Full wwPDB EM Validation Report ⓘ

Dec 9, 2021 – 03:33 pm GMT

PDB ID	:	7PQC
EMDB ID	:	EMD-7522
Title	:	tau-microtubule structural ensemble based on CryoEM data
Authors	:	Brotzakis, Z.F.; Vendruscolo, M.
Deposited on	:	2021-09-16
Resolution	:	4.10 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 following versions of software and data (see references ⓘ) were used in the production of this report:

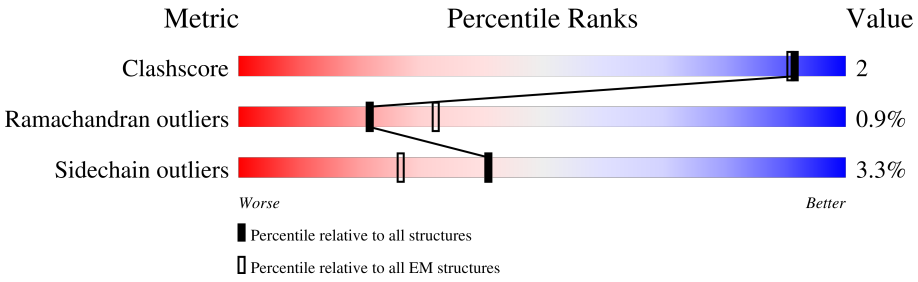
EMDB validation analysis	:	0.0.0.dev97
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.24

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 4.10 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	445	5% 81% 18% ·
1	C	445	6% 77% 20% ·
1	E	445	6% 79% 20% ·
1	G	445	· 80% 17% ·
1	I	445	5% 81% 17% ·
1	K	445	6% 78% 19% ·
1	M	445	6% 81% 16% ·
2	B	451	7% 81% 15% ·

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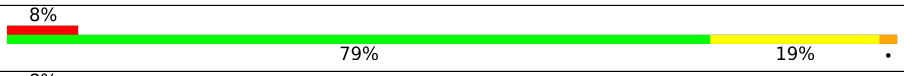
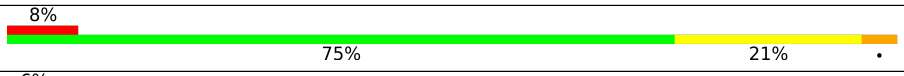
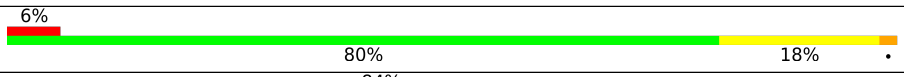
Mol	Chain	Length	Quality of chain
2	D	451	
2	F	451	
2	H	451	
2	J	451	
2	L	451	
2	N	451	
3	O	194	

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 51036 atoms, of which 0 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 Tubulin beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		
1	C	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		
1	E	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		
1	G	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		
1	I	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		
1	K	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		
1	M	445	Total	C	N	O	S	0	0
			3498	2189	595	688	26		

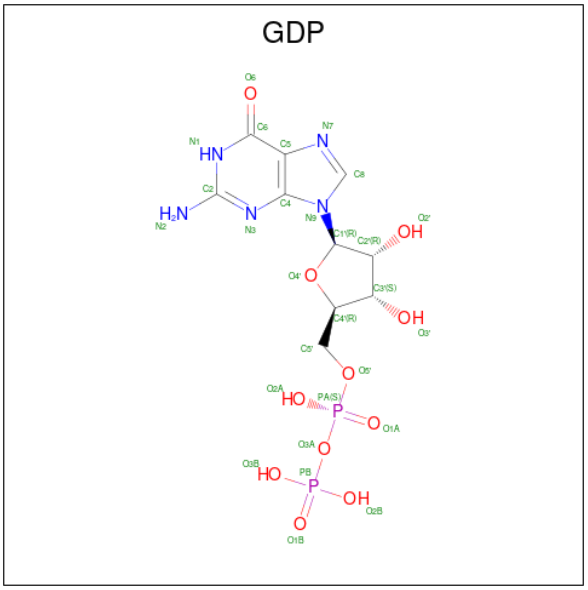
- Molecule 2 is a protein called Tubulin alpha-1B chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		
2	D	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		
2	F	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		
2	H	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		
2	J	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		
2	L	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		
2	N	451	Total	C	N	O	S	0	0
			3524	2225	595	682	22		

- Molecule 3 is a protein called Isoform Tau-F of Microtubule-associated protein tau.

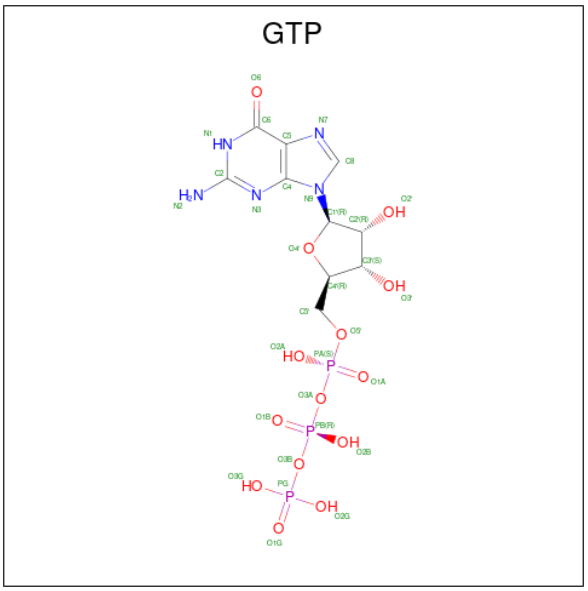
Mol	Chain	Residues	Atoms					AltConf	Trace
3	O	194	Total	C	N	O	S	0	0
			1455	904	273	275	3		

- Molecule 4 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
4	A	1	Total	C	N	O	P	0
			28	10	5	11	2	
4	C	1	Total	C	N	O	P	0
			28	10	5	11	2	
4	E	1	Total	C	N	O	P	0
			28	10	5	11	2	
4	G	1	Total	C	N	O	P	0
			28	10	5	11	2	
4	I	1	Total	C	N	O	P	0
			28	10	5	11	2	
4	K	1	Total	C	N	O	P	0
			28	10	5	11	2	
4	M	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 5 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
5	B	1	Total	C	N	O	P	0
			32	10	5	14	3	
5	D	1	Total	C	N	O	P	0
			32	10	5	14	3	
5	F	1	Total	C	N	O	P	0
			32	10	5	14	3	
5	H	1	Total	C	N	O	P	0
			32	10	5	14	3	
5	J	1	Total	C	N	O	P	0
			32	10	5	14	3	
5	L	1	Total	C	N	O	P	0
			32	10	5	14	3	
5	N	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
6	B	1	Total	Mg	0
			1	1	
6	D	1	Total	Mg	0
			1	1	
6	F	1	Total	Mg	0
			1	1	
6	H	1	Total	Mg	0
			1	1	

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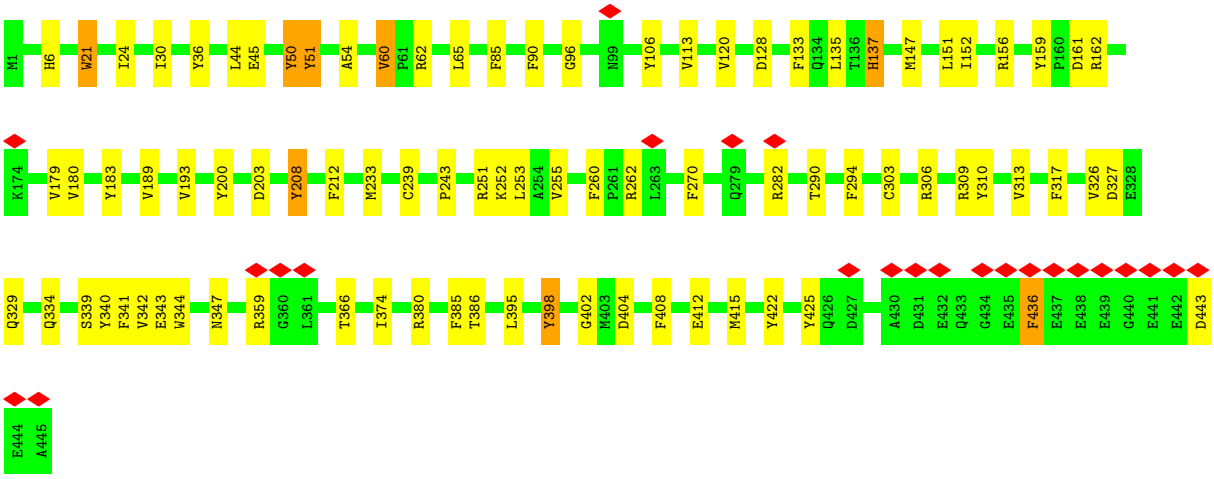
Mol	Chain	Residues	Atoms	AltConf
6	J	1	Total Mg 1 1	0
6	L	1	Total Mg 1 1	0
6	N	1	Total Mg 1 1	0

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.

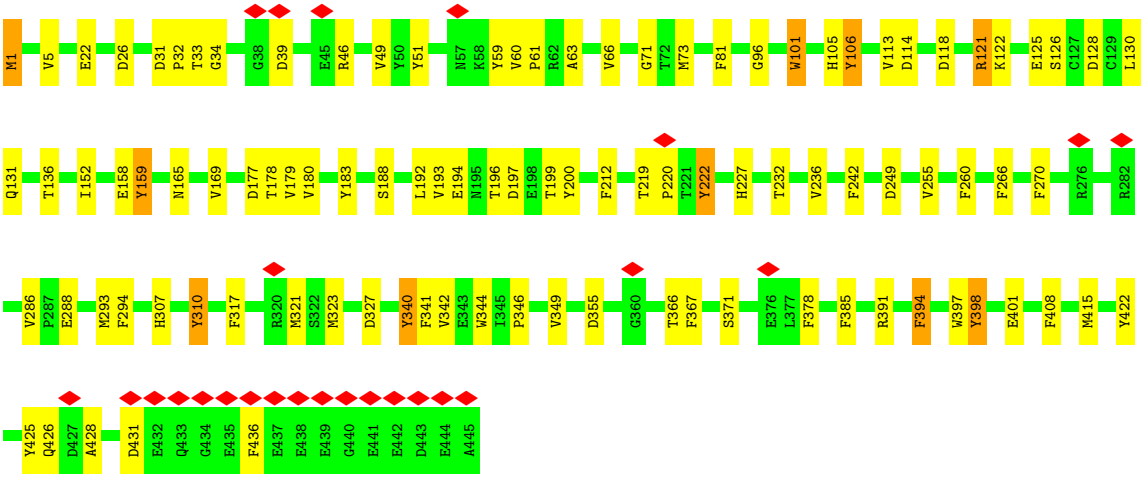
• Molecule 1: Tubulin beta chain

Chain A:



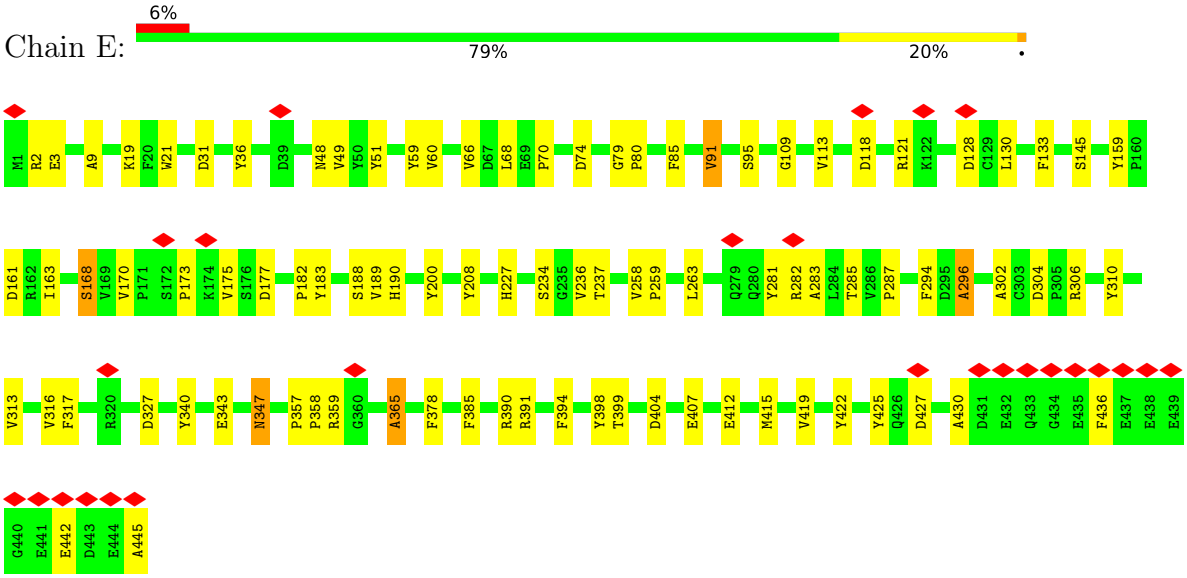
• Molecule 1: Tubulin beta chain

Chain C:



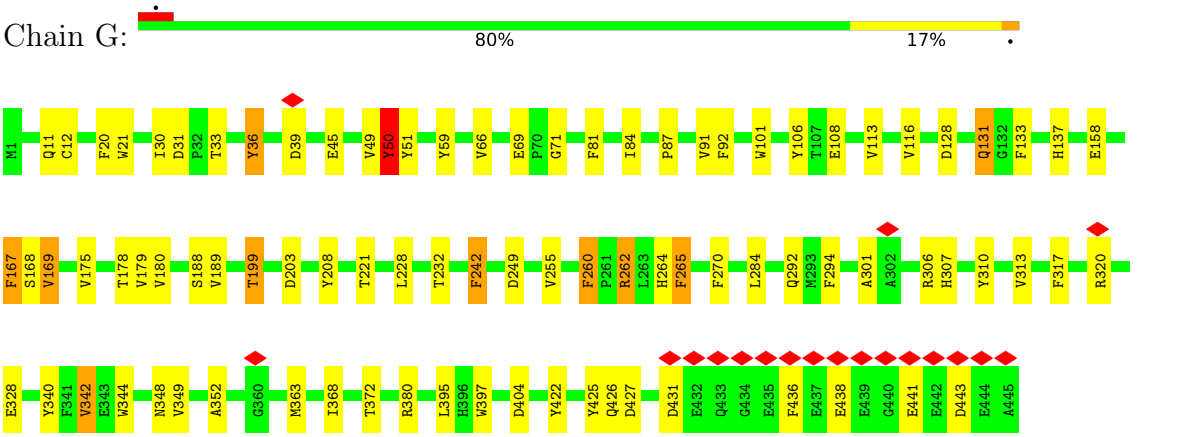
• Molecule 1: Tubulin beta chain

Chain E:



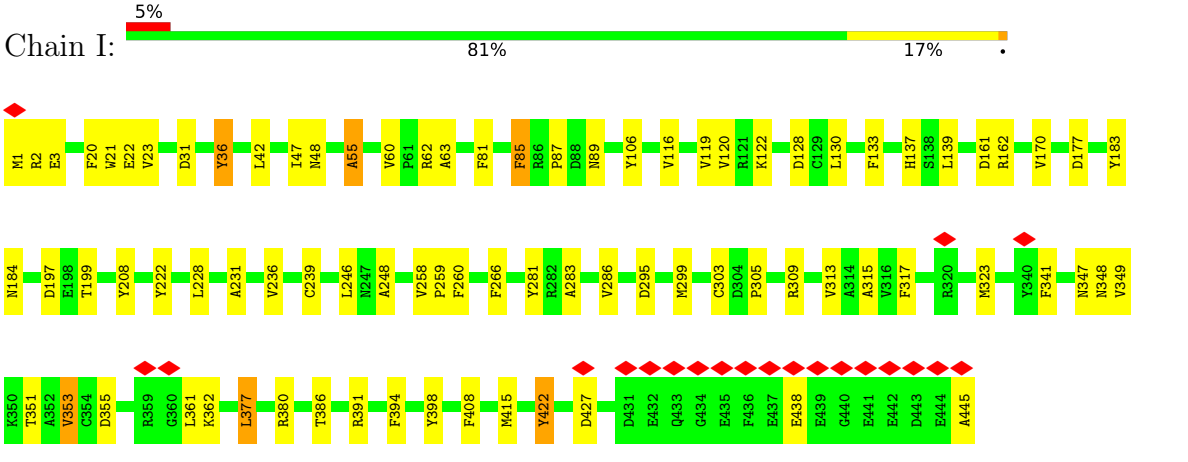
• Molecule 1: Tubulin beta chain

Chain G:



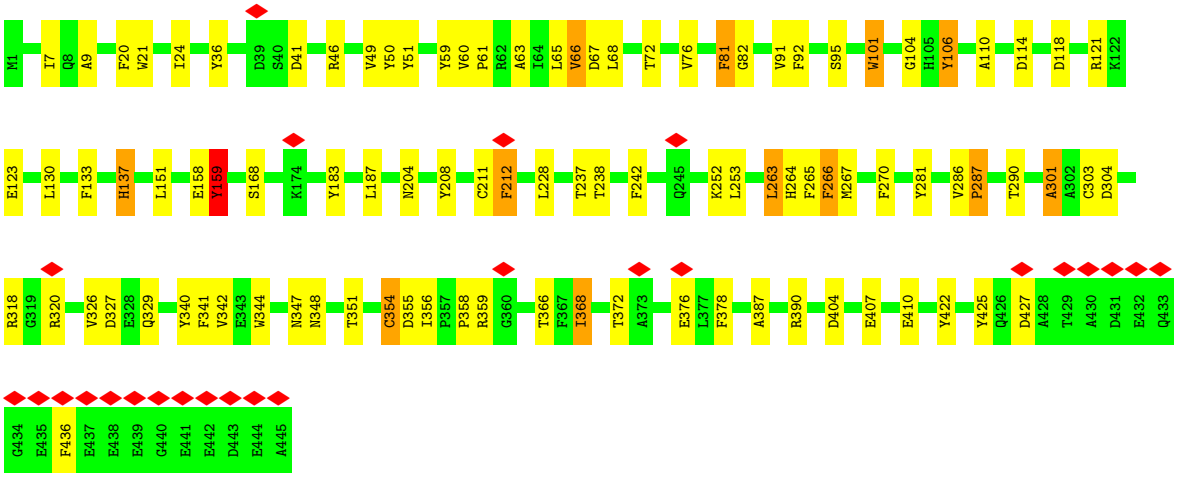
• Molecule 1: Tubulin beta chain

Chain I:

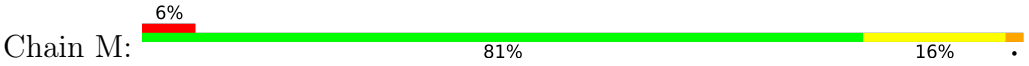


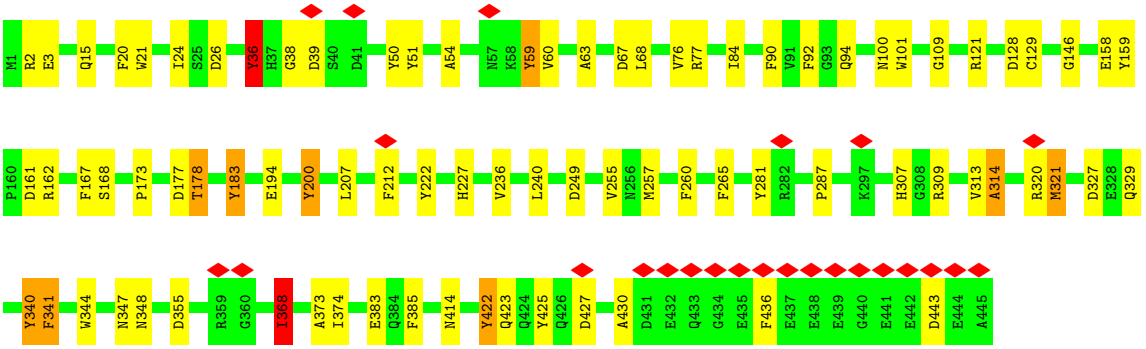
• Molecule 1: Tubulin beta chain

Chain K:

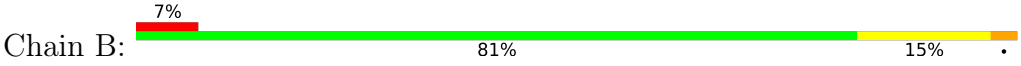


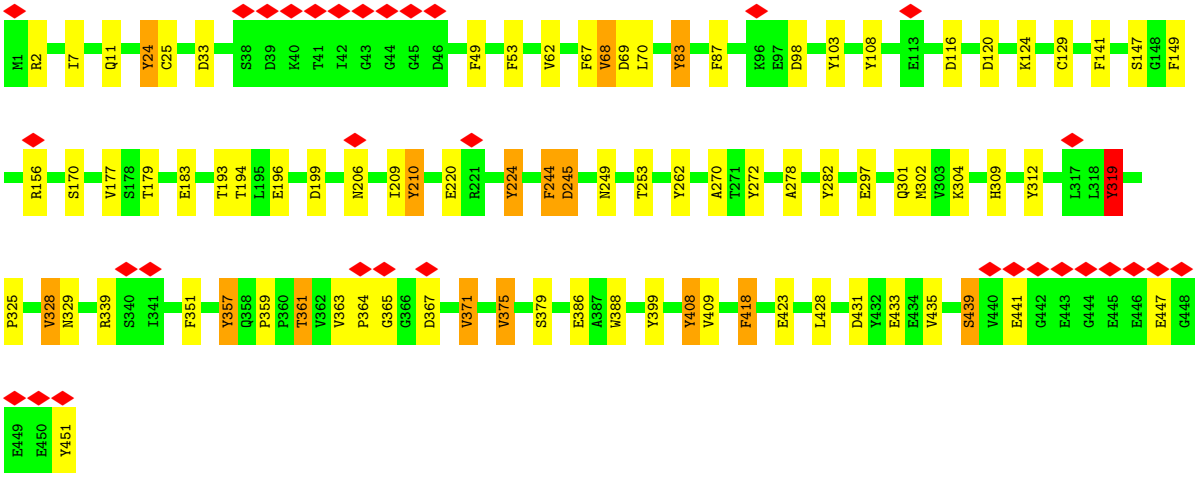
• Molecule 1: Tubulin beta chain



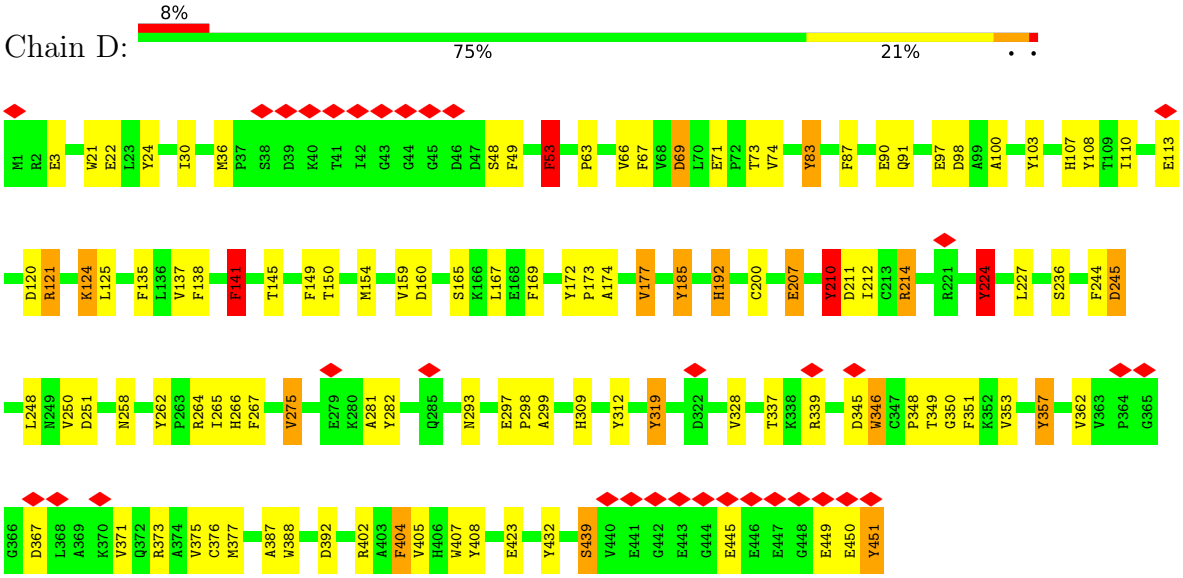


• Molecule 2: Tubulin alpha-1B chain

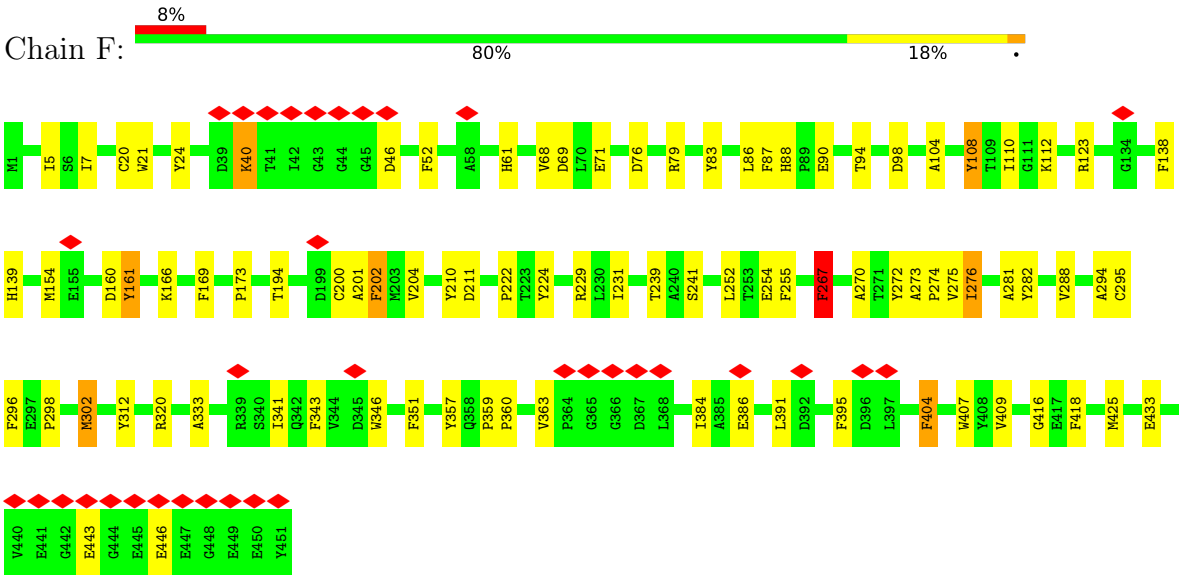




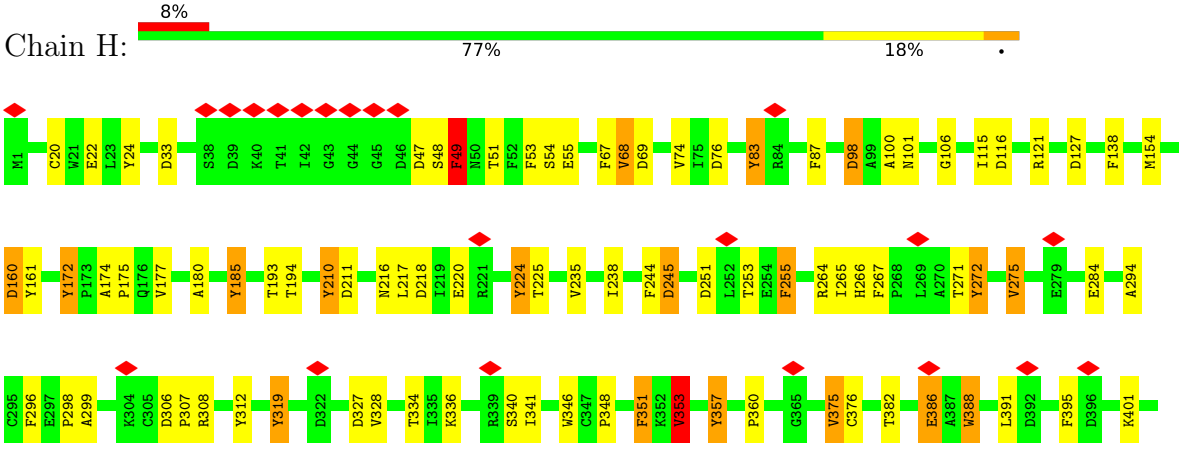
• Molecule 2: Tubulin alpha-1B chain

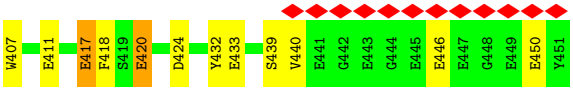


• Molecule 2: Tubulin alpha-1B chain

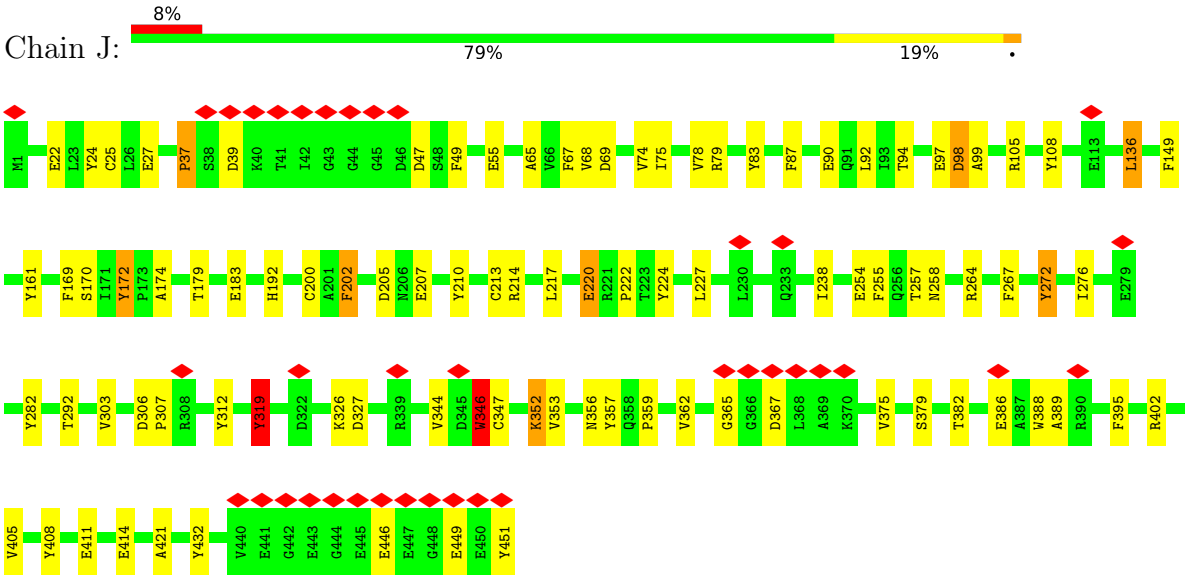


• Molecule 2: Tubulin alpha-1B chain

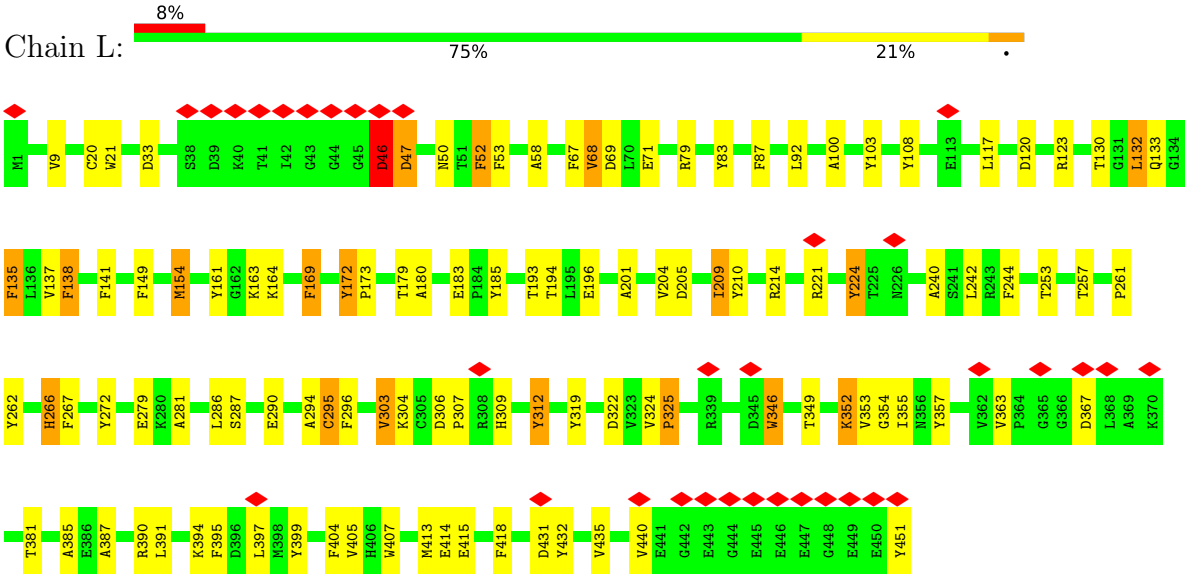




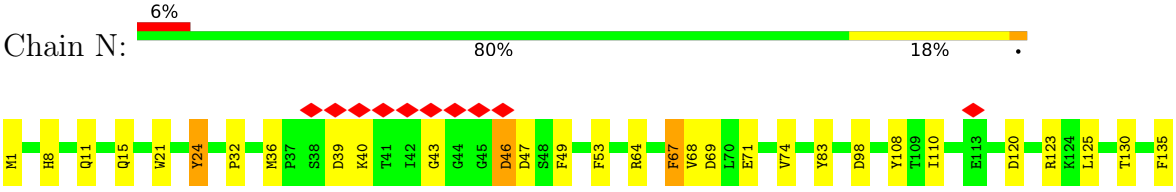
• Molecule 2: Tubulin alpha-1B chain

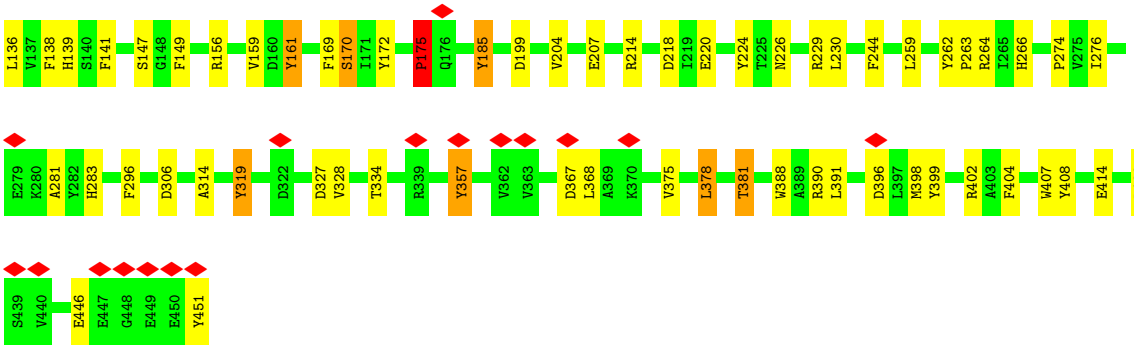


• Molecule 2: Tubulin alpha-1B chain



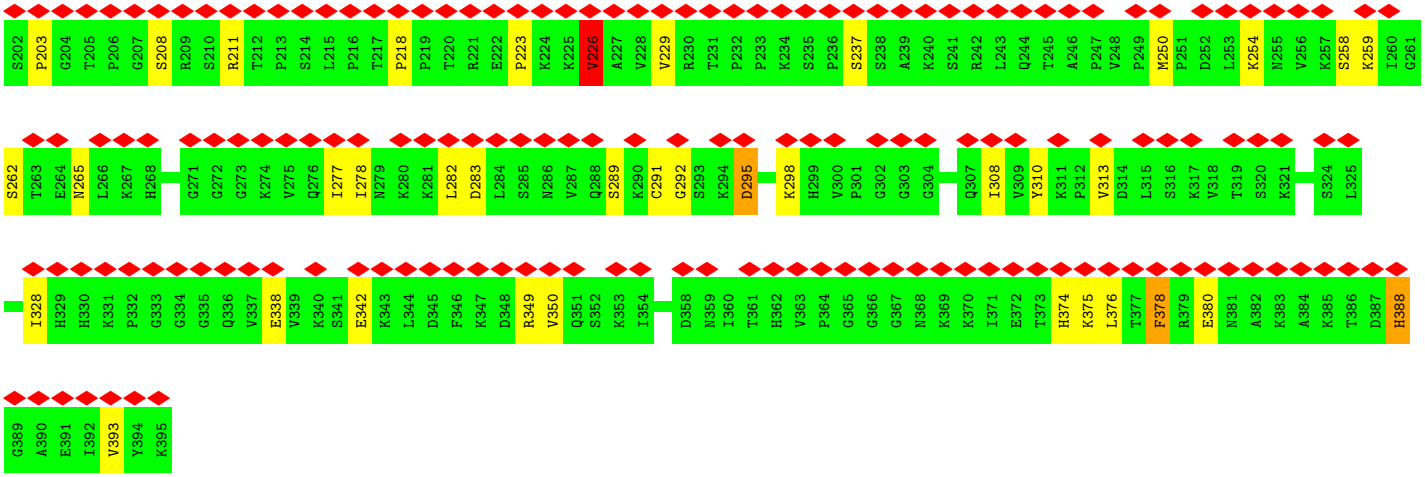
• Molecule 2: Tubulin alpha-1B chain





• Molecule 3: Isoform Tau-F of Microtubule-associated protein tau

Chain O:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	25963	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY; Images were drift-corrected using UCSF motioncorr software . CTFFIND4 was used to estimate CTFs for the drift-corrected images	Depositor
Microscope	FEI TITAN	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	27.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	7.789	Depositor
Minimum map value	-4.020	Depositor
Average map value	0.021	Depositor
Map value standard deviation	0.413	Depositor
Recommended contour level	1.26	Depositor
Map size (Å)	675.84, 675.84, 675.84	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.32, 1.32, 1.32	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GTP, GDP, MG

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	0.55	0/3574	1.82	60/4839 (1.2%)
1	C	0.56	0/3574	1.86	76/4839 (1.6%)
1	E	0.57	1/3574 (0.0%)	1.84	70/4839 (1.4%)
1	G	0.57	1/3574 (0.0%)	1.84	75/4839 (1.5%)
1	I	0.57	0/3574	1.80	63/4839 (1.3%)
1	K	0.58	1/3574 (0.0%)	1.87	85/4839 (1.8%)
1	M	0.56	1/3574 (0.0%)	1.84	57/4839 (1.2%)
2	B	0.56	1/3603 (0.0%)	1.91	86/4889 (1.8%)
2	D	0.56	1/3603 (0.0%)	1.92	93/4889 (1.9%)
2	F	0.55	0/3603	1.85	79/4889 (1.6%)
2	H	0.56	0/3603	1.91	90/4889 (1.8%)
2	J	0.58	0/3603	1.85	76/4889 (1.6%)
2	L	0.58	2/3603 (0.1%)	1.91	103/4889 (2.1%)
2	N	0.58	1/3603 (0.0%)	1.89	85/4889 (1.7%)
3	O	0.60	0/1483	1.59	20/1996 (1.0%)
All	All	0.57	9/51722 (0.0%)	1.86	1118/70092 (1.6%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	8
1	C	0	10
1	E	0	3
1	G	0	9
1	I	0	9
1	K	0	12
1	M	0	17
2	B	0	18

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	D	0	18
2	F	0	12
2	H	0	23
2	J	0	16
2	L	0	11
2	N	0	13
3	O	0	4
All	All	0	183

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	N	388	TRP	CZ3-CH2	10.53	1.56	1.40
2	L	21	TRP	CZ3-CH2	7.71	1.52	1.40
1	G	21	TRP	CZ3-CH2	7.69	1.52	1.40
2	B	388	TRP	CZ3-CH2	-7.66	1.27	1.40
2	L	346	TRP	CZ3-CH2	7.16	1.51	1.40
1	K	101	TRP	CZ3-CH2	6.84	1.50	1.40
1	E	21	TRP	CZ3-CH2	6.46	1.50	1.40
1	M	21	TRP	CZ3-CH2	5.53	1.48	1.40
2	D	21	TRP	CZ3-CH2	5.41	1.48	1.40

All (1118) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	172	TYR	CB-CG-CD2	-16.78	110.93	121.00
2	B	33	ASP	CB-CG-OD2	15.77	132.50	118.30
2	H	224	TYR	CB-CG-CD2	-14.42	112.35	121.00
1	M	340	TYR	CB-CG-CD2	-13.91	112.65	121.00
2	N	69	ASP	CB-CG-OD1	13.61	130.55	118.30
2	L	210	TYR	CB-CG-CD2	-12.82	113.31	121.00
2	F	210	TYR	CB-CG-CD2	-12.70	113.38	121.00
2	J	161	TYR	CB-CG-CD1	12.58	128.55	121.00
1	K	340	TYR	CB-CG-CD2	-12.22	113.67	121.00
1	C	183	TYR	CB-CG-CD2	-12.18	113.69	121.00
1	C	183	TYR	CB-CG-CD1	11.99	128.19	121.00
2	B	351	PHE	CB-CG-CD1	11.99	129.19	120.80
2	L	244	PHE	CB-CG-CD2	-11.62	112.67	120.80
1	E	208	TYR	CB-CG-CD2	-11.59	114.05	121.00
1	I	177	ASP	CB-CG-OD2	11.49	128.64	118.30
2	J	282	TYR	CB-CG-CD2	-11.42	114.15	121.00
2	D	172	TYR	CB-CG-CD1	11.28	127.77	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	M	194	GLU	OE1-CD-OE2	-11.27	109.77	123.30
1	I	398	TYR	CB-CG-CD2	-11.25	114.25	121.00
1	I	208	TYR	CB-CG-CD2	11.22	127.73	121.00
1	I	422	TYR	CB-CG-CD1	-11.22	114.27	121.00
2	L	69	ASP	CB-CG-OD1	11.18	128.37	118.30
2	D	185	TYR	CB-CG-CD2	-11.11	114.34	121.00
1	E	281	TYR	CB-CG-CD1	11.07	127.64	121.00
2	D	210	TYR	CB-CG-CD2	-10.99	114.41	121.00
1	K	159	TYR	CB-CG-CD1	-10.98	114.41	121.00
2	B	108	TYR	CB-CG-CD2	-10.88	114.47	121.00
2	L	83	TYR	CB-CG-CD2	-10.80	114.52	121.00
1	E	133	PHE	CB-CG-CD2	10.67	128.27	120.80
2	B	224	TYR	CB-CG-CD2	-10.54	114.67	121.00
2	J	432	TYR	CB-CG-CD1	-10.52	114.69	121.00
2	L	262	TYR	CB-CG-CD2	-10.50	114.70	121.00
2	H	172	TYR	CB-CG-CD2	-10.40	114.76	121.00
1	E	159	TYR	CB-CG-CD2	-10.32	114.81	121.00
1	E	281	TYR	CB-CG-CD2	-10.30	114.82	121.00
2	F	282	TYR	CB-CG-CD1	10.24	127.15	121.00
2	L	244	PHE	CB-CG-CD1	10.17	127.92	120.80
1	K	341	PHE	CB-CG-CD2	10.15	127.90	120.80
2	D	319	TYR	CB-CG-CD2	-10.14	114.91	121.00
2	F	98	ASP	CB-CG-OD1	10.14	127.42	118.30
2	H	432	TYR	CB-CG-CD2	-9.97	115.02	121.00
2	N	69	ASP	OD1-CG-OD2	-9.95	104.39	123.30
2	N	185	TYR	CB-CG-CD1	9.92	126.95	121.00
1	A	85	PHE	CB-CG-CD1	-9.86	113.90	120.80
2	N	98	ASP	CB-CG-OD1	9.80	127.12	118.30
2	F	255	PHE	CB-CG-CD2	-9.79	113.95	120.80
2	F	138	PHE	CB-CG-CD1	-9.72	114.00	120.80
2	B	103	TYR	CB-CG-CD2	-9.59	115.24	121.00
2	J	161	TYR	CB-CG-CD2	-9.58	115.25	121.00
1	G	431	ASP	CB-CG-OD2	9.57	126.92	118.30
1	C	59	TYR	CB-CG-CD1	-9.55	115.27	121.00
1	K	265	PHE	CB-CG-CD2	-9.50	114.15	120.80
1	I	85	PHE	CB-CG-CD1	-9.49	114.16	120.80
1	A	260	PHE	CB-CG-CD2	-9.47	114.17	120.80
2	N	199	ASP	CB-CG-OD1	9.47	126.83	118.30
2	F	69	ASP	CB-CG-OD2	9.41	126.77	118.30
2	N	156	ARG	CD-NE-CZ	9.18	136.45	123.60
1	A	436	PHE	CB-CG-CD1	9.16	127.21	120.80
2	F	69	ASP	CB-CG-OD1	9.16	126.54	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	H	218	ASP	CB-CG-OD2	-9.15	110.07	118.30
1	G	422	TYR	CB-CG-CD1	-9.11	115.53	121.00
1	M	340	TYR	CB-CG-CD1	9.08	126.45	121.00
2	N	39	ASP	CB-CG-OD2	9.07	126.47	118.30
2	F	69	ASP	OD1-CG-OD2	-9.06	106.09	123.30
2	D	224	TYR	CB-CG-CD2	-9.04	115.58	121.00
2	J	306	ASP	CB-CG-OD1	9.03	126.43	118.30
2	N	229	ARG	CD-NE-CZ	8.99	136.19	123.60
2	H	395	PHE	CB-CG-CD2	8.95	127.07	120.80
2	H	185	TYR	CB-CG-CD2	-8.94	115.64	121.00
2	H	185	TYR	CB-CG-CD1	8.92	126.35	121.00
1	C	242	PHE	CB-CG-CD2	-8.90	114.57	120.80
1	K	422	TYR	CB-CG-CD1	-8.85	115.69	121.00
1	I	31	ASP	CB-CG-OD2	8.85	126.27	118.30
1	A	200	TYR	CB-CG-CD1	8.84	126.31	121.00
2	J	108	TYR	CB-CG-CD1	-8.84	115.69	121.00
1	M	265	PHE	CB-CG-CD2	-8.83	114.62	120.80
1	G	425	TYR	CB-CG-CD2	-8.81	115.72	121.00
1	I	208	TYR	CB-CG-CD1	-8.81	115.72	121.00
2	J	432	TYR	CB-CG-CD2	8.80	126.28	121.00
2	J	408	TYR	CB-CG-CD2	8.79	126.27	121.00
1	G	45	GLU	OE1-CD-OE2	-8.76	112.79	123.30
1	E	161	ASP	CB-CG-OD1	-8.75	110.42	118.30
2	D	345	ASP	CB-CG-OD1	8.71	126.14	118.30
2	H	432	TYR	CG-CD2-CE2	-8.71	114.34	121.30
1	M	36	TYR	CB-CG-CD2	-8.70	115.78	121.00
1	K	76	VAL	CG1-CB-CG2	-8.65	97.07	110.90
1	M	236	VAL	CA-CB-CG1	8.63	123.85	110.90
1	C	394	PHE	CB-CG-CD1	-8.62	114.77	120.80
2	D	138	PHE	CB-CG-CD2	8.60	126.82	120.80
2	J	98	ASP	CB-CG-OD2	8.56	126.01	118.30
2	L	161	TYR	CB-CG-CD2	-8.53	115.88	121.00
2	L	108	TYR	CB-CG-CD1	-8.51	115.89	121.00
1	M	183	TYR	CB-CG-CD2	-8.49	115.91	121.00
1	C	422	TYR	CB-CG-CD1	-8.48	115.91	121.00
1	G	203	ASP	CB-CG-OD1	-8.47	110.68	118.30
2	H	218	ASP	CB-CG-OD1	8.46	125.91	118.30
2	D	53	PHE	CB-CG-CD2	-8.44	114.89	120.80
1	K	422	TYR	CB-CG-CD2	8.43	126.06	121.00
1	I	197	ASP	CB-CG-OD1	8.43	125.89	118.30
2	N	46	ASP	CB-CG-OD1	8.41	125.87	118.30
1	K	59	TYR	CB-CG-CD2	-8.41	115.96	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	L	123	ARG	CD-NE-CZ	8.36	135.30	123.60
2	D	423	GLU	OE1-CD-OE2	-8.36	113.27	123.30
1	C	59	TYR	CB-CG-CD2	8.35	126.01	121.00
1	G	36	TYR	CB-CG-CD1	-8.33	116.00	121.00
1	K	304	ASP	CB-CG-OD1	8.32	125.79	118.30
2	L	69	ASP	OD1-CG-OD2	-8.32	107.50	123.30
2	N	24	TYR	CB-CG-CD1	-8.30	116.02	121.00
1	G	33	THR	CA-CB-CG2	8.30	124.02	112.40
1	E	161	ASP	CB-CG-OD2	8.29	125.76	118.30
2	J	224	TYR	CB-CG-CD2	-8.29	116.03	121.00
1	I	408	PHE	CB-CG-CD2	-8.28	115.00	120.80
1	G	128	ASP	CB-CG-OD1	-8.27	110.86	118.30
2	B	177	VAL	CA-CB-CG1	8.22	123.23	110.90
2	N	224	TYR	CB-CG-CD1	8.21	125.92	121.00
1	G	260	PHE	CB-CG-CD1	-8.17	115.08	120.80
2	F	161	TYR	CB-CG-CD2	-8.15	116.11	121.00
1	E	128	ASP	CB-CG-OD1	8.14	125.63	118.30
2	D	69	ASP	CB-CG-OD1	8.11	125.60	118.30
1	M	443	ASP	CB-CG-OD2	8.09	125.58	118.30
1	K	341	PHE	CB-CG-CD1	-8.08	115.14	120.80
2	F	446	GLU	OE1-CD-OE2	-8.06	113.62	123.30
1	K	425	TYR	CB-CG-CD2	-8.06	116.16	121.00
1	G	249	ASP	CB-CG-OD2	8.06	125.56	118.30
2	D	405	VAL	CG1-CB-CG2	-8.05	98.02	110.90
2	L	135	PHE	CB-CG-CD1	-8.05	115.17	120.80
2	B	388	TRP	NE1-CE2-CZ2	8.05	139.25	130.40
2	D	141	PHE	CB-CG-CD2	8.02	126.41	120.80
2	B	245	ASP	CB-CG-OD2	8.01	125.51	118.30
2	H	69	ASP	CB-CG-OD2	7.99	125.49	118.30
1	G	317	PHE	CB-CG-CD2	-7.99	115.21	120.80
2	B	98	ASP	CB-CG-OD2	7.97	125.47	118.30
2	L	68	VAL	CG1-CB-CG2	-7.93	98.20	110.90
1	E	310	TYR	CB-CG-CD1	-7.92	116.25	121.00
1	M	39	ASP	CB-CG-OD1	7.91	125.41	118.30
2	H	440	VAL	CA-CB-CG2	7.89	122.74	110.90
2	D	98	ASP	CB-CG-OD1	7.86	125.38	118.30
1	G	221	THR	CA-CB-CG2	7.86	123.41	112.40
2	B	87	PHE	CB-CG-CD1	-7.85	115.31	120.80
1	E	2	ARG	CD-NE-CZ	7.84	134.58	123.60
2	D	135	PHE	CB-CG-CD2	7.80	126.26	120.80
2	H	175	PRO	N-CD-CG	7.80	114.90	103.20
2	N	404	PHE	CB-CG-CD1	-7.80	115.34	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	M	50	TYR	CB-CG-CD1	-7.79	116.32	121.00
2	D	451	TYR	CB-CG-CD2	-7.79	116.33	121.00
2	J	149	PHE	CB-CG-CD1	-7.79	115.35	120.80
2	D	24	TYR	CG-CD1-CE1	-7.79	115.07	121.30
1	K	81	PHE	CB-CG-CD1	-7.78	115.36	120.80
1	E	183	TYR	CB-CG-CD1	7.76	125.66	121.00
2	B	210	TYR	CB-CG-CD1	7.75	125.65	121.00
1	E	208	TYR	CB-CG-CD1	7.74	125.64	121.00
2	B	351	PHE	CB-CG-CD2	-7.73	115.39	120.80
2	B	83	TYR	CG-CD1-CE1	-7.73	115.12	121.30
2	H	67	PHE	CB-CG-CD2	7.72	126.20	120.80
2	H	375	VAL	CG1-CB-CG2	-7.72	98.55	110.90
1	E	340	TYR	CB-CG-CD1	7.71	125.63	121.00
1	M	422	TYR	CB-CG-CD1	-7.71	116.37	121.00
2	H	319	TYR	CB-CG-CD1	-7.71	116.37	121.00
1	G	294	PHE	CB-CG-CD1	-7.71	115.41	120.80
2	J	24	TYR	CB-CG-CD2	-7.70	116.38	121.00
2	B	297	GLU	OE1-CD-OE2	-7.70	114.06	123.30
1	E	91	VAL	CG1-CB-CG2	-7.70	98.58	110.90
1	A	159	TYR	CB-CG-CD1	7.70	125.62	121.00
2	B	224	TYR	CZ-CE2-CD2	7.69	126.72	119.80
1	C	193	VAL	CA-CB-CG1	7.69	122.44	110.90
2	D	141	PHE	CB-CG-CD1	-7.67	115.43	120.80
2	F	357	TYR	CB-CG-CD2	-7.66	116.41	121.00
2	J	69	ASP	CB-CG-OD1	7.65	125.18	118.30
2	L	418	PHE	CB-CG-CD1	-7.64	115.45	120.80
1	I	3	GLU	OE1-CD-OE2	-7.62	114.16	123.30
1	E	378	PHE	CB-CG-CD2	7.60	126.12	120.80
1	I	106	TYR	CB-CG-CD2	-7.59	116.44	121.00
2	B	361	THR	CA-CB-CG2	7.58	123.01	112.40
2	F	83	TYR	CG-CD2-CE2	-7.54	115.26	121.30
2	D	83	TYR	CB-CG-CD1	-7.48	116.51	121.00
1	E	113	VAL	CA-CB-CG2	7.48	122.12	110.90
1	E	304	ASP	CB-CG-OD1	7.47	125.03	118.30
1	G	101	TRP	CE3-CZ3-CH2	-7.47	112.98	121.20
2	D	210	TYR	CG-CD1-CE1	-7.47	115.33	121.30
2	J	78	VAL	CA-CB-CG2	7.46	122.10	110.90
1	A	251	ARG	CD-NE-CZ	7.46	134.05	123.60
2	J	395	PHE	CB-CG-CD2	7.46	126.02	120.80
2	N	306	ASP	CB-CG-OD2	-7.46	111.59	118.30
1	I	120	VAL	CA-CB-CG1	7.45	122.08	110.90
2	L	210	TYR	CB-CG-CD1	7.43	125.46	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	N	161	TYR	CG-CD1-CE1	-7.43	115.36	121.30
2	D	36	MET	CG-SD-CE	-7.43	88.31	100.20
3	O	203	PRO	N-CA-CB	7.43	112.22	103.30
1	M	355	ASP	CB-CA-C	7.43	125.25	110.40
1	E	183	TYR	CZ-CE2-CD2	7.42	126.48	119.80
2	H	224	TYR	CB-CG-CD1	7.41	125.45	121.00
2	F	255	PHE	CB-CG-CD1	7.40	125.98	120.80
2	B	87	PHE	CG-CD2-CE2	-7.39	112.67	120.80
2	J	382	THR	CA-CB-CG2	-7.39	102.06	112.40
2	L	52	PHE	CG-CD2-CE2	-7.39	112.67	120.80
1	C	60	VAL	CG1-CB-CG2	7.38	122.72	110.90
2	J	47	ASP	CB-CG-OD2	7.38	124.95	118.30
2	H	264	ARG	NE-CZ-NH1	7.38	123.99	120.30
2	J	87	PHE	CB-CG-CD1	-7.38	115.63	120.80
1	M	385	PHE	CG-CD1-CE1	7.37	128.91	120.80
1	M	59	TYR	CB-CG-CD1	-7.37	116.58	121.00
1	E	294	PHE	CB-CG-CD1	-7.35	115.65	120.80
1	G	21	TRP	CZ3-CH2-CZ2	-7.35	112.78	121.60
2	N	214	ARG	CD-NE-CZ	7.34	133.88	123.60
2	F	173	PRO	N-CA-CB	7.33	112.10	103.30
1	A	183	TYR	CB-CG-CD1	7.32	125.39	121.00
1	K	270	PHE	CB-CG-CD1	7.31	125.92	120.80
2	N	396	ASP	CB-CG-OD1	7.31	124.88	118.30
1	C	121	ARG	CD-NE-CZ	7.31	133.83	123.60
1	K	50	TYR	CB-CG-CD1	-7.31	116.62	121.00
2	L	221	ARG	CD-NE-CZ	7.30	133.82	123.60
1	A	341	PHE	CB-CG-CD2	-7.30	115.69	120.80
1	A	398	TYR	CB-CG-CD1	-7.29	116.62	121.00
2	N	296	PHE	CB-CG-CD2	-7.28	115.70	120.80
2	H	83	TYR	CB-CG-CD1	-7.28	116.63	121.00
2	B	272	TYR	CB-CG-CD1	-7.28	116.63	121.00
1	A	106	TYR	CB-CG-CD1	-7.28	116.63	121.00
2	L	346	TRP	CB-CG-CD2	7.28	136.06	126.60
2	F	282	TYR	CB-CG-CD2	-7.26	116.64	121.00
2	L	346	TRP	CZ3-CH2-CZ2	-7.26	112.89	121.60
2	L	135	PHE	CB-CG-CD2	7.25	125.88	120.80
2	J	224	TYR	CA-CB-CG	7.24	127.16	113.40
2	H	272	TYR	CG-CD1-CE1	-7.24	115.51	121.30
2	B	210	TYR	CB-CG-CD2	-7.23	116.66	121.00
1	I	133	PHE	CB-CG-CD1	-7.21	115.75	120.80
1	I	184	ASN	N-CA-CB	-7.21	97.62	110.60
2	D	312	TYR	CB-CG-CD2	-7.20	116.68	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	G	116	VAL	CA-CB-CG2	7.20	121.70	110.90
2	B	67	PHE	CB-CG-CD2	-7.20	115.76	120.80
1	M	54	ALA	N-CA-CB	-7.20	100.03	110.10
2	B	371	VAL	CA-CB-CG2	7.19	121.69	110.90
2	H	22	GLU	OE1-CD-OE2	-7.19	114.67	123.30
1	E	49	VAL	CG1-CB-CG2	-7.19	99.40	110.90
2	B	24	TYR	CB-CG-CD2	-7.18	116.69	121.00
2	H	251	ASP	CB-CG-OD1	7.18	124.77	118.30
1	I	317	PHE	CB-CG-CD1	-7.18	115.77	120.80
2	H	83	TYR	CD1-CE1-CZ	-7.17	113.34	119.80
1	C	255	VAL	CG1-CB-CG2	-7.17	99.43	110.90
2	D	214	ARG	CD-NE-CZ	7.16	133.63	123.60
1	G	242	PHE	CB-CG-CD1	-7.16	115.79	120.80
2	D	165	SER	CB-CA-C	-7.15	96.51	110.10
2	H	334	THR	CA-CB-CG2	7.15	122.41	112.40
1	M	178	THR	CA-CB-CG2	7.14	122.40	112.40
1	K	121	ARG	CD-NE-CZ	7.13	133.59	123.60
2	N	381	THR	CA-CB-CG2	7.13	122.39	112.40
1	K	110	ALA	N-CA-CB	-7.11	100.14	110.10
2	B	33	ASP	CB-CG-OD1	-7.11	111.90	118.30
2	H	127	ASP	CB-CG-OD1	7.09	124.68	118.30
2	B	129	CYS	CA-CB-SG	-7.09	101.24	114.00
2	F	20	CYS	CA-CB-SG	-7.07	101.28	114.00
1	I	60	VAL	CA-CB-CG2	7.06	121.50	110.90
2	B	49	PHE	CB-CG-CD1	-7.06	115.86	120.80
1	I	380	ARG	CD-NE-CZ	7.06	133.48	123.60
1	K	378	PHE	CB-CG-CD2	7.06	125.74	120.80
2	D	149	PHE	CB-CG-CD2	-7.06	115.86	120.80
2	F	210	TYR	CG-CD2-CE2	-7.05	115.66	121.30
1	G	262	ARG	CD-NE-CZ	7.05	133.48	123.60
2	H	407	TRP	CE3-CZ3-CH2	-7.05	113.45	121.20
1	K	59	TYR	CG-CD1-CE1	-7.05	115.66	121.30
2	D	312	TYR	CG-CD1-CE1	-7.04	115.67	121.30
2	J	319	TYR	CZ-CE2-CD2	-7.04	113.47	119.80
1	M	76	VAL	CA-CB-CG1	7.03	121.44	110.90
1	E	183	TYR	CB-CG-CD2	-7.03	116.78	121.00
1	I	353	VAL	CG1-CB-CG2	-7.03	99.66	110.90
1	E	390	ARG	CD-NE-CZ	7.02	133.43	123.60
2	H	388	TRP	CE3-CZ3-CH2	-7.01	113.49	121.20
2	D	345	ASP	CB-CG-OD2	-7.00	112.00	118.30
3	O	226	VAL	CG1-CB-CG2	-6.99	99.71	110.90
2	F	351	PHE	CB-CG-CD2	6.99	125.69	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	M	240	LEU	CB-CG-CD1	6.99	122.88	111.00
2	J	183	GLU	OE1-CD-OE2	-6.97	114.93	123.30
2	H	357	TYR	CB-CG-CD1	-6.96	116.82	121.00
1	G	50	TYR	CB-CG-CD1	6.96	125.17	121.00
2	N	319	TYR	CG-CD2-CE2	-6.96	115.73	121.30
2	D	357	TYR	CB-CG-CD2	-6.95	116.83	121.00
1	G	128	ASP	CB-CG-OD2	6.94	124.54	118.30
1	G	443	ASP	CB-CG-OD1	-6.94	112.06	118.30
1	K	168	SER	N-CA-CB	-6.94	100.09	110.50
1	G	106	TYR	CB-CG-CD1	-6.93	116.84	121.00
2	L	209	ILE	CA-CB-CG1	6.93	124.17	111.00
2	H	74	VAL	CA-CB-CG2	6.92	121.28	110.90
1	A	313	VAL	CA-CB-CG1	6.91	121.26	110.90
2	N	135	PHE	CB-CG-CD1	6.90	125.63	120.80
1	I	87	PRO	N-CA-CB	6.90	111.58	103.30
1	A	239	CYS	CA-CB-SG	-6.89	101.59	114.00
1	G	342	VAL	CA-CB-CG2	6.88	121.23	110.90
1	M	344	TRP	NE1-CE2-CZ2	6.86	137.95	130.40
2	N	49	PHE	CB-CG-CD1	6.85	125.60	120.80
1	K	326	VAL	CA-CB-CG1	6.85	121.17	110.90
2	B	116	ASP	N-CA-CB	-6.84	98.28	110.60
2	N	21	TRP	NE1-CE2-CD2	-6.84	100.46	107.30
2	J	220	GLU	OE1-CD-OE2	-6.80	115.14	123.30
2	D	362	VAL	CA-CB-CG1	6.79	121.09	110.90
1	G	306	ARG	CD-NE-CZ	6.79	133.11	123.60
1	I	386	THR	CA-CB-CG2	6.79	121.91	112.40
2	L	46	ASP	CB-CG-OD2	6.79	124.41	118.30
2	B	270	ALA	CB-CA-C	6.78	120.27	110.10
1	E	313	VAL	CA-CB-CG2	6.78	121.06	110.90
1	K	92	PHE	CB-CG-CD1	-6.78	116.06	120.80
2	L	294	ALA	N-CA-CB	-6.77	100.62	110.10
2	N	185	TYR	CB-CG-CD2	-6.77	116.94	121.00
2	B	409	VAL	CA-CB-CG1	6.76	121.05	110.90
2	J	451	TYR	CG-CD1-CE1	-6.76	115.89	121.30
2	B	83	TYR	CB-CG-CD1	-6.76	116.95	121.00
2	L	407	TRP	NE1-CE2-CD2	-6.76	100.54	107.30
1	E	340	TYR	CB-CG-CD2	-6.74	116.95	121.00
1	G	175	VAL	CA-CB-CG1	6.73	121.00	110.90
1	M	313	VAL	CG1-CB-CG2	-6.73	100.13	110.90
2	D	24	TYR	CD1-CE1-CZ	6.73	125.85	119.80
2	J	264	ARG	NE-CZ-NH1	6.73	123.66	120.30
2	H	267	PHE	CB-CG-CD2	-6.71	116.10	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	L	261	PRO	N-CA-CB	6.71	111.35	103.30
2	F	343	PHE	CB-CG-CD1	-6.71	116.11	120.80
2	B	418	PHE	CB-CG-CD1	-6.70	116.11	120.80
2	N	83	TYR	CB-CG-CD2	-6.70	116.98	121.00
1	E	60	VAL	CG1-CB-CG2	-6.70	100.18	110.90
2	N	407	TRP	CD1-CG-CD2	6.70	111.66	106.30
1	C	26	ASP	CB-CG-OD1	-6.69	112.28	118.30
1	C	242	PHE	CB-CG-CD1	6.69	125.48	120.80
2	D	377	MET	CG-SD-CE	6.68	110.89	100.20
2	B	433	GLU	OE1-CD-OE2	-6.67	115.29	123.30
2	F	386	GLU	CA-CB-CG	6.67	128.08	113.40
1	C	294	PHE	CB-CG-CD2	-6.67	116.13	120.80
1	C	310	TYR	N-CA-CB	-6.67	98.60	110.60
2	N	224	TYR	CB-CG-CD2	-6.66	117.00	121.00
1	K	106	TYR	CB-CG-CD2	-6.66	117.01	121.00
1	K	344	TRP	NE1-CE2-CZ2	6.66	137.72	130.40
2	L	324	VAL	CA-CB-CG2	6.65	120.88	110.90
1	G	178	THR	CA-CB-CG2	6.65	121.71	112.40
2	J	357	TYR	CB-CG-CD2	-6.65	117.01	121.00
2	N	161	TYR	CB-CG-CD2	-6.65	117.01	121.00
1	C	398	TYR	CB-CG-CD1	-6.64	117.02	121.00
2	B	199	ASP	CB-CG-OD1	6.63	124.27	118.30
2	J	402	ARG	NE-CZ-NH1	6.63	123.62	120.30
1	I	313	VAL	CG1-CB-CG2	-6.63	100.29	110.90
2	D	71	GLU	CB-CA-C	6.63	123.66	110.40
2	H	98	ASP	CB-CG-OD1	6.63	124.26	118.30
1	M	344	TRP	O-C-N	-6.62	112.11	122.70
1	I	286	VAL	CG1-CB-CG2	-6.62	100.31	110.90
2	L	108	TYR	CB-CG-CD2	6.61	124.97	121.00
2	B	363	VAL	CG1-CB-CG2	-6.61	100.33	110.90
1	C	349	VAL	CA-CB-CG1	6.60	120.81	110.90
2	L	407	TRP	CD1-NE1-CE2	6.60	114.94	109.00
1	G	92	PHE	CB-CG-CD2	-6.60	116.18	120.80
2	H	83	TYR	CB-CG-CD2	6.60	124.96	121.00
2	L	391	LEU	CB-CG-CD1	-6.59	99.80	111.00
1	A	386	THR	CA-CB-CG2	6.59	121.62	112.40
1	M	68	LEU	CB-CG-CD2	6.58	122.19	111.00
1	M	177	ASP	CB-CG-OD1	6.58	124.22	118.30
2	H	272	TYR	CD1-CE1-CZ	6.56	125.71	119.80
2	B	141	PHE	CB-CG-CD1	-6.56	116.21	120.80
1	E	378	PHE	CB-CG-CD1	-6.55	116.21	120.80
1	G	443	ASP	CB-CG-OD2	6.54	124.18	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	224	TYR	CG-CD2-CE2	-6.54	116.07	121.30
1	C	385	PHE	CB-CG-CD2	6.54	125.38	120.80
1	K	265	PHE	CB-CG-CD1	6.53	125.37	120.80
2	J	282	TYR	CB-CG-CD1	6.52	124.91	121.00
1	K	183	TYR	CB-CG-CD1	6.52	124.91	121.00
2	B	367	ASP	CB-CG-OD2	-6.52	112.43	118.30
1	A	359	ARG	CA-CB-CG	6.51	127.72	113.40
2	L	33	ASP	CB-CG-OD1	6.51	124.16	118.30
2	B	262	TYR	CZ-CE2-CD2	6.50	125.65	119.80
1	I	355	ASP	CB-CG-OD1	6.50	124.15	118.30
3	O	211	ARG	CD-NE-CZ	6.50	132.70	123.60
2	D	357	TYR	CZ-CE2-CD2	-6.50	113.95	119.80
1	C	342	VAL	CA-CB-CG2	-6.49	101.16	110.90
2	N	407	TRP	CG-CD2-CE3	6.49	139.74	133.90
2	J	69	ASP	OD1-CG-OD2	-6.48	110.98	123.30
2	B	359	PRO	N-CA-CB	6.48	111.08	103.30
1	E	200	TYR	CB-CG-CD2	-6.48	117.11	121.00
3	O	349	ARG	NE-CZ-NH1	6.48	123.54	120.30
2	D	177	VAL	CA-CB-CG1	6.47	120.61	110.90
1	K	340	TYR	CA-CB-CG	6.47	125.70	113.40
2	B	441	GLU	OE1-CD-OE2	-6.47	115.54	123.30
2	B	156	ARG	CD-NE-CZ	6.46	132.65	123.60
1	C	118	ASP	CB-CG-OD1	6.46	124.12	118.30
3	O	223	PRO	CA-N-CD	-6.46	102.45	111.50
3	O	223	PRO	N-CA-CB	6.46	111.05	103.30
2	B	87	PHE	CD1-CG-CD2	6.45	126.68	118.30
2	N	199	ASP	CB-CG-OD2	-6.44	112.50	118.30
2	N	264	ARG	CD-NE-CZ	6.44	132.61	123.60
2	N	368	LEU	CB-CG-CD1	6.44	121.94	111.00
1	I	260	PHE	CB-CG-CD2	-6.43	116.30	120.80
2	L	290	GLU	OE1-CD-OE2	-6.43	115.58	123.30
2	L	451	TYR	CG-CD1-CE1	-6.43	116.16	121.30
2	B	25	CYS	CA-CB-SG	-6.42	102.44	114.00
2	N	83	TYR	CB-CG-CD1	6.41	124.84	121.00
1	A	36	TYR	CG-CD2-CE2	-6.41	116.17	121.30
2	D	309	HIS	C-N-CA	6.40	135.74	122.30
2	B	69	ASP	CB-CG-OD2	6.39	124.05	118.30
1	G	255	VAL	CG1-CB-CG2	-6.38	100.69	110.90
2	B	418	PHE	CG-CD1-CE1	-6.38	113.79	120.80
1	K	72	THR	OG1-CB-CG2	-6.38	95.34	110.00
2	L	319	TYR	CB-CG-CD1	-6.37	117.18	121.00
2	N	274	PRO	N-CD-CG	6.37	112.76	103.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	L	69	ASP	CB-CG-OD2	6.37	124.03	118.30
1	E	85	PHE	CB-CG-CD2	-6.37	116.34	120.80
2	B	408	TYR	CB-CG-CD1	-6.36	117.19	121.00
1	K	101	TRP	NE1-CE2-CD2	-6.35	100.95	107.30
2	F	71	GLU	OE1-CD-OE2	-6.35	115.68	123.30
2	B	312	TYR	CB-CG-CD2	-6.35	117.19	121.00
2	N	408	TYR	CB-CG-CD2	-6.34	117.19	121.00
1	C	397	TRP	CD1-NE1-CE2	6.34	114.71	109.00
2	F	407	TRP	CD1-CG-CD2	-6.34	101.23	106.30
3	O	229	VAL	CG1-CB-CG2	-6.34	100.76	110.90
1	G	179	VAL	CG1-CB-CG2	-6.34	100.76	110.90
1	K	287	PRO	N-CA-CB	6.33	110.90	103.30
2	F	87	PHE	CB-CG-CD2	-6.33	116.37	120.80
2	B	108	TYR	CG-CD1-CE1	-6.33	116.24	121.30
2	D	312	TYR	CZ-CE2-CD2	-6.33	114.11	119.80
1	I	139	LEU	CB-CG-CD2	6.32	121.75	111.00
1	K	228	LEU	CB-CG-CD2	6.32	121.73	111.00
2	F	21	TRP	CD1-CG-CD2	-6.31	101.25	106.30
1	A	436	PHE	CB-CG-CD2	-6.31	116.38	120.80
2	D	449	GLU	OE1-CD-OE2	-6.31	115.73	123.30
1	C	293	MET	CA-CB-CG	6.31	124.02	113.30
2	J	346	TRP	CD1-NE1-CE2	6.31	114.67	109.00
1	C	367	PHE	CB-CG-CD2	6.30	125.21	120.80
1	K	327	ASP	CB-CG-OD2	-6.30	112.63	118.30
1	K	425	TYR	CB-CG-CD1	6.30	124.78	121.00
1	M	159	TYR	CB-CG-CD1	-6.30	117.22	121.00
2	B	83	TYR	CD1-CG-CD2	6.29	124.82	117.90
2	B	447	GLU	OE1-CD-OE2	6.29	130.85	123.30
1	G	436	PHE	CB-CG-CD1	-6.29	116.40	120.80
1	M	173	PRO	N-CA-CB	6.29	110.84	103.30
1	C	158	GLU	N-CA-CB	-6.29	99.29	110.60
1	I	183	TYR	CB-CG-CD2	6.28	124.77	121.00
2	L	346	TRP	CE2-CD2-CE3	-6.28	111.17	118.70
1	I	422	TYR	CB-CG-CD2	6.27	124.76	121.00
1	G	425	TYR	CB-CG-CD1	6.26	124.76	121.00
2	N	1	MET	CB-CA-C	6.26	122.93	110.40
1	K	101	TRP	CD1-NE1-CE2	6.26	114.64	109.00
2	H	210	TYR	CB-CG-CD2	-6.26	117.24	121.00
2	F	224	TYR	CB-CG-CD2	-6.24	117.25	121.00
1	I	351	THR	OG1-CB-CG2	-6.24	95.65	110.00
1	C	125	GLU	OE1-CD-OE2	-6.24	115.81	123.30
1	C	378	PHE	CB-CG-CD1	6.24	125.17	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	H	308	ARG	CD-NE-CZ	6.23	132.33	123.60
2	H	360	PRO	N-CA-CB	6.23	110.78	103.30
2	L	180	ALA	CB-CA-C	6.23	119.44	110.10
3	O	310	TYR	CB-CG-CD2	-6.23	117.26	121.00
1	M	368	ILE	CA-CB-CG1	6.23	122.83	111.00
2	L	163	LYS	N-CA-CB	-6.22	99.40	110.60
2	D	264	ARG	CD-NE-CZ	6.22	132.31	123.60
1	G	108	GLU	OE1-CD-OE2	-6.22	115.83	123.30
2	N	49	PHE	CB-CG-CD2	-6.22	116.44	120.80
2	H	138	PHE	CB-CG-CD1	-6.22	116.45	120.80
2	B	423	GLU	O-C-N	-6.22	112.75	122.70
2	N	149	PHE	CB-CG-CD1	-6.22	116.45	120.80
2	N	244	PHE	CB-CG-CD2	-6.21	116.45	120.80
1	I	22	GLU	OE1-CD-OE2	-6.21	115.85	123.30
2	J	213	CYS	CA-CB-SG	-6.20	102.84	114.00
2	J	449	GLU	OE1-CD-OE2	-6.20	115.86	123.30
2	F	418	PHE	CB-CG-CD1	6.20	125.14	120.80
1	K	63	ALA	CB-CA-C	6.20	119.40	110.10
1	K	427	ASP	CB-CG-OD1	6.20	123.88	118.30
1	K	101	TRP	CZ3-CH2-CZ2	-6.19	114.18	121.60
2	F	90	GLU	OE1-CD-OE2	6.17	130.71	123.30
1	K	344	TRP	CB-CG-CD2	6.17	134.62	126.60
2	L	306	ASP	CB-CG-OD2	-6.17	112.75	118.30
2	H	417	GLU	OE1-CD-OE2	-6.16	115.90	123.30
1	C	236	VAL	CA-CB-CG1	6.16	120.14	110.90
1	M	63	ALA	CB-CA-C	6.16	119.34	110.10
1	G	301	ALA	N-CA-CB	6.15	118.71	110.10
1	M	430	ALA	N-CA-CB	-6.15	101.50	110.10
1	G	203	ASP	N-CA-CB	-6.13	99.56	110.60
2	F	98	ASP	OD1-CG-OD2	-6.13	111.66	123.30
2	H	272	TYR	CB-CG-CD1	-6.13	117.32	121.00
2	N	172	TYR	CB-CG-CD2	-6.13	117.32	121.00
2	H	76	ASP	CB-CG-OD1	6.13	123.81	118.30
2	N	138	PHE	CB-CG-CD1	-6.13	116.51	120.80
1	A	282	ARG	CD-NE-CZ	6.12	132.17	123.60
2	B	147	SER	N-CA-CB	-6.12	101.31	110.50
2	F	21	TRP	CE2-CD2-CG	6.12	112.20	107.30
1	G	133	PHE	CB-CG-CD2	6.12	125.08	120.80
2	L	346	TRP	CD2-CE2-CZ2	6.12	129.64	122.30
1	M	327	ASP	CB-CG-OD2	-6.12	112.80	118.30
2	H	220	GLU	N-CA-CB	-6.11	99.60	110.60
2	N	327	ASP	CB-CG-OD2	-6.11	112.80	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	177	ASP	CB-CG-OD2	-6.10	112.81	118.30
1	I	281	TYR	CB-CG-CD1	-6.10	117.34	121.00
2	F	418	PHE	CB-CG-CD2	-6.09	116.53	120.80
1	C	39	ASP	CB-CG-OD2	-6.09	112.82	118.30
2	D	445	GLU	OE1-CD-OE2	-6.09	115.99	123.30
2	N	21	TRP	CD1-NE1-CE2	6.09	114.48	109.00
1	K	342	VAL	CA-CB-CG2	-6.08	101.78	110.90
2	N	39	ASP	CB-CG-OD1	-6.08	112.83	118.30
1	K	390	ARG	NE-CZ-NH1	6.08	123.34	120.30
2	F	272	TYR	CB-CG-CD1	-6.07	117.36	121.00
2	J	254	GLU	N-CA-CB	-6.07	99.67	110.60
2	L	46	ASP	O-C-N	-6.07	112.98	122.70
2	L	357	TYR	CB-CG-CD1	6.06	124.64	121.00
2	B	319	TYR	CB-CG-CD1	-6.06	117.36	121.00
1	I	36	TYR	CG-CD1-CE1	-6.06	116.45	121.30
1	A	45	GLU	CA-CB-CG	6.05	126.71	113.40
2	B	272	TYR	CG-CD2-CE2	-6.05	116.46	121.30
2	N	446	GLU	OE1-CD-OE2	-6.04	116.05	123.30
2	J	346	TRP	CB-CG-CD1	-6.04	119.15	127.00
2	N	204	VAL	O-C-N	-6.04	113.04	122.70
1	C	294	PHE	CG-CD1-CE1	-6.03	114.16	120.80
2	L	281	ALA	N-CA-CB	-6.03	101.65	110.10
2	F	391	LEU	CB-CG-CD2	6.03	121.25	111.00
2	H	255	PHE	CB-CG-CD1	-6.03	116.58	120.80
2	H	275	VAL	CA-CB-CG2	6.03	119.94	110.90
2	N	328	VAL	CA-CB-CG2	6.03	119.94	110.90
1	C	114	ASP	CB-CG-OD2	6.02	123.72	118.30
2	B	179	THR	CA-CB-CG2	6.02	120.83	112.40
2	D	137	VAL	CB-CA-C	6.02	122.83	111.40
2	L	100	ALA	CB-CA-C	6.02	119.13	110.10
1	E	182	PRO	N-CA-CB	6.01	110.51	103.30
1	I	87	PRO	CA-N-CD	-6.00	103.11	111.50
2	L	367	ASP	O-C-N	-6.00	113.10	122.70
1	I	199	THR	CA-CB-CG2	5.99	120.79	112.40
1	I	236	VAL	CA-CB-CG1	5.99	119.88	110.90
3	O	291	CYS	CA-CB-SG	-5.99	103.23	114.00
1	K	110	ALA	CB-CA-C	5.98	119.08	110.10
2	L	214	ARG	CD-NE-CZ	5.98	131.98	123.60
2	D	138	PHE	CB-CG-CD1	-5.98	116.61	120.80
1	A	193	VAL	CG1-CB-CG2	-5.98	101.34	110.90
2	B	357	TYR	CB-CG-CD1	-5.97	117.42	121.00
2	J	414	GLU	CB-CA-C	5.97	122.33	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	251	ASP	CB-CG-OD1	-5.97	112.93	118.30
1	C	106	TYR	CB-CG-CD1	-5.96	117.42	121.00
2	L	346	TRP	CE2-CD2-CG	5.96	112.07	107.30
1	C	113	VAL	CA-CB-CG2	5.96	119.83	110.90
1	G	113	VAL	CA-CB-CG2	5.96	119.83	110.90
1	A	113	VAL	CA-CB-CG1	5.95	119.83	110.90
1	G	404	ASP	N-CA-CB	-5.95	99.88	110.60
1	K	66	VAL	CG1-CB-CG2	-5.95	101.38	110.90
2	J	414	GLU	OE1-CD-OE2	-5.95	116.17	123.30
2	L	132	LEU	CB-CA-C	5.95	121.50	110.20
2	J	362	VAL	CA-CB-CG1	5.94	119.81	110.90
2	L	395	PHE	CB-CG-CD2	-5.94	116.64	120.80
2	H	172	TYR	CD1-CG-CD2	5.94	124.44	117.90
2	H	83	TYR	N-CA-CB	-5.94	99.91	110.60
2	L	103	TYR	CB-CG-CD1	5.93	124.56	121.00
2	D	22	GLU	OE1-CD-OE2	-5.93	116.18	123.30
2	J	389	ALA	CB-CA-C	-5.93	101.20	110.10
2	F	296	PHE	CB-CG-CD2	-5.93	116.65	120.80
2	J	172	TYR	CB-CG-CD1	-5.93	117.44	121.00
2	F	87	PHE	CB-CG-CD1	5.93	124.95	120.80
2	D	98	ASP	CB-CG-OD2	-5.92	112.97	118.30
2	H	432	TYR	CD1-CE1-CZ	-5.92	114.47	119.80
2	N	399	TYR	CB-CG-CD2	-5.92	117.45	121.00
1	C	270	PHE	CB-CG-CD1	-5.92	116.66	120.80
2	H	382	THR	OG1-CB-CG2	-5.92	96.39	110.00
1	K	68	LEU	CB-CG-CD1	-5.92	100.94	111.00
1	I	283	ALA	N-CA-CB	-5.92	101.82	110.10
2	D	185	TYR	CB-CG-CD1	5.92	124.55	121.00
1	E	343	GLU	OE1-CD-OE2	-5.91	116.21	123.30
1	G	313	VAL	CG1-CB-CG2	-5.91	101.45	110.90
2	N	314	ALA	CB-CA-C	5.90	118.95	110.10
1	E	445	ALA	CB-CA-C	5.90	118.95	110.10
1	M	51	TYR	CA-CB-CG	5.90	124.61	113.40
1	G	49	VAL	CG1-CB-CG2	-5.90	101.46	110.90
2	L	431	ASP	CB-CG-OD1	5.90	123.61	118.30
2	F	94	THR	C-N-CA	5.89	134.68	122.30
2	H	33	ASP	CB-CG-OD2	-5.89	112.99	118.30
2	J	69	ASP	CB-CG-OD2	5.89	123.61	118.30
2	B	371	VAL	CG1-CB-CG2	5.89	120.33	110.90
2	B	364	PRO	N-CD-CG	5.89	112.03	103.20
2	F	46	ASP	C-N-CA	5.88	136.41	121.70
1	E	189	VAL	CA-CB-CG1	5.88	119.72	110.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	N	120	ASP	CB-CG-OD1	5.88	123.59	118.30
2	B	375	VAL	O-C-N	-5.88	113.29	122.70
2	N	378	LEU	O-C-N	-5.88	113.30	122.70
2	B	103	TYR	CG-CD1-CE1	-5.86	116.61	121.30
2	D	87	PHE	CB-CG-CD1	-5.86	116.70	120.80
2	J	90	GLU	OE1-CD-OE2	-5.85	116.28	123.30
2	B	435	VAL	CA-CB-CG2	5.85	119.68	110.90
1	G	101	TRP	CD2-CE3-CZ3	5.84	126.40	118.80
1	G	131	GLN	CG-CD-NE2	5.84	130.73	116.70
2	N	21	TRP	CE2-CD2-CG	5.84	111.98	107.30
2	L	154	MET	CG-SD-CE	-5.84	90.86	100.20
1	C	408	PHE	CB-CG-CD1	-5.83	116.72	120.80
1	E	51	TYR	CB-CG-CD1	-5.83	117.50	121.00
1	K	344	TRP	NE1-CE2-CD2	-5.83	101.47	107.30
2	L	53	PHE	CB-CG-CD1	-5.83	116.72	120.80
1	M	67	ASP	CB-CG-OD2	-5.83	113.05	118.30
2	B	244	PHE	O-C-N	-5.83	113.37	122.70
1	C	193	VAL	CG1-CB-CG2	-5.83	101.58	110.90
2	L	172	TYR	CD1-CE1-CZ	5.83	125.04	119.80
1	E	285	THR	CA-CB-CG2	5.82	120.55	112.40
2	H	67	PHE	CB-CG-CD1	-5.82	116.72	120.80
1	A	137	HIS	CA-CB-CG	5.82	123.50	113.60
2	H	211	ASP	CB-CG-OD2	5.82	123.54	118.30
2	J	257	THR	CA-CB-OG1	5.82	121.22	109.00
2	J	83	TYR	CG-CD1-CE1	5.82	125.95	121.30
2	L	68	VAL	CA-CB-CG1	5.82	119.63	110.90
1	G	425	TYR	CG-CD1-CE1	-5.81	116.65	121.30
1	K	118	ASP	CB-CG-OD1	-5.81	113.07	118.30
2	L	58	ALA	CB-CA-C	5.81	118.81	110.10
1	A	189	VAL	CA-CB-CG2	-5.80	102.20	110.90
1	C	101	TRP	CB-CG-CD1	-5.80	119.46	127.00
1	C	394	PHE	CB-CG-CD2	5.80	124.86	120.80
1	E	59	TYR	CB-CG-CD1	-5.80	117.52	121.00
1	I	377	LEU	CB-CG-CD1	5.80	120.85	111.00
2	J	362	VAL	CG1-CB-CG2	-5.79	101.63	110.90
2	H	346	TRP	NE1-CE2-CD2	-5.79	101.51	107.30
2	H	420	GLU	OE1-CD-OE2	-5.79	116.35	123.30
1	A	62	ARG	CD-NE-CZ	5.78	131.70	123.60
1	A	255	VAL	CA-CB-CG1	5.78	119.57	110.90
2	H	101	ASN	CB-CA-C	5.78	121.96	110.40
2	F	83	TYR	CB-CG-CD1	-5.78	117.53	121.00
2	L	20	CYS	CA-CB-SG	-5.77	103.61	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	N	388	TRP	CZ3-CH2-CZ2	-5.77	114.67	121.60
1	C	71	GLY	O-C-N	-5.77	113.47	122.70
2	H	296	PHE	CB-CG-CD2	-5.77	116.76	120.80
1	A	203	ASP	CB-CG-OD1	5.76	123.49	118.30
2	B	183	GLU	CA-CB-CG	5.76	126.08	113.40
1	G	208	TYR	CA-CB-CG	5.76	124.35	113.40
1	G	180	VAL	CA-CB-CG2	5.76	119.54	110.90
2	H	121	ARG	CD-NE-CZ	5.76	131.66	123.60
2	L	240	ALA	CB-CA-C	5.76	118.74	110.10
1	G	66	VAL	CG1-CB-CG2	-5.76	101.69	110.90
2	L	130	THR	CA-CB-CG2	5.75	120.45	112.40
1	E	313	VAL	CG1-CB-CG2	-5.75	101.70	110.90
1	E	316	VAL	CA-CB-CG2	5.74	119.52	110.90
2	J	169	PHE	CB-CG-CD1	-5.74	116.78	120.80
1	K	351	THR	CA-CB-CG2	5.74	120.43	112.40
2	F	288	VAL	CA-CB-CG2	-5.74	102.30	110.90
2	N	281	ALA	N-CA-CB	-5.74	102.07	110.10
2	B	262	TYR	CG-CD2-CE2	-5.73	116.71	121.30
1	A	380	ARG	CD-NE-CZ	5.73	131.62	123.60
2	L	161	TYR	CG-CD2-CE2	-5.73	116.72	121.30
2	B	319	TYR	CG-CD1-CE1	-5.72	116.72	121.30
2	N	161	TYR	CD1-CG-CD2	5.72	124.20	117.90
2	F	252	LEU	N-CA-CB	-5.72	98.96	110.40
2	F	312	TYR	CG-CD2-CE2	-5.72	116.72	121.30
2	H	294	ALA	N-CA-CB	-5.72	102.09	110.10
2	B	388	TRP	NE1-CE2-CD2	-5.72	101.58	107.30
2	F	160	ASP	CB-CA-C	5.71	121.82	110.40
1	I	408	PHE	CZ-CE2-CD2	-5.71	113.25	120.10
2	D	167	LEU	CB-CG-CD2	5.71	120.70	111.00
2	D	207	GLU	OE1-CD-OE2	-5.70	116.45	123.30
2	B	282	TYR	CB-CG-CD2	5.70	124.42	121.00
2	L	325	PRO	N-CD-CG	5.69	111.74	103.20
2	J	25	CYS	CA-CB-SG	-5.69	103.75	114.00
2	L	407	TRP	CE2-CD2-CE3	-5.69	111.88	118.70
2	L	169	PHE	CG-CD1-CE1	5.68	127.05	120.80
1	C	288	GLU	OE1-CD-OE2	5.68	130.12	123.30
2	H	193	THR	CA-CB-CG2	-5.68	104.44	112.40
1	E	436	PHE	CB-CG-CD1	-5.68	116.82	120.80
2	H	407	TRP	NE1-CE2-CZ2	5.68	136.65	130.40
2	D	275	VAL	CA-CB-CG2	5.68	119.42	110.90
2	L	52	PHE	CZ-CE2-CD2	5.67	126.91	120.10
2	N	67	PHE	CB-CG-CD2	-5.67	116.83	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	H	172	TYR	CG-CD2-CE2	-5.67	116.76	121.30
2	F	281	ALA	N-CA-CB	-5.67	102.17	110.10
2	F	395	PHE	CG-CD2-CE2	-5.66	114.57	120.80
1	K	21	TRP	NE1-CE2-CD2	-5.66	101.64	107.30
1	G	158	GLU	OE1-CD-OE2	-5.66	116.51	123.30
2	H	172	TYR	CG-CD1-CE1	-5.65	116.78	121.30
1	M	39	ASP	OD1-CG-OD2	-5.65	112.57	123.30
1	M	307	HIS	C-N-CA	5.64	134.15	122.30
1	C	212	PHE	CB-CG-CD2	-5.64	116.85	120.80
2	F	425	MET	CG-SD-CE	5.64	109.22	100.20
2	J	388	TRP	NE1-CE2-CD2	-5.64	101.66	107.30
1	K	76	VAL	CA-CB-CG1	5.64	119.35	110.90
2	L	47	ASP	CB-CA-C	5.64	121.67	110.40
1	A	54	ALA	CB-CA-C	5.63	118.55	110.10
2	D	407	TRP	CB-CG-CD1	-5.63	119.68	127.00
2	L	407	TRP	CE2-CD2-CG	5.63	111.80	107.30
2	J	238	ILE	O-C-N	-5.63	113.69	122.70
1	K	211	CYS	CA-CB-SG	-5.62	103.88	114.00
1	K	21	TRP	CE2-CD2-CG	5.62	111.80	107.30
1	E	398	TYR	CB-CG-CD1	5.61	124.37	121.00
2	H	100	ALA	CB-CA-C	5.61	118.52	110.10
2	J	282	TYR	CG-CD2-CE2	-5.61	116.81	121.30
1	I	445	ALA	CB-CA-C	5.61	118.52	110.10
1	A	183	TYR	CB-CG-CD2	-5.61	117.64	121.00
1	C	436	PHE	CG-CD2-CE2	-5.61	114.63	120.80
1	I	36	TYR	CD1-CE1-CZ	5.61	124.85	119.80
1	C	34	GLY	CA-C-O	-5.61	110.51	120.60
1	A	128	ASP	CB-CG-OD2	5.60	123.34	118.30
2	H	424	ASP	CB-CG-OD1	5.60	123.34	118.30
1	A	159	TYR	CB-CG-CD2	-5.60	117.64	121.00
2	F	320	ARG	CD-NE-CZ	5.60	131.44	123.60
1	I	260	PHE	CB-CG-CD1	5.60	124.72	120.80
1	M	59	TYR	CB-CG-CD2	5.60	124.36	121.00
1	C	194	GLU	OE1-CD-OE2	-5.60	116.58	123.30
1	C	321	MET	N-CA-CB	-5.60	100.52	110.60
1	E	306	ARG	CD-NE-CZ	5.59	131.43	123.60
2	J	65	ALA	N-CA-CB	-5.59	102.27	110.10
1	M	436	PHE	CB-CG-CD1	-5.59	116.89	120.80
1	I	116	VAL	CA-CB-CG1	-5.58	102.53	110.90
2	H	55	GLU	OE1-CD-OE2	-5.58	116.61	123.30
2	H	245	ASP	CB-CG-OD1	-5.58	113.28	118.30
2	L	79	ARG	CD-NE-CZ	5.58	131.41	123.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	222	PRO	O-C-N	-5.58	113.78	122.70
1	E	327	ASP	CB-CG-OD2	5.58	123.32	118.30
2	L	272	TYR	CB-CG-CD1	-5.58	117.65	121.00
1	C	270	PHE	CB-CG-CD2	5.57	124.70	120.80
1	I	177	ASP	CB-CG-OD1	-5.57	113.28	118.30
1	K	344	TRP	CG-CD2-CE3	-5.57	128.88	133.90
1	C	341	PHE	CB-CG-CD1	-5.57	116.90	120.80
2	D	373	ARG	CD-NE-CZ	5.57	131.40	123.60
2	N	407	TRP	CB-CG-CD1	-5.57	119.76	127.00
2	J	347	CYS	CA-CB-SG	-5.57	103.98	114.00
2	L	322	ASP	CB-CG-OD2	-5.57	113.29	118.30
2	D	404	PHE	CB-CG-CD2	-5.56	116.91	120.80
2	N	135	PHE	CB-CG-CD2	-5.56	116.91	120.80
2	D	405	VAL	CA-CB-CG1	5.56	119.24	110.90
1	E	296	ALA	N-CA-CB	-5.56	102.32	110.10
2	D	262	TYR	CB-CG-CD1	-5.55	117.67	121.00
1	M	320	ARG	CD-NE-CZ	5.55	131.38	123.60
3	O	380	GLU	N-CA-C	5.55	126.00	111.00
2	L	204	VAL	CA-CB-CG1	5.55	119.23	110.90
2	D	339	ARG	CD-NE-CZ	5.55	131.37	123.60
2	F	395	PHE	CB-CG-CD2	-5.55	116.92	120.80
1	G	91	VAL	CA-CB-CG2	5.55	119.22	110.90
1	M	255	VAL	CG1-CB-CG2	-5.54	102.03	110.90
1	C	367	PHE	CB-CG-CD1	-5.54	116.92	120.80
2	H	327	ASP	CB-CG-OD2	-5.54	113.32	118.30
2	L	272	TYR	CB-CG-CD2	-5.54	117.68	121.00
1	I	391	ARG	NE-CZ-NH1	5.54	123.07	120.30
1	A	156	ARG	N-CA-CB	-5.54	100.64	110.60
2	F	166	LYS	N-CA-CB	-5.54	100.64	110.60
1	G	30	ILE	CA-CB-CG1	5.54	121.52	111.00
2	F	312	TYR	CB-CG-CD1	-5.53	117.68	121.00
1	C	346	PRO	N-CD-CG	5.53	111.49	103.20
2	N	46	ASP	O-C-N	-5.53	113.86	122.70
1	K	340	TYR	CD1-CG-CD2	5.53	123.98	117.90
1	A	422	TYR	CB-CG-CD2	-5.52	117.69	121.00
2	J	272	TYR	CB-CG-CD2	-5.52	117.69	121.00
2	D	250	VAL	CG1-CB-CG2	-5.52	102.07	110.90
3	O	218	PRO	N-CA-CB	5.52	109.92	103.30
2	H	180	ALA	CB-CA-C	5.51	118.37	110.10
2	J	49	PHE	CB-CG-CD2	-5.51	116.94	120.80
2	D	135	PHE	CB-CG-CD1	-5.51	116.94	120.80
1	E	287	PRO	N-CA-CB	5.51	109.91	103.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	425	TYR	CB-CG-CD1	-5.51	117.70	121.00
1	G	320	ARG	CB-CA-C	5.51	121.41	110.40
1	I	236	VAL	CG1-CB-CG2	-5.51	102.09	110.90
2	N	64	ARG	CD-NE-CZ	5.51	131.31	123.60
1	I	23	VAL	CA-CB-CG1	5.50	119.16	110.90
2	B	428	LEU	CB-CG-CD1	5.50	120.36	111.00
1	E	399	THR	O-C-N	-5.50	113.85	123.20
2	J	306	ASP	CB-CA-C	5.50	121.41	110.40
2	L	46	ASP	CB-CG-OD1	-5.50	113.35	118.30
1	C	197	ASP	CB-CG-OD1	5.50	123.25	118.30
2	L	193	THR	CA-CB-OG1	5.50	120.54	109.00
1	G	232	THR	CA-CB-CG2	5.50	120.09	112.40
1	A	404	ASP	CB-CG-OD2	5.49	123.25	118.30
2	B	193	THR	O-C-N	-5.49	113.91	122.70
2	N	226	ASN	CA-CB-CG	5.49	125.49	113.40
2	J	55	GLU	OE1-CD-OE2	-5.49	116.71	123.30
2	J	214	ARG	CA-CB-CG	5.49	125.48	113.40
2	N	159	VAL	CG1-CB-CG2	-5.49	102.12	110.90
2	D	367	ASP	CB-CG-OD1	5.49	123.24	118.30
2	D	159	VAL	CG1-CB-CG2	-5.49	102.12	110.90
1	E	170	VAL	CA-CB-CG2	5.49	119.13	110.90
1	G	20	PHE	CB-CG-CD2	-5.49	116.96	120.80
1	A	341	PHE	CB-CG-CD1	5.48	124.64	120.80
1	I	305	PRO	N-CA-CB	5.48	109.87	103.30
2	F	360	PRO	CA-N-CD	-5.47	103.84	111.50
2	D	371	VAL	CA-CB-CG1	5.47	119.11	110.90
1	I	398	TYR	CG-CD2-CE2	-5.47	116.92	121.30
2	D	245	ASP	CB-CG-OD1	-5.47	113.38	118.30
2	B	108	TYR	CA-CB-CG	5.47	123.79	113.40
2	F	5	ILE	CG1-CB-CG2	-5.47	99.37	111.40
2	D	251	ASP	CB-CG-OD2	5.46	123.22	118.30
2	F	360	PRO	N-CA-CB	5.46	109.86	103.30
2	H	69	ASP	OD1-CG-OD2	-5.46	112.92	123.30
2	D	351	PHE	CB-CG-CD2	-5.46	116.98	120.80
1	K	372	THR	CA-CB-CG2	-5.46	104.75	112.40
2	L	67	PHE	CB-CG-CD1	5.46	124.62	120.80
2	J	346	TRP	N-CA-CB	-5.46	100.78	110.60
1	C	385	PHE	CB-CG-CD1	-5.46	116.98	120.80
2	N	451	TYR	CB-CG-CD2	-5.46	117.73	121.00
1	C	286	VAL	CA-CB-CG1	5.45	119.08	110.90
2	F	333	ALA	N-CA-CB	-5.45	102.46	110.10
1	K	41	ASP	N-CA-CB	-5.45	100.78	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	H	267	PHE	CB-CG-CD1	5.45	124.62	120.80
2	F	294	ALA	N-CA-CB	-5.45	102.47	110.10
2	J	83	TYR	CB-CG-CD2	5.45	124.27	121.00
1	K	318	ARG	CD-NE-CZ	5.45	131.23	123.60
2	D	172	TYR	CZ-CE2-CD2	-5.44	114.90	119.80
2	H	375	VAL	CA-CB-CG2	5.44	119.06	110.90
1	K	263	LEU	CB-CA-C	5.44	120.54	110.20
1	K	358	PRO	O-C-N	-5.44	113.99	122.70
2	L	319	TYR	CG-CD1-CE1	-5.44	116.95	121.30
1	E	121	ARG	CD-NE-CZ	5.44	131.21	123.60
2	H	446	GLU	OE1-CD-OE2	-5.44	116.77	123.30
1	C	401	GLU	OE1-CD-OE2	-5.43	116.78	123.30
1	E	419	VAL	CG1-CB-CG2	-5.43	102.21	110.90
2	F	161	TYR	CZ-CE2-CD2	-5.43	114.92	119.80
1	G	380	ARG	CD-NE-CZ	5.42	131.19	123.60
2	H	106	GLY	CA-C-O	-5.42	110.85	120.60
1	I	62	ARG	CB-CA-C	5.42	121.24	110.40
1	E	365	ALA	C-N-CA	5.42	135.24	121.70
2	H	54	SER	N-CA-CB	-5.42	102.38	110.50
2	B	220	GLU	OE1-CD-OE2	-5.42	116.80	123.30
1	A	24	ILE	CA-CB-CG2	5.41	121.73	110.90
1	K	123	GLU	O-C-N	-5.41	114.04	122.70
2	N	263	PRO	N-CA-CB	5.41	109.79	103.30
1	G	87	PRO	N-CA-CB	5.41	109.79	103.30
2	N	24	TYR	CA-CB-CG	5.41	123.67	113.40
2	N	334	THR	CA-CB-CG2	-5.41	104.83	112.40
2	L	117	LEU	CA-CB-CG	-5.40	102.87	115.30
2	B	278	ALA	CB-CA-C	5.40	118.20	110.10
2	D	262	TYR	CD1-CG-CD2	5.40	123.84	117.90
2	N	172	TYR	CG-CD2-CE2	-5.40	116.98	121.30
2	D	200	CYS	CB-CA-C	-5.40	99.60	110.40
1	K	237	THR	O-C-N	-5.40	114.06	122.70
2	F	254	GLU	N-CA-CB	-5.40	100.88	110.60
3	O	282	LEU	CB-CG-CD1	5.40	120.17	111.00
2	F	86	LEU	CB-CG-CD1	5.40	120.17	111.00
1	I	349	VAL	CA-CB-CG2	5.39	118.99	110.90
2	L	183	GLU	OE1-CD-OE2	-5.39	116.83	123.30
2	N	230	LEU	CB-CG-CD1	5.39	120.17	111.00
2	D	211	ASP	CB-CG-OD1	5.39	123.15	118.30
2	D	212	ILE	CA-CB-CG2	5.39	121.68	110.90
2	F	433	GLU	OE1-CD-OE2	-5.39	116.84	123.30
2	B	431	ASP	CB-CG-OD2	5.38	123.15	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	405	VAL	CA-CB-CG2	-5.38	102.82	110.90
1	E	31	ASP	N-CA-CB	-5.38	100.91	110.60
1	C	266	PHE	CB-CG-CD2	-5.38	117.03	120.80
1	C	49	VAL	CG1-CB-CG2	-5.38	102.29	110.90
1	C	61	PRO	N-CA-CB	5.38	109.75	103.30
2	L	435	VAL	O-C-N	-5.38	114.06	123.20
2	L	172	TYR	CG-CD1-CE1	-5.38	117.00	121.30
1	G	307	HIS	CA-CB-CG	5.37	122.74	113.60
1	A	120	VAL	CG1-CB-CG2	-5.37	102.31	110.90
1	A	342	VAL	CG1-CB-CG2	-5.37	102.31	110.90
2	B	62	VAL	CA-CB-CG1	5.37	118.95	110.90
1	E	302	ALA	CB-CA-C	5.37	118.15	110.10
1	C	397	TRP	NE1-CE2-CD2	-5.36	101.94	107.30
2	J	327	ASP	CB-CG-OD1	5.36	123.12	118.30
2	F	288	VAL	CG1-CB-CG2	-5.35	102.34	110.90
2	L	440	VAL	CG1-CB-CG2	-5.35	102.34	110.90
1	M	207	LEU	CB-CG-CD2	5.35	120.09	111.00
2	H	395	PHE	CB-CG-CD1	-5.35	117.06	120.80
2	J	98	ASP	OD1-CG-OD2	-5.35	113.14	123.30
1	K	304	ASP	CB-CG-OD2	-5.34	113.49	118.30
1	K	387	ALA	CB-CA-C	5.34	118.12	110.10
2	L	346	TRP	NE1-CE2-CD2	-5.34	101.96	107.30
1	G	50	TYR	CB-CG-CD2	-5.34	117.80	121.00
1	K	21	TRP	CZ3-CH2-CZ2	-5.34	115.19	121.60
1	G	167	PHE	CB-CG-CD1	-5.34	117.06	120.80
1	K	60	VAL	CA-CB-CG2	-5.34	102.89	110.90
2	L	415	GLU	OE1-CD-OE2	-5.33	116.90	123.30
1	E	407	GLU	OE1-CD-OE2	-5.33	116.90	123.30
1	A	60	VAL	CA-CB-CG2	5.33	118.90	110.90
1	A	395	LEU	CB-CG-CD1	5.33	120.06	111.00
1	G	441	GLU	OE1-CD-OE2	-5.33	116.90	123.30
1	A	50	TYR	CD1-CE1-CZ	5.33	124.60	119.80
2	F	123	ARG	CD-NE-CZ	5.33	131.06	123.60
2	J	395	PHE	CB-CG-CD1	-5.33	117.07	120.80
2	J	405	VAL	CG1-CB-CG2	-5.33	102.38	110.90
1	C	327	ASP	CB-CG-OD2	5.33	123.09	118.30
1	A	161	ASP	CB-CG-OD2	-5.32	113.51	118.30
2	F	108	TYR	CG-CD1-CE1	-5.32	117.04	121.30
1	I	55	ALA	CB-CA-C	5.32	118.09	110.10
2	N	327	ASP	CB-CG-OD1	5.32	123.09	118.30
1	E	302	ALA	O-C-N	-5.32	114.18	122.70
1	C	431	ASP	CB-CG-OD1	-5.32	113.51	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	L	418	PHE	O-C-N	-5.32	114.19	122.70
1	E	130	LEU	CB-CG-CD2	5.32	120.04	111.00
1	M	67	ASP	CB-CG-OD1	5.32	123.08	118.30
2	N	357	TYR	CG-CD2-CE2	-5.32	117.05	121.30
1	C	321	MET	O-C-N	5.31	131.20	122.70
2	F	40	LYS	N-CA-CB	-5.31	101.04	110.60
1	I	317	PHE	CD1-CG-CD2	5.31	125.20	118.30
1	C	73	MET	CA-C-O	-5.31	108.96	120.10
2	D	262	TYR	CG-CD2-CE2	-5.31	117.05	121.30
1	M	50	TYR	CB-CG-CD2	5.31	124.18	121.00
2	J	346	TRP	CB-CA-C	5.30	121.01	110.40
2	D	375	VAL	CG1-CB-CG2	-5.30	102.42	110.90
2	F	104	ALA	N-CA-CB	-5.30	102.68	110.10
2	L	193	THR	OG1-CB-CG2	-5.30	97.81	110.00
3	O	283	ASP	CB-CG-OD1	5.30	123.07	118.30
2	H	116	ASP	CB-CG-OD1	5.30	123.07	118.30
2	D	388	TRP	NE1-CE2-CZ2	5.29	136.22	130.40
1	G	169	VAL	CA-CB-CG2	5.29	118.83	110.90
1	G	427	ASP	CB-CG-OD1	5.29	123.06	118.30
2	F	202	PHE	CG-CD1-CE1	5.29	126.61	120.80
1	G	242	PHE	CB-CG-CD2	5.29	124.50	120.80
1	K	212	PHE	CB-CG-CD2	-5.29	117.10	120.80
1	M	383	GLU	OE1-CD-OE2	-5.28	116.96	123.30
3	O	258	SER	N-CA-CB	-5.28	102.58	110.50
2	B	301	GLN	CB-CA-C	5.28	120.96	110.40
1	K	228	LEU	CB-CG-CD1	-5.28	102.02	111.00
2	D	3	GLU	CB-CA-C	-5.28	99.84	110.40
2	D	138	PHE	N-CA-CB	-5.28	101.10	110.60
1	G	31	ASP	CB-CG-OD2	5.28	123.05	118.30
1	K	303	CYS	CB-CA-C	5.28	120.95	110.40
2	J	105	ARG	CD-NE-CZ	5.28	130.99	123.60
2	D	262	TYR	CD1-CE1-CZ	-5.27	115.05	119.80
1	E	283	ALA	CB-CA-C	5.27	118.01	110.10
1	K	342	VAL	CA-CB-CG1	5.27	118.81	110.90
2	F	407	TRP	CE2-CD2-CG	5.27	111.52	107.30
2	H	433	GLU	OE1-CD-OE2	-5.27	116.98	123.30
2	N	170	SER	CB-CA-C	5.27	120.11	110.10
2	N	367	ASP	CB-CG-OD2	5.27	123.04	118.30
2	J	258	ASN	CB-CA-C	5.27	120.93	110.40
2	F	241	SER	N-CA-CB	-5.26	102.60	110.50
2	J	99	ALA	N-CA-CB	-5.26	102.73	110.10
2	L	287	SER	O-C-N	-5.26	114.28	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	G	352	ALA	CB-CA-C	-5.26	102.21	110.10
2	D	450	GLU	OE1-CD-OE2	-5.25	117.00	123.30
2	N	125	LEU	N-CA-CB	-5.25	99.89	110.40
1	A	385	PHE	CB-CG-CD1	-5.25	117.12	120.80
1	C	33	THR	C-N-CA	5.25	133.33	122.30
1	A	212	PHE	CB-CG-CD1	5.25	124.47	120.80
1	E	190	HIS	CA-CB-CG	5.25	122.52	113.60
1	G	189	VAL	CG1-CB-CG2	-5.25	102.50	110.90
2	L	295	CYS	CA-CB-SG	-5.25	104.55	114.00
2	N	147	SER	CB-CA-C	5.25	120.07	110.10
1	E	347	ASN	CA-CB-CG	5.25	124.94	113.40
1	E	258	VAL	CA-CB-CG2	-5.24	103.04	110.90
1	K	130	LEU	O-C-N	-5.24	114.31	122.70
1	K	320	ARG	CD-NE-CZ	5.24	130.94	123.60
1	K	159	TYR	CB-CG-CD2	5.24	124.14	121.00
1	C	196	THR	CA-CB-OG1	5.23	119.99	109.00
1	I	341	PHE	CB-CG-CD2	-5.23	117.14	120.80
1	M	260	PHE	CB-CG-CD1	-5.23	117.14	120.80
2	N	207	GLU	OE1-CD-OE2	-5.23	117.02	123.30
2	B	312	TYR	CG-CD2-CE2	-5.23	117.12	121.30
1	E	359	ARG	CG-CD-NE	5.23	122.78	111.80
1	M	341	PHE	CZ-CE2-CD2	-5.23	113.83	120.10
2	D	349	THR	CA-CB-CG2	5.22	119.71	112.40
2	F	384	ILE	CA-CB-CG1	5.22	120.92	111.00
2	L	83	TYR	CD1-CG-CD2	5.22	123.64	117.90
2	L	349	THR	O-C-N	-5.22	114.32	123.20
2	N	259	LEU	CB-CG-CD2	5.22	119.88	111.00
1	A	262	ARG	O-C-N	-5.22	114.35	122.70
2	J	386	GLU	OE1-CD-OE2	-5.22	117.04	123.30
1	K	118	ASP	CB-CG-OD2	5.22	123.00	118.30
2	H	217	LEU	CB-CG-CD1	5.22	119.87	111.00
2	J	307	PRO	N-CA-CB	5.22	109.56	103.30
2	D	100	ALA	CB-CA-C	5.21	117.92	110.10
1	E	118	ASP	N-CA-CB	-5.21	101.21	110.60
1	G	228	LEU	CB-CG-CD1	-5.21	102.14	111.00
2	B	357	TYR	CA-CB-CG	5.21	123.31	113.40
1	K	21	TRP	O-C-N	-5.21	114.36	122.70
2	L	161	TYR	CD1-CG-CD2	5.21	123.63	117.90
2	L	303	VAL	CG1-CB-CG2	-5.21	102.56	110.90
2	J	39	ASP	CB-CG-OD2	5.21	122.99	118.30
2	H	298	PRO	N-CA-CB	5.21	109.55	103.30
1	C	152	ILE	CB-CA-C	5.21	122.01	111.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	H	411	GLU	OE1-CD-OE2	-5.21	117.05	123.30
2	D	450	GLU	N-CA-CB	-5.20	101.23	110.60
2	L	312	TYR	CB-CG-CD2	5.20	124.12	121.00
2	D	357	TYR	CE1-CZ-CE2	5.20	128.12	119.80
2	L	407	TRP	CD2-CE3-CZ3	5.20	125.56	118.80
1	A	344	TRP	CD1-NE1-CE2	5.20	113.67	109.00
1	G	349	VAL	CA-CB-CG1	5.19	118.69	110.90
1	K	344	TRP	CE2-CD2-CG	5.19	111.45	107.30
1	M	60	VAL	CB-CA-C	-5.19	101.53	111.40
1	E	3	GLU	C-N-CA	5.19	134.68	121.70
2	N	130	THR	N-CA-CB	5.19	120.16	110.30
2	H	388	TRP	CB-CG-CD1	-5.19	120.25	127.00
1	C	101	TRP	CD1-NE1-CE2	5.19	113.67	109.00
2	F	211	ASP	CB-CG-OD2	5.19	122.97	118.30
2	N	69	ASP	CB-CG-OD2	5.19	122.97	118.30
1	M	129	CYS	CA-CB-SG	-5.19	104.67	114.00
2	N	175	PRO	N-CA-CB	5.18	109.52	103.30
1	C	159	TYR	CG-CD1-CE1	-5.18	117.15	121.30
2	D	357	TYR	CD1-CE1-CZ	-5.18	115.14	119.80
1	G	167	PHE	CZ-CE2-CD2	-5.18	113.88	120.10
1	I	222	TYR	CB-CG-CD2	-5.18	117.89	121.00
2	N	21	TRP	NE1-CE2-CZ2	5.18	136.10	130.40
1	E	234	SER	C-N-CA	5.18	133.18	122.30
1	G	69	GLU	OE1-CD-OE2	-5.18	117.08	123.30
1	G	397	TRP	CD1-NE1-CE2	5.18	113.66	109.00
1	I	63	ALA	CA-C-N	-5.18	105.81	117.20
1	C	426	GLN	CA-CB-CG	5.18	124.79	113.40
2	D	387	ALA	CB-CA-C	5.18	117.86	110.10
3	O	388	HIS	C-N-CA	5.17	133.16	122.30
1	A	310	TYR	CZ-CE2-CD2	-5.17	115.15	119.80
1	K	91	VAL	CG1-CB-CG2	-5.17	102.63	110.90
3	O	259	LYS	O-C-N	-5.17	114.43	122.70
1	A	326	VAL	CG1-CB-CG2	-5.17	102.63	110.90
2	B	98	ASP	CB-CG-OD1	-5.17	113.65	118.30
3	O	388	HIS	CA-C-N	5.17	126.53	116.20
1	A	21	TRP	CE2-CD2-CG	5.16	111.43	107.30
1	K	407	GLU	OE1-CD-OE2	-5.16	117.10	123.30
1	E	133	PHE	CG-CD1-CE1	5.16	126.48	120.80
2	D	408	TYR	CB-CG-CD1	-5.16	117.91	121.00
2	H	272	TYR	CB-CG-CD2	5.16	124.09	121.00
1	A	340	TYR	CB-CG-CD1	-5.16	117.91	121.00
2	L	279	GLU	OE1-CD-OE2	-5.16	117.11	123.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	200	TYR	CG-CD1-CE1	5.15	125.42	121.30
1	A	262	ARG	CD-NE-CZ	5.15	130.81	123.60
2	D	74	VAL	CG1-CB-CG2	-5.15	102.66	110.90
2	J	292	THR	CA-CB-CG2	5.15	119.61	112.40
1	A	162	ARG	CD-NE-CZ	5.15	130.81	123.60
1	K	407	GLU	CA-CB-CG	-5.15	102.07	113.40
2	D	97	GLU	OE1-CD-OE2	5.15	129.48	123.30
2	D	108	TYR	CB-CG-CD1	-5.15	117.91	121.00
2	J	367	ASP	CB-CG-OD2	5.15	122.93	118.30
2	N	123	ARG	CD-NE-CZ	5.14	130.80	123.60
1	I	130	LEU	CB-CG-CD1	5.14	119.74	111.00
2	L	397	LEU	CA-C-O	-5.14	109.31	120.10
2	F	154	MET	N-CA-CB	-5.14	101.35	110.60
2	F	7	ILE	CA-CB-CG2	-5.14	100.63	110.90
2	F	409	VAL	CA-CB-CG2	5.14	118.60	110.90
1	M	212	PHE	N-CA-CB	-5.14	101.35	110.60
2	H	33	ASP	C-N-CA	5.13	133.08	122.30
1	M	374	ILE	CB-CA-C	5.13	121.87	111.60
1	I	295	ASP	CB-CG-OD2	-5.13	113.68	118.30
2	L	138	PHE	CB-CG-CD1	-5.13	117.21	120.80
2	H	175	PRO	CA-N-CD	-5.13	104.31	111.50
1	M	373	ALA	CB-CA-C	5.13	117.80	110.10
2	B	328	VAL	CG1-CB-CG2	-5.13	102.69	110.90
1	K	253	LEU	CB-CG-CD2	5.13	119.72	111.00
2	J	108	TYR	CB-CG-CD2	5.13	124.08	121.00
2	J	136	LEU	CA-CB-CG	5.12	127.08	115.30
2	J	272	TYR	CA-CB-CG	5.12	123.14	113.40
2	H	351	PHE	CZ-CE2-CD2	-5.12	113.95	120.10
3	O	374	HIS	N-CA-C	5.12	124.83	111.00
1	E	91	VAL	CA-CB-CG2	5.12	118.58	110.90
1	I	128	ASP	CB-CG-OD1	5.12	122.91	118.30
2	L	303	VAL	CA-CB-CG1	5.12	118.57	110.90
1	C	158	GLU	O-C-N	-5.11	114.52	122.70
2	F	252	LEU	CB-CA-C	5.11	119.91	110.20
2	L	405	VAL	CG1-CB-CG2	-5.11	102.72	110.90
1	A	21	TRP	CD1-CG-CD2	-5.11	102.21	106.30
2	B	149	PHE	CD1-CE1-CZ	-5.11	113.97	120.10
1	A	189	VAL	CG1-CB-CG2	-5.11	102.72	110.90
1	C	355	ASP	CB-CA-C	5.11	120.62	110.40
2	H	299	ALA	N-CA-CB	-5.11	102.95	110.10
1	K	359	ARG	CD-NE-CZ	5.10	130.75	123.60
1	A	151	LEU	CB-CG-CD2	-5.10	102.33	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	63	ALA	N-CA-CB	-5.10	102.96	110.10
1	C	169	VAL	CA-CB-CG1	5.10	118.55	110.90
2	N	169	PHE	CZ-CE2-CD2	5.10	126.22	120.10
1	I	408	PHE	CB-CA-C	-5.09	100.21	110.40
2	L	395	PHE	CB-CG-CD1	5.09	124.37	120.80
2	N	319	TYR	CA-CB-CG	5.09	123.08	113.40
2	J	359	PRO	N-CA-CB	5.09	109.41	103.30
2	F	239	THR	CA-CB-CG2	5.09	119.53	112.40
1	I	303	CYS	C-N-CA	5.09	134.43	121.70
2	L	67	PHE	CB-CG-CD2	-5.09	117.24	120.80
2	B	69	ASP	OD1-CG-OD2	-5.09	113.63	123.30
1	K	404	ASP	CB-CG-OD2	-5.09	113.72	118.30
1	K	46	ARG	CD-NE-CZ	5.09	130.72	123.60
1	K	49	VAL	CA-CB-CG2	5.09	118.53	110.90
1	C	66	VAL	CG1-CB-CG2	-5.08	102.77	110.90
1	G	397	TRP	NE1-CE2-CZ2	5.08	135.99	130.40
1	M	51	TYR	CD1-CE1-CZ	-5.08	115.23	119.80
1	A	343	GLU	OE1-CD-OE2	-5.08	117.20	123.30
1	I	398	TYR	CB-CA-C	5.08	120.56	110.40
1	K	266	PHE	CG-CD2-CE2	-5.08	115.21	120.80
1	M	287	PRO	N-CD-CG	5.08	110.82	103.20
2	L	205	ASP	CB-CG-OD1	5.08	122.87	118.30
1	M	414	ASN	CA-CB-CG	-5.08	102.22	113.40
2	D	258	ASN	N-CA-CB	-5.08	101.46	110.60
1	E	436	PHE	CG-CD1-CE1	-5.08	115.21	120.80
2	F	359	PRO	N-CA-CB	5.08	109.39	103.30
2	H	115	ILE	CA-CB-CG1	5.08	120.65	111.00
2	L	363	VAL	CA-CB-CG1	5.08	118.52	110.90
2	D	169	PHE	CB-CG-CD1	-5.08	117.25	120.80
2	H	83	TYR	CZ-CE2-CD2	-5.07	115.23	119.80
2	D	137	VAL	CG1-CB-CG2	-5.07	102.78	110.90
1	K	137	HIS	CA-CB-CG	5.07	122.22	113.60
2	F	312	TYR	CD1-CG-CD2	5.07	123.47	117.90
2	F	346	TRP	NE1-CE2-CD2	-5.07	102.23	107.30
1	G	21	TRP	CE3-CZ3-CH2	5.07	126.78	121.20
1	M	249	ASP	N-CA-CB	-5.07	101.48	110.60
2	B	68	VAL	CG1-CB-CG2	-5.07	102.79	110.90
1	K	376	GLU	OE1-CD-OE2	-5.07	117.22	123.30
1	E	404	ASP	CB-CG-OD1	-5.06	113.75	118.30
1	E	422	TYR	CA-CB-CG	5.06	123.01	113.40
2	F	276	ILE	CA-CB-CG1	5.06	120.61	111.00
1	G	221	THR	CA-CB-OG1	-5.06	98.37	109.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	L	120	ASP	CB-CG-OD2	5.06	122.85	118.30
2	N	136	LEU	C-N-CA	5.06	134.35	121.70
2	H	160	ASP	CB-CG-OD1	-5.06	113.75	118.30
2	J	202	PHE	O-C-N	5.05	130.79	122.70
1	G	340	TYR	CB-CG-CD2	5.05	124.03	121.00
1	E	74	ASP	CA-CB-CG	-5.05	102.29	113.40
2	L	224	TYR	CB-CG-CD1	-5.05	117.97	121.00
2	D	113	GLU	OE1-CD-OE2	-5.05	117.24	123.30
2	F	443	GLU	C-N-CA	5.05	132.90	122.30
1	M	314	ALA	N-CA-CB	-5.05	103.03	110.10
1	G	39	ASP	CB-CG-OD1	5.05	122.84	118.30
1	M	94	GLN	CB-CA-C	5.05	120.49	110.40
1	G	328	GLU	OE1-CD-OE2	-5.04	117.25	123.30
1	I	246	LEU	CB-CG-CD2	5.04	119.58	111.00
3	O	226	VAL	CA-CB-CG2	5.04	118.47	110.90
1	C	136	THR	N-CA-CB	5.04	119.88	110.30
1	A	317	PHE	CB-CG-CD1	5.04	124.33	120.80
1	A	327	ASP	CB-CG-OD2	5.04	122.84	118.30
2	H	376	CYS	N-CA-CB	-5.04	101.53	110.60
2	D	67	PHE	CB-CG-CD1	-5.03	117.28	120.80
1	I	422	TYR	CG-CD1-CE1	-5.03	117.27	121.30
2	F	267	PHE	CB-CG-CD1	5.03	124.32	120.80
2	B	196	GLU	N-CA-CB	-5.03	101.55	110.60
1	E	79	GLY	N-CA-C	5.03	125.68	113.10
1	K	67	ASP	CB-CG-OD1	5.03	122.83	118.30
2	L	196	GLU	OE1-CD-OE2	-5.03	117.26	123.30
1	M	368	ILE	CA-CB-CG2	-5.03	100.84	110.90
2	D	346	TRP	CA-CB-CG	5.03	123.25	113.70
2	H	386	GLU	OE1-CD-OE2	-5.03	117.27	123.30
1	M	100	ASN	N-CA-CB	-5.03	101.55	110.60
2	N	226	ASN	CB-CA-C	5.03	120.45	110.40
1	C	340	TYR	CB-CG-CD2	-5.02	117.99	121.00
2	N	407	TRP	CE2-CD2-CG	-5.02	103.28	107.30
1	A	208	TYR	CA-CB-CG	5.02	122.94	113.40
2	B	11	GLN	CA-CB-CG	5.02	124.44	113.40
1	E	282	ARG	CD-NE-CZ	5.02	130.62	123.60
2	H	284	GLU	OE1-CD-OE2	-5.02	117.28	123.30
2	J	22	GLU	OE1-CD-OE2	-5.02	117.28	123.30
2	L	87	PHE	CB-CG-CD1	-5.02	117.29	120.80
3	O	378	PHE	N-CA-C	5.02	124.55	111.00
2	B	365	GLY	O-C-N	-5.01	114.68	123.20
1	M	430	ALA	CB-CA-C	5.01	117.62	110.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	I	303	CYS	CA-CB-SG	-5.01	104.98	114.00
2	B	319	TYR	CZ-CE2-CD2	-5.01	115.29	119.80
2	H	388	TRP	CD1-NE1-CE2	5.01	113.51	109.00
1	K	65	LEU	CB-CG-CD2	5.01	119.52	111.00
1	C	179	VAL	CA-CB-CG1	5.00	118.41	110.90
1	C	425	TYR	CB-CG-CD1	-5.00	118.00	121.00
1	E	422	TYR	CZ-CE2-CD2	5.00	124.30	119.80
2	B	325	PRO	N-CD-CG	5.00	110.70	103.20
2	D	154	MET	CG-SD-CE	5.00	108.20	100.20

There are no chirality outliers.

All (183) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	208	TYR	Sidechain
1	A	243	PRO	Mainchain
1	A	270	PHE	Sidechain
1	A	398	TYR	Sidechain
1	A	408	PHE	Sidechain
1	A	415	MET	Mainchain
1	A	436	PHE	Sidechain
1	A	51	TYR	Sidechain
2	B	170	SER	Peptide
2	B	209	ILE	Mainchain
2	B	210	TYR	Sidechain
2	B	224	TYR	Sidechain
2	B	24	TYR	Sidechain
2	B	249	ASN	Peptide
2	B	302	MET	Mainchain,Peptide
2	B	319	TYR	Sidechain
2	B	357	TYR	Peptide
2	B	375	VAL	Mainchain
2	B	408	TYR	Sidechain
2	B	439	SER	Peptide
2	B	451	TYR	Sidechain
2	B	53	PHE	Sidechain
2	B	68	VAL	Peptide
2	B	70	LEU	Peptide
2	B	83	TYR	Sidechain
1	C	159	TYR	Sidechain
1	C	200	TYR	Sidechain
1	C	222	TYR	Sidechain

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Mol	Chain	Res	Type	Group
1	C	227	HIS	Sidechain
1	C	307	HIS	Sidechain
1	C	340	TYR	Sidechain
1	C	398	TYR	Sidechain
1	C	5	VAL	Peptide
1	C	51	TYR	Sidechain,Peptide
2	D	107	HIS	Sidechain
2	D	124	LYS	Peptide
2	D	185	TYR	Sidechain
2	D	192	HIS	Sidechain
2	D	210	TYR	Sidechain
2	D	245	ASP	Mainchain
2	D	248	LEU	Peptide
2	D	267	PHE	Sidechain
2	D	282	TYR	Sidechain
2	D	293	ASN	Mainchain
2	D	299	ALA	Mainchain
2	D	337	THR	Mainchain
2	D	357	TYR	Sidechain
2	D	404	PHE	Sidechain
2	D	439	SER	Mainchain
2	D	451	TYR	Sidechain
2	D	53	PHE	Sidechain
2	D	83	TYR	Sidechain
1	E	168	SER	Peptide
1	E	36	TYR	Sidechain
1	E	425	TYR	Sidechain
2	F	108	TYR	Sidechain
2	F	139	HIS	Sidechain
2	F	161	TYR	Sidechain
2	F	202	PHE	Sidechain
2	F	24	TYR	Sidechain
2	F	270	ALA	Peptide
2	F	275	VAL	Mainchain
2	F	302	MET	Peptide
2	F	341	ILE	Peptide
2	F	40	LYS	Mainchain
2	F	61	HIS	Sidechain
2	F	88	HIS	Sidechain
1	G	242	PHE	Sidechain
1	G	260	PHE	Sidechain
1	G	264	HIS	Sidechain

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Mol	Chain	Res	Type	Group
1	G	270	PHE	Sidechain
1	G	292	GLN	Mainchain
1	G	310	TYR	Mainchain
1	G	50	TYR	Sidechain
1	G	51	TYR	Sidechain
1	G	59	TYR	Sidechain
2	H	161	TYR	Sidechain
2	H	172	TYR	Sidechain
2	H	185	TYR	Sidechain
2	H	210	TYR	Sidechain
2	H	225	THR	Mainchain
2	H	238	ILE	Mainchain
2	H	24	TYR	Mainchain
2	H	255	PHE	Sidechain
2	H	265	ILE	Peptide
2	H	272	TYR	Sidechain
2	H	312	TYR	Sidechain
2	H	341	ILE	Peptide
2	H	351	PHE	Sidechain
2	H	353	VAL	Peptide
2	H	357	TYR	Sidechain
2	H	391	LEU	Mainchain
2	H	418	PHE	Mainchain
2	H	48	SER	Peptide
2	H	49	PHE	Sidechain
2	H	53	PHE	Sidechain
2	H	68	VAL	Peptide
2	H	83	TYR	Sidechain
2	H	87	PHE	Mainchain
1	I	1	MET	Peptide
1	I	20	PHE	Sidechain
1	I	21	TRP	Peptide
1	I	266	PHE	Sidechain
1	I	315	ALA	Mainchain
1	I	36	TYR	Sidechain
1	I	422	TYR	Sidechain
1	I	438	GLU	Mainchain
1	I	85	PHE	Sidechain
2	J	136	LEU	Peptide
2	J	170	SER	Peptide
2	J	172	TYR	Sidechain
2	J	202	PHE	Sidechain

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Mol	Chain	Res	Type	Group
2	J	210	TYR	Sidechain
2	J	255	PHE	Sidechain
2	J	272	TYR	Sidechain
2	J	312	TYR	Sidechain
2	J	319	TYR	Sidechain
2	J	356	ASN	Sidechain
2	J	37	PRO	Peptide
2	J	411	GLU	Peptide
2	J	67	PHE	Sidechain,Mainchain
2	J	68	VAL	Peptide
2	J	92	LEU	Mainchain
1	K	106	TYR	Sidechain
1	K	133	PHE	Sidechain
1	K	159	TYR	Sidechain
1	K	263	LEU	Mainchain
1	K	281	TYR	Sidechain
1	K	301	ALA	Mainchain
1	K	347	ASN	Peptide
1	K	36	TYR	Sidechain
1	K	410	GLU	Mainchain
1	K	436	PHE	Sidechain
1	K	51	TYR	Sidechain
1	K	61	PRO	Mainchain
2	L	135	PHE	Sidechain
2	L	141	PHE	Sidechain
2	L	149	PHE	Mainchain
2	L	224	TYR	Sidechain
2	L	266	HIS	Sidechain
2	L	304	LYS	Peptide
2	L	309	HIS	Sidechain
2	L	312	TYR	Sidechain
2	L	399	TYR	Sidechain
2	L	52	PHE	Sidechain
2	L	68	VAL	Peptide
1	M	109	GLY	Mainchain
1	M	128	ASP	Peptide
1	M	183	TYR	Sidechain
1	M	200	TYR	Sidechain
1	M	222	TYR	Sidechain
1	M	227	HIS	Sidechain
1	M	26	ASP	Mainchain
1	M	281	TYR	Sidechain

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Mol	Chain	Res	Type	Group
1	M	309	ARG	Mainchain
1	M	321	MET	Peptide
1	M	340	TYR	Sidechain
1	M	341	PHE	Sidechain
1	M	36	TYR	Sidechain
1	M	422	TYR	Sidechain
1	M	425	TYR	Sidechain
1	M	59	TYR	Sidechain
1	M	92	PHE	Sidechain
2	N	108	TYR	Sidechain,Peptide
2	N	141	PHE	Sidechain
2	N	161	TYR	Sidechain
2	N	185	TYR	Sidechain
2	N	24	TYR	Sidechain
2	N	262	TYR	Sidechain
2	N	283	HIS	Peptide
2	N	36	MET	Peptide
2	N	53	PHE	Mainchain
2	N	67	PHE	Sidechain
2	N	68	VAL	Peptide
2	N	8	HIS	Sidechain
3	O	262	SER	Mainchain
3	O	277	ILE	Peptide
3	O	278	ILE	Mainchain
3	O	308	ILE	Mainchain

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	3498	0	3342	9	0
1	C	3498	0	3342	16	0
1	E	3498	0	3342	11	0
1	G	3498	0	3342	9	0
1	I	3498	0	3342	14	0
1	K	3498	0	3342	16	0
1	M	3498	0	3342	11	0
2	B	3524	0	3409	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	3524	0	3409	15	0
2	F	3524	0	3409	6	0
2	H	3524	0	3409	10	0
2	J	3524	0	3409	13	0
2	L	3524	0	3409	15	0
2	N	3524	0	3409	8	0
3	O	1455	0	1526	4	0
4	A	28	0	12	0	0
4	C	28	0	12	0	0
4	E	28	0	12	0	0
4	G	28	0	12	0	0
4	I	28	0	12	0	0
4	K	28	0	12	0	0
4	M	28	0	12	0	0
5	B	32	0	12	1	0
5	D	32	0	12	0	0
5	F	32	0	12	0	0
5	H	32	0	12	1	0
5	J	32	0	12	0	0
5	L	32	0	12	1	0
5	N	32	0	12	0	0
6	B	1	0	0	0	0
6	D	1	0	0	0	0
6	F	1	0	0	0	0
6	H	1	0	0	0	0
6	J	1	0	0	0	0
6	L	1	0	0	0	0
6	N	1	0	0	0	0
All	All	51036	0	48951	154	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 2.

All (154) 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)
3:O:375:LYS:CB	3:O:376:LEU:HA	2.26	0.65
2:L:133:GLN:HE22	2:L:242:LEU:HD21	1.65	0.62
2:J:326:LYS:HE3	1:K:212:PHE:CD1	2.38	0.58
2:D:319:TYR:CE1	2:D:328:VAL:HG13	2.39	0.58
2:J:326:LYS:HE3	1:K:212:PHE:CG	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:20:PHE:O	1:K:24:ILE:HG22	2.05	0.57
2:H:319:TYR:CD2	2:H:375:VAL:HG22	2.39	0.57
1:M:161:ASP:CG	1:M:162:ARG:HH21	2.09	0.56
1:I:239:CYS:CB	1:I:248:ALA:H	2.19	0.55
1:C:344:TRP:HE1	1:C:428:ALA:HB3	1.71	0.55
2:D:346:TRP:CE3	1:E:391:ARG:NH2	2.74	0.55
2:L:413:MET:HG2	2:L:414:GLU:H	1.72	0.55
2:L:137:VAL:HG21	2:L:154:MET:HE1	1.88	0.54
1:M:167:PHE:CZ	1:M:200:TYR:CE1	2.96	0.54
2:N:402:ARG:HH11	2:N:402:ARG:HG2	1.73	0.54
1:G:12:CYS:SG	1:G:169:VAL:HG21	2.47	0.54
1:I:170:VAL:HG21	1:I:377:LEU:HD21	1.90	0.54
1:M:77:ARG:HH22	1:M:90:PHE:HB3	1.73	0.54
1:I:361:LEU:HD12	1:I:362:LYS:H	1.73	0.53
2:L:137:VAL:HG21	2:L:154:MET:CE	2.38	0.53
1:A:6:HIS:HD1	1:A:21:TRP:HE1	1.56	0.53
1:C:344:TRP:HE1	1:C:428:ALA:CB	2.22	0.53
2:J:174:ALA:HB1	2:J:207:GLU:HB2	1.90	0.52
1:K:252:LYS:HE2	5:L:501:GTP:O1G	2.09	0.52
1:C:232:THR:HG23	1:C:366:THR:CG2	2.39	0.52
1:M:20:PHE:O	1:M:24:ILE:HG22	2.09	0.52
1:K:368:ILE:HD12	1:K:368:ILE:N	2.26	0.51
1:I:2:ARG:HH11	2:J:97:GLU:HA	1.75	0.51
1:C:192:LEU:HD21	1:C:199:THR:HG21	1.93	0.51
1:K:7:ILE:HD13	1:K:151:LEU:HD21	1.92	0.51
2:H:328:VAL:HG11	2:H:353:VAL:HG11	1.93	0.51
1:M:257:MET:SD	1:M:314:ALA:HB2	2.51	0.51
1:C:310:TYR:CD1	1:C:371:SER:HB2	2.46	0.51
1:G:344:TRP:CG	2:H:401:LYS:HE2	2.46	0.50
3:O:375:LYS:HB2	3:O:376:LEU:HA	1.93	0.50
1:E:19:LYS:HE2	1:E:227:HIS:HB2	1.94	0.50
2:J:344:VAL:HG21	2:J:346:TRP:CZ3	2.47	0.50
1:C:101:TRP:HE1	1:C:188:SER:HB3	1.76	0.49
2:N:71:GLU:HG3	2:N:74:VAL:H	1.78	0.49
2:J:74:VAL:HG13	2:J:75:ILE:HG13	1.94	0.49
2:F:201:ALA:HB3	2:F:267:PHE:CD1	2.48	0.49
3:O:375:LYS:HB3	3:O:376:LEU:HA	1.93	0.49
1:I:161:ASP:CG	1:I:162:ARG:HH21	2.16	0.49
2:J:319:TYR:CD2	2:J:375:VAL:HG22	2.48	0.49
2:L:133:GLN:HE22	2:L:242:LEU:CD2	2.25	0.49
2:H:224:TYR:CE2	5:H:501:GTP:C5	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:132:LEU:O	2:L:164:LYS:HE3	2.13	0.48
1:K:242:PHE:HB3	1:K:356:ILE:HD13	1.95	0.48
2:L:387:ALA:HB2	2:L:390:ARG:NH2	2.29	0.48
2:L:385:ALA:HB2	2:L:432:TYR:CG	2.49	0.48
1:I:42:LEU:HD12	1:I:42:LEU:H	1.79	0.47
1:M:368:ILE:HD12	1:M:368:ILE:N	2.29	0.47
1:G:284:LEU:HG	1:G:363:MET:HG2	1.96	0.47
1:K:204:ASN:O	1:K:208:TYR:CD1	2.68	0.47
1:C:32:PRO:HA	1:C:81:PHE:CD1	2.49	0.47
1:E:236:VAL:HG13	1:E:237:THR:HG23	1.96	0.46
1:A:135:LEU:CD2	1:A:152:ILE:HD11	2.45	0.46
1:A:252:LYS:HE2	5:B:501:GTP:O1G	2.16	0.46
1:A:179:VAL:HG23	1:A:180:VAL:HG13	1.96	0.46
2:J:352:LYS:HE3	2:J:353:VAL:H	1.80	0.46
2:N:139:HIS:CE1	2:N:170:SER:HB3	2.50	0.46
1:C:46:ARG:HD2	2:D:73:THR:HG22	1.98	0.46
1:G:199:THR:HG21	1:G:265:PHE:CE2	2.51	0.46
2:D:174:ALA:HB3	2:D:177:VAL:O	2.16	0.46
2:B:399:TYR:CE1	2:B:418:PHE:HB3	2.51	0.45
2:D:90:GLU:HB2	2:D:121:ARG:NH1	2.31	0.45
1:A:290:THR:HG21	1:A:329:GLN:HB3	1.97	0.45
2:F:76:ASP:HA	2:F:79:ARG:HD2	1.98	0.45
1:I:309:ARG:NH2	1:I:427:ASP:HA	2.31	0.45
2:N:319:TYR:CD2	2:N:375:VAL:HG22	2.51	0.45
1:A:303:CYS:SG	1:A:374:ILE:HA	2.56	0.45
1:I:323:MET:SD	1:I:353:VAL:HG21	2.56	0.45
1:C:323:MET:HG3	2:D:224:TYR:CG	2.52	0.45
1:E:317:PHE:CD2	1:E:365:ALA:HB2	2.51	0.45
2:N:46:ASP:HA	2:N:47:ASP:C	2.37	0.45
2:D:210:TYR:CE1	2:D:227:LEU:HD11	2.52	0.45
2:F:229:ARG:NH2	2:F:363:VAL:HB	2.31	0.45
1:K:286:VAL:HB	1:K:287:PRO:HD3	1.98	0.45
1:I:228:LEU:O	1:I:231:ALA:HB3	2.17	0.45
2:J:220:GLU:C	2:J:222:PRO:HD3	2.38	0.45
1:E:163:ILE:H	1:E:163:ILE:HD12	1.81	0.44
1:G:284:LEU:HG	1:G:363:MET:CG	2.48	0.44
2:L:390:ARG:O	2:L:394:LYS:HE3	2.17	0.44
2:N:175:PRO:HA	2:N:390:ARG:NH1	2.32	0.44
1:M:101:TRP:NE1	1:M:146:GLY:HA2	2.33	0.44
1:A:309:ARG:NH1	1:A:339:SER:O	2.45	0.44
2:L:172:TYR:CD2	2:L:173:PRO:HD2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:121:ARG:HH21	1:M:158:GLU:CD	2.21	0.44
1:G:368:ILE:N	1:G:368:ILE:HD12	2.33	0.44
2:H:47:ASP:HB3	2:H:49:PHE:CE2	2.53	0.44
2:F:204:VAL:HG12	2:F:302:MET:HB3	2.00	0.44
1:M:167:PHE:CZ	1:M:200:TYR:CD1	3.06	0.44
1:A:65:LEU:HD22	1:A:90:PHE:CE2	2.53	0.43
2:H:417:GLU:HA	2:H:420:GLU:HB3	2.00	0.43
2:L:138:PHE:CD2	2:L:169:PHE:HB2	2.53	0.43
1:E:259:PRO:HG2	1:E:263:LEU:HD23	1.99	0.43
2:J:79:ARG:HH12	2:J:94:THR:HG21	1.82	0.43
1:C:219:THR:N	1:C:220:PRO:CD	2.80	0.43
2:B:319:TYR:CE1	2:B:328:VAL:HG13	2.53	0.43
2:L:46:ASP:HA	2:L:47:ASP:HB2	2.00	0.43
1:C:178:THR:HG22	1:C:180:VAL:H	1.83	0.43
2:J:205:ASP:HB3	2:J:303:VAL:HA	1.99	0.43
1:C:105:HIS:CD2	1:C:106:TYR:CE2	3.07	0.43
2:D:69:ASP:HA	2:D:145:THR:HG21	2.00	0.43
1:K:238:THR:HG22	1:K:354:CYS:SG	2.59	0.43
1:M:36:TYR:CE1	1:M:38:GLY:HA3	2.54	0.42
2:H:336:LYS:HE3	2:H:348:PRO:O	2.18	0.42
1:E:385:PHE:CE2	1:E:412:GLU:HB2	2.55	0.42
1:M:2:ARG:H	1:M:3:GLU:CD	2.22	0.42
2:N:11:GLN:HG2	2:N:15:GLN:HE21	1.84	0.42
1:C:122:LYS:HE3	1:C:126:SER:OG	2.19	0.42
2:J:79:ARG:NH1	2:J:94:THR:HG21	2.34	0.42
2:J:192:HIS:CG	2:J:421:ALA:HA	2.54	0.42
1:A:30:ILE:HD13	1:A:51:TYR:CZ	2.55	0.42
1:E:9:ALA:HA	1:E:66:VAL:O	2.20	0.42
2:F:231:ILE:HD13	2:F:231:ILE:HG21	1.78	0.42
2:D:297:GLU:HA	2:D:298:PRO:HD3	1.89	0.42
1:I:170:VAL:HG21	1:I:377:LEU:CD2	2.49	0.42
1:K:264:HIS:HA	1:K:266:PHE:CZ	2.54	0.42
1:E:68:LEU:HD21	1:E:109:GLY:HA2	2.01	0.42
1:I:119:VAL:HA	1:I:122:LYS:HE3	2.02	0.42
1:K:9:ALA:HA	1:K:66:VAL:O	2.20	0.42
2:D:30:ILE:CD1	2:D:53:PHE:CZ	3.03	0.42
2:D:120:ASP:OD1	2:D:124:LYS:NZ	2.50	0.42
2:B:120:ASP:OD1	2:B:124:LYS:HE3	2.19	0.42
2:B:319:TYR:CZ	2:B:328:VAL:HG13	2.55	0.42
2:D:353:VAL:HG22	1:E:177:ASP:HA	2.02	0.42
1:G:137:HIS:CE1	1:G:168:SER:HB3	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:306:ASP:HA	2:H:307:PRO:HD3	1.88	0.42
1:K:101:TRP:CE3	1:K:187:LEU:HD13	2.54	0.42
1:K:158:GLU:HB3	1:K:159:TYR:CD2	2.55	0.42
2:L:201:ALA:HB3	2:L:267:PHE:CD1	2.55	0.41
2:D:91:GLN:HE22	2:D:125:LEU:HD21	1.84	0.41
2:D:174:ALA:HB1	2:D:207:GLU:HB2	2.02	0.41
2:N:11:GLN:CG	2:N:15:GLN:HE21	2.33	0.41
1:I:239:CYS:HB2	1:I:248:ALA:H	1.84	0.41
1:K:267:MET:SD	1:K:301:ALA:HB3	2.60	0.41
3:O:295:ASP:O	3:O:298:LYS:HE2	2.21	0.41
1:C:131:GLN:HE22	1:C:249:ASP:CG	2.24	0.41
1:G:36:TYR:CD2	1:G:36:TYR:C	2.93	0.41
2:L:352:LYS:HD3	2:L:353:VAL:H	1.86	0.41
2:F:273:ALA:HB1	2:F:274:PRO:HA	2.03	0.41
2:D:53:PHE:HA	2:D:63:PRO:HA	2.02	0.41
1:E:357:PRO:HB2	1:E:358:PRO:HD2	2.02	0.41
2:H:20:CYS:SG	2:H:235:VAL:HG21	2.61	0.41
2:H:174:ALA:HB3	2:H:177:VAL:O	2.21	0.41
2:L:354:GLY:C	2:L:355:ILE:HD12	2.41	0.41
1:I:89:ASN:HA	1:I:119:VAL:HG11	2.03	0.41
1:K:290:THR:HG21	1:K:329:GLN:HB3	2.02	0.41
1:I:258:VAL:HA	1:I:259:PRO:HD2	1.92	0.40
2:B:7:ILE:HD13	2:B:7:ILE:HG21	1.90	0.40
1:C:317:PHE:CD1	1:C:317:PHE:N	2.89	0.40
1:C:1:MET:HA	1:C:128:ASP:OD2	2.21	0.40
1:G:372:THR:HG21	1:G:426:GLN:HA	2.03	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	443/445 (100%)	413 (93%)	26 (6%)	4 (1%)	17	54
1	C	443/445 (100%)	405 (91%)	35 (8%)	3 (1%)	22	60
1	E	443/445 (100%)	414 (94%)	21 (5%)	8 (2%)	8	40
1	G	443/445 (100%)	416 (94%)	24 (5%)	3 (1%)	22	60
1	I	443/445 (100%)	405 (91%)	32 (7%)	6 (1%)	11	45
1	K	443/445 (100%)	411 (93%)	28 (6%)	4 (1%)	17	54
1	M	443/445 (100%)	404 (91%)	37 (8%)	2 (0%)	29	67
2	B	449/451 (100%)	413 (92%)	36 (8%)	0	100	100
2	D	449/451 (100%)	414 (92%)	28 (6%)	7 (2%)	9	43
2	F	449/451 (100%)	413 (92%)	33 (7%)	3 (1%)	22	60
2	H	449/451 (100%)	420 (94%)	26 (6%)	3 (1%)	22	60
2	J	449/451 (100%)	420 (94%)	27 (6%)	2 (0%)	34	71
2	L	449/451 (100%)	404 (90%)	43 (10%)	2 (0%)	34	71
2	N	449/451 (100%)	418 (93%)	26 (6%)	5 (1%)	14	50
3	O	192/194 (99%)	166 (86%)	21 (11%)	5 (3%)	5	34
All	All	6436/6466 (100%)	5936 (92%)	443 (7%)	57 (1%)	21	54

All (57) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	394	PHE
2	D	281	ALA
2	D	439	SER
1	E	394	PHE
1	G	81	PHE
2	L	404	PHE
1	M	347	ASN
1	A	96	GLY
2	D	402	ARG
1	E	48	ASN
1	E	427	ASP
1	G	348	ASN
2	H	68	VAL
1	I	55	ALA
1	K	81	PHE
1	M	427	ASP
3	O	208	SER
3	O	350	VAL

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Mol	Chain	Res	Type
2	D	141	PHE
1	E	95	SER
1	E	430	ALA
2	F	404	PHE
2	F	416	GLY
1	G	71	GLY
1	I	48	ASN
1	I	81	PHE
1	I	348	ASN
1	K	82	GLY
2	L	286	LEU
2	N	218	ASP
1	A	347	ASN
1	A	443	ASP
1	E	347	ASN
2	H	439	SER
1	I	347	ASN
1	K	95	SER
2	N	43	GLY
3	O	254	LYS
3	O	292	GLY
1	I	394	PHE
2	J	267	PHE
2	J	365	GLY
2	N	220	GLU
1	A	402	GLY
1	C	130	LEU
1	E	296	ALA
1	K	104	GLY
1	C	96	GLY
2	D	348	PRO
1	E	173	PRO
2	F	267	PHE
2	H	275	VAL
2	N	32	PRO
2	D	265	ILE
2	D	350	GLY
2	N	175	PRO
3	O	226	VAL

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	381/381 (100%)	368 (97%)	13 (3%)	37	61
1	C	381/381 (100%)	372 (98%)	9 (2%)	49	69
1	E	381/381 (100%)	372 (98%)	9 (2%)	49	69
1	G	381/381 (100%)	369 (97%)	12 (3%)	40	63
1	I	381/381 (100%)	377 (99%)	4 (1%)	76	85
1	K	381/381 (100%)	374 (98%)	7 (2%)	59	77
1	M	381/381 (100%)	372 (98%)	9 (2%)	49	69
2	B	379/379 (100%)	364 (96%)	15 (4%)	31	57
2	D	379/379 (100%)	358 (94%)	21 (6%)	21	50
2	F	379/379 (100%)	368 (97%)	11 (3%)	42	64
2	H	379/379 (100%)	362 (96%)	17 (4%)	27	54
2	J	379/379 (100%)	367 (97%)	12 (3%)	39	62
2	L	379/379 (100%)	359 (95%)	20 (5%)	22	51
2	N	379/379 (100%)	368 (97%)	11 (3%)	42	64
3	O	168/168 (100%)	155 (92%)	13 (8%)	13	40
All	All	5488/5488 (100%)	5305 (97%)	183 (3%)	41	62

All (183) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	44	LEU
1	A	50	TYR
1	A	60	VAL
1	A	133	PHE
1	A	137	HIS
1	A	147	MET
1	A	233	MET
1	A	253	LEU
1	A	294	PHE
1	A	306	ARG

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Mol	Chain	Res	Type
1	A	334	GLN
1	A	366	THR
1	A	412	GLU
2	B	2	ARG
2	B	194	THR
2	B	206	ASN
2	B	244	PHE
2	B	245	ASP
2	B	253	THR
2	B	304	LYS
2	B	309	HIS
2	B	329	ASN
2	B	339	ARG
2	B	361	THR
2	B	371	VAL
2	B	379	SER
2	B	386	GLU
2	B	439	SER
1	C	1	MET
1	C	22	GLU
1	C	31	ASP
1	C	121	ARG
1	C	165	ASN
1	C	222	TYR
1	C	260	PHE
1	C	391	ARG
1	C	415	MET
2	D	48	SER
2	D	49	PHE
2	D	53	PHE
2	D	66	VAL
2	D	103	TYR
2	D	110	ILE
2	D	121	ARG
2	D	141	PHE
2	D	150	THR
2	D	160	ASP
2	D	173	PRO
2	D	192	HIS
2	D	214	ARG
2	D	224	TYR
2	D	236	SER

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Mol	Chain	Res	Type
2	D	244	PHE
2	D	266	HIS
2	D	275	VAL
2	D	376	CYS
2	D	392	ASP
2	D	432	TYR
1	E	70	PRO
1	E	80	PRO
1	E	91	VAL
1	E	145	SER
1	E	168	SER
1	E	175	VAL
1	E	188	SER
1	E	415	MET
1	E	442	GLU
2	F	52	PHE
2	F	68	VAL
2	F	110	ILE
2	F	112	LYS
2	F	169	PHE
2	F	194	THR
2	F	200	CYS
2	F	276	ILE
2	F	295	CYS
2	F	298	PRO
2	F	404	PHE
1	G	11	GLN
1	G	50	TYR
1	G	84	ILE
1	G	131	GLN
1	G	167	PHE
1	G	188	SER
1	G	199	THR
1	G	262	ARG
1	G	265	PHE
1	G	342	VAL
1	G	395	LEU
1	G	438	GLU
2	H	49	PHE
2	H	51	THR
2	H	98	ASP
2	H	154	MET

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Mol	Chain	Res	Type
2	H	160	ASP
2	H	194	THR
2	H	216	ASN
2	H	244	PHE
2	H	245	ASP
2	H	253	THR
2	H	266	HIS
2	H	271	THR
2	H	340	SER
2	H	353	VAL
2	H	386	GLU
2	H	388	TRP
2	H	450	GLU
1	I	47	ILE
1	I	137	HIS
1	I	299	MET
1	I	415	MET
2	J	27	GLU
2	J	37	PRO
2	J	98	ASP
2	J	179	THR
2	J	200	CYS
2	J	217	LEU
2	J	227	LEU
2	J	276	ILE
2	J	346	TRP
2	J	352	LYS
2	J	379	SER
2	J	446	GLU
1	K	114	ASP
1	K	137	HIS
1	K	348	ASN
1	K	354	CYS
1	K	355	ASP
1	K	366	THR
1	K	368	ILE
2	L	9	VAL
2	L	46	ASP
2	L	50	ASN
2	L	71	GLU
2	L	92	LEU
2	L	179	THR

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Mol	Chain	Res	Type
2	L	185	TYR
2	L	194	THR
2	L	209	ILE
2	L	253	THR
2	L	257	THR
2	L	266	HIS
2	L	295	CYS
2	L	296	PHE
2	L	303	VAL
2	L	307	PRO
2	L	325	PRO
2	L	346	TRP
2	L	352	LYS
2	L	381	THR
1	M	15	GLN
1	M	84	ILE
1	M	168	SER
1	M	178	THR
1	M	321	MET
1	M	329	GLN
1	M	348	ASN
1	M	368	ILE
1	M	423	GLN
2	N	40	LYS
2	N	110	ILE
2	N	266	HIS
2	N	276	ILE
2	N	357	TYR
2	N	378	LEU
2	N	381	THR
2	N	391	LEU
2	N	398	MET
2	N	414	GLU
2	N	422	ARG
3	O	226	VAL
3	O	237	SER
3	O	250	MET
3	O	265	ASN
3	O	289	SER
3	O	295	ASP
3	O	313	VAL
3	O	328	ILE

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Mol	Chain	Res	Type
3	O	338	GLU
3	O	342	GLU
3	O	378	PHE
3	O	388	HIS
3	O	393	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	8	HIS
1	C	6	HIS
1	C	134	GLN
2	F	393	HIS
1	G	105	HIS
2	J	61	HIS
2	J	186	ASN
2	L	8	HIS
2	L	50	ASN
2	L	133	GLN
2	L	266	HIS
1	M	105	HIS
2	N	15	GLN
2	N	266	HIS
3	O	299	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 21 ligands modelled in this entry, 7 are monoatomic - leaving 14 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	GDP	G	501	-	24,30,30	1.25	3 (12%)	31,47,47	1.76	8 (25%)
5	GTP	H	501	6	26,34,34	1.17	2 (7%)	33,54,54	2.14	10 (30%)
5	GTP	J	501	6	26,34,34	1.27	2 (7%)	33,54,54	1.78	5 (15%)
5	GTP	D	501	6	26,34,34	1.22	2 (7%)	33,54,54	2.33	8 (24%)
5	GTP	F	501	6	26,34,34	1.26	2 (7%)	33,54,54	2.78	11 (33%)
5	GTP	N	501	6	26,34,34	1.23	2 (7%)	33,54,54	2.92	12 (36%)
4	GDP	E	501	-	24,30,30	1.27	2 (8%)	31,47,47	2.41	8 (25%)
4	GDP	C	501	-	24,30,30	1.27	2 (8%)	31,47,47	2.51	11 (35%)
4	GDP	I	501	-	24,30,30	1.12	2 (8%)	31,47,47	2.46	6 (19%)
5	GTP	B	501	6	26,34,34	1.22	2 (7%)	33,54,54	2.08	12 (36%)
5	GTP	L	501	6	26,34,34	1.18	1 (3%)	33,54,54	2.39	13 (39%)
4	GDP	M	501	-	24,30,30	1.25	2 (8%)	31,47,47	2.44	6 (19%)
4	GDP	A	501	-	24,30,30	1.26	2 (8%)	31,47,47	2.46	8 (25%)
4	GDP	K	501	-	24,30,30	1.21	1 (4%)	31,47,47	2.41	11 (35%)

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
4	GDP	G	501	-	-	2/12/32/32	0/3/3/3
5	GTP	H	501	6	-	6/18/38/38	0/3/3/3
5	GTP	J	501	6	-	8/18/38/38	0/3/3/3
5	GTP	D	501	6	-	3/18/38/38	0/3/3/3
5	GTP	F	501	6	-	2/18/38/38	0/3/3/3
5	GTP	N	501	6	-	5/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GDP	E	501	-	-	5/12/32/32	0/3/3/3
4	GDP	C	501	-	-	1/12/32/32	0/3/3/3
4	GDP	I	501	-	-	4/12/32/32	0/3/3/3
5	GTP	B	501	6	-	4/18/38/38	0/3/3/3
5	GTP	L	501	6	-	3/18/38/38	0/3/3/3
4	GDP	M	501	-	-	2/12/32/32	0/3/3/3
4	GDP	A	501	-	-	5/12/32/32	0/3/3/3
4	GDP	K	501	-	-	2/12/32/32	0/3/3/3

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	501	GDP	C6-N1	3.98	1.40	1.33
4	K	501	GDP	C6-N1	3.86	1.39	1.33
5	J	501	GTP	C6-N1	3.79	1.39	1.33
4	A	501	GDP	C6-N1	3.74	1.39	1.33
4	C	501	GDP	C6-N1	3.70	1.39	1.33
5	B	501	GTP	C6-N1	3.70	1.39	1.33
4	M	501	GDP	C6-N1	3.66	1.39	1.33
5	D	501	GTP	C6-N1	3.59	1.39	1.33
5	F	501	GTP	C6-N1	3.59	1.39	1.33
5	N	501	GTP	C6-N1	3.39	1.38	1.33
4	G	501	GDP	C6-N1	3.38	1.38	1.33
5	H	501	GTP	C6-N1	3.19	1.38	1.33
5	L	501	GTP	C6-N1	3.11	1.38	1.33
4	I	501	GDP	C6-N1	2.90	1.38	1.33
5	B	501	GTP	C8-N7	-2.36	1.30	1.34
4	G	501	GDP	C2-N1	2.29	1.39	1.35
4	C	501	GDP	C8-N7	-2.28	1.30	1.34
5	H	501	GTP	C8-N7	-2.27	1.30	1.34
5	J	501	GTP	C8-N7	-2.22	1.30	1.34
5	F	501	GTP	C8-N7	-2.22	1.30	1.34
4	A	501	GDP	C8-N7	-2.19	1.30	1.34
5	N	501	GTP	C8-N7	-2.16	1.30	1.34
5	D	501	GTP	C2-N1	2.16	1.39	1.35
4	G	501	GDP	C8-N7	-2.09	1.31	1.34
4	M	501	GDP	C8-N7	-2.07	1.31	1.34
4	E	501	GDP	C8-N7	-2.06	1.31	1.34
4	I	501	GDP	C2-N1	2.00	1.39	1.35

All (129) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	M	501	GDP	C5-C6-N1	-9.05	111.05	123.43
4	I	501	GDP	C5-C6-N1	-9.00	111.12	123.43
4	A	501	GDP	C5-C6-N1	-8.91	111.25	123.43
5	F	501	GTP	C5-C6-N1	-8.74	111.48	123.43
4	C	501	GDP	C5-C6-N1	-8.71	111.52	123.43
4	E	501	GDP	C5-C6-N1	-8.04	112.44	123.43
4	K	501	GDP	C5-C6-N1	-8.03	112.45	123.43
5	N	501	GTP	C5-C6-N1	-7.94	112.58	123.43
5	D	501	GTP	C5-C6-N1	-7.83	112.72	123.43
5	L	501	GTP	C5-C6-N1	-7.17	113.62	123.43
4	I	501	GDP	C2-N3-C4	-7.06	107.30	115.36
5	N	501	GTP	C2-N1-C6	6.23	125.83	115.93
5	H	501	GTP	C5-C6-N1	-6.18	114.97	123.43
5	J	501	GTP	C5-C6-N1	-6.10	115.09	123.43
4	M	501	GDP	C2-N1-C6	5.93	125.36	115.93
5	F	501	GTP	PB-O3B-PG	-5.58	113.68	132.83
5	N	501	GTP	N2-C2-N1	5.43	125.69	117.25
4	C	501	GDP	C2-N1-C6	5.36	124.44	115.93
5	F	501	GTP	C2-N3-C4	-5.35	109.25	115.36
4	A	501	GDP	C2-N1-C6	5.29	124.34	115.93
5	D	501	GTP	C2-N1-C6	5.12	124.06	115.93
5	N	501	GTP	PB-O3B-PG	-5.09	115.35	132.83
4	C	501	GDP	C2-N3-C4	-5.08	109.55	115.36
5	F	501	GTP	C3'-C2'-C1'	5.02	108.54	100.98
5	L	501	GTP	PA-O3A-PB	-5.01	115.63	132.83
5	N	501	GTP	C4-C5-C6	-4.90	116.12	120.80
5	D	501	GTP	PB-O3B-PG	-4.89	116.04	132.83
4	G	501	GDP	C5-C6-N1	-4.84	116.81	123.43
4	K	501	GDP	C2-N1-C6	4.83	123.60	115.93
5	B	501	GTP	PB-O3B-PG	-4.78	116.42	132.83
5	B	501	GTP	C5-C6-N1	-4.72	116.98	123.43
4	E	501	GDP	N2-C2-N3	-4.62	110.26	117.79
5	L	501	GTP	C2-N1-C6	4.59	123.23	115.93
4	E	501	GDP	PA-O3A-PB	-4.54	117.26	132.83
4	A	501	GDP	N3-C2-N1	-4.40	121.35	127.22
4	I	501	GDP	C2-N1-C6	4.17	122.56	115.93
5	F	501	GTP	C2-N1-C6	4.08	122.40	115.93
4	E	501	GDP	N2-C2-N1	4.07	123.58	117.25
4	K	501	GDP	C2'-C3'-C4'	-4.05	94.77	102.64
5	H	501	GTP	C2-N1-C6	3.98	122.26	115.93
4	M	501	GDP	N3-C2-N1	-3.91	122.01	127.22
5	N	501	GTP	C2-N3-C4	-3.81	111.00	115.36
5	N	501	GTP	N3-C2-N1	-3.75	122.23	127.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	N	501	GTP	N2-C2-N3	-3.70	111.76	117.79
5	N	501	GTP	C3'-C2'-C1'	3.68	106.52	100.98
5	H	501	GTP	C4-C5-N7	3.64	113.19	109.40
4	G	501	GDP	C4-C5-C6	-3.58	117.38	120.80
4	K	501	GDP	PA-O3A-PB	-3.54	120.68	132.83
5	B	501	GTP	O2G-PG-O1G	3.53	124.52	110.68
5	D	501	GTP	N3-C2-N1	-3.53	122.51	127.22
5	F	501	GTP	O5'-C5'-C4'	3.53	121.12	108.99
5	B	501	GTP	C4-C5-C6	-3.49	117.46	120.80
5	H	501	GTP	C4-C5-C6	-3.45	117.50	120.80
4	M	501	GDP	C1'-N9-C4	-3.43	120.62	126.64
4	E	501	GDP	C2-N1-C6	3.23	121.06	115.93
5	L	501	GTP	C4-C5-C6	-3.22	117.72	120.80
4	E	501	GDP	C2-N3-C4	-3.20	111.71	115.36
5	L	501	GTP	N3-C2-N1	-3.17	122.99	127.22
5	H	501	GTP	N2-C2-N3	3.16	122.94	117.79
5	H	501	GTP	PB-O3B-PG	-3.11	122.16	132.83
5	H	501	GTP	C2'-C3'-C4'	3.08	108.63	102.64
5	B	501	GTP	N2-C2-N3	3.07	122.80	117.79
5	F	501	GTP	O2G-PG-O1G	3.01	122.46	110.68
5	H	501	GTP	N3-C2-N1	-3.01	123.21	127.22
5	F	501	GTP	C1'-N9-C4	-3.00	121.36	126.64
5	J	501	GTP	C2-N3-C4	-2.99	111.94	115.36
4	I	501	GDP	O4'-C4'-C3'	2.97	111.00	105.11
5	N	501	GTP	O3G-PG-O1G	2.96	122.28	110.68
4	K	501	GDP	C2-N3-C4	-2.96	111.98	115.36
5	D	501	GTP	C1'-N9-C4	-2.88	121.58	126.64
5	L	501	GTP	PB-O3B-PG	-2.87	122.97	132.83
5	J	501	GTP	PB-O3B-PG	-2.83	123.10	132.83
4	C	501	GDP	PA-O3A-PB	-2.77	123.32	132.83
5	D	501	GTP	O4'-C4'-C3'	2.77	110.59	105.11
5	B	501	GTP	C2-N1-C6	2.74	120.29	115.93
4	G	501	GDP	O2'-C2'-C3'	2.70	120.55	111.82
5	L	501	GTP	C1'-N9-C4	-2.70	121.90	126.64
5	L	501	GTP	C4-C5-N7	2.67	112.19	109.40
4	C	501	GDP	O3B-PB-O2B	2.65	117.78	107.64
5	B	501	GTP	O5'-C5'-C4'	2.65	118.12	108.99
5	L	501	GTP	O3'-C3'-C4'	2.64	118.67	111.05
5	L	501	GTP	C2-N3-C4	-2.62	112.37	115.36
5	B	501	GTP	N2-C2-N1	-2.60	113.21	117.25
4	G	501	GDP	C2-N1-C6	2.60	120.05	115.93
5	B	501	GTP	C2'-C3'-C4'	-2.59	97.61	102.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	D	501	GTP	O5'-C5'-C4'	2.58	117.87	108.99
4	C	501	GDP	O4'-C1'-C2'	2.51	110.59	106.93
4	K	501	GDP	N3-C2-N1	-2.51	123.88	127.22
4	A	501	GDP	C4-C5-C6	-2.49	118.42	120.80
4	A	501	GDP	C1'-N9-C4	2.47	130.98	126.64
4	K	501	GDP	O4'-C4'-C3'	2.43	109.93	105.11
4	E	501	GDP	O3B-PB-O2B	2.43	116.92	107.64
4	G	501	GDP	C4-C5-N7	-2.42	106.88	109.40
5	B	501	GTP	N3-C2-N1	-2.42	124.00	127.22
5	N	501	GTP	O4'-C4'-C3'	2.42	109.90	105.11
5	N	501	GTP	C1'-N9-C4	-2.41	122.40	126.64
5	F	501	GTP	C2'-C3'-C4'	-2.41	97.96	102.64
4	K	501	GDP	C4-C5-N7	-2.39	106.91	109.40
4	C	501	GDP	C4-C5-C6	-2.36	118.54	120.80
5	D	501	GTP	O2G-PG-O1G	2.36	119.90	110.68
4	M	501	GDP	C3'-C2'-C1'	2.35	104.52	100.98
4	C	501	GDP	O5'-PA-O1A	-2.34	99.91	109.07
4	G	501	GDP	PA-O3A-PB	-2.33	124.82	132.83
4	G	501	GDP	N3-C2-N1	-2.30	124.15	127.22
4	A	501	GDP	O5'-PA-O1A	-2.30	100.09	109.07
4	I	501	GDP	C4-C5-N7	2.29	111.78	109.40
5	H	501	GTP	N2-C2-N1	-2.28	113.71	117.25
4	G	501	GDP	O3B-PB-O3A	2.28	112.28	104.64
4	K	501	GDP	O5'-PA-O1A	-2.27	100.22	109.07
5	F	501	GTP	PA-O3A-PB	-2.26	125.08	132.83
5	J	501	GTP	C2-N1-C6	2.25	119.50	115.93
5	H	501	GTP	O3G-PG-O1G	2.25	119.49	110.68
4	A	501	GDP	C2-N3-C4	-2.24	112.80	115.36
5	B	501	GTP	O3G-PG-O3B	-2.22	97.18	104.64
4	K	501	GDP	O2B-PB-O3A	2.22	112.08	104.64
5	J	501	GTP	O3B-PG-O1G	-2.22	98.88	111.19
5	F	501	GTP	O3G-PG-O1G	2.15	119.08	110.68
4	M	501	GDP	O3B-PB-O2B	2.13	115.77	107.64
4	K	501	GDP	O2A-PA-O1A	2.09	122.57	112.24
4	E	501	GDP	O2A-PA-O1A	2.09	122.55	112.24
5	L	501	GTP	O2A-PA-O1A	2.06	122.44	112.24
5	L	501	GTP	N2-C2-N1	2.06	120.46	117.25
5	B	501	GTP	O3B-PG-O1G	-2.03	99.90	111.19
4	C	501	GDP	O3A-PB-O1B	-2.03	99.95	111.19
4	C	501	GDP	C4-C5-N7	2.03	111.51	109.40
4	I	501	GDP	C2'-C3'-C4'	-2.03	98.71	102.64
4	C	501	GDP	O2B-PB-O1B	2.02	118.57	110.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	501	GDP	C4-C5-N7	2.01	111.50	109.40
5	L	501	GTP	O2G-PG-O3B	-2.01	97.89	104.64

There are no chirality outliers.

All (52) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	501	GDP	PA-O3A-PB-O2B
4	E	501	GDP	C5'-O5'-PA-O3A
4	E	501	GDP	C5'-O5'-PA-O2A
4	G	501	GDP	C3'-C4'-C5'-O5'
4	I	501	GDP	PA-O3A-PB-O2B
4	M	501	GDP	C5'-O5'-PA-O1A
5	B	501	GTP	PB-O3A-PA-O5'
5	H	501	GTP	C5'-O5'-PA-O1A
5	J	501	GTP	PB-O3B-PG-O2G
5	J	501	GTP	C5'-O5'-PA-O1A
5	J	501	GTP	C5'-O5'-PA-O2A
5	L	501	GTP	PB-O3B-PG-O3G
5	B	501	GTP	O4'-C4'-C5'-O5'
4	G	501	GDP	O4'-C4'-C5'-O5'
4	I	501	GDP	O4'-C4'-C5'-O5'
4	A	501	GDP	O4'-C4'-C5'-O5'
4	I	501	GDP	C3'-C4'-C5'-O5'
5	D	501	GTP	O4'-C4'-C5'-O5'
5	D	501	GTP	C3'-C4'-C5'-O5'
4	K	501	GDP	PA-O3A-PB-O1B
5	J	501	GTP	C4'-C5'-O5'-PA
5	J	501	GTP	PA-O3A-PB-O3B
5	B	501	GTP	C3'-C4'-C5'-O5'
4	K	501	GDP	PA-O3A-PB-O2B
4	M	501	GDP	C5'-O5'-PA-O3A
5	H	501	GTP	C5'-O5'-PA-O3A
5	H	501	GTP	PB-O3A-PA-O1A
5	N	501	GTP	PG-O3B-PB-O1B
5	H	501	GTP	C5'-O5'-PA-O2A
4	E	501	GDP	C3'-C4'-C5'-O5'
4	E	501	GDP	PA-O3A-PB-O1B
5	H	501	GTP	PB-O3A-PA-O2A
5	B	501	GTP	PG-O3B-PB-O1B
5	F	501	GTP	PB-O3A-PA-O1A
4	A	501	GDP	C3'-C4'-C5'-O5'

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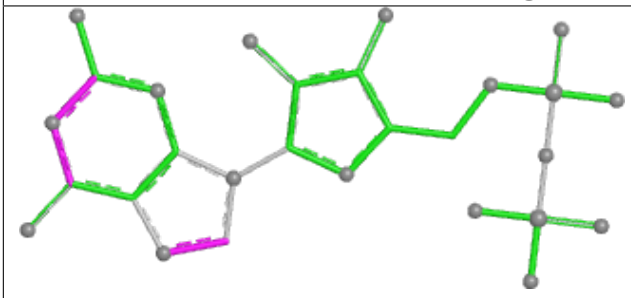
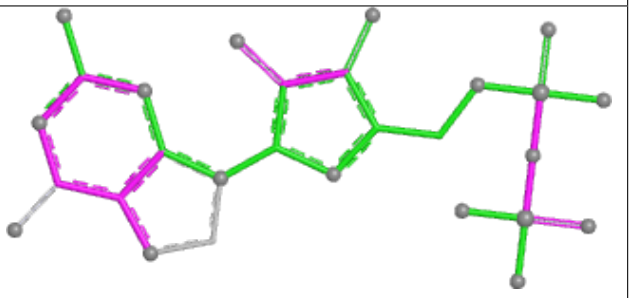
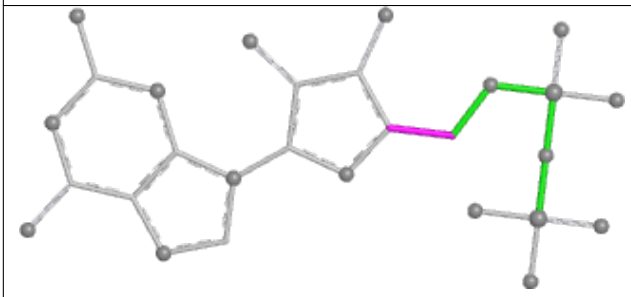
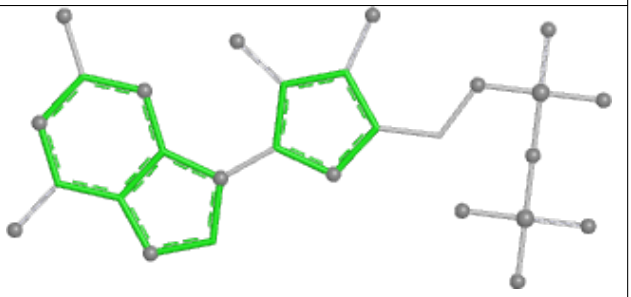
Mol	Chain	Res	Type	Atoms
4	A	501	GDP	PA-O3A-PB-O1B
5	J	501	GTP	PB-O3B-PG-O1G
4	E	501	GDP	O4'-C4'-C5'-O5'
4	A	501	GDP	PA-O3A-PB-O3B
4	I	501	GDP	PA-O3A-PB-O3B
5	J	501	GTP	PB-O3B-PG-O3G
5	L	501	GTP	PB-O3B-PG-O2G
5	N	501	GTP	PA-O3A-PB-O3B
5	J	501	GTP	C5'-O5'-PA-O3A
5	N	501	GTP	C5'-O5'-PA-O3A
4	C	501	GDP	PB-O3A-PA-O1A
5	D	501	GTP	PA-O3A-PB-O2B
5	F	501	GTP	PB-O3A-PA-O2A
5	H	501	GTP	PG-O3B-PB-O2B
5	N	501	GTP	PA-O3A-PB-O1B
5	N	501	GTP	C5'-O5'-PA-O1A
5	L	501	GTP	PB-O3B-PG-O1G

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	H	501	GTP	1	0
5	B	501	GTP	1	0
5	L	501	GTP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand GDP G 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

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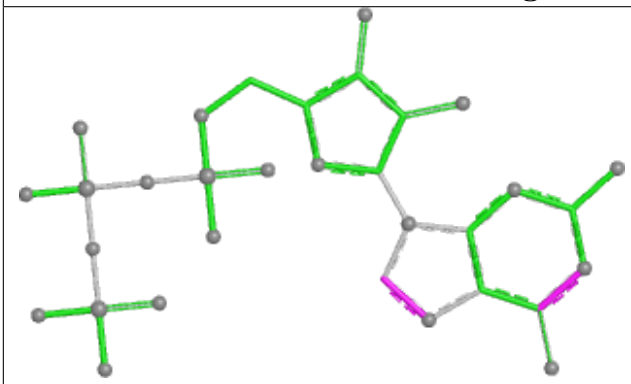
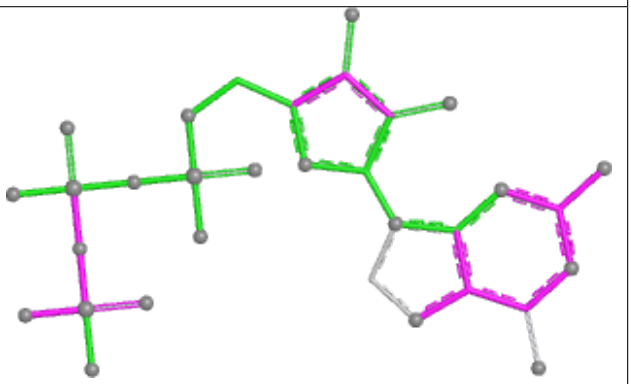
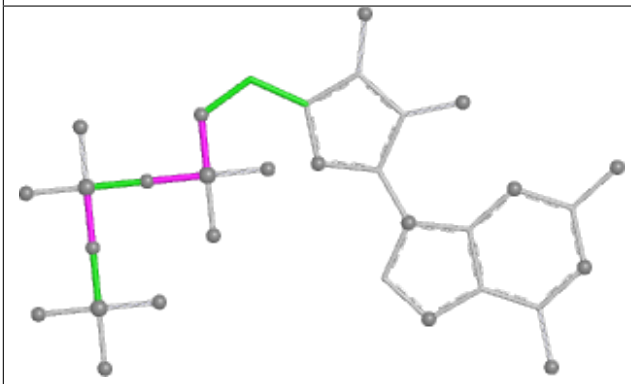
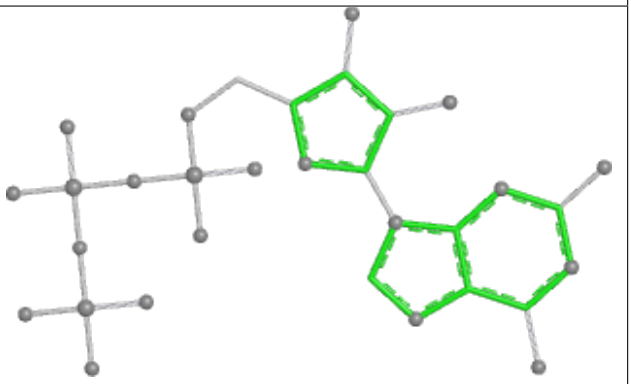
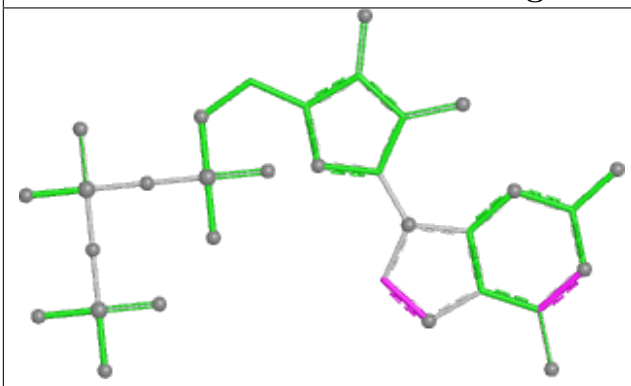
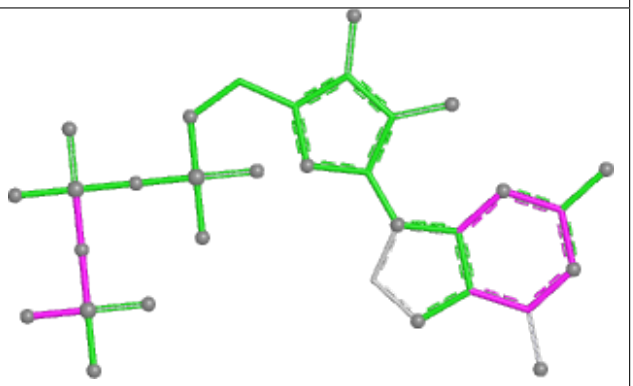
 Bond lengths	 Bond angles
 Torsions	 Rings

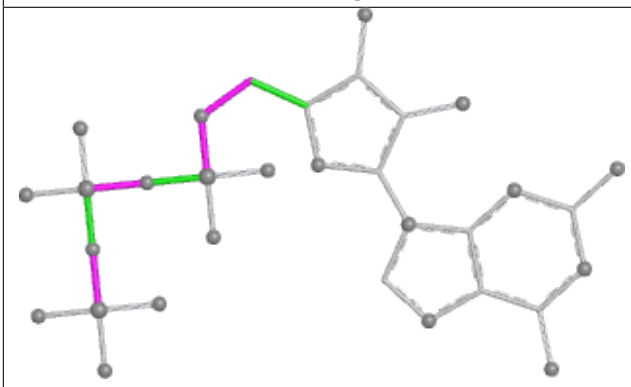
Ligand GTP J 501



Bond lengths



Bond angles



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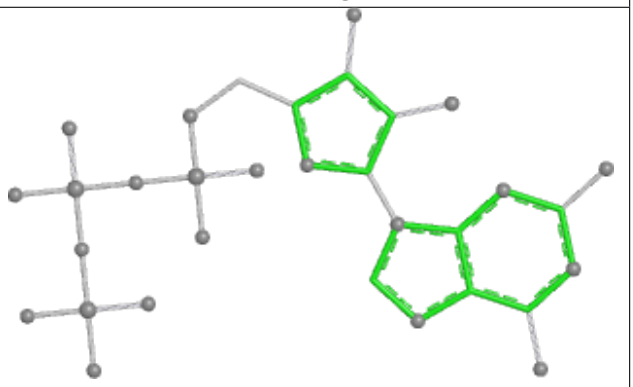
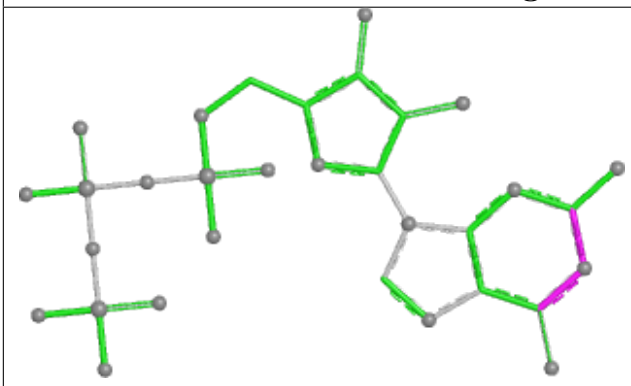
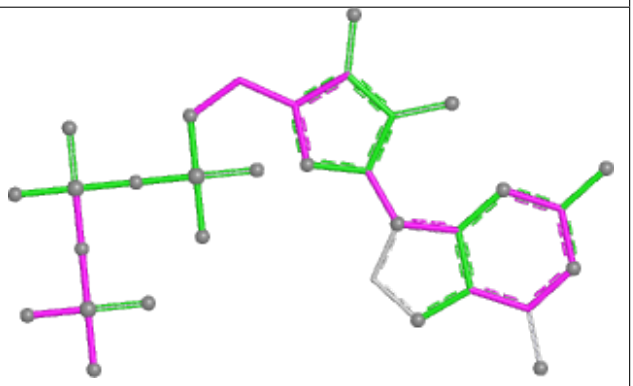


Rings

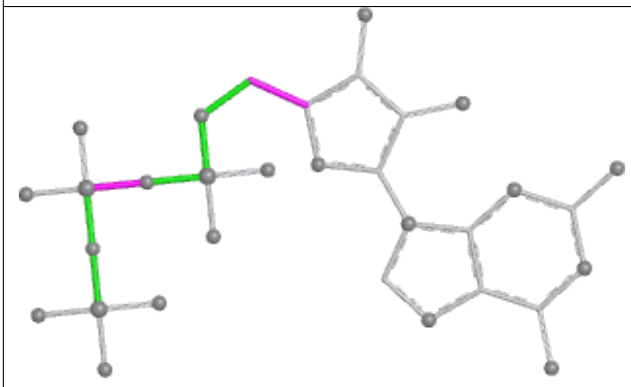
Ligand GTP D 501



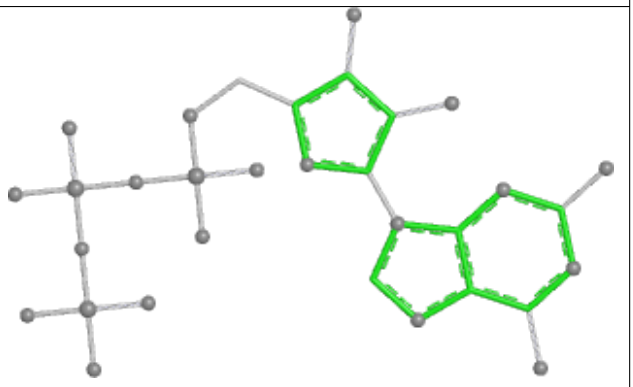
Bond lengths



Bond angles

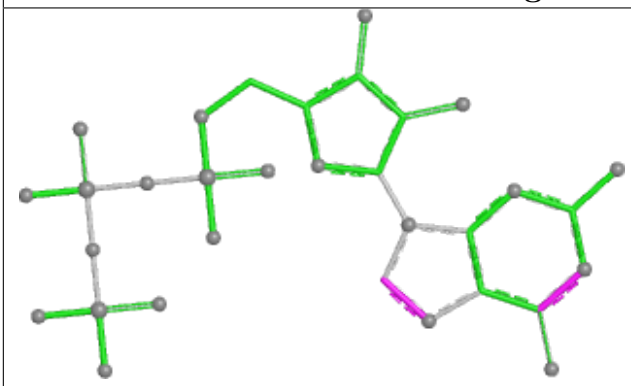


Torsions

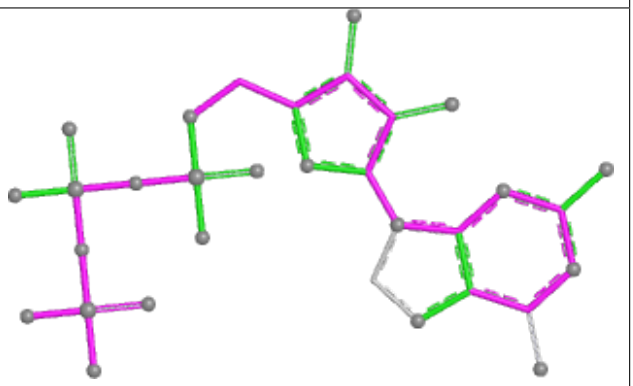


Rings

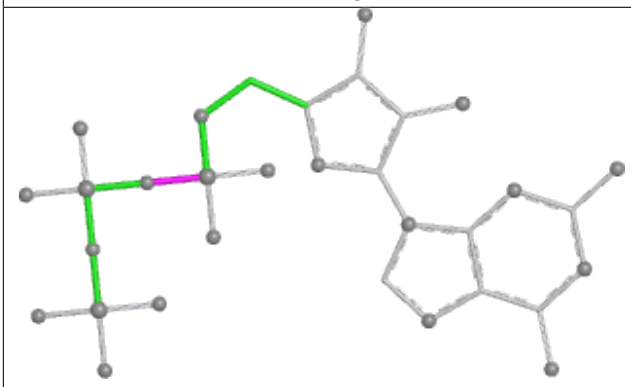
Ligand GTP F 501



Bond lengths



Bond angles



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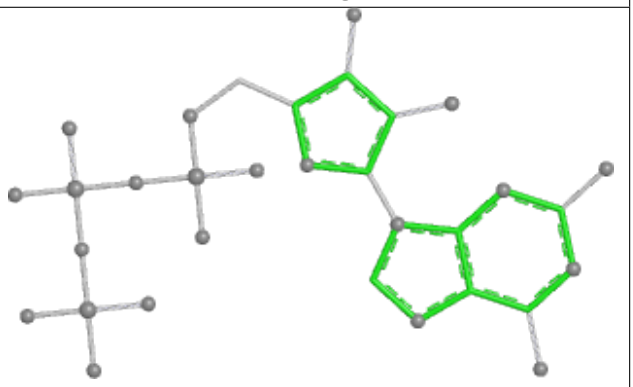
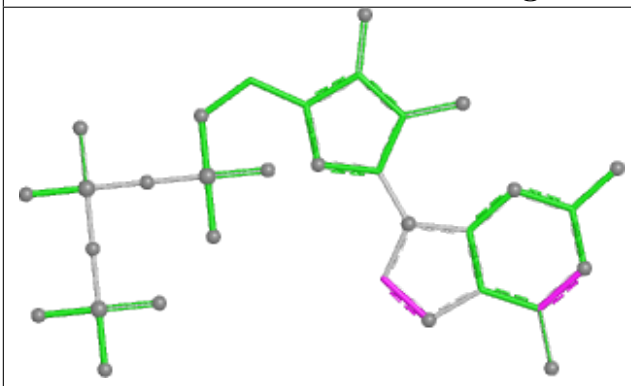
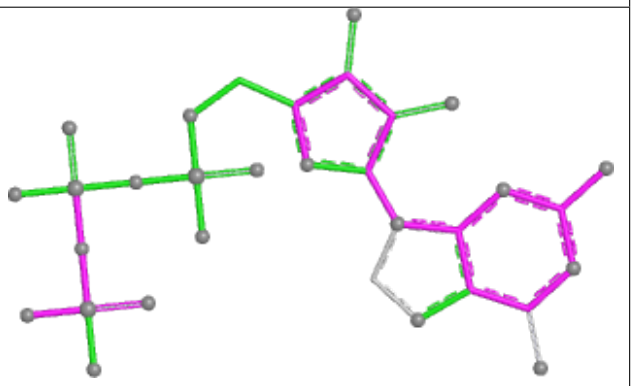


Rings

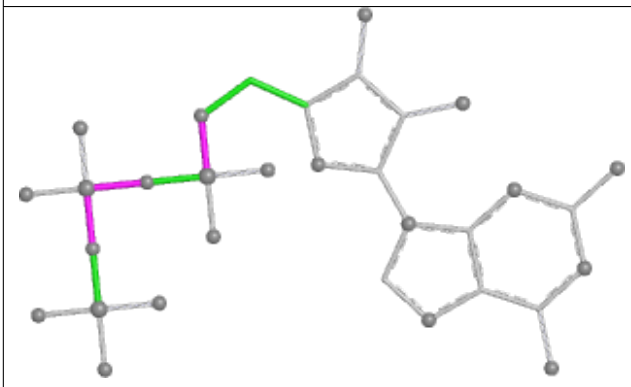
Ligand GTP N 501



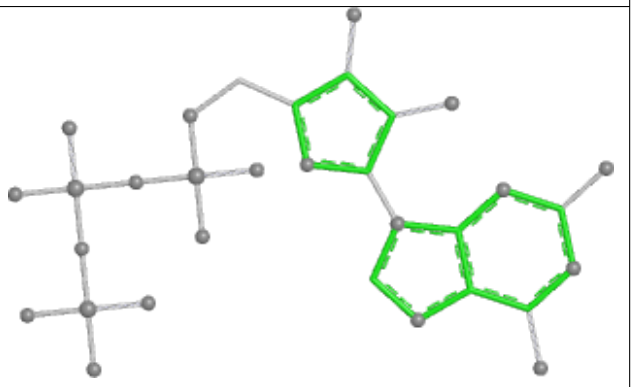
Bond lengths



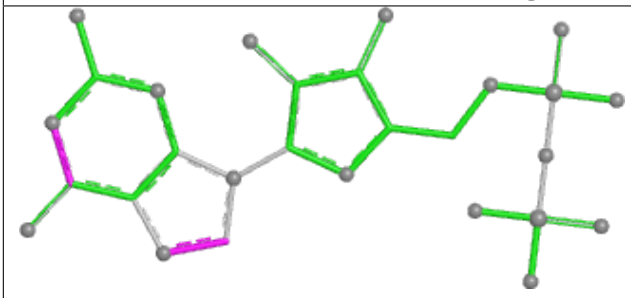
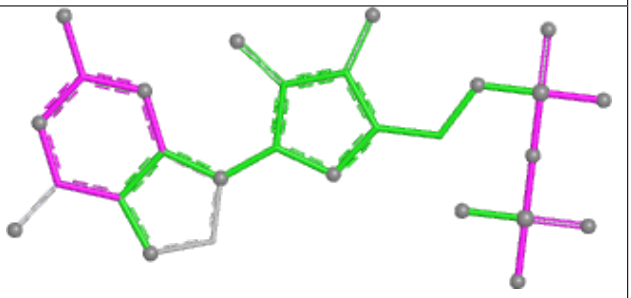
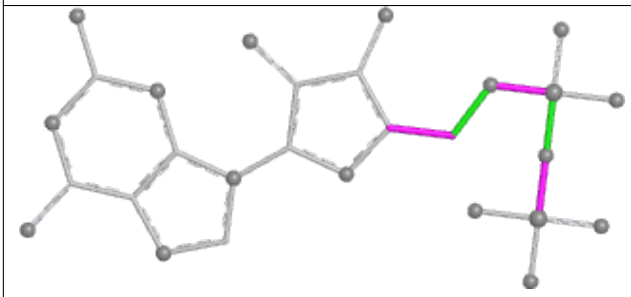
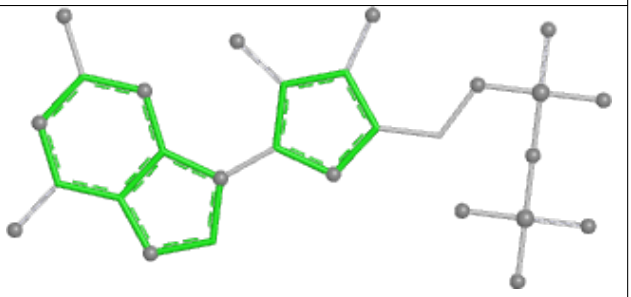
Bond angles

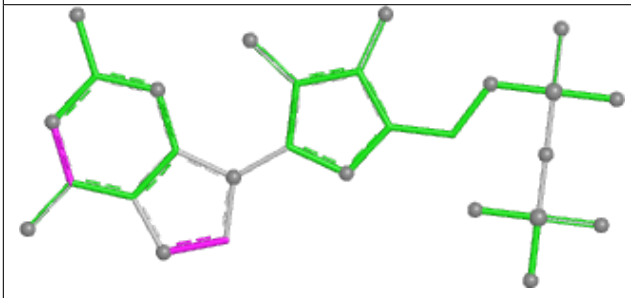
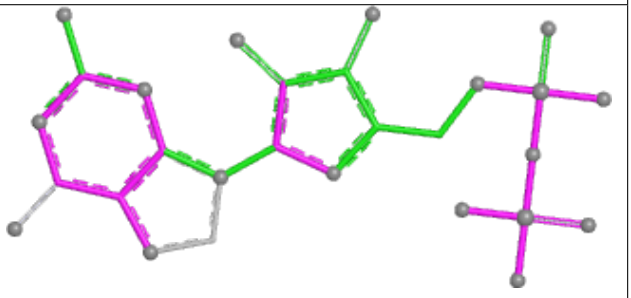
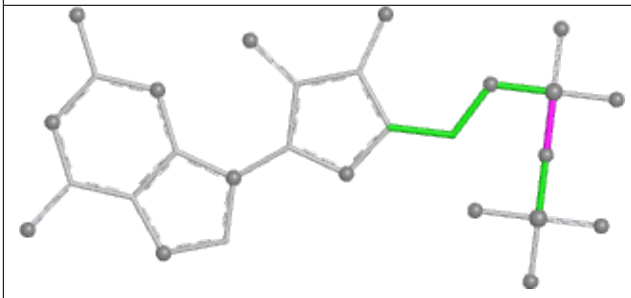
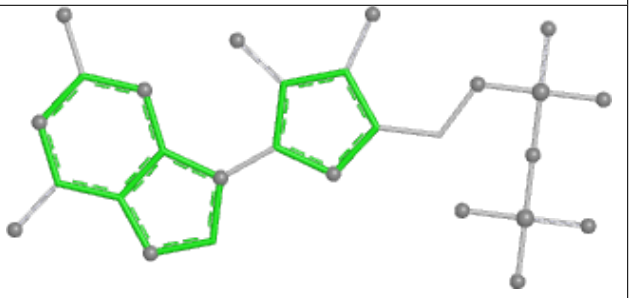


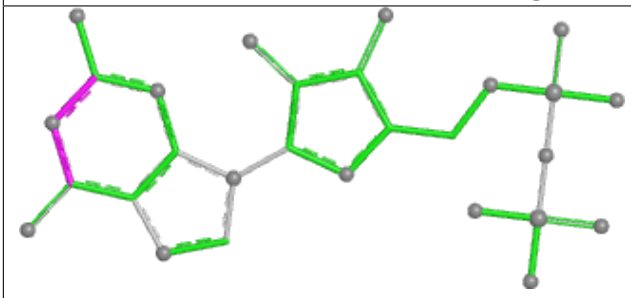
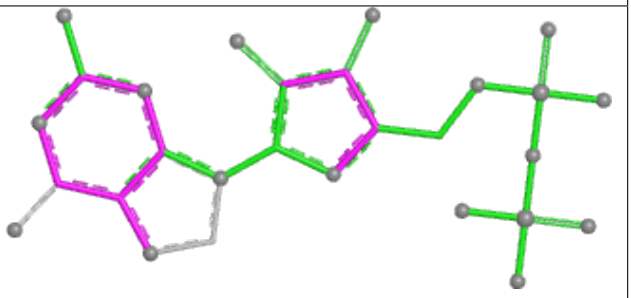
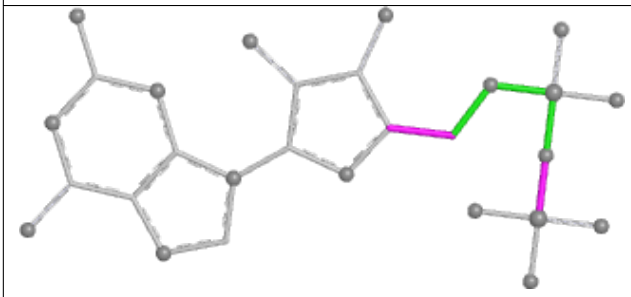
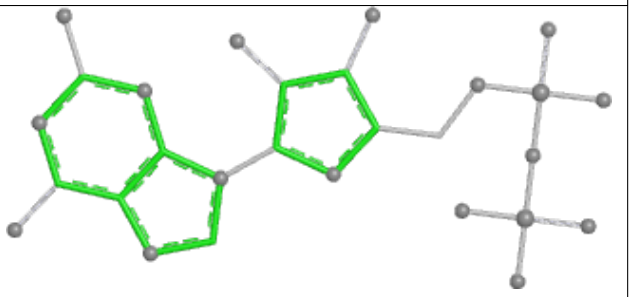
Torsions

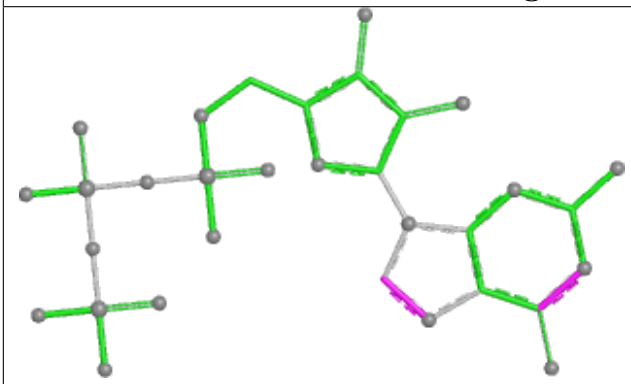
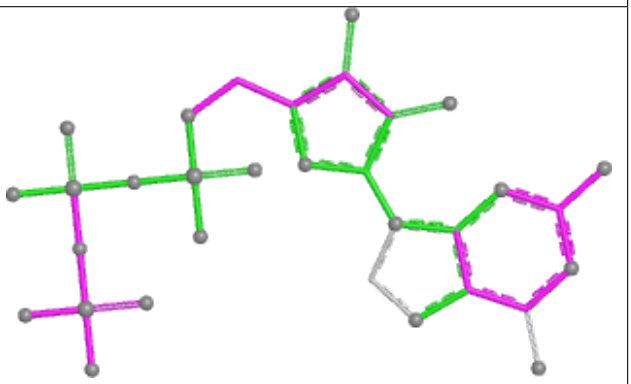
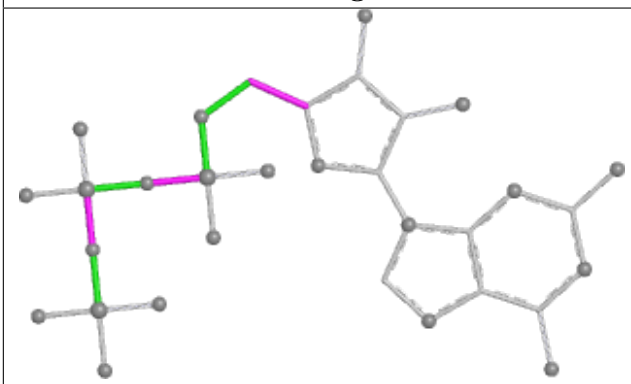
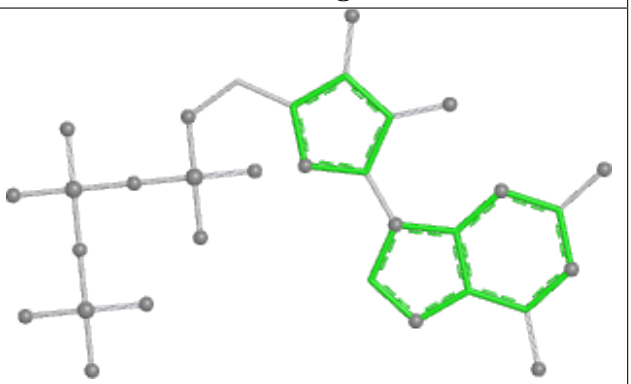


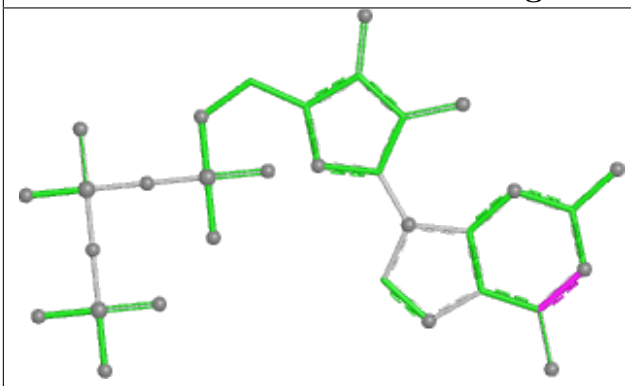
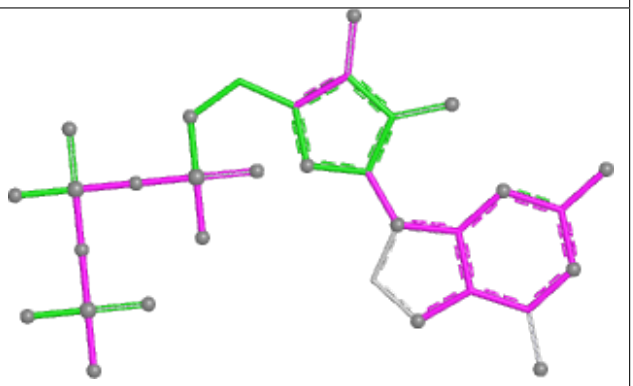
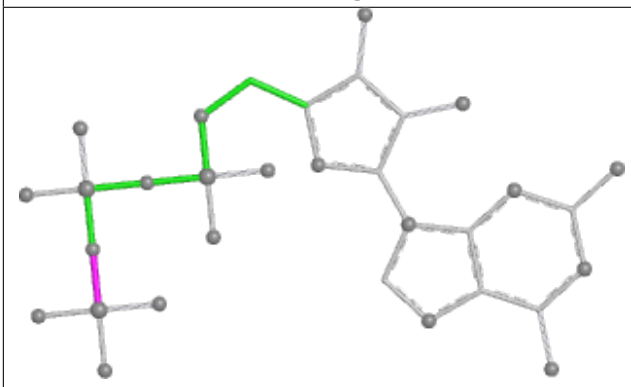
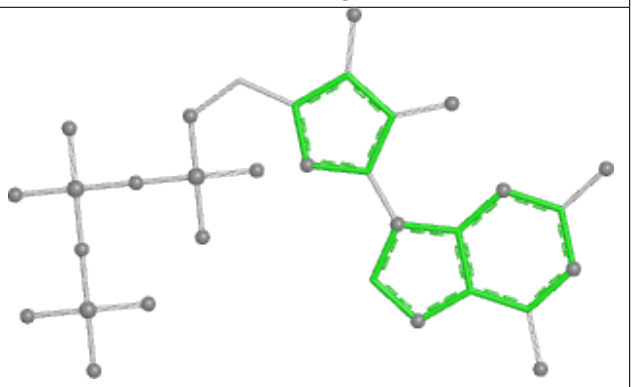
Rings

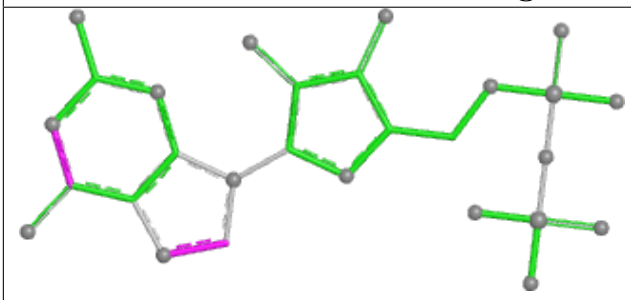
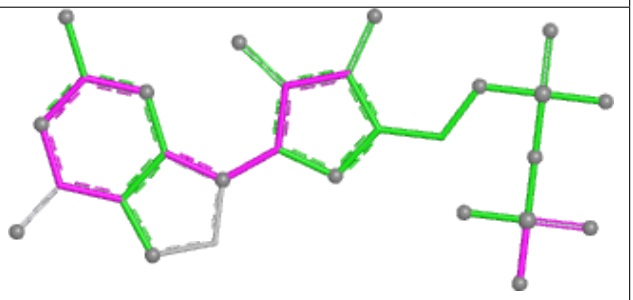
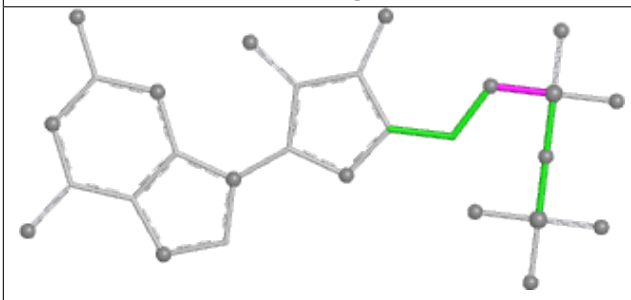
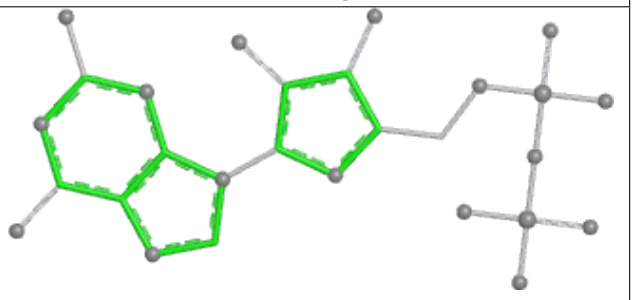
Ligand GDP E 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

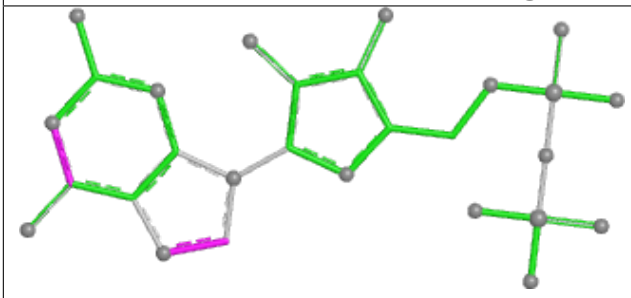
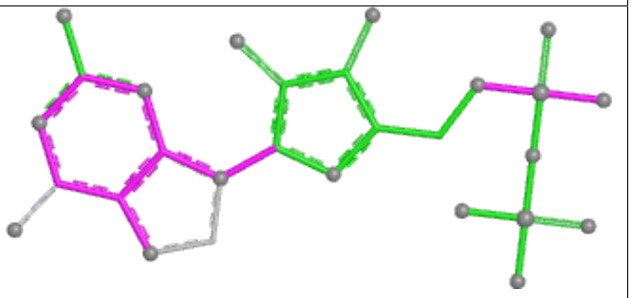
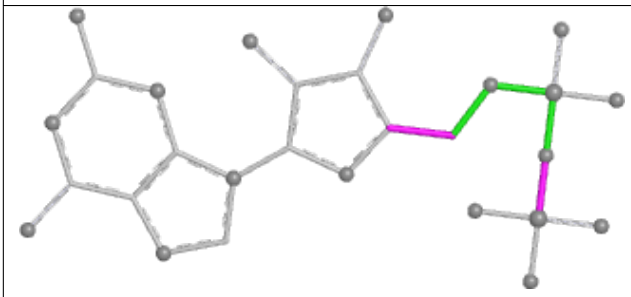
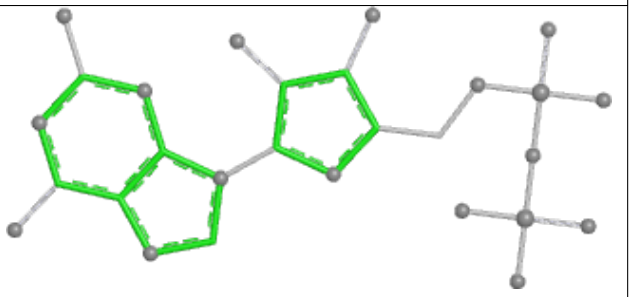
Ligand GDP C 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

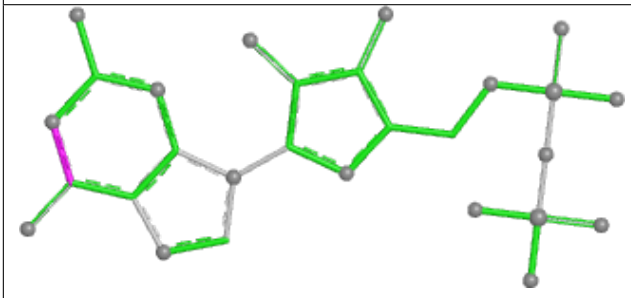
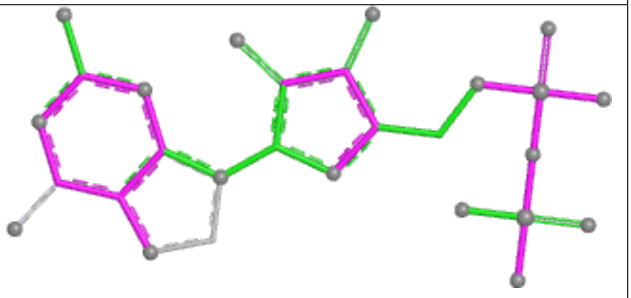
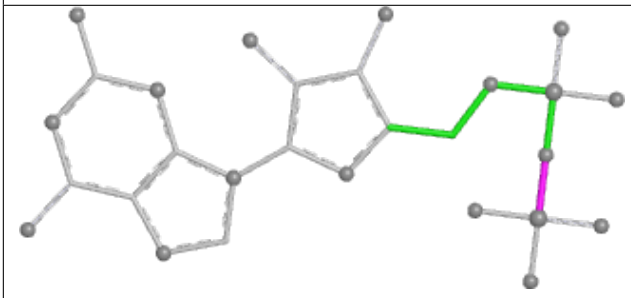
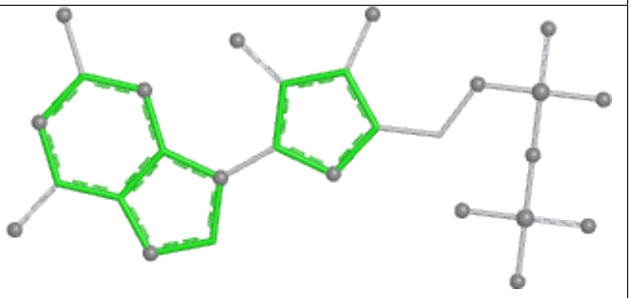
Ligand GDP I 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand GTP B 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand GTP L 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand GDP M 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand GDP A 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand GDP K 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

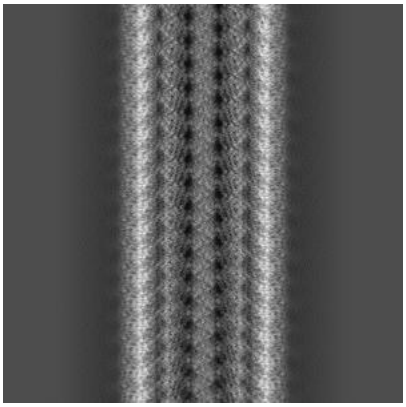
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-7522. These allow visual inspection of the internal detail of the map and identification of artifacts.

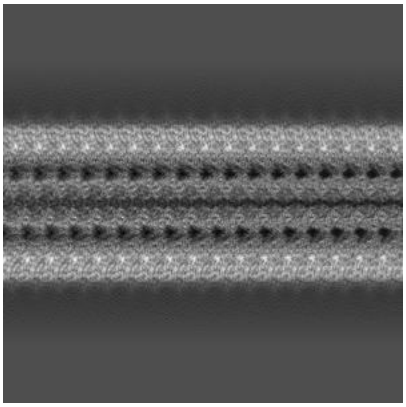
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

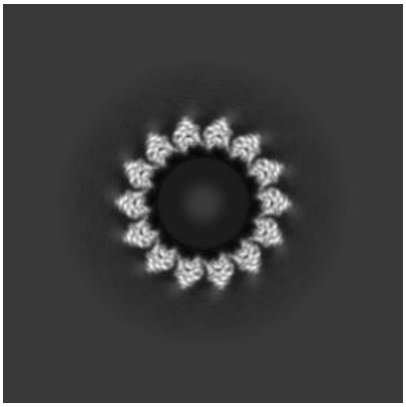
6.1.1 Primary map



X



Y

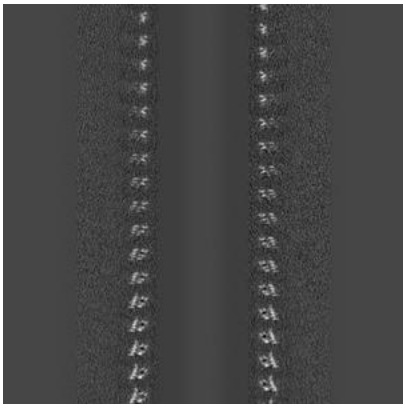


Z

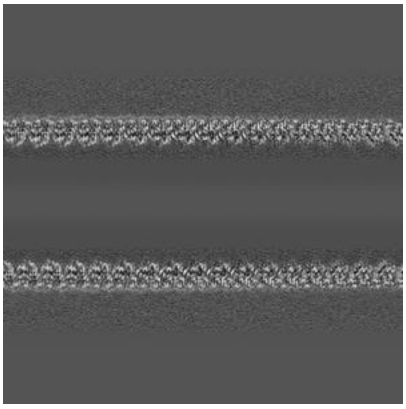
The images above show the map projected in three orthogonal directions.

6.2 Central slices

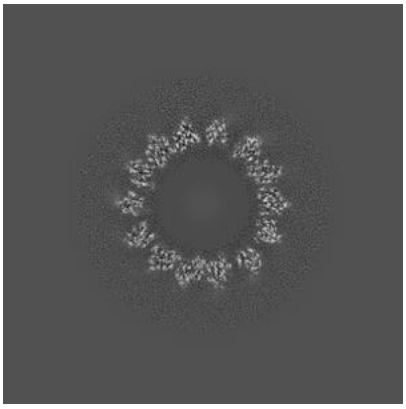
6.2.1 Primary map



X Index: 256



Y Index: 256

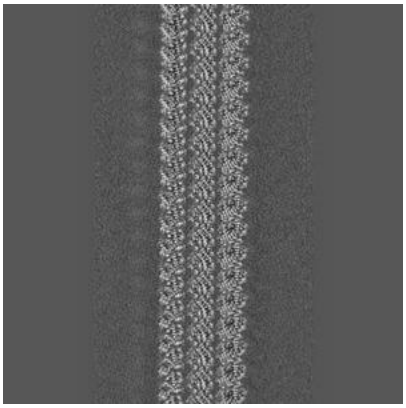


Z Index: 256

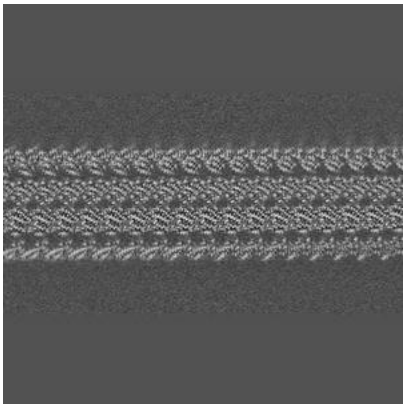
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

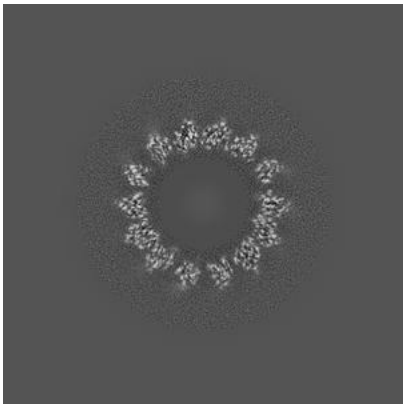
6.3.1 Primary map



X Index: 174



Y Index: 337

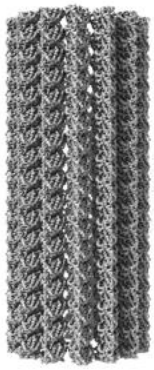


Z Index: 237

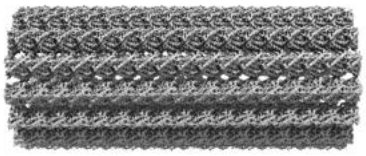
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

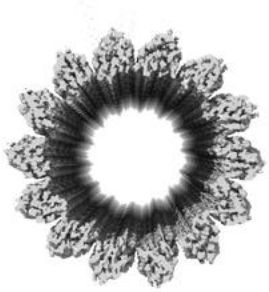
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.26. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

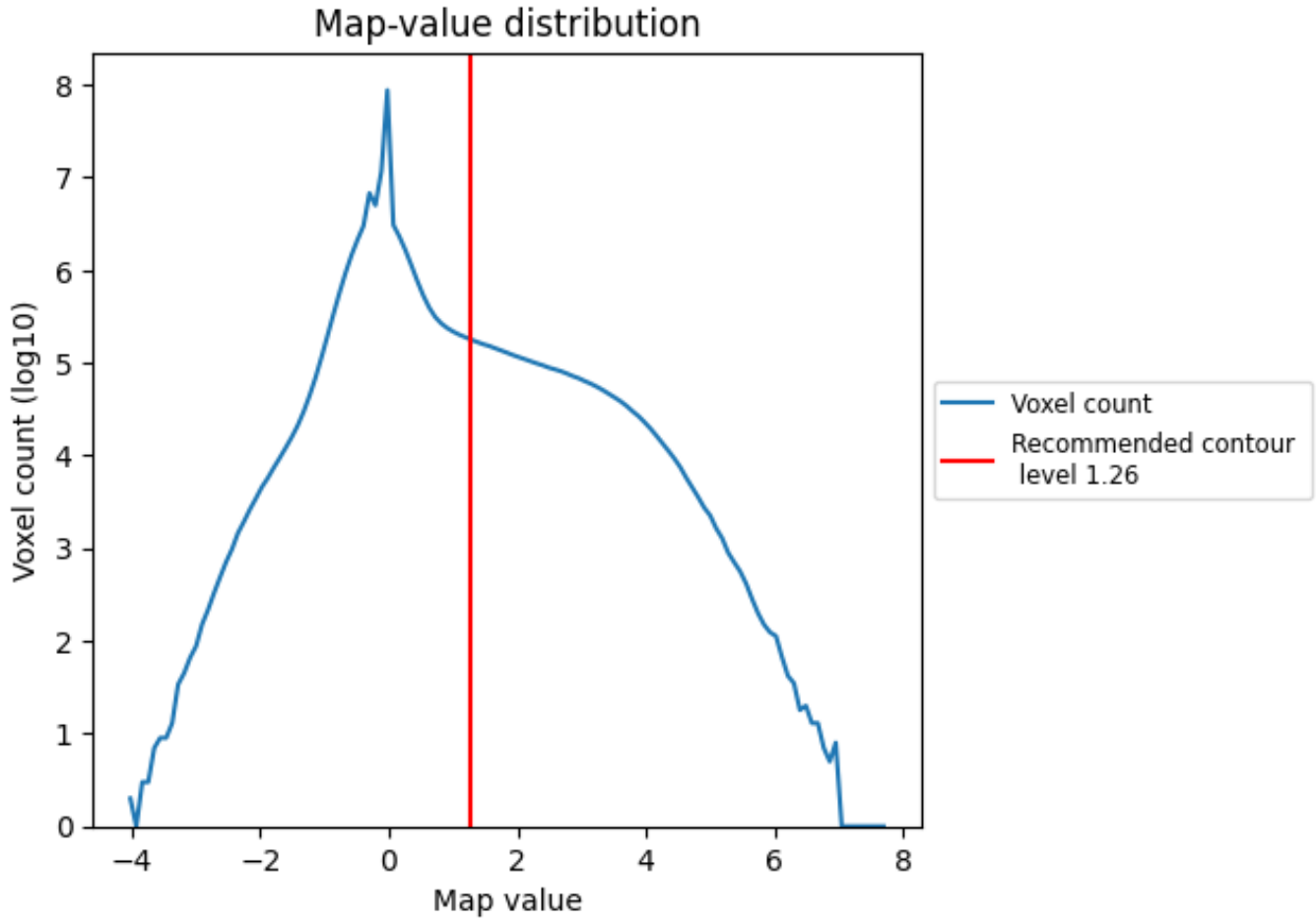
6.5 Mask visualisation (i)

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

7 Map analysis

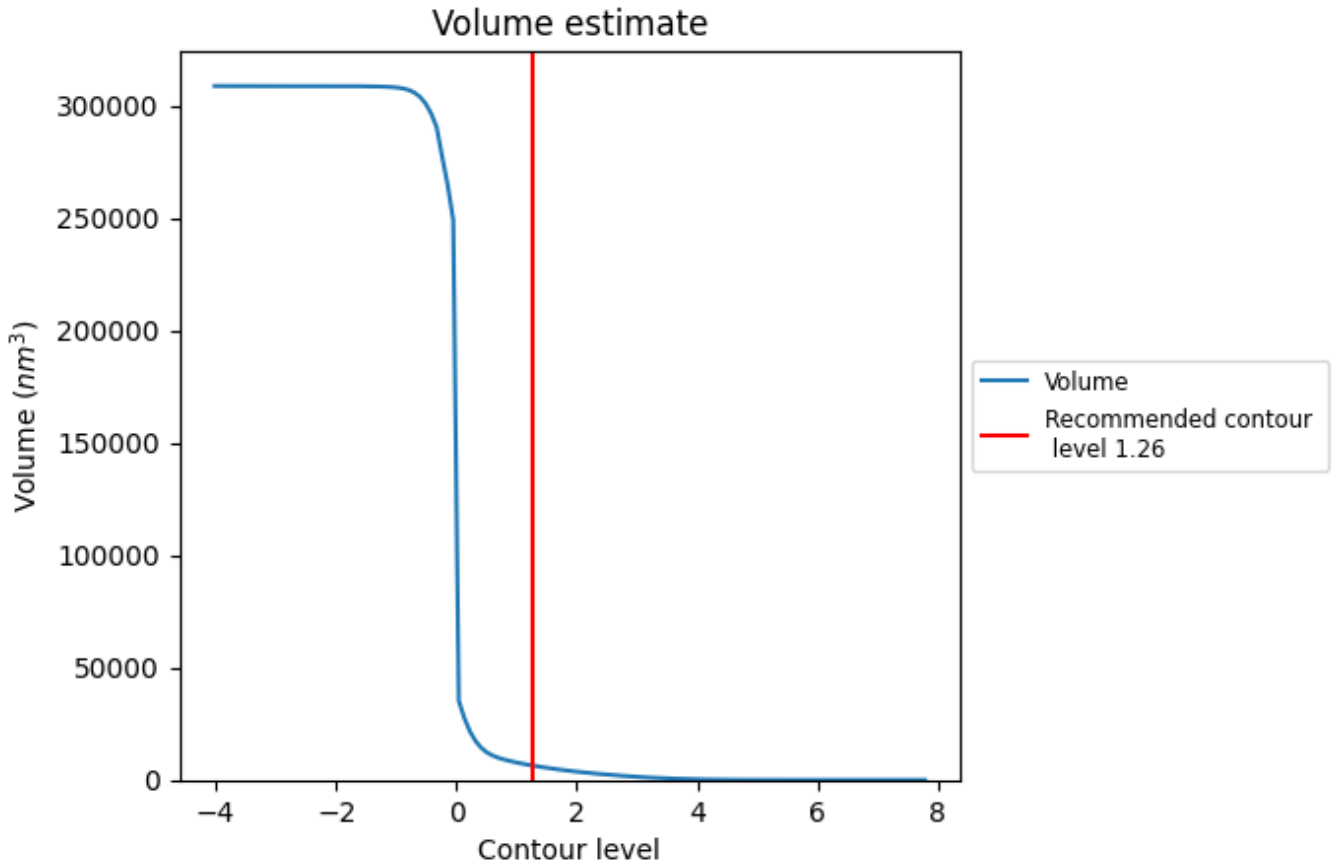
This section contains the results of statistical analysis of the map.

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.

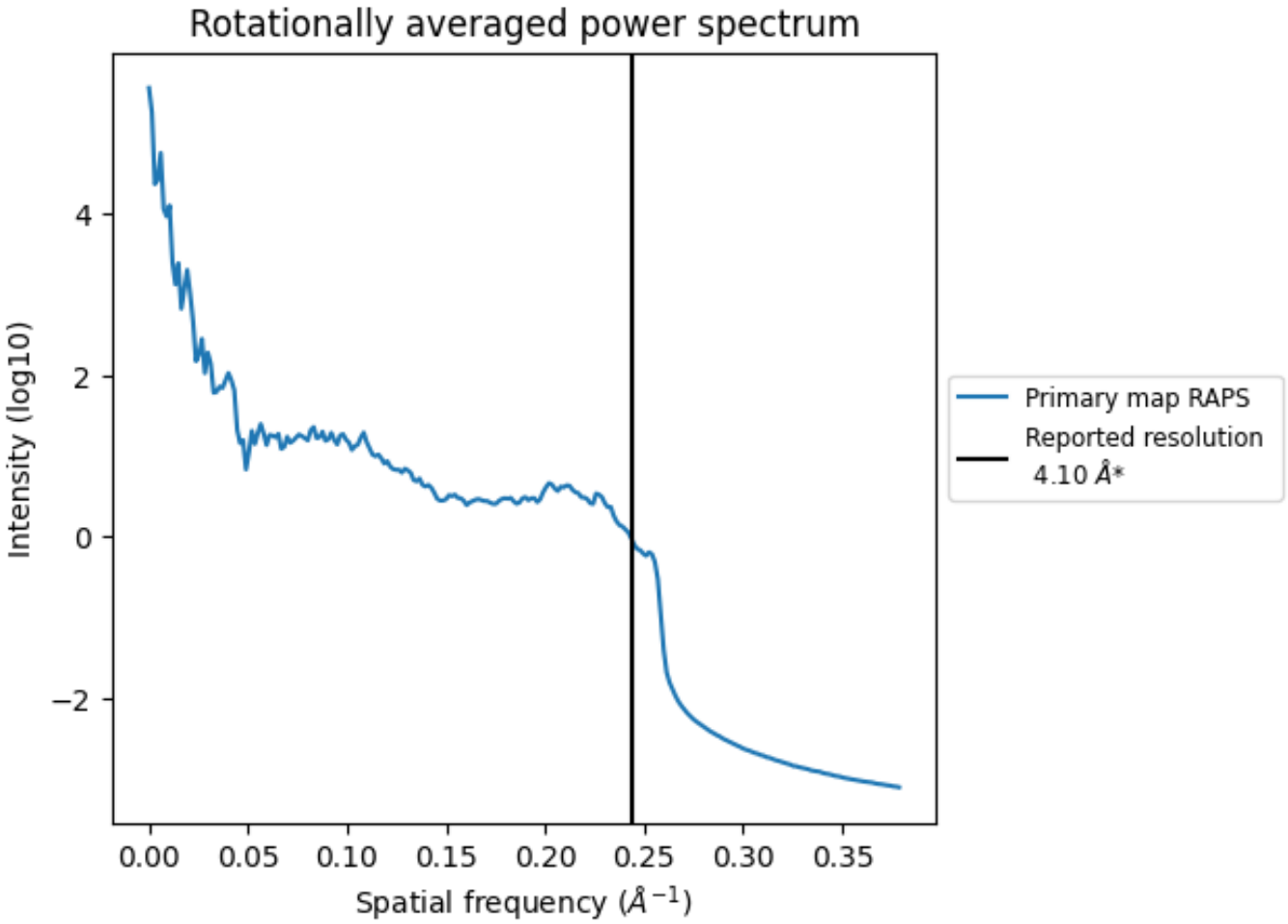
7.2 Volume estimate



The volume at the recommended contour level is 6436 nm^3; this corresponds to an approximate mass of 5814 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 0.244 Å^{-1}

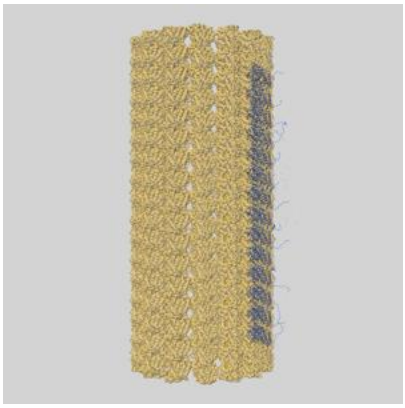
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

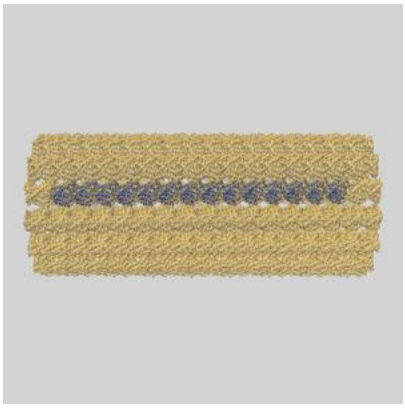
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-7522 and PDB model 7PQC. Per-residue inclusion information can be found in section 3 on page 8.

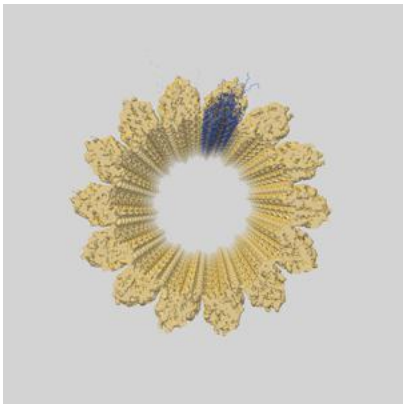
9.1 Map-model overlay



X



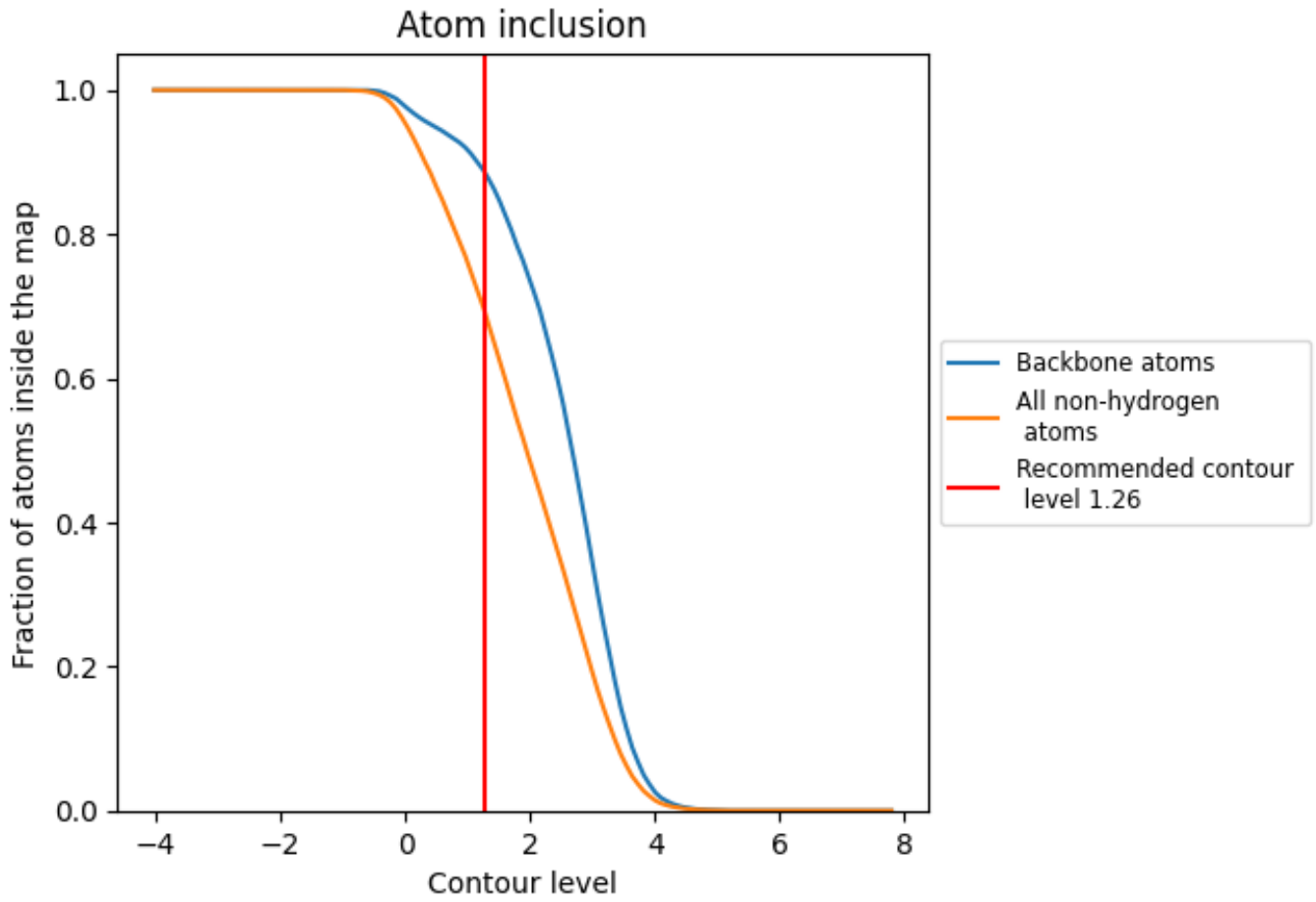
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.26 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 Atom inclusion (i)



At the recommended contour level, 89% of all backbone atoms, 70% of all non-hydrogen atoms, are inside the map.