Full wwPDB EM Validation Report ⓘ

May 8, 2025 – 02:13 PM EDT

PDB ID	:	8VM7 / pdb_00008vm7
EMDB ID	:	EMD-43354
Title	:	Composite structure of human FASN with NADPH in State 7
Authors	:	Schultz, K.; Marmorstein, R.
Deposited on	:	2024-01-13
Resolution	:	3.30 Å(reported)
Based on initial model	:	3HHD

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:

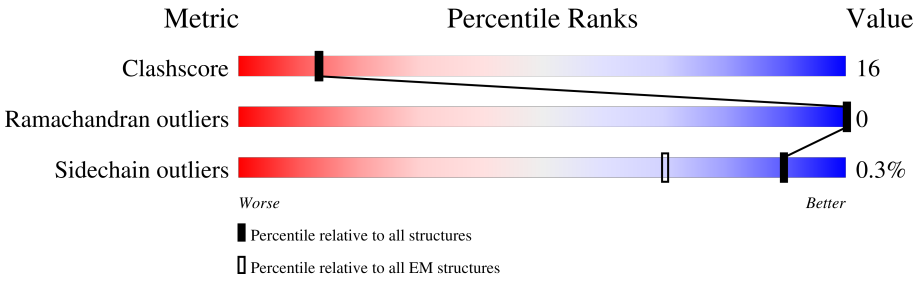
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.30 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)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	2553	58% 22% 19%
1	B	2553	60% 21% 19%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 50709 atoms, of which 18827 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 Fatty acid synthase.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	2068	Total	C	H	N	O	S	0	0
			25176	10041	9343	2785	2934	73		
1	B	2071	Total	C	H	N	O	S	0	0
			25237	10054	9380	2789	2941	73		

There are 88 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-31	MET	-	expression tag	UNP P49327
A	-30	SER	-	expression tag	UNP P49327
A	-29	TYR	-	expression tag	UNP P49327
A	-28	TYR	-	expression tag	UNP P49327
A	-27	ASP	-	expression tag	UNP P49327
A	-26	TYR	-	expression tag	UNP P49327
A	-25	LYS	-	expression tag	UNP P49327
A	-24	ASP	-	expression tag	UNP P49327
A	-23	ASP	-	expression tag	UNP P49327
A	-22	ASP	-	expression tag	UNP P49327
A	-21	ASP	-	expression tag	UNP P49327
A	-20	LYS	-	expression tag	UNP P49327
A	-19	ASP	-	expression tag	UNP P49327
A	-18	TYR	-	expression tag	UNP P49327
A	-17	ASP	-	expression tag	UNP P49327
A	-16	ILE	-	expression tag	UNP P49327
A	-15	PRO	-	expression tag	UNP P49327
A	-14	THR	-	expression tag	UNP P49327
A	-13	THR	-	expression tag	UNP P49327
A	-12	GLU	-	expression tag	UNP P49327
A	-11	ASN	-	expression tag	UNP P49327
A	-10	LEU	-	expression tag	UNP P49327
A	-9	TYR	-	expression tag	UNP P49327
A	-8	PHE	-	expression tag	UNP P49327
A	-7	GLN	-	expression tag	UNP P49327
A	-6	GLY	-	expression tag	UNP P49327

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-5	ALA	-	expression tag	UNP P49327
A	-4	MET	-	expression tag	UNP P49327
A	-3	GLY	-	expression tag	UNP P49327
A	-2	SER	-	expression tag	UNP P49327
A	-1	GLY	-	expression tag	UNP P49327
A	0	ILE	-	expression tag	UNP P49327
A	1	PRO	-	expression tag	UNP P49327
A	1151	THR	LYS	conflict	UNP P49327
A	2512	LEU	-	expression tag	UNP P49327
A	2513	GLU	-	expression tag	UNP P49327
A	2514	HIS	-	expression tag	UNP P49327
A	2515	HIS	-	expression tag	UNP P49327
A	2516	HIS	-	expression tag	UNP P49327
A	2517	HIS	-	expression tag	UNP P49327
A	2518	HIS	-	expression tag	UNP P49327
A	2519	HIS	-	expression tag	UNP P49327
A	2520	HIS	-	expression tag	UNP P49327
A	2521	HIS	-	expression tag	UNP P49327
B	-31	MET	-	expression tag	UNP P49327
B	-30	SER	-	expression tag	UNP P49327
B	-29	TYR	-	expression tag	UNP P49327
B	-28	TYR	-	expression tag	UNP P49327
B	-27	ASP	-	expression tag	UNP P49327
B	-26	TYR	-	expression tag	UNP P49327
B	-25	LYS	-	expression tag	UNP P49327
B	-24	ASP	-	expression tag	UNP P49327
B	-23	ASP	-	expression tag	UNP P49327
B	-22	ASP	-	expression tag	UNP P49327
B	-21	ASP	-	expression tag	UNP P49327
B	-20	LYS	-	expression tag	UNP P49327
B	-19	ASP	-	expression tag	UNP P49327
B	-18	TYR	-	expression tag	UNP P49327
B	-17	ASP	-	expression tag	UNP P49327
B	-16	ILE	-	expression tag	UNP P49327
B	-15	PRO	-	expression tag	UNP P49327
B	-14	THR	-	expression tag	UNP P49327
B	-13	THR	-	expression tag	UNP P49327
B	-12	GLU	-	expression tag	UNP P49327
B	-11	ASN	-	expression tag	UNP P49327
B	-10	LEU	-	expression tag	UNP P49327
B	-9	TYR	-	expression tag	UNP P49327
B	-8	PHE	-	expression tag	UNP P49327

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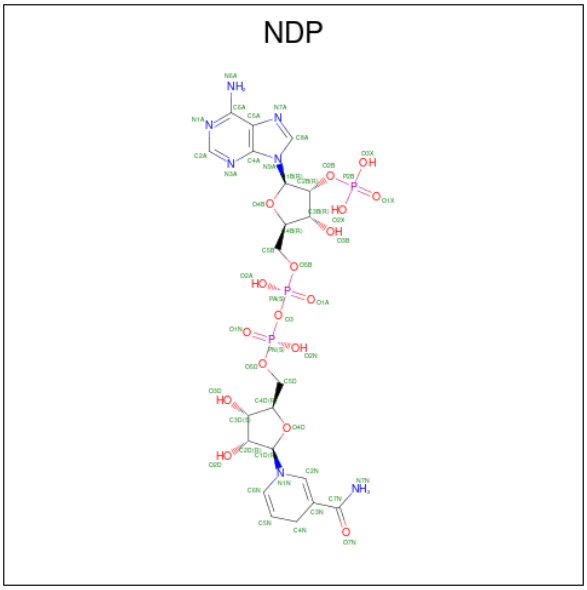
Chain	Residue	Modelled	Actual	Comment	Reference
B	-7	GLN	-	expression tag	UNP P49327
B	-6	GLY	-	expression tag	UNP P49327
B	-5	ALA	-	expression tag	UNP P49327
B	-4	MET	-	expression tag	UNP P49327
B	-3	GLY	-	expression tag	UNP P49327
B	-2	SER	-	expression tag	UNP P49327
B	-1	GLY	-	expression tag	UNP P49327
B	0	ILE	-	expression tag	UNP P49327
B	1	PRO	-	expression tag	UNP P49327
B	1151	THR	LYS	conflict	UNP P49327
B	2512	LEU	-	expression tag	UNP P49327
B	2513	GLU	-	expression tag	UNP P49327
B	2514	HIS	-	expression tag	UNP P49327
B	2515	HIS	-	expression tag	UNP P49327
B	2516	HIS	-	expression tag	UNP P49327
B	2517	HIS	-	expression tag	UNP P49327
B	2518	HIS	-	expression tag	UNP P49327
B	2519	HIS	-	expression tag	UNP P49327
B	2520	HIS	-	expression tag	UNP P49327
B	2521	HIS	-	expression tag	UNP P49327

- Molecule 2 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (CCD ID: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$) (labeled as "Ligand of Interest" by depositor).



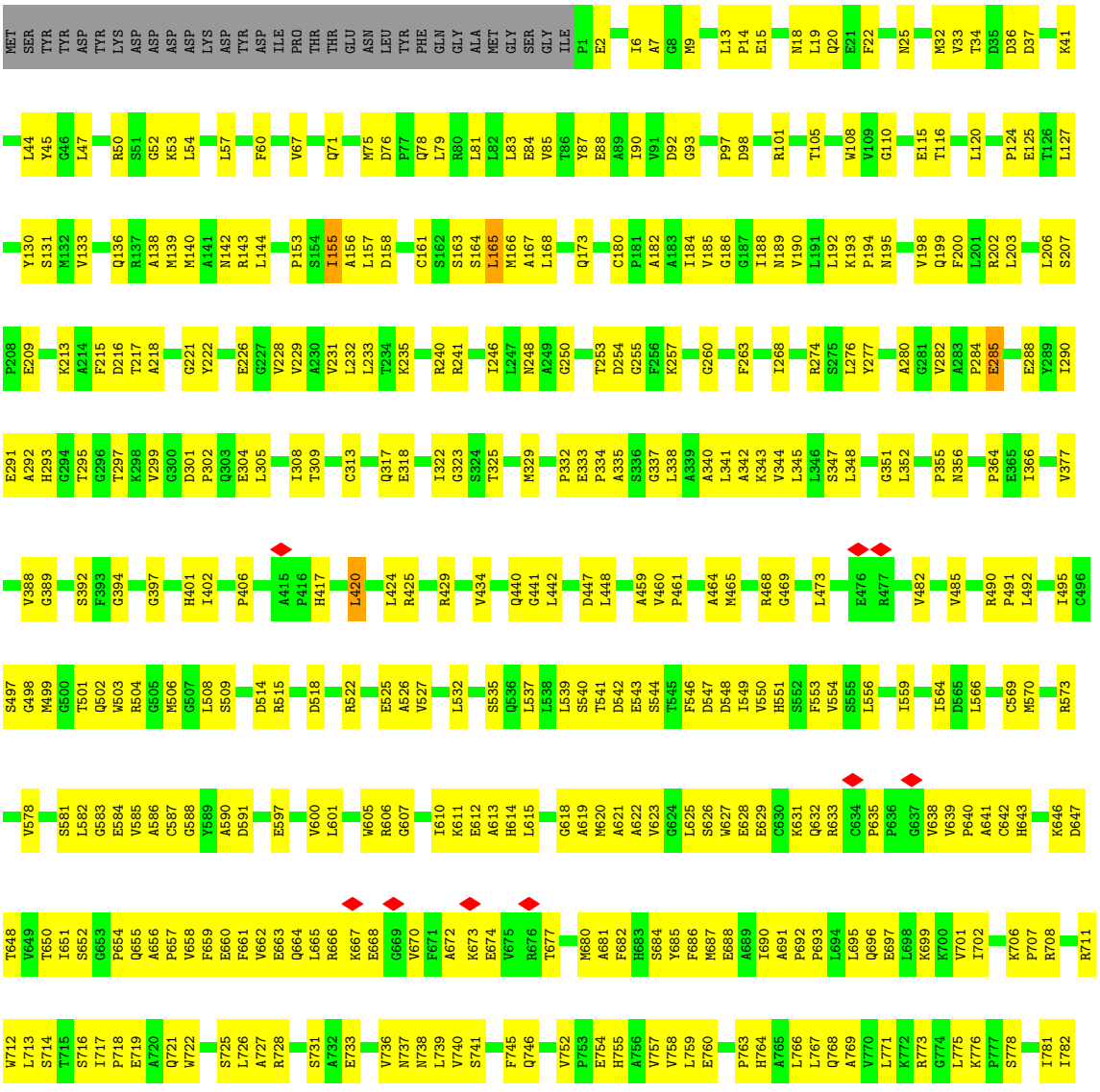
Mol	Chain	Residues	Atoms						AltConf
2	A	1	Total	C	H	N	O	P	0
			74	21	26	7	17	3	
2	A	1	Total	C	H	N	O	P	0
			74	21	26	7	17	3	
2	B	1	Total	C	H	N	O	P	0
			74	21	26	7	17	3	
2	B	1	Total	C	H	N	O	P	0
			74	21	26	7	17	3	

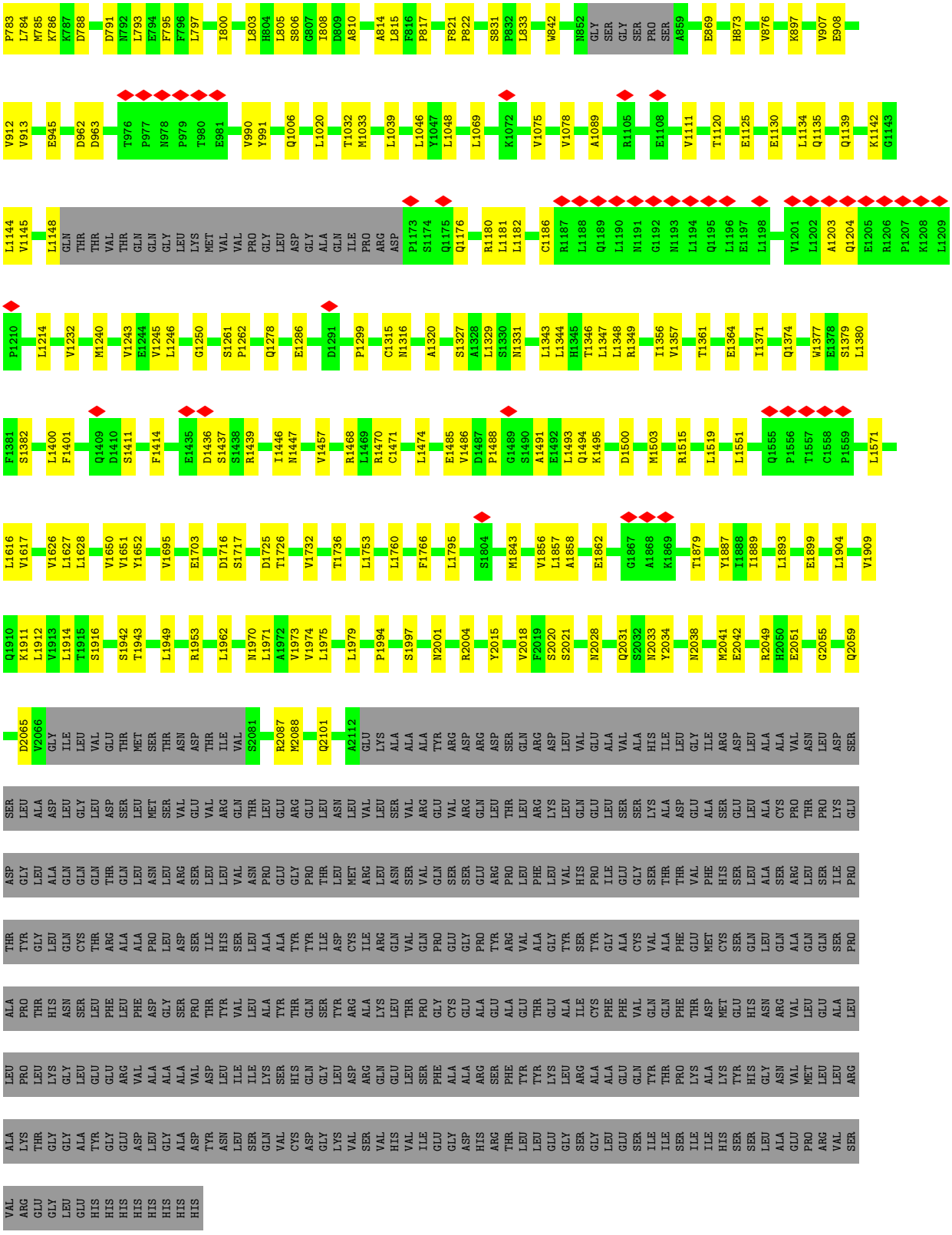
3 Residue-property plots (i)

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: Fatty acid synthase

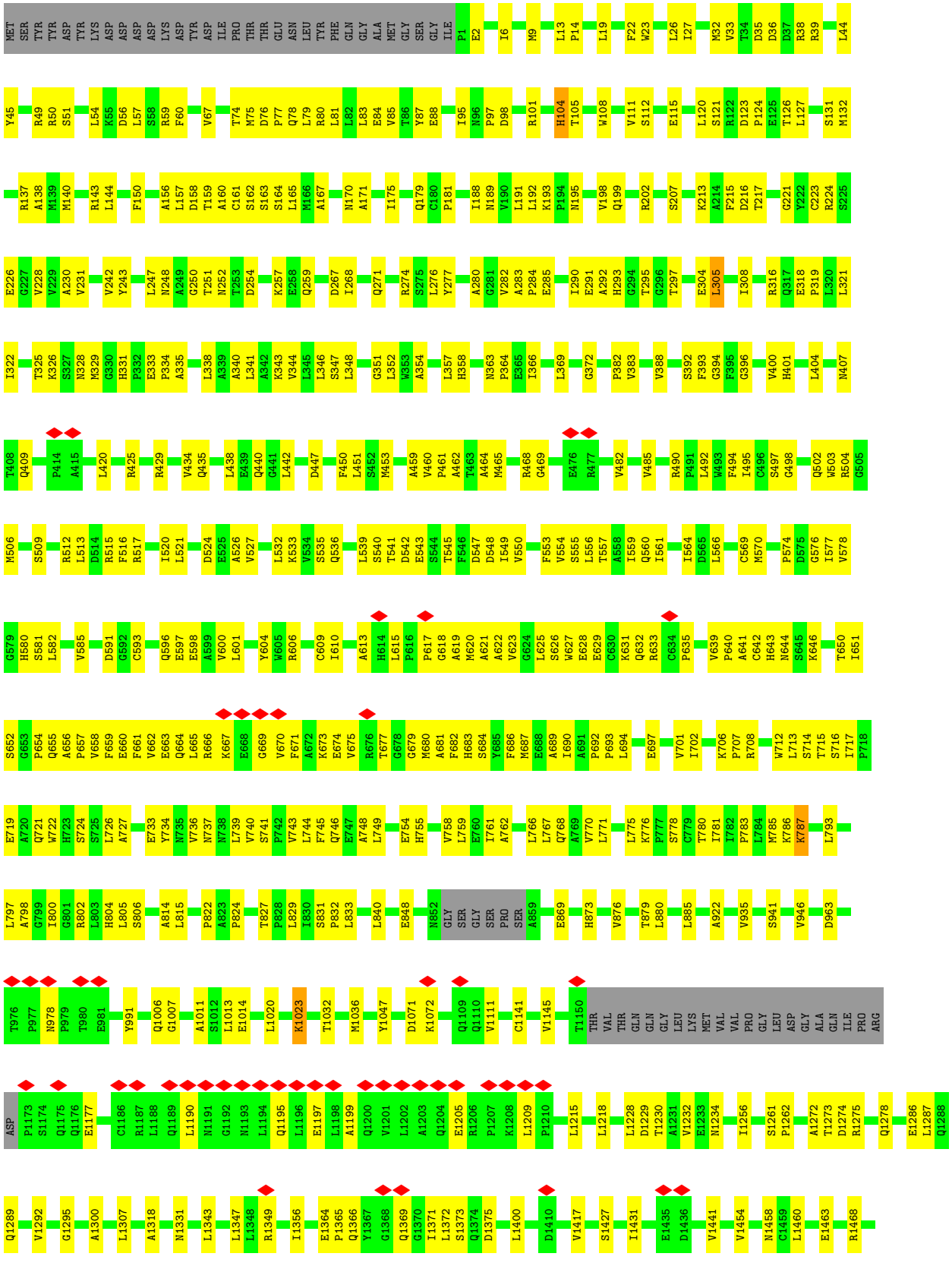
Chain A:

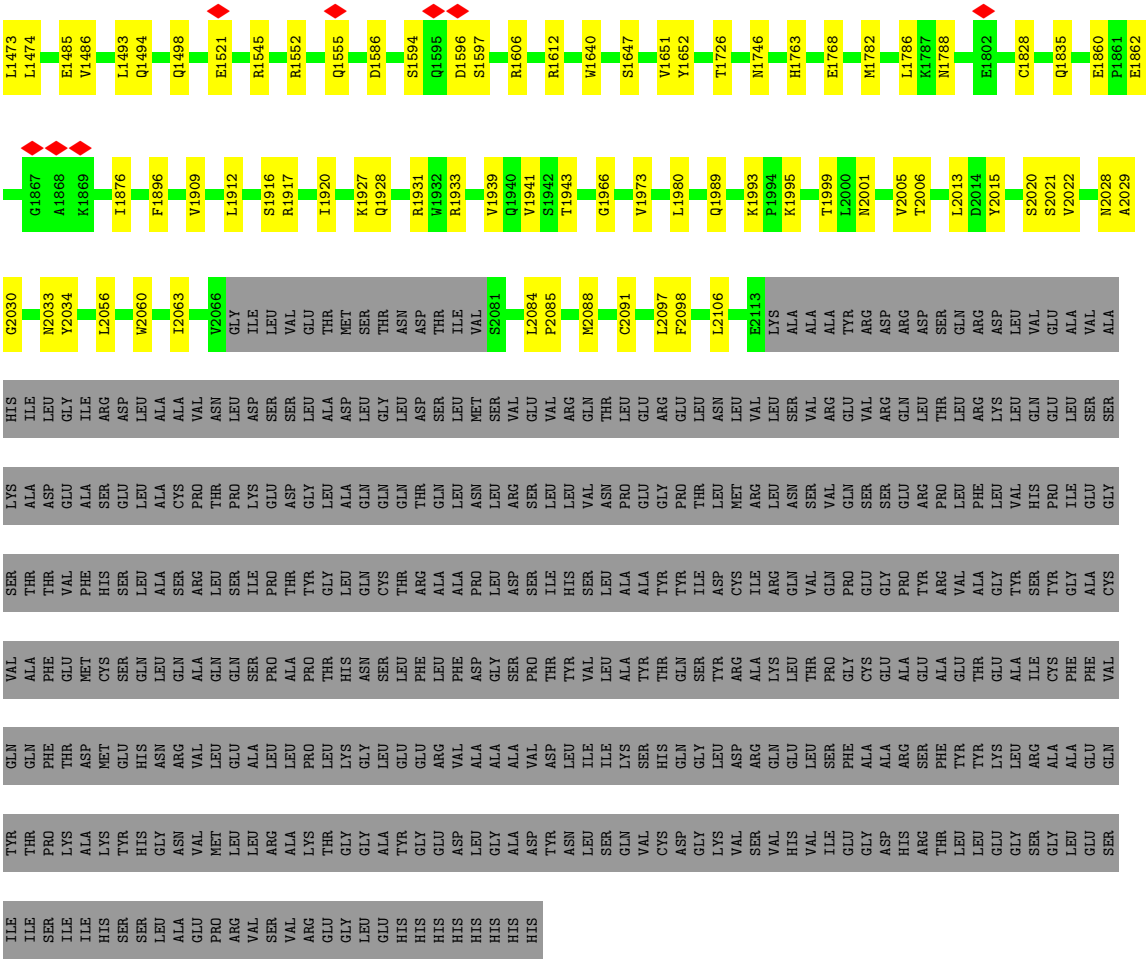




• Molecule 1: Fatty acid synthase

Chain B:




L1473 L1474 E1485 V1486 L1493 Q1494 Q1498 E1521 R1545 R1552 Q1555 D1586 S1594 Q1595 D1596 S1597 R1606 R1612 W1640 S1647 V1651 Y1652 T1726 N1746 H1763 E1768 M1782 L1786 K1787 N1788 E1802 C1828 Q1835 E1860 P1861 E1862
G1867 A1868 K1869 I1876 F1896 V1909 L1912 S1916 R1917 I1920 K1927 Q1928 R1931 W1932 R1933 V1939 Q1940 V1941 S1942 T1943 G1966 V1973 L1980 Q1989 K1993 P1994 K1995 T1999 L2000 N2001 V2005 T2006 L2013 D2014 Y2015 S2020 S2021 V2022 N2028 A2029
G2030 N2033 Y2034 L2056 W2060 I2063 V2066 S2081 L2084 P2085 M2088 C2091 L2097 F2098 L2106 E2113
GLY ILE LEU VAL GLU THR MET SER THR ASN ASP THR ILE VAL LYS ALA ALA ALA TYR ARG ASP ARG ASP SER GLN VAL ALA VAL
HIS ILE LEU GLY ILE ARG ASP LEU ALA ALA VAL ASN LEU ASP SER SER LEU ALA ASP LEU GLY LEU ASP SER LEU MET SER VAL GLU VAL GLN ARG GLN THR LEU GLU ARG GLU LEU ASN LEU VAL LEU SER VAL ARG GLU VAL ARG GLN LEU THR LEU ARG LYS LEU GLN GLU LEU SER SER
LYS ALA ASP GLU ALA SER GLU LEU ALA CYS PRO THR PRO LYS GLU ASP GLY LEU ALA GLN GLN GLN GLN THR GLN LEU ASN LEU ARG SER LEU LEU VAL ASN PRO GLU GLU GLY PRO THR LEU LEU PHE LEU VAL HIS PRO ILE GLY GLY
SER THR THR VAL PHE HIS SER LEU ALA SER ARG LEU SER ILE PRO THR TYR GLY LEU GLN CYS THR ARG ALA ALA PRO LEU ASP SER LEU ALA ASP PRO GLY PRO TYR ARG VAL ALA GLY TYR SER TYR GLY ALA CYS
VAL ALA PHE GLU MET CYS SER GLN LEU GLN GLN ALA ALA GLN GLN SER PRO ALA PRO THR HIS ASN SER LEU PHE LEU PHE ASP GLY SER PRO THR TYR VAL LEU ALA TYR THR GLN SER TYR ARG ALA LYS LEU THR PRO GLY CYS GLU ALA GLU ALA GLU THR GLU ALA ILE CYS PHE PHE VAL
GLN GLN PHE THR ASP MET GLU HIS ASN ARG VAL LEU GLU ALA LEU LEU PRO LEU LYS GLY LEU GLU GLU ARG VAL ALA ALA ALA VAL ASP LEU ILE ILE LYS SER HIS GLN GLY LEU ASP ARG GLN GLU LEU SER PHE ALA ALA ARG SER PHE TYR TYR LYS LEU ARG ALA ALA GLU GLN
TYR THR PRO LYS ALA LYS TYR HIS GLY ASN VAL MET LEU LEU ARG ALA LYS THR GLY GLY ALA TYR GLY GLU ASP LEU GLY ALA ASP TYR ASN LEU SER GLN VAL CYS ASP GLY LYS VAL SER VAL HIS VAL ILE GLU GLY ASP HIS ARG THR LEU LEU GLU GLY SER GLY LEU GLU SER
ILE ILE SER ILE ILE HIS SER SER LEU ALA GLU PRO ARG VAL SER VAL ARG GLU GLY LEU GLU HIS HIS HIS HIS HIS HIS HIS HIS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	116738	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	52.4	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.734	Depositor
Minimum map value	-0.214	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.027	Depositor
Recommended contour level	0.193	Depositor
Map size (Å)	384.84, 384.84, 384.84	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.069, 1.069, 1.069	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.12	0/16198	0.25	0/22023
1	B	0.13	0/16222	0.27	2/22055 (0.0%)
All	All	0.12	0/32420	0.26	2/44078 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	1023	LYS	N-CA-C	-6.27	102.70	110.41
1	B	581	SER	CB-CA-C	-5.02	110.76	116.54

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	15833	9343	15809	542	0
1	B	15857	9380	15826	498	0
2	A	96	52	52	3	0
2	B	96	52	52	2	0
All	All	31882	18827	31739	1019	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 16.

All (1019) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:622:ALA:HA	1:A:650:THR:HA	1.37	1.06
1:B:619:ALA:HB3	1:B:658:VAL:HG11	1.35	1.03
1:B:767:LEU:HB3	1:B:771:LEU:HD23	1.37	1.02
1:B:78:GLN:HB3	1:B:188:ILE:HD12	1.44	0.99
1:B:1989:GLN:O	1:B:1993:LYS:HG3	1.62	0.98
1:A:628:GLU:HA	1:A:631:LYS:HE2	1.45	0.97
1:A:9:MET:HE1	1:A:342:ALA:HA	1.48	0.96
1:B:494:PHE:CE1	1:B:759:LEU:HD12	2.05	0.92
1:B:188:ILE:HG22	1:B:228:VAL:HG13	1.51	0.92
1:A:641:ALA:HB3	1:A:650:THR:HG23	1.51	0.90
1:B:494:PHE:HE1	1:B:759:LEU:HD12	1.34	0.89
1:A:564:ILE:HD13	1:A:590:ALA:HB2	1.54	0.88
1:A:1245:VAL:HG22	1:A:1246:LEU:HD12	1.55	0.88
1:B:652:SER:HB2	1:B:681:ALA:HB1	1.54	0.88
1:B:621:ALA:HB3	1:B:651:ILE:HD11	1.56	0.87
1:A:161:CYS:HB2	1:A:394:GLY:HA2	1.55	0.86
1:A:613:ALA:HB1	1:A:615:LEU:HG	1.57	0.84
1:A:79:LEU:HD21	1:A:143:ARG:HG3	1.59	0.84
1:A:164:SER:HB2	1:A:338:LEU:HG	1.57	0.84
1:A:291:GLU:HG2	1:A:340:ALA:HB1	1.58	0.83
1:B:333:GLU:HB2	1:B:334:PRO:HD3	1.60	0.82
1:A:502:GLN:HB2	1:A:506:MET:HE1	1.60	0.81
1:B:290:ILE:HG23	1:B:322:ILE:HG13	1.62	0.81
1:A:276:LEU:HD12	1:A:401:HIS:HB3	1.62	0.81
1:B:1966:GLY:O	1:B:2013:LEU:HD12	1.82	0.80
1:B:642:CYS:SG	1:B:644:ASN:ND2	2.52	0.80
1:A:626:SER:HB3	1:A:629:GLU:HG2	1.61	0.80
1:B:492:LEU:HD11	1:B:759:LEU:HD11	1.62	0.80
1:B:515:ARG:NH1	1:B:569:CYS:SG	2.55	0.80
1:A:468:ARG:HD2	1:A:485:VAL:HG21	1.64	0.80
1:A:83:LEU:HD23	1:A:144:LEU:HD23	1.64	0.80
1:B:274:ARG:HA	1:B:277:TYR:CE2	2.18	0.79
1:B:618:GLY:N	1:B:679:GLY:O	2.15	0.79
1:B:2006:THR:CG2	1:B:2013:LEU:HD22	2.13	0.79
1:B:165:LEU:HB3	1:B:400:VAL:HG11	1.64	0.78
1:A:348:LEU:HD13	1:A:406:PRO:HB3	1.65	0.78
1:A:274:ARG:HA	1:A:277:TYR:CE2	2.18	0.78
1:A:292:ALA:HB2	1:A:322:ILE:HD11	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:9:MET:HE3	1:B:19:LEU:HD13	1.64	0.77
1:B:641:ALA:N	1:B:650:THR:O	2.17	0.77
1:B:2006:THR:HG21	1:B:2013:LEU:HD22	1.65	0.77
1:A:623:VAL:HG11	1:A:665:LEU:HD13	1.65	0.77
1:B:654:PRO:HB2	1:B:657:PRO:HD2	1.65	0.77
1:B:503:TRP:HB3	1:B:787:LYS:HE2	1.66	0.77
1:A:522:ARG:O	1:A:525:GLU:HG3	1.84	0.76
1:B:164:SER:HB3	1:B:338:LEU:HG	1.64	0.76
1:A:659:PHE:O	1:A:663:GLU:HG2	1.85	0.76
1:B:717:ILE:HG12	1:B:727:ALA:HB2	1.68	0.76
1:B:758:VAL:CG1	1:B:781:ILE:HA	2.16	0.76
1:B:469:GLY:HA2	1:B:805:LEU:HD21	1.67	0.76
1:B:215:PHE:HE1	1:B:305:LEU:HD11	1.49	0.76
1:B:440:GLN:HG3	1:B:833:LEU:HD22	1.65	0.76
1:A:213:LYS:HD2	1:A:218:ALA:O	1.86	0.75
1:A:440:GLN:HG3	1:A:833:LEU:HD22	1.68	0.75
1:A:570:MET:HE1	1:A:800:ILE:HD12	1.68	0.75
1:B:2006:THR:HG21	1:B:2013:LEU:CD2	2.16	0.75
1:B:596:GLN:O	1:B:600:VAL:HG23	1.87	0.75
1:A:502:GLN:OE1	1:A:502:GLN:N	2.19	0.75
1:B:440:GLN:HG3	1:B:833:LEU:CD2	2.17	0.75
1:B:492:LEU:HD11	1:B:759:LEU:CD1	2.17	0.74
1:B:628:GLU:N	1:B:628:GLU:OE1	2.20	0.74
1:A:125:GLU:OE1	1:A:125:GLU:N	2.20	0.74
1:A:139:MET:HE1	1:B:396:GLY:HA2	1.68	0.74
1:B:429:ARG:NH1	1:B:464:ALA:O	2.21	0.73
1:B:1463:GLU:OE2	1:B:2030:GLY:N	2.21	0.73
1:B:2013:LEU:HD11	1:B:2015:TYR:O	1.88	0.73
1:A:584:GLU:O	1:A:588:GLY:N	2.18	0.73
1:A:297:THR:HG22	1:A:299:VAL:H	1.52	0.73
1:A:469:GLY:HA2	1:A:805:LEU:HD21	1.71	0.72
1:B:420:LEU:HD21	1:B:512:ARG:HD2	1.71	0.72
1:B:1230:THR:O	1:B:1234:ASN:ND2	2.23	0.72
1:B:79:LEU:HD21	1:B:143:ARG:HG3	1.71	0.71
1:A:165:LEU:HD13	1:A:337:GLY:HA3	1.71	0.71
1:A:209:GLU:OE1	1:A:209:GLU:N	2.24	0.71
1:B:291:GLU:HG2	1:B:340:ALA:HB1	1.73	0.71
1:B:502:GLN:N	1:B:502:GLN:OE1	2.23	0.71
1:A:253:THR:HG22	1:A:255:GLY:H	1.54	0.71
1:A:628:GLU:OE1	1:A:631:LYS:HE3	1.90	0.71
1:A:660:GLU:O	1:A:664:GLN:HG2	1.89	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:124:PRO:HA	1:A:127:LEU:HD23	1.74	0.70
1:A:460:VAL:HG23	1:A:461:PRO:HD2	1.73	0.70
1:B:59:ARG:NH1	1:B:840:LEU:O	2.23	0.70
1:A:693:PRO:HA	1:A:696:GLN:CD	2.16	0.70
1:B:627:TRP:NE1	1:B:631:LYS:HE2	2.07	0.70
1:B:1145:VAL:HG21	1:B:1356:ILE:HG12	1.73	0.70
1:B:1746:ASN:ND2	1:B:1768:GLU:OE1	2.25	0.70
1:A:631:LYS:HG3	1:A:632:GLN:OE1	1.92	0.70
1:A:503:TRP:H	1:A:506:MET:HE2	1.57	0.69
1:A:625:LEU:HD21	1:A:670:VAL:HG11	1.73	0.69
1:A:648:THR:OG1	1:A:773:ARG:NH2	2.25	0.69
1:B:165:LEU:HD12	1:B:392:SER:CB	2.22	0.69
1:A:442:LEU:HD23	1:A:473:LEU:HD22	1.73	0.69
1:B:504:ARG:HH12	1:B:543:GLU:HB2	1.57	0.69
1:B:655:GLN:O	1:B:658:VAL:HG12	1.92	0.69
1:A:666:ARG:HH21	1:A:672:ALA:HB3	1.55	0.69
1:B:215:PHE:CE1	1:B:305:LEU:HD11	2.27	0.69
1:A:1997:SER:O	1:A:2001:ASN:ND2	2.26	0.69
1:B:248:ASN:HB2	1:B:280:ALA:HB2	1.73	0.69
1:A:71:GLN:HE22	1:A:130:TYR:HB3	1.56	0.69
1:A:628:GLU:HA	1:A:631:LYS:CE	2.19	0.69
1:B:191:LEU:HD22	1:B:224:ARG:NH2	2.08	0.69
1:B:276:LEU:HD12	1:B:401:HIS:HB3	1.74	0.69
1:B:719:GLU:HA	1:B:722:TRP:CD1	2.27	0.69
1:A:1329:LEU:HD22	1:A:1380:LEU:HD22	1.72	0.69
1:B:1274:ASP:OD1	1:B:1275:ARG:N	2.26	0.68
1:B:623:VAL:HG12	1:B:625:LEU:HG	1.76	0.68
1:B:1300:ALA:O	1:B:1331:ASN:ND2	2.27	0.68
1:A:643:HIS:CD2	1:A:746:GLN:HB3	2.29	0.68
1:A:752:VAL:HB	1:A:775:LEU:HD11	1.74	0.68
1:B:532:LEU:HD21	1:B:604:TYR:HE2	1.59	0.67
1:B:254:ASP:CB	1:B:257:LYS:HE3	2.22	0.67
1:B:627:TRP:CZ3	1:B:640:PRO:HB2	2.30	0.67
1:A:57:LEU:HD23	1:A:81:LEU:HD11	1.77	0.67
1:A:217:THR:HG22	1:A:364:PRO:HD3	1.75	0.67
1:B:564:ILE:HD13	1:B:761:ILE:HD13	1.77	0.67
1:B:2028:ASN:OD1	1:B:2029:ALA:N	2.26	0.67
1:B:293:HIS:N	1:B:304:GLU:OE2	2.21	0.67
1:B:343:LYS:NZ	1:B:354:ALA:HB3	2.10	0.67
1:A:615:LEU:HB2	1:A:680:MET:HE1	1.76	0.67
1:A:1250:GLY:O	1:A:1316:ASN:ND2	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:725:SER:HA	1:A:728:ARG:NH1	2.10	0.67
1:A:566:LEU:HD22	1:A:815:LEU:HD22	1.75	0.67
1:B:366:ILE:HG21	1:B:369:LEU:HD13	1.76	0.67
1:B:276:LEU:CD1	1:B:401:HIS:HB3	2.25	0.66
1:B:1896:PHE:CE1	1:B:2088:MET:HE1	2.29	0.66
1:B:547:ASP:OD1	1:B:548:ASP:N	2.29	0.66
1:A:506:MET:HG3	1:A:559:ILE:HD11	1.77	0.66
1:B:640:PRO:HA	1:B:651:ILE:HG22	1.78	0.66
1:B:295:THR:HG23	1:B:297:THR:HG23	1.76	0.66
1:B:717:ILE:HD12	1:B:717:ILE:O	1.96	0.66
1:B:1177:GLU:N	1:B:1177:GLU:OE1	2.28	0.66
1:A:22:PHE:CD1	1:A:32:MET:HE1	2.31	0.66
1:B:935:VAL:HG12	1:B:946:VAL:HG22	1.78	0.66
1:A:460:VAL:HG11	1:A:465:MET:SD	2.36	0.66
1:A:509:SER:OG	1:A:791:ASP:OD1	2.13	0.66
1:A:731:SER:OG	1:A:733:GLU:OE1	2.10	0.66
1:A:767:LEU:O	1:A:771:LEU:HD13	1.96	0.65
1:B:540:SER:OG	1:B:545:THR:HG21	1.95	0.65
1:B:555:SER:O	1:B:559:ILE:HG12	1.95	0.65
1:B:1933:ARG:NH1	1:B:1939:VAL:O	2.29	0.65
1:A:216:ASP:OD1	1:A:217:THR:N	2.29	0.65
1:A:633:ARG:NH2	1:A:668:GLU:OE2	2.22	0.65
1:B:652:SER:OG	1:B:684:SER:HB3	1.96	0.65
1:B:675:VAL:HG23	1:B:677:THR:HG23	1.78	0.65
1:A:9:MET:CE	1:A:342:ALA:HA	2.23	0.65
1:A:654:PRO:HG2	1:A:657:PRO:HG2	1.78	0.65
1:A:1485:GLU:N	1:A:1485:GLU:OE1	2.29	0.65
1:B:319:PRO:HB3	1:B:372:GLY:O	1.97	0.65
1:A:277:TYR:CE1	1:A:284:PRO:HG3	2.31	0.65
1:A:32:MET:HB2	1:A:329:MET:HA	1.80	0.64
1:B:1111:VAL:HG23	1:B:1111:VAL:O	1.96	0.64
1:A:697:GLU:O	1:A:701:VAL:HG23	1.98	0.64
1:A:1327:SER:O	1:A:1331:ASN:ND2	2.31	0.64
1:A:333:GLU:HB2	1:A:334:PRO:HD3	1.80	0.64
1:B:9:MET:HG2	1:B:19:LEU:HD11	1.80	0.64
1:B:560:GLN:O	1:B:564:ILE:HG12	1.96	0.64
1:B:1071:ASP:OD1	1:B:1072:LYS:N	2.29	0.64
1:A:717:ILE:HD12	1:A:727:ALA:HB2	1.79	0.64
1:A:1286:GLU:OE1	1:A:1286:GLU:N	2.31	0.64
1:B:250:GLY:HA3	1:B:276:LEU:HD21	1.79	0.64
1:B:74:THR:HG23	1:B:120:LEU:HD13	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:250:GLY:HA3	1:A:276:LEU:HD21	1.80	0.64
1:A:526:ALA:HB2	1:A:597:GLU:OE1	1.97	0.64
1:B:1228:LEU:HD21	1:B:1256:ILE:HD13	1.78	0.64
1:A:425:ARG:HH22	1:A:459:ALA:HB2	1.63	0.64
1:B:654:PRO:HB2	1:B:657:PRO:CD	2.27	0.64
1:B:254:ASP:HB2	1:B:257:LYS:HE3	1.79	0.63
1:B:1612:ARG:NH2	1:B:1640:TRP:O	2.32	0.63
1:A:736:VAL:O	1:A:740:VAL:HG22	1.98	0.63
1:B:363:ASN:HB3	1:B:366:ILE:CD1	2.28	0.63
1:A:15:GLU:OE2	1:A:34:THR:HG21	1.98	0.63
1:A:440:GLN:HG3	1:A:833:LEU:CD2	2.29	0.63
1:A:755:HIS:ND1	1:A:778:SER:HB2	2.14	0.62
1:A:763:PRO:HA	1:A:785:MET:SD	2.39	0.62
1:B:680:MET:HE2	1:B:680:MET:HA	1.80	0.62
1:B:848:GLU:N	1:B:848:GLU:OE1	2.31	0.62
1:A:25:ASN:HB2	1:A:32:MET:HE3	1.81	0.62
1:A:158:ASP:HB2	1:B:156:ALA:HB3	1.80	0.62
1:B:1596:ASP:O	1:B:1597:SER:OG	2.15	0.62
1:B:267:ASP:O	1:B:271:GLN:HG3	1.99	0.62
1:B:661:PHE:CE2	1:B:665:LEU:HD11	2.35	0.62
1:B:758:VAL:HG12	1:B:780:THR:O	1.99	0.62
1:B:768:GLN:OE1	1:B:781:ILE:HG21	2.00	0.62
1:A:1470:ARG:NH1	1:A:1500:ASP:OD1	2.33	0.62
1:A:620:MET:HG2	1:A:677:THR:HG21	1.81	0.62
1:A:768:GLN:HE22	1:A:783:PRO:HG3	1.65	0.62
1:B:51:SER:HA	1:B:223:CYS:SG	2.40	0.62
1:B:164:SER:OG	1:B:335:ALA:HA	2.00	0.62
1:B:582:LEU:O	1:B:585:VAL:HG22	1.99	0.62
1:B:717:ILE:HG12	1:B:727:ALA:CB	2.29	0.62
1:A:71:GLN:NE2	1:A:130:TYR:HB3	2.13	0.61
1:A:276:LEU:CD1	1:A:401:HIS:HB3	2.29	0.61
1:B:112:SER:HB3	1:B:334:PRO:HG3	1.81	0.61
1:A:725:SER:HA	1:A:728:ARG:HH12	1.64	0.61
1:B:115:GLU:OE1	1:B:192:LEU:HB2	2.00	0.61
1:B:767:LEU:HB3	1:B:771:LEU:CD2	2.22	0.61
1:A:661:PHE:CE2	1:A:665:LEU:HD11	2.35	0.61
1:A:1329:LEU:HD22	1:A:1380:LEU:CD2	2.30	0.61
1:A:1862:GLU:N	1:A:1862:GLU:OE1	2.33	0.61
1:A:641:ALA:N	1:A:650:THR:O	2.31	0.61
1:B:627:TRP:CD1	1:B:631:LYS:HE2	2.36	0.61
1:A:1617:VAL:HG12	1:A:1628:LEU:HD13	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:754:GLU:HB2	1:B:776:LYS:HE3	1.81	0.61
1:B:243:TYR:OH	1:B:829:LEU:HD22	2.00	0.61
1:B:713:LEU:HD22	1:B:722:TRP:CH2	2.36	0.61
1:A:83:LEU:HD23	1:A:144:LEU:CD2	2.30	0.61
1:A:1176:GLN:N	1:A:1176:GLN:OE1	2.33	0.60
1:B:36:ASP:OD1	1:B:38:ARG:HG3	2.00	0.60
1:A:548:ASP:HB2	1:A:551:HIS:HD1	1.67	0.60
1:A:739:LEU:HD23	1:A:739:LEU:O	2.00	0.60
1:B:642:CYS:SG	1:B:650:THR:HB	2.42	0.60
1:B:1545:ARG:HD2	1:B:1876:ILE:HD11	1.83	0.60
1:A:506:MET:HE3	1:A:546:PHE:CZ	2.36	0.60
1:A:2034:TYR:O	1:A:2038:ASN:ND2	2.35	0.60
1:B:652:SER:CB	1:B:681:ALA:HB1	2.30	0.60
1:A:161:CYS:HA	1:A:333:GLU:O	2.02	0.60
1:A:504:ARG:HD3	1:A:543:GLU:HA	1.82	0.60
1:A:623:VAL:CG1	1:A:665:LEU:HD13	2.31	0.60
1:A:692:PRO:HD2	1:A:693:PRO:HD2	1.84	0.60
1:B:165:LEU:HB3	1:B:400:VAL:CG1	2.30	0.60
1:B:328:ASN:OD1	1:B:357:LEU:HD13	2.01	0.60
1:A:168:LEU:HD21	1:A:246:ILE:HD13	1.83	0.60
1:A:253:THR:HG23	1:A:397:GLY:O	2.02	0.60
1:B:1366:GLN:O	1:B:1369:GLN:N	2.35	0.60
1:B:570:MET:HE1	1:B:800:ILE:CD1	2.32	0.60
1:B:629:GLU:HG2	1:B:632:GLN:HE21	1.67	0.60
1:A:317:GLN:N	1:A:317:GLN:OE1	2.34	0.59
1:A:605:TRP:CE3	1:A:697:GLU:HG2	2.37	0.59
1:B:213:LYS:HG2	1:B:358:HIS:HB3	1.83	0.59
1:B:714:SER:HB3	1:B:717:ILE:HD11	1.84	0.59
1:A:612:GLU:O	1:A:614:HIS:ND1	2.31	0.59
1:B:593:CYS:HA	1:B:706:LYS:HE2	1.84	0.59
1:A:543:GLU:N	1:A:543:GLU:OE1	2.33	0.59
1:B:158:ASP:O	1:B:163:SER:HB2	2.02	0.59
1:B:869:GLU:N	1:B:869:GLU:OE1	2.35	0.59
1:A:632:GLN:OE1	1:A:632:GLN:N	2.35	0.59
1:A:1486:VAL:O	1:A:1493:LEU:HD22	2.02	0.59
1:B:629:GLU:HG2	1:B:632:GLN:NE2	2.18	0.59
1:B:743:VAL:C	1:B:744:LEU:HD12	2.26	0.59
1:B:32:MET:HE3	1:B:329:MET:HB3	1.84	0.59
1:B:165:LEU:HD12	1:B:392:SER:HB3	1.85	0.59
1:B:656:ALA:HB3	1:B:657:PRO:HD3	1.83	0.59
1:A:288:GLU:HG2	1:A:288:GLU:O	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:57:LEU:HD23	1:B:81:LEU:HD11	1.85	0.59
1:B:343:LYS:HZ3	1:B:354:ALA:HB3	1.67	0.59
1:B:344:VAL:HG11	1:B:388:VAL:HG11	1.83	0.59
1:A:67:VAL:HG11	1:A:75:MET:HE1	1.85	0.59
1:A:1457:VAL:HG11	1:A:1471:CYS:HB2	1.84	0.59
1:B:22:PHE:CE2	1:B:26:LEU:HD11	2.37	0.59
1:B:33:VAL:CG1	1:B:50:ARG:HB3	2.33	0.59
1:B:625:LEU:HB3	1:B:629:GLU:OE1	2.03	0.59
1:B:687:MET:HE2	1:B:739:LEU:HD11	1.84	0.59
1:B:1835:GLN:N	1:B:1835:GLN:OE1	2.35	0.59
1:A:341:LEU:O	1:A:345:LEU:HG	2.03	0.59
1:A:491:PRO:HD2	1:A:755:HIS:O	2.02	0.59
1:A:661:PHE:O	1:A:665:LEU:HG	2.01	0.59
1:B:44:LEU:HG	1:B:45:TYR:CD2	2.38	0.59
1:B:708:ARG:NH2	1:B:714:SER:HB2	2.17	0.59
1:A:591:ASP:O	1:A:711:ARG:NH2	2.36	0.59
1:B:737:ASN:HA	1:B:740:VAL:HG22	1.83	0.59
1:A:627:TRP:O	1:A:631:LYS:HG2	2.02	0.58
1:A:1139:GLN:OE1	1:A:1142:LYS:NZ	2.34	0.58
1:A:656:ALA:HB3	1:A:657:PRO:HD3	1.83	0.58
1:A:1975:LEU:HD23	1:A:1975:LEU:H	1.67	0.58
1:A:155:ILE:HG22	1:A:156:ALA:H	1.68	0.58
1:B:216:ASP:OD1	1:B:217:THR:N	2.34	0.58
1:B:620:MET:HG3	1:B:677:THR:HG21	1.86	0.58
1:A:613:ALA:HB1	1:A:615:LEU:CG	2.33	0.58
1:A:1245:VAL:HG22	1:A:1246:LEU:CD1	2.30	0.58
1:B:504:ARG:NH2	1:B:541:THR:O	2.37	0.58
1:B:1190:LEU:O	1:B:1195:GLN:NE2	2.35	0.58
1:B:159:THR:HG22	1:B:162:SER:OG	2.03	0.58
1:B:715:THR:HG22	1:B:748:ALA:HB2	1.85	0.58
1:A:745:PHE:HZ	1:A:771:LEU:HD11	1.67	0.58
1:A:1125:GLU:N	1:A:1125:GLU:OE1	2.37	0.58
1:B:340:ALA:O	1:B:344:VAL:HG23	2.03	0.58
1:B:516:PHE:O	1:B:520:ILE:HG12	2.04	0.58
1:A:569:CYS:SG	1:A:814:ALA:HB1	2.43	0.58
1:A:687:MET:HA	1:A:687:MET:HE2	1.86	0.58
1:A:1414:PHE:CE2	1:A:1493:LEU:HD21	2.39	0.58
1:B:33:VAL:HG12	1:B:50:ARG:HB3	1.85	0.57
1:B:639:VAL:HG13	1:B:640:PRO:HD2	1.85	0.57
1:A:351:GLY:C	1:A:352:LEU:HD12	2.29	0.57
1:A:657:PRO:O	1:A:660:GLU:HG2	2.03	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:632:GLN:CD	1:B:633:ARG:HG2	2.29	0.57
1:B:733:GLU:HA	1:B:736:VAL:HG22	1.85	0.57
1:A:1703:GLU:N	1:A:1703:GLU:OE1	2.36	0.57
1:B:366:ILE:CG2	1:B:369:LEU:HD13	2.33	0.57
1:A:1246:LEU:HD11	1:A:1299:PRO:CG	2.35	0.57
1:B:591:ASP:OD2	1:B:712:TRP:HB2	2.04	0.57
1:B:2006:THR:CG2	1:B:2013:LEU:CD2	2.81	0.57
1:A:658:VAL:O	1:A:662:VAL:HG23	2.05	0.57
1:A:776:LYS:H	1:A:776:LYS:HD2	1.69	0.57
1:B:1215:LEU:HD21	1:B:1318:ALA:HB1	1.86	0.57
1:A:701:VAL:HG12	1:A:702:ILE:HD12	1.87	0.57
1:A:188:ILE:HG22	1:A:228:VAL:HG22	1.86	0.57
1:B:79:LEU:O	1:B:83:LEU:HD13	2.05	0.57
1:A:544:SER:HA	1:A:547:ASP:OD2	2.04	0.57
1:A:610:ILE:HA	1:A:690:ILE:HD13	1.86	0.57
1:B:524:ASP:CG	1:B:533:LYS:HB2	2.30	0.57
1:B:658:VAL:O	1:B:662:VAL:HG23	2.05	0.57
1:A:52:GLY:O	1:A:226:GLU:HG2	2.05	0.56
1:A:257:LYS:HE2	1:A:260:GLY:O	2.04	0.56
1:A:666:ARG:NH2	1:A:672:ALA:HB3	2.20	0.56
1:B:632:GLN:NE2	1:B:633:ARG:HG2	2.19	0.56
1:A:708:ARG:NH1	1:A:714:SER:HB2	2.20	0.56
1:A:1551:LEU:HD11	1:A:1627:LEU:HB2	1.87	0.56
1:B:165:LEU:HD12	1:B:392:SER:HB2	1.87	0.56
1:B:215:PHE:HD1	1:B:305:LEU:HD21	1.70	0.56
1:B:363:ASN:HB3	1:B:366:ILE:HD12	1.88	0.56
1:B:717:ILE:HG23	1:B:737:ASN:HD21	1.70	0.56
1:B:758:VAL:HG13	1:B:781:ILE:HA	1.85	0.56
1:A:215:PHE:HZ	1:A:292:ALA:HB3	1.71	0.56
1:A:639:VAL:CG2	1:A:640:PRO:HD2	2.35	0.56
1:A:693:PRO:O	1:A:696:GLN:HG2	2.05	0.56
1:A:1411:SER:OG	1:A:1439:ARG:NH2	2.38	0.56
1:B:274:ARG:HA	1:B:277:TYR:CD2	2.40	0.56
1:B:549:ILE:HD11	1:B:553:PHE:HE1	1.69	0.56
1:B:1441:VAL:N	1:B:1468:ARG:O	2.38	0.56
1:A:1446:ILE:HG21	1:A:1486:VAL:HG21	1.88	0.56
1:B:254:ASP:HB3	1:B:257:LYS:HE3	1.86	0.56
1:B:1606:ARG:NH2	1:B:1862:GLU:O	2.38	0.56
1:A:124:PRO:HA	1:A:127:LEU:CD2	2.35	0.56
1:A:495:ILE:CD1	1:A:578:VAL:HB	2.36	0.56
1:B:615:LEU:HD12	1:B:615:LEU:H	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1417:VAL:HG12	1:B:1417:VAL:O	2.06	0.56
1:B:1460:LEU:HD21	1:B:1980:LEU:HD22	1.88	0.56
1:A:158:ASP:O	1:B:138:ALA:HB2	2.06	0.56
1:A:1130:GLU:N	1:A:1130:GLU:OE1	2.39	0.56
1:B:217:THR:HG22	1:B:363:ASN:HA	1.86	0.56
1:A:115:GLU:OE1	1:A:193:LYS:N	2.39	0.56
1:A:1973:VAL:H	2:A:2602:NDP:H52A	1.70	0.56
1:B:597:GLU:OE1	1:B:597:GLU:N	2.31	0.56
1:A:639:VAL:HG23	1:A:640:PRO:HD2	1.86	0.56
1:B:625:LEU:HD13	1:B:629:GLU:OE2	2.05	0.56
1:B:1521:GLU:OE1	1:B:1521:GLU:N	2.36	0.56
1:A:1617:VAL:HG11	1:A:1626:VAL:HG21	1.86	0.56
1:B:494:PHE:HE1	1:B:759:LEU:CD1	2.12	0.56
1:A:57:LEU:CD2	1:A:81:LEU:HD11	2.36	0.55
1:A:116:THR:O	1:A:120:LEU:HD13	2.06	0.55
1:A:498:GLY:HA2	1:A:582:LEU:O	2.06	0.55
1:A:1346:THR:HG22	1:A:1347:LEU:H	1.71	0.55
1:B:160:ALA:O	1:B:394:GLY:HA3	2.06	0.55
1:A:548:ASP:HB2	1:A:551:HIS:ND1	2.20	0.55
1:B:532:LEU:HD21	1:B:604:TYR:CE2	2.41	0.55
1:A:726:LEU:HD12	1:A:726:LEU:H	1.71	0.55
1:A:1795:LEU:HD22	1:B:1786:LEU:O	2.06	0.55
1:B:643:HIS:O	1:B:746:GLN:N	2.37	0.55
1:A:133:VAL:O	1:A:139:MET:HG3	2.05	0.55
1:B:420:LEU:CD2	1:B:512:ARG:HD2	2.37	0.55
1:A:502:GLN:CB	1:A:506:MET:HE1	2.34	0.55
1:A:665:LEU:HB3	1:A:670:VAL:CG2	2.36	0.55
1:A:2051:GLU:N	1:A:2051:GLU:OE1	2.40	0.55
1:B:215:PHE:HZ	1:B:292:ALA:HB3	1.71	0.55
1:B:749:LEU:HD22	1:B:775:LEU:HD21	1.89	0.55
1:B:1197:GLU:OE1	1:B:1197:GLU:N	2.35	0.55
1:A:1246:LEU:HD11	1:A:1299:PRO:HG3	1.87	0.55
1:B:527:VAL:HG11	1:B:532:LEU:HD11	1.89	0.55
1:B:646:LYS:HD3	1:B:746:GLN:HE22	1.70	0.55
1:B:2033:ASN:OD1	1:B:2034:TYR:N	2.38	0.55
1:B:621:ALA:HB3	1:B:651:ILE:CD1	2.32	0.55
1:A:189:ASN:O	1:A:226:GLU:HB2	2.07	0.54
1:A:648:THR:HG23	1:A:773:ARG:HH22	1.73	0.54
1:A:153:PRO:HG3	1:B:251:THR:HG23	1.89	0.54
1:B:664:GLN:OE1	1:B:667:LYS:HD2	2.07	0.54
1:A:618:GLY:O	1:A:681:ALA:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1909:VAL:HG12	1:A:1911:LYS:H	1.71	0.54
1:A:548:ASP:HB2	1:A:551:HIS:CE1	2.42	0.54
1:A:776:LYS:HD2	1:A:776:LYS:N	2.23	0.54
1:B:682:PHE:HB2	1:B:683:HIS:ND1	2.22	0.54
1:A:81:LEU:O	1:A:85:VAL:HG23	2.07	0.54
1:A:654:PRO:O	1:A:658:VAL:HG23	2.08	0.54
1:A:783:PRO:HB2	1:A:795:PHE:HE2	1.72	0.54
1:B:242:VAL:HG23	1:B:822:PRO:HB3	1.88	0.54
1:B:535:SER:O	1:B:539:LEU:HD23	2.08	0.54
1:B:656:ALA:O	1:B:660:GLU:HG3	2.07	0.54
1:B:2022:VAL:HG13	1:B:2060:TRP:O	2.07	0.54
1:A:503:TRP:N	1:A:506:MET:HE2	2.23	0.54
1:A:1725:ASP:OD1	1:A:1726:THR:N	2.39	0.54
1:B:344:VAL:CG1	1:B:388:VAL:HG11	2.36	0.54
1:A:202:ARG:NH1	1:B:127:LEU:O	2.41	0.54
1:A:717:ILE:CD1	1:A:727:ALA:HB2	2.38	0.54
1:A:2018:VAL:HG11	1:A:2041:MET:HB3	1.90	0.54
1:B:76:ASP:OD1	1:B:77:PRO:HD2	2.08	0.54
1:A:692:PRO:CD	1:A:693:PRO:HD2	2.38	0.54
1:B:517:ARG:O	1:B:521:LEU:HG	2.08	0.54
1:B:1195:GLN:O	1:B:1199:ALA:N	2.37	0.54
1:A:199:GLN:OE1	1:B:121:SER:HB3	2.07	0.54
1:A:460:VAL:CG2	1:A:461:PRO:HD2	2.38	0.54
1:A:550:VAL:HG21	1:A:611:LYS:HE2	1.90	0.54
1:B:81:LEU:O	1:B:85:VAL:HG23	2.08	0.54
1:B:598:GLU:OE2	1:B:702:ILE:HA	2.07	0.54
1:A:138:ALA:CB	1:B:160:ALA:HB2	2.38	0.53
1:A:168:LEU:HD21	1:A:246:ILE:CD1	2.38	0.53
1:A:626:SER:N	1:A:629:GLU:OE2	2.36	0.53
1:A:664:GLN:O	1:A:667:LYS:HB2	2.08	0.53
1:B:14:PRO:CD	1:B:329:MET:HE3	2.38	0.53
1:B:1020:LEU:HD22	1:B:1032:THR:HG22	1.90	0.53
1:A:83:LEU:CD2	1:A:144:LEU:HD23	2.37	0.53
1:A:490:ARG:HD3	1:A:806:SER:O	2.07	0.53
1:B:663:GLU:O	1:B:667:LYS:HG3	2.08	0.53
1:A:155:ILE:N	1:A:155:ILE:HD12	2.23	0.53
1:A:189:ASN:ND2	1:A:333:GLU:OE1	2.41	0.53
1:A:626:SER:HB3	1:A:629:GLU:CG	2.37	0.53
1:B:215:PHE:CD1	1:B:305:LEU:HD21	2.43	0.53
1:B:1349:ARG:NH2	1:B:1371:ILE:O	2.42	0.53
1:A:1962:LEU:HD12	1:A:1962:LEU:H	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:706:LYS:HG2	1:B:707:PRO:HD2	1.89	0.53
1:B:1860:GLU:OE1	1:B:1860:GLU:N	2.41	0.53
1:A:36:ASP:OD1	1:A:37:ASP:N	2.41	0.53
1:B:1552:ARG:O	1:B:1555:GLN:NE2	2.41	0.53
1:B:2006:THR:HG23	1:B:2013:LEU:HD22	1.87	0.53
1:A:344:VAL:HG11	1:A:388:VAL:HG11	1.90	0.53
1:A:355:PRO:HA	1:A:377:VAL:HG12	1.90	0.53
1:A:515:ARG:NH1	1:A:569:CYS:SG	2.82	0.53
1:B:533:LYS:HG3	1:B:536:GLN:H	1.73	0.53
1:B:719:GLU:HA	1:B:722:TRP:NE1	2.23	0.53
1:A:706:LYS:HB3	1:A:707:PRO:HD2	1.90	0.53
1:A:14:PRO:HG2	1:A:329:MET:HE3	1.90	0.53
1:A:198:VAL:O	1:A:202:ARG:HG2	2.09	0.53
1:A:1343:LEU:HD11	1:A:1400:LEU:HD21	1.89	0.53
1:B:609:CYS:HB3	1:B:690:ILE:CG2	2.39	0.53
1:B:1215:LEU:HD23	1:B:1215:LEU:O	2.09	0.53
1:A:532:LEU:HD21	1:A:550:VAL:HG12	1.91	0.53
1:A:584:GLU:HA	1:A:587:CYS:HB2	1.90	0.53
1:A:620:MET:HA	1:A:652:SER:HA	1.91	0.53
1:A:786:LYS:HE2	1:A:795:PHE:CZ	2.44	0.53
1:B:1228:LEU:HD21	1:B:1256:ILE:CD1	2.39	0.53
1:B:1594:SER:OG	1:B:1596:ASP:O	2.22	0.53
1:A:440:GLN:HA	1:A:440:GLN:OE1	2.08	0.52
1:A:717:ILE:HG23	1:A:721:GLN:HB2	1.91	0.52
1:A:740:VAL:HG23	1:A:741:SER:H	1.74	0.52
1:B:566:LEU:HD22	1:B:815:LEU:HD22	1.91	0.52
1:A:1760:LEU:HD11	1:A:1766:PHE:HB2	1.91	0.52
1:A:1909:VAL:HG11	1:A:1912:LEU:HD13	1.91	0.52
1:B:627:TRP:CH2	1:B:640:PRO:HB2	2.45	0.52
1:A:22:PHE:HD1	1:A:32:MET:HE1	1.73	0.52
1:A:318:GLU:OE1	1:A:318:GLU:N	2.33	0.52
1:B:425:ARG:HH22	1:B:459:ALA:HB2	1.75	0.52
1:B:550:VAL:O	1:B:554:VAL:HG22	2.09	0.52
1:B:609:CYS:SG	1:B:694:LEU:HD13	2.49	0.52
1:B:644:ASN:HB3	1:B:770:VAL:HG11	1.91	0.52
1:A:429:ARG:NH1	1:A:464:ALA:O	2.38	0.52
1:A:733:GLU:O	1:A:736:VAL:HG12	2.09	0.52
1:A:737:ASN:HA	1:A:740:VAL:HG22	1.91	0.52
1:B:490:ARG:HD3	1:B:806:SER:O	2.09	0.52
1:A:607:GLY:O	1:A:610:ILE:HG22	2.10	0.52
1:B:189:ASN:HB2	1:B:334:PRO:HD2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:651:ILE:O	1:B:651:ILE:HD12	2.09	0.52
1:A:549:ILE:HD12	1:A:610:ILE:HG23	1.90	0.52
1:A:635:PRO:HD3	1:A:661:PHE:CD1	2.45	0.52
1:B:606:ARG:O	1:B:610:ILE:HG13	2.10	0.52
1:A:115:GLU:OE1	1:A:192:LEU:HB2	2.10	0.52
1:A:1970:ASN:C	1:A:1971:LEU:HD12	2.34	0.52
1:B:305:LEU:HD23	1:B:366:ILE:HG21	1.92	0.52
1:B:318:GLU:HG3	1:B:319:PRO:HD2	1.92	0.52
1:A:657:PRO:HA	1:A:660:GLU:CD	2.35	0.52
1:A:781:ILE:N	1:A:781:ILE:HD12	2.25	0.52
1:B:533:LYS:O	1:B:536:GLN:HG3	2.10	0.52
1:A:108:TRP:NE1	1:A:155:ILE:HD13	2.25	0.52
1:B:67:VAL:HG21	1:B:75:MET:HE1	1.90	0.52
1:B:798:ALA:O	1:B:802:ARG:HG3	2.09	0.52
1:A:1379:SER:O	1:A:1382:SER:OG	2.20	0.52
1:A:2033:ASN:OD1	1:A:2034:TYR:N	2.43	0.52
1:A:332:PRO:HB2	1:A:335:ALA:HB3	1.92	0.51
1:B:54:LEU:HD12	1:B:57:LEU:HD21	1.92	0.51
1:B:736:VAL:O	1:B:740:VAL:HG22	2.09	0.51
1:A:25:ASN:HB2	1:A:32:MET:CE	2.40	0.51
1:B:23:TRP:O	1:B:27:ILE:HG22	2.10	0.51
1:B:333:GLU:CB	1:B:334:PRO:HD3	2.36	0.51
1:B:497:SER:CB	1:B:762:ALA:HB2	2.40	0.51
1:B:737:ASN:HA	1:B:740:VAL:CG2	2.41	0.51
1:A:582:LEU:HD12	1:A:606:ARG:HD2	1.92	0.51
1:A:643:HIS:HD2	1:A:746:GLN:HB3	1.75	0.51
1:A:783:PRO:O	1:A:784:LEU:HB2	2.10	0.51
1:A:1436:ASP:OD1	1:A:1437:SER:N	2.44	0.51
1:B:524:ASP:OD2	1:B:533:LYS:HB2	2.10	0.51
1:B:570:MET:HE1	1:B:800:ILE:HD11	1.90	0.51
1:B:754:GLU:O	1:B:755:HIS:HB2	2.10	0.51
1:A:434:VAL:HG11	1:A:482:VAL:HG23	1.92	0.51
1:A:652:SER:OG	1:A:681:ALA:HB1	2.11	0.51
1:A:93:GLY:O	1:A:240:ARG:HB3	2.11	0.51
1:A:184:ILE:HD11	1:A:232:LEU:HD13	1.93	0.51
1:B:1347:LEU:N	1:B:1347:LEU:HD12	2.26	0.51
1:A:87:TYR:CE1	1:A:97:PRO:HG2	2.46	0.51
1:A:222:TYR:HB3	1:A:295:THR:HG22	1.92	0.51
1:B:60:PHE:CD1	1:B:80:ARG:HB3	2.46	0.51
1:B:737:ASN:OD1	1:B:741:SER:HB3	2.10	0.51
1:B:1920:ILE:HD11	1:B:1941:VAL:HG21	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:325:THR:HB	1:A:343:LYS:CD	2.41	0.51
1:A:1346:THR:HG21	1:A:1377:TRP:HE1	1.76	0.51
1:A:1942:SER:O	1:A:1943:THR:OG1	2.18	0.51
1:B:786:LYS:HD2	1:B:787:LYS:H	1.75	0.51
1:A:647:ASP:HB2	1:A:773:ARG:NH2	2.26	0.51
1:A:657:PRO:HA	1:A:660:GLU:HG2	1.93	0.51
1:A:782:ILE:HG22	1:A:784:LEU:HD22	1.92	0.51
1:B:247:LEU:HD13	1:B:282:VAL:HG21	1.91	0.51
1:B:689:ALA:O	1:B:692:PRO:HD2	2.10	0.51
1:B:793:LEU:O	1:B:797:LEU:HG	2.11	0.51
1:A:168:LEU:HD22	1:A:402:ILE:CD1	2.41	0.51
1:A:351:GLY:O	1:A:352:LEU:HD12	2.10	0.51
1:A:504:ARG:NE	1:A:541:THR:O	2.44	0.51
1:A:597:GLU:O	1:A:601:LEU:HG	2.11	0.51
1:B:564:ILE:CD1	1:B:761:ILE:HD13	2.40	0.51
1:B:2088:MET:HE3	1:B:2091:CYS:HB2	1.93	0.51
1:A:1357:VAL:HG23	1:A:1371:ILE:HD13	1.93	0.50
1:B:14:PRO:HD2	1:B:329:MET:HE3	1.93	0.50
1:B:617:PRO:HB2	1:B:655:GLN:CD	2.36	0.50
1:B:84:GLU:O	1:B:88:GLU:HG3	2.11	0.50
1:B:242:VAL:O	1:B:407:ASN:ND2	2.37	0.50
1:B:533:LYS:HG2	1:B:536:GLN:HG2	1.92	0.50
1:B:697:GLU:HA	1:B:697:GLU:OE1	2.10	0.50
1:B:771:LEU:HD12	1:B:775:LEU:HD11	1.93	0.50
1:A:155:ILE:HG22	1:A:156:ALA:N	2.26	0.50
1:A:499:MET:HG2	1:A:553:PHE:CE1	2.46	0.50
1:A:1411:SER:O	1:A:1439:ARG:NE	2.34	0.50
1:A:646:LYS:HG3	1:A:647:ASP:OD1	2.12	0.50
1:B:9:MET:HG2	1:B:19:LEU:CD1	2.41	0.50
1:B:188:ILE:CG2	1:B:228:VAL:HG13	2.33	0.50
1:A:193:LYS:HD2	1:A:195:ASN:HD22	1.76	0.50
1:A:333:GLU:HB2	1:A:334:PRO:CD	2.41	0.50
1:B:293:HIS:NE2	1:B:393:PHE:O	2.45	0.50
1:A:45:TYR:CZ	1:B:124:PRO:HG3	2.47	0.50
1:A:499:MET:HE2	1:A:581:SER:HB2	1.93	0.50
1:B:527:VAL:HG12	1:B:527:VAL:O	2.11	0.50
1:B:733:GLU:O	1:B:736:VAL:HG22	2.11	0.50
1:A:550:VAL:O	1:A:554:VAL:HG23	2.12	0.50
1:A:1232:VAL:HG22	1:A:1240:MET:CE	2.42	0.50
1:B:98:ASP:HA	1:B:101:ARG:HG3	1.94	0.50
1:B:1218:LEU:O	1:B:1218:LEU:HD23	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:573:ARG:HH21	1:A:711:ARG:NH1	2.10	0.50
1:B:198:VAL:O	1:B:202:ARG:HG2	2.11	0.50
1:A:98:ASP:HA	1:A:101:ARG:HG3	1.92	0.49
1:A:165:LEU:HD13	1:A:337:GLY:CA	2.39	0.49
1:A:1033:MET:SD	1:A:1089:ALA:HB3	2.52	0.49
1:A:1348:LEU:HD13	1:A:1374:GLN:HB3	1.94	0.49
1:A:1357:VAL:O	1:A:1361:THR:OG1	2.29	0.49
1:B:460:VAL:HG11	1:B:465:MET:HG3	1.93	0.49
1:B:468:ARG:O	1:B:482:VAL:HG13	2.12	0.49
1:B:2001:ASN:O	1:B:2005:VAL:HG23	2.12	0.49
1:A:621:ALA:HB1	1:A:673:LYS:O	2.11	0.49
1:A:1893:LEU:HD12	1:A:1916:SER:OG	2.12	0.49
1:B:111:VAL:HG13	1:B:137:ARG:HD3	1.93	0.49
1:B:159:THR:HG22	1:B:159:THR:O	2.11	0.49
1:A:248:ASN:HB2	1:A:280:ALA:HB2	1.94	0.49
1:A:1446:ILE:HG22	1:A:1474:LEU:HD13	1.95	0.49
1:A:1716:ASP:OD1	1:A:1717:SER:N	2.43	0.49
1:B:632:GLN:OE1	1:B:633:ARG:HG2	2.11	0.49
1:B:666:ARG:HH21	1:B:669:GLY:HA2	1.77	0.49
1:A:869:GLU:N	1:A:869:GLU:OE1	2.45	0.49
1:A:501:THR:HG22	1:A:766:LEU:HB2	1.93	0.49
1:A:733:GLU:HA	1:A:736:VAL:HG12	1.94	0.49
1:A:325:THR:HB	1:A:343:LYS:HD3	1.94	0.49
1:A:347:SER:HB3	1:A:352:LEU:O	2.11	0.49
1:A:1344:LEU:O	1:A:1401:PHE:N	2.46	0.49
1:B:1229:ASP:HA	1:B:1232:VAL:HG12	1.94	0.49
1:A:757:VAL:HG11	1:A:803:LEU:CD1	2.42	0.49
1:B:533:LYS:HE2	1:B:535:SER:OG	2.13	0.49
1:A:173:GLN:HE22	1:B:179:GLN:HE22	1.59	0.49
1:A:447:ASP:OD1	1:A:448:LEU:N	2.45	0.49
1:B:193:LYS:HE3	1:B:195:ASN:HB2	1.95	0.49
1:B:494:PHE:O	1:B:495:ILE:HD13	2.13	0.49
1:B:991:TYR:OH	1:B:1007:GLY:N	2.43	0.49
1:B:2084:LEU:HD23	1:B:2085:PRO:O	2.12	0.49
1:A:1488:PRO:HA	1:A:1493:LEU:HD23	1.93	0.49
1:A:1887:TYR:HD1	1:A:1909:VAL:HG13	1.76	0.49
1:A:945:GLU:OE2	1:B:941:SER:OG	2.22	0.49
1:A:990:VAL:HG13	1:A:1039:LEU:CD1	2.43	0.49
1:A:1246:LEU:HD12	1:A:1246:LEU:N	2.28	0.49
1:A:1246:LEU:HD23	1:A:1320:ALA:HB1	1.94	0.49
1:A:1616:LEU:HD11	1:A:1650:VAL:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:13:LEU:HB3	1:B:14:PRO:CD	2.43	0.48
1:B:83:LEU:HD12	1:B:144:LEU:HD21	1.95	0.48
1:B:87:TYR:CE1	1:B:97:PRO:HG2	2.48	0.48
1:B:713:LEU:HD22	1:B:722:TRP:CZ3	2.48	0.48
1:B:963:ASP:OD1	1:B:963:ASP:N	2.45	0.48
1:B:615:LEU:HD12	1:B:615:LEU:N	2.27	0.48
1:B:680:MET:HB2	1:B:682:PHE:CE1	2.48	0.48
1:B:74:THR:HG22	1:B:131:SER:HA	1.95	0.48
1:B:553:PHE:CD2	1:B:582:LEU:HD22	2.48	0.48
1:A:695:LEU:HD21	1:A:699:LYS:NZ	2.28	0.48
1:A:740:VAL:HG23	1:A:741:SER:N	2.27	0.48
1:B:95:ILE:HD12	1:B:95:ILE:N	2.29	0.48
1:B:687:MET:CE	1:B:739:LEU:HD11	2.44	0.48
1:A:274:ARG:HA	1:A:277:TYR:CD2	2.49	0.48
1:B:661:PHE:O	1:B:665:LEU:HG	2.14	0.48
1:B:1726:THR:HG22	1:B:1726:THR:O	2.13	0.48
1:A:290:ILE:CG2	1:A:322:ILE:HG13	2.44	0.48
1:A:323:GLY:HA3	1:A:356:ASN:HD21	1.79	0.48
1:A:550:VAL:CG2	1:A:611:LYS:HE2	2.43	0.48
1:A:78:GLN:OE1	1:A:190:VAL:HG22	2.13	0.48
1:A:184:ILE:CD1	1:A:232:LEU:HD13	2.44	0.48
1:A:254:ASP:HA	1:A:268:ILE:HG13	1.95	0.48
1:A:540:SER:OG	1:A:542:ASP:OD1	2.30	0.48
1:A:621:ALA:CB	1:A:674:GLU:HA	2.44	0.48
1:A:752:VAL:CB	1:A:775:LEU:HD11	2.42	0.48
1:A:1069:LEU:HD11	1:A:1075:VAL:HG11	1.94	0.48
1:A:1315:CYS:HB3	1:A:1344:LEU:HD12	1.96	0.48
1:A:638:VAL:HG22	1:A:654:PRO:HD2	1.95	0.48
1:A:1145:VAL:HG21	1:A:1356:ILE:HG12	1.95	0.48
1:B:304:GLU:O	1:B:308:ILE:HG13	2.14	0.48
1:B:879:THR:C	1:B:880:LEU:HD12	2.39	0.48
1:A:506:MET:HG3	1:A:559:ILE:CD1	2.43	0.47
1:A:757:VAL:HG11	1:A:803:LEU:HD11	1.96	0.47
1:B:497:SER:HB3	1:B:762:ALA:HB2	1.96	0.47
1:B:527:VAL:CG2	1:B:600:VAL:HG12	2.43	0.47
1:B:627:TRP:HB2	1:B:643:HIS:NE2	2.29	0.47
1:B:1286:GLU:OE2	1:B:1289:GLN:NE2	2.47	0.47
1:A:194:PRO:O	1:A:198:VAL:HG23	2.14	0.47
1:A:648:THR:CG2	1:A:773:ARG:HH22	2.27	0.47
1:B:442:LEU:C	1:B:442:LEU:HD23	2.39	0.47
1:B:642:CYS:HA	1:B:743:VAL:HB	1.94	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:659:PHE:O	1:B:663:GLU:HG3	2.14	0.47
1:A:33:VAL:HG12	1:A:50:ARG:HB3	1.96	0.47
1:A:501:THR:HB	1:A:764:HIS:HB3	1.97	0.47
1:A:585:VAL:HG23	1:A:586:ALA:N	2.29	0.47
1:A:766:LEU:HD23	1:A:766:LEU:O	2.14	0.47
1:A:1446:ILE:HD12	1:A:1447:ASN:N	2.30	0.47
1:A:1974:VAL:HG12	1:A:1994:PRO:HG3	1.96	0.47
1:B:576:GLY:C	1:B:577:ILE:HD12	2.40	0.47
1:B:717:ILE:HG23	1:B:737:ASN:ND2	2.28	0.47
1:A:92:ASP:OD2	1:A:831:SER:HB2	2.14	0.47
1:A:105:THR:HG23	1:A:182:ALA:O	2.13	0.47
1:A:619:ALA:O	1:A:658:VAL:HG21	2.15	0.47
1:A:1446:ILE:HD12	1:A:1446:ILE:C	2.40	0.47
1:A:1519:LEU:HD12	1:A:1519:LEU:C	2.39	0.47
1:A:2042:GLU:OE2	1:A:2059:GLN:NE2	2.47	0.47
1:A:2049:ARG:NH1	1:A:2055:GLY:O	2.46	0.47
1:B:460:VAL:HG13	1:B:461:PRO:HD2	1.97	0.47
1:B:1278:GLN:OE1	1:B:1278:GLN:N	2.44	0.47
1:A:424:LEU:CD2	1:A:441:GLY:HA3	2.45	0.47
1:B:259:GLN:OE1	1:B:259:GLN:N	2.46	0.47
1:B:767:LEU:O	1:B:771:LEU:HB2	2.14	0.47
1:B:1013:LEU:O	1:B:1927:LYS:NZ	2.47	0.47
1:A:84:GLU:O	1:A:88:GLU:HG3	2.14	0.47
1:A:648:THR:HG23	1:A:773:ARG:HH12	1.79	0.47
1:A:873:HIS:O	1:A:876:VAL:HG22	2.15	0.47
1:B:39:ARG:NE	1:B:226:GLU:OE2	2.47	0.47
1:B:758:VAL:HG12	1:B:781:ILE:HA	1.94	0.47
1:A:285:GLU:H	1:A:285:GLU:CD	2.23	0.47
1:A:301:ASP:HB2	1:A:302:PRO:HD3	1.96	0.47
1:A:1949:LEU:HD22	1:A:2004:ARG:HH11	1.79	0.47
1:B:498:GLY:O	1:B:556:LEU:HD21	2.15	0.47
1:B:557:THR:O	1:B:561:ILE:HG12	2.14	0.47
1:B:978:ASN:ND2	1:B:1014:GLU:OE2	2.45	0.47
1:A:127:LEU:HD13	1:B:199:GLN:HG2	1.96	0.47
1:A:527:VAL:O	1:A:527:VAL:HG22	2.15	0.47
1:A:582:LEU:HD23	1:A:583:GLY:N	2.29	0.47
1:B:692:PRO:HD2	1:B:693:PRO:HD2	1.97	0.47
1:A:290:ILE:HD12	1:A:389:GLY:HA3	1.96	0.47
1:A:535:SER:O	1:A:539:LEU:HG	2.14	0.47
1:A:687:MET:HE2	1:A:687:MET:CA	2.45	0.47
1:A:1971:LEU:HD12	1:A:1971:LEU:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:542:ASP:HB3	1:B:545:THR:OG1	2.15	0.47
1:A:702:ILE:HD12	1:A:702:ILE:N	2.29	0.47
1:A:793:LEU:O	1:A:797:LEU:HG	2.14	0.47
1:B:435:GLN:HA	1:B:435:GLN:OE1	2.14	0.47
1:B:577:ILE:HD12	1:B:577:ILE:N	2.29	0.47
1:B:885:LEU:HD22	1:B:922:ALA:HB1	1.97	0.47
1:B:1371:ILE:C	1:B:1372:LEU:HD22	2.40	0.47
1:A:754:GLU:OE2	1:A:776:LYS:HG2	2.14	0.46
1:A:1246:LEU:CD2	1:A:1320:ALA:HB1	2.45	0.46
1:B:1261:SER:N	1:B:1262:PRO:HD2	2.30	0.46
1:A:54:LEU:HG	1:A:226:GLU:HG3	1.97	0.46
1:A:549:ILE:HD12	1:A:610:ILE:CG2	2.44	0.46
1:A:739:LEU:HD23	1:A:739:LEU:C	2.40	0.46
1:A:783:PRO:HB2	1:A:795:PHE:CE2	2.50	0.46
1:B:639:VAL:O	1:B:651:ILE:HG22	2.14	0.46
1:B:666:ARG:NH2	1:B:669:GLY:HA2	2.30	0.46
1:A:1181:LEU:HD13	1:A:1204:GLN:HG2	1.97	0.46
1:A:1519:LEU:HD13	1:A:2101:GLN:HE22	1.81	0.46
1:B:13:LEU:HB3	1:B:14:PRO:HD2	1.98	0.46
1:B:494:PHE:CD2	1:B:574:PRO:HB3	2.51	0.46
1:B:533:LYS:CG	1:B:536:GLN:HB3	2.45	0.46
1:B:758:VAL:HG22	1:B:759:LEU:H	1.80	0.46
1:B:758:VAL:HG22	1:B:759:LEU:N	2.30	0.46
1:B:831:SER:HB3	1:B:832:PRO:HD3	1.98	0.46
1:A:263:PHE:CE1	1:A:299:VAL:HG11	2.51	0.46
1:A:1904:LEU:HB3	1:A:1909:VAL:HG21	1.96	0.46
1:A:1973:VAL:HG12	2:A:2602:NDP:O5B	2.15	0.46
1:B:74:THR:HG22	1:B:74:THR:O	2.15	0.46
1:A:168:LEU:HD23	1:A:168:LEU:O	2.16	0.46
1:A:737:ASN:HA	1:A:740:VAL:CG2	2.46	0.46
1:B:207:SER:HB2	1:B:221:GLY:C	2.40	0.46
1:B:217:THR:HG22	1:B:364:PRO:HD3	1.97	0.46
1:B:351:GLY:O	1:B:383:VAL:HG23	2.15	0.46
1:B:425:ARG:HB2	1:B:804:HIS:CE1	2.51	0.46
1:B:622:ALA:N	1:B:673:LYS:O	2.44	0.46
1:B:692:PRO:HB2	1:B:693:PRO:HD3	1.98	0.46
1:A:290:ILE:HG23	1:A:322:ILE:HG13	1.98	0.46
1:A:495:ILE:HD12	1:A:578:VAL:HB	1.96	0.46
1:A:621:ALA:HB2	1:A:674:GLU:HG2	1.97	0.46
1:A:665:LEU:O	1:A:668:GLU:N	2.49	0.46
1:A:726:LEU:HD12	1:A:726:LEU:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1349:ARG:HB2	1:A:1371:ILE:HG22	1.97	0.46
1:B:768:GLN:NE2	1:B:783:PRO:HG3	2.31	0.46
1:B:1343:LEU:HD21	1:B:1400:LEU:HD11	1.98	0.46
1:A:142:ASN:HD22	1:B:396:GLY:HA3	1.81	0.46
1:B:283:ALA:HB1	1:B:285:GLU:OE1	2.16	0.46
1:B:346:LEU:CD2	1:B:829:LEU:HD11	2.45	0.46
1:B:453:MET:HE1	1:B:827:THR:HG21	1.98	0.46
1:B:680:MET:HB2	1:B:682:PHE:HE1	1.81	0.46
1:B:1943:THR:HG22	1:B:1943:THR:O	2.15	0.46
1:A:652:SER:HG	1:A:681:ALA:HB1	1.80	0.46
1:A:1887:TYR:CD1	1:A:1909:VAL:HG13	2.51	0.46
1:A:1979:LEU:HD22	1:A:1979:LEU:H	1.80	0.46
1:B:880:LEU:HD12	1:B:880:LEU:N	2.30	0.46
1:A:758:VAL:HG21	1:A:775:LEU:CD2	2.46	0.46
1:B:991:TYR:CZ	1:B:1006:GLN:HA	2.51	0.46
1:A:13:LEU:HD12	1:A:22:PHE:CG	2.51	0.46
1:A:582:LEU:HD23	1:A:582:LEU:C	2.41	0.46
1:A:1278:GLN:OE1	1:A:1278:GLN:N	2.44	0.46
1:B:434:VAL:O	1:B:438:LEU:HG	2.16	0.46
1:B:1205:GLU:O	1:B:1209:LEU:N	2.48	0.46
1:B:1909:VAL:HG11	1:B:1912:LEU:HD13	1.98	0.46
1:A:6:ILE:HG23	1:A:231:VAL:CG1	2.46	0.45
1:A:13:LEU:HD21	1:A:229:VAL:CG2	2.46	0.45
1:B:341:LEU:CD1	1:B:404:LEU:HD11	2.45	0.45
1:A:329:MET:HE2	1:A:332:PRO:HD3	1.98	0.45
1:A:640:PRO:HA	1:A:651:ILE:HG22	1.98	0.45
1:B:639:VAL:CG1	1:B:640:PRO:HD2	2.45	0.45
1:B:664:GLN:O	1:B:667:LYS:HB2	2.16	0.45
1:B:2098:PHE:CD1	1:B:2106:LEU:HD13	2.52	0.45
1:A:692:PRO:N	1:A:693:PRO:HD2	2.31	0.45
1:B:157:LEU:HD11	1:B:170:ASN:HD22	1.81	0.45
1:B:692:PRO:HB2	1:B:693:PRO:CD	2.46	0.45
1:B:726:LEU:HD13	1:B:733:GLU:HG3	1.99	0.45
1:A:108:TRP:HB3	1:A:167:ALA:HB1	1.99	0.45
1:A:897:LYS:HG2	1:A:907:VAL:HG21	1.98	0.45
1:A:1144:LEU:HD22	1:A:1182:LEU:HB3	1.98	0.45
1:B:1047:TYR:OH	1:B:1586:ASP:OD2	2.29	0.45
1:A:2:GLU:OE1	1:A:2:GLU:HA	2.16	0.45
1:A:25:ASN:CB	1:A:32:MET:HE3	2.45	0.45
1:A:76:ASP:HB3	1:A:140:MET:HE1	1.98	0.45
1:A:504:ARG:HA	1:A:546:PHE:HE2	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1078:VAL:HG23	1:A:1089:ALA:HB2	1.97	0.45
1:B:503:TRP:CB	1:B:787:LYS:HE2	2.42	0.45
1:B:2097:LEU:O	1:B:2097:LEU:HD23	2.15	0.45
1:A:570:MET:HE3	1:A:810:ALA:HB1	1.99	0.45
1:A:621:ALA:N	1:A:651:ILE:O	2.48	0.45
1:B:716:SER:OG	1:B:734:TYR:HE1	1.99	0.45
1:A:105:THR:HG23	1:A:182:ALA:C	2.42	0.45
1:A:153:PRO:HG3	1:B:251:THR:CG2	2.46	0.45
1:A:1732:VAL:O	1:A:1736:THR:HG22	2.17	0.45
1:B:646:LYS:HB2	1:B:746:GLN:NE2	2.31	0.45
1:A:203:LEU:HD12	1:B:132:MET:CE	2.47	0.45
1:A:641:ALA:H	1:A:651:ILE:HA	1.80	0.45
1:B:74:THR:CG2	1:B:120:LEU:HD13	2.47	0.45
1:B:494:PHE:CD1	1:B:759:LEU:HD12	2.49	0.45
1:B:506:MET:HE2	1:B:555:SER:HB2	1.99	0.45
1:B:640:PRO:CA	1:B:651:ILE:HG22	2.46	0.45
1:B:726:LEU:HD13	1:B:733:GLU:CG	2.47	0.45
1:A:2020:SER:OG	1:A:2021:SER:N	2.50	0.45
1:B:108:TRP:HB3	1:B:167:ALA:HB1	1.99	0.45
1:B:494:PHE:CE1	1:B:759:LEU:CD1	2.91	0.45
1:A:32:MET:SD	1:A:329:MET:HB3	2.58	0.45
1:A:76:ASP:CB	1:A:140:MET:HE1	2.46	0.45
1:A:277:TYR:HB2	1:A:282:VAL:HG23	1.98	0.45
1:A:642:CYS:H	1:A:650:THR:HG23	1.82	0.45
1:B:1272:ALA:O	1:B:1295:GLY:N	2.50	0.45
1:B:1916:SER:OG	1:B:1917:ARG:N	2.50	0.45
1:A:47:LEU:HD21	1:A:198:VAL:HA	1.99	0.44
1:A:78:GLN:HB3	1:A:188:ILE:HD12	1.99	0.44
1:A:1364:GLU:N	1:A:1364:GLU:OE1	2.50	0.44
1:B:1651:VAL:HG23	1:B:1652:TYR:N	2.32	0.44
1:A:124:PRO:HG3	1:B:195:ASN:ND2	2.32	0.44
1:A:716:SER:CB	1:A:738:ASN:HA	2.47	0.44
1:B:622:ALA:HA	1:B:650:THR:HA	1.98	0.44
1:B:654:PRO:HG3	1:B:686:PHE:CE1	2.51	0.44
1:B:1011:ALA:HB1	1:B:1036:MET:HE1	1.99	0.44
1:B:1486:VAL:HG23	1:B:1493:LEU:HB2	1.98	0.44
1:B:2056:LEU:HD11	1:B:2106:LEU:HD12	1.98	0.44
1:A:142:ASN:ND2	1:B:396:GLY:HA3	2.32	0.44
1:A:610:ILE:HD11	1:A:682:PHE:HE1	1.82	0.44
1:A:654:PRO:HG2	1:A:657:PRO:CG	2.47	0.44
1:B:497:SER:HB2	1:B:762:ALA:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:620:MET:HB3	1:A:652:SER:OG	2.18	0.44
1:A:1180:ARG:NH2	1:A:1203:ALA:O	2.51	0.44
1:B:1375:ASP:OD1	1:B:1375:ASP:N	2.51	0.44
1:A:1380:LEU:C	1:A:1380:LEU:HD23	2.42	0.44
1:A:1899:GLU:HB3	1:A:2088:MET:HE2	1.99	0.44
1:A:1949:LEU:HD21	1:A:1953:ARG:HH12	1.81	0.44
1:A:2038:ASN:O	1:A:2042:GLU:HG3	2.17	0.44
1:B:161:CYS:SG	1:B:331:HIS:NE2	2.91	0.44
1:B:171:ALA:O	1:B:175:ILE:HG13	2.18	0.44
1:B:506:MET:CE	1:B:555:SER:HB2	2.48	0.44
1:B:661:PHE:CZ	1:B:665:LEU:HD21	2.53	0.44
1:B:754:GLU:HG3	1:B:778:SER:OG	2.18	0.44
1:A:120:LEU:HD23	1:A:131:SER:HB3	1.99	0.44
1:A:157:LEU:HD23	1:A:166:MET:CG	2.48	0.44
1:A:613:ALA:CB	1:A:615:LEU:HG	2.36	0.44
1:A:716:SER:HB3	1:A:738:ASN:HA	2.00	0.44
1:A:962:ASP:OD1	1:A:963:ASP:N	2.49	0.44
1:A:1975:LEU:HD23	1:A:1975:LEU:N	2.31	0.44
1:B:32:MET:CE	1:B:329:MET:HB3	2.46	0.44
1:B:79:LEU:HD13	1:B:140:MET:HA	2.00	0.44
1:B:532:LEU:HD12	1:B:532:LEU:O	2.17	0.44
1:B:549:ILE:HG23	1:B:550:VAL:N	2.33	0.44
1:A:745:PHE:CZ	1:A:771:LEU:HD11	2.51	0.44
1:A:768:GLN:NE2	1:A:783:PRO:HG3	2.29	0.44
1:A:991:TYR:CZ	1:A:1006:GLN:HA	2.53	0.44
1:B:641:ALA:H	1:B:651:ILE:HA	1.83	0.44
1:A:2:GLU:HG2	1:A:235:LYS:HB2	2.00	0.44
1:A:623:VAL:HG12	1:A:625:LEU:H	1.83	0.44
1:A:717:ILE:HG22	1:A:718:PRO:O	2.18	0.44
1:A:769:ALA:O	1:A:773:ARG:HG3	2.18	0.44
1:B:1141:CYS:O	1:B:1145:VAL:HG23	2.18	0.44
1:A:417:HIS:O	1:A:420:LEU:HG	2.18	0.44
1:A:696:GLN:HG2	1:A:697:GLU:N	2.33	0.44
1:A:719:GLU:HA	1:A:722:TRP:NE1	2.33	0.44
1:A:1120:THR:HG21	1:A:1515:ARG:HG3	1.99	0.44
1:B:347:SER:HB2	1:B:352:LEU:O	2.17	0.44
1:B:462:ALA:HB1	1:B:485:VAL:HG13	1.99	0.44
1:B:768:GLN:OE1	1:B:768:GLN:HA	2.17	0.44
1:A:33:VAL:HB	1:A:50:ARG:NH2	2.32	0.43
1:A:75:MET:HE3	1:A:75:MET:HB2	1.94	0.43
1:A:138:ALA:HB1	1:B:160:ALA:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:821:PHE:HA	1:A:822:PRO:C	2.43	0.43
1:A:1571:LEU:HB3	1:A:1843:MET:HE1	1.99	0.43
1:B:13:LEU:HD22	1:B:329:MET:HE1	2.00	0.43
1:B:697:GLU:O	1:B:701:VAL:HG23	2.18	0.43
1:B:1454:VAL:O	1:B:1458:ASN:ND2	2.47	0.43
1:B:2020:SER:OG	1:B:2021:SER:N	2.51	0.43
1:A:625:LEU:CD2	1:A:670:VAL:HG11	2.43	0.43
1:A:654:PRO:HB2	1:A:657:PRO:HD2	2.00	0.43
1:A:768:GLN:HG3	1:A:781:ILE:HG21	2.00	0.43
1:B:1215:LEU:HD21	1:B:1318:ALA:CB	2.48	0.43
1:A:168:LEU:HD23	1:A:168:LEU:C	2.43	0.43
1:A:648:THR:CB	1:A:773:ARG:HH22	2.30	0.43
1:B:344:VAL:O	1:B:348:LEU:HG	2.19	0.43
1:B:692:PRO:CD	1:B:693:PRO:HD2	2.48	0.43
1:A:18:ASN:OD1	1:A:20:GLN:HB3	2.19	0.43
1:A:514:ASP:OD2	1:A:817:PRO:HG3	2.18	0.43
1:A:1879:THR:HG23	1:A:2015:TYR:OH	2.18	0.43
1:B:527:VAL:CG1	1:B:532:LEU:HD11	2.48	0.43
1:B:569:CYS:SG	1:B:814:ALA:HB1	2.58	0.43
1:A:76:ASP:HA	1:A:116:THR:HG21	2.01	0.43
1:A:200:PHE:HB3	1:A:206:LEU:HG	2.01	0.43
1:A:728:ARG:HB2	1:A:728:ARG:CZ	2.49	0.43
1:A:1144:LEU:HD21	1:A:1186:CYS:SG	2.59	0.43
1:A:1617:VAL:HG12	1:A:1628:LEU:CD1	2.45	0.43
1:B:242:VAL:CG2	1:B:822:PRO:HB3	2.48	0.43
1:B:290:ILE:HG22	1:B:321:LEU:O	2.19	0.43
1:A:333:GLU:OE1	1:A:333:GLU:N	2.39	0.43
1:A:1134:LEU:HD12	1:A:1214:LEU:HD23	2.00	0.43
1:A:1457:VAL:HG23	1:A:1503:MET:HE1	2.01	0.43
1:B:670:VAL:HG12	1:B:671:PHE:N	2.33	0.43
1:A:549:ILE:CD1	1:A:610:ILE:HG23	2.48	0.43
1:B:252:ASN:ND2	1:B:268:ILE:HG22	2.33	0.43
1:A:340:ALA:O	1:A:344:VAL:HG23	2.19	0.43
1:A:908:GLU:OE1	1:A:908:GLU:N	2.46	0.43
1:B:104:HIS:HB3	1:B:181:PRO:HD2	2.00	0.43
1:B:295:THR:CG2	1:B:297:THR:HG23	2.47	0.43
1:B:745:PHE:CE2	1:B:749:LEU:HD11	2.53	0.43
1:A:168:LEU:HD22	1:A:402:ILE:HD11	2.00	0.43
1:A:626:SER:CB	1:A:629:GLU:HG2	2.42	0.43
1:A:1046:LEU:HD11	1:A:1048:LEU:HD21	2.00	0.43
1:A:1495:LYS:N	1:A:1495:LYS:HD2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:35:ASP:OD1	1:B:49:ARG:HB3	2.19	0.43
1:B:39:ARG:NH2	1:B:226:GLU:OE1	2.52	0.43
1:B:85:VAL:HG12	1:B:230:ALA:HB3	1.99	0.43
1:A:186:GLY:HA2	1:A:338:LEU:CD1	2.49	0.43
1:A:492:LEU:HB2	1:A:808:ILE:HD13	2.00	0.43
1:A:1246:LEU:HD11	1:A:1299:PRO:HG2	2.00	0.43
1:B:609:CYS:SG	1:B:694:LEU:HB2	2.59	0.43
1:B:625:LEU:HD13	1:B:629:GLU:CD	2.44	0.43
1:B:935:VAL:HG23	1:B:935:VAL:O	2.19	0.43
1:B:1364:GLU:N	1:B:1365:PRO:HD2	2.34	0.43
1:A:207:SER:HB3	1:A:221:GLY:N	2.34	0.42
1:A:655:GLN:OE1	1:A:656:ALA:N	2.52	0.42
1:A:990:VAL:HG13	1:A:1039:LEU:HD12	2.01	0.42
1:B:447:ASP:OD2	1:B:450:PHE:HB2	2.19	0.42
1:B:1111:VAL:O	1:B:1111:VAL:CG2	2.64	0.42
1:A:90:ILE:HA	1:A:232:LEU:HD22	2.01	0.42
1:B:1473:LEU:HD23	1:B:1474:LEU:N	2.34	0.42
1:A:532:LEU:HD21	1:A:550:VAL:CG1	2.50	0.42
1:A:1491:ALA:O	1:A:1495:LYS:HG2	2.19	0.42
1:B:215:PHE:HE1	1:B:322:ILE:HD13	1.84	0.42
1:B:532:LEU:HD12	1:B:532:LEU:C	2.44	0.42
1:B:580:HIS:CD2	1:B:743:VAL:HG11	2.54	0.42
1:B:635:PRO:HD3	1:B:661:PHE:CD1	2.54	0.42
1:B:1287:LEU:HG	1:B:1292:VAL:HG21	2.01	0.42
1:A:9:MET:CE	1:A:345:LEU:HD12	2.50	0.42
1:A:157:LEU:N	1:A:157:LEU:HD12	2.35	0.42
1:A:654:PRO:CG	1:A:657:PRO:HG2	2.47	0.42
1:B:285:GLU:HA	1:B:316:ARG:NH1	2.34	0.42
1:B:293:HIS:O	1:B:326:LYS:HD2	2.19	0.42
1:B:460:VAL:CG1	1:B:465:MET:HG3	2.49	0.42
1:B:640:PRO:HA	1:B:651:ILE:CG2	2.48	0.42
1:B:1427:SER:O	1:B:1431:ILE:HG12	2.19	0.42
1:A:138:ALA:HB3	1:B:160:ALA:HB2	2.02	0.42
1:A:153:PRO:HD2	1:A:180:CYS:SG	2.60	0.42
1:A:185:VAL:HG21	1:A:233:LEU:HD12	2.01	0.42
1:A:684:SER:OG	1:A:686:PHE:HD2	2.02	0.42
1:A:712:TRP:C	1:A:713:LEU:HD12	2.45	0.42
1:B:447:ASP:O	1:B:451:LEU:HG	2.20	0.42
1:B:873:HIS:O	1:B:876:VAL:HG12	2.20	0.42
1:A:504:ARG:HB3	1:A:504:ARG:CZ	2.48	0.42
1:A:1439:ARG:O	1:A:1468:ARG:NH2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1856:VAL:O	1:A:1856:VAL:HG12	2.19	0.42
1:B:440:GLN:HG3	1:B:833:LEU:HD21	1.97	0.42
1:B:621:ALA:HA	1:B:674:GLU:HA	2.00	0.42
1:B:654:PRO:C	1:B:657:PRO:HD2	2.45	0.42
1:B:692:PRO:N	1:B:693:PRO:HD2	2.35	0.42
1:B:1763:HIS:N	1:B:1788:ASN:O	2.50	0.42
1:A:254:ASP:HA	1:A:268:ILE:HG21	2.02	0.42
1:A:759:LEU:HD22	1:A:782:ILE:HB	2.02	0.42
1:A:1695:VAL:O	1:A:1695:VAL:HG23	2.19	0.42
1:B:610:ILE:HA	1:B:690:ILE:HD13	2.02	0.42
1:B:620:MET:SD	1:B:681:ALA:HA	2.59	0.42
1:B:1373:SER:OG	1:B:1375:ASP:OD1	2.35	0.42
1:A:110:GLY:CA	1:A:163:SER:HB2	2.49	0.42
1:A:188:ILE:O	1:A:334:PRO:HG2	2.20	0.42
1:A:497:SER:HB3	1:A:760:GLU:OE2	2.19	0.42
1:A:1446:ILE:HG21	1:A:1486:VAL:CG2	2.48	0.42
1:B:2:GLU:OE1	1:B:2:GLU:HA	2.20	0.42
1:A:88:GLU:O	1:A:92:ASP:HB2	2.20	0.42
1:A:690:ILE:O	1:A:690:ILE:HG22	2.20	0.42
1:A:1889:ILE:HD11	1:A:1904:LEU:HD12	2.02	0.42
1:B:409:GLN:HB3	1:B:824:PRO:HA	2.02	0.42
1:B:619:ALA:CB	1:B:658:VAL:HG11	2.26	0.42
1:B:654:PRO:HG3	1:B:686:PHE:CZ	2.55	0.42
1:A:168:LEU:CA	1:A:185:VAL:HG11	2.50	0.42
1:A:305:LEU:HB2	1:A:366:ILE:HD13	2.01	0.42
1:A:1148:LEU:HD12	1:A:1148:LEU:N	2.35	0.42
1:B:509:SER:HB2	1:B:512:ARG:NH2	2.35	0.42
1:B:626:SER:OG	1:B:629:GLU:HB2	2.20	0.42
1:A:127:LEU:C	1:A:127:LEU:HD12	2.44	0.41
1:A:537:LEU:HD13	1:A:551:HIS:HB3	2.02	0.41
1:B:524:ASP:OD2	1:B:533:LYS:HE3	2.20	0.41
1:B:613:ALA:HB3	1:B:615:LEU:HD11	2.01	0.41
1:B:721:GLN:HB3	1:B:724:SER:OG	2.19	0.41
1:B:1273:THR:HG21	1:B:1307:LEU:HD11	2.02	0.41
1:B:1485:GLU:OE1	1:B:1485:GLU:N	2.42	0.41
1:B:1973:VAL:HG12	2:B:2602:NDP:H52A	2.02	0.41
1:A:67:VAL:CG1	1:A:75:MET:HE1	2.49	0.41
1:A:173:GLN:NE2	1:B:179:GLN:OE1	2.53	0.41
1:A:295:THR:HG22	1:A:295:THR:O	2.20	0.41
1:A:657:PRO:HA	1:A:660:GLU:CG	2.49	0.41
1:A:685:TYR:HA	1:A:688:GLU:CD	2.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:766:LEU:C	1:B:767:LEU:HD12	2.45	0.41
1:A:508:LEU:HD21	1:A:539:LEU:HD23	2.01	0.41
1:A:1020:LEU:HD22	1:A:1032:THR:CG2	2.50	0.41
1:B:6:ILE:HG23	1:B:231:VAL:CG1	2.50	0.41
1:B:1647:SER:OG	1:B:1828:CYS:SG	2.59	0.41
1:A:6:ILE:HG12	1:A:233:LEU:CD2	2.50	0.41
1:A:53:LYS:HA	1:A:226:GLU:OE2	2.21	0.41
1:A:293:HIS:ND1	1:A:392:SER:HA	2.35	0.41
1:A:537:LEU:HD21	1:A:551:HIS:HD2	1.86	0.41
1:A:2065:ASP:OD1	1:A:2087:ARG:NH1	2.53	0.41
1:A:67:VAL:HG11	1:A:75:MET:CE	2.49	0.41
1:A:503:TRP:CZ3	1:A:788:ASP:HA	2.55	0.41
1:A:597:GLU:O	1:A:600:VAL:HG12	2.21	0.41
1:A:661:PHE:CD2	1:A:665:LEU:HD11	2.55	0.41
1:A:692:PRO:HB2	1:A:693:PRO:CD	2.50	0.41
1:A:2028:ASN:ND2	1:A:2031:GLN:OE1	2.52	0.41
1:B:495:ILE:CD1	1:B:578:VAL:HB	2.51	0.41
1:B:708:ARG:HD2	1:B:734:TYR:CE2	2.56	0.41
1:A:7:ALA:O	1:A:241:ARG:HG2	2.20	0.41
1:A:549:ILE:HD12	1:A:610:ILE:HD13	2.03	0.41
1:A:549:ILE:H	1:A:549:ILE:HG12	1.68	0.41
1:A:1753:LEU:HD22	1:B:1782:MET:HE1	2.03	0.41
1:B:352:LEU:HD23	1:B:382:PRO:HA	2.03	0.41
1:B:1995:LYS:O	1:B:1999:THR:OG1	2.32	0.41
1:A:41:LYS:O	1:A:44:LEU:HB2	2.20	0.41
1:A:60:PHE:HB3	1:A:842:TRP:CD1	2.56	0.41
1:A:189:ASN:HB2	1:A:334:PRO:HG2	2.02	0.41
1:A:304:GLU:O	1:A:308:ILE:HG13	2.21	0.41
1:A:1973:VAL:O	1:A:1973:VAL:HG13	2.20	0.41
1:B:165:LEU:HD23	1:B:165:LEU:HA	1.93	0.41
1:B:325:THR:HB	1:B:343:LYS:HD3	2.03	0.41
1:B:549:ILE:HD11	1:B:553:PHE:CE1	2.52	0.41
1:A:1651:VAL:HG23	1:A:1652:TYR:N	2.36	0.41
1:B:674:GLU:N	1:B:674:GLU:OE1	2.54	0.41
1:B:2063:ILE:HG12	2:B:2602:NDP:C7N	2.51	0.41
1:A:250:GLY:CA	1:A:276:LEU:HD21	2.50	0.41
1:A:556:LEU:C	1:A:556:LEU:HD23	2.45	0.41
1:A:665:LEU:HB3	1:A:670:VAL:HG22	2.03	0.41
1:A:912:VAL:HG22	1:A:913:VAL:N	2.36	0.41
1:A:1111:VAL:O	1:A:1111:VAL:HG13	2.21	0.41
1:A:1243:VAL:O	1:A:1243:VAL:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2021:SER:HA	2:A:2602:NDP:H5N	2.02	0.41
1:B:74:THR:HG21	1:B:131:SER:HB3	2.03	0.41
1:B:453:MET:CE	1:B:827:THR:HG21	2.51	0.41
1:B:629:GLU:HA	1:B:632:GLN:HE21	1.86	0.41
1:B:708:ARG:CZ	1:B:714:SER:HB2	2.51	0.41
1:B:1494:GLN:O	1:B:1498:GLN:HG3	2.21	0.41
1:A:136:GLN:HG3	1:A:138:ALA:H	1.86	0.41
1:A:257:LYS:HD2	1:A:263:PHE:O	2.22	0.41
1:A:290:ILE:HD12	1:A:389:GLY:CA	2.51	0.41
1:A:309:THR:HA	1:A:313:CYS:HB2	2.03	0.41
1:A:532:LEU:N	1:A:532:LEU:HD12	2.36	0.41
1:A:695:LEU:HD23	1:A:695:LEU:O	2.21	0.41
1:A:1261:SER:N	1:A:1262:PRO:CD	2.84	0.41
1:A:1974:VAL:O	1:A:1974:VAL:HG13	2.20	0.41
1:B:123:ASP:OD2	1:B:126:THR:OG1	2.30	0.41
1:A:9:MET:HG3	1:A:19:LEU:CD1	2.51	0.40
1:A:168:LEU:HD22	1:A:402:ILE:HD13	2.03	0.40
1:A:504:ARG:HB3	1:A:504:ARG:NH1	2.36	0.40
1:B:277:TYR:CE1	1:B:284:PRO:HG3	2.56	0.40
1:A:518:ASP:O	1:A:522:ARG:HG3	2.21	0.40
1:A:766:LEU:HD23	1:A:766:LEU:C	2.45	0.40
1:A:1857:LEU:HD23	1:A:1858:ALA:N	2.36	0.40
1:A:1914:LEU:HD12	1:A:1914:LEU:N	2.35	0.40
1:B:105:THR:O	1:B:150:PHE:HB3	2.21	0.40
1:B:513:LEU:HD11	1:B:793:LEU:HD11	2.03	0.40
1:B:621:ALA:C	1:B:650:THR:HG23	2.46	0.40
1:B:2084:LEU:HD23	1:B:2085:PRO:N	2.37	0.40
1:B:56:ASP:OD2	1:B:59:ARG:HG2	2.21	0.40
1:B:67:VAL:CG2	1:B:75:MET:HE1	2.51	0.40
1:B:767:LEU:O	1:B:771:LEU:HD23	2.21	0.40
1:A:276:LEU:HD23	1:A:276:LEU:HA	1.90	0.40
1:A:1135:GLN:O	1:A:1139:GLN:HG2	2.21	0.40
1:B:526:ALA:O	1:B:601:LEU:HD21	2.22	0.40
1:B:639:VAL:C	1:B:651:ILE:HG22	2.47	0.40
1:B:762:ALA:O	1:B:785:MET:HB2	2.21	0.40
1:B:1928:GLN:OE1	1:B:1931:ARG:NH2	2.52	0.40
1:A:691:ALA:HB3	1:A:692:PRO:HD3	2.04	0.40
1:B:285:GLU:HA	1:B:316:ARG:HH12	1.86	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	2060/2553 (81%)	2010 (98%)	50 (2%)	0	100	100
1	B	2063/2553 (81%)	2019 (98%)	44 (2%)	0	100	100
All	All	4123/5106 (81%)	4029 (98%)	94 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	1705/2117 (80%)	1700 (100%)	5 (0%)	91	94
1	B	1708/2117 (81%)	1704 (100%)	4 (0%)	92	95
All	All	3413/4234 (81%)	3404 (100%)	9 (0%)	90	94

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	155	ILE
1	A	165	LEU
1	A	285	GLU
1	A	420	LEU
1	A	1494	GLN
1	B	104	HIS
1	B	305	LEU
1	B	787	LYS

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Mol	Chain	Res	Type
1	B	1023	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (40) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	71	GLN
1	A	136	GLN
1	A	142	ASN
1	A	173	GLN
1	A	195	ASN
1	A	331	HIS
1	A	596	GLN
1	A	664	GLN
1	A	683	HIS
1	A	735	ASN
1	A	738	ASN
1	A	768	GLN
1	A	804	HIS
1	A	873	HIS
1	A	949	ASN
1	A	987	GLN
1	A	1074	GLN
1	A	1290	HIS
1	A	1815	GLN
1	A	2001	ASN
1	B	170	ASN
1	B	179	GLN
1	B	199	GLN
1	B	387	ASN
1	B	580	HIS
1	B	632	GLN
1	B	644	ASN
1	B	1006	GLN
1	B	1056	HIS
1	B	1331	ASN
1	B	1345	HIS
1	B	1476	ASN
1	B	1595	GLN
1	B	1735	HIS
1	B	1778	HIS
1	B	1855	GLN
1	B	1906	GLN

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Mol	Chain	Res	Type
1	B	1982	ASN
1	B	2050	HIS
1	B	2101	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

4 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	$\#\|Z\| > 2$
2	NDP	A	2601	-	47,52,52	0.66	0	61,80,80	0.78	3 (4%)
2	NDP	B	2602	-	47,52,52	0.67	0	61,80,80	0.79	2 (3%)
2	NDP	B	2601	-	47,52,52	0.63	0	61,80,80	0.85	2 (3%)
2	NDP	A	2602	-	47,52,52	0.66	0	61,80,80	0.85	2 (3%)

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
2	NDP	A	2601	-	-	13/30/77/77	0/5/5/5
2	NDP	B	2602	-	-	8/30/77/77	0/5/5/5
2	NDP	B	2601	-	-	10/30/77/77	0/5/5/5
2	NDP	A	2602	-	-	10/30/77/77	0/5/5/5

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	2602	NDP	P2B-O2B-C2B	-3.94	112.91	123.43
2	B	2601	NDP	P2B-O2B-C2B	-3.52	114.04	123.43
2	B	2602	NDP	P2B-O2B-C2B	-3.49	114.12	123.43
2	B	2601	NDP	C5A-C6A-N6A	2.41	123.99	120.31
2	A	2601	NDP	C4B-O4B-C1B	-2.30	107.81	109.92
2	B	2602	NDP	C5A-C6A-N6A	2.25	123.73	120.31
2	A	2601	NDP	C5A-C6A-N6A	2.21	123.67	120.31
2	A	2602	NDP	C5A-C6A-N6A	2.16	123.61	120.31
2	A	2601	NDP	O3B-C3B-C2B	2.02	116.84	111.19

There are no chirality outliers.

All (41) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	2601	NDP	C5D-O5D-PN-O3
2	A	2601	NDP	C5D-O5D-PN-O1N
2	A	2601	NDP	C2N-C3N-C7N-N7N
2	A	2602	NDP	C5D-O5D-PN-O3
2	A	2602	NDP	C5D-O5D-PN-O2N
2	A	2602	NDP	O4D-C1D-N1N-C6N
2	A	2602	NDP	C2N-C3N-C7N-O7N
2	B	2601	NDP	C5D-O5D-PN-O3
2	B	2601	NDP	C5D-O5D-PN-O1N
2	B	2601	NDP	O4D-C1D-N1N-C2N
2	B	2601	NDP	C2N-C3N-C7N-N7N
2	B	2602	NDP	C4B-C5B-O5B-PA
2	B	2602	NDP	C5D-O5D-PN-O3
2	B	2602	NDP	C2N-C3N-C7N-N7N
2	B	2601	NDP	O4B-C4B-C5B-O5B
2	A	2601	NDP	C3B-C2B-O2B-P2B
2	A	2602	NDP	O4B-C4B-C5B-O5B
2	B	2601	NDP	C3B-C4B-C5B-O5B

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Mol	Chain	Res	Type	Atoms
2	A	2601	NDP	C1B-C2B-O2B-P2B
2	B	2601	NDP	C1B-C2B-O2B-P2B
2	A	2602	NDP	C3B-C4B-C5B-O5B
2	B	2601	NDP	C3B-C2B-O2B-P2B
2	A	2601	NDP	O4D-C4D-C5D-O5D
2	B	2602	NDP	O4B-C4B-C5B-O5B
2	A	2601	NDP	C3D-C4D-C5D-O5D
2	B	2602	NDP	O4D-C4D-C5D-O5D
2	A	2602	NDP	C4B-C5B-O5B-PA
2	A	2602	NDP	C2N-C3N-C7N-N7N
2	A	2602	NDP	PN-O3-PA-O5B
2	A	2601	NDP	C3B-C4B-C5B-O5B
2	A	2601	NDP	C2N-C3N-C7N-O7N
2	A	2601	NDP	O4D-C1D-N1N-C2N
2	A	2601	NDP	C5D-O5D-PN-O2N
2	B	2601	NDP	C5D-O5D-PN-O2N
2	B	2602	NDP	C5D-O5D-PN-O1N
2	A	2601	NDP	O4B-C4B-C5B-O5B
2	B	2602	NDP	O4D-C1D-N1N-C6N
2	A	2601	NDP	C2B-O2B-P2B-O1X
2	B	2601	NDP	C2B-O2B-P2B-O1X
2	B	2602	NDP	C2D-C1D-N1N-C6N
2	A	2602	NDP	PA-O3-PN-O2N

There are no ring outliers.

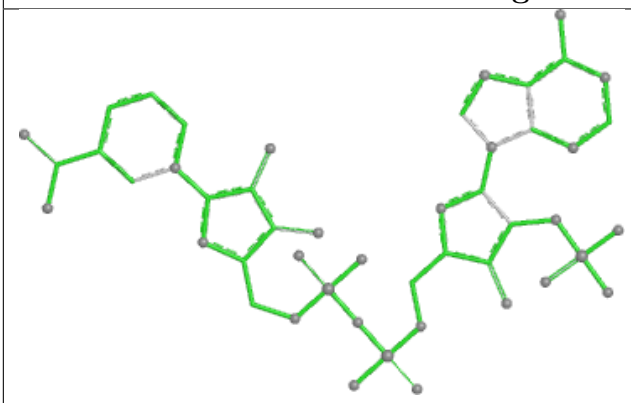
2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	2602	NDP	2	0
2	A	2602	NDP	3	0

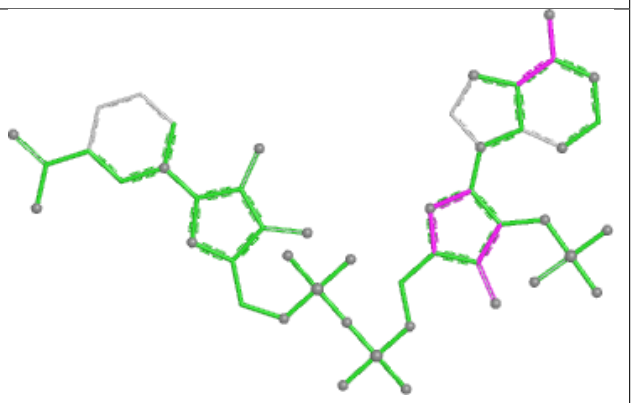
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

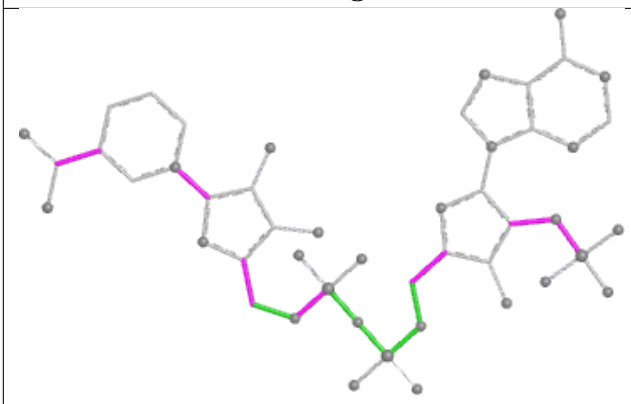
Ligand NDP A 2601



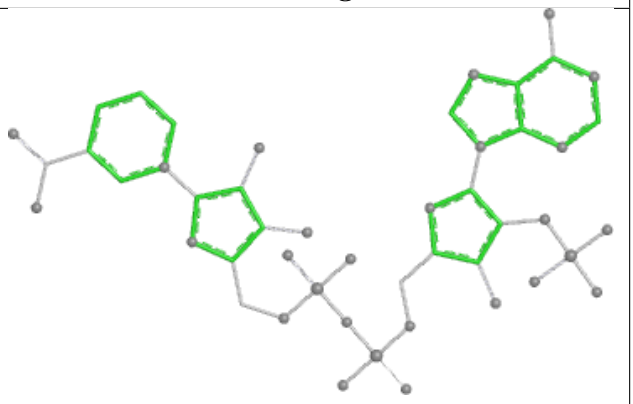
Bond lengths



Bond angles

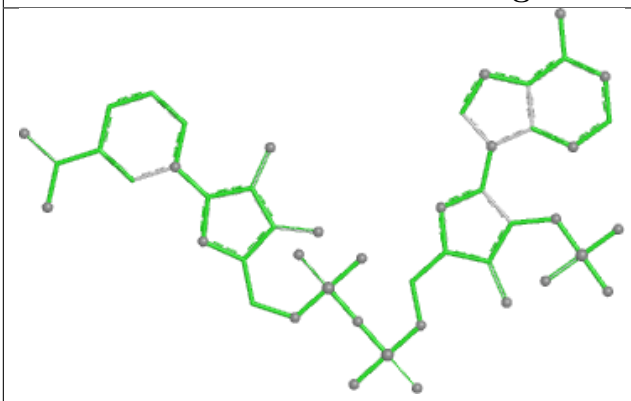


Torsions

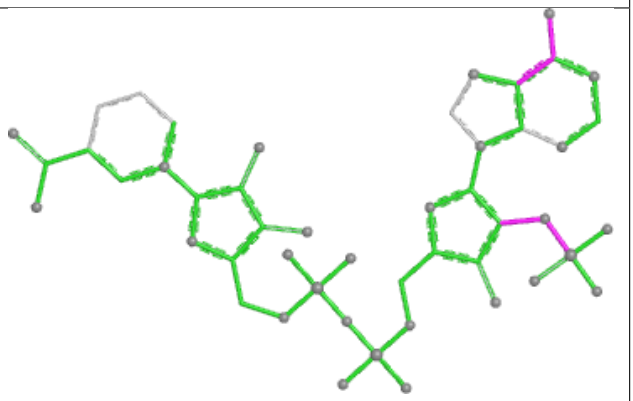


Rings

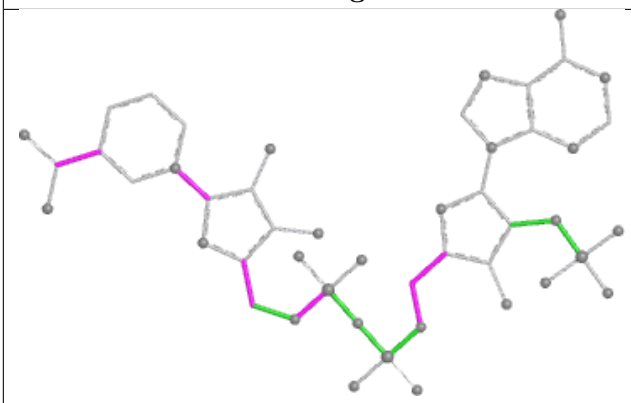
Ligand NDP B 2602



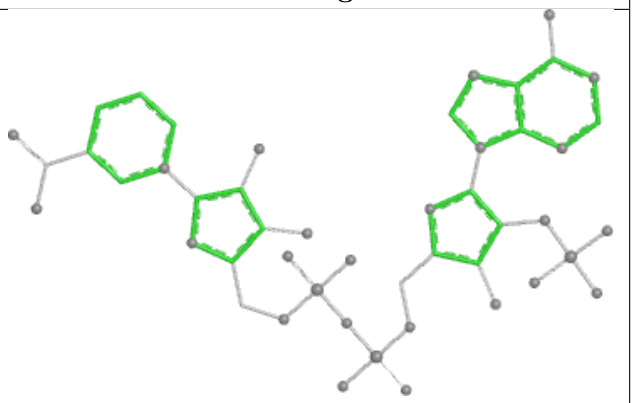
Bond lengths



Bond angles

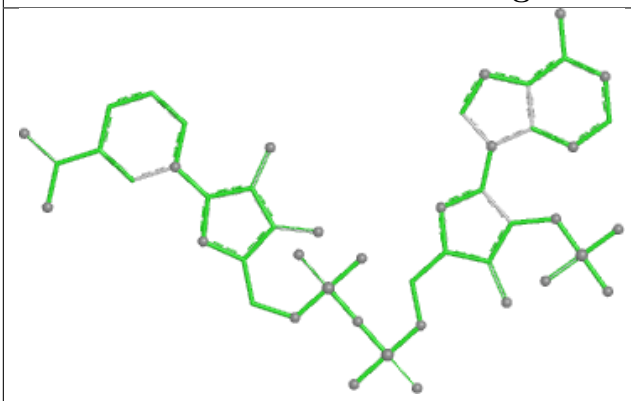


Torsions

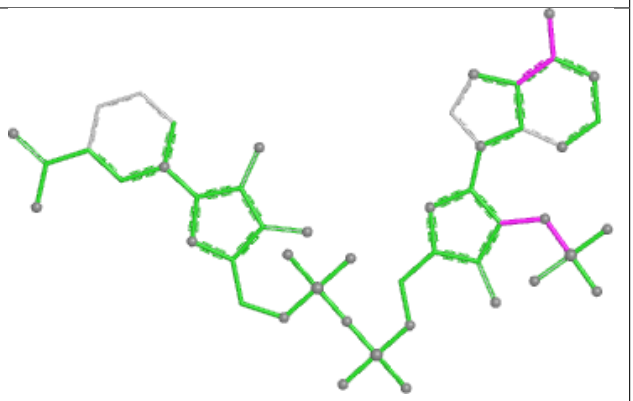


Rings

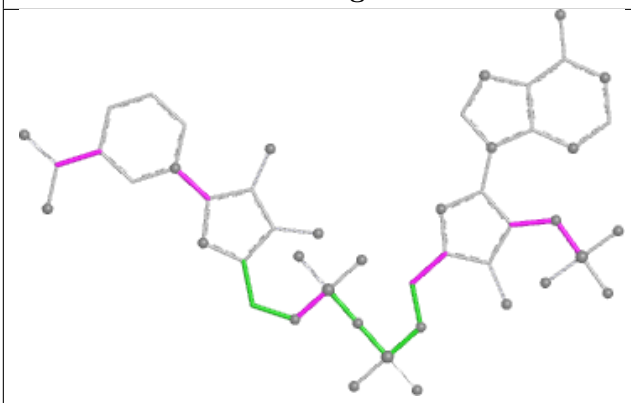
Ligand NDP B 2601



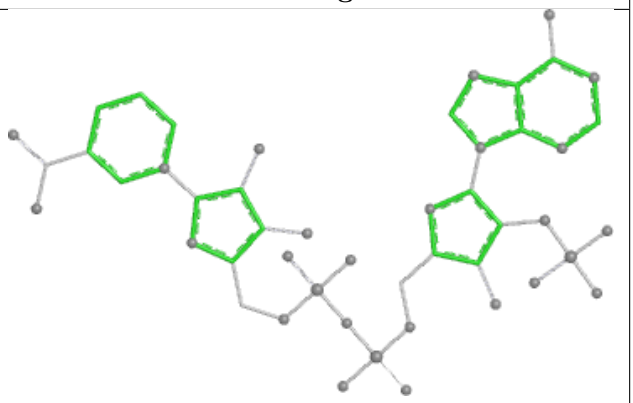
Bond lengths



Bond angles

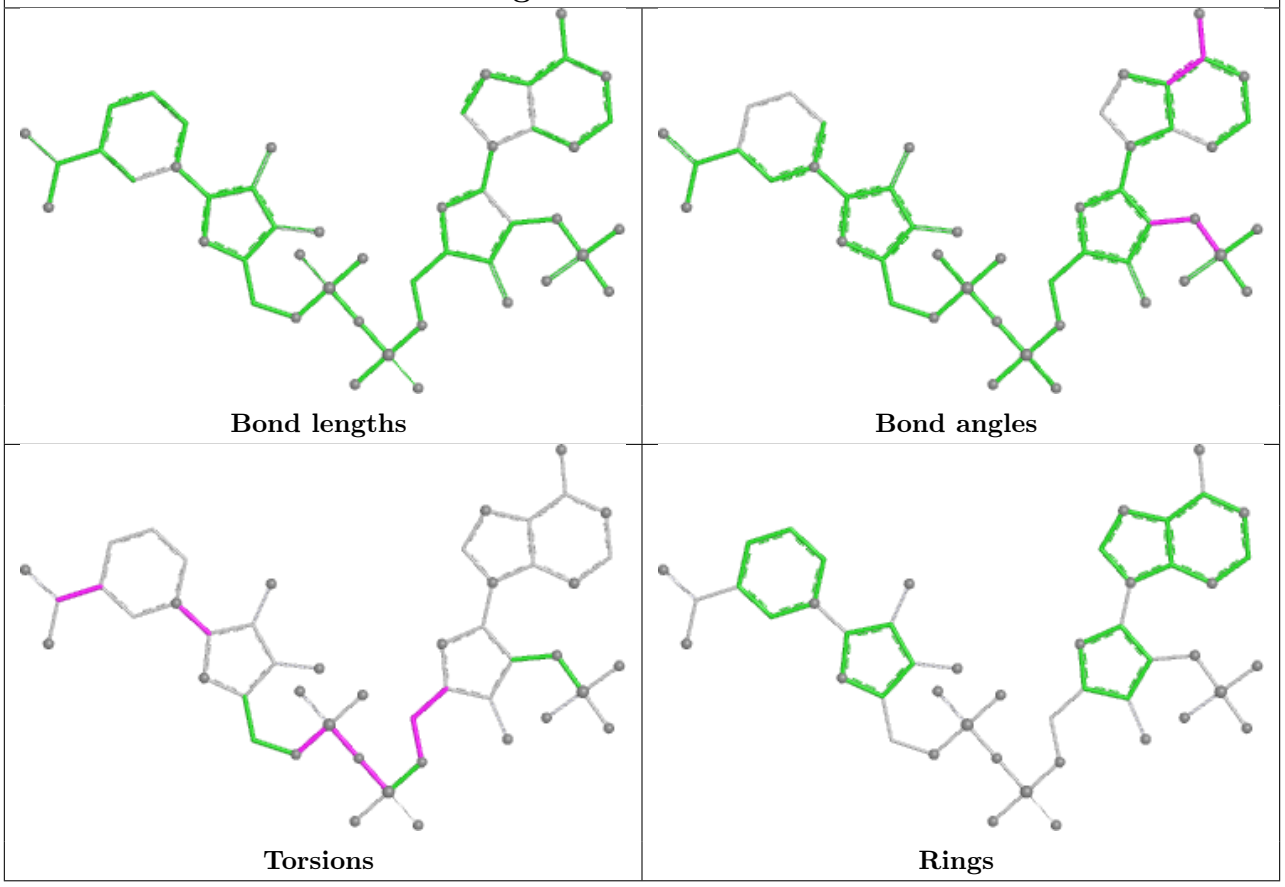


Torsions



Rings

Ligand NDP A 2602



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.

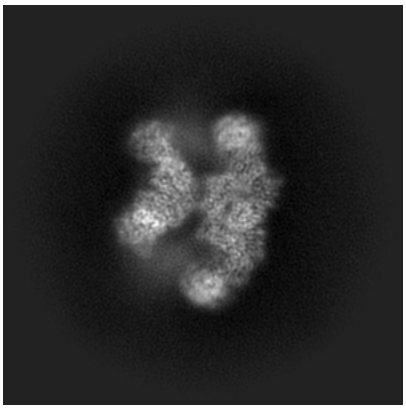
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-43354. These allow visual inspection of the internal detail of the map and identification of artifacts.

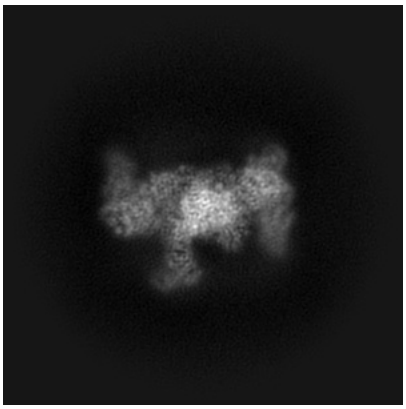
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

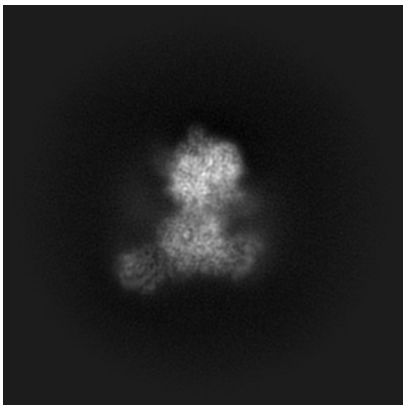
6.1.1 Primary map



X

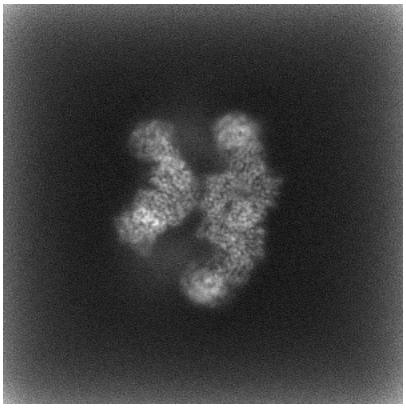


Y

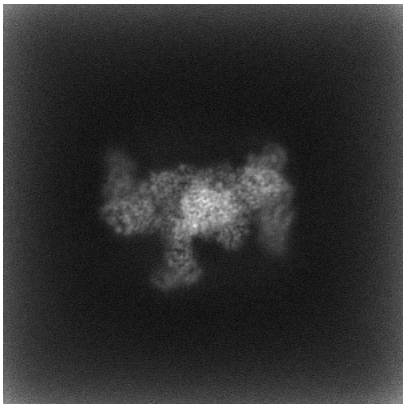


Z

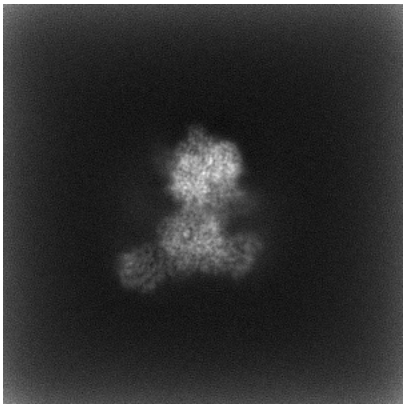
6.1.2 Raw map



X



Y

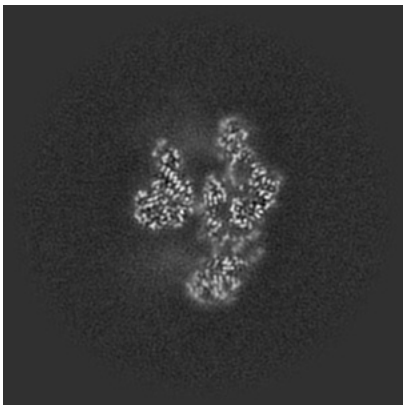


Z

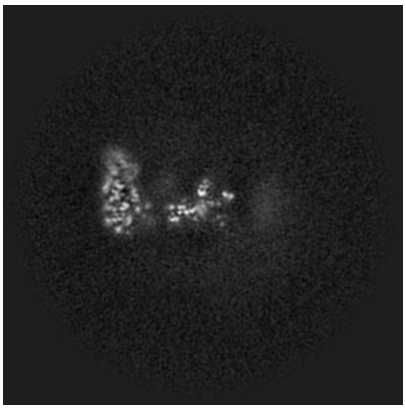
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

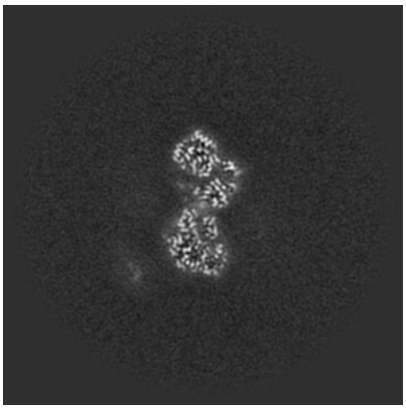
6.2.1 Primary map



X Index: 180

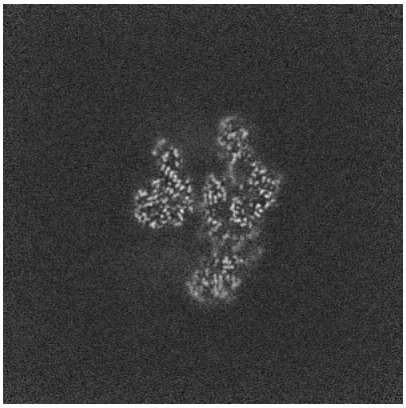


Y Index: 180

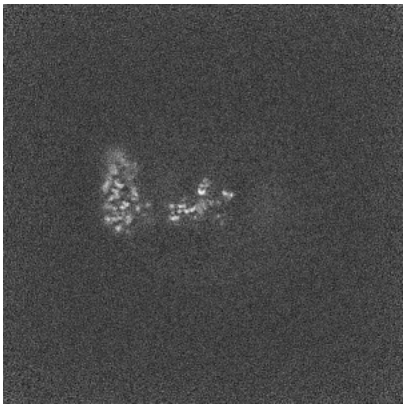


Z Index: 180

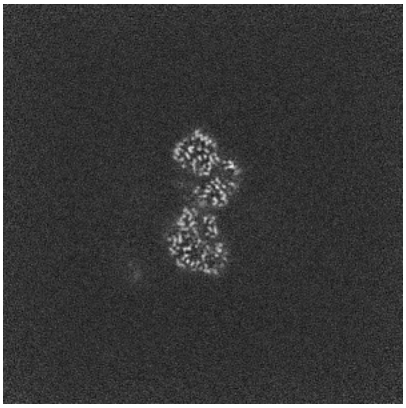
6.2.2 Raw map



X Index: 180



Y Index: 180

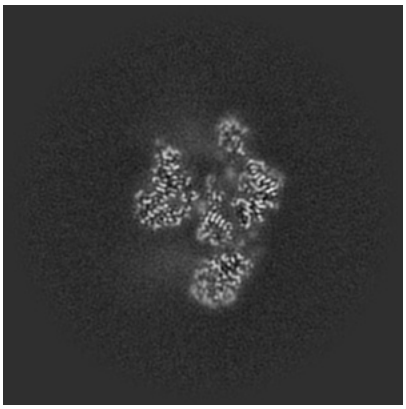


Z Index: 180

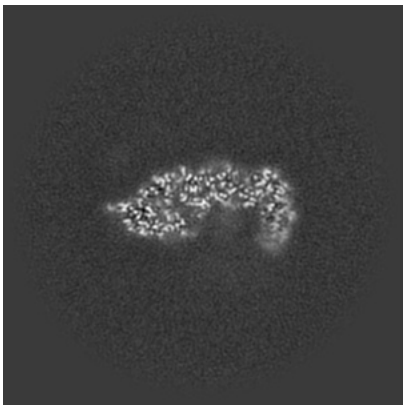
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

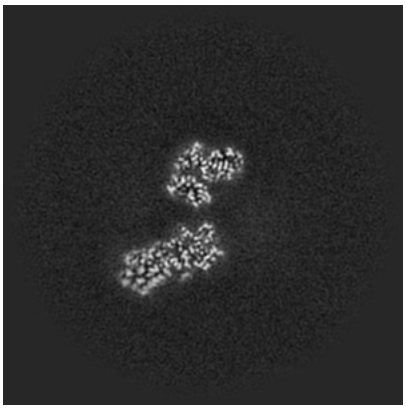
6.3.1 Primary map



X Index: 177

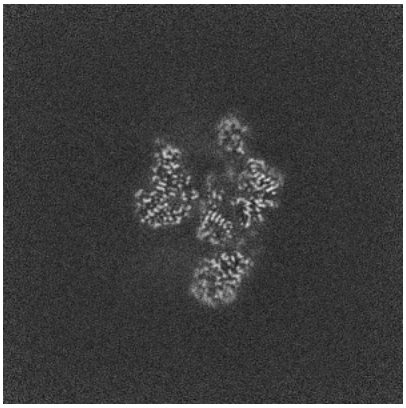


Y Index: 207

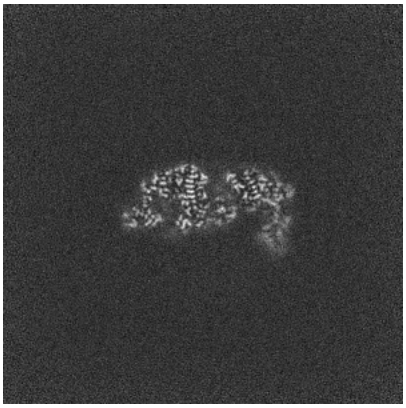


Z Index: 165

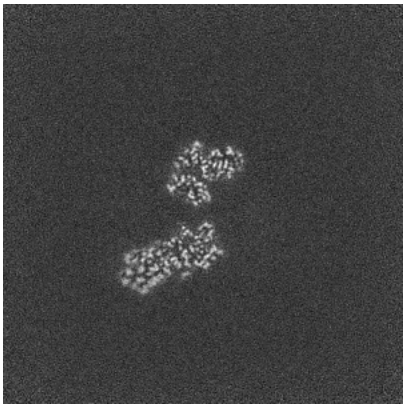
6.3.2 Raw map



X Index: 177



Y Index: 217

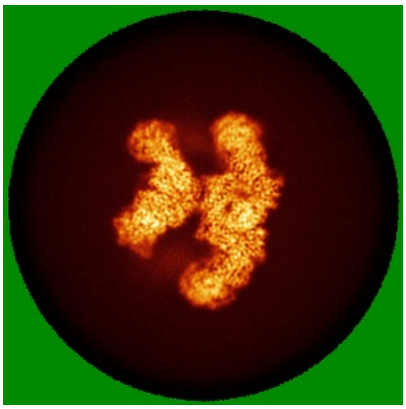


Z Index: 165

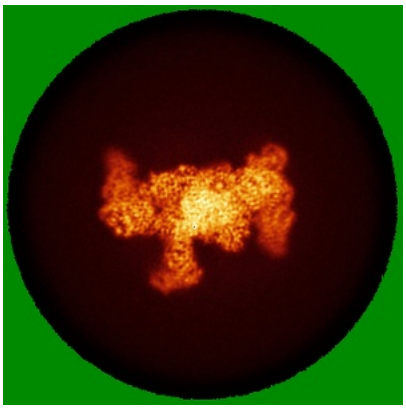
The images above show the largest variance slices of the map in three orthogonal directions.

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

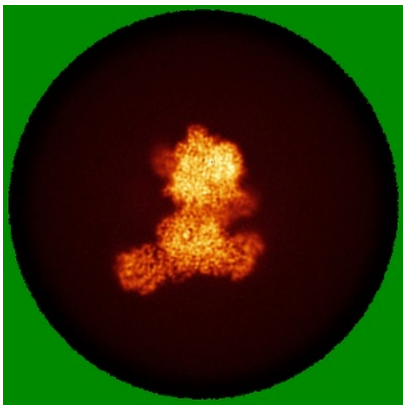
6.4.1 Primary map



X

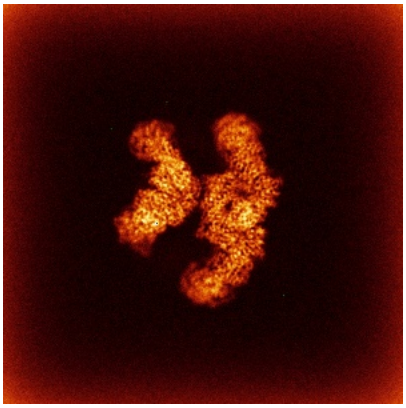


Y

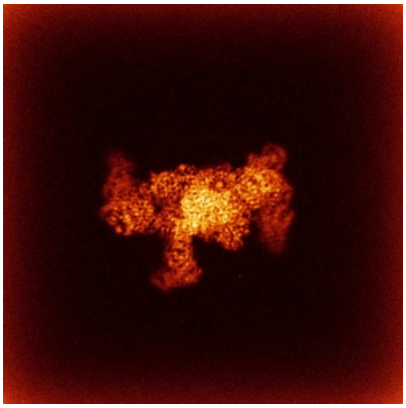


Z

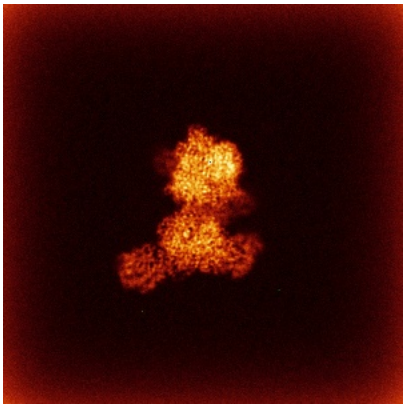
6.4.2 Raw map



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 0.193. 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.

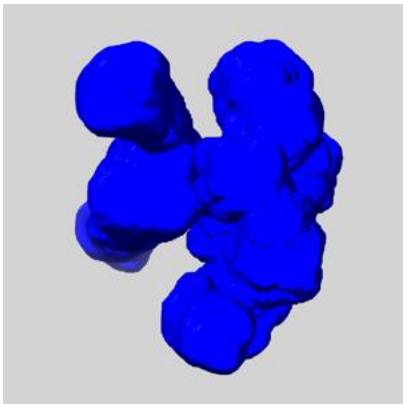
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

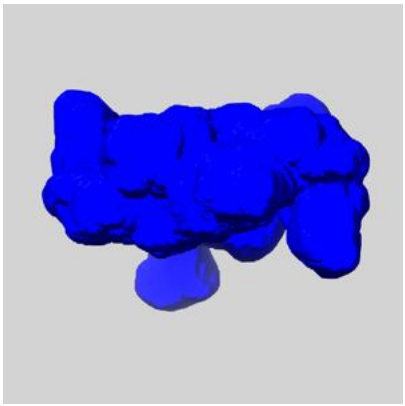
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

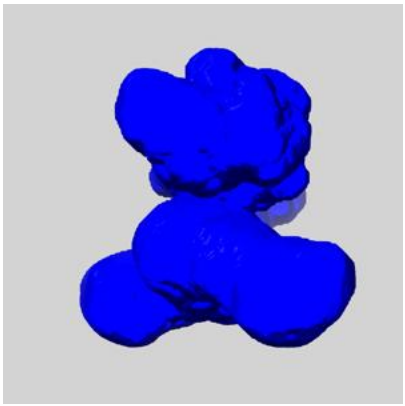
6.6.1 emd_43354_msk_1.map (i)



X



Y

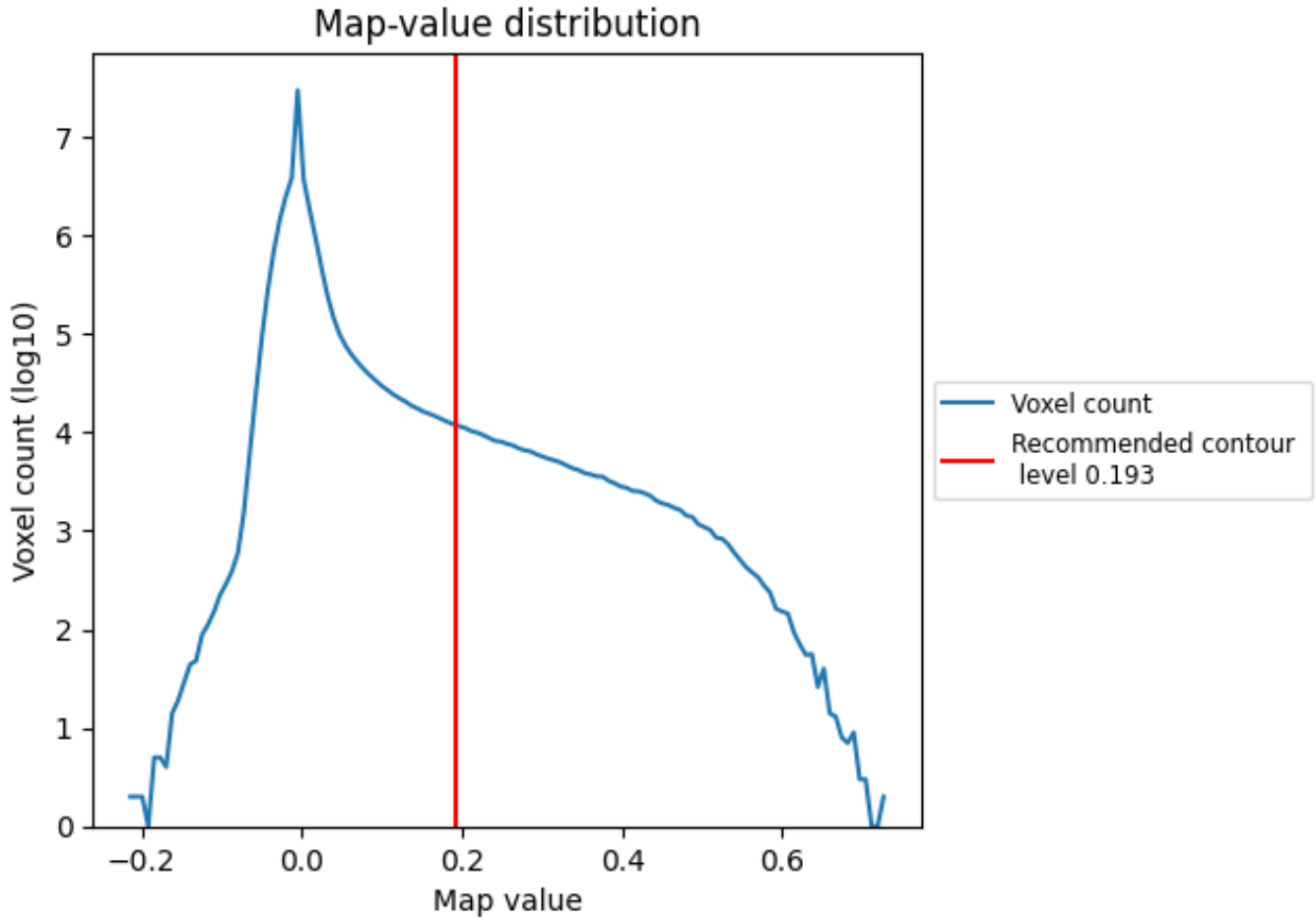


Z

7 Map analysis

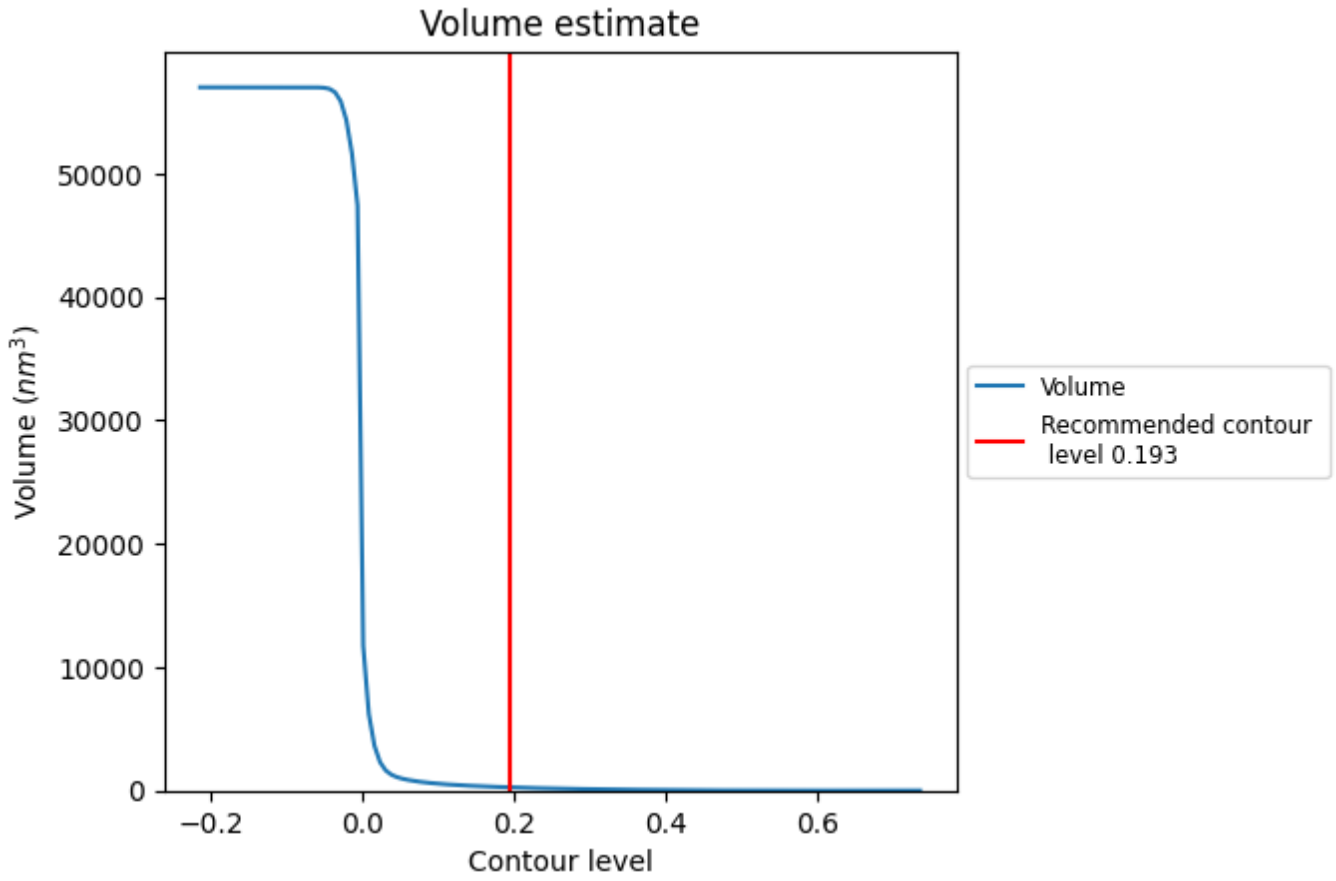
This section contains the results of statistical analysis of the map.

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.

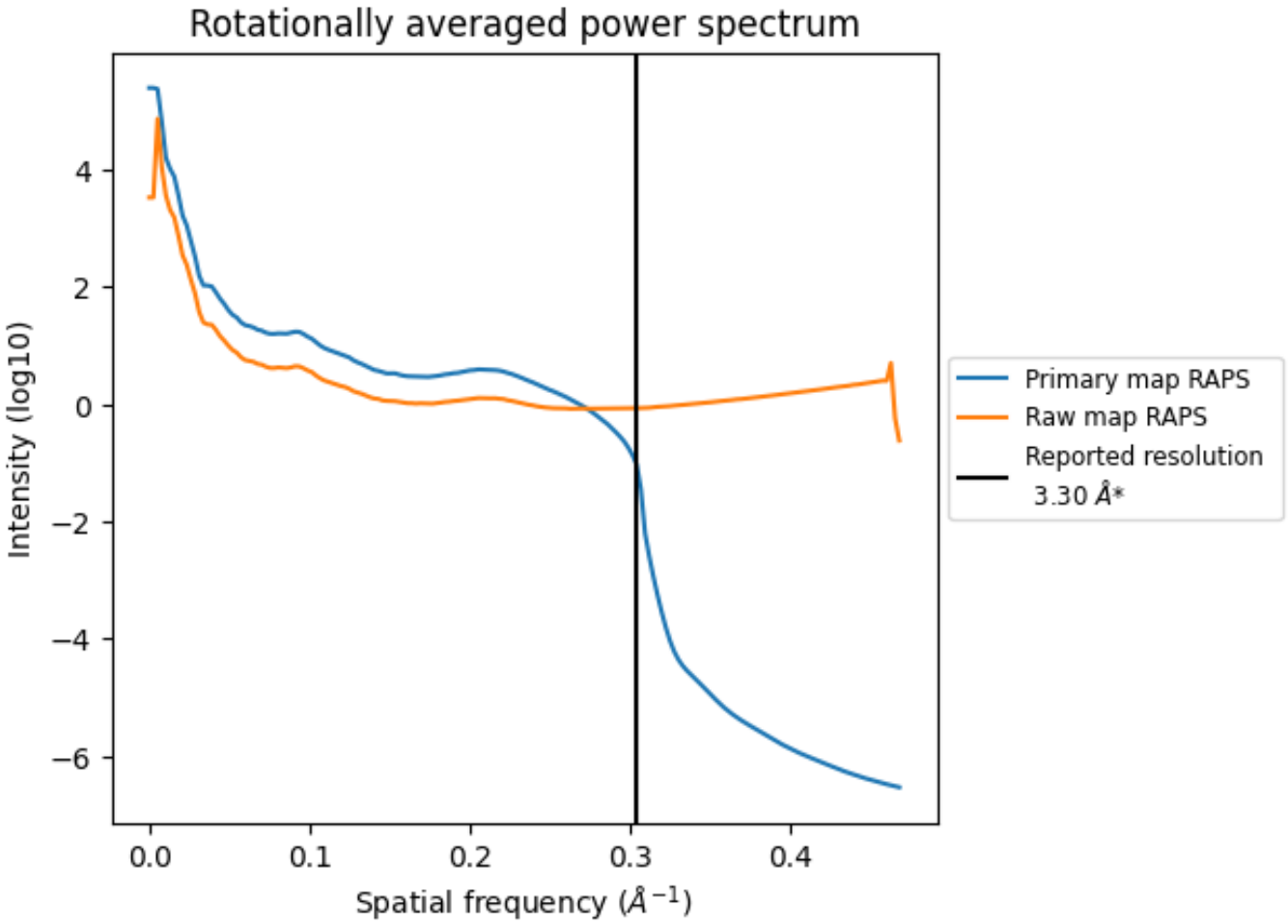
7.2 Volume estimate



The volume at the recommended contour level is 263 nm^3; this corresponds to an approximate mass of 237 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)

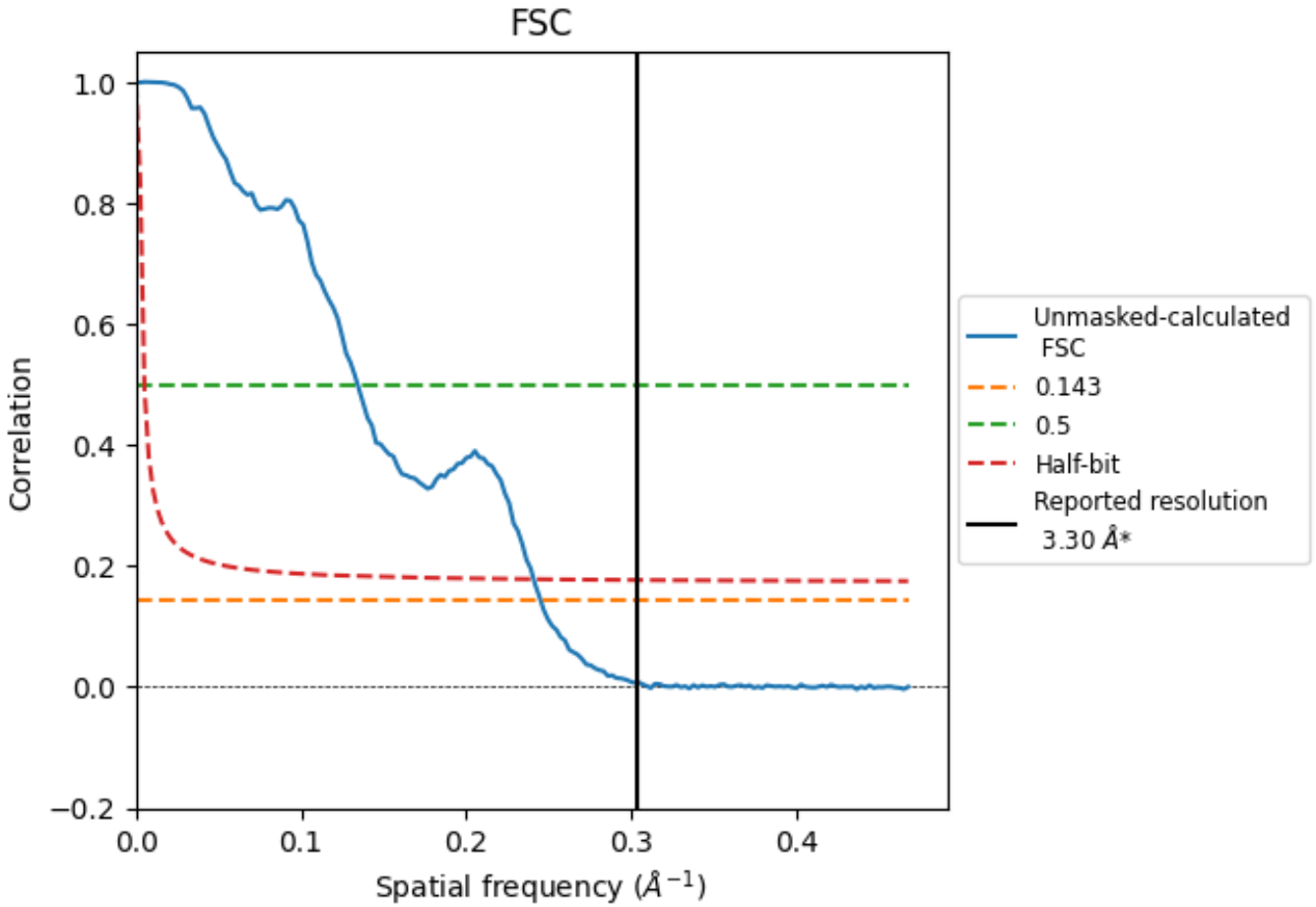


*Reported resolution corresponds to spatial frequency of 0.303 Å^{-1}

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 0.303 Å^{-1}

8.2 Resolution estimates (i)

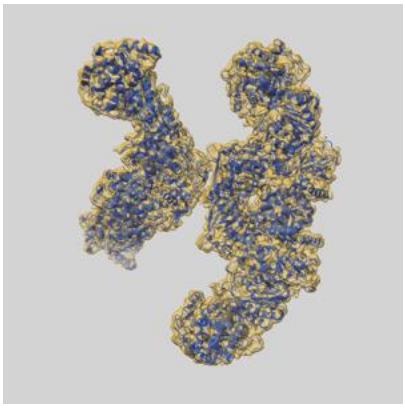
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.08	7.45	4.15

*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 4.08 differs from the reported value 3.3 by more than 10 %

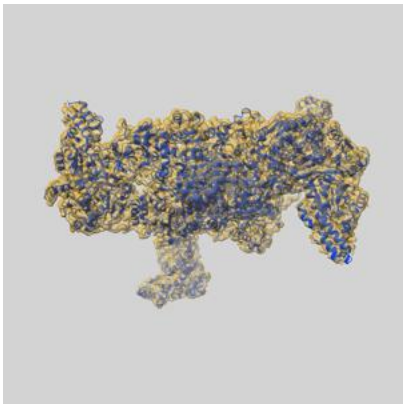
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-43354 and PDB model 8VM7. Per-residue inclusion information can be found in section 3 on page 7.

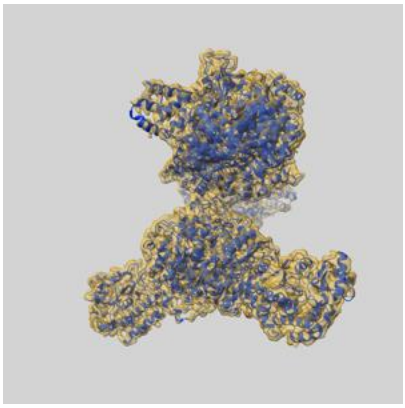
9.1 Map-model overlay



X



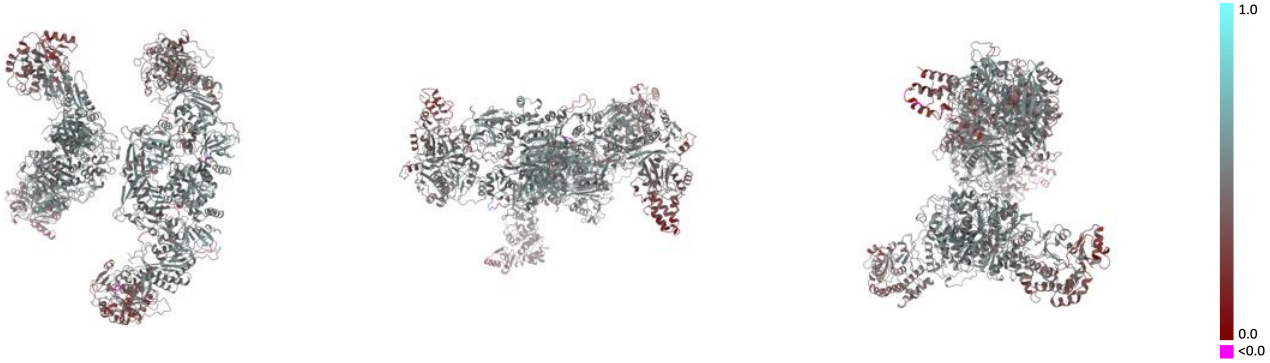
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.193 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.

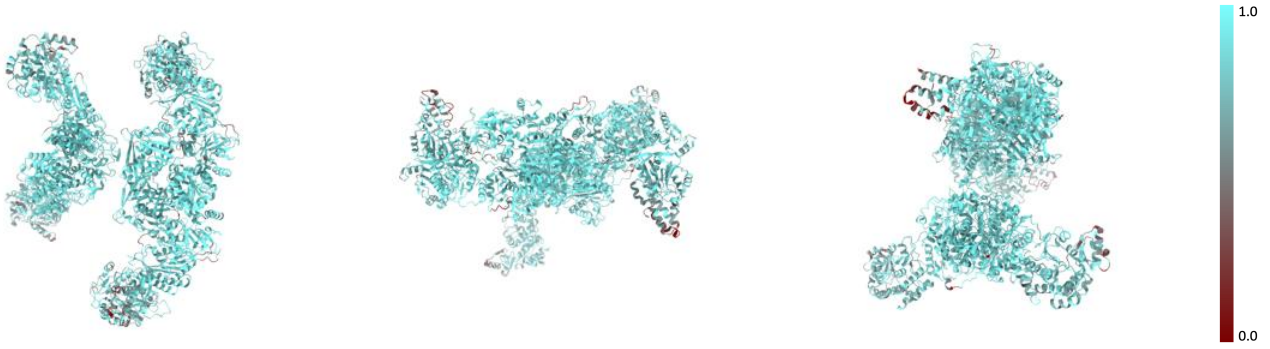
9.2 Q-score mapped to coordinate model (i)



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.

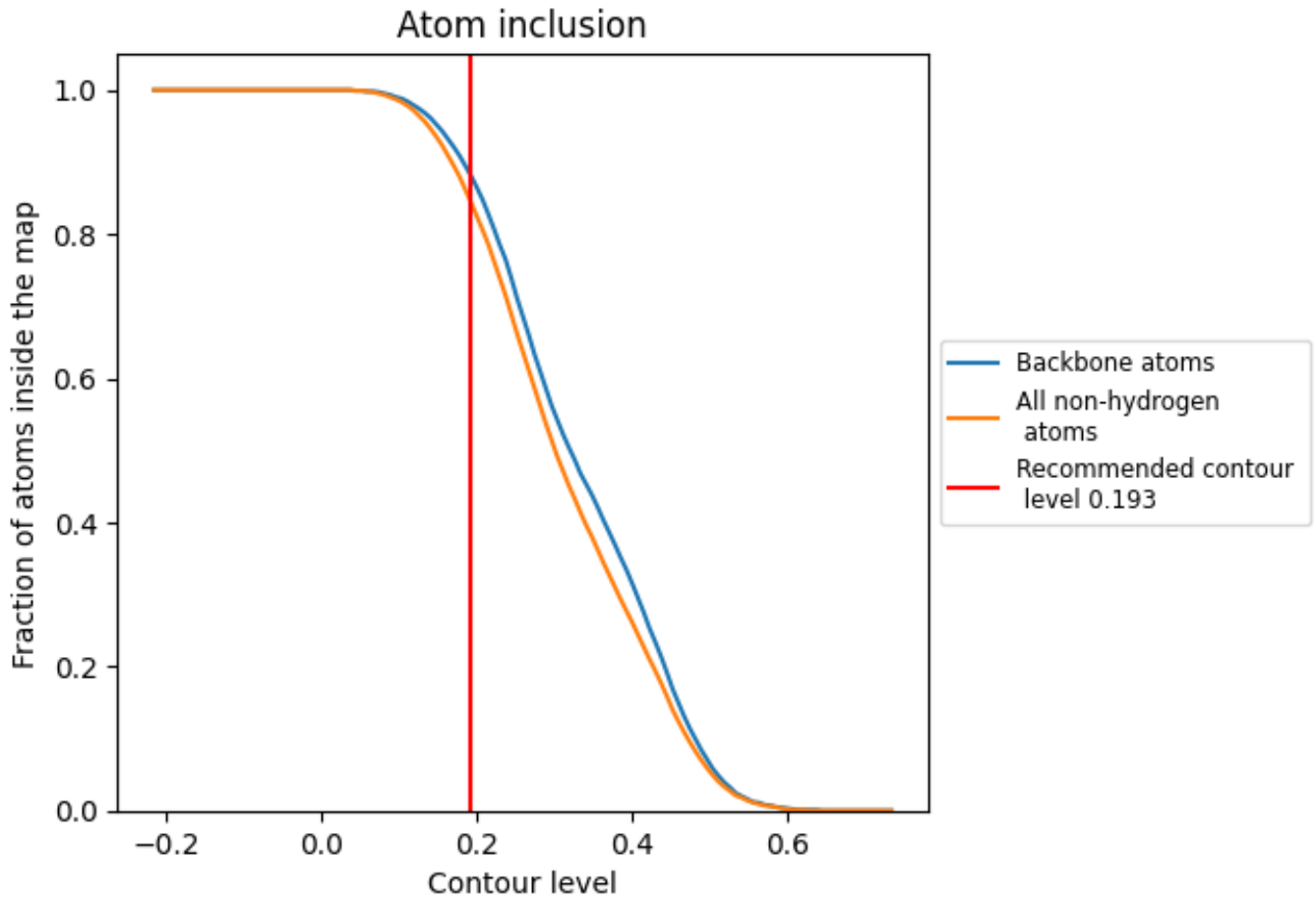
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.193).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 84% 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 (0.193) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8450	0.4630
A	0.8490	0.4640
B	0.8410	0.4620