEU:C	2:L:444:LEU:HD23	2.42	0.44
2:P:238:ASP:O	2:P:242:ILE:HG12	2.17	0.44
1:C:213:VAL:HG21	1:C:226:LEU:HD23	1.98	0.44
1:C:321:ASP:OD2	1:C:321:ASP:C	2.60	0.44
1:F:56:THR:HA	1:F:330:MET:HE1	1.99	0.44
2:J:406:ASP:OD1	2:J:407:VAL:N	2.47	0.44
2:L:359:ASN:OD1	2:L:360:GLY:N	2.51	0.44
2:L:457:GLN:OE1	2:L:457:GLN:O	2.35	0.44
1:B:238:ASN:OD1	1:B:239:ARG:N	2.50	0.44
1:B:301:ILE:HG21	1:G:329:VAL:HG12	1.99	0.44
1:F:329:VAL:HG21	1:G:315:ALA:HB2	1.99	0.44
2:M:522:MET:SD	2:M:522:MET:C	3.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P:406:ASP:OD1	2:P:407:VAL:N	2.43	0.44
1:B:37:ILE:N	1:B:37:ILE:HD13	2.32	0.44
1:D:274:SER:O	1:D:274:SER:OG	2.30	0.44
2:L:322:GLU:C	2:L:322:GLU:CD	2.86	0.44
1:D:74:MET:HE3	1:D:74:MET:HA	1.99	0.44
2:M:560:LEU:HD23	2:M:561:ILE:N	2.33	0.44
2:N:444:LEU:HD23	2:N:445:LEU:HD22	1.98	0.44
2:P:522:MET:HE2	2:P:522:MET:HA	1.99	0.44
1:A:238:ASN:OD1	1:A:239:ARG:N	2.51	0.44
1:C:39:GLN:HA	1:C:39:GLN:OE1	2.17	0.44
1:D:215:LEU:HD23	1:D:215:LEU:C	2.43	0.44
1:H:99:ASP:O	1:H:100:HIS:ND1	2.51	0.44
2:I:259:GLU:C	2:I:259:GLU:OE2	2.60	0.44
2:K:313:MET:HE3	2:K:313:MET:O	2.17	0.44
2:M:154:LEU:C	2:M:154:LEU:HD23	2.43	0.44
1:B:340:ASP:N	1:B:340:ASP:OD1	2.49	0.44
1:D:224:ILE:HG22	1:D:225:SER:N	2.31	0.44
2:I:470:ILE:HD11	2:I:510:ILE:HG13	1.98	0.44
2:J:517:LEU:C	2:J:521:MET:HE2	2.43	0.44
2:N:541:THR:OG1	3:N:1000:ADP:O1A	2.33	0.44
1:A:262:GLU:OE2	1:A:292:THR:HG21	2.17	0.44
2:J:188:MET:SD	2:J:189:VAL:N	2.91	0.44
1:D:242:TYR:N	1:D:245:ASP:OD2	2.51	0.44
2:L:110:ASP:OD1	2:L:110:ASP:N	2.50	0.44
1:A:174:TYR:C	1:A:175:ILE:HD12	2.43	0.43
2:M:144:PRO:HG2	2:M:147:MET:HE3	1.98	0.43
2:P:326:LYS:HG2	2:P:330:ILE:HD12	2.00	0.43
2:P:359:ASN:OD1	2:P:359:ASN:C	2.61	0.43
1:E:276:MET:HE3	1:E:281:ALA:HB2	2.00	0.43
1:H:222:GLU:OE2	1:H:239:ARG:NH2	2.51	0.43
2:I:238:ASP:OD1	2:I:241:GLN:N	2.45	0.43
2:N:454:GLU:OE2	2:N:701:ARG:NH1	2.47	0.43
1:F:307:GLU:OE1	1:F:307:GLU:N	2.35	0.43
1:H:262:GLU:HG2	1:H:346:THR:HG22	2.00	0.43
2:I:344:LEU:HD23	2:I:344:LEU:O	2.18	0.43
2:J:238:ASP:O	2:J:242:ILE:HG12	2.18	0.43
2:L:541:THR:OG1	3:L:1000:ADP:O2A	2.27	0.43
2:L:582:LEU:HD12	2:L:582:LEU:O	2.18	0.43
2:N:362:VAL:HG13	2:O:300:VAL:HG23	2.01	0.43
1:H:24:LEU:HD12	1:H:24:LEU:H	1.83	0.43
2:P:234:TYR:CD1	2:P:242:ILE:HG22	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:195:LEU:HD21	1:F:246:ILE:CD1	2.49	0.43
2:J:513:LEU:HD12	2:J:694:ILE:HD11	2.01	0.43
2:N:677:GLU:CD	2:N:677:GLU:C	2.86	0.43
1:F:221:GLU:OE1	1:F:221:GLU:N	2.52	0.43
1:G:367:ARG:HD2	1:G:367:ARG:C	2.44	0.43
1:H:92:VAL:HG23	1:H:92:VAL:O	2.18	0.43
2:J:700:ARG:NH1	2:J:710:TYR:O	2.52	0.43
2:K:529:LEU:HD23	2:K:640:LEU:HD21	2.00	0.43
2:M:377:ARG:NH1	2:N:383:GLN:OE1	2.44	0.43
2:P:582:LEU:N	2:P:608:PRO:O	2.48	0.43
2:N:601:ILE:HD12	2:N:601:ILE:N	2.34	0.43
1:B:225:SER:O	1:B:225:SER:OG	2.33	0.43
2:K:28:ILE:O	2:K:31:ARG:NE	2.52	0.43
2:M:110:ASP:OD1	2:M:110:ASP:N	2.51	0.43
2:M:581:GLY:N	2:M:584:GLU:OE1	2.42	0.43
2:O:664:MET:HE1	2:O:666:ALA:HB2	2.01	0.43
1:B:162:ASP:OD1	1:B:163:VAL:N	2.51	0.43
1:G:157:ALA:O	1:G:158:ASP:OD1	2.37	0.43
1:G:320:LEU:C	1:G:320:LEU:HD23	2.44	0.43
1:G:372:THR:HG22	1:G:376:ILE:HD12	2.01	0.43
2:P:20:ILE:HA	2:P:23:LEU:HD13	2.01	0.43
2:P:23:LEU:N	2:P:23:LEU:HD12	2.33	0.43
2:P:504:ASP:O	2:P:507:ILE:HD12	2.19	0.43
2:P:565:MET:HE2	2:P:583:SER:HB3	2.01	0.43
1:B:141:LEU:O	1:B:144:ILE:HG22	2.19	0.42
1:D:55:LEU:HD23	1:D:59:LEU:HD23	2.01	0.42
1:E:71:ARG:NH2	1:E:236:ASN:OD1	2.52	0.42
2:L:707:ASP:OD1	2:L:707:ASP:O	2.37	0.42
2:N:359:ASN:OD1	2:N:360:GLY:N	2.52	0.42
1:A:280:GLU:OE2	1:F:256:LYS:HD3	2.19	0.42
2:I:563:CYS:O	2:I:563:CYS:SG	2.75	0.42
2:K:242:ILE:HG13	2:K:243:ARG:N	2.33	0.42
2:M:323:LEU:HD11	2:M:347:LYS:HB3	2.01	0.42
1:A:162:ASP:OD1	1:A:163:VAL:N	2.52	0.42
1:A:195:LEU:HD21	1:F:246:ILE:HD11	2.02	0.42
1:A:263:VAL:HG12	1:A:265:LYS:H	1.84	0.42
1:E:340:ASP:OD1	1:E:341:VAL:N	2.53	0.42
1:F:195:LEU:CD2	1:G:246:ILE:HD11	2.49	0.42
1:H:307:GLU:O	1:H:310:ARG:NH1	2.53	0.42
2:I:223:ASN:ND2	2:P:92:GLN:OE1	2.52	0.42
2:I:531:MET:SD	2:I:532:THR:N	2.92	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:664:MET:SD	2:I:665:VAL:N	2.92	0.42
2:J:129:MET:SD	2:J:129:MET:N	2.92	0.42
2:J:528:VAL:HG12	2:J:659:VAL:HG23	2.01	0.42
2:L:503:THR:O	2:L:503:THR:HG22	2.20	0.42
2:N:298:ASP:OD1	2:N:298:ASP:C	2.61	0.42
1:G:242:TYR:N	1:G:245:ASP:OD2	2.51	0.42
2:I:118:PHE:O	2:I:122:GLY:N	2.52	0.42
2:N:132:GLN:O	2:N:133:ASN:C	2.63	0.42
2:N:226:ASP:O	2:N:226:ASP:CG	2.63	0.42
2:N:611:GLN:OE1	2:N:611:GLN:HA	2.18	0.42
1:A:369:MET:SD	1:A:369:MET:C	3.03	0.42
2:K:343:THR:HG23	2:K:344:LEU:N	2.34	0.42
2:K:437:MET:SD	2:K:438:LEU:N	2.93	0.42
2:M:564:ASP:O	2:M:568:GLY:N	2.51	0.42
2:N:470:ILE:HD12	2:N:470:ILE:N	2.33	0.42
2:N:583:SER:HA	2:N:586:LEU:HD12	2.01	0.42
2:O:531:MET:HE1	2:O:663:LEU:HB2	2.02	0.42
2:O:582:LEU:N	2:O:608:PRO:O	2.43	0.42
1:A:215:LEU:C	1:A:215:LEU:HD23	2.45	0.42
2:K:579:VAL:O	2:K:597:LYS:NZ	2.48	0.42
2:M:460:GLU:HA	2:M:460:GLU:OE2	2.20	0.42
2:M:628:LEU:C	2:M:628:LEU:HD23	2.45	0.42
2:N:189:VAL:HG11	2:N:192:ILE:HD11	2.00	0.42
2:N:220:VAL:HG22	2:N:232:LEU:HD22	2.01	0.42
2:N:453:ILE:N	2:N:453:ILE:HD13	2.34	0.42
2:O:555:ASN:OD1	2:O:555:ASN:C	2.61	0.42
1:B:221:GLU:C	1:B:221:GLU:OE2	2.62	0.42
1:D:157:ALA:O	1:D:158:ASP:C	2.63	0.42
1:E:92:VAL:O	1:E:92:VAL:CG2	2.67	0.42
1:C:328:LEU:CD2	1:H:341:VAL:HG11	2.49	0.42
1:E:198:ILE:O	1:E:198:ILE:HG22	2.19	0.42
1:F:213:VAL:HG12	1:F:214:VAL:N	2.34	0.42
2:J:110:ASP:OD1	2:J:110:ASP:N	2.49	0.42
2:L:470:ILE:HD12	2:L:696:ASN:OD1	2.20	0.42
2:P:688:ILE:HD12	2:P:688:ILE:N	2.34	0.42
1:E:360:LEU:HD12	1:E:360:LEU:HA	1.95	0.42
2:I:678:THR:O	2:I:681:SER:OG	2.30	0.42
2:J:323:LEU:HD11	2:J:347:LYS:HB3	2.01	0.42
2:K:260:ARG:CZ	2:L:408:ARG:HD2	2.50	0.42
2:K:282:ARG:NH1	2:L:394:GLN:OE1	2.47	0.42
2:L:504:ASP:O	2:L:507:ILE:HG22	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:609:ARG:NH1	2:L:610:GLY:O	2.52	0.42
2:N:343:THR:HG23	2:N:344:LEU:N	2.35	0.42
2:N:663:LEU:HB3	2:N:694:ILE:HD11	2.02	0.42
2:O:459:LEU:HD22	2:O:464:ILE:HB	2.00	0.42
2:I:630:ASN:O	2:I:634:LYS:HG2	2.20	0.42
2:K:110:ASP:OD1	2:K:110:ASP:N	2.46	0.42
2:K:210:MET:O	2:K:213:GLN:N	2.53	0.42
2:L:29:GLU:C	2:L:29:GLU:OE1	2.63	0.42
2:N:337:VAL:HG12	2:N:337:VAL:O	2.20	0.42
2:O:146:GLU:OE1	2:O:146:GLU:N	2.53	0.42
1:A:195:LEU:CD2	1:F:246:ILE:HD11	2.50	0.41
2:J:377:ARG:NH1	2:K:383:GLN:OE1	2.52	0.41
2:L:309:VAL:HG11	2:L:362:VAL:CG2	2.50	0.41
2:N:714:GLU:OE2	2:N:716:LYS:NZ	2.45	0.41
2:O:624:ARG:HB2	2:O:624:ARG:CZ	2.50	0.41
2:P:188:MET:SD	2:P:189:VAL:N	2.93	0.41
2:P:638:LEU:C	2:P:638:LEU:HD23	2.45	0.41
1:A:29:MET:HB3	1:C:325:ALA:HB3	2.02	0.41
1:E:277:THR:O	1:E:280:GLU:N	2.53	0.41
2:I:91:ILE:HD11	2:I:230:LEU:HD22	2.01	0.41
2:P:99:VAL:HG23	2:P:100:LEU:N	2.34	0.41
2:P:180:LEU:C	2:P:180:LEU:HD23	2.44	0.41
2:P:327:GLU:HB2	2:P:344:LEU:HD21	2.03	0.41
1:A:366:VAL:O	1:A:369:MET:HE3	2.19	0.41
1:F:337:GLN:CG	1:F:338:PRO:HD2	2.50	0.41
2:I:568:GLY:O	2:I:609:ARG:NH1	2.53	0.41
2:L:109:LEU:HB3	2:L:210:MET:HE3	2.03	0.41
2:N:323:LEU:HD11	2:N:347:LYS:HB3	2.02	0.41
2:O:49:THR:CG2	2:O:427:ILE:HG21	2.50	0.41
2:P:269:LEU:HD21	2:P:396:LEU:HB2	2.03	0.41
1:C:66:ARG:CZ	1:C:67:PRO:HD2	2.50	0.41
1:C:162:ASP:OD1	1:C:163:VAL:N	2.54	0.41
1:E:157:ALA:O	1:E:158:ASP:C	2.64	0.41
1:H:162:ASP:OD1	1:H:163:VAL:N	2.54	0.41
2:K:504:ASP:OD1	2:K:505:LEU:N	2.53	0.41
2:P:716:LYS:HD2	2:P:717:SER:O	2.20	0.41
1:A:276:MET:HG3	1:A:280:GLU:OE1	2.20	0.41
1:D:92:VAL:O	1:D:92:VAL:CG2	2.67	0.41
2:K:301:ASP:OD2	2:K:301:ASP:C	2.63	0.41
2:L:411:ASP:OD2	2:L:411:ASP:C	2.64	0.41
2:N:530:MET:HE1	2:N:656:GLY:HA2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:531:MET:HE1	2:O:663:LEU:CB	2.50	0.41
1:B:218:ASN:O	1:B:218:ASN:CG	2.64	0.41
1:B:258:PHE:HD1	1:B:268:THR:HG22	1.85	0.41
1:D:332:THR:O	1:D:332:THR:HG22	2.19	0.41
1:F:136:VAL:O	1:F:137:VAL:C	2.64	0.41
2:I:576:THR:HG22	2:I:577:ASN:N	2.36	0.41
2:I:665:VAL:HG23	2:I:694:ILE:HG22	2.03	0.41
2:K:517:LEU:HD21	2:K:529:LEU:CD2	2.51	0.41
2:L:359:ASN:OD1	2:L:359:ASN:C	2.63	0.41
2:M:454:GLU:O	2:M:668:TYR:OH	2.35	0.41
2:O:323:LEU:HD21	2:O:347:LYS:HE3	2.03	0.41
2:O:325:PHE:CG	2:P:347:LYS:HD3	2.56	0.41
2:P:132:GLN:O	2:P:133:ASN:C	2.63	0.41
2:P:210:MET:HE2	2:P:210:MET:HA	2.03	0.41
2:P:684:GLU:C	2:P:684:GLU:CD	2.88	0.41
1:A:194:ILE:HD11	1:A:215:LEU:CD1	2.51	0.41
2:I:145:LYS:HD3	2:I:145:LYS:O	2.20	0.41
2:I:529:LEU:HD23	2:I:640:LEU:HD21	2.03	0.41
2:J:565:MET:HE2	2:J:565:MET:HA	2.01	0.41
2:P:529:LEU:C	2:P:529:LEU:HD23	2.45	0.41
1:E:224:ILE:HG22	1:E:225:SER:N	2.36	0.41
1:G:337:GLN:HG3	1:G:338:PRO:HD2	2.02	0.41
2:J:460:GLU:CD	2:J:460:GLU:C	2.88	0.41
2:K:497:LEU:C	2:K:497:LEU:HD23	2.46	0.41
2:N:45:ALA:O	2:N:49:THR:HG23	2.20	0.41
1:C:29:MET:HE2	1:D:299:PHE:CD2	2.56	0.41
1:F:93:LEU:HD12	1:F:126:MET:SD	2.60	0.41
1:G:157:ALA:O	1:G:158:ASP:C	2.64	0.41
1:H:23:VAL:O	1:H:23:VAL:HG22	2.21	0.41
2:I:147:MET:HE1	2:I:170:PHE:HB2	2.03	0.41
2:I:540:MET:HE3	2:I:642:ASP:OD1	2.21	0.41
2:J:132:GLN:O	2:J:133:ASN:C	2.64	0.41
2:J:451:ARG:NH2	2:K:705:TYR:O	2.49	0.41
2:K:122:GLY:O	2:K:126:ASP:OD2	2.38	0.41
2:K:472:LEU:N	2:K:472:LEU:HD23	2.36	0.41
2:K:574:LEU:HD12	2:K:606:LEU:HD12	2.03	0.41
2:M:620:LEU:HD22	2:M:620:LEU:H	1.85	0.41
2:N:327:GLU:HB2	2:N:344:LEU:HD21	2.03	0.41
2:O:529:LEU:HD12	2:O:530:MET:H	1.86	0.41
2:O:531:MET:HA	2:O:531:MET:CE	2.46	0.41
2:O:532:THR:C	2:O:540:MET:HE2	2.46	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:263:VAL:HG11	1:B:285:ALA:HB1	2.02	0.41
1:F:28:ASN:OD1	1:F:28:ASN:C	2.63	0.41
2:I:343:THR:HG23	2:I:344:LEU:N	2.36	0.41
2:I:577:ASN:OD1	2:I:597:LYS:NZ	2.45	0.41
2:J:565:MET:SD	2:J:582:LEU:HD23	2.61	0.41
2:N:302:LEU:HD22	2:N:302:LEU:H	1.86	0.41
2:O:694:ILE:HD13	2:O:694:ILE:HA	1.94	0.41
2:P:323:LEU:HD11	2:P:347:LYS:HB3	2.02	0.41
2:P:410:VAL:HG12	2:P:411:ASP:OD1	2.21	0.41
1:B:36:VAL:C	1:B:37:ILE:HD13	2.46	0.40
1:C:68:ASN:OD1	1:C:69:VAL:N	2.53	0.40
1:C:299:PHE:CD2	1:H:29:MET:HE2	2.57	0.40
1:G:128:TYR:CG	1:G:129:PRO:HD2	2.57	0.40
1:G:360:LEU:N	1:G:361:PRO:HD2	2.37	0.40
1:H:224:ILE:HG22	1:H:225:SER:N	2.35	0.40
1:H:300:VAL:O	1:H:300:VAL:CG1	2.69	0.40
2:K:179:MET:HG2	2:K:188:MET:HE2	2.03	0.40
2:L:132:GLN:O	2:L:133:ASN:C	2.64	0.40
2:N:642:ASP:OD1	2:N:643:THR:N	2.55	0.40
1:D:61:ASP:OD1	1:D:64:ARG:NH1	2.49	0.40
1:E:66:ARG:N	1:E:66:ARG:HD2	2.36	0.40
2:I:496:LEU:CD1	2:I:573:LEU:HD11	2.51	0.40
2:K:563:CYS:SG	2:K:620:LEU:HD21	2.61	0.40
2:P:576:THR:HG22	2:P:577:ASN:N	2.36	0.40
1:E:360:LEU:N	1:E:361:PRO:HD2	2.37	0.40
1:G:136:VAL:O	1:G:137:VAL:C	2.65	0.40
2:K:406:ASP:O	2:K:407:VAL:HB	2.21	0.40
2:M:371:GLU:OE2	2:M:374:ARG:NH2	2.51	0.40
2:N:662:THR:C	2:N:663:LEU:HD22	2.46	0.40
2:P:585:ILE:O	2:P:624:ARG:NE	2.50	0.40
1:D:252:ASN:OD1	1:D:252:ASN:C	2.64	0.40
1:F:140:THR:HG22	1:F:141:LEU:N	2.37	0.40
2:M:560:LEU:HD23	2:M:560:LEU:C	2.47	0.40
2:O:343:THR:HG23	2:O:344:LEU:N	2.37	0.40
2:P:593:THR:HG23	2:P:594:THR:HG23	2.03	0.40
1:A:213:VAL:HG12	1:A:214:VAL:N	2.37	0.40
2:K:302:LEU:HB2	2:K:303:PRO:HD3	2.03	0.40
2:L:225:LYS:O	2:L:226:ASP:HB3	2.22	0.40
2:M:472:LEU:HD12	3:M:1000:ADP:N1	2.37	0.40
2:M:530:MET:HE1	2:M:656:GLY:N	2.36	0.40
2:N:46:VAL:HA	2:N:428:ILE:HD11	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:606:LEU:HD23	2:N:607:ILE:C	2.47	0.40
2:O:664:MET:O	2:O:694:ILE:N	2.48	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	356/394 (90%)	341 (96%)	15 (4%)	0	100	100
1	B	356/394 (90%)	345 (97%)	11 (3%)	0	100	100
1	C	356/394 (90%)	340 (96%)	16 (4%)	0	100	100
1	D	356/394 (90%)	338 (95%)	18 (5%)	0	100	100
1	E	356/394 (90%)	343 (96%)	13 (4%)	0	100	100
1	F	356/394 (90%)	339 (95%)	17 (5%)	0	100	100
1	G	356/394 (90%)	346 (97%)	10 (3%)	0	100	100
1	H	356/394 (90%)	345 (97%)	11 (3%)	0	100	100
2	I	662/738 (90%)	649 (98%)	12 (2%)	1 (0%)	43	73
2	J	662/738 (90%)	651 (98%)	9 (1%)	2 (0%)	36	67
2	K	662/738 (90%)	645 (97%)	16 (2%)	1 (0%)	43	73
2	L	662/738 (90%)	647 (98%)	13 (2%)	2 (0%)	36	67
2	M	662/738 (90%)	647 (98%)	13 (2%)	2 (0%)	36	67
2	N	662/738 (90%)	643 (97%)	18 (3%)	1 (0%)	43	73
2	O	662/738 (90%)	647 (98%)	14 (2%)	1 (0%)	43	73
2	P	662/738 (90%)	649 (98%)	12 (2%)	1 (0%)	43	73
All	All	8144/9056 (90%)	7915 (97%)	218 (3%)	11 (0%)	49	79

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	P	407	VAL
2	I	407	VAL
2	J	407	VAL
2	L	407	VAL
2	N	407	VAL
2	O	407	VAL
2	K	407	VAL
2	M	407	VAL
2	J	120	ILE
2	L	120	ILE
2	M	120	ILE

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	307/342 (90%)	307 (100%)	0	100 100
1	B	307/342 (90%)	307 (100%)	0	100 100
1	C	307/342 (90%)	306 (100%)	1 (0%)	86 84
1	D	307/342 (90%)	307 (100%)	0	100 100
1	E	307/342 (90%)	306 (100%)	1 (0%)	86 84
1	F	307/342 (90%)	307 (100%)	0	100 100
1	G	307/342 (90%)	307 (100%)	0	100 100
1	H	307/342 (90%)	307 (100%)	0	100 100
2	I	570/630 (90%)	570 (100%)	0	100 100
2	J	570/630 (90%)	569 (100%)	1 (0%)	87 87
2	K	570/630 (90%)	570 (100%)	0	100 100
2	L	570/630 (90%)	570 (100%)	0	100 100
2	M	570/630 (90%)	570 (100%)	0	100 100
2	N	570/630 (90%)	570 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	O	570/630 (90%)	570 (100%)	0	100	100
2	P	570/630 (90%)	570 (100%)	0	100	100
All	All	7016/7776 (90%)	7013 (100%)	3 (0%)	100	100

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	346	THR
1	E	206	ASP
2	J	698	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	100	HIS
1	A	160	GLN
1	A	266	GLN
1	C	232	ASN
1	D	100	HIS
1	F	94	ASN
1	F	160	GLN
1	F	184	GLN
1	F	266	GLN
1	F	337	GLN
1	G	100	HIS
1	H	135	HIS
1	H	316	ASN
1	H	358	GLN
2	I	175	GLN
2	I	223	ASN
2	I	370	GLN
2	J	193	HIS
2	J	580	ASN
2	K	223	ASN
2	K	252	ASN
2	K	462	HIS
2	K	611	GLN
2	K	630	ASN
2	L	212	ASN
2	L	580	ASN

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Mol	Chain	Res	Type
2	M	175	GLN
2	M	370	GLN
2	M	450	ASN
2	M	630	ASN
2	M	635	ASN
2	N	223	ASN
2	N	370	GLN
2	N	462	HIS
2	N	580	ASN
2	O	155	ASN
2	O	193	HIS
2	O	388	GLN
2	O	580	ASN
2	P	193	HIS
2	P	291	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 oligosaccharides in this entry.

5.6 Ligand geometry

8 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	$\#\|Z\|>2$
3	ADP	J	1000	-	28,29,29	1.40	4 (14%)	43,45,45	1.90	10 (23%)
3	ADP	P	1000	-	28,29,29	1.38	4 (14%)	43,45,45	1.89	9 (20%)
3	ADP	K	1000	-	28,29,29	1.39	4 (14%)	43,45,45	1.86	11 (25%)
3	ADP	M	1000	-	28,29,29	1.38	4 (14%)	43,45,45	1.89	10 (23%)
3	ADP	L	1000	-	28,29,29	1.38	4 (14%)	43,45,45	1.89	11 (25%)
3	ADP	I	1000	-	28,29,29	1.39	4 (14%)	43,45,45	1.88	11 (25%)
3	ADP	O	1000	-	28,29,29	1.39	4 (14%)	43,45,45	1.91	11 (25%)
3	ADP	N	1000	-	28,29,29	1.39	4 (14%)	43,45,45	1.89	11 (25%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ADP	J	1000	-	-	5/16/32/32	0/3/3/3
3	ADP	P	1000	-	-	3/16/32/32	0/3/3/3
3	ADP	K	1000	-	-	5/16/32/32	0/3/3/3
3	ADP	M	1000	-	-	7/16/32/32	0/3/3/3
3	ADP	L	1000	-	-	6/16/32/32	0/3/3/3
3	ADP	I	1000	-	-	5/16/32/32	0/3/3/3
3	ADP	O	1000	-	-	6/16/32/32	0/3/3/3
3	ADP	N	1000	-	-	5/16/32/32	0/3/3/3

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	O	1000	ADP	C5-C4	4.56	1.47	1.39
3	J	1000	ADP	C5-C4	4.56	1.47	1.39
3	K	1000	ADP	C5-C4	4.56	1.47	1.39
3	I	1000	ADP	C5-C4	4.55	1.47	1.39
3	N	1000	ADP	C5-C4	4.53	1.47	1.39
3	L	1000	ADP	C5-C4	4.50	1.47	1.39
3	P	1000	ADP	C5-C4	4.45	1.47	1.39
3	M	1000	ADP	C5-C4	4.43	1.47	1.39
3	J	1000	ADP	C5-C6	2.67	1.48	1.41
3	O	1000	ADP	C5-C6	2.65	1.48	1.41
3	M	1000	ADP	C5-C6	2.65	1.48	1.41
3	I	1000	ADP	C5-C6	2.64	1.48	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	N	1000	ADP	C5-C6	2.63	1.48	1.41
3	K	1000	ADP	C5-C6	2.61	1.48	1.41
3	L	1000	ADP	C5-C6	2.60	1.48	1.41
3	P	1000	ADP	C5-C6	2.49	1.47	1.41
3	K	1000	ADP	C5-N7	-2.39	1.34	1.39
3	J	1000	ADP	C5-N7	-2.36	1.34	1.39
3	I	1000	ADP	C8-N7	2.36	1.36	1.31
3	P	1000	ADP	C5-N7	-2.36	1.34	1.39
3	O	1000	ADP	C5-N7	-2.36	1.34	1.39
3	L	1000	ADP	C5-N7	-2.35	1.34	1.39
3	I	1000	ADP	C5-N7	-2.35	1.34	1.39
3	L	1000	ADP	C8-N7	2.33	1.36	1.31
3	J	1000	ADP	C8-N7	2.33	1.36	1.31
3	M	1000	ADP	C5-N7	-2.33	1.34	1.39
3	N	1000	ADP	C8-N7	2.32	1.36	1.31
3	M	1000	ADP	C8-N7	2.32	1.36	1.31
3	N	1000	ADP	C5-N7	-2.30	1.34	1.39
3	O	1000	ADP	C8-N7	2.29	1.36	1.31
3	K	1000	ADP	C8-N7	2.29	1.36	1.31
3	P	1000	ADP	C8-N7	2.22	1.35	1.31

All (84) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	J	1000	ADP	C5-C4-N3	-5.98	118.48	126.72
3	N	1000	ADP	C5-C4-N3	-5.88	118.62	126.72
3	K	1000	ADP	C5-C4-N3	-5.87	118.63	126.72
3	O	1000	ADP	C5-C4-N3	-5.87	118.64	126.72
3	P	1000	ADP	C5-C4-N3	-5.83	118.69	126.72
3	I	1000	ADP	C5-C4-N3	-5.80	118.73	126.72
3	L	1000	ADP	C5-C4-N3	-5.79	118.75	126.72
3	M	1000	ADP	C5-C4-N3	-5.77	118.77	126.72
3	P	1000	ADP	N3-C4-N9	4.89	135.49	127.17
3	J	1000	ADP	N3-C4-N9	4.73	135.22	127.17
3	K	1000	ADP	N3-C4-N9	4.73	135.22	127.17
3	N	1000	ADP	N3-C4-N9	4.72	135.20	127.17
3	O	1000	ADP	N3-C4-N9	4.71	135.18	127.17
3	M	1000	ADP	N3-C4-N9	4.64	135.06	127.17
3	L	1000	ADP	N3-C4-N9	4.62	135.02	127.17
3	I	1000	ADP	N3-C4-N9	4.56	134.93	127.17
3	N	1000	ADP	C2-N3-C4	3.89	121.33	111.83
3	M	1000	ADP	C2-N3-C4	3.87	121.29	111.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L	1000	ADP	C2-N3-C4	3.86	121.26	111.83
3	O	1000	ADP	C2-N3-C4	3.86	121.25	111.83
3	J	1000	ADP	C2-N3-C4	3.85	121.24	111.83
3	K	1000	ADP	C2-N3-C4	3.84	121.21	111.83
3	P	1000	ADP	C2-N3-C4	3.83	121.19	111.83
3	I	1000	ADP	C2-N3-C4	3.81	121.14	111.83
3	L	1000	ADP	N3-C2-N1	-3.72	122.96	128.58
3	N	1000	ADP	N3-C2-N1	-3.67	123.03	128.58
3	M	1000	ADP	N3-C2-N1	-3.66	123.05	128.58
3	O	1000	ADP	N3-C2-N1	-3.65	123.06	128.58
3	K	1000	ADP	N3-C2-N1	-3.63	123.08	128.58
3	P	1000	ADP	N3-C2-N1	-3.63	123.08	128.58
3	I	1000	ADP	N3-C2-N1	-3.57	123.18	128.58
3	J	1000	ADP	N3-C2-N1	-3.52	123.25	128.58
3	N	1000	ADP	C4-C5-N7	-3.52	106.56	110.58
3	I	1000	ADP	C4-C5-N7	-3.51	106.57	110.58
3	J	1000	ADP	C4-C5-N7	-3.49	106.59	110.58
3	O	1000	ADP	C4-C5-N7	-3.47	106.61	110.58
3	L	1000	ADP	C4-C5-N7	-3.47	106.62	110.58
3	M	1000	ADP	C4-C5-N7	-3.41	106.68	110.58
3	K	1000	ADP	C4-C5-N7	-3.39	106.70	110.58
3	P	1000	ADP	C4-C5-N7	-3.17	106.95	110.58
3	P	1000	ADP	C4-N9-C8	3.12	109.02	105.74
3	N	1000	ADP	C4-N9-C8	3.02	108.91	105.74
3	M	1000	ADP	C4-N9-C8	2.94	108.83	105.74
3	L	1000	ADP	C4-N9-C8	2.89	108.78	105.74
3	O	1000	ADP	C4-N9-C8	2.89	108.77	105.74
3	K	1000	ADP	C4-N9-C8	2.78	108.65	105.74
3	I	1000	ADP	C4-N9-C8	2.77	108.64	105.74
3	O	1000	ADP	C5-N7-C8	2.71	107.72	103.45
3	N	1000	ADP	C5-N7-C8	2.69	107.68	103.45
3	L	1000	ADP	C5-N7-C8	2.69	107.67	103.45
3	J	1000	ADP	C4-N9-C8	2.67	108.54	105.74
3	I	1000	ADP	C5-N7-C8	2.66	107.63	103.45
3	M	1000	ADP	C5-N7-C8	2.64	107.60	103.45
3	J	1000	ADP	C5-N7-C8	2.62	107.57	103.45
3	I	1000	ADP	C3'-C2'-C1'	2.57	106.33	101.46
3	K	1000	ADP	C3'-C2'-C1'	2.55	106.29	101.46
3	K	1000	ADP	C5-N7-C8	2.55	107.46	103.45
3	J	1000	ADP	C3'-C2'-C1'	2.53	106.26	101.46
3	L	1000	ADP	C3'-C2'-C1'	2.51	106.22	101.46
3	P	1000	ADP	C5-N7-C8	2.48	107.35	103.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	O	1000	ADP	C3'-C2'-C1'	2.48	106.15	101.46
3	M	1000	ADP	C3'-C2'-C1'	2.38	105.96	101.46
3	N	1000	ADP	N9-C8-N7	-2.30	110.67	113.94
3	L	1000	ADP	N9-C8-N7	-2.27	110.71	113.94
3	P	1000	ADP	C3'-C2'-C1'	2.27	105.76	101.46
3	O	1000	ADP	N9-C8-N7	-2.27	110.71	113.94
3	M	1000	ADP	N9-C8-N7	-2.27	110.72	113.94
3	I	1000	ADP	N9-C8-N7	-2.19	110.82	113.94
3	P	1000	ADP	N9-C8-N7	-2.17	110.86	113.94
3	N	1000	ADP	C3'-C2'-C1'	2.15	105.53	101.46
3	L	1000	ADP	C6-C5-N7	2.15	136.23	132.09
3	M	1000	ADP	C6-C5-N7	2.15	136.23	132.09
3	N	1000	ADP	C6-C5-N7	2.14	136.21	132.09
3	I	1000	ADP	C6-C5-N7	2.12	136.17	132.09
3	O	1000	ADP	C6-C5-N7	2.10	136.14	132.09
3	J	1000	ADP	N9-C8-N7	-2.07	111.00	113.94
3	K	1000	ADP	N9-C8-N7	-2.05	111.03	113.94
3	L	1000	ADP	C2-N1-C6	2.05	122.09	118.73
3	O	1000	ADP	C2-N1-C6	2.03	122.07	118.73
3	K	1000	ADP	C6-C5-N7	2.03	136.00	132.09
3	J	1000	ADP	C6-C5-N7	2.03	135.99	132.09
3	K	1000	ADP	C2-N1-C6	2.02	122.05	118.73
3	I	1000	ADP	C2-N1-C6	2.02	122.05	118.73
3	N	1000	ADP	C2-N1-C6	2.00	122.02	118.73

There are no chirality outliers.

All (42) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	I	1000	ADP	C5'-O5'-PA-O1A
3	J	1000	ADP	PA-O3A-PB-O3B
3	K	1000	ADP	O4'-C4'-C5'-O5'
3	L	1000	ADP	C5'-O5'-PA-O3A
3	M	1000	ADP	PA-O3A-PB-O3B
3	M	1000	ADP	C5'-O5'-PA-O1A
3	M	1000	ADP	C5'-O5'-PA-O2A
3	M	1000	ADP	C5'-O5'-PA-O3A
3	O	1000	ADP	C5'-O5'-PA-O1A
3	O	1000	ADP	C5'-O5'-PA-O2A
3	O	1000	ADP	C5'-O5'-PA-O3A
3	P	1000	ADP	C5'-O5'-PA-O1A
3	P	1000	ADP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
3	P	1000	ADP	C5'-O5'-PA-O3A
3	I	1000	ADP	C3'-C4'-C5'-O5'
3	K	1000	ADP	C3'-C4'-C5'-O5'
3	L	1000	ADP	C3'-C4'-C5'-O5'
3	M	1000	ADP	C3'-C4'-C5'-O5'
3	I	1000	ADP	O4'-C4'-C5'-O5'
3	J	1000	ADP	C3'-C4'-C5'-O5'
3	L	1000	ADP	O4'-C4'-C5'-O5'
3	M	1000	ADP	O4'-C4'-C5'-O5'
3	L	1000	ADP	PB-O3A-PA-O1A
3	O	1000	ADP	PB-O3A-PA-O1A
3	O	1000	ADP	PB-O3A-PA-O5'
3	I	1000	ADP	PB-O3A-PA-O2A
3	J	1000	ADP	C5'-O5'-PA-O1A
3	L	1000	ADP	C5'-O5'-PA-O1A
3	N	1000	ADP	C5'-O5'-PA-O1A
3	N	1000	ADP	C5'-O5'-PA-O2A
3	N	1000	ADP	C5'-O5'-PA-O3A
3	K	1000	ADP	PB-O3A-PA-O2A
3	L	1000	ADP	PB-O3A-PA-O2A
3	N	1000	ADP	PB-O3A-PA-O2A
3	J	1000	ADP	O4'-C4'-C5'-O5'
3	O	1000	ADP	O4'-C4'-C5'-O5'
3	M	1000	ADP	PA-O3A-PB-O1B
3	N	1000	ADP	O4'-C4'-C5'-O5'
3	K	1000	ADP	C4'-C5'-O5'-PA
3	J	1000	ADP	PA-O3A-PB-O2B
3	K	1000	ADP	PB-O3A-PA-O1A
3	I	1000	ADP	PB-O3A-PA-O1A

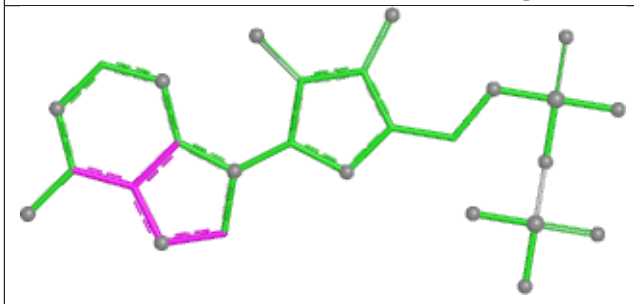
There are no ring outliers.

8 monomers are involved in 19 short contacts:

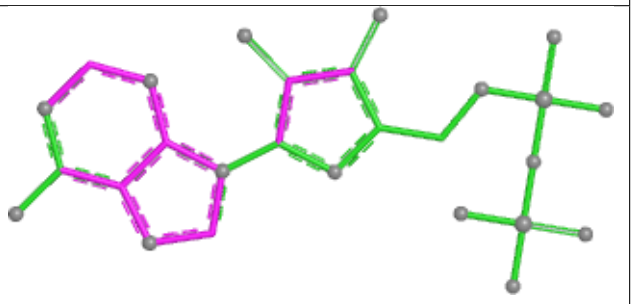
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	J	1000	ADP	5	0
3	P	1000	ADP	2	0
3	K	1000	ADP	1	0
3	M	1000	ADP	3	0
3	L	1000	ADP	3	0
3	I	1000	ADP	1	0
3	O	1000	ADP	2	0
3	N	1000	ADP	2	0

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.

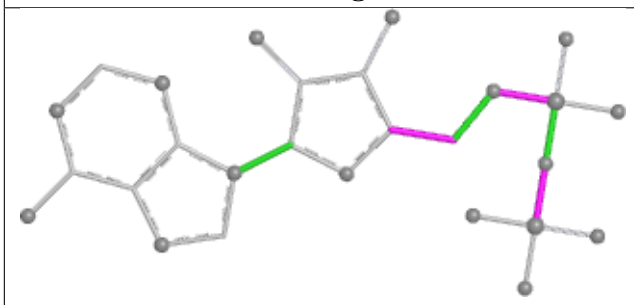
Ligand ADP J 1000



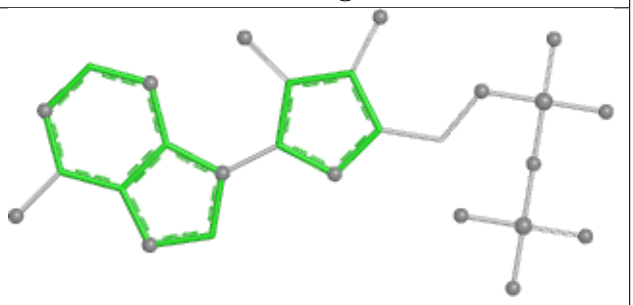
Bond lengths



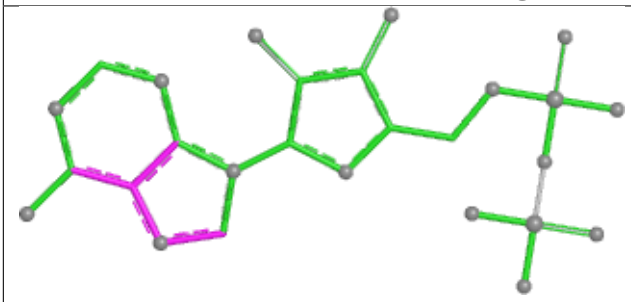
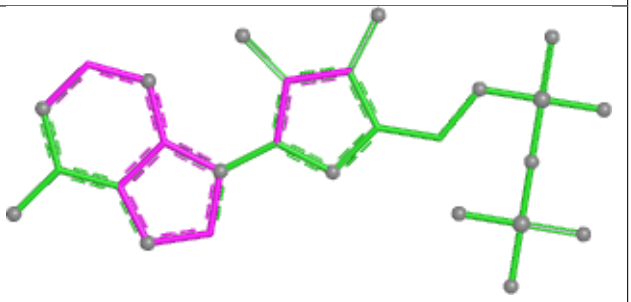
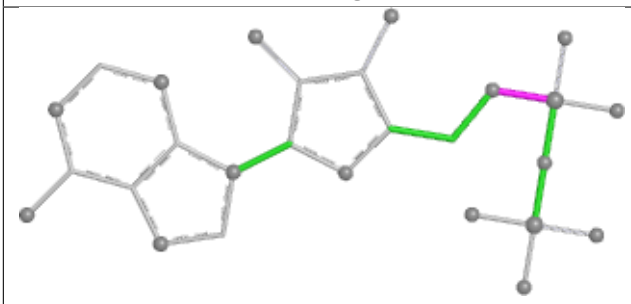
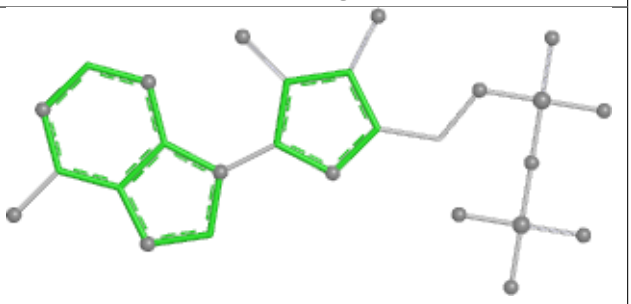
Bond angles

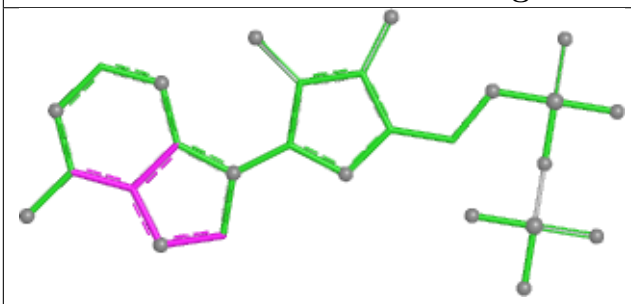
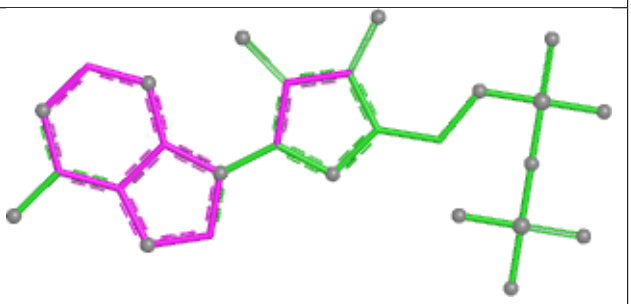
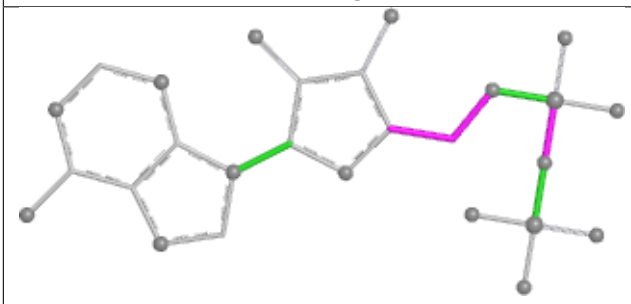
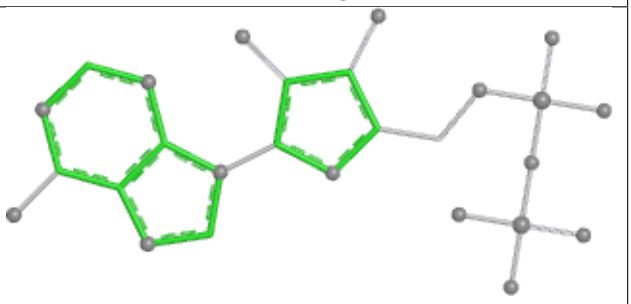


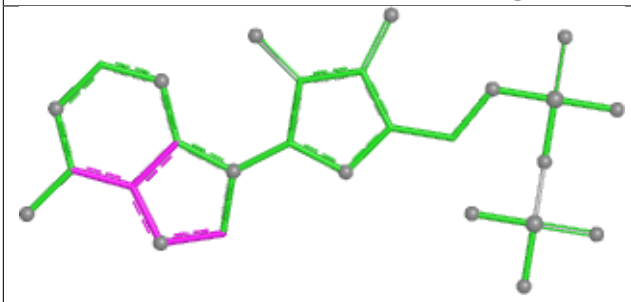
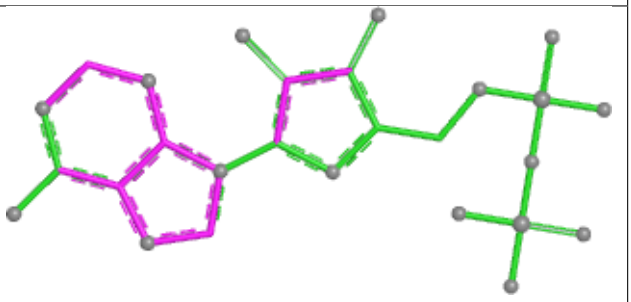
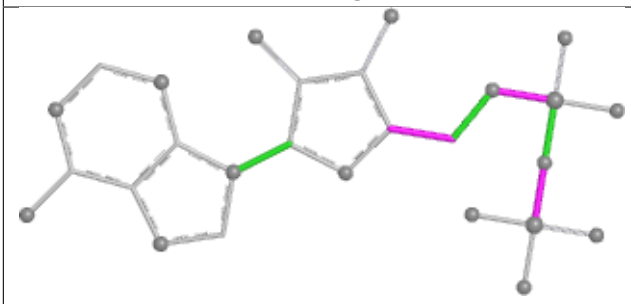
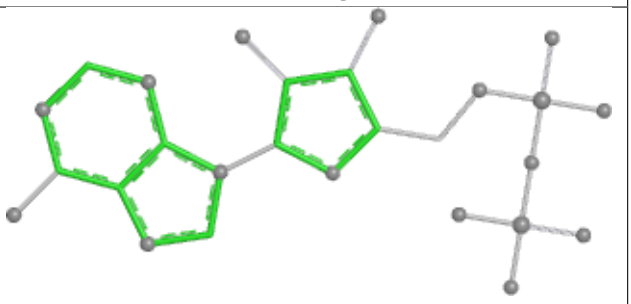
Torsions

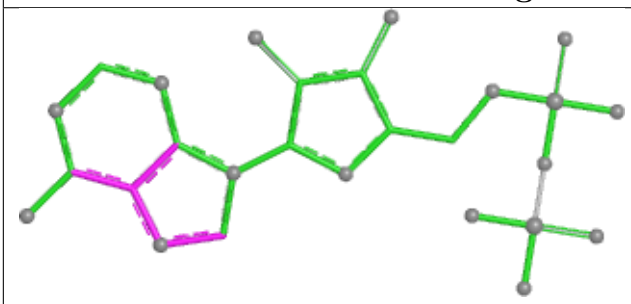
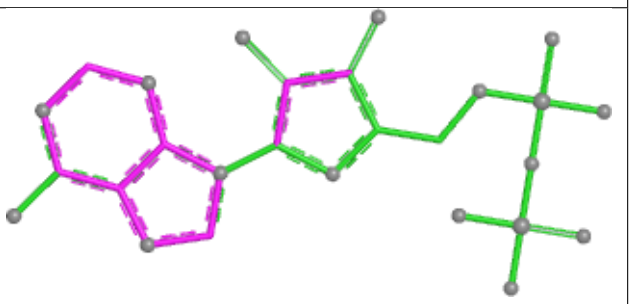
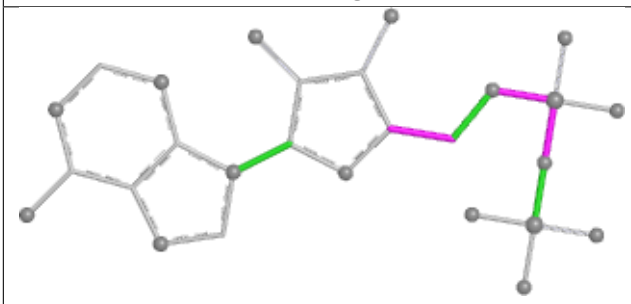
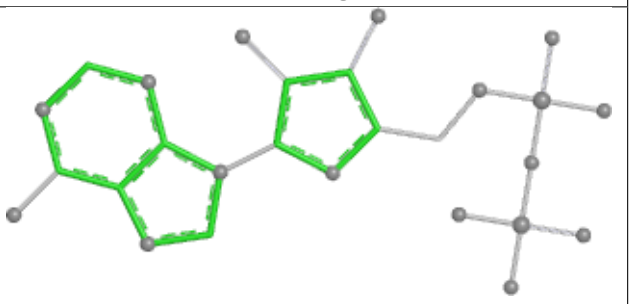


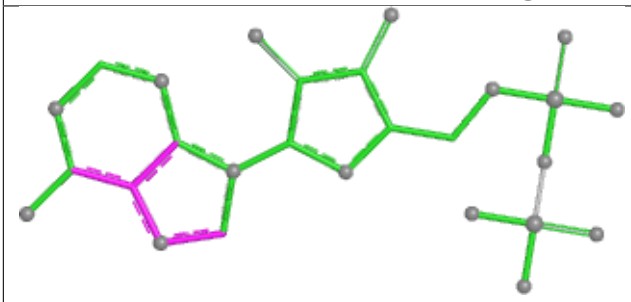
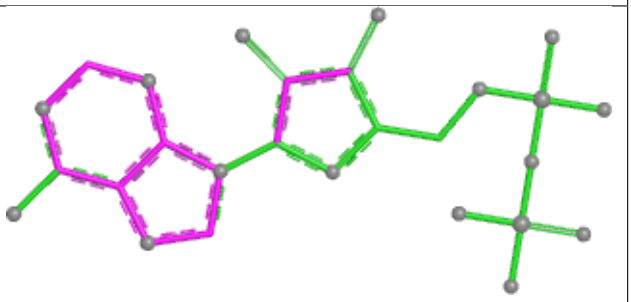
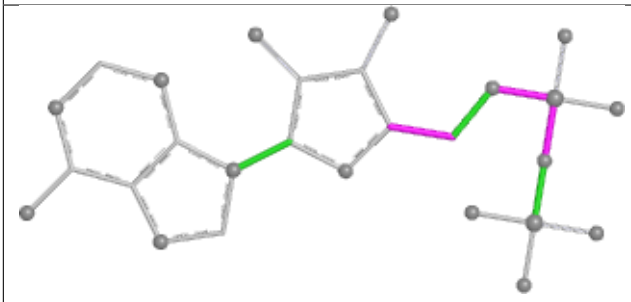
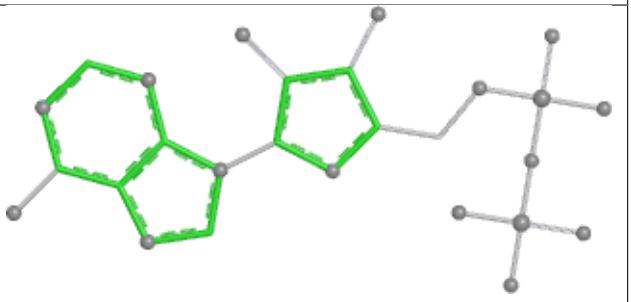
Rings

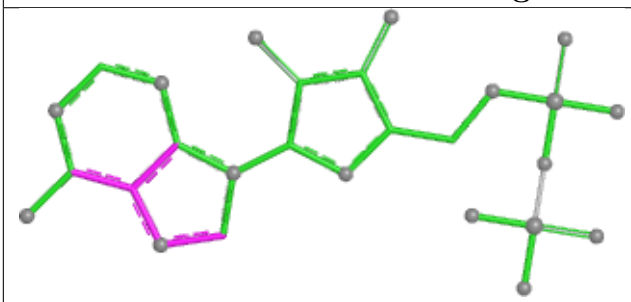
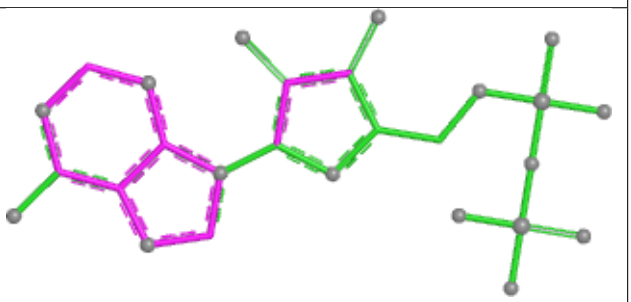
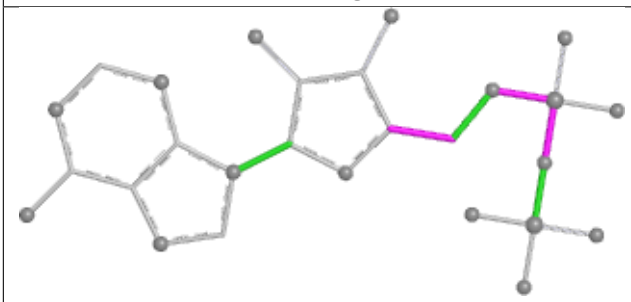
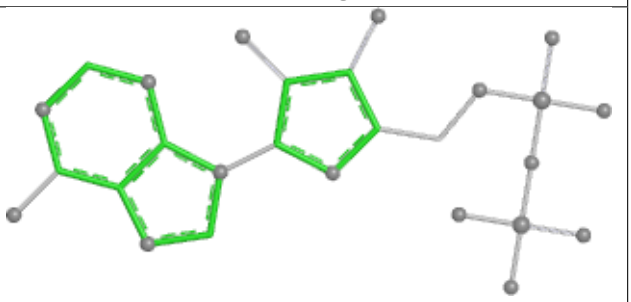
Ligand ADP P 1000	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP K 1000	
 Bond lengths	 Bond angles
 Torsions	 Rings

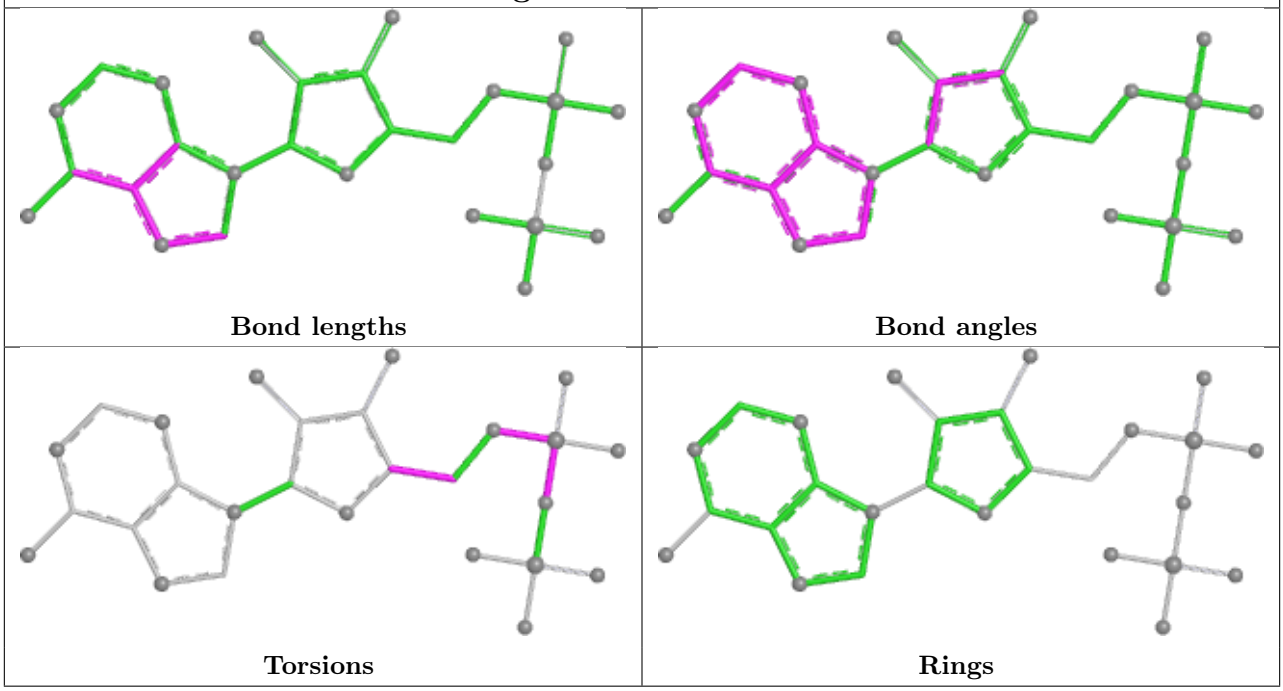
Ligand ADP M 1000	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP L 1000	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP I 1000	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP O 1000	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP N 1000



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.

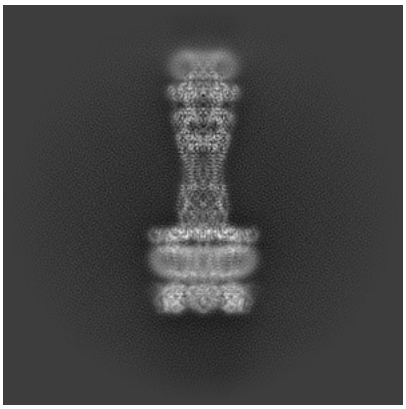
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53604. These allow visual inspection of the internal detail of the map and identification of artifacts.

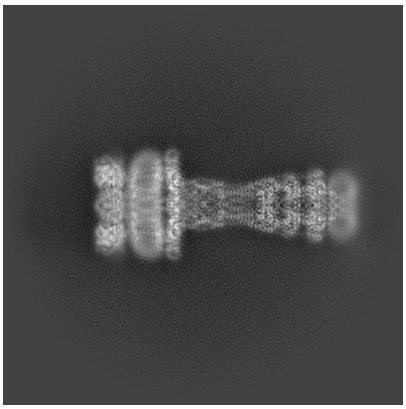
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

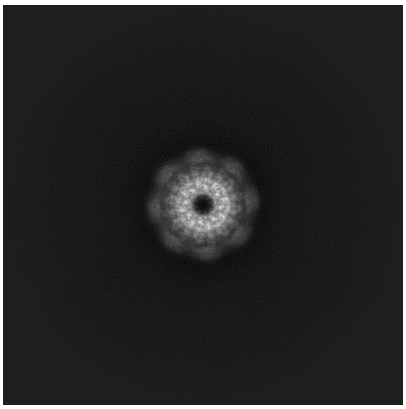
6.1.1 Primary map



X

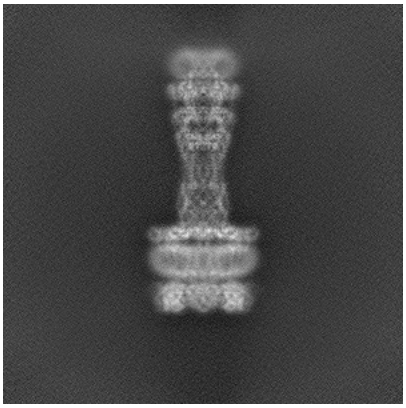


Y

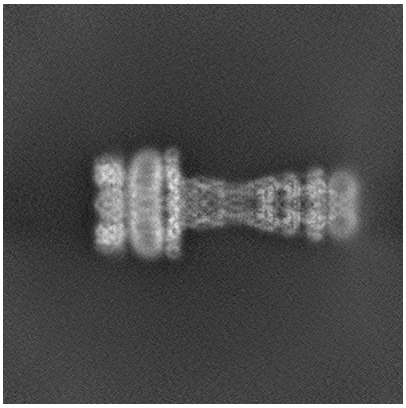


Z

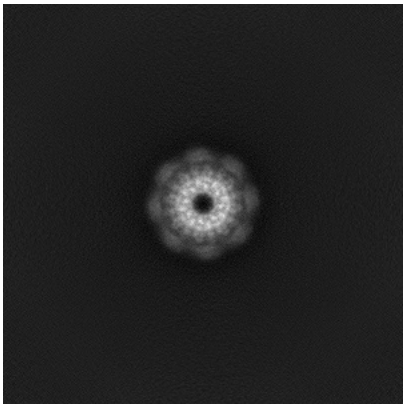
6.1.2 Raw map



X



Y

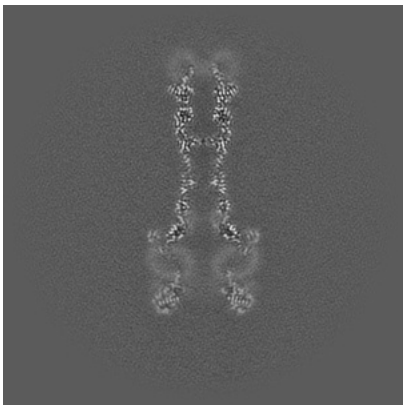


Z

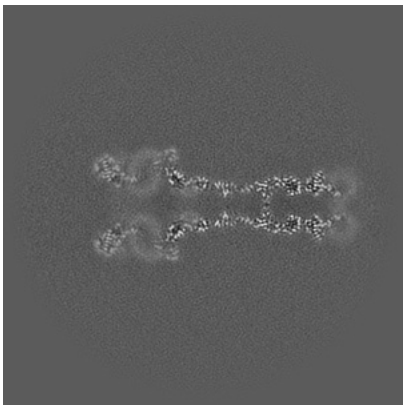
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

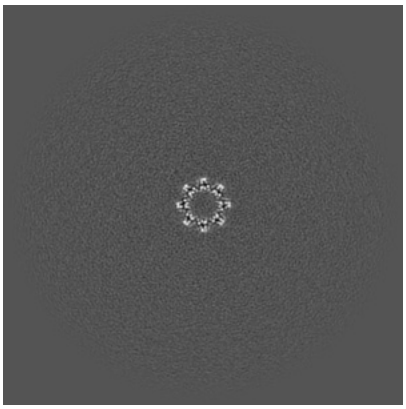
6.2.1 Primary map



X Index: 300

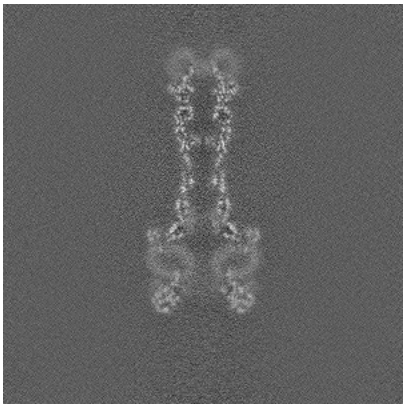


Y Index: 300

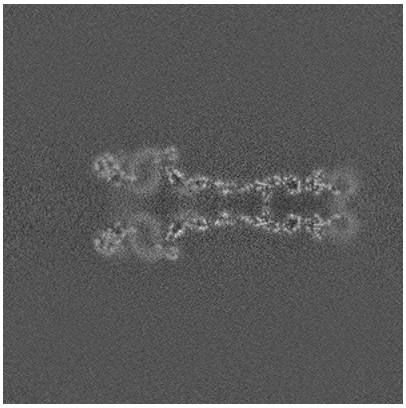


Z Index: 300

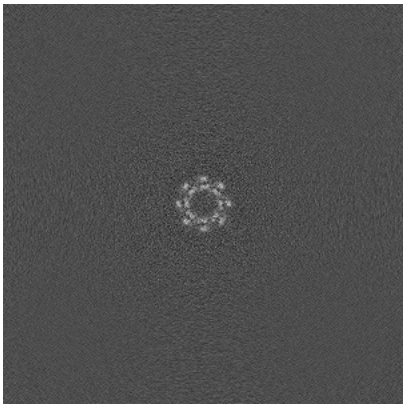
6.2.2 Raw map



X Index: 300



Y Index: 300

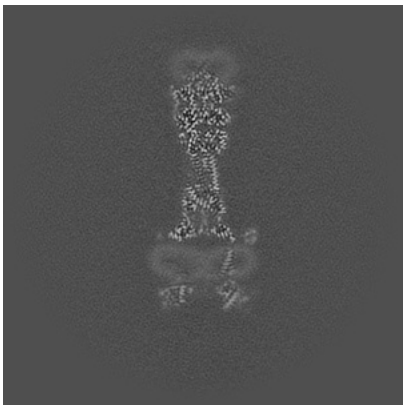


Z Index: 300

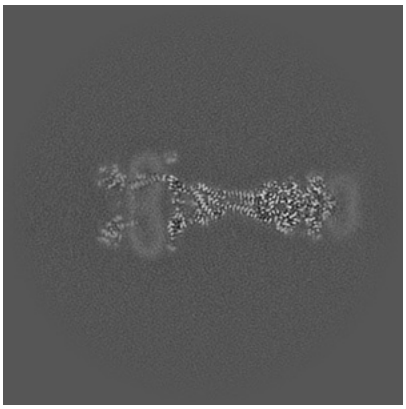
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

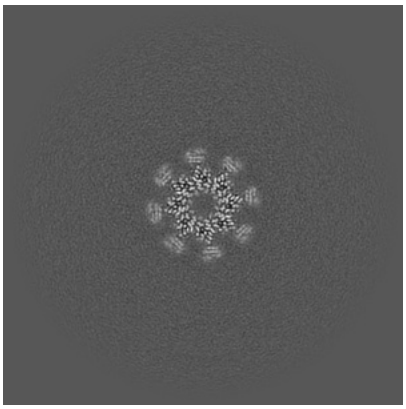
6.3.1 Primary map



X Index: 277

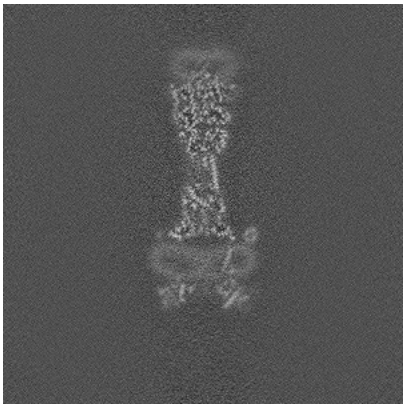


Y Index: 326

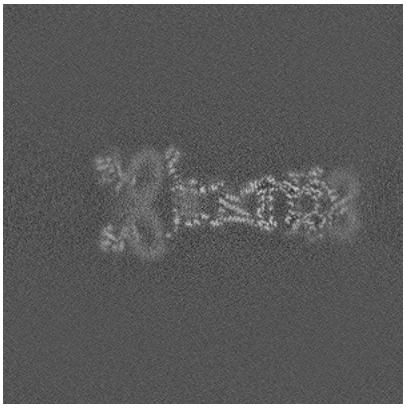


Z Index: 260

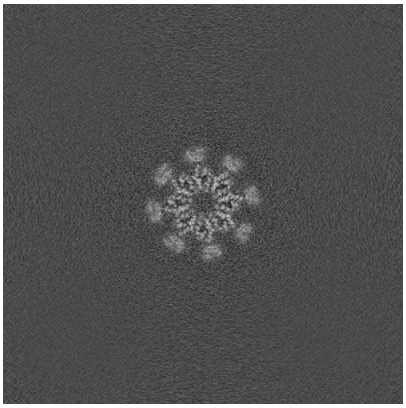
6.3.2 Raw map



X Index: 277



Y Index: 316

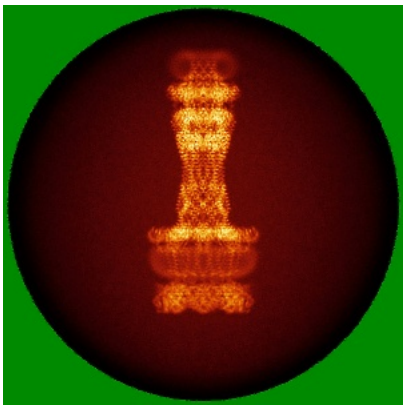


Z Index: 260

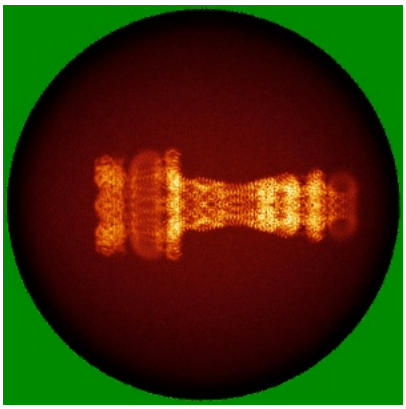
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

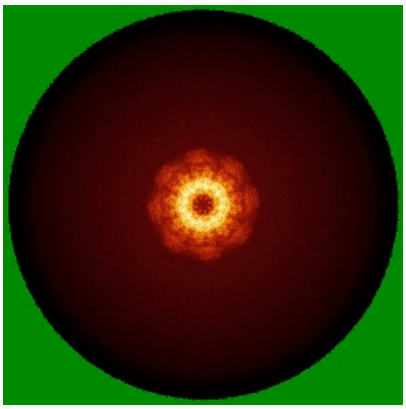
6.4.1 Primary map



X

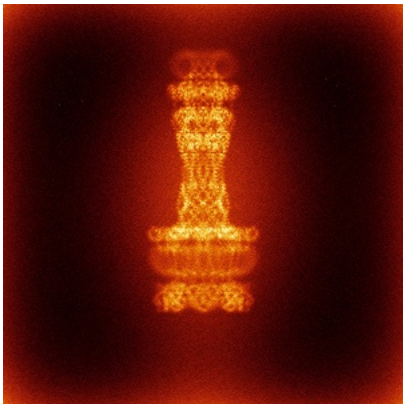


Y

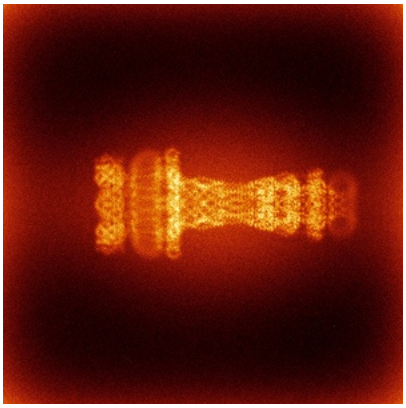


Z

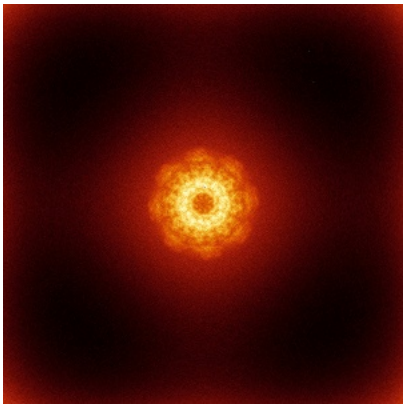
6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

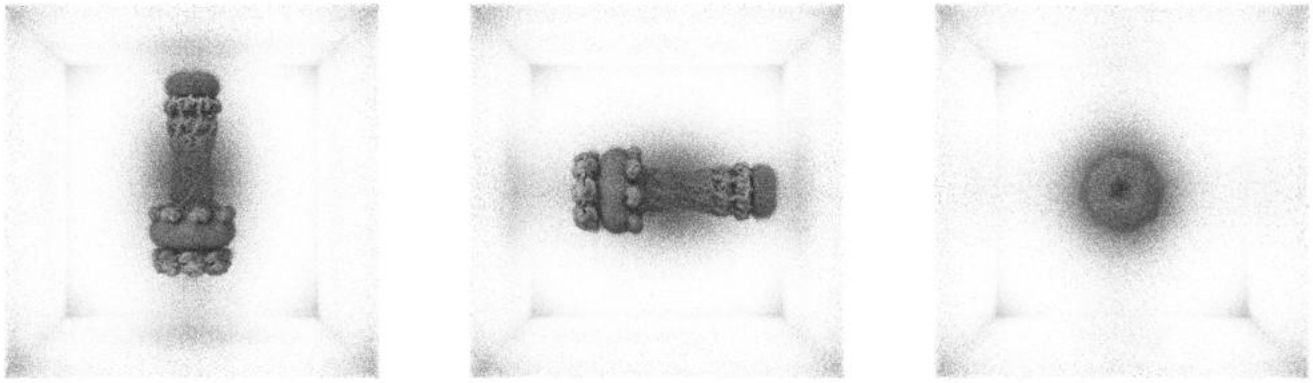
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

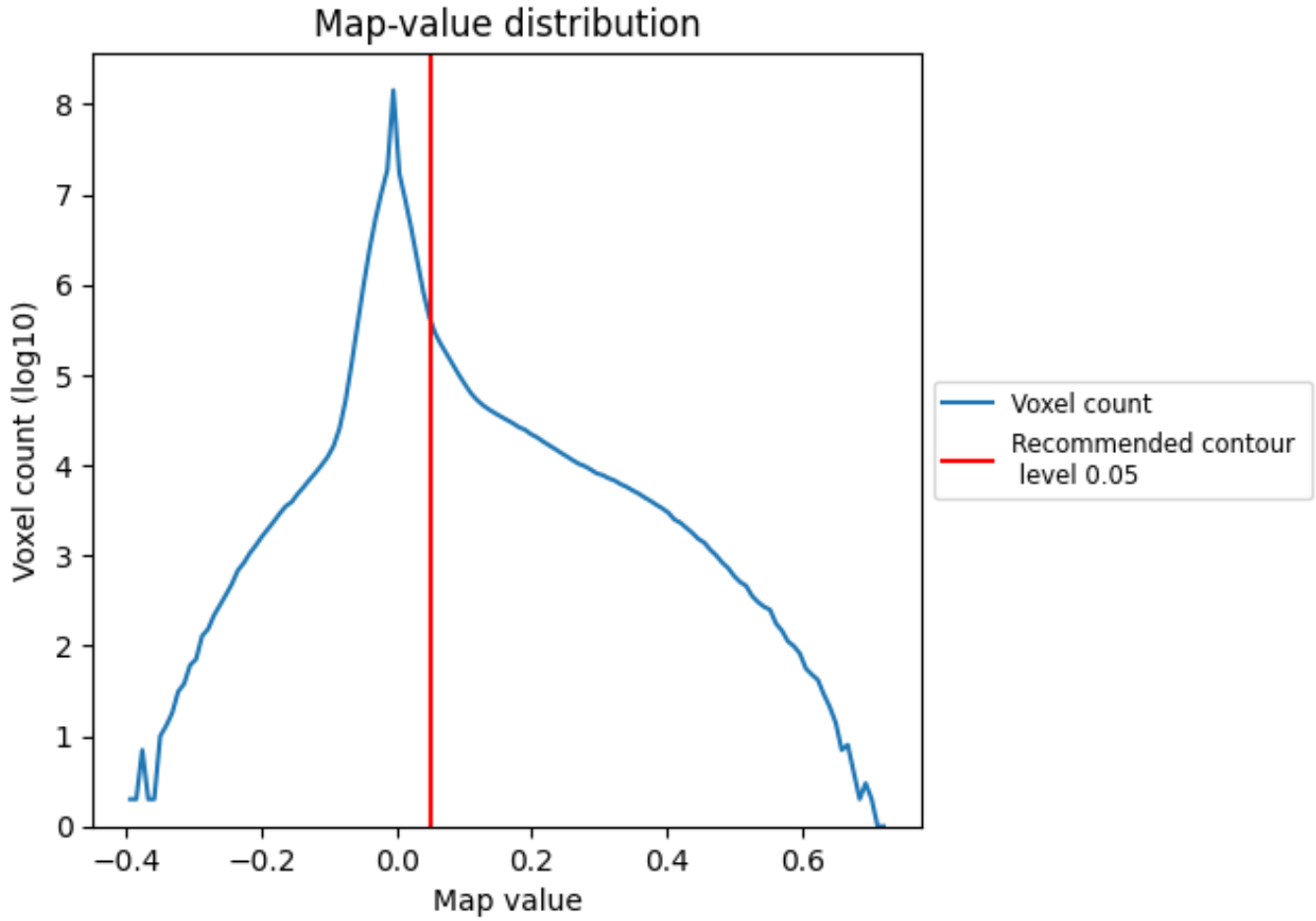
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

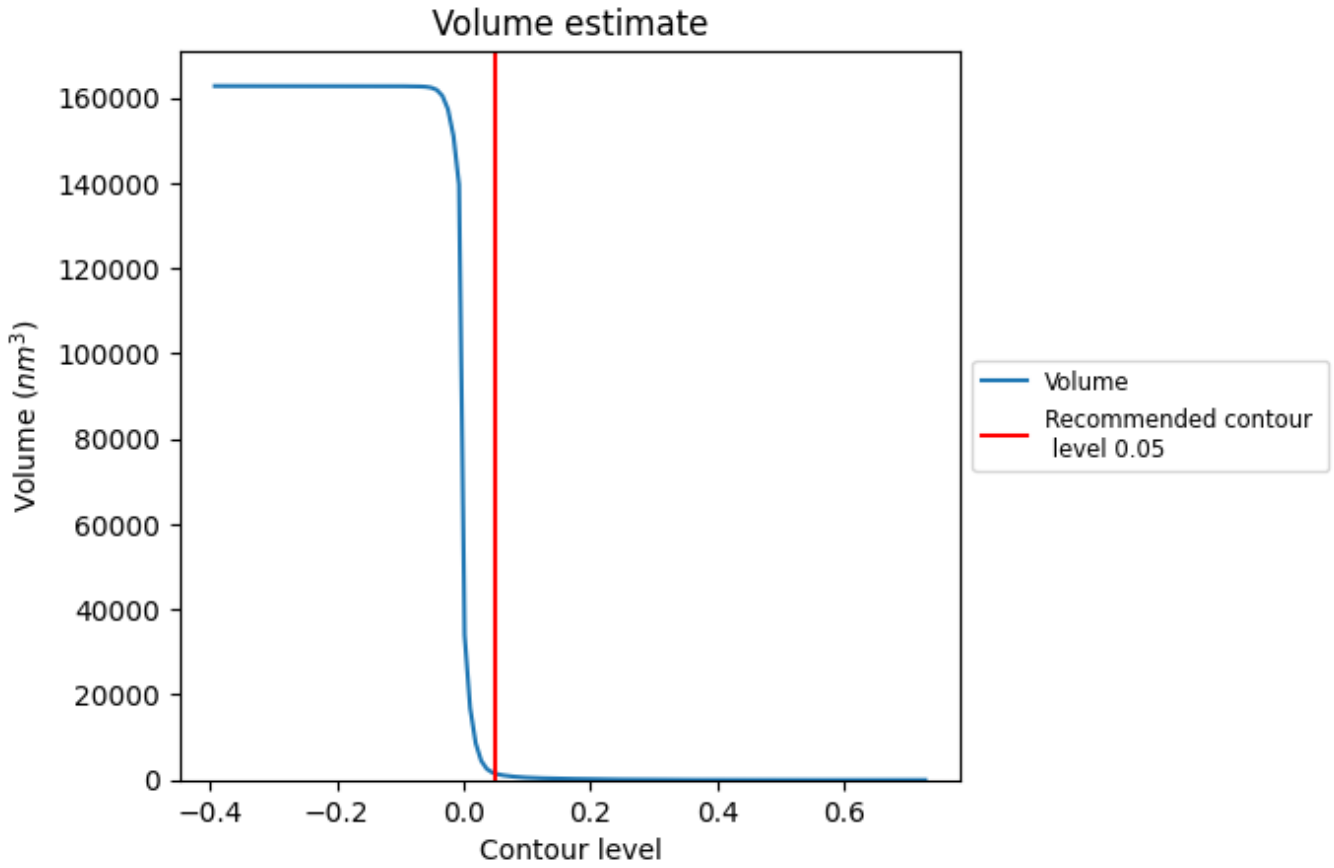
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

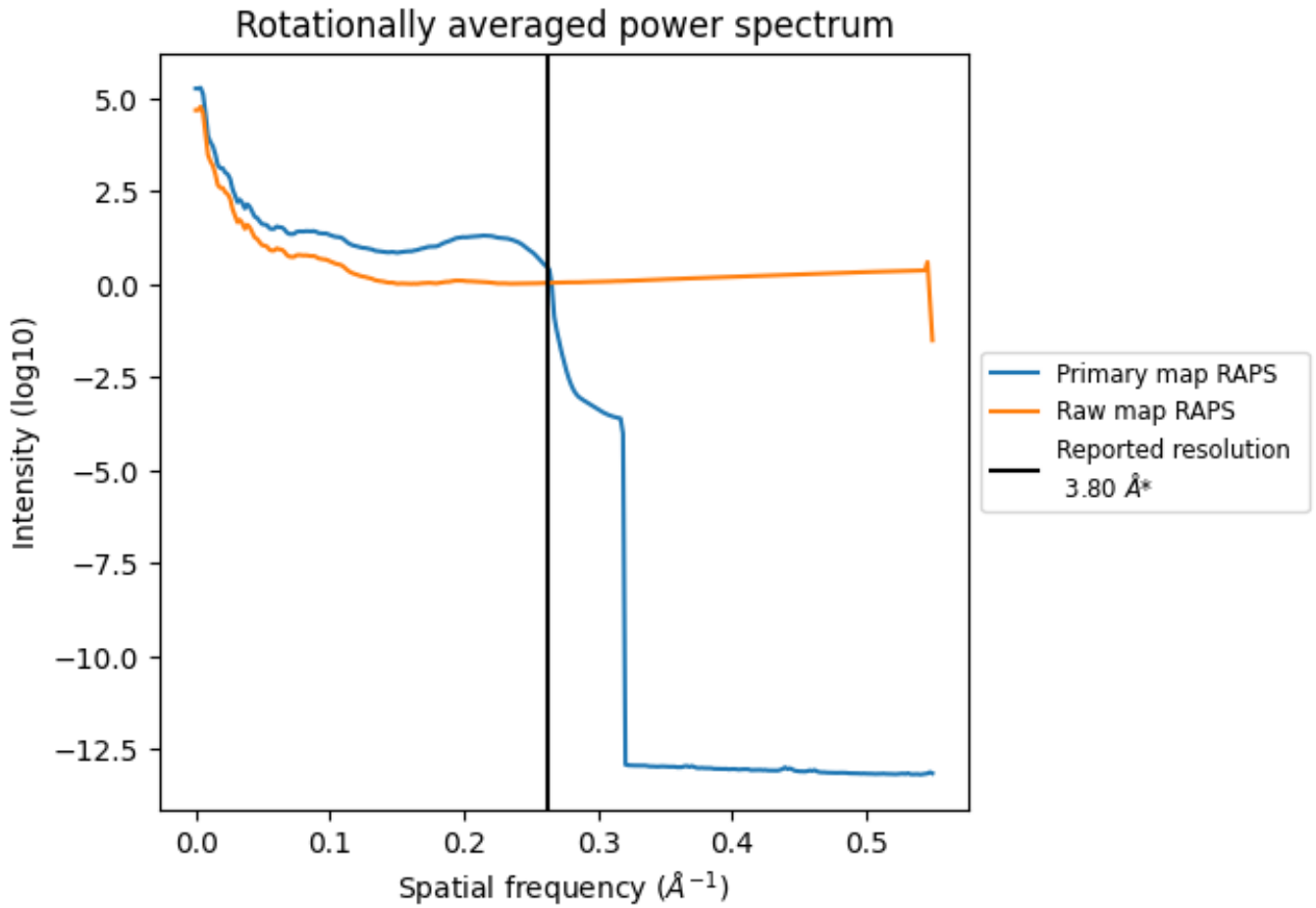
7.2 Volume estimate



The volume at the recommended contour level is 1516 nm^3; this corresponds to an approximate mass of 1370 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

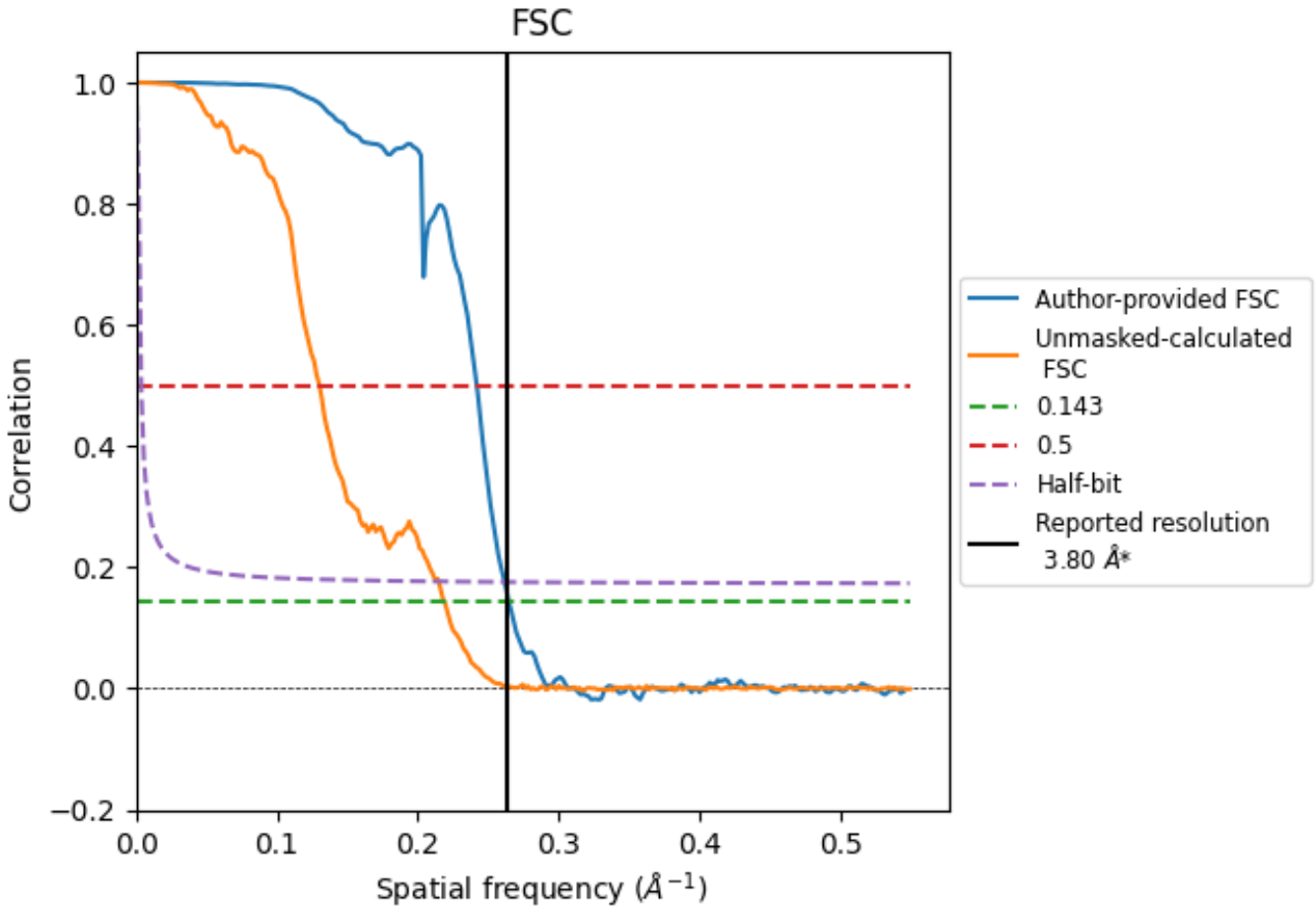


*Reported resolution corresponds to spatial frequency of 0.263 $Å^{-1}$

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.263 Å^{-1}

8.2 Resolution estimates (i)

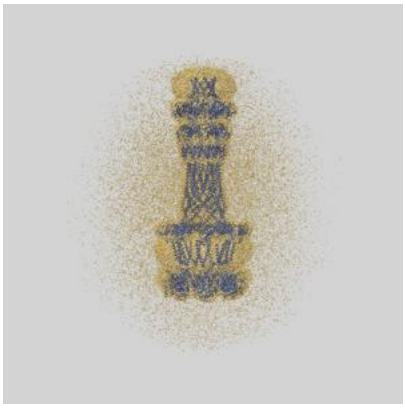
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	3.78	4.13	3.82
Unmasked-calculated*	4.57	7.68	4.66

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.57 differs from the reported value 3.8 by more than 10 %

9 Map-model fit

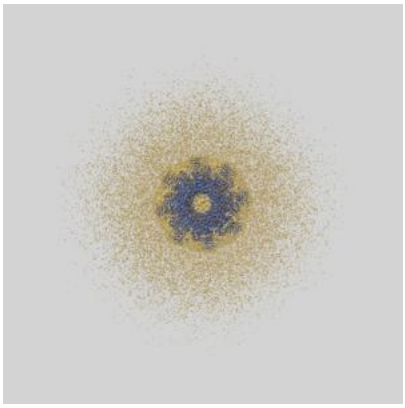
This section contains information regarding the fit between EMDB map EMD-53604 and PDB model 9R66. Per-residue inclusion information can be found in section 3 on page 13.

9.1 Map-model overlay



X

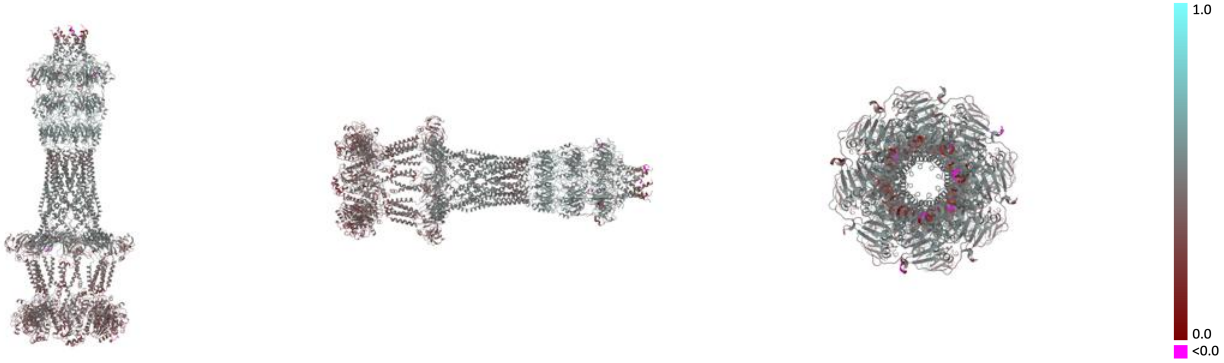
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

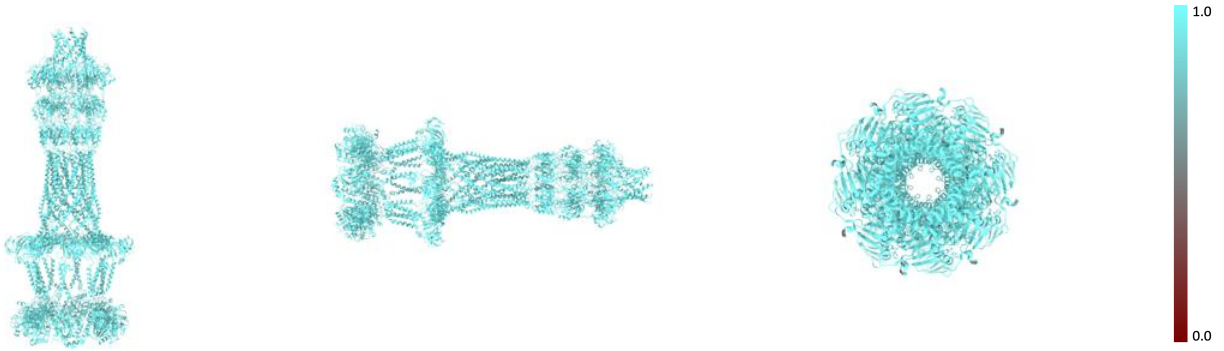
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

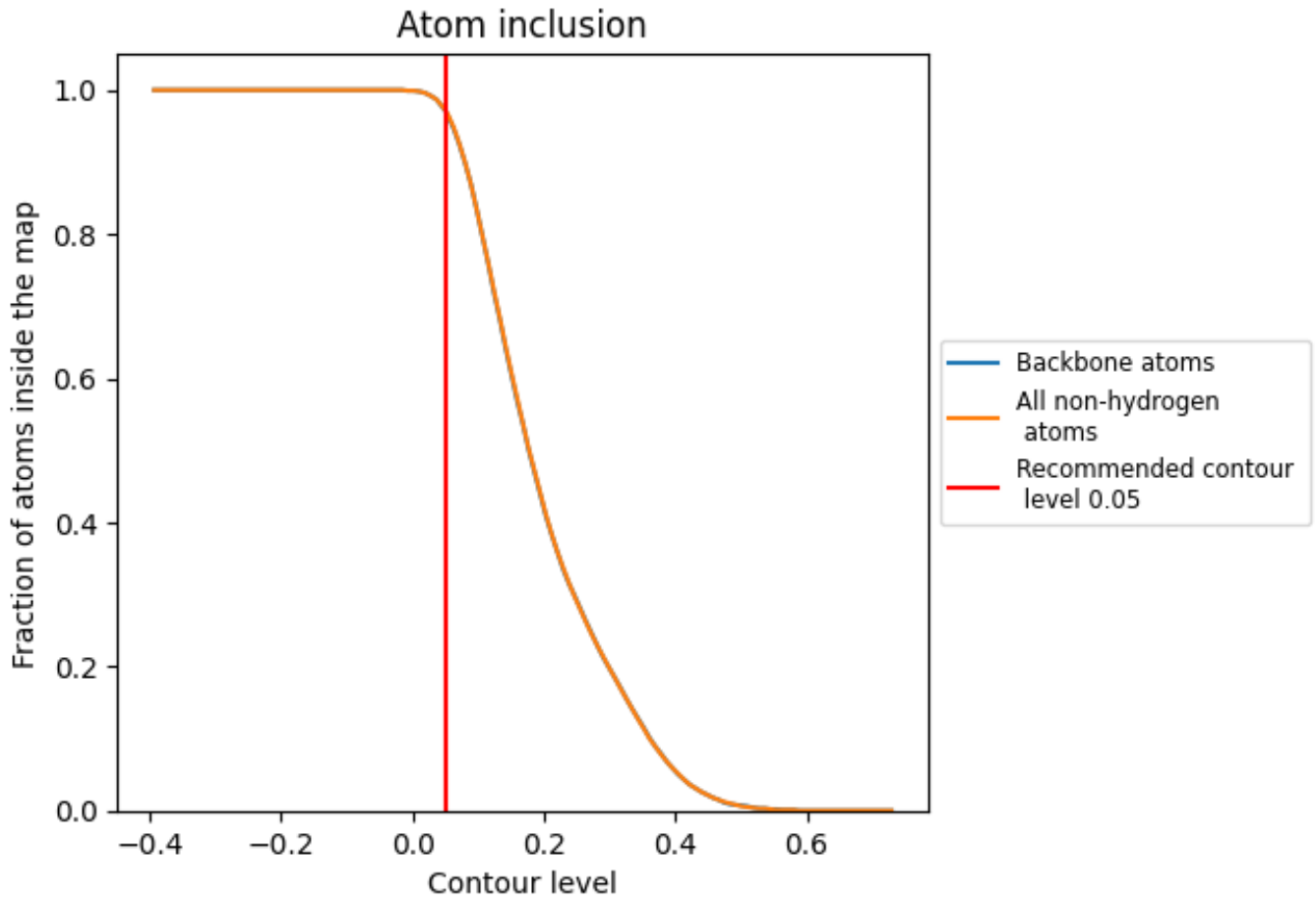
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.05).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 97% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9720	0.4460
A	0.9850	0.5030
B	0.9860	0.4990
C	0.9810	0.4970
D	0.9790	0.4940
E	0.9790	0.5000
F	0.9830	0.4970
G	0.9800	0.4970
H	0.9770	0.4980
I	0.9700	0.4180
J	0.9690	0.4220
K	0.9700	0.4220
L	0.9720	0.4190
M	0.9700	0.4210
N	0.9670	0.4170
O	0.9650	0.4130
P	0.9640	0.4180