



## Full wwPDB EM Validation Report ⓘ

Jan 29, 2022 – 06:20 am GMT

PDB ID : 7QJ4  
EMDB ID : EMD-14009  
Title : Structure of recombinant human gamma-Tubulin Ring Complex 10-spoked assembly intermediate (spokes 5-14)  
Authors : Zupa, E.; Pfeffer, S.  
Deposited on : 2021-12-16  
Resolution : 9.00 Å (reported)  
Based on initial models : 6V6S, 7AS4, 6L81, 6X0U

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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.

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

EMDB validation analysis : 0.0.0.dev97  
MolProbity : 4.02b-467  
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) : 2.26

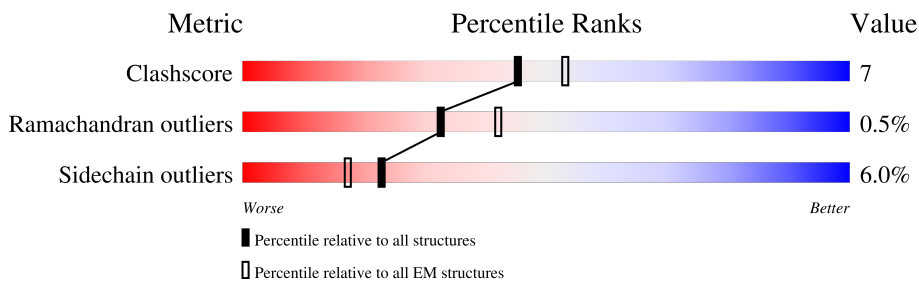
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 9.00 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.



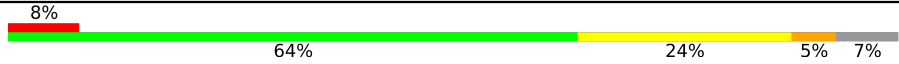
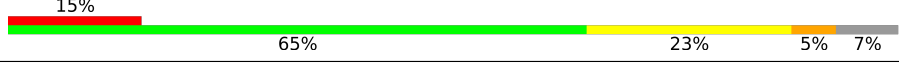
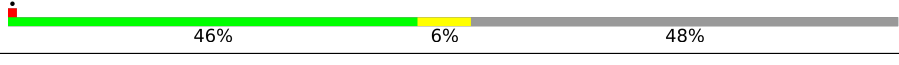
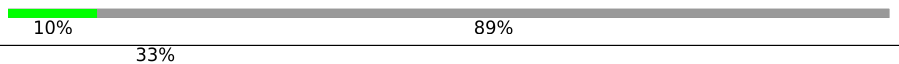



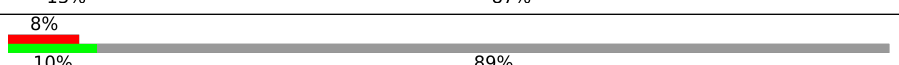

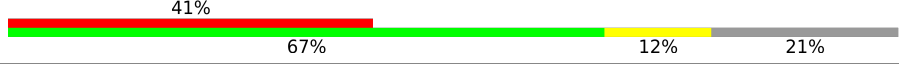
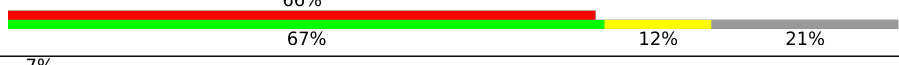
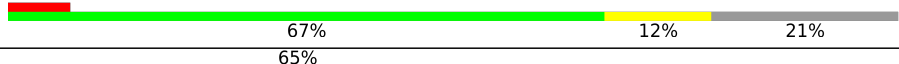








Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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  $\geq 3$ , 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  $\leq 5\%$ . 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	1	451	
1	2	451	
1	S	451	
1	T	451	
1	U	451	
1	V	451	
1	W	451	
1	X	451	

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Mol	Chain	Length	Quality of chain
1	Y	451	
1	Z	451	
2	J	1024	
2	l	1024	
3	F	907	
3	H	907	
3	N	907	
3	a	907	
3	j	907	
3	n	907	
4	b	82	
4	k	82	
4	m	82	
4	o	82	
5	E	902	
5	G	902	
5	M	902	
6	I	667	
6	K	667	
7	L	1819	

## 2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 87259 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 gamma-1 chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	1	420	3373	2134	586	638	15	0	0
1	2	420	3373	2134	586	638	15	0	0
1	S	420	3373	2134	586	638	15	0	0
1	T	420	3373	2134	586	638	15	0	0
1	U	420	3373	2134	586	638	15	0	0
1	V	420	3373	2134	586	638	15	0	0
1	W	420	3373	2134	586	638	15	0	0
1	X	420	3373	2134	586	638	15	0	0
1	Y	420	3373	2134	586	638	15	0	0
1	Z	420	3373	2134	586	638	15	0	0

- Molecule 2 is a protein called Gamma-tubulin complex component 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	I	108	875	556	151	167	1	0	0
2	J	534	4429	2893	737	776	23	0	0

- Molecule 3 is a protein called Gamma-tubulin complex component 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	n	99	803	509	148	144	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	F	599	Total	C	N	O	S	0	0
			4941	3151	871	894	25		
3	H	594	Total	C	N	O	S	0	0
			4907	3130	864	888	25		
3	N	594	Total	C	N	O	S	0	0
			4907	3130	864	888	25		
3	j	99	Total	C	N	O	S	0	0
			803	509	148	144	2		
3	a	116	Total	C	N	O	S	0	0
			933	591	171	169	2		

- Molecule 4 is a protein called Mitotic-spindle organizing protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	o	65	Total	C	N	O	S	0	0
			484	299	85	96	4		
4	m	65	Total	C	N	O	S	0	0
			484	299	85	96	4		
4	k	65	Total	C	N	O	S	0	0
			484	299	85	96	4		
4	b	65	Total	C	N	O	S	0	0
			484	299	85	96	4		

- Molecule 5 is a protein called Gamma-tubulin complex component 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	638	Total	C	N	O	S	0	0
			5202	3354	873	942	33		
5	G	640	Total	C	N	O	S	0	0
			5216	3359	878	946	33		
5	M	636	Total	C	N	O	S	0	0
			5186	3342	871	940	33		

- Molecule 6 is a protein called Gamma-tubulin complex component 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	I	521	Total	C	N	O	S	0	0
			4225	2737	720	750	18		
6	K	562	Total	C	N	O	S	0	0
			4579	2964	781	816	18		

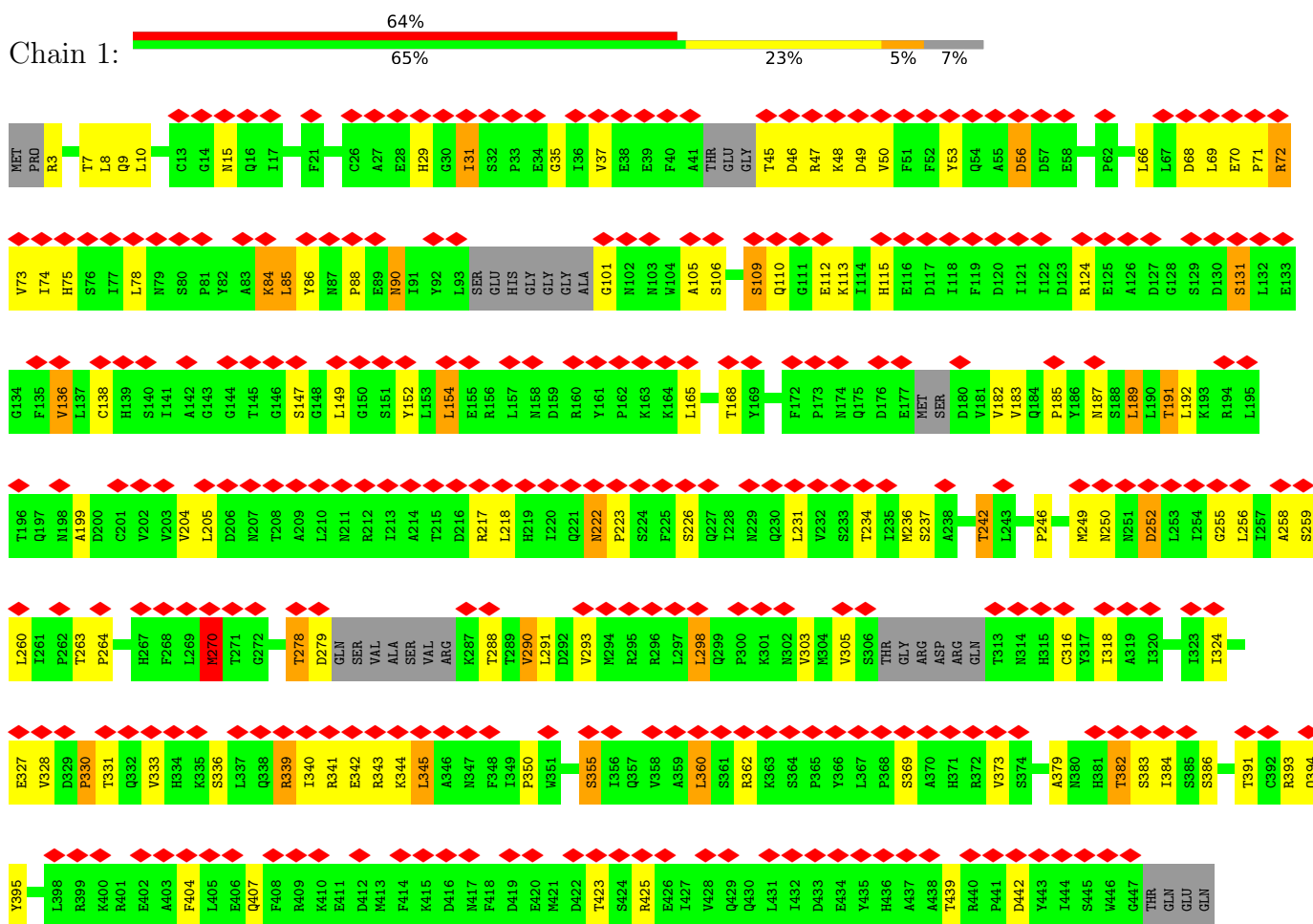
- Molecule 7 is a protein called Gamma-tubulin complex component 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	L	566	4587	3000	773	789	25	0	0

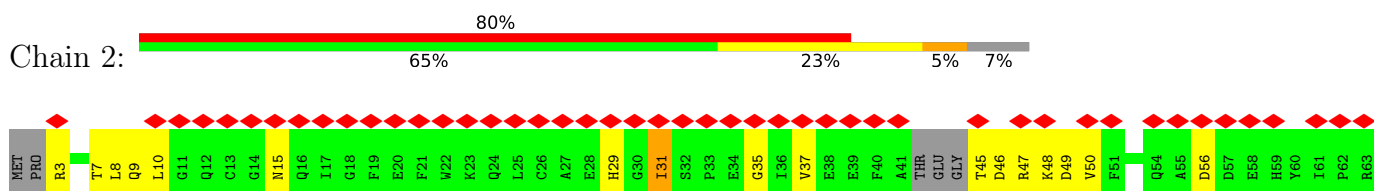
### 3 Residue-property plots [i](#)

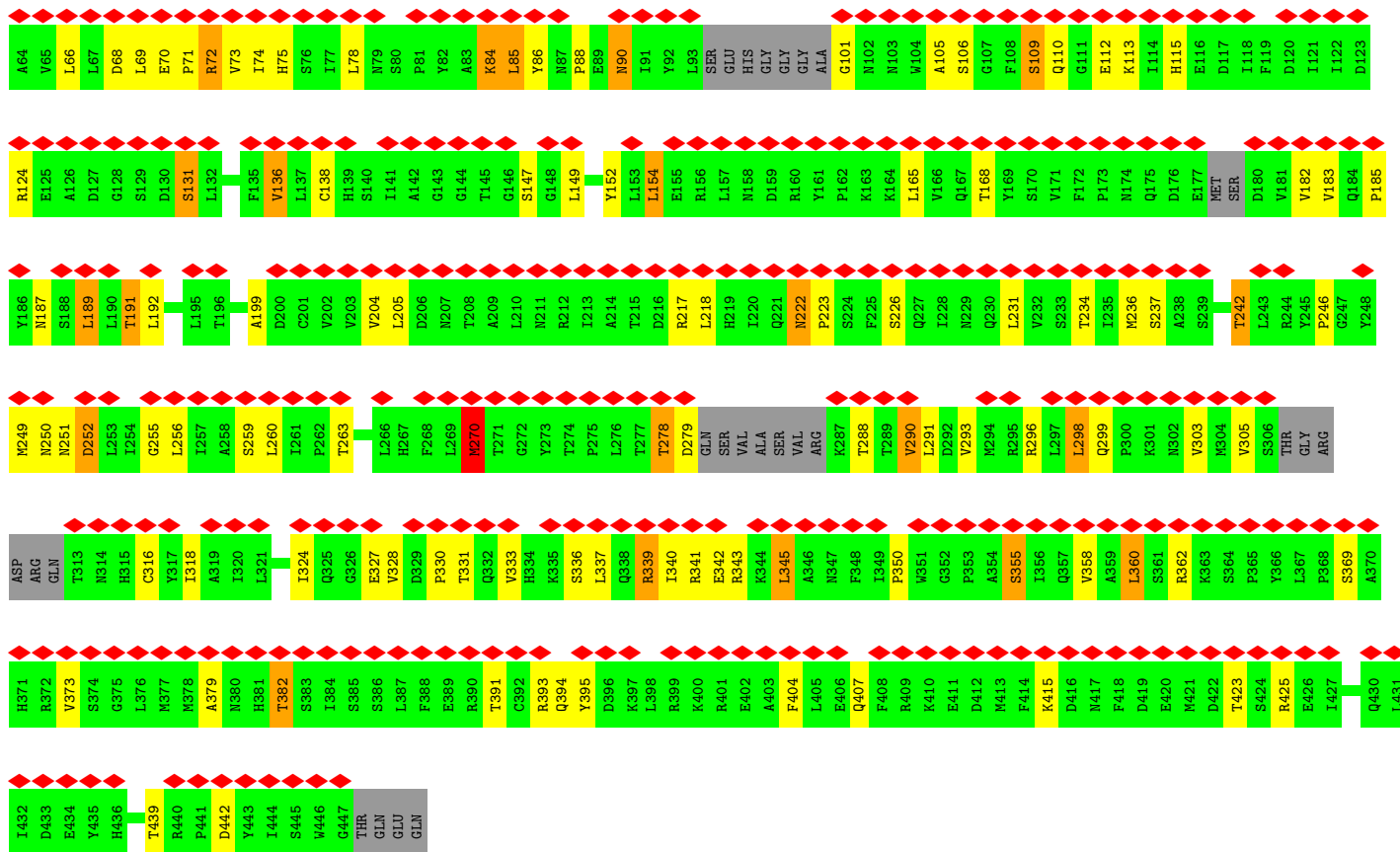
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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 gamma-1 chain

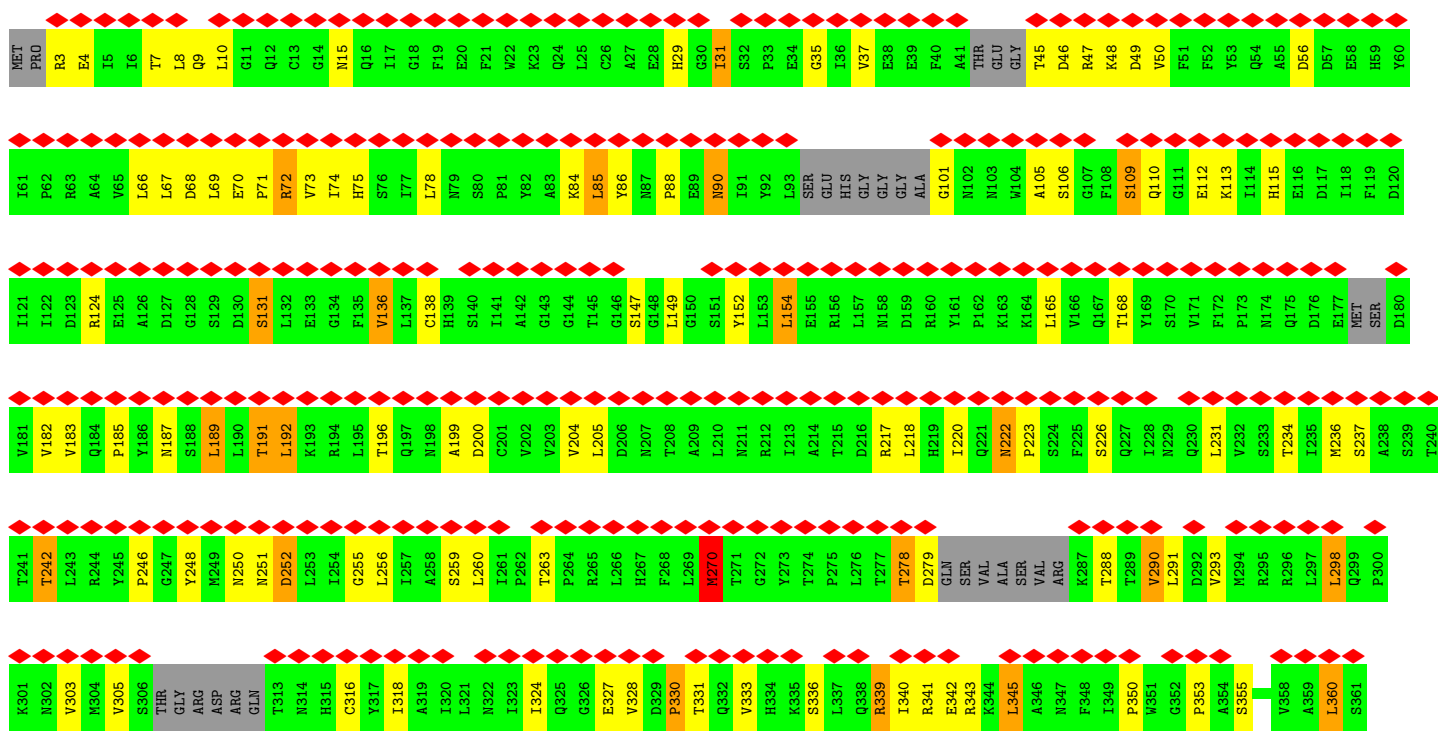
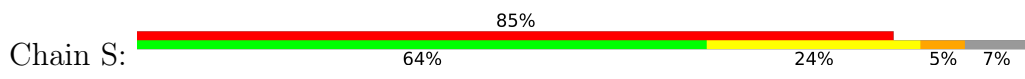


- Molecule 1: Tubulin gamma-1 chain

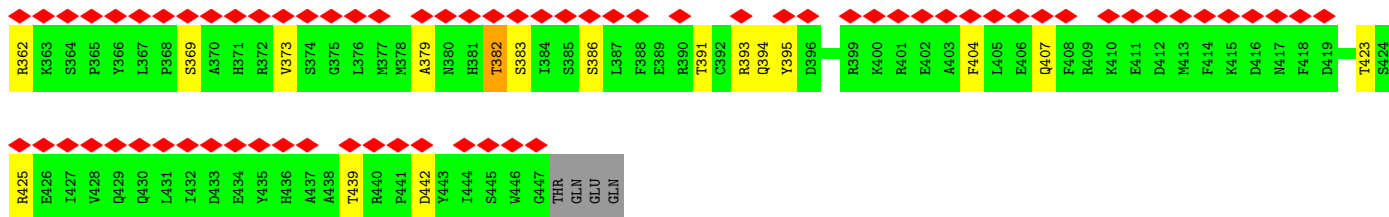




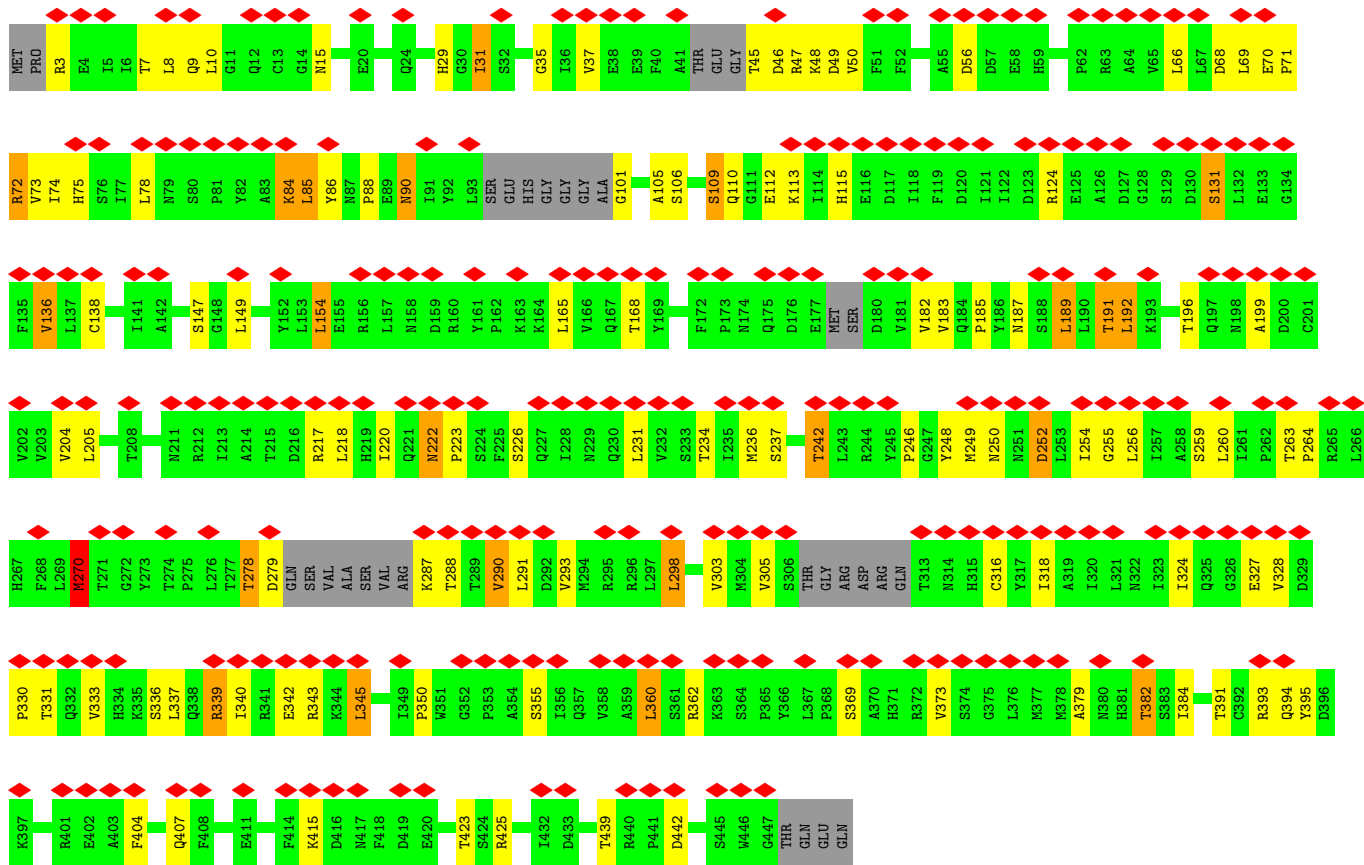
● Molecule 1: Tubulin gamma-1 chain



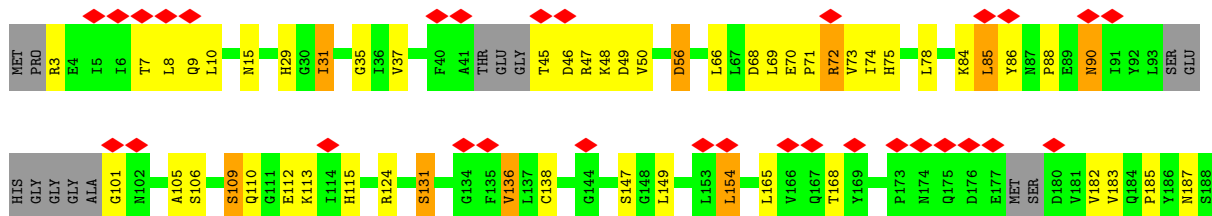


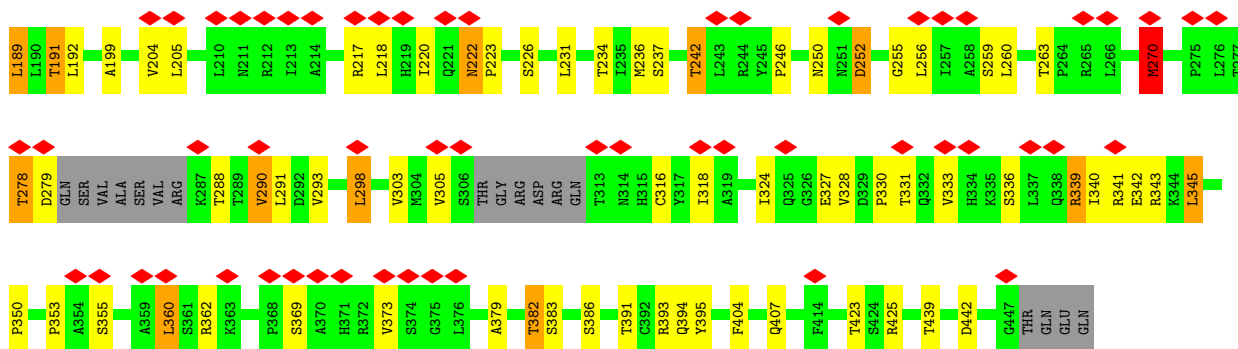


• Molecule 1: Tubulin gamma-1 chain

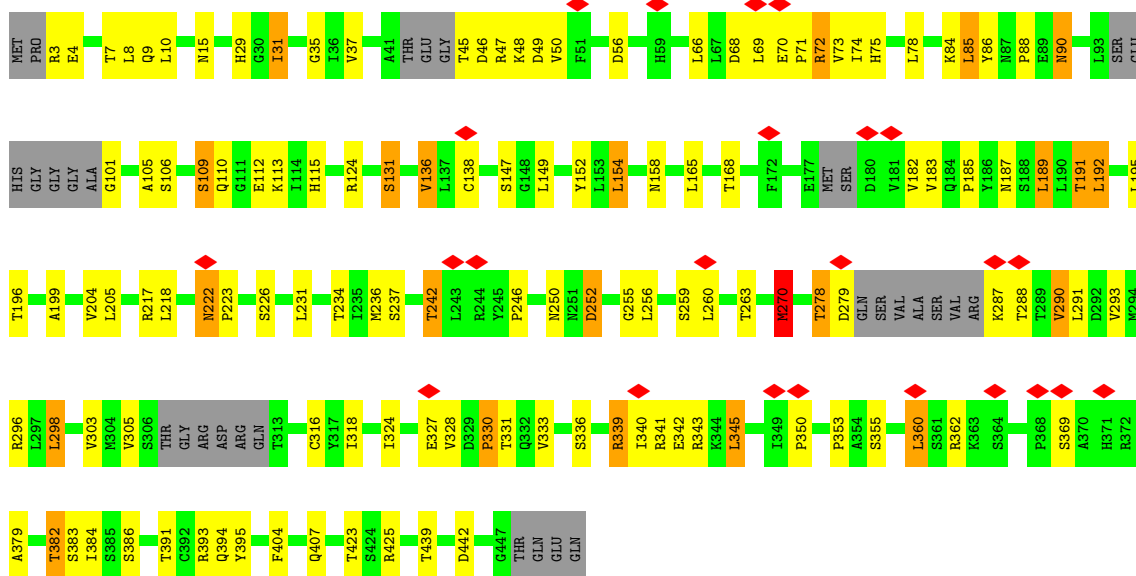


• Molecule 1: Tubulin gamma-1 chain

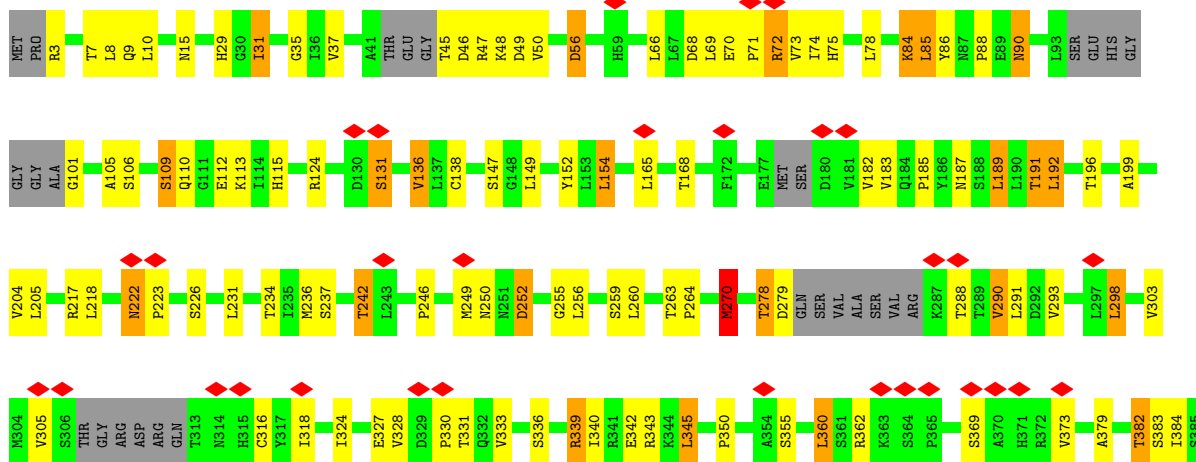


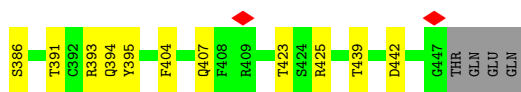


• Molecule 1: Tubulin gamma-1 chain

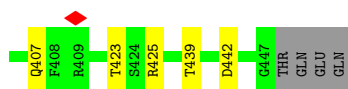
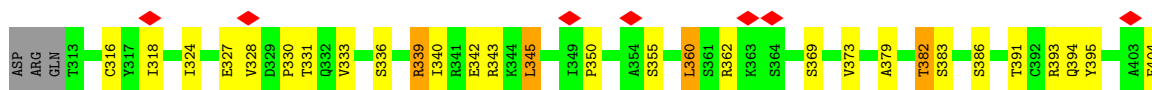
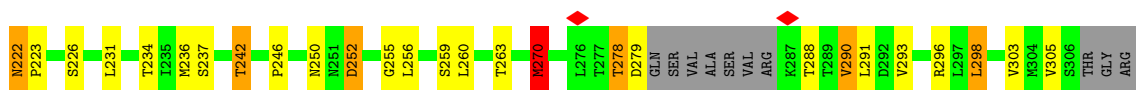
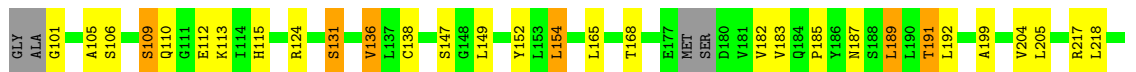
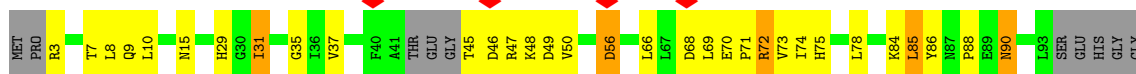


• Molecule 1: Tubulin gamma-1 chain

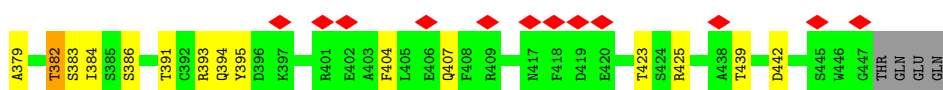




• Molecule 1: Tubulin gamma-1 chain

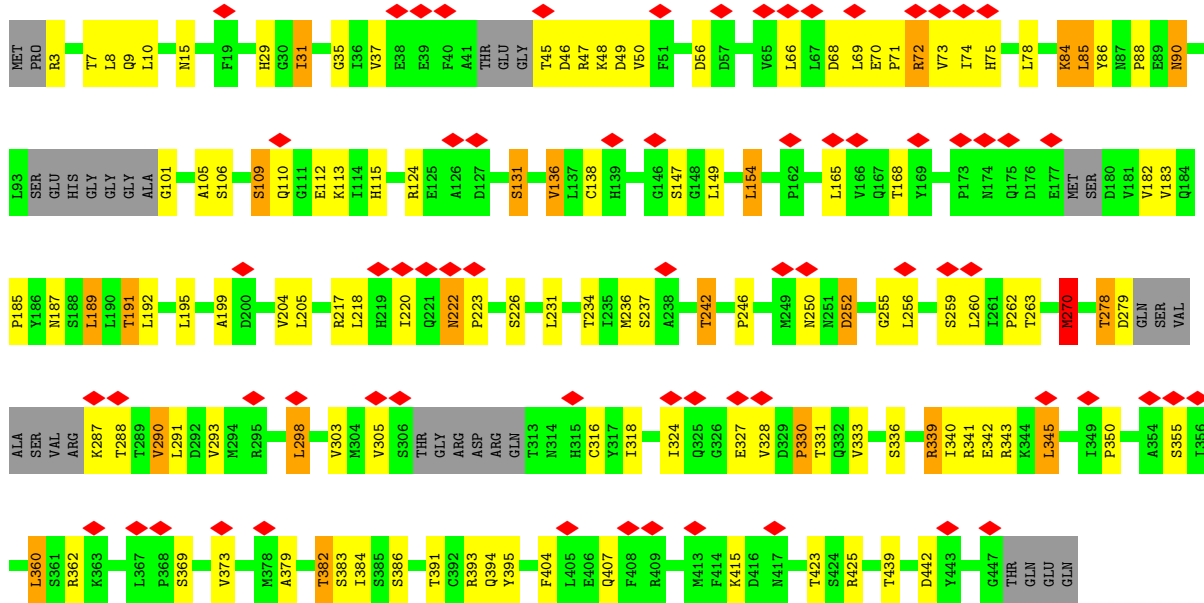


• Molecule 1: Tubulin gamma-1 chain

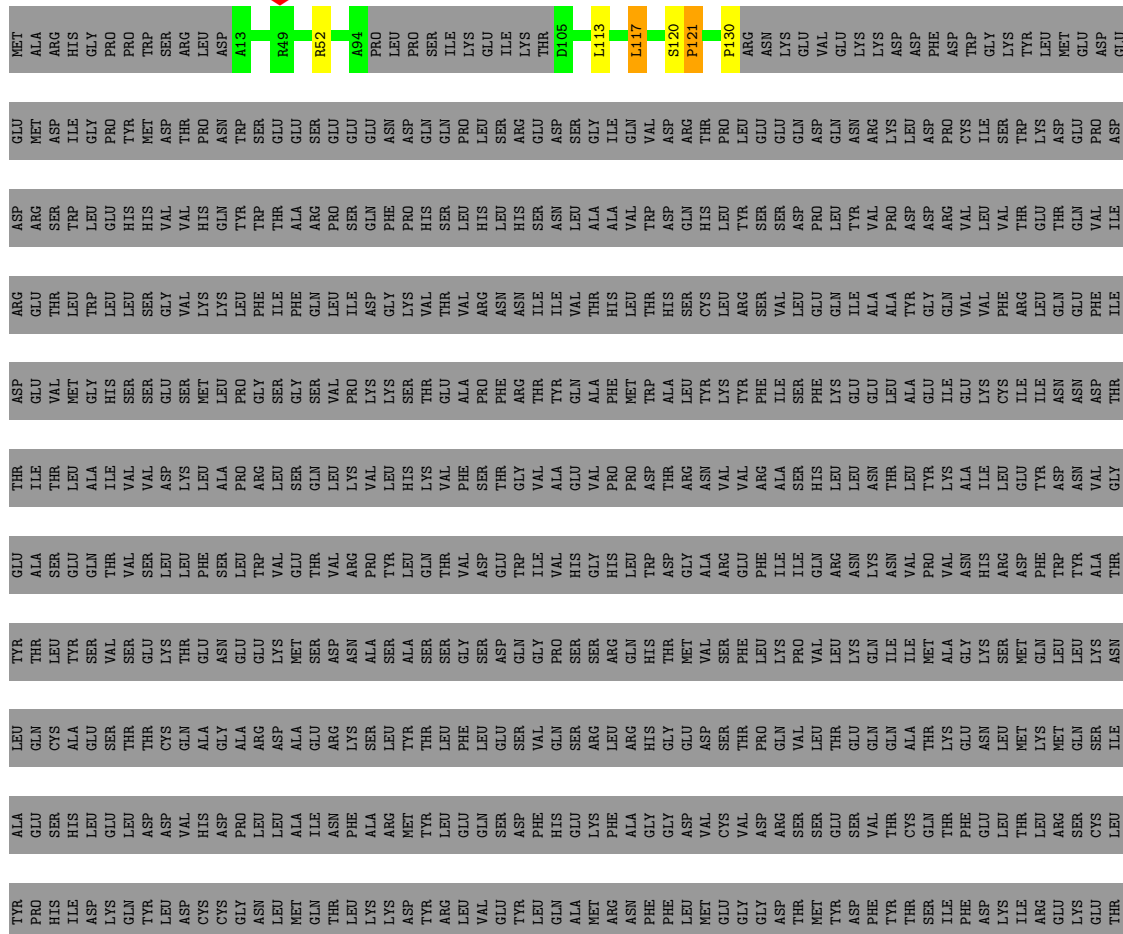


• Molecule 1: Tubulin gamma-1 chain

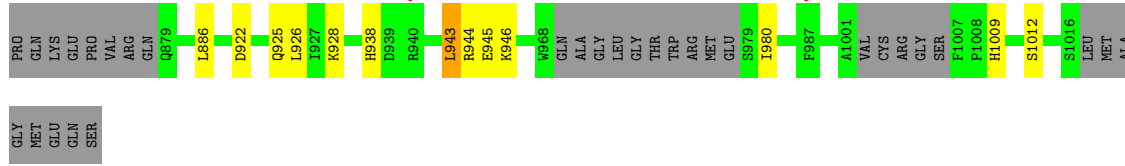




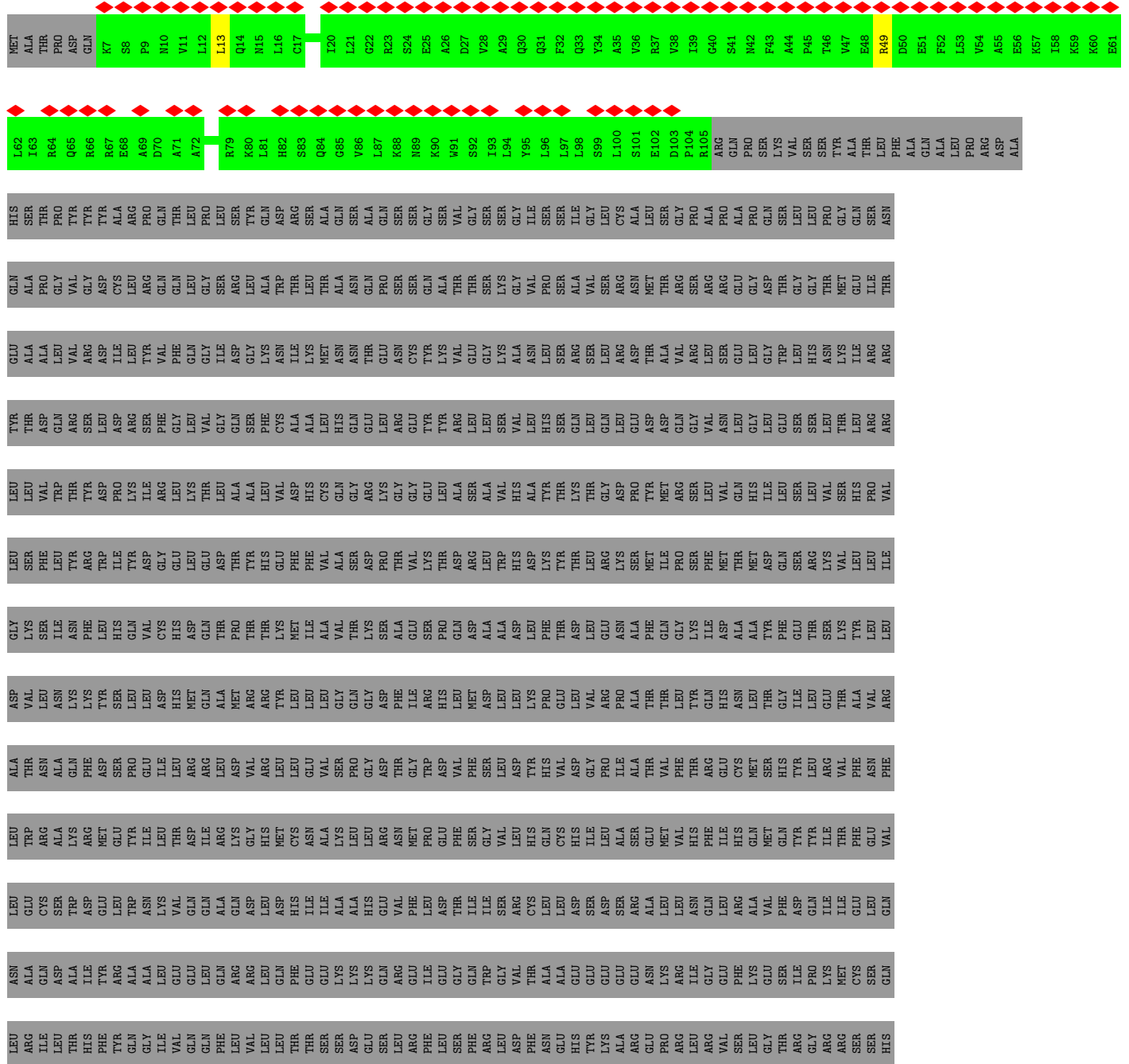
• Molecule 2: Gamma-tubulin complex component 5







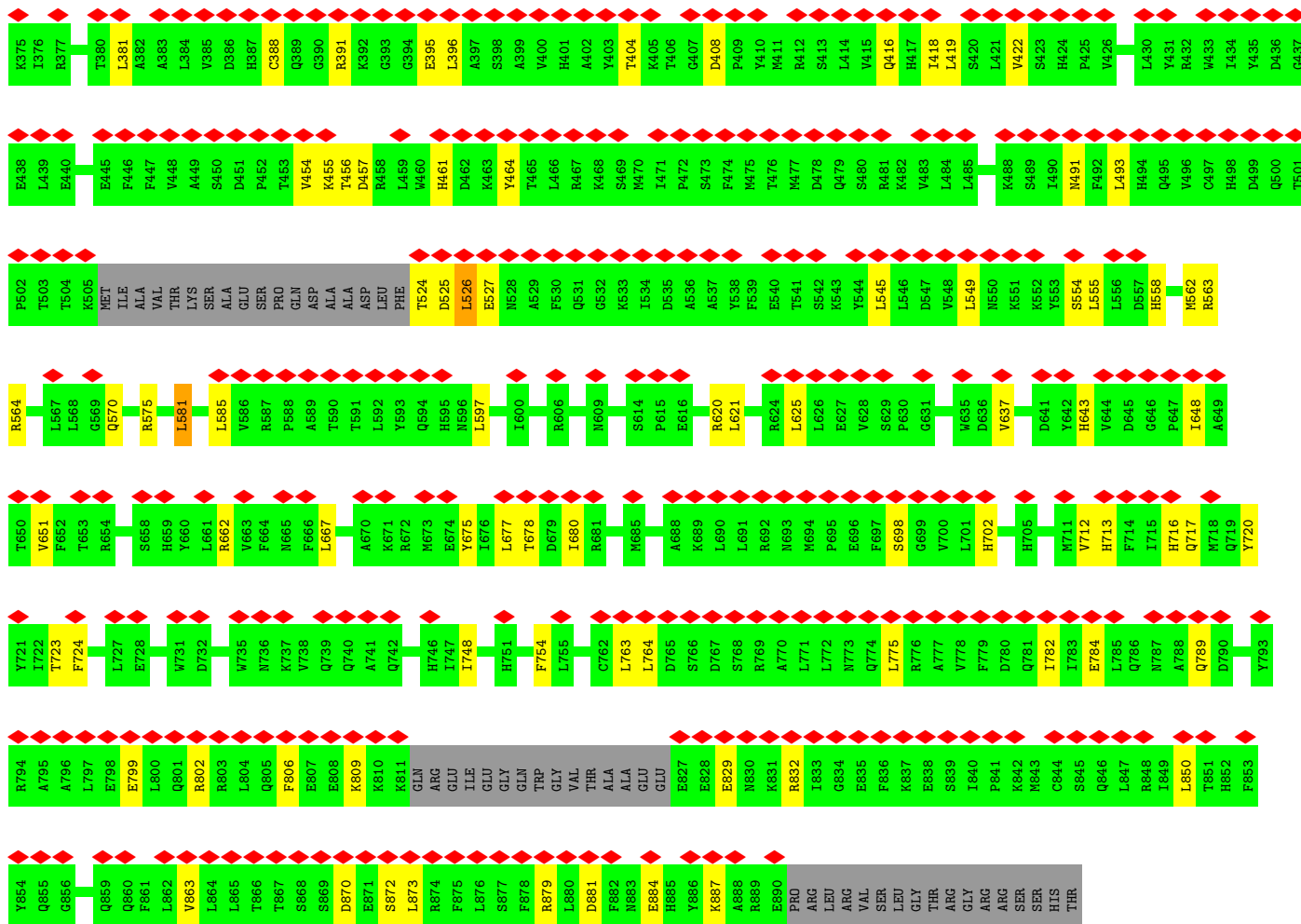
• Molecule 3: Gamma-tubulin complex component 3



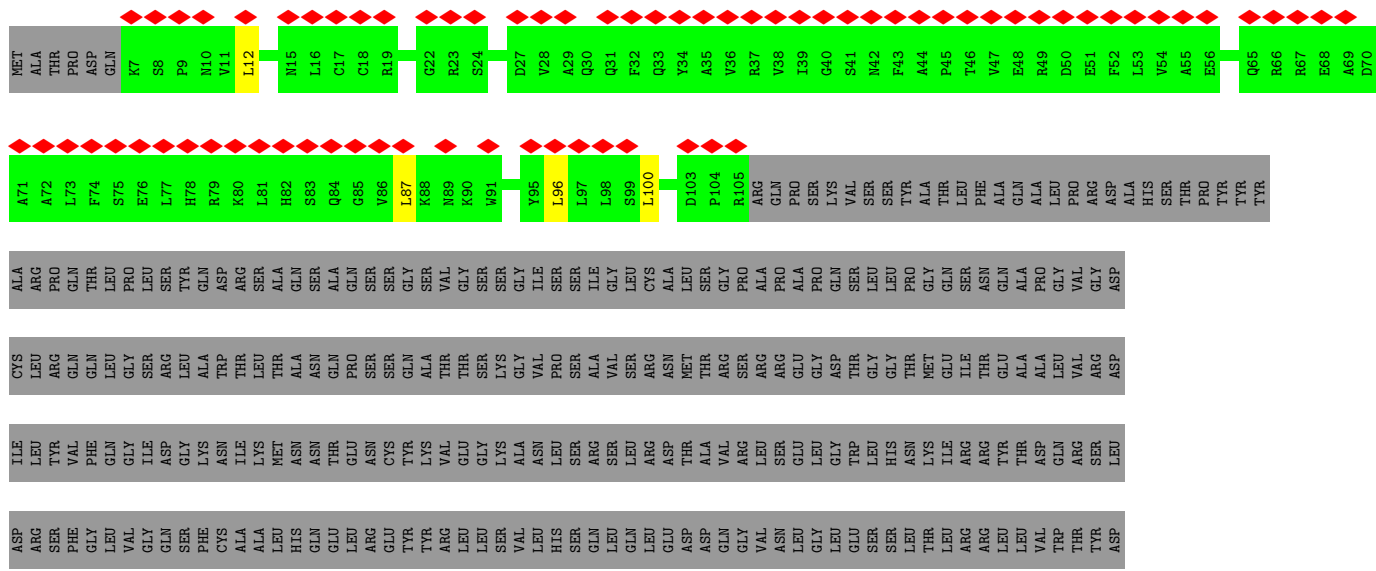






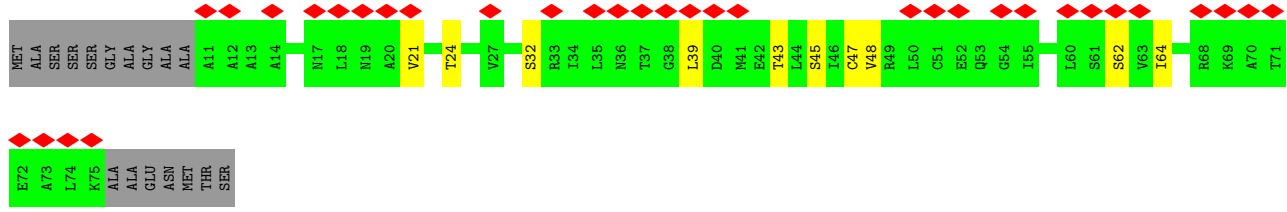


● Molecule 3: Gamma-tubulin complex component 3

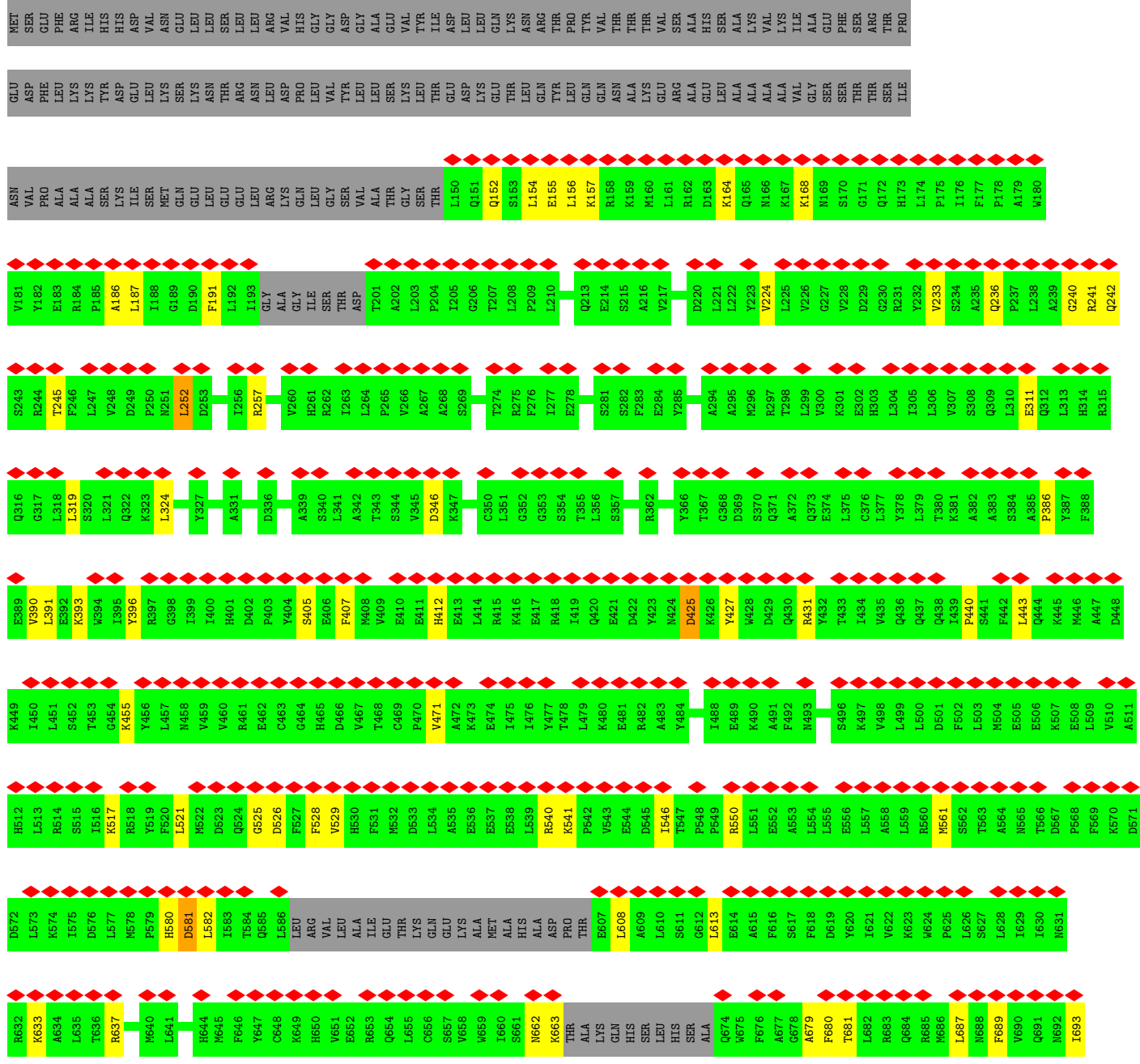








• Molecule 5: Gamma-tubulin complex component 2







MET	GLU	ASP	VAL	ASN	V181	V248	H314	L375	L457	V529	ILE	K663	L730	GLU	GLU	S857	GLU	GLU	S858
SER	ASP	PHE	PRO	VAL	Y182	D249	R315	C376	M458	H630	THR	THR	D731	GLU	ARG	GLU	GLU	ARG	R858
PHE	LEU	ARG	ALA	ALA	E183	P250	Q316	L377	W459	F531	GLY	ALA	D732	ARG	ALA	ARG	ARG	ALA	L859
LEU	LYS	LEU	ALA	ALA	A186	N251	G317	Y378	V460	M332	GLN	GLY	L733	ARG	LYS	ARG	ARG	LYS	D860
ARG	TYR	ASP	ALA	SER	L187	L252	L318	K381	R461	D533	LYS	HIS	K734	GLY	GLY	LEU	LEU	GLY	F861
HIS	ASP	GLY	LYS	ILE	I188	L254	L319	A382	C462	L534	ALA	ALA	K735	ALA	ALA	LEU	LEU	LEU	N862
HIS	ASP	ASP	LYS	ILE	D190	S255	S320	A383	C464	E536	ALA	SER	M736	ALA	ALA	ALA	ALA	ALA	G863
VAL	GLY	GLY	ASN	ILE	D199	I256	L321	Y396	H465	E538	ALA	GLY	L739	ARG	ARG	ARG	ARG	ARG	F864
VAL	LEU	ASP	ASN	MET	F191	R257	L322	R397	D466	L539	ALA	ASP	T740	LYS	LYS	LYS	HIS	HIS	Y865
GLY	LEU	LEU	ASN	GLN	F191	R257	L322	R397	D466	L539	PRO	THR	N741	LEU	LEU	LEU	LEU	LEU	T866
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	F742	ALA	ALA	ALA	ALA	ALA	E867
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	E743	ALA	ALA	ALA	ALA	ALA	R868
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	K746	ALA	ALA	ALA	ALA	ALA	E870
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V747	ALA	ALA	ALA	ALA	ALA	R871
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	F748	ALA	ALA	ALA	ALA	ALA	L872
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L751	ALA	ALA	ALA	ALA	ALA	S872
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M752	ALA	ALA	ALA	ALA	ALA	A873
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	S753	ALA	ALA	ALA	ALA	ALA	G874
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V754	ALA	ALA	ALA	ALA	ALA	F878
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	C755	ALA	ALA	ALA	ALA	ALA	E879
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V756	ALA	ALA	ALA	ALA	ALA	R880
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V757	ALA	ALA	ALA	ALA	ALA	E881
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	F758	ALA	ALA	ALA	ALA	ALA	R882
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	T759	ALA	ALA	ALA	ALA	ALA	I883
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M760	ALA	ALA	ALA	ALA	ALA	N823
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	C761	ALA	ALA	ALA	ALA	ALA	K824
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M762	ALA	ALA	ALA	ALA	ALA	F825
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V763	ALA	ALA	ALA	ALA	ALA	N828
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	K764	ALA	ALA	ALA	ALA	ALA	F829
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	F765	ALA	ALA	ALA	ALA	ALA	N831
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V766	ALA	ALA	ALA	ALA	ALA	F832
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	T767	ALA	ALA	ALA	ALA	ALA	D833
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	S768	ALA	ALA	ALA	ALA	ALA	L836
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M769	ALA	ALA	ALA	ALA	ALA	N839
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	K770	ALA	ALA	ALA	ALA	ALA	L840
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V771	ALA	ALA	ALA	ALA	ALA	S841
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A772	ALA	ALA	ALA	ALA	ALA	I842
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L773	ALA	ALA	ALA	ALA	ALA	Y843
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M774	ALA	ALA	ALA	ALA	ALA	S844
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	T775	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V776	ALA	ALA	ALA	ALA	ALA	SER
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A777	ALA	ALA	ALA	ALA	ALA	ASP
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L778	ALA	ALA	ALA	ALA	ALA	GLY
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M779	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V780	ALA	ALA	ALA	ALA	ALA	ASP
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A781	ALA	ALA	ALA	ALA	ALA	GLY
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L782	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M783	ALA	ALA	ALA	ALA	ALA	SER
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V784	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A785	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L786	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M787	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V788	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A789	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L790	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M791	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V792	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A793	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L794	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M795	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V796	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A797	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L798	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M799	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V800	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A801	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L802	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M803	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V804	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A805	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L806	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M807	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V808	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A809	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L810	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M811	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V812	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A813	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L814	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M815	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	V816	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	A817	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	L818	ALA	ALA	ALA	ALA	ALA	THR
SER	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D466	L539	THR	THR	M819	ALA	ALA	ALA	ALA	ALA	THR
LEU	LEU	LEU	ASN	GLY	F191	R257	L322	R397	D										









## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	6097	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	35	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.272	Depositor
Minimum map value	-0.099	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.0514	Depositor
Map size (Å)	532.0, 532.0, 532.0	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.66, 2.66, 2.66	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

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	1	0.37	0/3441	0.63	1/4661 (0.0%)
1	2	0.37	0/3441	0.63	1/4661 (0.0%)
1	S	0.37	0/3441	0.63	1/4661 (0.0%)
1	T	0.37	0/3441	0.63	1/4661 (0.0%)
1	U	0.37	0/3441	0.63	1/4661 (0.0%)
1	V	0.37	0/3441	0.63	1/4661 (0.0%)
1	W	0.37	0/3441	0.63	1/4661 (0.0%)
1	X	0.37	0/3441	0.63	1/4661 (0.0%)
1	Y	0.37	0/3441	0.63	1/4661 (0.0%)
1	Z	0.37	0/3441	0.63	1/4661 (0.0%)
2	J	0.44	0/4525	0.69	3/6119 (0.0%)
2	l	0.40	0/894	0.69	3/1209 (0.2%)
3	F	0.39	1/5044 (0.0%)	0.66	3/6809 (0.0%)
3	H	0.48	1/5009 (0.0%)	0.72	7/6761 (0.1%)
3	N	0.42	1/5009 (0.0%)	0.68	4/6761 (0.1%)
3	a	0.38	0/948	0.74	1/1277 (0.1%)
3	j	0.37	0/815	0.70	4/1096 (0.4%)
3	n	0.37	0/815	0.67	1/1096 (0.1%)
4	b	0.42	0/484	0.71	0/653
4	k	0.42	0/484	0.71	0/653
4	m	0.42	0/484	0.71	0/653
4	o	0.42	0/484	0.71	0/653
5	E	0.41	0/5311	0.68	2/7169 (0.0%)
5	G	0.41	1/5325 (0.0%)	0.67	4/7187 (0.1%)
5	M	0.43	0/5295	0.75	13/7147 (0.2%)
6	I	0.49	3/4322 (0.1%)	0.68	2/5853 (0.0%)
6	K	0.41	1/4683 (0.0%)	0.70	8/6338 (0.1%)
7	L	0.39	0/4697	0.66	1/6348 (0.0%)
All	All	0.41	8/89038 (0.0%)	0.67	66/120392 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1	0	2
1	2	0	2
1	S	0	2
1	T	0	2
1	U	0	2
1	V	0	2
1	W	0	2
1	X	0	2
1	Y	0	2
1	Z	0	2
2	J	0	2
3	H	0	5
3	N	0	2
5	E	0	2
5	G	0	2
5	M	0	5
6	I	0	4
7	L	0	3
All	All	0	45

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	I	361	TYR	CD2-CE2	-10.32	1.23	1.39
6	I	530	TYR	CD2-CE2	-7.44	1.28	1.39
3	H	603	THR	CB-CG2	6.75	1.74	1.52
3	N	754	PHE	CD1-CE1	-6.73	1.25	1.39
6	K	651	TYR	CB-CG	-6.12	1.42	1.51
6	I	124	TYR	CD1-CE1	-5.31	1.31	1.39
5	G	260	VAL	CB-CG1	-5.24	1.41	1.52
3	F	882	PHE	CE2-CZ	5.17	1.47	1.37

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	K	651	TYR	CB-CG-CD1	15.74	130.44	121.00
3	a	77	LEU	CB-CG-CD2	-11.82	90.90	111.00
6	K	651	TYR	CA-CB-CG	9.06	130.61	113.40
3	H	568	LEU	CA-CB-CG	8.97	135.93	115.30
6	K	651	TYR	CB-CG-CD2	-8.74	115.75	121.00
5	E	252	LEU	CA-CB-CG	8.22	134.21	115.30
2	l	121	PRO	CA-N-CD	-8.07	100.20	111.50
2	l	130	PRO	CA-N-CD	-8.06	100.22	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	N	408	ASP	CB-CG-OD1	7.84	125.35	118.30
3	j	12	LEU	CB-CG-CD2	-7.53	98.20	111.00
6	K	410	LEU	CA-CB-CG	7.45	132.43	115.30
5	M	703	GLU	CB-CA-C	7.13	124.67	110.40
2	J	943	LEU	CA-CB-CG	6.87	131.09	115.30
3	F	430	LEU	CA-CB-CG	6.76	130.85	115.30
3	H	587	ARG	NE-CZ-NH1	6.75	123.67	120.30
5	G	687	LEU	CA-CB-CG	6.49	130.22	115.30
3	H	672	ARG	NE-CZ-NH1	6.39	123.49	120.30
5	G	260	VAL	CG1-CB-CG2	-6.30	100.82	110.90
6	K	645	LEU	CA-CB-CG	6.18	129.52	115.30
3	H	365	ARG	NE-CZ-NH2	-6.14	117.23	120.30
7	L	1779	LEU	CA-CB-CG	6.14	129.41	115.30
6	K	409	ASN	C-N-CA	6.09	136.94	121.70
5	M	554	LEU	CB-CG-CD2	6.08	121.34	111.00
3	H	367	LEU	CA-CB-CG	6.05	129.22	115.30
5	M	704	PRO	N-CD-CG	-5.97	94.25	103.20
5	M	241	ARG	O-C-N	-5.93	113.21	122.70
5	M	581	ASP	N-CA-CB	-5.83	100.11	110.60
2	J	926	LEU	CB-CG-CD2	5.83	120.90	111.00
5	M	836	LEU	CA-CB-CG	5.81	128.66	115.30
3	N	667	LEU	CA-CB-CG	5.75	128.53	115.30
5	M	705	THR	N-CA-C	-5.73	95.54	111.00
1	U	270	MET	CA-CB-CG	5.65	122.91	113.30
1	X	270	MET	CA-CB-CG	5.65	122.91	113.30
5	M	555	LEU	CA-CB-CG	5.65	128.29	115.30
1	1	270	MET	CA-CB-CG	5.65	122.90	113.30
1	S	270	MET	CA-CB-CG	5.64	122.89	113.30
1	W	270	MET	CA-CB-CG	5.64	122.89	113.30
1	Z	270	MET	CA-CB-CG	5.64	122.89	113.30
1	2	270	MET	CA-CB-CG	5.64	122.88	113.30
5	M	176	ILE	C-N-CA	5.64	135.79	121.70
1	T	270	MET	CA-CB-CG	5.63	122.87	113.30
1	V	270	MET	CA-CB-CG	5.62	122.86	113.30
1	Y	270	MET	CA-CB-CG	5.62	122.86	113.30
3	j	96	LEU	CB-CG-CD1	-5.50	101.66	111.00
3	N	621	LEU	CA-CB-CG	5.43	127.80	115.30
6	K	646	LEU	CA-CB-CG	5.39	127.71	115.30
3	j	100	LEU	CA-CB-CG	-5.32	103.07	115.30
3	H	603	THR	CA-CB-CG2	5.26	119.77	112.40
5	G	377	LEU	CA-CB-CG	5.26	127.39	115.30
5	E	687	LEU	CB-CG-CD2	-5.24	102.10	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	F	625	LEU	CA-CB-CG	5.16	127.17	115.30
3	n	13	LEU	CB-CG-CD2	-5.14	102.26	111.00
3	F	269	ASN	C-N-CA	5.14	134.55	121.70
5	G	240	GLY	C-N-CA	5.11	134.48	121.70
6	I	530	TYR	CB-CG-CD2	-5.10	117.94	121.00
6	K	86	LEU	CA-CB-CG	5.09	127.01	115.30
5	M	240	GLY	C-N-CA	5.09	134.42	121.70
3	j	87	LEU	CA-CB-CG	5.08	126.99	115.30
2	l	113	LEU	CB-CG-CD1	-5.08	102.37	111.00
3	H	365	ARG	NE-CZ-NH1	5.08	122.84	120.30
2	J	710	LEU	CA-CB-CG	5.06	126.95	115.30
5	M	555	LEU	CB-CG-CD2	5.06	119.61	111.00
5	M	346	ASP	CB-CG-OD2	5.04	122.83	118.30
6	I	475	TYR	CB-CG-CD2	-5.03	117.98	121.00
5	M	254	LEU	CA-CB-CG	5.02	126.84	115.30
3	N	581	LEU	CA-CB-CG	5.01	126.83	115.30

There are no chirality outliers.

All (45) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	1	327	GLU	Peptide
1	1	56	ASP	Peptide
1	2	327	GLU	Peptide
1	2	56	ASP	Peptide
5	E	580	HIS	Peptide
5	E	861	PHE	Mainchain
5	G	355	THR	Peptide
5	G	580	HIS	Peptide
3	H	269	ASN	Peptide
3	H	270	ASN	Peptide
3	H	501	THR	Peptide
3	H	602	GLU	Peptide
3	H	603	THR	Mainchain
6	I	407	ASP	Peptide
6	I	502	ARG	Peptide
6	I	507	SER	Peptide
6	I	508	ASN	Mainchain
2	J	256	LEU	Peptide
2	J	760	VAL	Peptide
7	L	311	TYR	Peptide
7	L	342	PRO	Peptide

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Mol	Chain	Res	Type	Group
7	L	346	LEU	Peptide
5	M	240	GLY	Peptide
5	M	241	ARG	Mainchain
5	M	525	GLY	Peptide
5	M	581	ASP	Mainchain
5	M	674	GLN	Peptide
3	N	454	VAL	Peptide
3	N	526	LEU	Peptide
1	S	327	GLU	Peptide
1	S	56	ASP	Peptide
1	T	327	GLU	Peptide
1	T	56	ASP	Peptide
1	U	327	GLU	Peptide
1	U	56	ASP	Peptide
1	V	327	GLU	Peptide
1	V	56	ASP	Peptide
1	W	327	GLU	Peptide
1	W	56	ASP	Peptide
1	X	327	GLU	Peptide
1	X	56	ASP	Peptide
1	Y	327	GLU	Peptide
1	Y	56	ASP	Peptide
1	Z	327	GLU	Peptide
1	Z	56	ASP	Peptide

## 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	1	3373	0	3325	77	0
1	2	3373	0	3325	71	0
1	S	3373	0	3325	65	0
1	T	3373	0	3325	67	0
1	U	3373	0	3325	58	0
1	V	3373	0	3325	74	0
1	W	3373	0	3325	61	0
1	X	3373	0	3325	57	0
1	Y	3373	0	3325	70	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Z	3373	0	3325	65	0
2	J	4429	0	4482	37	0
2	l	875	0	842	0	0
3	F	4941	0	4935	42	0
3	H	4907	0	4896	63	0
3	N	4907	0	4896	61	0
3	a	933	0	953	0	0
3	j	803	0	831	0	0
3	n	803	0	831	0	0
4	b	484	0	512	0	0
4	k	484	0	512	0	0
4	m	484	0	512	0	0
4	o	484	0	512	0	0
5	E	5202	0	5241	44	0
5	G	5216	0	5246	61	0
5	M	5186	0	5219	65	0
6	I	4225	0	4259	52	0
6	K	4579	0	4586	42	0
7	L	4587	0	4636	37	0
All	All	87259	0	87151	1071	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 7.

All (1071) 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:H:603:THR:CB	3:H:603:THR:CG2	1.74	1.62
6:I:357:ILE:O	6:I:361:TYR:HB3	1.71	0.90
3:H:603:THR:CG2	3:H:603:THR:HB	2.04	0.86
5:M:703:GLU:HB3	5:M:704:PRO:HD3	1.56	0.85
5:G:280:LYS:HB3	5:G:289:ASN:HD21	1.44	0.81
5:G:557:LEU:HB2	1:V:339:ARG:HH11	1.46	0.81
5:E:581:ASP:H	5:E:608:LEU:HD21	1.47	0.79
1:I:47:ARG:HB2	5:M:563:THR:HB	1.64	0.78
1:U:56:ASP:HB3	1:V:296:ARG:NE	1.99	0.78
1:I:341:ARG:NH1	5:M:857:SER:O	2.17	0.77
6:I:527:ASN:O	6:I:530:TYR:HB3	1.88	0.74
6:K:63:THR:HG22	7:L:468:ARG:HH21	1.52	0.74
1:2:250:ASN:HD21	3:N:716:HIS:HD2	1.35	0.72
1:2:355:SER:OG	3:N:879:ARG:O	2.08	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:294:LEU:HD11	3:F:371:THR:HG21	1.72	0.71
6:I:361:TYR:HE2	6:I:475:TYR:HB3	1.55	0.71
3:F:594:GLN:HB2	3:F:625:LEU:HD23	1.74	0.70
3:F:597:LEU:HB2	3:F:623:VAL:HG21	1.73	0.70
3:H:883:ASN:HB2	1:V:353:PRO:HA	1.75	0.69
6:I:555:GLU:HA	6:I:558:ARG:HE	1.58	0.68
1:T:270:MET:N	1:T:270:MET:SD	2.67	0.68
1:1:270:MET:SD	1:1:270:MET:N	2.67	0.68
1:S:270:MET:SD	1:S:270:MET:N	2.67	0.68
1:V:270:MET:SD	1:V:270:MET:N	2.67	0.68
1:1:47:ARG:HB2	5:M:563:THR:CB	2.24	0.68
1:U:270:MET:SD	1:U:270:MET:N	2.67	0.67
3:H:608:THR:HG23	3:H:610:ALA:H	1.59	0.67
1:U:47:ARG:HE	1:U:49:ASP:HB3	1.60	0.67
1:S:47:ARG:HE	1:S:49:ASP:HB3	1.60	0.67
1:Y:47:ARG:HE	1:Y:49:ASP:HB3	1.60	0.67
1:2:47:ARG:HE	1:2:49:ASP:HB3	1.60	0.67
1:X:47:ARG:HE	1:X:49:ASP:HB3	1.60	0.67
1:Z:270:MET:SD	1:Z:270:MET:N	2.67	0.67
1:T:47:ARG:HE	1:T:49:ASP:HB3	1.60	0.67
1:X:270:MET:SD	1:X:270:MET:N	2.67	0.66
1:S:101:GLY:N	1:S:106:SER:HG	1.94	0.66
3:N:698:SER:O	3:N:702:HIS:HB2	1.96	0.66
1:2:101:GLY:N	1:2:106:SER:HG	1.94	0.65
1:1:47:ARG:HE	1:1:49:ASP:HB3	1.60	0.65
1:1:101:GLY:N	1:1:106:SER:HG	1.94	0.65
1:Z:47:ARG:HE	1:Z:49:ASP:HB3	1.60	0.65
1:1:339:ARG:HH22	1:1:342:GLU:HB2	1.61	0.65
1:T:101:GLY:N	1:T:106:SER:HG	1.94	0.65
1:U:101:GLY:N	1:U:106:SER:HG	1.94	0.65
1:2:270:MET:SD	1:2:270:MET:N	2.67	0.65
1:U:339:ARG:HH22	1:U:342:GLU:HB2	1.61	0.65
1:2:339:ARG:HH22	1:2:342:GLU:HB2	1.61	0.65
1:T:339:ARG:HH22	1:T:342:GLU:HB2	1.61	0.65
1:W:47:ARG:HE	1:W:49:ASP:HB3	1.60	0.65
1:Y:339:ARG:HH22	1:Y:342:GLU:HB2	1.61	0.65
1:Z:101:GLY:N	1:Z:106:SER:HG	1.94	0.65
6:K:653:LYS:HA	6:K:657:GLN:HG3	1.78	0.65
1:Y:101:GLY:N	1:Y:106:SER:HG	1.94	0.65
1:S:339:ARG:HH22	1:S:342:GLU:HB2	1.61	0.65
5:G:557:LEU:CB	1:V:339:ARG:HH11	2.10	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:339:ARG:HH22	1:Z:342:GLU:HB2	1.61	0.65
1:2:185:PRO:O	1:2:189:LEU:HB3	1.97	0.64
5:E:241:ARG:NH2	5:E:346:ASP:OD1	2.31	0.64
1:U:185:PRO:O	1:U:189:LEU:HB3	1.98	0.64
1:V:339:ARG:HH22	1:V:342:GLU:HB2	1.62	0.64
1:2:290:VAL:HG21	1:2:333:VAL:HG12	1.80	0.64
1:T:185:PRO:O	1:T:189:LEU:HB3	1.97	0.64
1:V:101:GLY:N	1:V:106:SER:HG	1.96	0.64
1:X:290:VAL:HG21	1:X:333:VAL:HG12	1.80	0.64
3:N:799:GLU:HA	3:N:802:ARG:HE	1.63	0.64
1:W:270:MET:SD	1:W:270:MET:N	2.67	0.64
1:W:339:ARG:HH22	1:W:342:GLU:HB2	1.61	0.64
1:T:290:VAL:HG21	1:T:333:VAL:HG12	1.80	0.64
1:V:47:ARG:HE	1:V:49:ASP:HB3	1.60	0.64
1:X:339:ARG:HH22	1:X:342:GLU:HB2	1.61	0.64
6:I:471:VAL:O	6:I:475:TYR:HB2	1.97	0.64
5:M:510:VAL:HG12	5:M:514:ARG:HE	1.63	0.64
1:V:185:PRO:O	1:V:189:LEU:HB3	1.97	0.64
1:W:101:GLY:N	1:W:106:SER:HG	1.95	0.64
1:W:185:PRO:O	1:W:189:LEU:HB3	1.97	0.64
1:X:101:GLY:N	1:X:106:SER:HG	1.96	0.64
1:W:290:VAL:HG21	1:W:333:VAL:HG12	1.80	0.64
1:Y:185:PRO:O	1:Y:189:LEU:HB3	1.97	0.64
1:Z:290:VAL:HG21	1:Z:333:VAL:HG12	1.80	0.64
1:1:185:PRO:O	1:1:189:LEU:HB3	1.97	0.63
1:S:185:PRO:O	1:S:189:LEU:HB3	1.97	0.63
1:X:185:PRO:O	1:X:189:LEU:HB3	1.98	0.63
1:Z:185:PRO:O	1:Z:189:LEU:HB3	1.97	0.63
6:I:361:TYR:CE2	6:I:475:TYR:HB3	2.34	0.63
1:1:3:ARG:HA	5:M:530:HIS:HE1	1.64	0.63
1:U:290:VAL:HG21	1:U:333:VAL:HG12	1.80	0.63
1:V:290:VAL:HG21	1:V:333:VAL:HG12	1.80	0.63
1:X:222:ASN:OD1	1:X:222:ASN:N	2.32	0.63
1:Y:222:ASN:OD1	1:Y:222:ASN:N	2.32	0.63
3:H:733:GLU:HG3	3:H:737:LYS:HE2	1.80	0.62
1:1:222:ASN:OD1	1:1:222:ASN:N	2.32	0.62
1:W:222:ASN:OD1	1:W:222:ASN:N	2.32	0.62
1:Y:270:MET:SD	1:Y:270:MET:N	2.67	0.62
1:V:222:ASN:OD1	1:V:222:ASN:N	2.32	0.62
2:J:697:LYS:HA	2:J:700:LEU:HD12	1.82	0.62
1:1:290:VAL:HG21	1:1:333:VAL:HG12	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:298:LEU:HD21	1:1:340:ILE:HD12	1.82	0.62
1:S:290:VAL:HG21	1:S:333:VAL:HG12	1.80	0.62
1:U:298:LEU:HD21	1:U:340:ILE:HD12	1.82	0.62
1:Y:290:VAL:HG21	1:Y:333:VAL:HG12	1.80	0.62
1:2:298:LEU:HD21	1:2:340:ILE:HD12	1.82	0.62
6:K:513:ILE:HA	6:K:516:ARG:HD2	1.82	0.62
3:N:464:TYR:OH	3:N:491:ASN:ND2	2.33	0.62
1:V:298:LEU:HD21	1:V:340:ILE:HD12	1.82	0.62
1:Y:298:LEU:HD21	1:Y:340:ILE:HD12	1.82	0.62
5:G:852:MET:SD	5:G:852:MET:N	2.72	0.61
3:F:261:ILE:HG12	5:G:262:ARG:HH22	1.65	0.61
1:2:337:LEU:HD21	3:N:879:ARG:HG3	1.83	0.61
3:F:526:LEU:HB3	3:F:529:ALA:HB3	1.82	0.61
1:T:298:LEU:HD21	1:T:340:ILE:HD12	1.82	0.61
7:L:332:GLN:HG2	7:L:337:GLY:HA2	1.81	0.61
1:S:222:ASN:OD1	1:S:222:ASN:N	2.32	0.61
3:F:555:LEU:HD13	3:F:648:ILE:HG23	1.81	0.61
6:I:392:VAL:HG22	6:I:414:LEU:HD13	1.81	0.61
1:S:298:LEU:HD21	1:S:340:ILE:HD12	1.82	0.61
1:U:222:ASN:OD1	1:U:222:ASN:N	2.32	0.60
2:J:945:GLU:HG3	2:J:946:LYS:HD2	1.82	0.60
1:2:355:SER:HB2	3:N:713:HIS:NE2	2.16	0.60
1:Z:298:LEU:HD21	1:Z:340:ILE:HD12	1.82	0.60
3:F:806:PHE:HA	3:F:809:LYS:HD2	1.82	0.60
3:H:689:LYS:NZ	1:V:158:ASN:OD1	2.33	0.60
1:T:90:ASN:N	1:T:90:ASN:OD1	2.35	0.60
1:X:298:LEU:HD21	1:X:340:ILE:HD12	1.82	0.60
1:W:298:LEU:HD21	1:W:340:ILE:HD12	1.82	0.60
1:X:90:ASN:OD1	1:X:90:ASN:N	2.35	0.60
2:J:221:VAL:O	2:J:228:ARG:NH2	2.35	0.60
1:U:90:ASN:OD1	1:U:90:ASN:N	2.35	0.60
1:S:90:ASN:OD1	1:S:90:ASN:N	2.35	0.59
6:K:509:GLN:HG3	6:K:511:ASP:H	1.67	0.59
1:X:56:ASP:HB3	1:Y:287:LYS:HD2	1.85	0.59
1:1:341:ARG:NH1	5:M:860:ASP:O	2.35	0.59
5:G:485:VAL:HA	5:G:488:ILE:HD12	1.85	0.59
6:K:27:VAL:HG13	6:K:29:GLN:HG2	1.85	0.59
1:2:222:ASN:OD1	1:2:222:ASN:N	2.32	0.59
6:K:407:ASP:HB3	6:K:411:LEU:HD13	1.84	0.59
3:H:274:CYS:SG	3:H:275:TYR:N	2.76	0.58
6:I:96:VAL:HG12	6:I:174:LYS:HD2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:W:90:ASN:N	1:W:90:ASN:OD1	2.35	0.58
5:G:415:ARG:HB2	5:G:431:ARG:HH22	1.68	0.58
6:K:509:GLN:HG2	6:K:603:PRO:HB3	1.85	0.58
6:K:639:ASN:HB3	1:Y:334:HIS:NE2	2.18	0.58
1:Z:90:ASN:OD1	1:Z:90:ASN:N	2.35	0.58
1:1:90:ASN:OD1	1:1:90:ASN:N	2.35	0.58
3:H:680:ILE:HD11	3:H:786:GLN:HE21	1.68	0.58
1:Y:90:ASN:N	1:Y:90:ASN:OD1	2.35	0.58
1:2:339:ARG:HH12	5:M:554:LEU:HD22	1.68	0.58
3:N:339:LEU:O	3:N:343:HIS:ND1	2.35	0.58
1:1:246:PRO:HA	5:M:563:THR:HG21	1.86	0.58
3:H:253:ASP:HB3	3:H:266:ILE:HG22	1.86	0.58
3:H:388:CYS:HA	3:H:391:ARG:HE	1.67	0.58
1:1:355:SER:OG	5:M:858:ARG:O	2.22	0.58
5:G:313:LEU:HD23	5:G:319:LEU:HD13	1.85	0.58
1:V:90:ASN:OD1	1:V:90:ASN:N	2.35	0.58
2:J:829:LEU:HA	2:J:832:LYS:HE3	1.86	0.58
1:W:56:ASP:OD2	1:X:296:ARG:HG3	2.04	0.58
5:G:578:MET:H	5:G:615:ALA:HB1	1.68	0.57
5:M:221:LEU:HD11	5:M:260:VAL:HG22	1.86	0.57
1:2:90:ASN:N	1:2:90:ASN:OD1	2.35	0.57
5:M:236:GLN:O	5:M:244:ARG:NH1	2.36	0.57
1:X:343:ARG:HB3	1:X:345:LEU:HD12	1.86	0.57
6:I:569:LEU:HD21	6:I:575:LEU:HD13	1.86	0.57
6:K:646:LEU:O	1:Y:341:ARG:NH1	2.32	0.57
1:V:343:ARG:HB3	1:V:345:LEU:HD12	1.86	0.57
5:G:241:ARG:O	5:G:275:ARG:NH1	2.37	0.57
5:M:398:GLY:H	5:M:457:LEU:HD22	1.69	0.57
3:N:651:VAL:HG23	3:N:748:ILE:HG12	1.86	0.57
1:X:56:ASP:OD1	1:Y:288:THR:OG1	2.22	0.57
3:N:555:LEU:HD11	3:N:651:VAL:HG11	1.86	0.57
1:U:343:ARG:HB3	1:U:345:LEU:HD12	1.86	0.57
1:1:47:ARG:CB	5:M:563:THR:HB	2.33	0.57
6:I:477:VAL:HA	6:I:480:LYS:HE2	1.87	0.57
1:Z:343:ARG:HB3	1:Z:345:LEU:HD12	1.86	0.57
1:Y:343:ARG:HB3	1:Y:345:LEU:HD12	1.87	0.57
1:V:383:SER:O	1:V:386:SER:OG	2.22	0.57
1:1:343:ARG:HB3	1:1:345:LEU:HD12	1.86	0.56
1:T:222:ASN:OD1	1:T:222:ASN:N	2.32	0.56
1:1:264:PRO:O	5:M:663:LYS:NZ	2.38	0.56
3:F:553:TYR:HB3	3:F:648:ILE:HD11	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:K:149:HIS:NE2	6:K:202:GLU:OE1	2.35	0.56
1:S:343:ARG:HB3	1:S:345:LEU:HD12	1.86	0.56
5:E:311:GLU:OE2	3:F:366:ARG:NH2	2.37	0.56
1:X:383:SER:O	1:X:386:SER:OG	2.22	0.56
1:2:343:ARG:HB3	1:2:345:LEU:HD12	1.86	0.56
2:J:827:LEU:HG	2:J:943:LEU:HD11	1.86	0.56
1:W:343:ARG:HB3	1:W:345:LEU:HD12	1.86	0.56
5:G:334:THR:HG23	5:G:375:LEU:HD22	1.88	0.56
2:J:828:LEU:HG	2:J:832:LYS:HE2	1.88	0.56
6:K:131:LEU:HD13	6:K:165:LEU:HD21	1.88	0.56
1:T:343:ARG:HB3	1:T:345:LEU:HD12	1.86	0.56
1:2:182:VAL:HB	1:2:404:PHE:HD1	1.71	0.56
5:M:613:LEU:HD12	5:M:614:GLU:HG3	1.88	0.56
5:E:517:LYS:HG3	5:E:521:LEU:HD12	1.87	0.55
5:E:637:ARG:HG2	5:E:734:LEU:HD22	1.88	0.55
3:N:784:GLU:HG2	3:N:850:LEU:HD11	1.88	0.55
6:I:154:LEU:HD11	6:I:179:CYS:HB2	1.88	0.55
6:I:357:ILE:O	6:I:361:TYR:CB	2.50	0.55
3:F:579:ASP:HA	3:F:582:LYS:HE3	1.86	0.55
3:H:466:LEU:HD11	3:H:471:ILE:HD11	1.88	0.55
2:J:286:ILE:HG23	2:J:297:ARG:H	1.70	0.55
1:U:56:ASP:HB3	1:V:296:ARG:HE	1.69	0.55
1:V:182:VAL:HB	1:V:404:PHE:HD1	1.72	0.55
5:E:152:GLN:NE2	5:E:240:GLY:O	2.39	0.55
6:I:411:LEU:HD23	6:I:458:LYS:HE2	1.87	0.55
5:G:434:ILE:HD11	5:G:439:ILE:HD11	1.88	0.55
1:U:395:TYR:OH	1:U:425:ARG:NH2	2.40	0.55
1:Z:182:VAL:HB	1:Z:404:PHE:HD1	1.72	0.55
5:E:662:ASN:HD22	5:E:680:PHE:HE2	1.52	0.55
1:S:182:VAL:HB	1:S:404:PHE:HD1	1.72	0.55
1:2:290:VAL:HA	1:2:293:VAL:HG22	1.89	0.55
1:X:182:VAL:HB	1:X:404:PHE:HD1	1.72	0.55
6:K:337:ALA:HB1	6:K:554:PHE:H	1.72	0.55
3:H:332:LEU:HA	3:H:335:TYR:HD2	1.72	0.55
3:F:406:THR:HG21	3:F:411:MET:HB2	1.89	0.54
5:G:557:LEU:HB2	1:V:339:ARG:NH1	2.18	0.54
5:M:558:ALA:O	5:M:562:SER:HB3	2.07	0.54
1:T:182:VAL:HB	1:T:404:PHE:HD1	1.72	0.54
1:U:182:VAL:HB	1:U:404:PHE:HD1	1.72	0.54
1:1:182:VAL:HB	1:1:404:PHE:HD1	1.72	0.54
3:N:829:GLU:HA	3:N:832:ARG:HD2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:W:395:TYR:OH	1:W:425:ARG:NH2	2.40	0.54
1:Z:290:VAL:HA	1:Z:293:VAL:HG22	1.89	0.54
1:2:250:ASN:ND2	3:N:720:TYR:OH	2.39	0.54
3:H:400:VAL:HG11	3:H:422:VAL:HG21	1.89	0.54
7:L:1732:ILE:HG23	7:L:1772:PHE:HE1	1.71	0.54
1:W:182:VAL:HB	1:W:404:PHE:HD1	1.72	0.54
1:X:395:TYR:OH	1:X:425:ARG:NH2	2.40	0.54
1:Y:395:TYR:OH	1:Y:425:ARG:NH2	2.40	0.54
1:S:383:SER:O	1:S:386:SER:OG	2.22	0.54
1:Z:395:TYR:OH	1:Z:425:ARG:NH2	2.40	0.54
1:1:290:VAL:HA	1:1:293:VAL:HG22	1.89	0.54
1:U:88:PRO:O	1:U:124:ARG:NH2	2.39	0.54
1:U:290:VAL:HA	1:U:293:VAL:HG22	1.89	0.54
1:1:395:TYR:OH	1:1:425:ARG:NH2	2.40	0.54
1:2:395:TYR:OH	1:2:425:ARG:NH2	2.40	0.54
1:W:290:VAL:HA	1:W:293:VAL:HG22	1.89	0.54
1:X:88:PRO:O	1:X:124:ARG:NH2	2.39	0.54
1:Y:290:VAL:HA	1:Y:293:VAL:HG22	1.89	0.54
6:I:540:GLN:HA	6:I:543:GLN:HE21	1.73	0.54
1:Y:182:VAL:HB	1:Y:404:PHE:HD1	1.72	0.54
7:L:348:LYS:HG3	7:L:349:GLU:H	1.73	0.54
1:V:395:TYR:OH	1:V:425:ARG:NH2	2.40	0.54
1:1:328:VAL:HG21	1:1:360:LEU:HD11	1.90	0.54
1:T:290:VAL:HA	1:T:293:VAL:HG22	1.89	0.54
1:X:328:VAL:HG21	1:X:360:LEU:HD11	1.90	0.54
1:Y:154:LEU:HD11	1:Y:199:ALA:HB2	1.90	0.54
1:2:341:ARG:NH2	3:N:884:GLU:OE2	2.41	0.53
3:H:277:VAL:HG21	3:H:288:ARG:HA	1.90	0.53
5:M:699:PHE:HE1	5:M:703:GLU:HG3	1.73	0.53
1:Z:154:LEU:HD11	1:Z:199:ALA:HB2	1.90	0.53
3:F:346:LEU:HD13	3:F:362:LEU:HD22	1.91	0.53
3:N:625:LEU:HD22	3:N:637:VAL:HG12	1.90	0.53
3:H:728:GLU:HG3	1:V:330:PRO:HG3	1.89	0.53
1:S:328:VAL:HG21	1:S:360:LEU:HD11	1.90	0.53
1:S:395:TYR:OH	1:S:425:ARG:NH2	2.40	0.53
1:T:395:TYR:OH	1:T:425:ARG:NH2	2.40	0.53
3:H:432:ARG:HH22	3:H:439:LEU:HA	1.73	0.53
6:K:29:GLN:HA	6:K:34:LEU:HD11	1.90	0.53
3:N:416:GLN:O	3:N:416:GLN:NE2	2.41	0.53
3:N:872:SER:OG	3:N:873:LEU:N	2.41	0.53
1:T:88:PRO:O	1:T:124:ARG:NH2	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:U:154:LEU:HD11	1:U:199:ALA:HB2	1.90	0.53
1:U:328:VAL:HG21	1:U:360:LEU:HD11	1.90	0.53
3:H:709:SER:HA	3:H:712:VAL:HG22	1.90	0.53
6:K:499:GLN:HB3	6:K:516:ARG:HE	1.73	0.53
1:T:328:VAL:HG21	1:T:360:LEU:HD11	1.90	0.53
1:V:88:PRO:O	1:V:124:ARG:NH2	2.39	0.53
1:W:291:LEU:HG	1:W:336:SER:HA	1.91	0.53
1:V:290:VAL:HA	1:V:293:VAL:HG22	1.89	0.53
1:Y:291:LEU:HG	1:Y:336:SER:HA	1.91	0.53
1:Z:88:PRO:O	1:Z:124:ARG:NH2	2.39	0.53
1:1:154:LEU:HD11	1:1:199:ALA:HB2	1.90	0.53
3:F:466:LEU:HD22	3:F:481:ARG:HH12	1.74	0.53
1:T:291:LEU:HG	1:T:336:SER:HA	1.91	0.53
1:U:291:LEU:HG	1:U:336:SER:HA	1.91	0.53
1:2:250:ASN:ND2	3:N:716:HIS:HD2	2.05	0.53
3:F:879:ARG:CZ	3:F:879:ARG:HA	2.39	0.53
6:I:89:PHE:HZ	6:I:140:VAL:HG22	1.74	0.53
2:J:886:LEU:HD11	2:J:980:ILE:HG23	1.91	0.53
5:M:356:LEU:HB3	5:M:440:PRO:HB3	1.90	0.53
1:Z:222:ASN:OD1	1:Z:222:ASN:N	2.32	0.53
1:1:340:ILE:HG22	5:M:861:PHE:HZ	1.74	0.53
1:2:328:VAL:HG21	1:2:360:LEU:HD11	1.91	0.53
6:I:279:VAL:HG13	6:I:336:VAL:HG11	1.91	0.53
2:J:557:LYS:O	2:J:557:LYS:NZ	2.41	0.53
5:M:518:ARG:HA	5:M:523:ASP:HB2	1.91	0.53
1:V:328:VAL:HG21	1:V:360:LEU:HD11	1.90	0.53
1:X:154:LEU:HD11	1:X:199:ALA:HB2	1.90	0.53
1:X:290:VAL:HA	1:X:293:VAL:HG22	1.89	0.53
1:X:291:LEU:HG	1:X:336:SER:HA	1.91	0.53
2:J:1009:HIS:O	2:J:1012:SER:OG	2.23	0.53
1:Z:291:LEU:HG	1:Z:336:SER:HA	1.91	0.53
6:K:370:GLN:HB2	6:K:486:ARG:HH21	1.74	0.52
1:V:252:ASP:OD1	1:V:252:ASP:N	2.42	0.52
1:W:154:LEU:HD11	1:W:199:ALA:HB2	1.90	0.52
1:W:252:ASP:OD1	1:W:252:ASP:N	2.42	0.52
1:Y:328:VAL:HG21	1:Y:360:LEU:HD11	1.90	0.52
1:1:252:ASP:OD1	1:1:252:ASP:N	2.42	0.52
3:N:575:ARG:NE	3:N:675:TYR:OH	2.42	0.52
1:S:154:LEU:HD11	1:S:199:ALA:HB2	1.90	0.52
1:S:290:VAL:HA	1:S:293:VAL:HG22	1.89	0.52
1:T:231:LEU:O	1:T:234:THR:OG1	2.26	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:231:LEU:O	1:Z:234:THR:OG1	2.26	0.52
1:1:88:PRO:O	1:1:124:ARG:NH2	2.39	0.52
1:2:291:LEU:HG	1:2:336:SER:HA	1.91	0.52
1:U:69:LEU:HB2	1:U:149:LEU:HD13	1.92	0.52
1:2:252:ASP:OD1	1:2:252:ASP:N	2.42	0.52
3:F:878:PHE:O	3:F:879:ARG:NH2	2.42	0.52
6:K:544:LEU:HD13	6:K:564:PHE:HB2	1.92	0.52
1:S:69:LEU:HB2	1:S:149:LEU:HD13	1.92	0.52
1:S:88:PRO:O	1:S:124:ARG:NH2	2.39	0.52
1:S:252:ASP:OD1	1:S:252:ASP:N	2.42	0.52
3:F:568:LEU:HD23	3:F:574:ILE:HG21	1.92	0.52
5:M:530:HIS:CD2	5:M:561:MET:HG3	2.44	0.52
1:T:154:LEU:HD11	1:T:199:ALA:HB2	1.90	0.52
1:1:242:THR:HA	1:1:362:ARG:HH11	1.75	0.52
6:K:365:ARG:HB3	6:K:368:LEU:HD13	1.90	0.52
3:N:456:THR:OG1	3:N:457:ASP:N	2.42	0.52
1:W:328:VAL:HG21	1:W:360:LEU:HD11	1.90	0.52
1:2:154:LEU:HD11	1:2:199:ALA:HB2	1.90	0.52
3:N:806:PHE:HA	3:N:809:LYS:HD3	1.90	0.52
1:U:242:THR:HA	1:U:362:ARG:HH11	1.75	0.52
1:V:69:LEU:HB2	1:V:149:LEU:HD13	1.92	0.52
1:V:154:LEU:HD11	1:V:199:ALA:HB2	1.90	0.52
1:V:291:LEU:HG	1:V:336:SER:HA	1.91	0.52
1:Y:242:THR:HA	1:Y:362:ARG:HH11	1.75	0.52
5:E:732:THR:HA	5:E:735:LYS:HG2	1.91	0.52
1:T:242:THR:HA	1:T:362:ARG:HH11	1.75	0.52
1:X:242:THR:HA	1:X:362:ARG:HH11	1.75	0.52
1:Z:252:ASP:OD1	1:Z:252:ASP:N	2.42	0.52
1:Z:328:VAL:HG21	1:Z:360:LEU:HD11	1.90	0.52
1:2:358:VAL:O	3:N:879:ARG:NH1	2.43	0.51
3:H:879:ARG:HH12	1:V:341:ARG:HB2	1.75	0.51
7:L:1513:ARG:NH1	7:L:1681:LEU:O	2.43	0.51
3:N:763:LEU:HD22	3:N:775:LEU:HD22	1.92	0.51
1:S:70:GLU:HB3	1:S:72:ARG:HH21	1.75	0.51
1:S:242:THR:HA	1:S:362:ARG:HH11	1.75	0.51
1:S:291:LEU:HG	1:S:336:SER:HA	1.91	0.51
1:U:70:GLU:HB3	1:U:72:ARG:HH21	1.75	0.51
1:V:242:THR:HA	1:V:362:ARG:HH11	1.75	0.51
1:W:242:THR:HA	1:W:362:ARG:HH11	1.75	0.51
1:X:69:LEU:HB2	1:X:149:LEU:HD13	1.92	0.51
1:1:258:ALA:HB1	5:M:687:LEU:HD13	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:416:GLN:NE2	3:N:526:LEU:HD21	2.25	0.51
1:Y:70:GLU:HB3	1:Y:72:ARG:HH21	1.75	0.51
1:Z:69:LEU:HB2	1:Z:149:LEU:HD13	1.92	0.51
1:1:69:LEU:HB2	1:1:149:LEU:HD13	1.92	0.51
1:2:242:THR:HA	1:2:362:ARG:HH11	1.75	0.51
3:F:716:HIS:CE1	1:T:250:ASN:HD21	2.27	0.51
5:G:446:MET:SD	5:G:446:MET:N	2.83	0.51
1:U:252:ASP:OD1	1:U:252:ASP:N	2.43	0.51
3:H:716:HIS:CE1	1:V:250:ASN:HD21	2.29	0.51
1:W:69:LEU:HB2	1:W:149:LEU:HD13	1.92	0.51
1:X:70:GLU:HB3	1:X:72:ARG:HH21	1.75	0.51
5:G:341:LEU:HD21	5:G:362:ARG:HG3	1.92	0.51
2:J:289:LEU:HA	2:J:294:VAL:HA	1.93	0.51
1:V:187:ASN:O	1:V:191:THR:OG1	2.28	0.51
5:M:373:GLN:HE22	5:M:377:LEU:HD22	1.76	0.51
5:M:679:ALA:HB2	5:M:822:ILE:HG13	1.92	0.51
1:V:70:GLU:HB3	1:V:72:ARG:HH21	1.75	0.51
1:X:187:ASN:O	1:X:191:THR:OG1	2.28	0.51
1:X:231:LEU:O	1:X:234:THR:OG1	2.26	0.51
5:M:506:GLU:HG3	5:M:507:LYS:HD2	1.91	0.51
1:T:70:GLU:HB3	1:T:72:ARG:HH21	1.75	0.51
1:T:252:ASP:OD1	1:T:252:ASP:N	2.42	0.51
1:Y:88:PRO:O	1:Y:124:ARG:NH2	2.39	0.51
5:E:390:VAL:HA	5:E:393:LYS:HE3	1.92	0.51
5:G:168:LYS:HG2	5:G:171:GLY:H	1.75	0.51
1:S:231:LEU:O	1:S:234:THR:OG1	2.26	0.51
1:Y:252:ASP:OD1	1:Y:252:ASP:N	2.42	0.51
7:L:1485:ALA:HA	7:L:1488:ILE:HD12	1.93	0.51
1:Y:69:LEU:HB2	1:Y:149:LEU:HD13	1.92	0.51
1:1:291:LEU:HG	1:1:336:SER:HA	1.91	0.51
1:1:340:ILE:HG22	5:M:861:PHE:CZ	2.46	0.51
3:H:587:ARG:HD2	3:H:588:PRO:HD2	1.92	0.51
3:N:662:ARG:HB3	3:N:764:LEU:HD13	1.92	0.51
1:Z:242:THR:HA	1:Z:362:ARG:HH11	1.75	0.51
1:U:383:SER:O	1:U:386:SER:OG	2.22	0.50
6:K:565:LEU:O	6:K:569:LEU:HB2	2.11	0.50
1:W:70:GLU:HB3	1:W:72:ARG:HH21	1.75	0.50
1:Z:70:GLU:HB3	1:Z:72:ARG:HH21	1.75	0.50
1:2:69:LEU:HB2	1:2:149:LEU:HD13	1.92	0.50
3:H:659:HIS:HB3	3:H:759:ILE:HD11	1.94	0.50
6:I:164:GLY:H	6:I:169:ARG:HE	1.58	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:T:46:ASP:N	1:T:46:ASP:OD1	2.45	0.50
1:U:46:ASP:OD1	1:U:46:ASP:N	2.45	0.50
1:V:46:ASP:OD1	1:V:46:ASP:N	2.45	0.50
1:W:88:PRO:O	1:W:124:ARG:NH2	2.39	0.50
1:1:187:ASN:O	1:1:191:THR:OG1	2.28	0.50
1:1:70:GLU:HB3	1:1:72:ARG:HH21	1.75	0.50
1:2:68:ASP:OD1	1:2:68:ASP:N	2.45	0.50
6:I:1:MET:HB2	2:J:242:LEU:HD13	1.94	0.50
7:L:1549:VAL:HG13	7:L:1550:LEU:HD12	1.92	0.50
7:L:1555:SER:HA	7:L:1558:LEU:HD12	1.92	0.50
5:M:555:LEU:HD21	5:M:573:LEU:HD22	1.93	0.50
1:X:252:ASP:N	1:X:252:ASP:OD1	2.42	0.50
1:1:383:SER:O	1:1:386:SER:OG	2.22	0.50
6:K:344:MET:HG3	6:K:463:LEU:HD12	1.93	0.50
1:V:68:ASP:N	1:V:68:ASP:OD1	2.45	0.50
1:T:69:LEU:HB2	1:T:149:LEU:HD13	1.92	0.50
1:2:187:ASN:O	1:2:191:THR:OG1	2.28	0.50
3:H:380:THR:OG1	3:H:411:MET:SD	2.68	0.50
2:J:473:LEU:HA	2:J:476:VAL:HG12	1.93	0.50
5:E:525:GLY:HA2	5:E:528:PHE:HD2	1.77	0.50
1:1:46:ASP:OD1	1:1:46:ASP:N	2.45	0.49
1:2:70:GLU:HB3	1:2:72:ARG:HH21	1.75	0.49
3:F:682:LYS:HE3	1:T:254:ILE:HD12	1.92	0.49
6:I:154:LEU:O	6:I:158:TYR:HB2	2.12	0.49
6:I:496:TRP:CH2	6:I:499:GLN:HB3	2.47	0.49
7:L:1664:GLU:HG2	7:L:1769:TYR:HE1	1.77	0.49
1:U:71:PRO:O	1:U:75:HIS:NE2	2.45	0.49
5:E:540:ARG:HH11	5:E:613:LEU:HD11	1.76	0.49
5:M:233:VAL:HG22	5:M:248:VAL:HG13	1.94	0.49
1:S:187:ASN:O	1:S:191:THR:OG1	2.28	0.49
1:U:68:ASP:OD1	1:U:68:ASP:N	2.45	0.49
1:W:68:ASP:OD1	1:W:68:ASP:N	2.45	0.49
5:G:307:VAL:O	3:H:365:ARG:NH2	2.45	0.49
5:G:482:ARG:HD3	5:G:485:VAL:HG21	1.94	0.49
3:N:328:LEU:HD22	3:N:381:LEU:HD11	1.94	0.49
1:Y:46:ASP:N	1:Y:46:ASP:OD1	2.45	0.49
1:1:330:PRO:HG2	5:M:705:THR:HG23	1.95	0.49
5:G:319:LEU:HD21	5:G:324:LEU:HD21	1.95	0.49
2:J:437:LEU:HD22	2:J:549:VAL:HG21	1.95	0.49
5:M:526:ASP:HA	5:M:529:VAL:HG12	1.95	0.49
1:W:46:ASP:N	1:W:46:ASP:OD1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:46:ASP:OD1	1:Z:46:ASP:N	2.45	0.49
1:Z:383:SER:O	1:Z:386:SER:OG	2.22	0.49
3:H:419:LEU:HA	3:H:422:VAL:HG22	1.95	0.49
2:J:922:ASP:HB3	2:J:925:GLN:HG2	1.94	0.49
1:S:71:PRO:O	1:S:75:HIS:NE2	2.45	0.49
1:2:88:PRO:O	1:2:124:ARG:NH2	2.39	0.49
6:I:151:CYS:HB3	6:I:263:ILE:HB	1.95	0.49
2:J:938:HIS:HB3	2:J:944:ARG:HH21	1.77	0.49
7:L:1800:LEU:HD11	1:Z:341:ARG:HG2	1.95	0.49
1:T:45:THR:HB	1:T:246:PRO:HD2	1.95	0.49
1:V:71:PRO:O	1:V:75:HIS:NE2	2.45	0.49
1:2:71:PRO:O	1:2:75:HIS:NE2	2.45	0.49
3:N:564:ARG:HB3	3:N:570:GLN:HB2	1.95	0.49
3:N:677:LEU:HD21	3:N:782:ILE:HG12	1.95	0.49
1:U:45:THR:HB	1:U:246:PRO:HD2	1.95	0.49
1:X:217:ARG:HB2	1:X:279:ASP:HB2	1.95	0.49
1:2:45:THR:HB	1:2:246:PRO:HD2	1.95	0.49
1:X:45:THR:HB	1:X:246:PRO:HD2	1.95	0.49
1:Y:68:ASP:OD1	1:Y:68:ASP:N	2.45	0.49
3:H:603:THR:HG23	1:W:339:ARG:HH12	1.78	0.48
6:K:646:LEU:HB3	1:Y:341:ARG:NH1	2.28	0.48
3:N:404:THR:HG21	3:N:419:LEU:HD22	1.95	0.48
3:N:554:SER:O	3:N:558:HIS:ND1	2.36	0.48
1:X:46:ASP:OD1	1:X:46:ASP:N	2.45	0.48
1:1:45:THR:HB	1:1:246:PRO:HD2	1.95	0.48
1:2:46:ASP:N	1:2:46:ASP:OD1	2.45	0.48
2:J:396:ALA:HA	2:J:399:VAL:HG22	1.94	0.48
6:K:368:LEU:HD21	6:K:405:LEU:HD23	1.95	0.48
3:N:720:TYR:HD2	3:N:879:ARG:HH12	1.60	0.48
1:S:46:ASP:OD1	1:S:46:ASP:N	2.45	0.48
1:Z:68:ASP:OD1	1:Z:68:ASP:N	2.45	0.48
6:I:20:ASN:H	6:I:24:GLY:HA2	1.78	0.48
2:J:277:LEU:HD11	2:J:294:VAL:HG21	1.94	0.48
1:S:45:THR:HB	1:S:246:PRO:HD2	1.95	0.48
1:V:231:LEU:O	1:V:234:THR:OG1	2.26	0.48
3:H:433:TRP:CE2	3:H:487:GLY:HA3	2.48	0.48
6:K:118:SER:OG	6:K:119:ILE:N	2.44	0.48
1:U:3:ARG:HH11	1:U:131:SER:HA	1.79	0.48
1:X:71:PRO:O	1:X:75:HIS:NE2	2.45	0.48
1:2:341:ARG:NH1	3:N:881:ASP:O	2.46	0.48
3:F:451:ASP:H	3:F:463:LYS:HA	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:K:651:TYR:CE2	1:Y:354:ALA:HB3	2.47	0.48
3:N:717:GLN:HE22	3:N:879:ARG:HG2	1.79	0.48
1:1:3:ARG:HH11	1:1:131:SER:HA	1.79	0.48
2:J:466:VAL:HG13	2:J:642:HIS:HE1	1.78	0.48
5:G:864:PHE:HB3	1:U:353:PRO:HB3	1.95	0.48
7:L:1732:ILE:HG23	7:L:1772:PHE:CE1	2.48	0.48
1:T:217:ARG:HB2	1:T:279:ASP:HB2	1.95	0.48
1:Z:3:ARG:HH11	1:Z:131:SER:HA	1.79	0.48
1:1:68:ASP:N	1:1:68:ASP:OD1	2.45	0.48
1:1:217:ARG:HB2	1:1:279:ASP:HB2	1.95	0.48
3:F:382:ALA:HA	3:F:385:VAL:HB	1.95	0.48
3:H:567:LEU:HD21	3:H:660:TYR:HD1	1.78	0.48
1:T:187:ASN:O	1:T:191:THR:OG1	2.28	0.48
1:V:3:ARG:HH11	1:V:131:SER:HA	1.79	0.48
1:Y:45:THR:HB	1:Y:246:PRO:HD2	1.95	0.48
1:2:217:ARG:HB2	1:2:279:ASP:HB2	1.95	0.48
1:S:3:ARG:HH11	1:S:131:SER:HA	1.79	0.48
1:T:68:ASP:OD1	1:T:68:ASP:N	2.45	0.48
1:W:217:ARG:HB2	1:W:279:ASP:HB2	1.95	0.48
3:N:620:ARG:HA	3:N:643:HIS:CE1	2.49	0.48
1:S:217:ARG:HB2	1:S:279:ASP:HB2	1.95	0.48
1:U:217:ARG:HB2	1:U:279:ASP:HB2	1.95	0.48
1:W:3:ARG:HH11	1:W:131:SER:HA	1.79	0.48
1:Y:217:ARG:HB2	1:Y:279:ASP:HB2	1.95	0.48
6:I:59:ILE:HD11	6:I:93:LEU:HG	1.96	0.47
6:I:526:ASP:HA	6:I:529:GLN:HE21	1.78	0.47
5:M:536:GLU:HA	5:M:539:LEU:HB2	1.96	0.47
3:F:409:PRO:HA	3:F:412:ARG:HG2	1.95	0.47
6:I:575:LEU:HD12	6:I:576:LEU:H	1.78	0.47
5:M:314:HIS:HB2	5:M:319:LEU:HD12	1.96	0.47
3:N:416:GLN:HE22	3:N:526:LEU:HD21	1.79	0.47
3:N:461:HIS:HE1	3:N:748:ILE:HG21	1.79	0.47
3:N:712:VAL:O	3:N:716:HIS:ND1	2.48	0.47
1:W:45:THR:HB	1:W:246:PRO:HD2	1.95	0.47
5:G:531:PHE:HB2	5:G:558:ALA:HB1	1.96	0.47
1:X:3:ARG:HH11	1:X:131:SER:HA	1.79	0.47
1:1:339:ARG:HA	1:1:339:ARG:NH2	2.30	0.47
6:I:299:ILE:HG22	6:I:303:GLN:HE21	1.78	0.47
5:M:519:TYR:HE1	5:M:524:GLN:HE22	1.63	0.47
3:N:346:LEU:HD13	3:N:362:LEU:H	1.79	0.47
3:N:581:LEU:HG	3:N:585:LEU:HG	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:339:ARG:HA	1:S:339:ARG:NH2	2.30	0.47
1:V:45:THR:HB	1:V:246:PRO:HD2	1.95	0.47
1:Z:217:ARG:HB2	1:Z:279:ASP:HB2	1.95	0.47
6:I:369:PHE:HA	6:I:372:PHE:HB3	1.96	0.47
1:V:217:ARG:HB2	1:V:279:ASP:HB2	1.95	0.47
1:W:339:ARG:NH2	1:W:339:ARG:HA	2.30	0.47
1:1:35:GLY:HA2	1:1:85:LEU:HD12	1.97	0.47
1:2:251:ASN:HD21	3:N:575:ARG:HG3	1.79	0.47
7:L:1664:GLU:OE2	7:L:1773:LYS:NZ	2.35	0.47
1:S:35:GLY:HA2	1:S:85:LEU:HD12	1.97	0.47
1:T:35:GLY:HA2	1:T:85:LEU:HD12	1.97	0.47
1:T:339:ARG:HA	1:T:339:ARG:NH2	2.30	0.47
1:U:339:ARG:HA	1:U:339:ARG:NH2	2.30	0.47
1:V:35:GLY:HA2	1:V:85:LEU:HD12	1.97	0.47
1:Z:187:ASN:O	1:Z:191:THR:OG1	2.28	0.47
1:1:231:LEU:O	1:1:234:THR:OG1	2.26	0.47
5:E:525:GLY:H	1:S:248:TYR:HB3	1.79	0.47
3:F:879:ARG:CZ	1:T:337:LEU:HD21	2.45	0.47
5:G:557:LEU:HD11	1:V:295:ARG:HH22	1.78	0.47
5:G:557:LEU:HD22	5:G:561:MET:HB2	1.97	0.47
2:J:444:ILE:HG12	2:J:461:LEU:HG	1.95	0.47
6:K:651:TYR:CE1	1:Y:348:PHE:HE2	2.32	0.47
6:K:651:TYR:CZ	1:Y:354:ALA:HB3	2.50	0.47
7:L:346:LEU:HA	7:L:347:VAL:HA	1.75	0.47
1:U:231:LEU:O	1:U:234:THR:OG1	2.26	0.47
1:W:223:PRO:O	1:W:226:SER:OG	2.33	0.47
1:X:339:ARG:HA	1:X:339:ARG:NH2	2.30	0.47
1:Y:183:VAL:HG13	1:Y:187:ASN:HD21	1.80	0.47
1:Z:45:THR:HB	1:Z:246:PRO:HD2	1.95	0.47
1:2:35:GLY:HA2	1:2:85:LEU:HD12	1.97	0.47
3:N:558:HIS:O	3:N:562:MET:N	2.48	0.47
1:T:3:ARG:HH11	1:T:131:SER:HA	1.79	0.47
1:1:71:PRO:O	1:1:75:HIS:NE2	2.45	0.47
3:F:712:VAL:O	3:F:716:HIS:HB2	2.15	0.47
5:G:168:LYS:HE3	5:G:170:SER:HB2	1.97	0.47
7:L:1505:LEU:HD22	7:L:1604:LEU:HG	1.96	0.47
5:M:719:ILE:HA	5:M:722:VAL:HG22	1.96	0.47
1:X:68:ASP:N	1:X:68:ASP:OD1	2.45	0.47
1:Z:339:ARG:HA	1:Z:339:ARG:NH2	2.30	0.47
5:G:222:LEU:HG	3:H:365:ARG:HH22	1.80	0.47
5:G:517:LYS:HG3	5:G:521:LEU:HD12	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:V:223:PRO:O	1:V:226:SER:OG	2.33	0.47
1:Y:339:ARG:HA	1:Y:339:ARG:NH2	2.30	0.47
1:Z:105:ALA:O	1:Z:109:SER:OG	2.33	0.47
1:1:105:ALA:O	1:1:109:SER:OG	2.33	0.46
1:2:105:ALA:O	1:2:109:SER:OG	2.33	0.46
5:E:154:LEU:HA	5:E:157:LYS:HE2	1.97	0.46
1:U:35:GLY:HA2	1:U:85:LEU:HD12	1.97	0.46
1:U:223:PRO:O	1:U:226:SER:OG	2.33	0.46
1:W:35:GLY:HA2	1:W:85:LEU:HD12	1.97	0.46
1:W:105:ALA:O	1:W:109:SER:OG	2.33	0.46
1:2:3:ARG:HH11	1:2:131:SER:HA	1.79	0.46
6:I:499:GLN:HA	1:W:264:PRO:HB3	1.97	0.46
3:N:563:ARG:HH11	3:N:564:ARG:HG2	1.79	0.46
1:X:183:VAL:HG13	1:X:187:ASN:HD21	1.80	0.46
1:Y:3:ARG:HH11	1:Y:131:SER:HA	1.79	0.46
1:1:56:ASP:OD1	1:2:296:ARG:HD3	2.16	0.46
1:2:339:ARG:HA	1:2:339:ARG:NH2	2.30	0.46
2:J:221:VAL:HG12	2:J:228:ARG:HH22	1.80	0.46
6:K:64:GLY:HA3	7:L:468:ARG:HH22	1.81	0.46
1:S:105:ALA:O	1:S:109:SER:OG	2.33	0.46
1:T:183:VAL:HG13	1:T:187:ASN:HD21	1.80	0.46
1:U:105:ALA:O	1:U:109:SER:OG	2.33	0.46
1:V:183:VAL:HG13	1:V:187:ASN:HD21	1.80	0.46
1:V:339:ARG:HA	1:V:339:ARG:NH2	2.30	0.46
1:Y:231:LEU:O	1:Y:234:THR:OG1	2.26	0.46
1:1:183:VAL:HG13	1:1:187:ASN:HD21	1.80	0.46
1:1:223:PRO:O	1:1:226:SER:OG	2.33	0.46
3:F:571:GLY:HA3	1:T:248:TYR:HB3	1.98	0.46
3:F:865:LEU:HB3	3:F:873:LEU:HD21	1.98	0.46
1:S:183:VAL:HG13	1:S:187:ASN:HD21	1.80	0.46
1:2:360:LEU:HB2	3:N:724:PHE:CE2	2.50	0.46
5:G:443:LEU:HD12	5:G:450:ILE:HD11	1.98	0.46
3:H:635:TRP:CD2	3:H:672:ARG:HD3	2.50	0.46
2:J:279:SER:HB3	2:J:379:LEU:HD22	1.97	0.46
7:L:588:LEU:HD21	7:L:590:HIS:HB2	1.98	0.46
5:M:157:LYS:HB3	5:M:284:GLU:HG3	1.97	0.46
1:T:223:PRO:O	1:T:226:SER:OG	2.33	0.46
1:X:223:PRO:O	1:X:226:SER:OG	2.33	0.46
3:F:845:SER:HA	3:F:848:ARG:HE	1.79	0.46
5:G:370:SER:HA	5:G:373:GLN:HB3	1.97	0.46
1:S:223:PRO:O	1:S:226:SER:OG	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:X:7:THR:HA	1:X:136:VAL:HG13	1.98	0.46
1:Z:35:GLY:HA2	1:Z:85:LEU:HD12	1.97	0.46
1:2:223:PRO:O	1:2:226:SER:OG	2.33	0.46
1:2:231:LEU:O	1:2:234:THR:OG1	2.26	0.46
5:E:526:ASP:HA	5:E:529:VAL:HG12	1.98	0.46
2:J:925:GLN:HA	2:J:928:LYS:HD3	1.98	0.46
6:K:368:LEU:HG	6:K:403:VAL:HG21	1.97	0.46
1:T:7:THR:HA	1:T:136:VAL:HG13	1.98	0.46
1:Y:71:PRO:O	1:Y:75:HIS:NE2	2.45	0.46
1:Y:105:ALA:O	1:Y:109:SER:OG	2.33	0.46
5:G:577:LEU:HD11	5:G:608:LEU:HD12	1.97	0.46
3:H:493:LEU:HD13	3:H:545:LEU:HD13	1.97	0.46
1:S:68:ASP:N	1:S:68:ASP:OD1	2.45	0.46
1:S:278:THR:O	1:S:278:THR:OG1	2.34	0.46
1:W:71:PRO:O	1:W:75:HIS:NE2	2.45	0.46
1:W:183:VAL:HG13	1:W:187:ASN:HD21	1.80	0.46
1:X:105:ALA:O	1:X:109:SER:OG	2.33	0.46
1:Z:183:VAL:HG13	1:Z:187:ASN:HD21	1.80	0.46
1:I:3:ARG:HA	5:M:530:HIS:CE1	2.46	0.46
1:1:7:THR:HA	1:1:136:VAL:HG13	1.98	0.46
3:F:490:ILE:HG12	3:F:494:HIS:CE1	2.51	0.46
3:N:555:LEU:HD13	3:N:648:ILE:HB	1.97	0.46
1:T:105:ALA:O	1:T:109:SER:OG	2.33	0.46
1:Y:7:THR:HA	1:Y:136:VAL:HG13	1.98	0.46
5:E:663:LYS:NZ	1:S:200:ASP:OD2	2.49	0.46
3:H:666:PHE:HE1	3:H:772:LEU:HD13	1.81	0.46
6:K:11:GLY:HA2	6:K:53:ILE:HG12	1.97	0.46
6:K:59:ILE:HG23	6:K:90:CYS:HB3	1.98	0.46
5:M:732:THR:HA	5:M:735:LYS:HG2	1.97	0.46
1:U:7:THR:HA	1:U:136:VAL:HG13	1.98	0.46
1:U:183:VAL:HG13	1:U:187:ASN:HD21	1.80	0.46
1:W:278:THR:O	1:W:278:THR:OG1	2.34	0.46
1:Y:223:PRO:O	1:Y:226:SER:OG	2.33	0.46
1:Y:250:ASN:ND2	1:Y:255:GLY:O	2.50	0.46
5:G:288:VAL:HG23	5:G:383:ALA:HB1	1.96	0.45
5:G:363:SER:HA	5:G:376:CYS:SG	2.56	0.45
5:G:439:ILE:HG22	5:G:441:SER:H	1.81	0.45
6:I:401:HIS:O	1:X:339:ARG:NH1	2.46	0.45
6:I:565:LEU:HA	6:I:568:LEU:HD12	1.98	0.45
1:U:250:ASN:ND2	1:U:255:GLY:O	2.50	0.45
1:V:47:ARG:HG2	1:V:49:ASP:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Y:383:SER:O	1:Y:386:SER:OG	2.22	0.45
3:N:549:LEU:HD23	3:N:549:LEU:HA	1.80	0.45
1:T:250:ASN:ND2	1:T:255:GLY:O	2.50	0.45
1:U:47:ARG:HG2	1:U:49:ASP:H	1.81	0.45
1:W:29:HIS:HB3	1:W:48:LYS:HD3	1.98	0.45
1:W:383:SER:O	1:W:386:SER:OG	2.22	0.45
1:Y:35:GLY:HA2	1:Y:85:LEU:HD12	1.97	0.45
1:2:7:THR:HA	1:2:136:VAL:HG13	1.98	0.45
1:2:47:ARG:HG2	1:2:49:ASP:H	1.81	0.45
6:K:204:PHE:HB2	6:K:259:LEU:HD12	1.98	0.45
1:T:278:THR:O	1:T:278:THR:OG1	2.34	0.45
1:U:29:HIS:HB3	1:U:48:LYS:HD3	1.98	0.45
1:V:29:HIS:HB3	1:V:48:LYS:HD3	1.98	0.45
1:X:35:GLY:HA2	1:X:85:LEU:HD12	1.97	0.45
1:Z:7:THR:HA	1:Z:136:VAL:HG13	1.98	0.45
5:E:861:PHE:HA	1:S:341:ARG:NH1	2.30	0.45
6:I:345:VAL:HG23	6:I:346:GLU:HG3	1.98	0.45
6:K:653:LYS:HG3	6:K:657:GLN:HG3	1.98	0.45
5:M:704:PRO:C	5:M:707:HIS:H	2.20	0.45
1:S:303:VAL:HG12	1:S:305:VAL:H	1.82	0.45
1:T:47:ARG:HG2	1:T:49:ASP:H	1.81	0.45
1:T:303:VAL:HG12	1:T:305:VAL:H	1.82	0.45
1:U:278:THR:O	1:U:278:THR:OG1	2.34	0.45
1:W:47:ARG:HG2	1:W:49:ASP:H	1.81	0.45
1:Z:71:PRO:O	1:Z:75:HIS:NE2	2.45	0.45
1:Z:223:PRO:O	1:Z:226:SER:OG	2.33	0.45
1:Z:278:THR:O	1:Z:278:THR:OG1	2.34	0.45
3:F:526:LEU:HD12	3:F:526:LEU:HA	1.80	0.45
2:J:406:LEU:HA	2:J:409:LEU:HD12	1.99	0.45
6:K:651:TYR:CE1	1:Y:348:PHE:CE2	3.04	0.45
1:S:7:THR:HA	1:S:136:VAL:HG13	1.98	0.45
1:T:71:PRO:O	1:T:75:HIS:NE2	2.45	0.45
1:1:29:HIS:HB3	1:1:48:LYS:HD3	1.98	0.45
1:2:183:VAL:HG13	1:2:187:ASN:HD21	1.80	0.45
3:H:803:ARG:HH22	3:H:833:ILE:HD11	1.81	0.45
3:N:680:ILE:HD12	3:N:789:GLN:HG2	1.98	0.45
1:V:303:VAL:HG12	1:V:305:VAL:H	1.82	0.45
1:W:250:ASN:ND2	1:W:255:GLY:O	2.50	0.45
2:J:720:LEU:HG	2:J:724:ARG:HH21	1.82	0.45
1:U:303:VAL:HG12	1:U:305:VAL:H	1.82	0.45
1:W:7:THR:HA	1:W:136:VAL:HG13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:250:ASN:ND2	1:2:255:GLY:O	2.50	0.45
1:S:29:HIS:HB3	1:S:48:LYS:HD3	1.98	0.45
1:Y:278:THR:O	1:Y:278:THR:OG1	2.34	0.45
1:Y:303:VAL:HG12	1:Y:305:VAL:H	1.82	0.45
3:H:294:LEU:HD21	3:H:368:LEU:HD22	1.97	0.45
6:I:190:TRP:CE2	6:I:280:GLY:HA3	2.52	0.45
7:L:1803:ASN:O	1:Z:341:ARG:NH1	2.45	0.45
1:V:105:ALA:O	1:V:109:SER:OG	2.33	0.45
1:V:250:ASN:ND2	1:V:255:GLY:O	2.50	0.45
1:X:303:VAL:HG12	1:X:305:VAL:H	1.82	0.45
1:Y:47:ARG:HG2	1:Y:49:ASP:H	1.81	0.45
1:Z:69:LEU:HG	1:Z:70:GLU:HG3	1.99	0.45
1:Z:250:ASN:ND2	1:Z:255:GLY:O	2.50	0.45
1:1:250:ASN:ND2	1:1:255:GLY:O	2.50	0.44
1:X:250:ASN:ND2	1:X:255:GLY:O	2.50	0.44
3:H:397:ALA:HB1	3:H:474:PHE:HE2	1.83	0.44
1:V:69:LEU:HG	1:V:70:GLU:HG3	1.99	0.44
1:X:29:HIS:HB3	1:X:48:LYS:HD3	1.98	0.44
1:Y:69:LEU:HG	1:Y:70:GLU:HG3	1.99	0.44
1:2:303:VAL:HG12	1:2:305:VAL:H	1.82	0.44
3:H:603:THR:HG21	1:W:342:GLU:HG3	1.98	0.44
5:M:559:LEU:HD21	5:M:570:LYS:HG2	2.00	0.44
3:N:391:ARG:HD3	3:N:395:GLU:HG2	2.00	0.44
1:S:47:ARG:HG2	1:S:49:ASP:H	1.81	0.44
1:X:47:ARG:HG2	1:X:49:ASP:H	1.81	0.44
1:1:47:ARG:HG2	1:1:49:ASP:H	1.81	0.44
1:2:29:HIS:HB3	1:2:48:LYS:HD3	1.98	0.44
1:2:69:LEU:HG	1:2:70:GLU:HG3	1.99	0.44
1:2:260:LEU:HD22	1:2:379:ALA:HA	2.00	0.44
3:H:625:LEU:HD12	3:H:637:VAL:HG12	1.99	0.44
6:I:569:LEU:HG	6:I:575:LEU:HB2	1.99	0.44
6:I:610:ALA:O	6:I:613:SER:OG	2.30	0.44
6:K:544:LEU:HD12	6:K:560:ALA:HB1	2.00	0.44
7:L:1670:LYS:NZ	1:Z:250:ASN:HD21	2.16	0.44
3:N:419:LEU:HA	3:N:422:VAL:HG22	1.99	0.44
3:N:717:GLN:NE2	3:N:879:ARG:HH21	2.16	0.44
1:Y:29:HIS:HB3	1:Y:48:LYS:HD3	1.98	0.44
1:Z:29:HIS:HB3	1:Z:48:LYS:HD3	1.98	0.44
6:I:97:LEU:HB2	6:I:101:ARG:HH21	1.82	0.44
7:L:601:THR:HG21	7:L:1495:ALA:HB2	2.00	0.44
7:L:1663:HIS:CG	1:Z:262:PRO:HA	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:M:527:PHE:HZ	5:M:555:LEU:HG	1.82	0.44
1:W:231:LEU:O	1:W:234:THR:OG1	2.26	0.44
1:Z:47:ARG:HG2	1:Z:49:ASP:H	1.81	0.44
1:Z:303:VAL:HG12	1:Z:305:VAL:H	1.82	0.44
1:1:278:THR:O	1:1:278:THR:OG1	2.34	0.44
5:G:861:PHE:HA	1:U:341:ARG:HH12	1.81	0.44
2:J:212:ASP:HB3	7:L:325:ARG:HH12	1.82	0.44
5:M:695:TYR:HD2	5:M:858:ARG:HH12	1.64	0.44
1:S:250:ASN:ND2	1:S:255:GLY:O	2.50	0.44
1:1:264:PRO:HB3	5:M:663:LYS:HG3	1.99	0.44
5:E:427:TYR:HE2	5:E:455:LYS:HD3	1.83	0.44
3:F:836:PHE:O	3:F:840:ILE:HG12	2.18	0.44
5:M:354:SER:OG	5:M:437:GLN:NE2	2.50	0.44
1:S:69:LEU:HG	1:S:70:GLU:HG3	1.99	0.44
1:V:7:THR:HA	1:V:136:VAL:HG13	1.98	0.44
1:Z:260:LEU:HD22	1:Z:379:ALA:HA	2.00	0.44
1:1:339:ARG:NH2	1:1:342:GLU:HB2	2.32	0.44
5:E:224:VAL:HB	5:E:233:VAL:HG21	2.00	0.44
3:F:249:ALA:HB1	3:F:252:ARG:HH21	1.83	0.44
6:K:653:LYS:H	1:Y:353:PRO:HB3	1.82	0.44
1:T:29:HIS:HB3	1:T:48:LYS:HD3	1.98	0.44
1:U:69:LEU:HG	1:U:70:GLU:HG3	1.99	0.44
1:X:69:LEU:HG	1:X:70:GLU:HG3	1.99	0.44
1:1:303:VAL:HG12	1:1:305:VAL:H	1.82	0.44
6:I:460:GLN:O	6:I:464:HIS:N	2.51	0.44
5:M:518:ARG:O	5:M:523:ASP:N	2.50	0.44
1:Z:339:ARG:NH2	1:Z:342:GLU:HB2	2.31	0.44
1:2:415:LYS:HD2	1:2:415:LYS:HA	1.88	0.43
5:G:286:GLY:O	5:G:290:HIS:ND1	2.50	0.43
1:S:260:LEU:HD22	1:S:379:ALA:HA	2.00	0.43
1:T:69:LEU:HG	1:T:70:GLU:HG3	1.99	0.43
1:W:303:VAL:HG12	1:W:305:VAL:H	1.82	0.43
1:Z:84:LYS:H	1:Z:84:LYS:HG2	1.50	0.43
1:1:260:LEU:HD22	1:1:379:ALA:HA	2.00	0.43
5:E:152:GLN:HA	5:E:155:GLU:HG2	1.99	0.43
5:E:689:PHE:CZ	5:E:693:ILE:HD11	2.53	0.43
5:G:350:CYS:HB3	5:G:355:THR:HB	1.99	0.43
1:U:324:ILE:HD11	1:U:373:VAL:HG12	2.01	0.43
1:W:260:LEU:HD22	1:W:379:ALA:HA	2.00	0.43
1:1:318:ILE:HD11	1:1:382:THR:HG23	2.01	0.43
3:F:582:LYS:HG3	3:F:583:PRO:HD3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:I:363:LEU:HD23	6:I:363:LEU:HA	1.82	0.43
3:N:850:LEU:HD13	3:N:850:LEU:HA	1.80	0.43
1:T:260:LEU:HD22	1:T:379:ALA:HA	2.00	0.43
1:T:318:ILE:HD11	1:T:382:THR:HG23	2.01	0.43
1:V:260:LEU:HD22	1:V:379:ALA:HA	2.00	0.43
1:X:260:LEU:HD22	1:X:379:ALA:HA	2.00	0.43
1:1:344:LYS:HE2	1:1:344:LYS:HB3	1.92	0.43
7:L:1679:GLN:HA	7:L:1683:VAL:HG22	2.00	0.43
5:M:468:THR:OG1	5:M:469:CYS:N	2.48	0.43
1:2:9:GLN:HA	1:2:138:CYS:HB2	2.01	0.43
1:2:249:MET:HG2	3:N:723:THR:HG21	2.00	0.43
3:F:688:ALA:HB3	1:T:264:PRO:HG2	2.00	0.43
5:G:559:LEU:HD12	5:G:559:LEU:HA	1.82	0.43
5:G:865:TYR:HA	5:G:868:ARG:HE	1.83	0.43
3:H:593:TYR:HB2	3:H:595:HIS:CD2	2.52	0.43
3:H:799:GLU:HG2	3:H:836:PHE:CZ	2.53	0.43
2:J:291:ASP:N	2:J:291:ASP:OD1	2.49	0.43
3:N:806:PHE:HE2	3:N:832:ARG:HH12	1.66	0.43
1:T:9:GLN:HA	1:T:138:CYS:HB2	2.01	0.43
1:W:9:GLN:HA	1:W:138:CYS:HB2	2.01	0.43
1:1:69:LEU:HG	1:1:70:GLU:HG3	1.99	0.43
5:E:168:LYS:HZ3	5:E:405:SER:HB2	1.82	0.43
5:E:386:PRO:HB3	3:F:412:ARG:HH22	1.84	0.43
5:G:306:LEU:O	5:G:310:LEU:HG	2.18	0.43
2:J:377:GLU:HB2	6:K:124:TYR:CE1	2.53	0.43
3:N:863:VAL:HG12	3:N:887:LYS:HD3	1.99	0.43
1:T:324:ILE:HD11	1:T:373:VAL:HG12	2.01	0.43
1:V:324:ILE:HD11	1:V:373:VAL:HG12	2.01	0.43
1:Z:318:ILE:HD11	1:Z:382:THR:HG23	2.01	0.43
5:M:702:MET:O	5:M:703:GLU:C	2.56	0.43
1:U:339:ARG:NH2	1:U:342:GLU:HB2	2.31	0.43
1:W:69:LEU:HG	1:W:70:GLU:HG3	1.99	0.43
1:X:278:THR:O	1:X:278:THR:OG1	2.34	0.43
1:1:53:TYR:OH	1:2:299:GLN:OE1	2.16	0.43
1:1:249:MET:HB3	5:M:695:TYR:HE1	1.83	0.43
1:U:260:LEU:HD22	1:U:379:ALA:HA	2.00	0.43
1:X:324:ILE:HD11	1:X:373:VAL:HG12	2.00	0.43
1:Y:318:ILE:HD11	1:Y:382:THR:HG23	2.01	0.43
1:1:9:GLN:HA	1:1:138:CYS:HB2	2.01	0.43
1:1:110:GLN:HA	1:1:113:LYS:HE3	2.01	0.43
5:E:236:GLN:HG3	5:E:245:THR:HG23	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:241:ARG:HE	5:E:242:GLN:H	1.67	0.43
3:F:620:ARG:HA	3:F:643:HIS:CE1	2.53	0.43
5:G:341:LEU:HD23	5:G:341:LEU:HA	1.89	0.43
5:G:446:MET:HG3	5:G:449:LYS:HD2	2.00	0.43
5:G:827:LYS:HD2	5:G:827:LYS:HA	1.83	0.43
3:H:704:CYS:SG	3:H:705:HIS:N	2.92	0.43
5:M:206:GLY:H	5:M:251:ASN:ND2	2.17	0.43
1:S:9:GLN:HA	1:S:138:CYS:HB2	2.01	0.43
1:S:31:ILE:HG23	1:S:37:VAL:HA	2.01	0.43
1:T:84:LYS:H	1:T:84:LYS:HG2	1.50	0.43
1:Y:260:LEU:HD22	1:Y:379:ALA:HA	2.00	0.43
1:Z:31:ILE:HG23	1:Z:37:VAL:HA	2.01	0.43
5:E:252:LEU:HG	5:E:257:ARG:HB2	2.00	0.43
5:E:704:PRO:HG3	1:S:330:PRO:HG2	2.00	0.43
5:G:691:GLN:HE21	5:G:691:GLN:HB2	1.62	0.43
6:I:578:PRO:HA	6:I:581:HIS:HD2	1.84	0.43
6:K:653:LYS:HD3	1:Y:353:PRO:HD3	2.00	0.43
1:S:339:ARG:NH2	1:S:342:GLU:HB2	2.32	0.43
1:T:31:ILE:HG23	1:T:37:VAL:HA	2.01	0.43
1:T:110:GLN:HA	1:T:113:LYS:HE3	2.01	0.43
1:T:339:ARG:NH2	1:T:342:GLU:HB2	2.32	0.43
1:V:9:GLN:HA	1:V:138:CYS:HB2	2.01	0.43
1:Y:110:GLN:HA	1:Y:113:LYS:HE3	2.01	0.43
5:E:164:LYS:HD2	5:E:405:SER:H	1.84	0.42
5:G:256:ILE:O	5:G:260:VAL:HG12	2.19	0.42
3:H:669:ARG:HG2	3:H:672:ARG:HH22	1.84	0.42
1:U:318:ILE:HD11	1:U:382:THR:HG23	2.01	0.42
1:2:31:ILE:HG23	1:2:37:VAL:HA	2.01	0.42
5:E:187:LEU:HD21	3:F:379:LYS:HE2	2.01	0.42
5:E:814:LEU:HB3	5:E:815:VAL:H	1.69	0.42
3:H:878:PHE:O	1:V:341:ARG:NH1	2.44	0.42
6:I:539:SER:O	6:I:542:SER:OG	2.31	0.42
2:J:938:HIS:CD2	2:J:944:ARG:HB3	2.54	0.42
5:M:164:LYS:HG2	5:M:404:TYR:HA	2.01	0.42
1:V:318:ILE:HD11	1:V:382:THR:HG23	2.01	0.42
1:W:318:ILE:HD11	1:W:382:THR:HG23	2.01	0.42
1:W:324:ILE:HD11	1:W:373:VAL:HG12	2.01	0.42
1:X:318:ILE:HD11	1:X:382:THR:HG23	2.01	0.42
1:Z:9:GLN:HA	1:Z:138:CYS:HB2	2.01	0.42
1:1:15:ASN:HD22	1:1:74:ILE:HG12	1.85	0.42
1:1:31:ILE:HG23	1:1:37:VAL:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:324:ILE:HD11	1:2:373:VAL:HG12	2.01	0.42
5:G:388:PHE:O	5:G:392:GLU:HB2	2.19	0.42
3:H:734:LEU:HB2	3:H:754:PHE:CD1	2.54	0.42
6:I:191:MET:HE1	6:I:276:ILE:HA	2.01	0.42
2:J:358:PHE:CD1	2:J:429:ASN:HB2	2.54	0.42
3:N:327:ALA:HB1	3:N:418:ILE:HG13	2.00	0.42
1:S:318:ILE:HD11	1:S:382:THR:HG23	2.01	0.42
1:V:31:ILE:HG23	1:V:37:VAL:HA	2.01	0.42
1:W:110:GLN:HA	1:W:113:LYS:HE3	2.01	0.42
1:X:9:GLN:HA	1:X:138:CYS:HB2	2.01	0.42
1:X:110:GLN:HA	1:X:113:LYS:HE3	2.01	0.42
1:Y:393:ARG:HE	1:Y:394:GLN:HG3	1.85	0.42
1:2:15:ASN:HD22	1:2:74:ILE:HG12	1.85	0.42
3:F:568:LEU:HD13	3:F:667:LEU:HB2	2.02	0.42
3:H:716:HIS:HE1	1:V:250:ASN:HD21	1.67	0.42
5:M:241:ARG:O	5:M:275:ARG:NH1	2.53	0.42
1:T:393:ARG:HE	1:T:394:GLN:HG3	1.85	0.42
1:U:15:ASN:HD22	1:U:74:ILE:HG12	1.85	0.42
1:1:324:ILE:HD11	1:1:373:VAL:HG12	2.00	0.42
5:G:415:ARG:N	5:G:431:ARG:HH12	2.17	0.42
3:H:336:TYR:HB2	6:I:124:TYR:CD1	2.55	0.42
2:J:392:THR:HG21	7:L:295:ARG:HB2	2.02	0.42
5:M:702:MET:HB3	5:M:703:GLU:H	1.62	0.42
1:S:393:ARG:HE	1:S:394:GLN:HG3	1.85	0.42
1:U:393:ARG:HE	1:U:394:GLN:HG3	1.85	0.42
1:Y:9:GLN:HA	1:Y:138:CYS:HB2	2.01	0.42
1:Y:15:ASN:HD22	1:Y:74:ILE:HG12	1.85	0.42
1:Z:110:GLN:HA	1:Z:113:LYS:HE3	2.01	0.42
1:2:318:ILE:HD11	1:2:382:THR:HG23	2.01	0.42
5:G:329:GLN:H	5:G:329:GLN:HG2	1.73	0.42
7:L:1661:PHE:O	7:L:1664:GLU:HB3	2.20	0.42
5:M:343:THR:O	5:M:347:LYS:HB2	2.20	0.42
5:E:156:LEU:HD12	5:E:156:LEU:HA	1.80	0.42
5:G:637:ARG:O	5:G:641:LEU:HG	2.20	0.42
3:H:389:GLN:O	3:H:391:ARG:NH1	2.53	0.42
3:H:597:LEU:HG	3:H:623:VAL:HG21	2.01	0.42
3:H:837:LYS:HA	3:H:837:LYS:HD2	1.80	0.42
6:I:530:TYR:CE1	1:W:249:MET:HG2	2.53	0.42
7:L:416:GLN:HG3	7:L:433:THR:HG21	2.01	0.42
3:N:597:LEU:HA	3:N:597:LEU:HD13	1.81	0.42
1:T:384:ILE:HD12	1:T:384:ILE:HA	1.92	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:557:ASP:HA	3:F:560:GLN:HB3	2.01	0.42
3:F:879:ARG:HA	3:F:879:ARG:NE	2.34	0.42
6:I:143:ILE:HG23	6:I:148:ILE:HB	2.00	0.42
7:L:1728:VAL:HG11	7:L:1779:LEU:HB3	2.01	0.42
1:S:3:ARG:HB2	1:S:4:GLU:H	1.73	0.42
1:S:15:ASN:HD22	1:S:74:ILE:HG12	1.85	0.42
1:Z:15:ASN:HD22	1:Z:74:ILE:HG12	1.85	0.42
1:Z:324:ILE:HD11	1:Z:373:VAL:HG12	2.01	0.42
1:2:84:LYS:H	1:2:84:LYS:HG2	1.50	0.42
3:F:489:SER:HB2	3:F:545:LEU:HD11	2.01	0.42
5:G:222:LEU:HD21	5:G:310:LEU:HB2	2.01	0.42
5:G:259:LEU:HA	5:G:262:ARG:HE	1.84	0.42
3:H:448:VAL:HG22	3:H:484:LEU:HD12	2.02	0.42
1:S:110:GLN:HA	1:S:113:LYS:HE3	2.01	0.42
1:V:15:ASN:HD22	1:V:74:ILE:HG12	1.85	0.42
1:V:85:LEU:HD23	1:V:86:TYR:HD1	1.85	0.42
1:V:110:GLN:HA	1:V:113:LYS:HE3	2.01	0.42
1:V:393:ARG:HE	1:V:394:GLN:HG3	1.85	0.42
1:X:31:ILE:HG23	1:X:37:VAL:HA	2.01	0.42
1:2:393:ARG:HE	1:2:394:GLN:HG3	1.85	0.42
5:G:356:LEU:HD13	5:G:440:PRO:HB3	2.02	0.42
6:K:22:ARG:HA	6:K:22:ARG:HD2	4.77	0.42
5:M:659:TRP:HD1	5:M:683:ARG:HE	1.66	0.42
1:T:15:ASN:HD22	1:T:74:ILE:HG12	1.85	0.42
1:T:287:LYS:HA	1:T:287:LYS:HD2	1.94	0.42
1:Y:187:ASN:O	1:Y:191:THR:OG1	2.28	0.42
1:Y:324:ILE:HD11	1:Y:373:VAL:HG12	2.01	0.42
1:1:112:GLU:O	1:1:115:HIS:ND1	2.53	0.41
5:E:391:LEU:HG	5:E:407:PHE:HE1	1.85	0.41
5:G:470:PRO:HD3	5:G:494:TYR:CZ	2.55	0.41
2:J:267:GLU:HB3	7:L:298:GLU:OE2	2.20	0.41
5:M:329:GLN:HB3	5:M:333:ARG:HH12	1.85	0.41
1:S:112:GLU:O	1:S:115:HIS:ND1	2.53	0.41
1:S:324:ILE:HD11	1:S:373:VAL:HG12	2.01	0.41
1:W:31:ILE:HG23	1:W:37:VAL:HA	2.01	0.41
1:W:84:LYS:H	1:W:84:LYS:HG2	1.50	0.41
1:W:393:ARG:HE	1:W:394:GLN:HG3	1.85	0.41
1:X:112:GLU:O	1:X:115:HIS:ND1	2.53	0.41
1:Y:339:ARG:NH2	1:Y:342:GLU:HB2	2.32	0.41
1:2:339:ARG:NH2	1:2:342:GLU:HB2	2.32	0.41
3:F:490:ILE:HG12	3:F:494:HIS:HE1	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:277:VAL:HB	3:H:288:ARG:HG3	2.02	0.41
3:H:291:ALA:HA	3:H:366:ARG:HH22	1.85	0.41
7:L:1512:LEU:O	7:L:1516:LEU:HB2	2.20	0.41
5:M:154:LEU:HA	5:M:157:LYS:HD2	2.02	0.41
1:S:339:ARG:HH21	1:S:339:ARG:HD2	1.73	0.41
1:U:9:GLN:HA	1:U:138:CYS:HB2	2.01	0.41
1:U:31:ILE:HG23	1:U:37:VAL:HA	2.01	0.41
1:X:393:ARG:HE	1:X:394:GLN:HG3	1.85	0.41
1:Y:85:LEU:HD23	1:Y:86:TYR:HD1	1.85	0.41
1:1:84:LYS:H	1:1:84:LYS:HG2	1.50	0.41
5:E:319:LEU:HD21	5:E:324:LEU:HD13	2.01	0.41
5:E:396:TYR:CE2	5:E:471:VAL:HG13	2.55	0.41
3:F:719:GLN:HE22	1:T:249:MET:HG2	1.84	0.41
5:G:280:LYS:O	5:G:289:ASN:ND2	2.54	0.41
5:M:311:GLU:HG3	3:N:365:ARG:HH11	1.86	0.41
5:M:499:LEU:HD23	5:M:719:ILE:HG13	2.01	0.41
5:M:504:MET:SD	5:M:714:LYS:NZ	2.85	0.41
5:M:551:LEU:HD13	5:M:575:ILE:HG21	2.02	0.41
1:U:85:LEU:HD23	1:U:86:TYR:HD1	1.85	0.41
1:U:110:GLN:HA	1:U:113:LYS:HE3	2.01	0.41
1:W:305:VAL:HG11	1:W:384:ILE:HD13	2.03	0.41
1:2:110:GLN:HA	1:2:113:LYS:HE3	2.01	0.41
5:G:422:ASP:HB2	5:G:627:SER:HB2	2.02	0.41
5:G:574:LYS:HB2	5:G:619:ASP:HB3	2.03	0.41
3:H:576:HIS:O	3:H:580:LEU:HG	2.20	0.41
6:I:263:ILE:H	6:I:263:ILE:HG13	1.74	0.41
6:I:403:VAL:HG22	6:I:404:LEU:HD12	2.01	0.41
6:K:381:LYS:HA	6:K:381:LYS:HD3	1.95	0.41
1:S:67:LEU:HD23	1:S:67:LEU:HA	1.96	0.41
1:T:85:LEU:HD23	1:T:86:TYR:HD1	1.85	0.41
1:T:112:GLU:O	1:T:115:HIS:ND1	2.53	0.41
1:T:415:LYS:HD2	1:T:415:LYS:HA	1.88	0.41
1:W:15:ASN:HD22	1:W:74:ILE:HG12	1.85	0.41
1:Y:112:GLU:O	1:Y:115:HIS:ND1	2.53	0.41
1:1:393:ARG:HE	1:1:394:GLN:HG3	1.85	0.41
5:E:186:ALA:HA	5:E:191:PHE:CE2	2.54	0.41
5:E:716:ALA:HB2	5:E:725:HIS:HE1	1.85	0.41
5:E:868:ARG:HE	5:E:868:ARG:HB3	1.71	0.41
3:H:398:SER:HA	3:H:473:SER:OG	2.21	0.41
3:H:885:HIS:HB3	1:V:353:PRO:HB3	2.03	0.41
2:J:797:ASP:OD2	2:J:797:ASP:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:938:HIS:CE1	2:J:943:LEU:HB2	2.55	0.41
1:V:287:LYS:HA	1:V:287:LYS:HD2	1.94	0.41
1:W:187:ASN:O	1:W:191:THR:OG1	2.28	0.41
5:E:679:ALA:HB1	5:E:762:MET:SD	2.60	0.41
5:E:738:MET:N	5:E:738:MET:SD	2.93	0.41
3:H:600:ILE:O	3:H:603:THR:HB	2.20	0.41
2:J:370:LYS:HE3	2:J:370:LYS:HB2	1.88	0.41
5:M:739:LEU:HD13	5:M:739:LEU:HA	1.77	0.41
3:N:388:CYS:HB3	3:N:396:LEU:HG	2.02	0.41
1:S:85:LEU:HD23	1:S:86:TYR:HD1	1.85	0.41
1:V:3:ARG:HB2	1:V:4:GLU:H	1.73	0.41
1:V:112:GLU:O	1:V:115:HIS:ND1	2.53	0.41
1:Z:195:LEU:HD23	1:Z:195:LEU:HA	1.97	0.41
1:1:85:LEU:HD23	1:1:86:TYR:HD1	1.85	0.41
1:1:112:GLU:HA	1:1:152:TYR:CE2	2.56	0.41
5:G:557:LEU:O	5:G:558:ALA:C	2.58	0.41
5:G:693:ILE:HD13	5:G:859:LEU:HD11	2.02	0.41
3:H:409:PRO:HA	3:H:412:ARG:HG2	2.02	0.41
7:L:392:SER:O	7:L:395:SER:OG	2.35	0.41
7:L:1683:VAL:HG12	1:Z:330:PRO:HG2	2.02	0.41
1:T:395:TYR:HE2	1:T:425:ARG:HE	1.69	0.41
1:V:112:GLU:HA	1:V:152:TYR:CE2	2.56	0.41
1:V:305:VAL:HG11	1:V:384:ILE:HD13	2.03	0.41
1:Z:85:LEU:HD23	1:Z:86:TYR:HD1	1.85	0.41
1:Z:305:VAL:HG11	1:Z:384:ILE:HD13	2.03	0.41
1:2:85:LEU:HD23	1:2:86:TYR:HD1	1.85	0.41
5:M:356:LEU:HD12	5:M:356:LEU:HA	1.95	0.41
1:V:195:LEU:HD23	1:V:195:LEU:HA	1.96	0.41
1:X:15:ASN:HD22	1:X:74:ILE:HG12	1.85	0.41
1:Y:31:ILE:HG23	1:Y:37:VAL:HA	2.01	0.41
1:Y:305:VAL:HG11	1:Y:384:ILE:HD13	2.03	0.41
1:Z:112:GLU:O	1:Z:115:HIS:ND1	2.53	0.41
1:Z:415:LYS:HD2	1:Z:415:LYS:HA	1.88	0.41
1:1:395:TYR:HE2	1:1:425:ARG:HE	1.69	0.41
5:E:550:ARG:NH2	1:T:342:GLU:OE2	2.54	0.41
3:H:706:ILE:O	3:H:709:SER:OG	2.24	0.41
2:J:234:HIS:ND1	2:J:236:LEU:HG	2.36	0.41
2:J:327:LEU:HD13	2:J:372:PHE:CE1	2.55	0.41
6:K:105:LEU:HA	6:K:105:LEU:HD23	1.87	0.41
6:K:253:SER:HB2	6:K:288:ASN:HD21	1.86	0.41
7:L:1588:PRO:HB2	7:L:1737:LEU:HD13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:M:408:MET:HG2	5:M:434:ILE:HG13	2.03	0.41
3:N:524:THR:OG1	3:N:525:ASP:N	2.54	0.41
1:S:220:ILE:HD12	1:S:223:PRO:HG2	2.03	0.41
1:U:220:ILE:HD12	1:U:223:PRO:HG2	2.03	0.41
1:V:339:ARG:NH2	1:V:342:GLU:HB2	2.32	0.41
1:W:112:GLU:O	1:W:115:HIS:ND1	2.53	0.41
1:Y:220:ILE:HD12	1:Y:223:PRO:HG2	2.03	0.41
1:Z:287:LYS:HA	1:Z:287:LYS:HD2	1.94	0.41
5:E:440:PRO:HD2	5:E:443:LEU:HD13	2.02	0.41
5:G:150:LEU:O	5:G:153:SER:OG	2.34	0.41
6:I:315:LYS:HB3	6:I:315:LYS:HE3	1.80	0.41
7:L:588:LEU:HD23	7:L:591:ILE:HG12	2.03	0.41
7:L:1608:ILE:HG12	7:L:1705:HIS:CE1	2.56	0.41
1:T:305:VAL:HG11	1:T:384:ILE:HD13	2.03	0.41
1:1:339:ARG:HH21	1:1:339:ARG:HD2	1.72	0.40
1:1:384:ILE:HD12	1:1:384:ILE:HA	1.92	0.40
3:H:664:PHE:HA	3:H:667:LEU:HG	2.02	0.40
3:H:862:LEU:HD11	3:H:887:LYS:HE2	2.02	0.40
7:L:357:LEU:HD21	7:L:448:LEU:HD21	2.03	0.40
3:N:493:LEU:HD13	3:N:545:LEU:HD22	2.01	0.40
1:U:112:GLU:O	1:U:115:HIS:ND1	2.53	0.40
1:U:187:ASN:O	1:U:191:THR:OG1	2.28	0.40
1:X:112:GLU:HA	1:X:152:TYR:CE2	2.56	0.40
1:Z:220:ILE:HD12	1:Z:223:PRO:HG2	2.03	0.40
1:Z:384:ILE:HD12	1:Z:384:ILE:HA	1.92	0.40
1:Z:393:ARG:HE	1:Z:394:GLN:HG3	1.85	0.40
1:2:278:THR:O	1:2:278:THR:OG1	2.34	0.40
5:E:864:PHE:CD2	1:S:353:PRO:HA	2.57	0.40
3:H:417:HIS:O	3:H:420:SER:OG	2.29	0.40
3:H:568:LEU:HD12	3:H:571:GLY:HA2	2.02	0.40
3:H:717:GLN:OE1	3:H:879:ARG:HB2	2.21	0.40
6:I:367:GLU:OE2	6:I:367:GLU:N	2.54	0.40
6:K:350:LEU:HD13	6:K:463:LEU:HG	2.03	0.40
1:V:278:THR:O	1:V:278:THR:OG1	2.34	0.40
1:X:85:LEU:HD23	1:X:86:TYR:HD1	1.85	0.40
1:Y:112:GLU:HA	1:Y:152:TYR:CE2	2.56	0.40
1:Y:195:LEU:HD23	1:Y:195:LEU:HA	1.96	0.40
1:2:112:GLU:O	1:2:115:HIS:ND1	2.53	0.40
5:E:412:HIS:HB2	5:E:431:ARG:HA	2.02	0.40
3:F:657:MET:HA	3:F:660:TYR:HB2	2.03	0.40
5:G:741:ASN:HD22	5:G:745:LEU:HG	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:303:LYS:H	3:H:303:LYS:HG2	1.62	0.40
3:H:857:ILE:HD12	3:H:857:ILE:HA	1.95	0.40
6:I:42:LEU:O	6:I:45:LEU:HB2	2.21	0.40
6:K:260:ARG:HE	6:K:260:ARG:HB3	1.68	0.40
7:L:1668:PHE:CE2	7:L:1732:ILE:HG21	2.56	0.40
1:S:112:GLU:HA	1:S:152:TYR:CE2	2.56	0.40
1:W:85:LEU:HD23	1:W:86:TYR:HD1	1.85	0.40
1:Y:395:TYR:HE2	1:Y:425:ARG:HE	1.69	0.40
1:2:112:GLU:HA	1:2:152:TYR:CE2	2.56	0.40
5:G:292:LEU:HA	5:G:292:LEU:HD23	1.88	0.40
6:I:259:LEU:HB3	6:I:277:LEU:HD21	2.04	0.40
6:I:270:VAL:HG22	6:I:271:ARG:HH11	1.86	0.40
6:I:548:ILE:HG22	6:I:557:ILE:HD12	2.04	0.40
5:M:517:LYS:O	5:M:523:ASP:N	2.54	0.40
5:M:855:VAL:O	5:M:859:LEU:HG	2.21	0.40
1:T:220:ILE:HD12	1:T:223:PRO:HG2	2.03	0.40
1:V:395:TYR:HE2	1:V:425:ARG:HE	1.69	0.40
1:W:112:GLU:HA	1:W:152:TYR:CE2	2.56	0.40
1:2:358:VAL:HG23	3:N:879:ARG:HH11	1.86	0.40
5:E:529:VAL:HG11	1:S:251:ASN:HD21	1.87	0.40
5:E:541:LYS:O	5:E:546:ILE:HD11	2.20	0.40
5:G:408:MET:O	5:G:435:VAL:N	2.54	0.40
5:G:578:MET:HG2	5:G:581:ASP:HA	2.04	0.40
6:I:196:LEU:HD23	6:I:196:LEU:HA	1.98	0.40
7:L:467:GLY:O	7:L:470:LEU:HG	2.22	0.40
7:L:1522:GLU:HA	7:L:1525:GLN:HB2	2.03	0.40
3:N:870:ASP:OD2	3:N:870:ASP:N	2.53	0.40
1:S:192:LEU:O	1:S:196:THR:HG23	2.22	0.40
1:T:192:LEU:O	1:T:196:THR:HG23	2.22	0.40
1:V:192:LEU:O	1:V:196:THR:HG23	2.22	0.40
1:W:192:LEU:O	1:W:196:THR:HG23	2.22	0.40
1:Y:192:LEU:O	1:Y:196:THR:HG23	2.22	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	1	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	2	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	S	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	T	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	U	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	V	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	W	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	X	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	Y	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
1	Z	408/451 (90%)	391 (96%)	15 (4%)	2 (0%)	29	69
2	J	506/1024 (49%)	470 (93%)	33 (6%)	3 (1%)	25	66
2	l	104/1024 (10%)	94 (90%)	7 (7%)	3 (3%)	4	29
3	F	591/907 (65%)	559 (95%)	32 (5%)	0	100	100
3	H	584/907 (64%)	560 (96%)	22 (4%)	2 (0%)	41	77
3	N	584/907 (64%)	556 (95%)	26 (4%)	2 (0%)	41	77
3	a	112/907 (12%)	106 (95%)	6 (5%)	0	100	100
3	j	97/907 (11%)	96 (99%)	1 (1%)	0	100	100
3	n	97/907 (11%)	91 (94%)	6 (6%)	0	100	100
4	b	63/82 (77%)	62 (98%)	1 (2%)	0	100	100
4	k	63/82 (77%)	62 (98%)	1 (2%)	0	100	100
4	m	63/82 (77%)	62 (98%)	1 (2%)	0	100	100
4	o	63/82 (77%)	62 (98%)	1 (2%)	0	100	100
5	E	626/902 (69%)	590 (94%)	33 (5%)	3 (0%)	29	69
5	G	628/902 (70%)	590 (94%)	35 (6%)	3 (0%)	29	69
5	M	624/902 (69%)	581 (93%)	38 (6%)	5 (1%)	19	60
6	I	511/667 (77%)	477 (93%)	30 (6%)	4 (1%)	19	60
6	K	548/667 (82%)	528 (96%)	19 (4%)	1 (0%)	47	81
7	L	540/1819 (30%)	505 (94%)	30 (6%)	5 (1%)	17	57
All	All	10484/18187 (58%)	9961 (95%)	472 (4%)	51 (0%)	32	69

All (51) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	I	117	LEU
5	E	581	ASP
5	G	241	ARG
3	H	270	ASN
6	I	408	ASP
6	I	508	ASN
5	M	241	ARG
5	M	703	GLU
3	N	527	GLU
1	1	350	PRO
1	2	350	PRO
3	H	602	GLU
7	L	308	GLU
3	N	455	LYS
1	S	350	PRO
1	T	350	PRO
1	U	350	PRO
1	V	350	PRO
1	W	350	PRO
1	X	350	PRO
1	Y	350	PRO
1	Z	350	PRO
1	1	330	PRO
1	2	330	PRO
5	E	425	ASP
6	I	405	LEU
7	L	310	PRO
7	L	311	TYR
5	M	675	TRP
1	S	330	PRO
1	T	330	PRO
1	U	330	PRO
1	V	330	PRO
1	W	330	PRO
1	X	330	PRO
1	Y	330	PRO
1	Z	330	PRO
2	J	238	LEU
2	J	714	TYR
6	K	409	ASN
7	L	309	GLU
2	I	120	SER

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Mol	Chain	Res	Type
5	E	582	LEU
6	I	404	LEU
2	J	257	TYR
7	L	346	LEU
5	G	558	ALA
5	G	581	ASP
5	M	704	PRO
5	M	701	VAL
2	l	121	PRO

### 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	1	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	2	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	S	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	T	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	U	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	V	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	W	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	X	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	Y	376/400 (94%)	326 (87%)	50 (13%)	4	18
1	Z	376/400 (94%)	326 (87%)	50 (13%)	4	18
2	J	498/933 (53%)	497 (100%)	1 (0%)	93	96
2	l	96/933 (10%)	94 (98%)	2 (2%)	53	72
3	F	542/798 (68%)	541 (100%)	1 (0%)	93	96
3	H	539/798 (68%)	538 (100%)	1 (0%)	93	96
3	N	539/798 (68%)	538 (100%)	1 (0%)	93	96
3	a	101/798 (13%)	100 (99%)	1 (1%)	76	86
3	j	88/798 (11%)	88 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	n	88/798 (11%)	87 (99%)	1 (1%)	73	84
4	b	53/62 (86%)	43 (81%)	10 (19%)	1	8
4	k	53/62 (86%)	43 (81%)	10 (19%)	1	8
4	m	53/62 (86%)	43 (81%)	10 (19%)	1	8
4	o	53/62 (86%)	43 (81%)	10 (19%)	1	8
5	E	574/791 (73%)	570 (99%)	4 (1%)	84	90
5	G	575/791 (73%)	571 (99%)	4 (1%)	84	90
5	M	572/791 (72%)	565 (99%)	7 (1%)	71	83
6	I	472/594 (80%)	466 (99%)	6 (1%)	69	81
6	K	509/594 (86%)	507 (100%)	2 (0%)	91	94
7	L	501/1546 (32%)	495 (99%)	6 (1%)	71	83
All	All	9666/16009 (60%)	9089 (94%)	577 (6%)	23	44

All (577) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	8	LEU
1	1	10	LEU
1	1	31	ILE
1	1	50	VAL
1	1	66	LEU
1	1	72	ARG
1	1	73	VAL
1	1	78	LEU
1	1	84	LYS
1	1	85	LEU
1	1	90	ASN
1	1	109	SER
1	1	131	SER
1	1	136	VAL
1	1	147	SER
1	1	154	LEU
1	1	165	LEU
1	1	168	THR
1	1	189	LEU
1	1	191	THR
1	1	192	LEU
1	1	204	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	1	205	LEU
1	1	218	LEU
1	1	222	ASN
1	1	236	MET
1	1	237	SER
1	1	242	THR
1	1	252	ASP
1	1	256	LEU
1	1	259	SER
1	1	263	THR
1	1	270	MET
1	1	278	THR
1	1	288	THR
1	1	290	VAL
1	1	298	LEU
1	1	316	CYS
1	1	331	THR
1	1	339	ARG
1	1	345	LEU
1	1	355	SER
1	1	360	LEU
1	1	369	SER
1	1	382	THR
1	1	391	THR
1	1	407	GLN
1	1	423	THR
1	1	439	THR
1	1	442	ASP
1	2	8	LEU
1	2	10	LEU
1	2	31	ILE
1	2	50	VAL
1	2	66	LEU
1	2	72	ARG
1	2	73	VAL
1	2	78	LEU
1	2	84	LYS
1	2	85	LEU
1	2	90	ASN
1	2	109	SER
1	2	131	SER
1	2	136	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	147	SER
1	2	154	LEU
1	2	165	LEU
1	2	168	THR
1	2	189	LEU
1	2	191	THR
1	2	192	LEU
1	2	204	VAL
1	2	205	LEU
1	2	218	LEU
1	2	222	ASN
1	2	236	MET
1	2	237	SER
1	2	242	THR
1	2	252	ASP
1	2	256	LEU
1	2	259	SER
1	2	263	THR
1	2	270	MET
1	2	278	THR
1	2	288	THR
1	2	290	VAL
1	2	298	LEU
1	2	316	CYS
1	2	331	THR
1	2	339	ARG
1	2	345	LEU
1	2	355	SER
1	2	360	LEU
1	2	369	SER
1	2	382	THR
1	2	391	THR
1	2	407	GLN
1	2	423	THR
1	2	439	THR
1	2	442	ASP
2	1	52	ARG
2	1	117	LEU
3	n	49	ARG
4	o	21	VAL
4	o	24	THR
4	o	32	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	o	39	LEU
4	o	43	THR
4	o	45	SER
4	o	47	CYS
4	o	48	VAL
4	o	62	SER
4	o	64	ILE
4	m	21	VAL
4	m	24	THR
4	m	32	SER
4	m	39	LEU
4	m	43	THR
4	m	45	SER
4	m	47	CYS
4	m	48	VAL
4	m	62	SER
4	m	64	ILE
5	E	425	ASP
5	E	561	MET
5	E	633	LYS
5	E	681	THR
3	F	371	THR
5	G	241	ARG
5	G	248	VAL
5	G	557	LEU
5	G	675	TRP
3	H	266	ILE
6	I	260	ARG
6	I	271	ARG
6	I	315	LYS
6	I	475	TYR
6	I	600	ASN
6	I	601	LEU
2	J	238	LEU
6	K	86	LEU
6	K	651	TYR
7	L	283	TRP
7	L	294	ARG
7	L	414	SER
7	L	465	LYS
7	L	468	ARG
7	L	588	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	M	524	GLN
5	M	562	SER
5	M	563	THR
5	M	701	VAL
5	M	703	GLU
5	M	705	THR
5	M	759	THR
3	N	678	THR
4	k	21	VAL
4	k	24	THR
4	k	32	SER
4	k	39	LEU
4	k	43	THR
4	k	45	SER
4	k	47	CYS
4	k	48	VAL
4	k	62	SER
4	k	64	ILE
4	b	21	VAL
4	b	24	THR
4	b	32	SER
4	b	39	LEU
4	b	43	THR
4	b	45	SER
4	b	47	CYS
4	b	48	VAL
4	b	62	SER
4	b	64	ILE
3	a	117	LEU
1	S	8	LEU
1	S	10	LEU
1	S	31	ILE
1	S	50	VAL
1	S	66	LEU
1	S	72	ARG
1	S	73	VAL
1	S	78	LEU
1	S	84	LYS
1	S	85	LEU
1	S	90	ASN
1	S	109	SER
1	S	131	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	S	136	VAL
1	S	147	SER
1	S	154	LEU
1	S	165	LEU
1	S	168	THR
1	S	189	LEU
1	S	191	THR
1	S	192	LEU
1	S	204	VAL
1	S	205	LEU
1	S	218	LEU
1	S	222	ASN
1	S	236	MET
1	S	237	SER
1	S	242	THR
1	S	252	ASP
1	S	256	LEU
1	S	259	SER
1	S	263	THR
1	S	270	MET
1	S	278	THR
1	S	288	THR
1	S	290	VAL
1	S	298	LEU
1	S	316	CYS
1	S	331	THR
1	S	339	ARG
1	S	345	LEU
1	S	355	SER
1	S	360	LEU
1	S	369	SER
1	S	382	THR
1	S	391	THR
1	S	407	GLN
1	S	423	THR
1	S	439	THR
1	S	442	ASP
1	T	8	LEU
1	T	10	LEU
1	T	31	ILE
1	T	50	VAL
1	T	66	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	T	72	ARG
1	T	73	VAL
1	T	78	LEU
1	T	84	LYS
1	T	85	LEU
1	T	90	ASN
1	T	109	SER
1	T	131	SER
1	T	136	VAL
1	T	147	SER
1	T	154	LEU
1	T	165	LEU
1	T	168	THR
1	T	189	LEU
1	T	191	THR
1	T	192	LEU
1	T	204	VAL
1	T	205	LEU
1	T	218	LEU
1	T	222	ASN
1	T	236	MET
1	T	237	SER
1	T	242	THR
1	T	252	ASP
1	T	256	LEU
1	T	259	SER
1	T	263	THR
1	T	270	MET
1	T	278	THR
1	T	288	THR
1	T	290	VAL
1	T	298	LEU
1	T	316	CYS
1	T	331	THR
1	T	339	ARG
1	T	345	LEU
1	T	355	SER
1	T	360	LEU
1	T	369	SER
1	T	382	THR
1	T	391	THR
1	T	407	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	T	423	THR
1	T	439	THR
1	T	442	ASP
1	U	8	LEU
1	U	10	LEU
1	U	31	ILE
1	U	50	VAL
1	U	66	LEU
1	U	72	ARG
1	U	73	VAL
1	U	78	LEU
1	U	84	LYS
1	U	85	LEU
1	U	90	ASN
1	U	109	SER
1	U	131	SER
1	U	136	VAL
1	U	147	SER
1	U	154	LEU
1	U	165	LEU
1	U	168	THR
1	U	189	LEU
1	U	191	THR
1	U	192	LEU
1	U	204	VAL
1	U	205	LEU
1	U	218	LEU
1	U	222	ASN
1	U	236	MET
1	U	237	SER
1	U	242	THR
1	U	252	ASP
1	U	256	LEU
1	U	259	SER
1	U	263	THR
1	U	270	MET
1	U	278	THR
1	U	288	THR
1	U	290	VAL
1	U	298	LEU
1	U	316	CYS
1	U	331	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	U	339	ARG
1	U	345	LEU
1	U	355	SER
1	U	360	LEU
1	U	369	SER
1	U	382	THR
1	U	391	THR
1	U	407	GLN
1	U	423	THR
1	U	439	THR
1	U	442	ASP
1	V	8	LEU
1	V	10	LEU
1	V	31	ILE
1	V	50	VAL
1	V	66	LEU
1	V	72	ARG
1	V	73	VAL
1	V	78	LEU
1	V	84	LYS
1	V	85	LEU
1	V	90	ASN
1	V	109	SER
1	V	131	SER
1	V	136	VAL
1	V	147	SER
1	V	154	LEU
1	V	165	LEU
1	V	168	THR
1	V	189	LEU
1	V	191	THR
1	V	192	LEU
1	V	204	VAL
1	V	205	LEU
1	V	218	LEU
1	V	222	ASN
1	V	236	MET
1	V	237	SER
1	V	242	THR
1	V	252	ASP
1	V	256	LEU
1	V	259	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	V	263	THR
1	V	270	MET
1	V	278	THR
1	V	288	THR
1	V	290	VAL
1	V	298	LEU
1	V	316	CYS
1	V	331	THR
1	V	339	ARG
1	V	345	LEU
1	V	355	SER
1	V	360	LEU
1	V	369	SER
1	V	382	THR
1	V	391	THR
1	V	407	GLN
1	V	423	THR
1	V	439	THR
1	V	442	ASP
1	W	8	LEU
1	W	10	LEU
1	W	31	ILE
1	W	50	VAL
1	W	66	LEU
1	W	72	ARG
1	W	73	VAL
1	W	78	LEU
1	W	84	LYS
1	W	85	LEU
1	W	90	ASN
1	W	109	SER
1	W	131	SER
1	W	136	VAL
1	W	147	SER
1	W	154	LEU
1	W	165	LEU
1	W	168	THR
1	W	189	LEU
1	W	191	THR
1	W	192	LEU
1	W	204	VAL
1	W	205	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	W	218	LEU
1	W	222	ASN
1	W	236	MET
1	W	237	SER
1	W	242	THR
1	W	252	ASP
1	W	256	LEU
1	W	259	SER
1	W	263	THR
1	W	270	MET
1	W	278	THR
1	W	288	THR
1	W	290	VAL
1	W	298	LEU
1	W	316	CYS
1	W	331	THR
1	W	339	ARG
1	W	345	LEU
1	W	355	SER
1	W	360	LEU
1	W	369	SER
1	W	382	THR
1	W	391	THR
1	W	407	GLN
1	W	423	THR
1	W	439	THR
1	W	442	ASP
1	X	8	LEU
1	X	10	LEU
1	X	31	ILE
1	X	50	VAL
1	X	66	LEU
1	X	72	ARG
1	X	73	VAL
1	X	78	LEU
1	X	84	LYS
1	X	85	LEU
1	X	90	ASN
1	X	109	SER
1	X	131	SER
1	X	136	VAL
1	X	147	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	X	154	LEU
1	X	165	LEU
1	X	168	THR
1	X	189	LEU
1	X	191	THR
1	X	192	LEU
1	X	204	VAL
1	X	205	LEU
1	X	218	LEU
1	X	222	ASN
1	X	236	MET
1	X	237	SER
1	X	242	THR
1	X	252	ASP
1	X	256	LEU
1	X	259	SER
1	X	263	THR
1	X	270	MET
1	X	278	THR
1	X	288	THR
1	X	290	VAL
1	X	298	LEU
1	X	316	CYS
1	X	331	THR
1	X	339	ARG
1	X	345	LEU
1	X	355	SER
1	X	360	LEU
1	X	369	SER
1	X	382	THR
1	X	391	THR
1	X	407	GLN
1	X	423	THR
1	X	439	THR
1	X	442	ASP
1	Y	8	LEU
1	Y	10	LEU
1	Y	31	ILE
1	Y	50	VAL
1	Y	66	LEU
1	Y	72	ARG
1	Y	73	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	Y	78	LEU
1	Y	84	LYS
1	Y	85	LEU
1	Y	90	ASN
1	Y	109	SER
1	Y	131	SER
1	Y	136	VAL
1	Y	147	SER
1	Y	154	LEU
1	Y	165	LEU
1	Y	168	THR
1	Y	189	LEU
1	Y	191	THR
1	Y	192	LEU
1	Y	204	VAL
1	Y	205	LEU
1	Y	218	LEU
1	Y	222	ASN
1	Y	236	MET
1	Y	237	SER
1	Y	242	THR
1	Y	252	ASP
1	Y	256	LEU
1	Y	259	SER
1	Y	263	THR
1	Y	270	MET
1	Y	278	THR
1	Y	288	THR
1	Y	290	VAL
1	Y	298	LEU
1	Y	316	CYS
1	Y	331	THR
1	Y	339	ARG
1	Y	345	LEU
1	Y	355	SER
1	Y	360	LEU
1	Y	369	SER
1	Y	382	THR
1	Y	391	THR
1	Y	407	GLN
1	Y	423	THR
1	Y	439	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	Y	442	ASP
1	Z	8	LEU
1	Z	10	LEU
1	Z	31	ILE
1	Z	50	VAL
1	Z	66	LEU
1	Z	72	ARG
1	Z	73	VAL
1	Z	78	LEU
1	Z	84	LYS
1	Z	85	LEU
1	Z	90	ASN
1	Z	109	SER
1	Z	131	SER
1	Z	136	VAL
1	Z	147	SER
1	Z	154	LEU
1	Z	165	LEU
1	Z	168	THR
1	Z	189	LEU
1	Z	191	THR
1	Z	192	LEU
1	Z	204	VAL
1	Z	205	LEU
1	Z	218	LEU
1	Z	222	ASN
1	Z	236	MET
1	Z	237	SER
1	Z	242	THR
1	Z	252	ASP
1	Z	256	LEU
1	Z	259	SER
1	Z	263	THR
1	Z	270	MET
1	Z	278	THR
1	Z	288	THR
1	Z	290	VAL
1	Z	298	LEU
1	Z	316	CYS
1	Z	331	THR
1	Z	339	ARG
1	Z	345	LEU

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Mol	Chain	Res	Type
1	Z	355	SER
1	Z	360	LEU
1	Z	369	SER
1	Z	382	THR
1	Z	391	THR
1	Z	407	GLN
1	Z	423	THR
1	Z	439	THR
1	Z	442	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (114) such sidechains are listed below:

Mol	Chain	Res	Type
1	1	103	ASN
1	1	334	HIS
1	1	357	GLN
1	1	394	GLN
1	2	103	ASN
1	2	250	ASN
1	2	394	GLN
2	l	38	GLN
2	l	42	ASN
3	n	84	GLN
4	o	53	GLN
5	E	644	HIS
5	E	691	GLN
5	E	725	HIS
3	F	302	ASN
3	F	387	HIS
3	F	500	GLN
3	F	550	ASN
3	F	594	GLN
3	F	643	HIS
3	F	719	GLN
3	F	786	GLN
3	F	789	GLN
5	G	166	ASN
5	G	173	HIS
5	G	289	ASN
5	G	444	GLN
5	G	493	ASN
5	G	691	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	G	760	ASN
5	G	763	GLN
3	H	330	GLN
3	H	479	GLN
3	H	500	GLN
3	H	558	HIS
3	H	576	HIS
3	H	716	HIS
3	H	736	ASN
3	H	751	HIS
3	H	883	ASN
6	I	121	HIS
6	I	130	GLN
6	I	303	GLN
6	I	409	ASN
6	I	529	GLN
6	I	533	GLN
6	I	543	GLN
6	I	581	HIS
2	J	642	HIS
2	J	698	GLN
2	J	830	GLN
2	J	892	HIS
2	J	895	ASN
2	J	930	HIS
2	J	938	HIS
2	J	989	ASN
6	K	29	GLN
6	K	370	GLN
6	K	377	GLN
6	K	393	ASN
6	K	520	HIS
7	L	416	GLN
7	L	1666	GLN
7	L	1770	ASN
5	M	151	GLN
5	M	172	GLN
5	M	173	HIS
5	M	213	GLN
5	M	251	ASN
5	M	316	GLN
5	M	373	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	M	437	GLN
5	M	530	HIS
5	M	639	GLN
5	M	674	GLN
5	M	712	ASN
3	N	389	GLN
3	N	461	HIS
3	N	479	GLN
3	N	491	ASN
3	N	494	HIS
3	N	643	HIS
3	N	716	HIS
3	N	736	ASN
3	N	740	GLN
4	k	53	GLN
3	j	84	GLN
1	S	103	ASN
1	S	251	ASN
1	S	394	GLN
1	T	103	ASN
1	T	158	ASN
1	T	250	ASN
1	T	251	ASN
1	T	334	HIS
1	T	338	GLN
1	T	394	GLN
1	U	103	ASN
1	U	334	HIS
1	U	394	GLN
1	V	103	ASN
1	V	394	GLN
1	W	103	ASN
1	W	334	HIS
1	W	394	GLN
1	X	103	ASN
1	X	334	HIS
1	X	394	GLN
1	Y	103	ASN
1	Y	394	GLN
1	Z	103	ASN
1	Z	250	ASN
1	Z	334	HIS

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Mol	Chain	Res	Type
1	Z	394	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

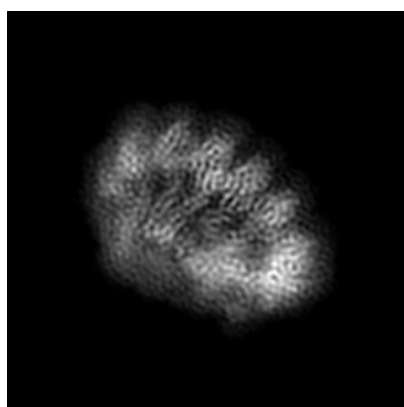
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14009. These allow visual inspection of the internal detail of the map and identification of artifacts.

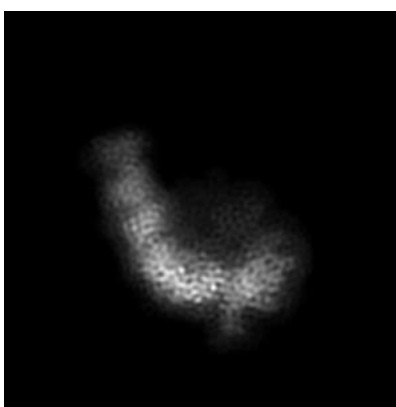
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

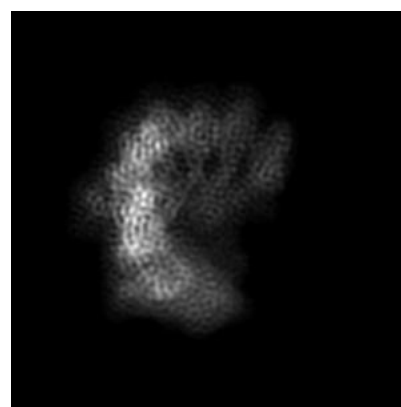
#### 6.1.1 Primary map



X



Y



Z

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

### 6.2 Central slices [i](#)

#### 6.2.1 Primary map



X Index: 100



Y Index: 100



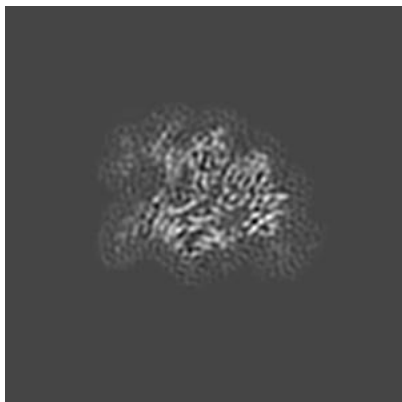
Z Index: 100



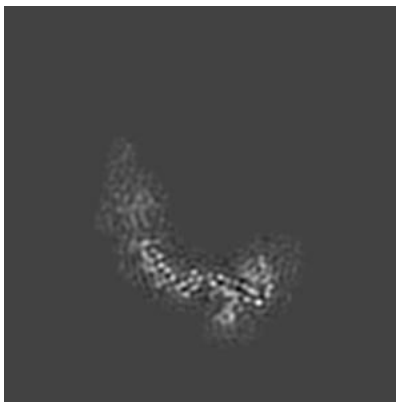
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

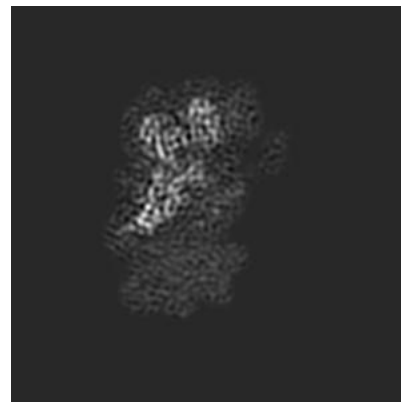
### 6.3.1 Primary map



X Index: 62



Y Index: 98

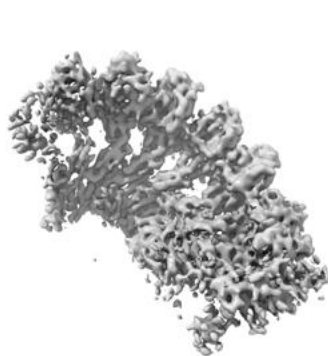


Z Index: 74

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

## 6.4 Orthogonal surface views [i](#)

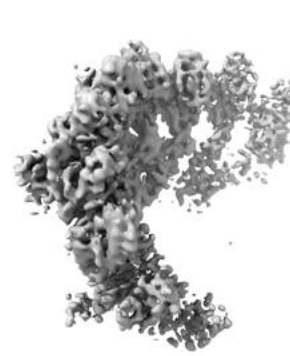
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0514. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

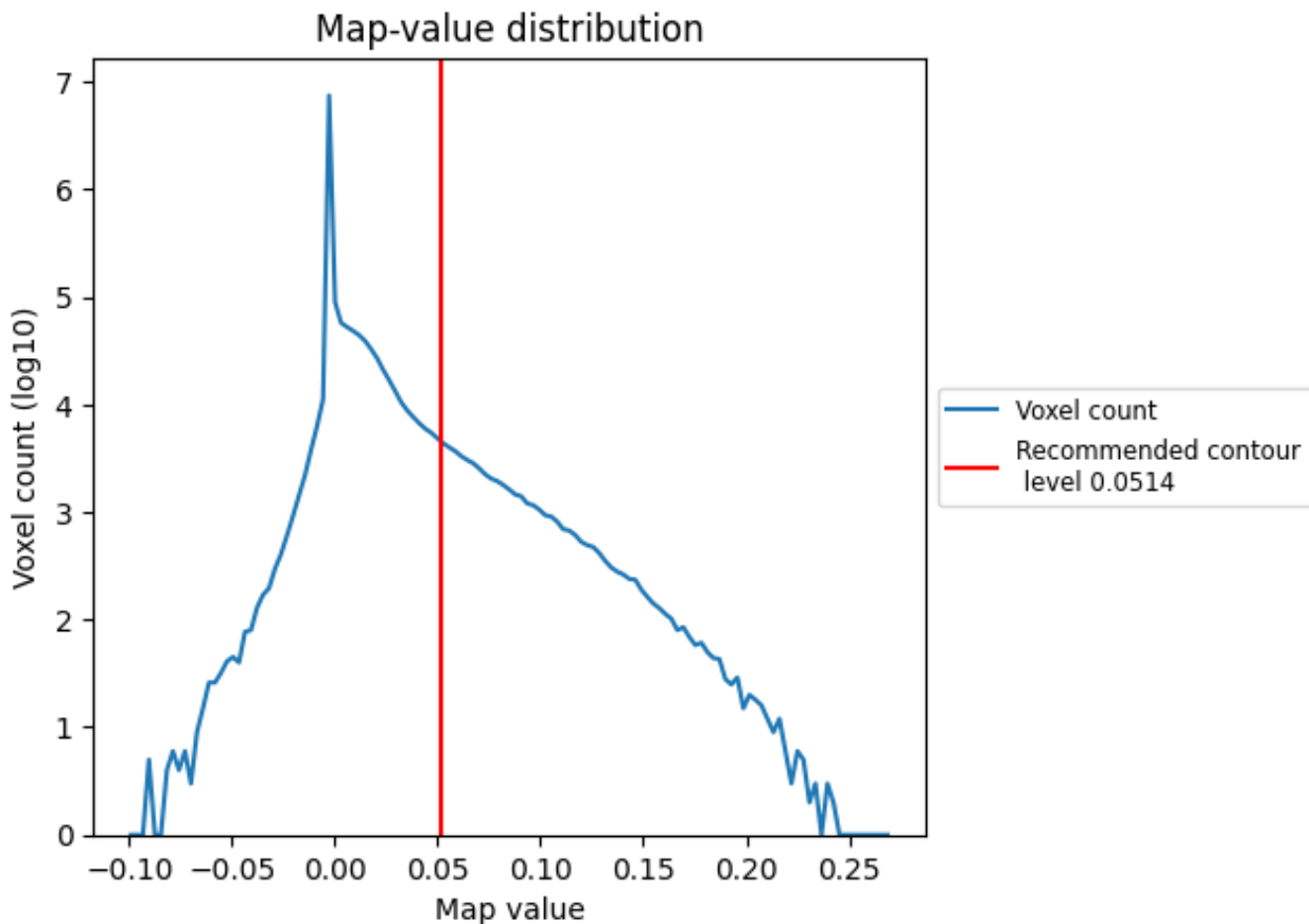
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

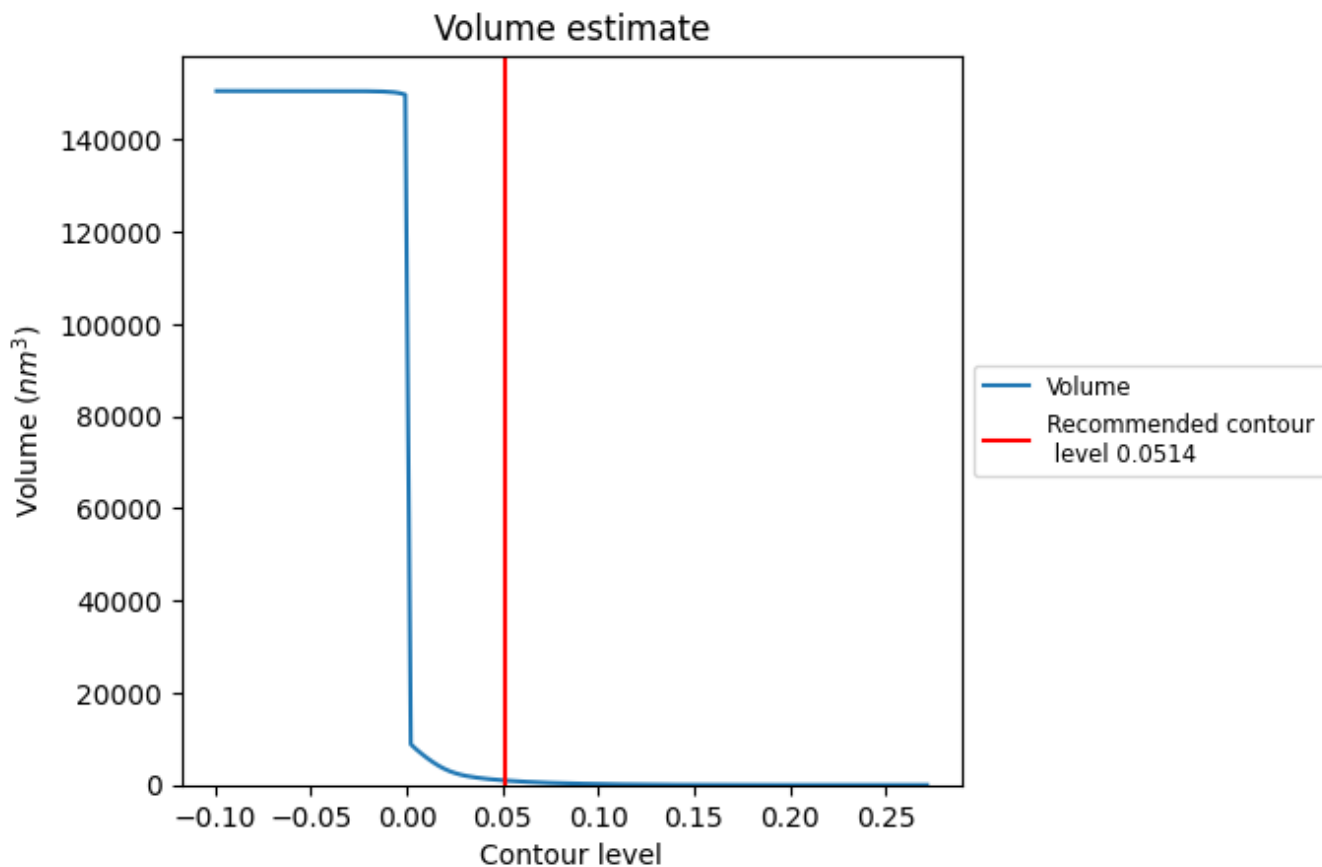
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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.

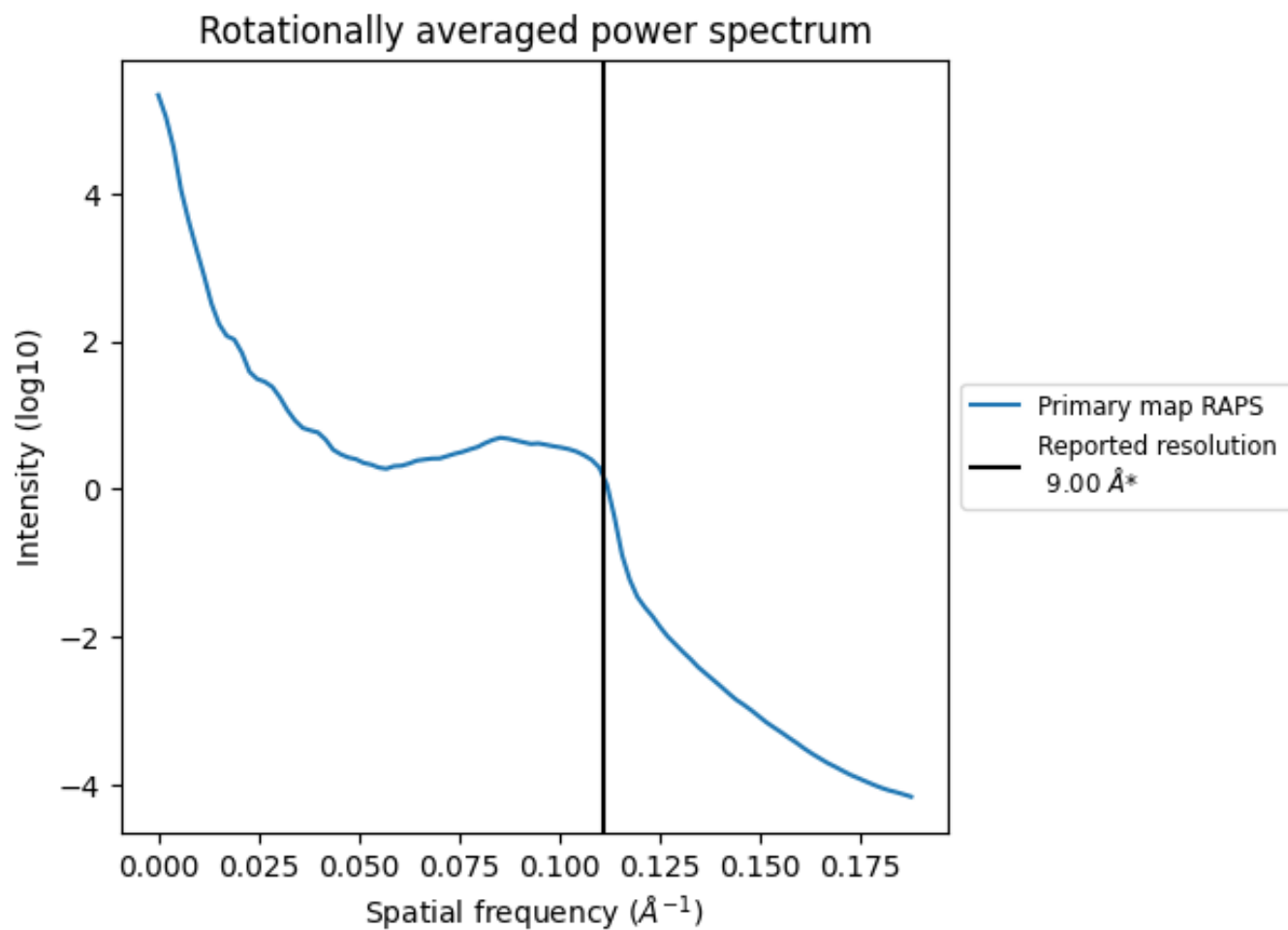
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 970  $\text{nm}^3$ ; this corresponds to an approximate mass of 876 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  $0.111 \text{\AA}^{-1}$

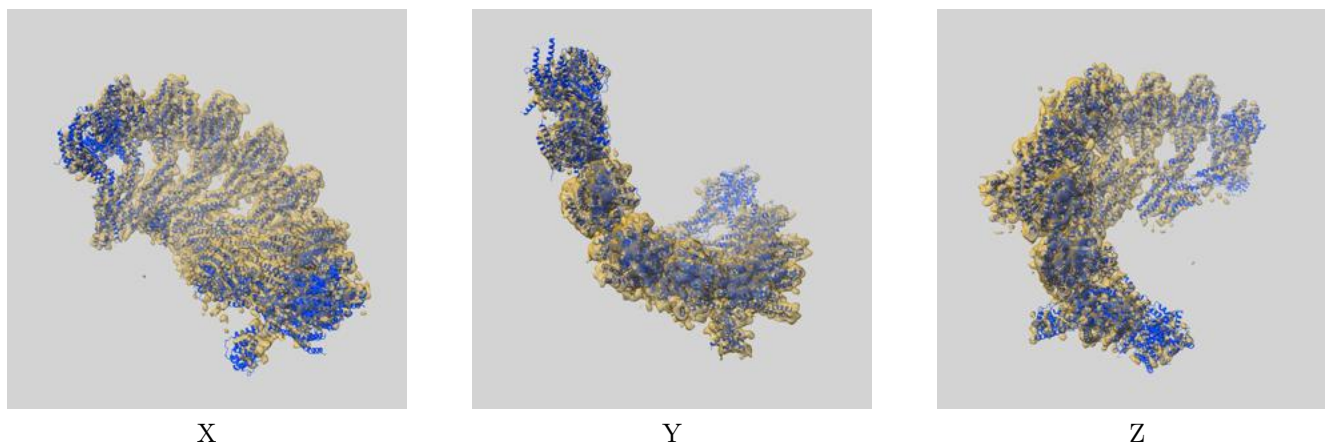
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

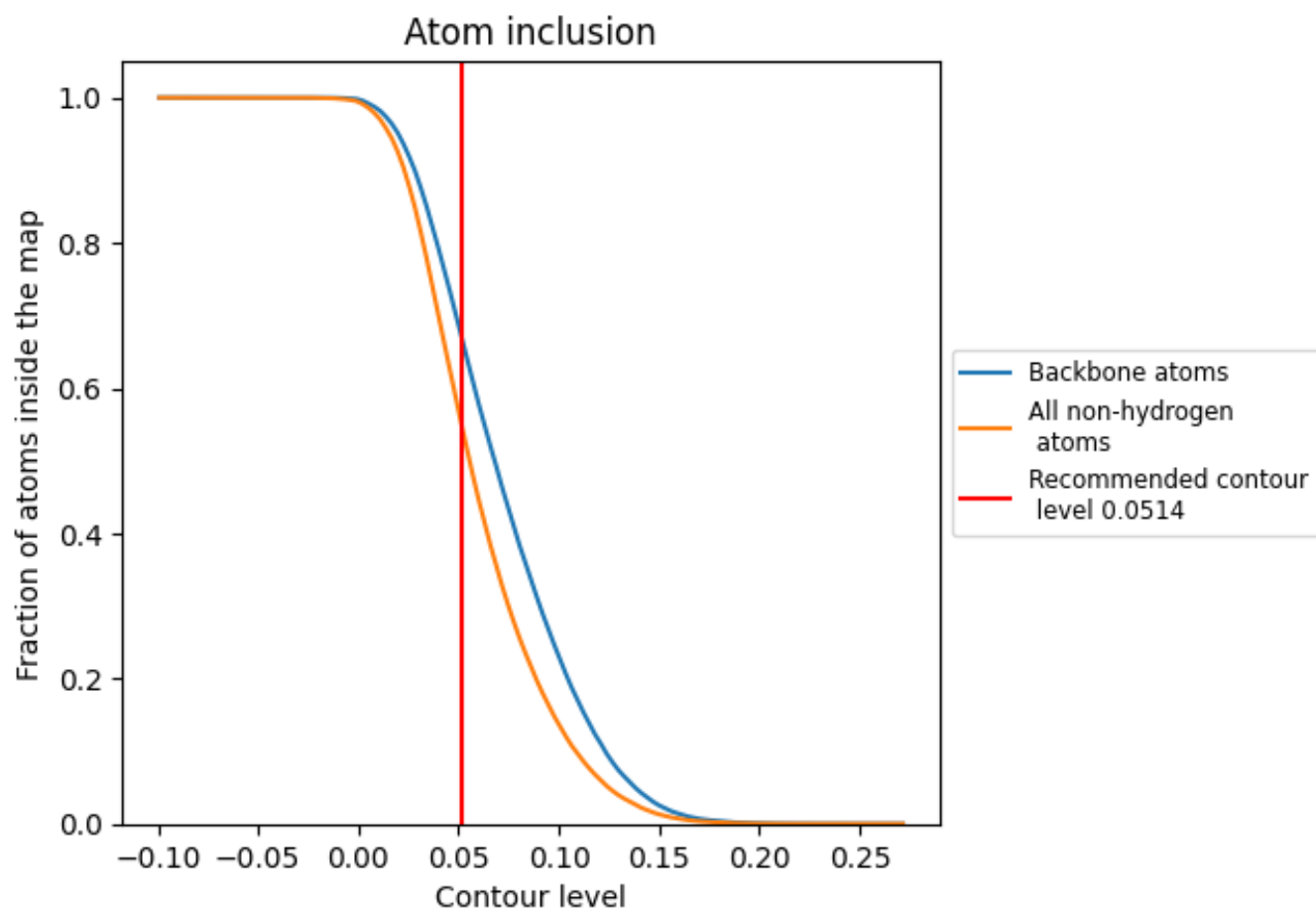
This section contains information regarding the fit between EMDB map EMD-14009 and PDB model 7QJ4. Per-residue inclusion information can be found in section 3 on page 7.

### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.0514 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, 67% of all backbone atoms, 55% of all non-hydrogen atoms, are inside the map.