



Full wwPDB EM Validation Report ⓘ

Nov 2, 2024 – 05:26 PM EDT

PDB ID : 8UOQ
EMDB ID : EMD-42437
Title : Composite map of PIC_delta_TFIIK form2
Authors : Yang, C.; Murakami, K.
Deposited on : 2023-10-20
Resolution : 3.80 Å (reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

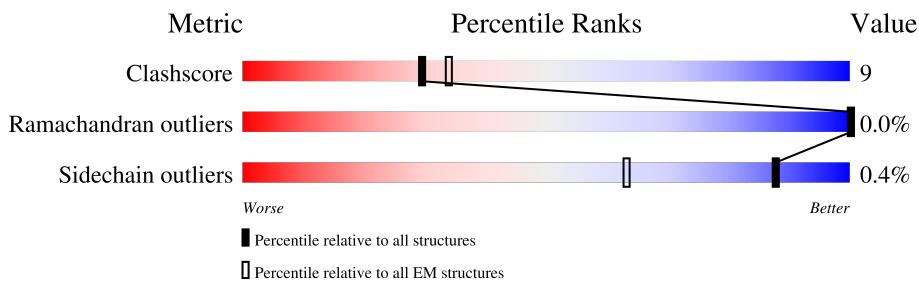
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.80 Å.

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





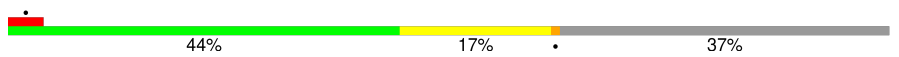


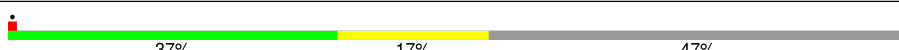
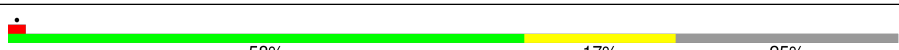

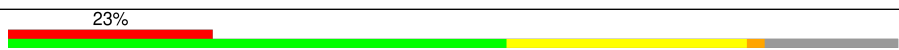

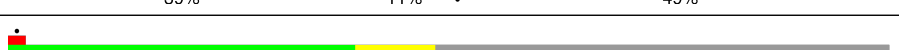
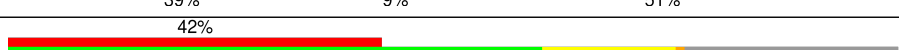

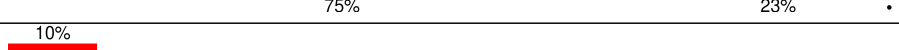
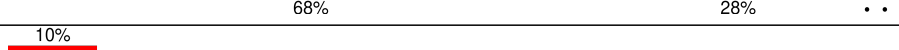
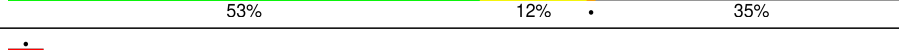





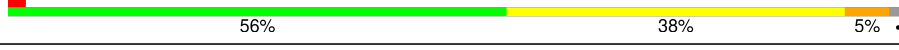
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	M	345	
2	A	1733	
3	B	1224	
4	C	318	
5	E	215	
6	F	155	
7	H	146	
8	I	122	

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Mol	Chain	Length	Quality of chain
9	J	70	
10	K	120	
11	L	70	
12	Q	735	
13	P	400	
14	S	309	
15	O	240	
16	U	286	
17	V	122	
18	W	482	
19	X	328	
20	D	221	
21	G	171	
22	0	778	
23	1	642	
24	4	338	
25	6	461	
26	7	843	
27	2	513	
28	5	72	
29	N	64	
30	T	64	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
33	SF4	0	801	-	-	X	-

2 Entry composition [i](#)

There are 33 unique types of molecules in this entry. The entry contains 70481 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 Transcription initiation factor IIB.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	M	279	2175	1382	373	403	17	0	0

- Molecule 2 is a protein called DNA-directed RNA polymerase II subunit RPB1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	1425	11167	7036	1948	2121	62	0	0

- Molecule 3 is a protein called DNA-directed RNA polymerase II subunit RPB2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	1166	9227	5823	1619	1729	56	0	0

- Molecule 4 is a protein called DNA-directed RNA polymerase II subunit RPB3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	C	265	2086	1312	347	414	13	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	214	1752	1111	309	321	11	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	87	705	451	119	132	3	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	H	135	Total	C	N	O	S	0	0
			1080	679	182	214	5		

- Molecule 8 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	I	114	Total	C	N	O	S	0	0
			927	571	168	178	10		

- Molecule 9 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	J	66	Total	C	N	O	S	0	0
			540	345	94	95	6		

- Molecule 10 is a protein called DNA-directed RNA polymerase II subunit RPB11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	K	115	Total	C	N	O	S	0	0
			924	593	157	172	2		

- Molecule 11 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	L	44	Total	C	N	O	S	0	0
			352	217	70	61	4		

- Molecule 12 is a protein called Transcription initiation factor IIF subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	Q	214	Total	C	N	O	S	0	0
			1619	1017	297	299	6		

- Molecule 13 is a protein called Transcription initiation factor IIF subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	P	179	Total	C	N	O	S	0	0
			1484	941	258	279	6		

- Molecule 14 is a protein called Transcription elongation factor S-II.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	S	164	1294	809	230	247	8	0	0

- Molecule 15 is a protein called TATA-box-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	O	181	1422	925	243	248	6	0	0

- Molecule 16 is a protein called Transcription initiation factor IIA large subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	U	107	885	559	147	176	3	0	0

- Molecule 17 is a protein called Transcription initiation factor IIA subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	V	104	815	511	136	164	4	0	0

- Molecule 18 is a protein called Transcription initiation factor IIE subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	W	247	2010	1275	347	381	7	0	0

- Molecule 19 is a protein called Transcription initiation factor IIE subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	X	160	1288	826	212	245	5	0	0

- Molecule 20 is a protein called DNA-directed RNA polymerase II subunit RPB4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	D	168	1331	822	237	270	2	0	0

- Molecule 21 is a protein called DNA-directed RNA polymerase II subunit RPB7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	G	171	1335	858	221	248	8	0	0

- Molecule 22 is a protein called General transcription and DNA repair factor IIIH helicase subunit XPD/RAD3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	0	752	6091	3882	1029	1142	38	0	0

- Molecule 23 is a protein called General transcription and DNA repair factor IIIH subunit TFB1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	1	417	3382	2139	587	640	16	0	0

- Molecule 24 is a protein called General transcription and DNA repair factor IIIH subunit TFB4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	4	292	2267	1449	376	428	14	0	0

- Molecule 25 is a protein called General transcription and DNA repair factor IIIH subunit SSL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	6	355	2786	1765	481	512	28	0	0

- Molecule 26 is a protein called General transcription and DNA repair factor IIIH helicase subunit XPB.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	7	608	4889	3110	847	906	26	0	0

- Molecule 27 is a protein called General transcription and DNA repair factor IIIH subunit TFB2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	2	445	3546	2291	585	654	16	0	0

- Molecule 28 is a protein called General transcription and DNA repair factor IIIH subunit TFB5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	5	66	498	314	89	93	2	0	0

- Molecule 29 is a DNA chain called non-template strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
29	N	63	1288	621	225	380	62	0	0

- Molecule 30 is a DNA chain called template strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
30	T	63	1291	619	236	373	63	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T	-10	DC	DT	conflict	GB 2567904391

- Molecule 31 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
31	M	1	Total	Zn	0
			1	1	
31	A	2	Total	Zn	0
			2	2	
31	B	1	Total	Zn	0
			1	1	
31	C	1	Total	Zn	0
			1	1	
31	I	2	Total	Zn	0
			2	2	
31	J	1	Total	Zn	0
			1	1	

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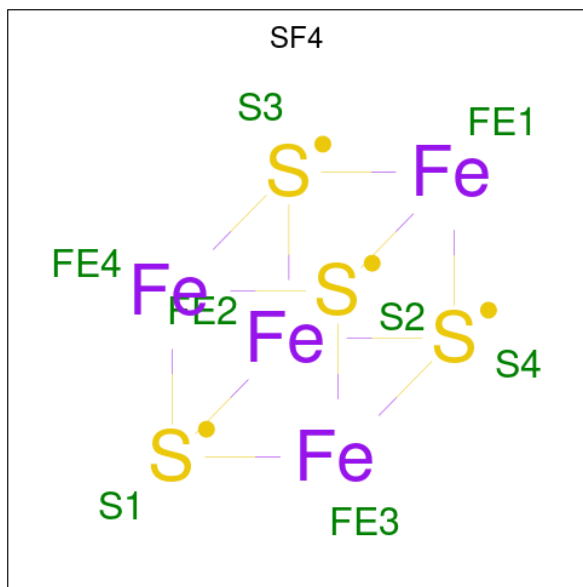
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Mol	Chain	Residues	Atoms		AltConf
31	L	1	Total	Zn	0
			1	1	
31	S	1	Total	Zn	0
			1	1	
31	4	1	Total	Zn	0
			1	1	
31	6	4	Total	Zn	0
			4	4	

- Molecule 32 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
32	A	1	Total	Mg	0
			1	1	
32	7	1	Total	Mg	0
			1	1	

- Molecule 33 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).

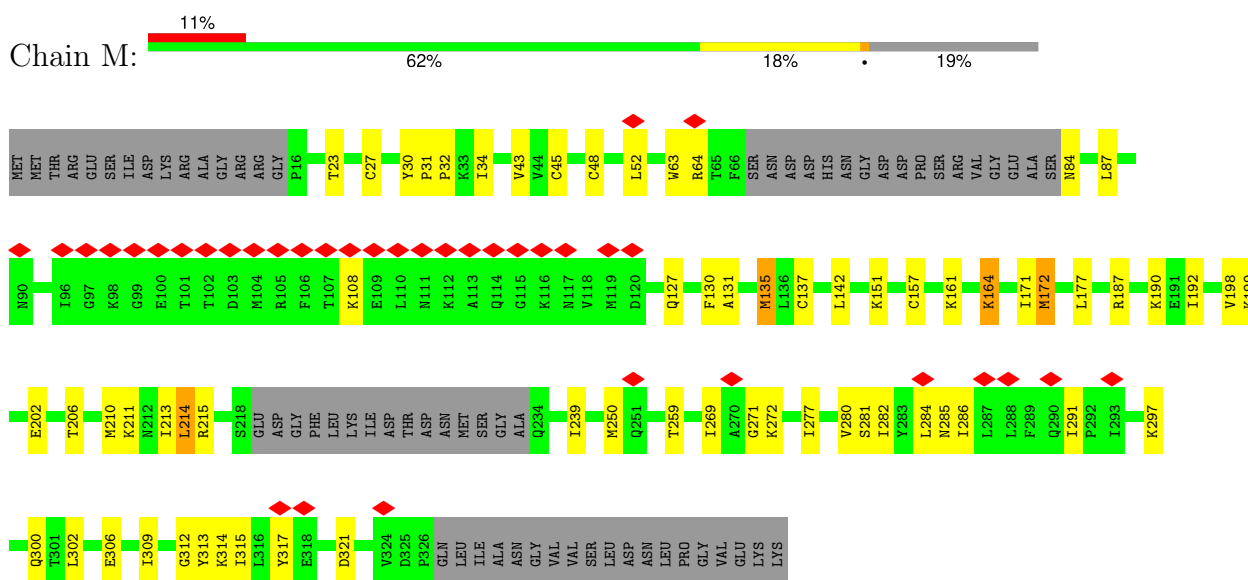


Mol	Chain	Residues	Atoms			AltConf
33	0	1	Total	Fe	S	0
			8	4	4	

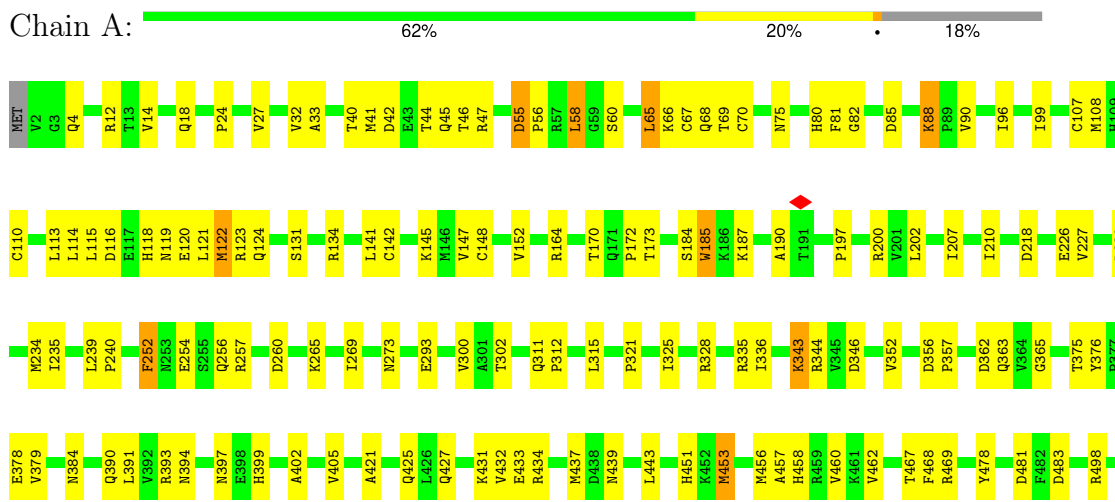
3 Residue-property plots i

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: Transcription initiation factor IIB



- Molecule 2: DNA-directed RNA polymerase II subunit RPB1

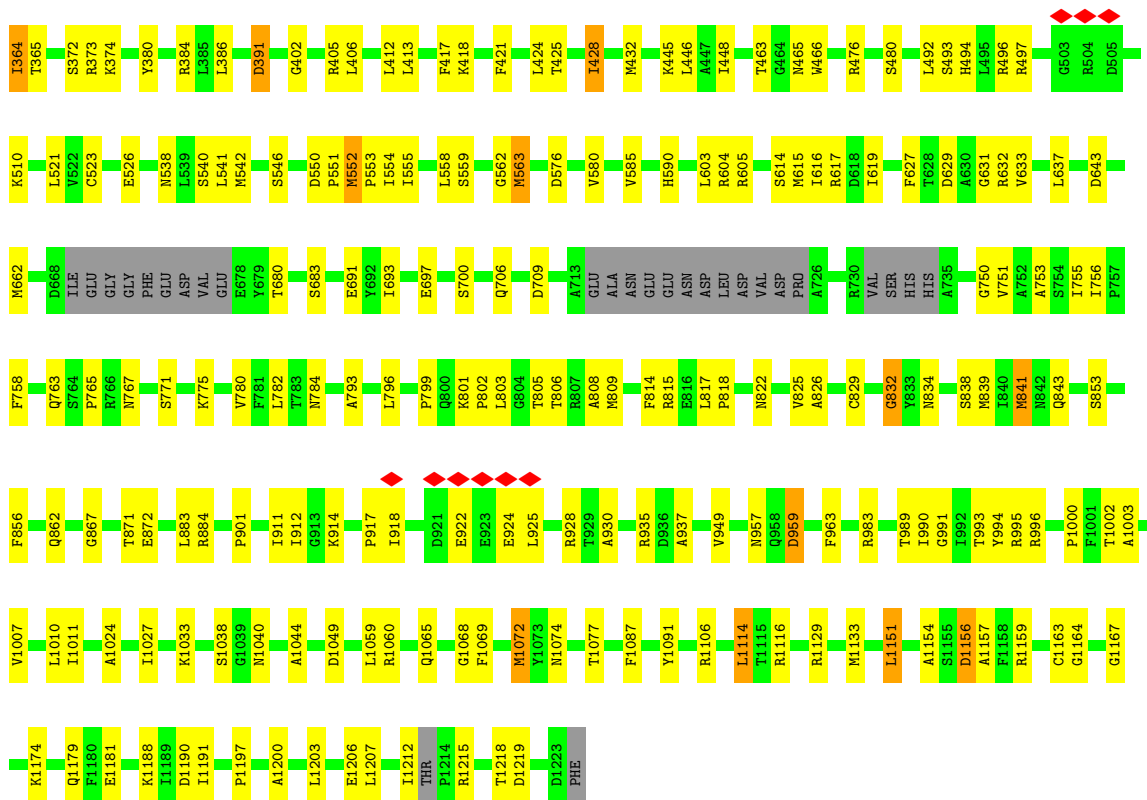


L501	E678	R843	I1007	P1188	G1240	R1366	SER	THR	TYR	SER	SER	SER	ARG	R261
C505	T692	E946	Q1008	R1159	R1241	L1371	ASN	SER	PRO	PRO	PRO	ALA	ARG	GLU
V512	L691	H851	D1013	S1160	P1245	V1372	GLY	PRO	THR	THR	THR	TYR	TYR	GLY
P519	Q698	H852	D1019	V1161	SER	D1374	SER	TYR	SER	PRO	SER	PRO	ALA	ASP
L528	L701	Y652	C1019	V1162	LEU	M1375	VAL	PRO	ALA	TYR	ALA	GLN	LYS	SER
R532	L742	T655	G1020	I1170	ASP	T1376	ASN	THR	SER	THR	SER	ASP	GLY	GLY
R537	N743	T656	L1021	H1173	ALA	T1377	ALA	PRO	PRO	PRO	PRO	GLN	TYR	TYR
L543	K744	R857	L1022	F1174	THR	V1384	LEU	THR	THR	THR	THR	GLN	THR	THR
D544	M747	N858	R1023	S1175	GLY	T1385	LEU	SER	TYR	SER	TYR	LYS	THR	THR
L547	G748	G852	S1024	LEU	A1254	G1388	VAL	PRO	PRO	PRO	PRO	HIS	THR	THR
N548	Q745	M874	R1025	LEU	E1255	M1259	LYS	THR	THR	TYR	TYR	ASN	THR	THR
M549	M746	D871	W1044	ASP	E1256	T1394	ASP	THR	THR	THR	THR	GLY	THR	THR
W552	M747	D872	V1045	GLU	M1268	G1395	GLY	TYR	TYR	TYR	TYR	ASN	THR	THR
T562	V747	M875	N1048	GLU	L1268	A1396	LEU	PRO	PRO	PRO	PRO	ASN	THR	THR
I566	M748	G873	Q1070	ALA	L1268	M1388	PHE	THR	THR	THR	THR	ASN	THR	THR
K567	A749	M874	Q1070	GLY	R1274	R1399	SER	PRO	PRO	PRO	PRO	ARG	THR	THR
W572	S751	D874	L1081	GLN	I1279	F1402	PRO	THR	THR	THR	THR	ARG	THR	THR
R590	K752	M881	ASN	SER	F1185	E1403	VAL	ALA	ALA	ALA	ALA	ARG	THR	THR
F591	G753	T885	THR	THR	D1186	E1404	ASP	SER	SER	SER	SER	ARG	THR	THR
D592	S754	I886	PHE	THR	Q1187	E1404	ASP	PRO	PRO	PRO	PRO	ARG	THR	THR
S599	M757	I886	HIS	THR	Q1188	D1419	GLY	THR	THR	THR	THR	ARG	THR	THR
N603	M761	I886	ALA	ALA	R1194	F1420	SER	PRO	PRO	PRO	PRO	ARG	THR	THR
G604	M761	I886	ALA	ALA	E1195	E1403	ASP	PRO	PRO	PRO	PRO	ARG	THR	THR
M605	C764	I886	VAL	VAL	E1196	G1431	ALA	TYR	TYR	TYR	TYR	ARG	THR	THR
K619	V765	I886	ALA	ALA	L1197	Q1432	MET	PRO	PRO	PRO	PRO	ARG	THR	THR
K620	V765	I886	SER	SER	D1198	V1443	ALA	PRO	PRO	PRO	PRO	ARG	THR	THR
T621	S769	I886	LYS	LYS	R1199	V1446	GLY	THR	THR	THR	THR	ARG	THR	THR
H631	K773	I886	VAL	VAL	A1200	D1446	GLY	PRO	PRO	PRO	PRO	ARG	THR	THR
R635	K773	I886	V1094	V1094	A1201	S1449	PHE	PRO	PRO	PRO	PRO	ARG	THR	THR
E636	R782	I886	R1100	R1100	K1205	K1452	THR	TYR	TYR	TYR	TYR	ARG	THR	THR
F646	T783	I886	R1107	R1107	D1206	Y1453	GLY	THR	THR	THR	THR	ARG	THR	THR
Q650	L784	I886	V1107	V1107	L207	M1454	ALA	PRO	PRO	PRO	PRO	ARG	THR	THR
K651	K789	I886	S1115	S1115	M1209	M1454	ALA	PRO	PRO	PRO	PRO	ARG	THR	THR
D668	P794	I886	L1116	L1116	G1210	M1454	ASP	PRO	PRO	PRO	PRO	ARG	THR	THR
T669	F799	I886	E1121	E1121	Q1211	M1454	TYR	THR	THR	THR	THR	ARG	THR	THR
D672	N802	I886	F1122	F1122	R1215	M1454	GLY	TYR	TYR	TYR	TYR	ARG	THR	THR
T675	N804	I886	G1123	G1123	I1216	M1454	ALA	TYR	TYR	TYR	TYR	ARG	THR	THR
	Y804	I886	K1132	K1132	Q1218	M1454	PRO	PRO	PRO	PRO	PRO	ARG	THR	THR
	L805	I886	R1135	R1135	K1221	M1454	PHE	PRO	PRO	PRO	PRO	ARG	THR	THR
	R806	I886	I1138	I1138	T1227	M1454	GLY	TYR	TYR	TYR	TYR	ARG	THR	THR
	G807	I886	T1142	T1142	M1228	M1454	ALA	PRO	PRO	PRO	PRO	ARG	THR	THR
	T834	I886	K977	K977	S1229	M1454	GLY	TYR	TYR	TYR	TYR	ARG	THR	THR
	I837	I886	G1002	G1002	E1230	M1454	GLY	TYR	TYR	TYR	TYR	ARG	THR	THR
	R840	I886	K1003	K1003	D1231	M1454	VAL	PRO	PRO	PRO	PRO	ARG	THR	THR
	L841	I886	S1145	S1145	M1232	M1454	THR	TYR	TYR	TYR	TYR	ARG	THR	THR
	V842	I886	V1146	V1146	D1233	M1454	PRO	PRO	PRO	PRO	PRO	ARG	THR	THR
		I886	I1005	I1005	S1361	M1454	PRO	PRO	PRO	PRO	PRO	ARG	THR	THR
		I886	A1149	A1149	R1239	M1454	PRO	PRO	PRO	PRO	PRO	ARG	THR	THR

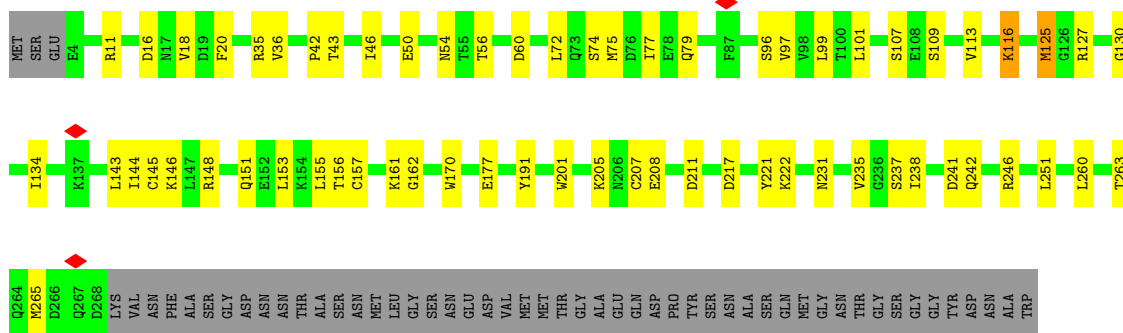
● Molecule 3: DNA-directed RNA polymerase II subunit RPB2

Chain B:

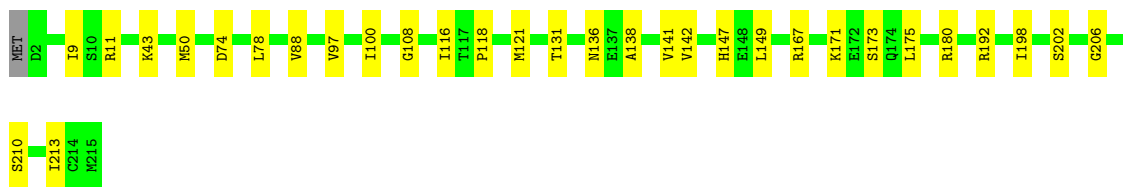
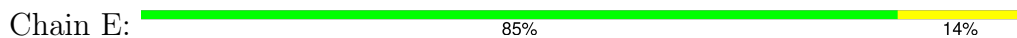
R261	MET	LYS	R261	R267	A271	I280	I284	R287	D294	E296	I297	H300	I301	C302	Y303	D304	G305	N306	D307	M310	M313	L314	V323	I324	Q325	D326	F333	I334	G335	R336	T339	A340	L341	K344	K347	R348	A352	I355	P362	H363					
GLY	SER	ARG	ASP	GLY	LEU	TYR	LEU	GLY	ASP	ASP	ASP	GLY	GLY	GLY	ASP	ASP	ASP	GLY	GLY	ASP	K164	M173	M173	K177	M178	Y180	E194	C195	D198	M199	Y202	I205	S208	I213	Q215	E216	S232	P233	I234	L244	E245	S248	K257	L258	G260
GLY	THR	THR	ALA	ASP	ASP	TYR	GLY	ASP	ASP	ASP	ASP	GLY	GLY	GLY	ASP	ASP	ASP	GLY	GLY	ASP	K164	M173	M173	K177	M178	Y180	E194	C195	D198	M199	Y202	I205	S208	I213	Q215	E216	S232	P233	I234	L244	E245	S248	K257	L258	G260
GLY	THR	THR	ALA	ASP	ASP	TYR	GLY	ASP	ASP	ASP	ASP	GLY	GLY	GLY	ASP	ASP	ASP	GLY	GLY	ASP	K164	M173	M173	K177	M178	Y180	E194	C195	D198	M199	Y202	I205	S208	I213	Q215	E216	S232	P233	I234	L244	E245	S248	K257	L258	G260



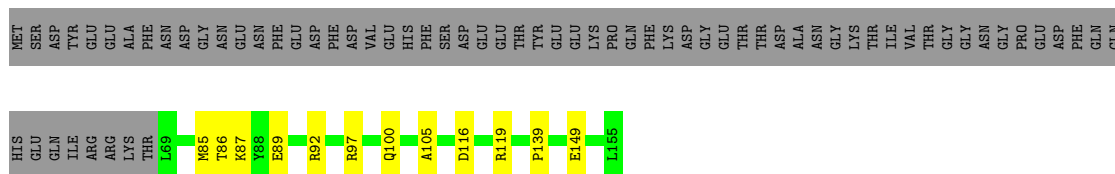
• Molecule 4: DNA-directed RNA polymerase II subunit RPB3



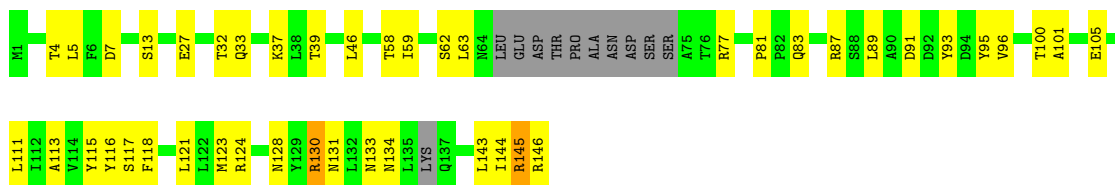
• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC1



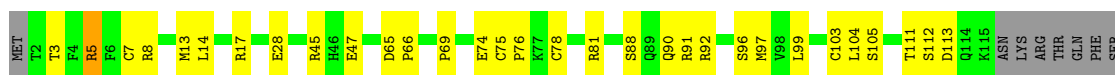
• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2



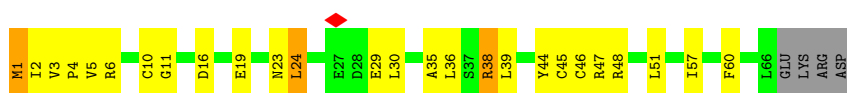
- Molecule 7: DNA-directed RNA polymerases I, II, and III subunit RPABC3



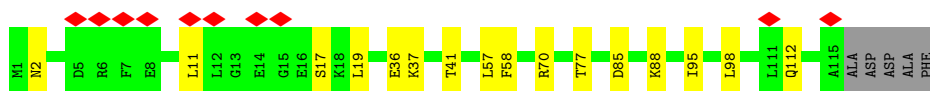
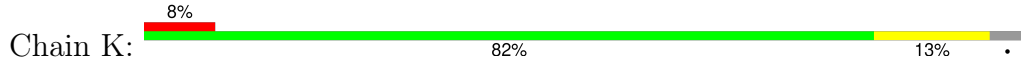
- Molecule 8: DNA-directed RNA polymerase II subunit RPB9



- Molecule 9: DNA-directed RNA polymerases I, II, and III subunit RPABC5



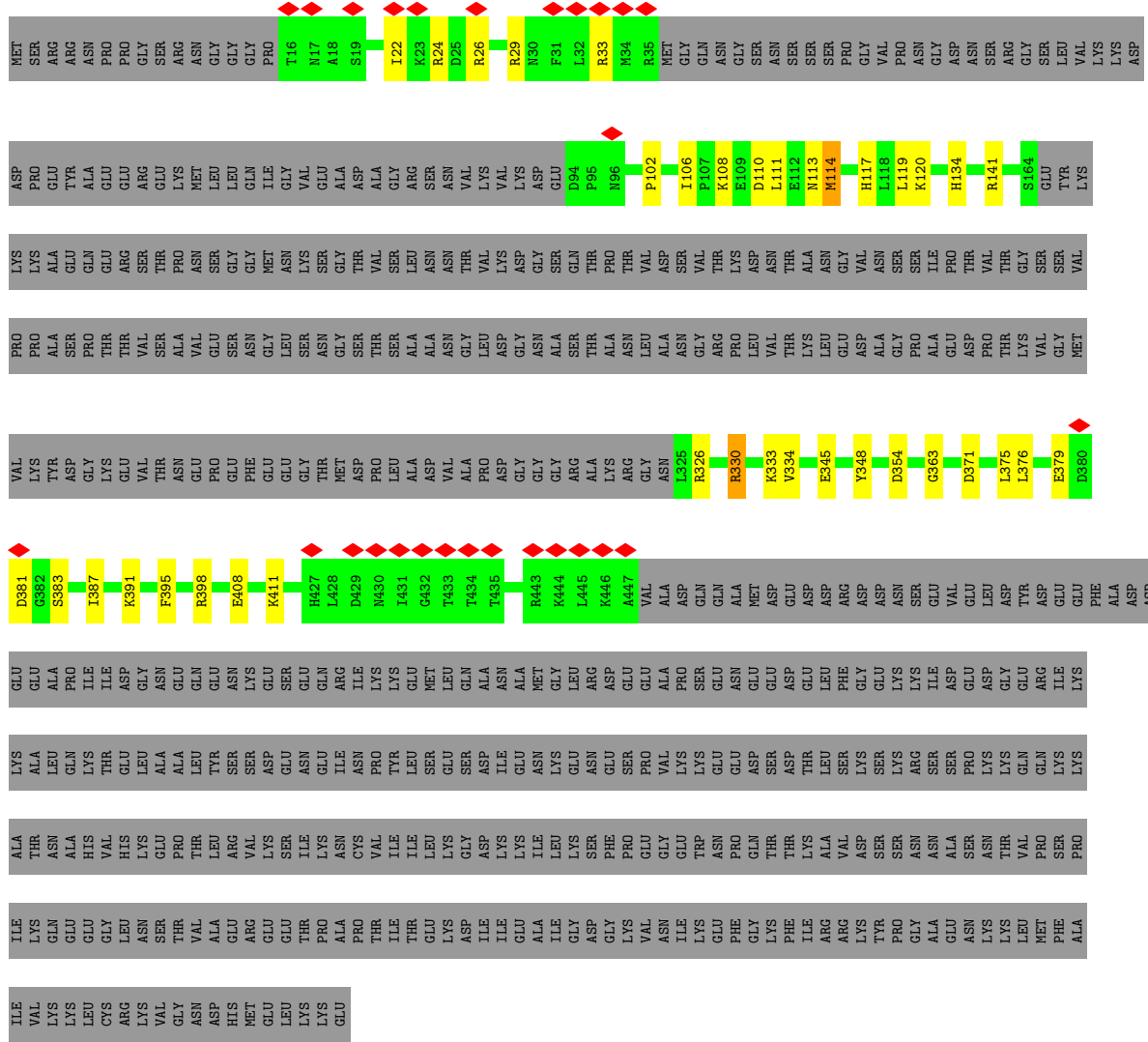
- Molecule 10: DNA-directed RNA polymerase II subunit RPB11



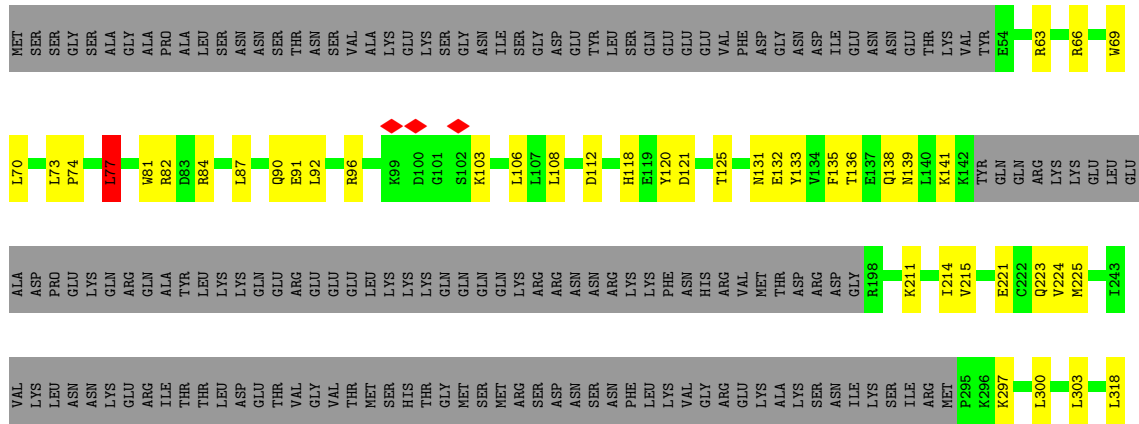
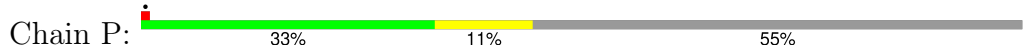
- Molecule 11: DNA-directed RNA polymerases I, II, and III subunit RPABC4

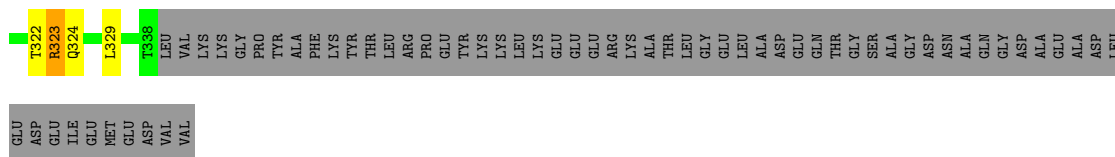


- Molecule 12: Transcription initiation factor IIF subunit alpha

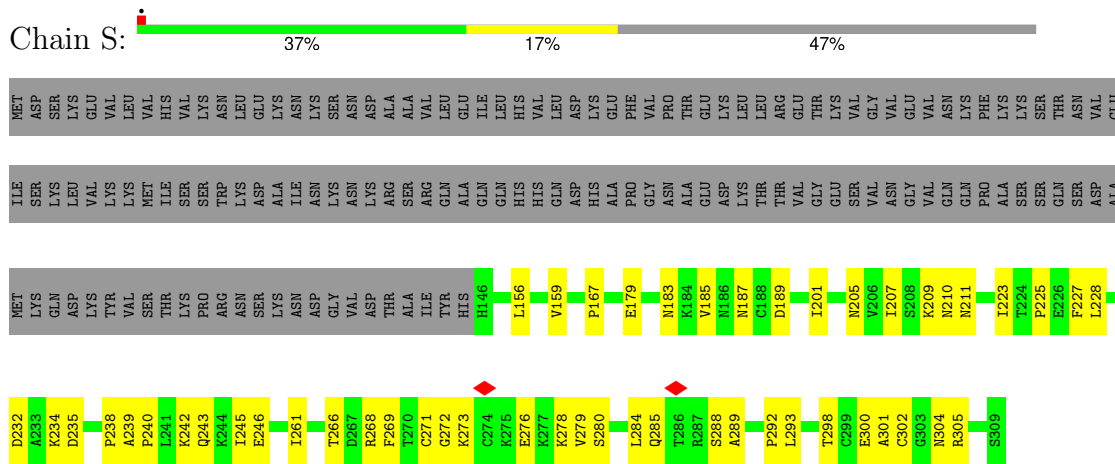


● Molecule 13: Transcription initiation factor IIF' subunit beta

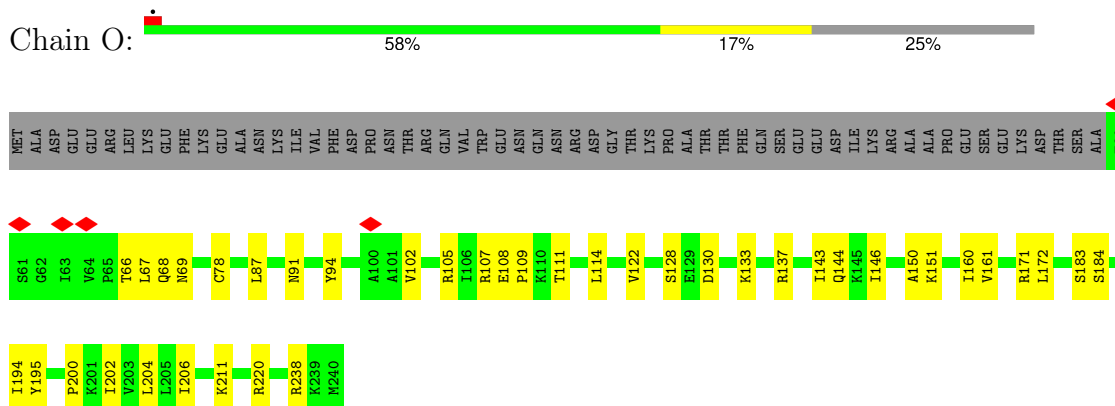




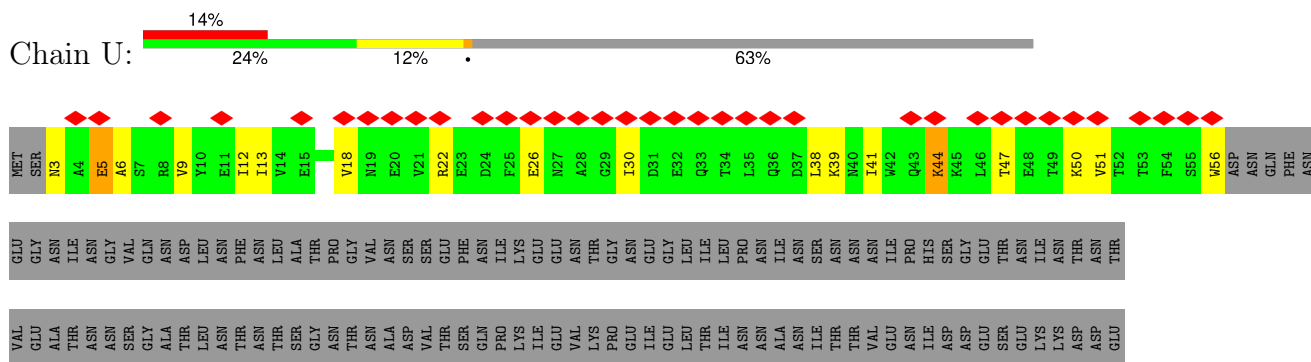
• Molecule 14: Transcription elongation factor S-II

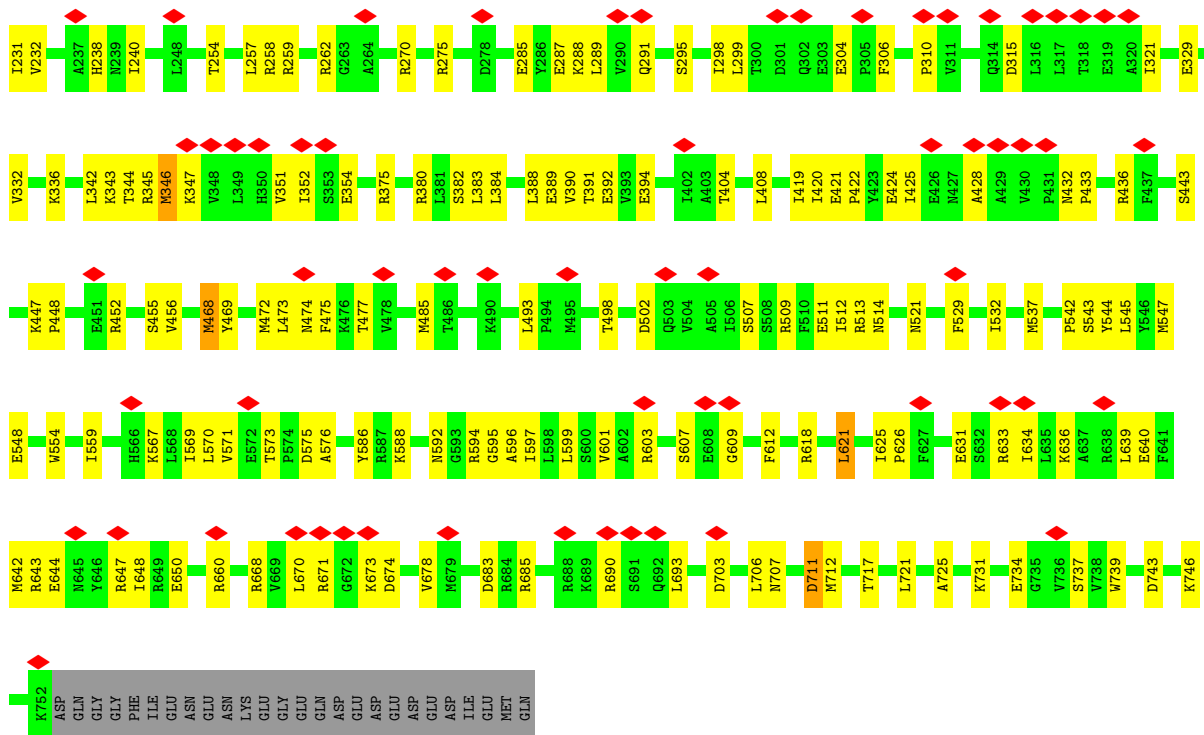


• Molecule 15: TATA-box-binding protein

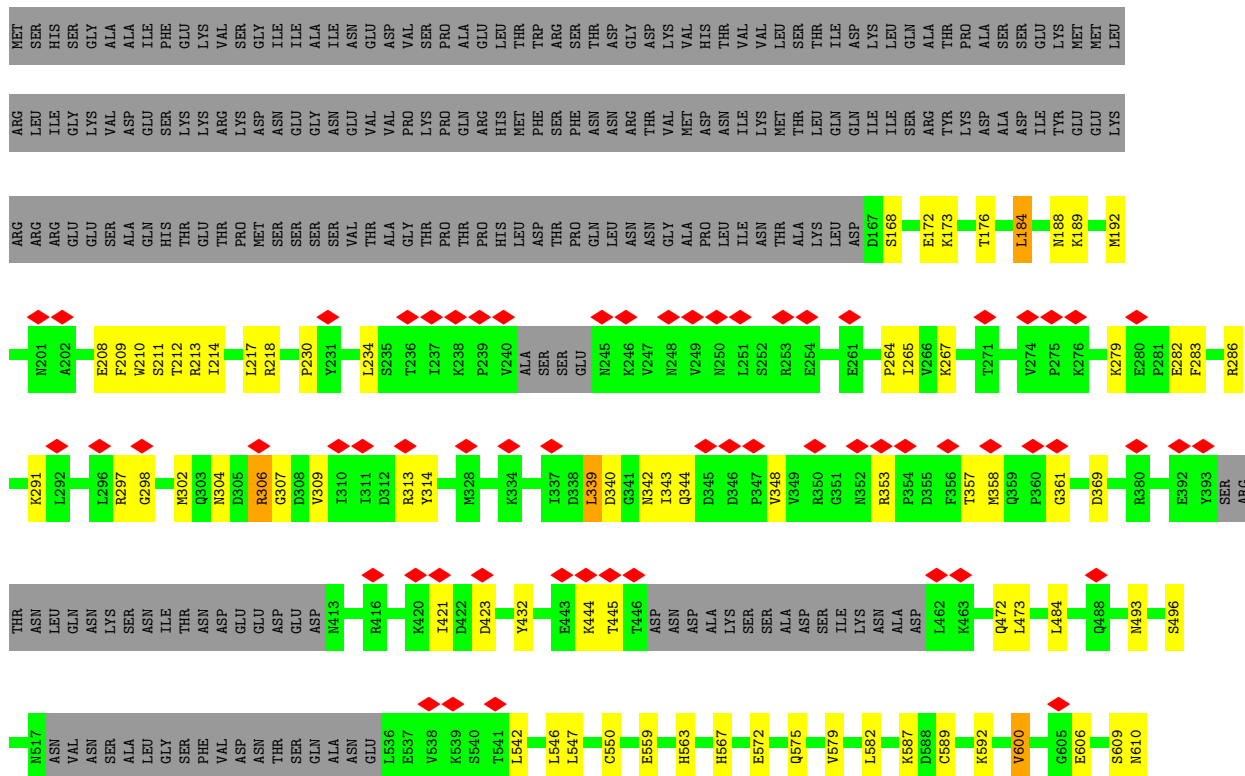


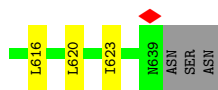
• Molecule 16: Transcription initiation factor IIA large subunit



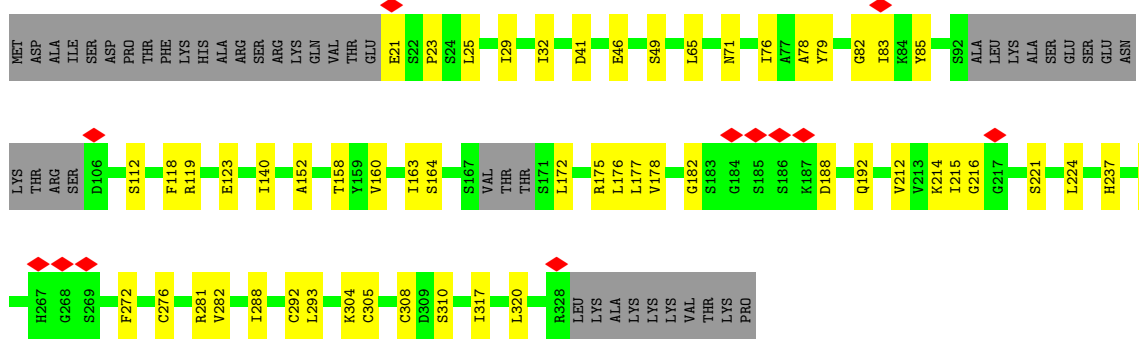


• Molecule 23: General transcription and DNA repair factor IIH subunit TFB1

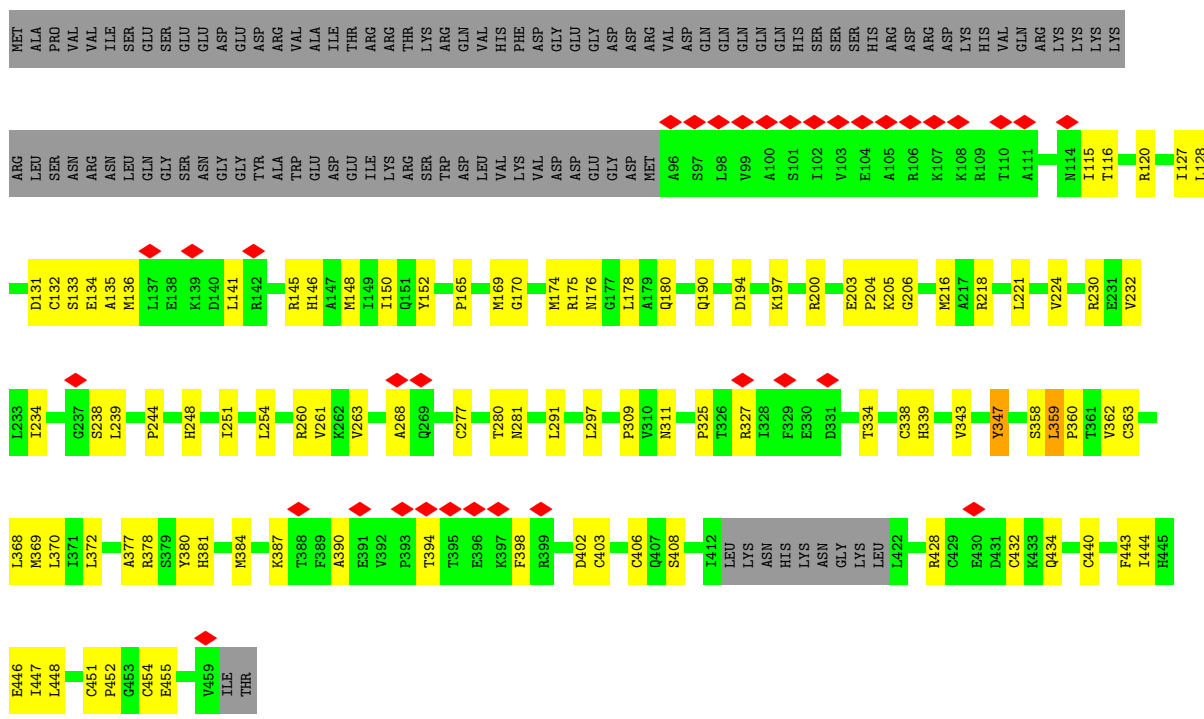




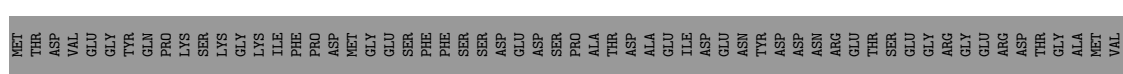
• Molecule 24: General transcription and DNA repair factor IIH subunit TFB4

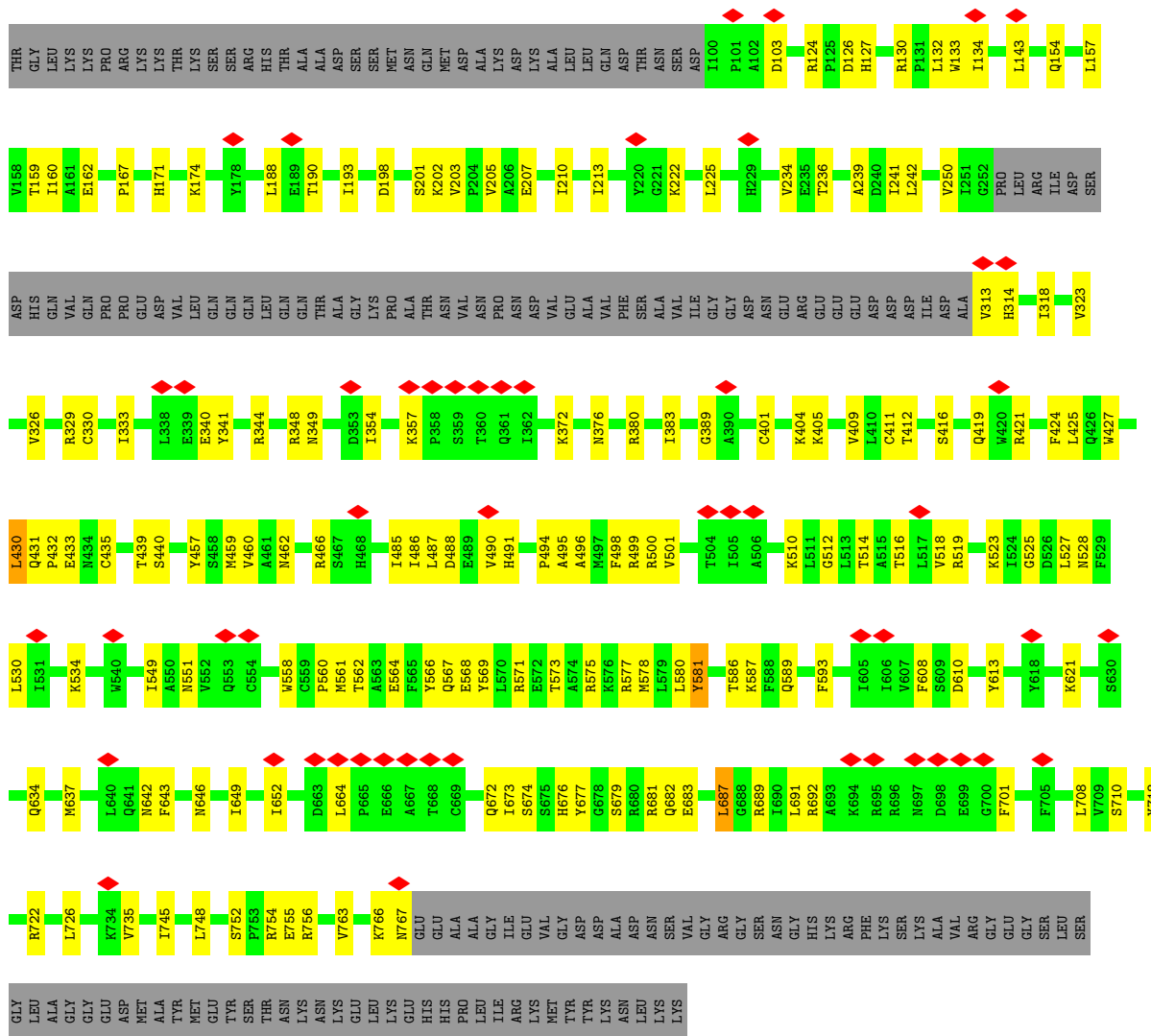


• Molecule 25: General transcription and DNA repair factor IIH subunit SSL1



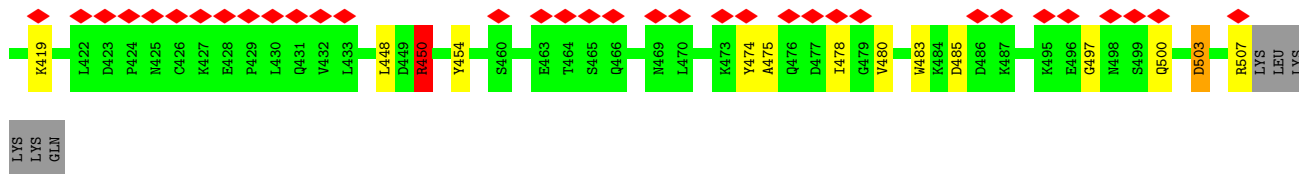
• Molecule 26: General transcription and DNA repair factor IIH helicase subunit XPB



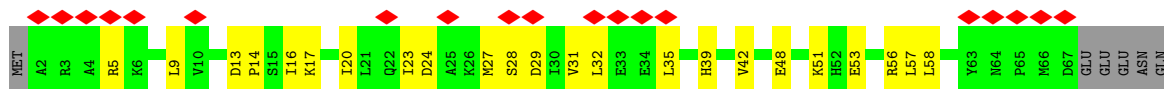


• Molecule 27: General transcription and DNA repair factor IIH subunit TFB2

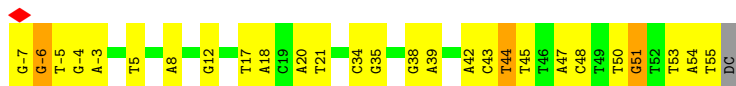




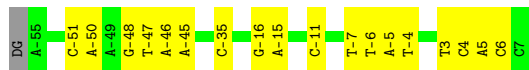
● Molecule 28: General transcription and DNA repair factor IIIH subunit TFB5



● Molecule 29: non-template strand



● Molecule 30: template strand



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	90136	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1.25	Depositor
Minimum defocus (nm)	750	Depositor
Maximum defocus (nm)	1750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.054	Depositor
Minimum map value	0.000	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.01	Depositor
Map size (\AA)	414.72003, 414.72003, 414.72003	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.08, 1.08, 1.08	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, SF4

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	M	0.46	1/2204 (0.0%)	0.84	7/2963 (0.2%)
2	A	0.48	2/11368 (0.0%)	0.83	29/15383 (0.2%)
3	B	0.50	4/9402 (0.0%)	0.85	30/12680 (0.2%)
4	C	0.46	0/2124	0.82	4/2879 (0.1%)
5	E	0.45	0/1788	0.75	1/2406 (0.0%)
6	F	0.48	0/717	0.83	1/967 (0.1%)
7	H	0.58	1/1097 (0.1%)	0.88	2/1484 (0.1%)
8	I	0.45	0/945	0.79	2/1273 (0.2%)
9	J	0.83	3/549 (0.5%)	1.65	11/738 (1.5%)
10	K	0.44	0/942	0.74	0/1272
11	L	0.56	0/354	1.03	2/468 (0.4%)
12	Q	0.47	0/1648	0.85	3/2226 (0.1%)
13	P	0.45	0/1511	0.84	6/2035 (0.3%)
14	S	0.47	1/1317 (0.1%)	0.76	3/1778 (0.2%)
15	O	0.39	0/1449	0.72	1/1952 (0.1%)
16	U	0.71	2/898 (0.2%)	0.82	1/1212 (0.1%)
17	V	0.54	0/822	0.95	6/1109 (0.5%)
18	W	0.39	0/2045	0.74	6/2757 (0.2%)
19	X	0.38	0/1312	0.63	1/1767 (0.1%)
20	D	0.40	0/1339	0.69	2/1793 (0.1%)
21	G	0.50	2/1363 (0.1%)	0.78	2/1840 (0.1%)
22	0	0.43	2/6209 (0.0%)	0.72	10/8384 (0.1%)
23	1	0.45	1/3434 (0.0%)	0.75	7/4624 (0.2%)
24	4	0.40	0/2305	0.66	0/3117
25	6	0.50	5/2843 (0.2%)	0.72	5/3845 (0.1%)
26	7	0.48	4/4992 (0.1%)	0.73	7/6754 (0.1%)
27	2	0.45	0/3611	0.76	11/4881 (0.2%)
28	5	0.47	1/502 (0.2%)	0.89	3/677 (0.4%)
29	N	0.88	0/1443	1.22	13/2226 (0.6%)
30	T	0.89	1/1449 (0.1%)	1.21	4/2233 (0.2%)
All	All	0.50	30/71982 (0.0%)	0.82	180/97723 (0.2%)

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	M	0	5
2	A	0	8
3	B	0	6
7	H	0	1
9	J	0	1
10	K	0	1
11	L	0	1
12	Q	0	1
13	P	0	1
14	S	0	2
15	O	0	1
17	V	0	1
20	D	0	1
21	G	0	1
22	0	0	2
27	2	0	1
All	All	0	34

All (30) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1156	ASP	CG-OD2	-11.08	0.99	1.25
16	U	258	TRP	CE3-CZ3	-11.03	1.19	1.38
26	7	575	ARG	CG-CD	-10.55	1.25	1.51
26	7	677	TYR	CD1-CE1	-10.33	1.23	1.39
25	6	347	TYR	CE1-CZ	-8.88	1.27	1.38
7	H	145	ARG	CB-CG	-8.32	1.30	1.52
21	G	33	GLU	CD-OE1	-7.73	1.17	1.25
14	S	246	GLU	CD-OE1	-7.57	1.17	1.25
1	M	164	LYS	CD-CE	-7.01	1.33	1.51
25	6	347	TYR	CD2-CE2	6.89	1.49	1.39
3	B	1206	GLU	CD-OE2	-6.85	1.18	1.25
25	6	347	TYR	CE2-CZ	-6.67	1.29	1.38
9	J	38	ARG	CG-CD	-6.43	1.35	1.51
22	0	644	GLU	CD-OE2	-6.25	1.18	1.25
2	A	478	TYR	CD2-CE2	-6.17	1.30	1.39
21	G	32	GLU	CD-OE1	-6.14	1.18	1.25
9	J	24	LEU	CG-CD1	6.11	1.74	1.51
16	U	5	GLU	CG-CD	-5.91	1.43	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
26	7	677	TYR	CE1-CZ	-5.67	1.31	1.38
2	A	325	ILE	CB-CG2	-5.67	1.35	1.52
3	B	267	ARG	CZ-NH2	-5.63	1.25	1.33
26	7	677	TYR	CZ-OH	-5.60	1.28	1.37
30	T	-47	DT	C3'-O3'	-5.52	1.36	1.44
3	B	424	LEU	CG-CD1	-5.45	1.31	1.51
25	6	347	TYR	CG-CD1	-5.41	1.32	1.39
9	J	24	LEU	CB-CG	-5.29	1.37	1.52
22	0	644	GLU	CB-CG	5.26	1.62	1.52
25	6	359	LEU	CG-CD1	-5.16	1.32	1.51
23	1	600	VAL	CB-CG1	-5.05	1.42	1.52
28	5	58	LEU	CG-CD1	-5.01	1.33	1.51

All (180) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	J	24	LEU	CB-CG-CD2	-27.19	64.77	111.00
12	Q	114	MET	CG-SD-CE	-14.42	77.13	100.20
1	M	172	MET	CG-SD-CE	-12.56	80.10	100.20
18	W	227	MET	CG-SD-CE	-12.44	80.30	100.20
9	J	38	ARG	CG-CD-NE	11.35	135.63	111.80
13	P	77	LEU	CA-CB-CG	11.20	141.06	115.30
9	J	38	ARG	CA-CB-CG	11.03	137.66	113.40
17	V	73	ASP	CB-CG-OD2	-10.88	108.50	118.30
23	1	234	LEU	CB-CG-CD1	-10.62	92.94	111.00
3	B	1156	ASP	CB-CG-OD1	10.57	127.81	118.30
18	W	123	MET	CG-SD-CE	9.80	115.89	100.20
13	P	77	LEU	CB-CG-CD1	9.80	127.66	111.00
3	B	79	THR	C-N-CA	9.70	145.96	121.70
3	B	267	ARG	NE-CZ-NH2	-9.33	115.63	120.30
26	7	561	MET	CG-SD-CE	-9.08	85.68	100.20
2	A	1107	VAL	C-N-CA	8.99	144.17	121.70
21	G	31	LEU	CB-CG-CD1	8.93	126.19	111.00
3	B	918	ILE	C-N-CA	8.81	143.72	121.70
27	2	258	LEU	CA-CB-CG	8.63	135.15	115.30
12	Q	114	MET	CA-CB-CG	-8.53	98.79	113.30
15	O	87	LEU	CB-CG-CD2	-8.46	96.62	111.00
2	A	1209	MET	CG-SD-CE	-8.41	86.75	100.20
2	A	65	LEU	CA-CB-CG	8.35	134.51	115.30
2	A	141	LEU	CB-CG-CD1	8.23	125.00	111.00
1	M	210	MET	CG-SD-CE	8.13	113.21	100.20
9	J	36	LEU	CB-CG-CD1	8.12	124.80	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	J	38	ARG	CB-CG-CD	-8.10	90.53	111.60
26	7	677	TYR	CE1-CZ-OH	-8.03	98.42	120.10
27	2	210	MET	CG-SD-CE	-7.91	87.55	100.20
1	M	250	MET	CB-CG-SD	-7.81	88.98	112.40
3	B	1151	LEU	CB-CG-CD2	7.78	124.22	111.00
11	L	56	LEU	CA-CB-CG	7.68	132.96	115.30
2	A	547	LEU	CB-CG-CD1	7.67	124.03	111.00
2	A	1259	MET	CG-SD-CE	7.62	112.39	100.20
22	0	644	GLU	CG-CD-OE1	7.54	133.39	118.30
9	J	24	LEU	CA-CB-CG	7.51	132.57	115.30
2	A	761	MET	CA-CB-CG	7.48	126.01	113.30
18	W	159	ASP	CB-CG-OD2	7.45	125.01	118.30
18	W	160	ASP	CB-CG-OD1	7.41	124.97	118.30
3	B	563	MET	CG-SD-CE	-7.38	88.38	100.20
27	2	38	ILE	CG1-CB-CG2	-7.37	95.18	111.40
8	I	13	MET	CG-SD-CE	-7.33	88.48	100.20
17	V	60	LEU	CA-CB-CG	7.28	132.04	115.30
22	0	711	ASP	CB-CG-OD2	7.24	124.81	118.30
7	H	46	LEU	CB-CG-CD2	-7.19	98.78	111.00
2	A	44	THR	C-N-CA	7.17	139.63	121.70
1	M	164	LYS	CD-CE-NZ	-7.08	95.41	111.70
3	B	930	ALA	C-N-CA	7.07	139.37	121.70
12	Q	119	LEU	CB-CG-CD1	-7.01	99.08	111.00
4	C	75	MET	CG-SD-CE	-7.01	88.99	100.20
17	V	109	ASP	CB-CG-OD2	6.95	124.55	118.30
3	B	1156	ASP	N-CA-CB	-6.93	98.13	110.60
27	2	355	LEU	CB-CG-CD2	-6.90	99.27	111.00
29	N	50	DT	O4'-C4'-C3'	-6.87	101.75	104.50
26	7	687	LEU	CB-CG-CD2	6.87	122.68	111.00
22	0	10	VAL	CG1-CB-CG2	-6.84	99.96	110.90
22	0	569	ILE	CG1-CB-CG2	-6.84	96.36	111.40
3	B	867	GLY	C-N-CA	6.81	138.72	121.70
23	1	184	LEU	CA-CB-CG	6.80	130.95	115.30
27	2	227	MET	CG-SD-CE	6.77	111.03	100.20
13	P	73	LEU	CB-CG-CD1	-6.77	99.49	111.00
14	S	209	LYS	C-N-CA	6.75	138.56	121.70
9	J	29	GLU	CA-CB-CG	6.74	128.24	113.40
2	A	58	LEU	CA-CB-CG	6.74	130.79	115.30
2	A	1021	LEU	CB-CG-CD2	6.73	122.44	111.00
25	6	347	TYR	CD1-CE1-CZ	6.68	125.81	119.80
3	B	424	LEU	CB-CG-CD1	-6.67	99.66	111.00
23	1	234	LEU	CA-CB-CG	-6.65	100.00	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	I	113	ASP	CB-CG-OD1	6.65	124.28	118.30
3	B	267	ARG	NE-CZ-NH1	6.61	123.61	120.30
25	6	216	MET	CG-SD-CE	-6.60	89.63	100.20
6	F	85	MET	CA-CB-CG	6.55	124.44	113.30
17	V	73	ASP	CB-CG-OD1	6.54	124.19	118.30
3	B	1156	ASP	OD1-CG-OD2	-6.47	111.00	123.30
3	B	82	ASP	C-N-CA	6.46	137.85	121.70
9	J	39	LEU	CA-CB-CG	6.46	130.15	115.30
1	M	135	MET	CB-CG-SD	6.43	131.68	112.40
29	N	8	DA	O4'-C4'-C3'	-6.37	101.95	104.50
27	2	123	VAL	CG1-CB-CG2	-6.37	100.72	110.90
26	7	430	LEU	CA-CB-CG	6.32	129.84	115.30
22	0	346	MET	CA-CB-CG	6.30	124.02	113.30
26	7	581	TYR	CA-CB-CG	6.30	125.38	113.40
4	C	265	MET	CG-SD-CE	6.30	110.28	100.20
2	A	701	LEU	CA-CB-CG	6.30	129.78	115.30
2	A	234	MET	CA-CB-CG	6.29	123.99	113.30
2	A	1116	LEU	CA-CB-CG	6.28	129.73	115.30
29	N	-6	DG	O4'-C4'-C3'	-6.28	101.99	104.50
25	6	358	SER	C-N-CA	6.24	137.30	121.70
13	P	77	LEU	CB-CG-CD2	6.22	121.57	111.00
3	B	173	MET	CA-CB-CG	6.21	123.86	113.30
4	C	125	MET	CA-CB-CG	6.18	123.81	113.30
23	1	192	MET	CG-SD-CE	6.13	110.02	100.20
11	L	27	LEU	CA-CB-CG	6.13	129.40	115.30
27	2	242	LEU	CB-CG-CD1	-6.13	100.58	111.00
22	0	644	GLU	CG-CD-OE2	-6.11	106.08	118.30
3	B	245	GLU	C-N-CA	6.10	136.96	121.70
2	A	567	LYS	CA-CB-CG	6.05	126.71	113.40
2	A	453	MET	CG-SD-CE	6.02	109.83	100.20
27	2	167	LEU	CB-CG-CD1	-6.01	100.79	111.00
29	N	45	DT	O4'-C1'-N1	5.97	112.18	108.00
4	C	75	MET	CA-CB-CG	5.95	123.42	113.30
23	1	339	LEU	CA-CB-CG	5.93	128.95	115.30
28	5	29	ASP	CB-CG-OD1	5.92	123.62	118.30
22	0	468	MET	CG-SD-CE	-5.86	90.83	100.20
3	B	994	TYR	CA-CB-CG	5.83	124.49	113.40
3	B	552	MET	CA-CB-CG	5.83	123.21	113.30
28	5	27	MET	CA-CB-CG	5.81	123.17	113.30
3	B	432	MET	CG-SD-CE	5.79	109.47	100.20
19	X	151	LEU	CA-CB-CG	5.78	128.59	115.30
26	7	677	TYR	OH-CZ-CE2	5.75	135.63	120.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	391	ASP	CB-CG-OD1	5.75	123.48	118.30
2	A	1371	LEU	CB-CG-CD1	-5.74	101.24	111.00
23	1	484	LEU	CA-CB-CG	5.71	128.42	115.30
29	N	45	DT	N3-C4-O4	5.71	123.32	119.90
2	A	122	MET	CA-CB-CG	5.69	122.98	113.30
2	A	1285	MET	CA-CB-CG	5.68	122.95	113.30
2	A	543	LEU	CA-CB-CG	5.63	128.25	115.30
9	J	1	MET	CA-CB-CG	5.63	122.87	113.30
2	A	456	MET	CA-CB-CG	5.62	122.86	113.30
20	D	123	LEU	CB-CG-CD1	5.59	120.50	111.00
2	A	185	TRP	CA-CB-CG	5.58	124.30	113.70
3	B	173	MET	CB-CG-SD	-5.55	95.76	112.40
2	A	343	LYS	CD-CE-NZ	5.54	124.45	111.70
29	N	8	DA	C4'-C3'-C2'	-5.54	98.11	103.10
2	A	1375	MET	CG-SD-CE	-5.52	91.37	100.20
20	D	204	ASP	CB-CG-OD1	5.51	123.26	118.30
25	6	359	LEU	CB-CG-CD2	-5.50	101.64	111.00
9	J	38	ARG	NE-CZ-NH2	-5.49	117.55	120.30
2	A	567	LYS	CB-CG-CD	-5.48	97.35	111.60
23	1	184	LEU	CB-CG-CD1	-5.48	101.69	111.00
3	B	841	MET	CG-SD-CE	5.47	108.95	100.20
29	N	44	DT	N3-C4-O4	5.47	123.18	119.90
21	G	119	LEU	CA-CB-CG	5.45	127.83	115.30
14	S	207	ILE	CG1-CB-CG2	-5.44	99.44	111.40
27	2	100	LEU	CA-CB-CG	5.43	127.79	115.30
26	7	677	TYR	CZ-CE2-CD2	-5.42	114.92	119.80
3	B	1114	LEU	CB-CG-CD2	-5.41	101.80	111.00
30	T	-48	DG	O4'-C1'-N9	5.39	111.77	108.00
3	B	1072	MET	CA-CB-CG	5.38	122.45	113.30
27	2	166	LEU	CA-CB-CG	5.38	127.68	115.30
3	B	643	ASP	CB-CG-OD1	5.37	123.14	118.30
22	0	570	LEU	CB-CG-CD2	5.37	120.13	111.00
5	E	78	LEU	CA-CB-CG	5.37	127.64	115.30
29	N	51	DG	O4'-C4'-C3'	-5.36	102.36	104.50
9	J	38	ARG	NE-CZ-NH1	5.35	122.97	120.30
17	V	24	ASP	CB-CG-OD1	5.34	123.11	118.30
28	5	58	LEU	CD1-CG-CD2	-5.34	94.48	110.50
3	B	959	ASP	CB-CG-OD1	5.31	123.08	118.30
22	0	621	LEU	CA-CB-CG	5.30	127.50	115.30
2	A	1019	CYS	CA-CB-SG	5.29	123.52	114.00
18	W	159	ASP	CB-CG-OD1	-5.29	113.54	118.30
1	M	214	LEU	CA-CB-CG	5.27	127.42	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	P	77	LEU	CD1-CG-CD2	-5.26	94.71	110.50
16	U	262	LEU	CA-CB-CG	5.25	127.38	115.30
13	P	225	MET	CA-CB-CG	5.23	122.19	113.30
17	V	40	VAL	CG1-CB-CG2	-5.23	102.53	110.90
2	A	1336	MET	CB-CG-SD	5.22	128.07	112.40
1	M	198	VAL	CA-CB-CG1	5.21	118.72	110.90
29	N	45	DT	C5-C4-O4	-5.21	121.25	124.90
25	6	384	MET	CA-CB-CG	5.20	122.14	113.30
2	A	874	ASP	CB-CG-OD1	5.18	122.97	118.30
27	2	503	ASP	CB-CG-OD1	5.18	122.96	118.30
29	N	53	DT	O4'-C1'-N1	5.18	111.62	108.00
29	N	-7	DG	O4'-C1'-N9	5.17	111.62	108.00
29	N	55	DT	N3-C4-O4	5.14	122.98	119.90
7	H	146	ARG	CA-C-O	5.14	130.89	120.10
29	N	50	DT	C3'-C2'-C1'	-5.14	96.33	102.50
30	T	-50	DA	C4'-C3'-C2'	-5.14	98.48	103.10
3	B	1087	PHE	CB-CG-CD1	-5.10	117.23	120.80
18	W	156	LEU	CA-CB-CG	5.09	127.01	115.30
3	B	603	LEU	CB-CG-CD2	5.09	119.65	111.00
2	A	549	MET	CG-SD-CE	-5.07	92.10	100.20
3	B	662	MET	CB-CG-SD	5.06	127.57	112.40
30	T	-50	DA	O4'-C4'-C3'	-5.05	102.48	104.50
3	B	428	ILE	CG1-CB-CG2	-5.05	100.29	111.40
30	T	-51	DC	C4'-C3'-C2'	-5.04	98.57	103.10
14	S	284	LEU	CA-CB-CG	5.03	126.87	115.30
22	0	670	LEU	CA-CB-CG	5.02	126.84	115.30
2	A	1359	ASP	CB-CG-OD1	5.01	122.81	118.30
3	B	199	MET	CA-CB-CG	5.01	121.81	113.30

There are no chirality outliers.

All (34) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
22	0	618	ARG	Sidechain
22	0	640	GLU	Mainchain
27	2	450	ARG	Sidechain
2	A	1274	ARG	Sidechain
2	A	1404	GLU	Peptide
2	A	152	VAL	Peptide
2	A	252	PHE	Peptide
2	A	55	ASP	Peptide
2	A	566	ILE	Peptide

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Mol	Chain	Res	Type	Group
2	A	65	LEU	Peptide
2	A	750	GLY	Peptide
3	B	137	TYR	Peptide
3	B	333	PHE	Peptide
3	B	363	HIS	Peptide
3	B	510	LYS	Peptide
3	B	832	GLY	Peptide
3	B	922	GLU	Peptide
20	D	155	ARG	Sidechain
21	G	154	VAL	Peptide
7	H	81	PRO	Peptide
9	J	38	ARG	Sidechain
10	K	112	GLN	Peptide
11	L	58	LYS	Peptide
1	M	269	ILE	Peptide
1	M	271	GLY	Peptide
1	M	272	LYS	Peptide
1	M	30	TYR	Peptide
1	M	31	PRO	Peptide
15	O	107	ARG	Sidechain
13	P	77	LEU	Mainchain
12	Q	110	ASP	Mainchain
14	S	227	PHE	Peptide
14	S	261	ILE	Peptide
17	V	112	ARG	Sidechain

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	M	2175	0	2283	37	0
2	A	11167	0	11189	222	0
3	B	9227	0	9200	180	0
4	C	2086	0	2045	36	0
5	E	1752	0	1776	21	0
6	F	705	0	731	8	0
7	H	1080	0	1049	30	0
8	I	927	0	881	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	J	540	0	553	16	0
10	K	924	0	934	10	0
11	L	352	0	375	8	0
12	Q	1619	0	1452	34	0
13	P	1484	0	1480	32	0
14	S	1294	0	1289	27	0
15	O	1422	0	1500	27	0
16	U	885	0	866	27	0
17	V	815	0	822	27	0
18	W	2010	0	2026	37	0
19	X	1288	0	1307	18	0
20	D	1331	0	1345	21	0
21	G	1335	0	1346	25	0
22	0	6091	0	6155	142	0
23	1	3382	0	3436	52	0
24	4	2267	0	2323	37	0
25	6	2786	0	2804	58	0
26	7	4889	0	4876	102	0
27	2	3546	0	3593	58	0
28	5	498	0	506	12	0
29	N	1288	0	719	17	0
30	T	1291	0	713	12	0
31	4	1	0	0	0	0
31	6	4	0	0	0	0
31	A	2	0	0	0	0
31	B	1	0	0	0	0
31	C	1	0	0	0	0
31	I	2	0	0	0	0
31	J	1	0	0	0	0
31	L	1	0	0	0	0
31	M	1	0	0	0	0
31	S	1	0	0	0	0
32	7	1	0	0	0	0
32	A	1	0	0	0	0
33	0	8	0	0	2	0
All	All	70481	0	69574	1257	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 9.

All (1257) 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)
9:J:24:LEU:CG	9:J:24:LEU:CD1	1.74	1.56
2:A:107:CYS:HB3	2:A:110:CYS:SG	2.01	1.00
25:6:406:CYS:HB3	25:6:440:CYS:SG	2.04	0.96
22:0:134:ARG:O	22:0:138:ASN:HB2	1.68	0.91
11:L:27:LEU:N	11:L:39:SER:HG	1.73	0.86
2:A:1170:ILE:O	2:A:1174:PHE:HB2	1.76	0.85
9:J:24:LEU:CD1	9:J:24:LEU:HG	2.05	0.82
11:L:31:CYS:SG	11:L:48:CYS:HB3	2.20	0.80
26:7:642:ASN:O	26:7:646:ASN:HB3	1.82	0.79
3:B:259:TYR:O	3:B:267:ARG:NH2	2.17	0.77
29:N:-6:DG:N2	30:T:6:DC:O2	2.19	0.76
2:A:344:ARG:HH12	3:B:1129:ARG:HH11	1.33	0.76
25:6:338:CYS:SG	25:6:339:HIS:CE1	2.79	0.75
7:H:95:TYR:HB3	7:H:144:ILE:HB	1.66	0.75
18:W:122:TYR:HB3	18:W:156:LEU:HB3	1.70	0.73
3:B:364:ILE:HG22	3:B:585:VAL:HG13	1.71	0.73
23:1:230:PRO:HD3	25:6:244:PRO:HA	1.70	0.72
2:A:88:LYS:HE2	2:A:293:GLU:HB2	1.70	0.72
9:J:24:LEU:CD1	9:J:24:LEU:CB	2.65	0.72
21:G:89:GLY:HA3	21:G:103:VAL:HG22	1.71	0.71
25:6:169:MET:SD	25:6:169:MET:N	2.63	0.71
2:A:1329:THR:HB	2:A:1335:ILE:HD11	1.74	0.70
2:A:1149:ALA:HB3	2:A:1196:GLU:HB2	1.74	0.70
22:0:721:LEU:HD13	25:6:268:ALA:HB2	1.74	0.69
3:B:680:THR:H	3:B:683:SER:HB2	1.58	0.69
11:L:31:CYS:HA	11:L:57:LEU:H	1.57	0.68
13:P:133:TYR:HB3	13:P:214:ILE:HD11	1.76	0.68
22:0:544:TYR:HA	22:0:547:MET:HG3	1.74	0.68
28:5:24:ASP:O	28:5:28:SER:HA	1.93	0.68
9:J:10:CYS:SG	9:J:11:GLY:N	2.67	0.68
22:0:419:ILE:HB	22:0:436:ARG:HB2	1.76	0.67
3:B:829:CYS:HA	3:B:834:ASN:HD21	1.60	0.67
3:B:323:VAL:HG13	3:B:324:ILE:HG13	1.77	0.66
3:B:883:LEU:HD21	3:B:928:ARG:HD3	1.77	0.66
2:A:108:MET:HA	2:A:210:ILE:HG12	1.77	0.66
24:4:65:LEU:HA	24:4:71:ASN:HD21	1.59	0.66
26:7:676:HIS:HB3	26:7:679:SER:HB3	1.77	0.66
3:B:287:ARG:NH2	3:B:294:ASP:OD1	2.29	0.66
28:5:9:LEU:HD21	28:5:39:HIS:HD2	1.58	0.66
26:7:459:MET:SD	26:7:466:ARG:NH2	2.69	0.66
22:0:111:ARG:HH12	22:0:134:ARG:HG3	1.62	0.65
26:7:330:CYS:HA	26:7:333:ILE:HG12	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:18:GLN:HB3	3:B:1215:ARG:HB2	1.77	0.65
23:1:291:LYS:HG3	23:1:307:GLY:HA3	1.78	0.65
22:0:721:LEU:O	22:0:725:ALA:HB2	1.97	0.65
1:M:27:CYS:SG	1:M:48:CYS:HB3	2.36	0.65
3:B:604:ARG:NH1	3:B:615:MET:SD	2.70	0.65
3:B:806:THR:HG23	3:B:808:ALA:H	1.61	0.65
3:B:336:ARG:NH1	3:B:339:THR:O	2.31	0.64
22:0:289:LEU:HD22	22:0:321:ILE:HG13	1.79	0.64
23:1:297:ARG:HH11	23:1:298:GLY:H	1.45	0.64
2:A:567:LYS:HD3	7:H:95:TYR:HA	1.77	0.64
27:2:190:GLN:HG3	27:2:395:GLN:HE21	1.62	0.64
2:A:1318:THR:HG22	5:E:141:VAL:HG11	1.78	0.64
3:B:73:GLN:HA	12:Q:330:ARG:HH22	1.63	0.64
2:A:1446:ASP:OD1	21:G:58:ARG:NH1	2.30	0.63
22:0:468:MET:SD	22:0:468:MET:N	2.70	0.63
25:6:134:GLU:HG3	25:6:206:GLY:H	1.64	0.63
26:7:132:LEU:HB3	26:7:201:SER:HA	1.81	0.63
3:B:28:GLU:HG3	12:Q:22:ILE:HG21	1.81	0.63
3:B:72:GLU:O	12:Q:330:ARG:NH2	2.32	0.62
22:0:1:MET:N	22:0:92:TYR:OH	2.32	0.62
24:4:305:CYS:HB3	24:4:310:SER:H	1.64	0.62
13:P:90:GLN:HE21	13:P:92:LEU:HD11	1.64	0.62
16:U:41:ILE:HG13	16:U:44:LYS:HE3	1.80	0.62
23:1:444:LYS:NZ	23:1:445:THR:O	2.33	0.62
23:1:559:GLU:O	23:1:563:HIS:ND1	2.32	0.62
2:A:1329:THR:HG22	2:A:1331:SER:H	1.65	0.62
4:C:242:GLN:HB3	4:C:246:ARG:HH12	1.63	0.62
7:H:105:GLU:HB3	7:H:113:ALA:HB3	1.81	0.62
2:A:1443:VAL:HG12	21:G:61:ILE:HD13	1.81	0.62
3:B:80:GLU:HG2	3:B:83:ASN:HB2	1.80	0.62
22:0:59:TYR:O	22:0:63:TYR:HB2	2.00	0.62
22:0:576:ALA:HB3	23:1:343:ILE:HD13	1.82	0.62
2:A:1398:MET:SD	2:A:1398:MET:N	2.73	0.61
27:2:175:GLU:HA	27:2:182:PHE:HA	1.82	0.61
2:A:532:ARG:NH2	2:A:748:MET:SD	2.73	0.61
11:L:31:CYS:H	11:L:57:LEU:HB2	1.66	0.61
18:W:45:GLN:OE1	18:W:210:GLN:NE2	2.34	0.61
2:A:202:LEU:HB3	2:A:207:ILE:HD11	1.83	0.61
16:U:257:ARG:HH22	16:U:282:GLU:HA	1.66	0.61
17:V:66:LEU:HD11	17:V:69:TYR:HB3	1.82	0.61
18:W:179:ILE:HG13	18:W:182:ILE:HD12	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:1:339:LEU:HD12	23:1:342:ASN:HD22	1.65	0.61
3:B:793:ALA:HB3	3:B:856:PHE:HB2	1.83	0.61
25:6:176:ASN:HD21	25:6:205:LYS:HG3	1.65	0.61
2:A:1173:HIS:NE2	2:A:1228:TRP:O	2.34	0.61
3:B:542:MET:SD	3:B:542:MET:N	2.73	0.61
6:F:100:GLN:HB3	6:F:105:ALA:HB3	1.82	0.60
2:A:328:ARG:HD2	2:A:335:ARG:HH21	1.66	0.60
2:A:107:CYS:SG	2:A:148:CYS:HB2	2.41	0.60
27:2:448:LEU:O	27:2:450:ARG:NH1	2.33	0.60
2:A:856:THR:HB	2:A:865:GLN:H	1.66	0.60
25:6:363:CYS:HB3	25:6:368:LEU:H	1.66	0.60
3:B:771:SER:O	3:B:775:LYS:NZ	2.35	0.60
18:W:17:VAL:HG21	18:W:29:LEU:HD13	1.83	0.60
2:A:173:THR:HG1	2:A:184:SER:HG	1.47	0.60
26:7:589:GLN:HE22	26:7:756:ARG:HH21	1.50	0.60
1:M:284:LEU:HD21	1:M:313:TYR:HA	1.83	0.60
23:1:210:TRP:HB3	23:1:217:LEU:HD11	1.84	0.60
26:7:527:LEU:HA	26:7:530:LEU:HB2	1.84	0.60
2:A:60:SER:HB3	2:A:67:CYS:H	1.67	0.60
2:A:1229:SER:OG	2:A:1230:GLU:N	2.34	0.60
22:0:545:LEU:HB2	23:1:357:THR:HA	1.84	0.60
3:B:313:MET:HG3	3:B:386:LEU:HD11	1.82	0.60
22:0:127:THR:HG22	23:1:348:VAL:HG12	1.83	0.60
22:0:443:SER:HB3	22:0:473:LEU:HA	1.82	0.60
22:0:548:GLU:OE1	23:1:361:GLY:N	2.34	0.60
8:I:88:SER:O	8:I:91:ARG:NH1	2.35	0.59
23:1:444:LYS:HE2	24:4:282:VAL:HG13	1.84	0.59
7:H:83:GLN:O	7:H:87:ARG:NH1	2.35	0.59
2:A:393:ARG:NH2	2:A:421:ALA:O	2.35	0.59
2:A:874:ASP:O	2:A:1366:ARG:NH1	2.35	0.59
16:U:5:GLU:OE1	17:V:57:GLN:NE2	2.35	0.59
27:2:14:LEU:O	27:2:22:GLN:NE2	2.31	0.59
17:V:63:LYS:HZ1	17:V:86:THR:HG22	1.67	0.59
3:B:287:ARG:HH21	3:B:297:ILE:HD13	1.68	0.59
18:W:70:HIS:HB3	18:W:86:TYR:HB2	1.84	0.59
26:7:424:PHE:HE2	26:7:430:LEU:HD22	1.67	0.59
1:M:281:SER:O	1:M:285:ASN:ND2	2.34	0.59
2:A:114:LEU:HD12	2:A:142:CYS:HB2	1.85	0.59
2:A:425:GLN:HE22	2:A:427:GLN:HB2	1.67	0.59
2:A:439:ASN:HA	2:A:460:VAL:H	1.68	0.59
22:0:642:MET:HB2	22:0:648:ILE:HD12	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:42:ASP:O	2:A:45:GLN:NE2	2.35	0.59
2:A:592:ASP:O	2:A:603:ASN:ND2	2.36	0.59
3:B:809:MET:SD	3:B:809:MET:N	2.76	0.59
23:1:606:GLU:HA	23:1:609:SER:HB3	1.84	0.59
3:B:706:GLN:HB2	3:B:709:ASP:HB3	1.84	0.59
22:0:60:GLN:O	22:0:66:HIS:ND1	2.35	0.59
27:2:208:LEU:HD13	27:2:221:VAL:HG11	1.84	0.59
2:A:1199:ARG:NH1	2:A:1231:ASP:O	2.36	0.58
3:B:1174:LYS:HB2	3:B:1179:GLN:HB2	1.84	0.58
2:A:881:GLN:HE21	2:A:956:LEU:HD23	1.69	0.58
2:A:1361:SER:OG	14:S:305:ARG:NH1	2.36	0.58
4:C:235:VAL:HG13	4:C:237:SER:H	1.68	0.58
10:K:95:ILE:HD12	10:K:98:LEU:HD11	1.85	0.58
27:2:29:PRO:HB3	27:2:111:ALA:HB2	1.84	0.58
2:A:939:ASP:OD2	2:A:1023:ARG:NH1	2.36	0.58
22:0:134:ARG:HH12	22:0:304:GLU:HB2	1.66	0.58
3:B:552:MET:HA	3:B:555:ILE:HG22	1.84	0.58
20:D:139:LYS:HD2	20:D:142:LYS:HD2	1.86	0.58
22:0:1:MET:N	22:0:12:PHE:O	2.36	0.58
1:M:313:TYR:O	1:M:317:TYR:HB2	2.03	0.58
13:P:106:LEU:HB3	13:P:120:TYR:HB2	1.86	0.58
30:T:-46:DA:H2'	30:T:-45:DA:C8	2.38	0.58
2:A:365:GLY:HA3	2:A:469:ARG:HB3	1.85	0.58
3:B:756:ILE:HD13	3:B:767:ASN:HD22	1.67	0.58
11:L:61:THR:HG22	11:L:63:ARG:H	1.68	0.58
2:A:119:ASN:HB3	2:A:122:MET:HG3	1.86	0.57
14:S:280:SER:HB3	14:S:300:GLU:HB2	1.85	0.57
27:2:88:ILE:HB	27:2:99:ASN:HB3	1.85	0.57
27:2:151:VAL:HG11	27:2:358:ALA:HB1	1.85	0.57
7:H:115:TYR:OH	7:H:124:ARG:NH1	2.36	0.57
26:7:354:ILE:HG13	26:7:430:LEU:HD12	1.85	0.57
3:B:805:THR:OG1	3:B:809:MET:SD	2.62	0.57
17:V:11:ARG:NH1	17:V:45:ASP:OD2	2.37	0.57
26:7:188:LEU:HB3	26:7:193:ILE:HD11	1.86	0.57
2:A:405:VAL:HG23	2:A:432:VAL:HG12	1.86	0.57
2:A:1317:MET:HB3	5:E:142:VAL:HG21	1.86	0.57
3:B:310:MET:SD	3:B:310:MET:N	2.76	0.57
18:W:40:GLU:HG2	18:W:44:LYS:HE2	1.87	0.57
22:0:232:VAL:HB	22:0:456:VAL:HA	1.85	0.57
2:A:227:VAL:HA	20:D:15:LEU:HD13	1.87	0.57
3:B:341:LEU:HD22	3:B:344:LYS:HD2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:43:LEU:O	3:B:496:ARG:NH2	2.37	0.57
3:B:803:LEU:HD11	3:B:822:ASN:HD22	1.69	0.57
8:I:78:CYS:SG	8:I:105:SER:OG	2.62	0.57
4:C:74:SER:HB2	4:C:238:ILE:HB	1.86	0.56
25:6:224:VAL:O	25:6:230:ARG:NH2	2.38	0.56
2:A:745:GLN:O	2:A:749:ALA:HB2	2.04	0.56
2:A:1158:PRO:HB3	2:A:1188:GLN:HE21	1.69	0.56
19:X:232:VAL:HA	19:X:244:VAL:HG12	1.87	0.56
2:A:226:GLU:OE2	2:A:230:ARG:NH2	2.38	0.56
3:B:302:CYS:SG	3:B:303:TYR:N	2.79	0.56
14:S:179:GLU:O	14:S:183:ASN:ND2	2.37	0.56
20:D:196:PRO:HA	20:D:199:ASN:HB2	1.87	0.56
21:G:47:CYS:SG	21:G:48:VAL:N	2.78	0.56
25:6:221:LEU:O	25:6:230:ARG:NH1	2.38	0.56
26:7:236:THR:O	26:7:313:VAL:N	2.38	0.56
27:2:239:ILE:HG12	27:2:247:ARG:HG2	1.87	0.56
22:0:636:LYS:HA	22:0:639:LEU:HD12	1.87	0.56
26:7:676:HIS:O	26:7:722:ARG:NH1	2.39	0.56
2:A:187:LYS:NZ	18:W:226:THR:O	2.36	0.56
22:0:306:PHE:HB3	22:0:382:SER:HA	1.88	0.56
23:1:309:VAL:O	23:1:313:ARG:NH1	2.39	0.56
26:7:491:HIS:O	26:7:519:ARG:NH1	2.39	0.56
1:M:190:LYS:NZ	1:M:302:LEU:O	2.38	0.56
4:C:42:PRO:HB2	4:C:161:LYS:HE2	1.87	0.56
8:I:45:ARG:HH21	8:I:47:GLU:H	1.52	0.56
7:H:62:SER:OG	7:H:63:LEU:N	2.38	0.56
12:Q:371:ASP:O	13:P:82:ARG:NH1	2.38	0.56
17:V:87:VAL:O	17:V:103:GLN:N	2.39	0.56
20:D:165:GLN:HA	20:D:168:LYS:HE3	1.86	0.56
22:0:422:PRO:HA	22:0:433:PRO:HB3	1.88	0.56
23:1:209:PHE:O	23:1:213:ARG:NH1	2.37	0.56
26:7:130:ARG:NH1	26:7:198:ASP:O	2.39	0.56
15:O:94:TYR:HB2	15:O:102:VAL:HG23	1.88	0.56
16:U:51:VAL:HG12	16:U:271:ARG:HA	1.87	0.56
24:4:78:ALA:HA	24:4:83:ILE:HA	1.88	0.56
26:7:589:GLN:HB3	26:7:748:LEU:HD22	1.88	0.56
22:0:238:HIS:HB2	22:0:660:ARG:HD2	1.85	0.56
22:0:295:SER:O	22:0:299:LEU:HB2	2.06	0.56
28:5:14:PRO:HA	28:5:17:LYS:HE2	1.87	0.56
12:Q:117:HIS:CE1	12:Q:391:LYS:HB2	2.41	0.56
12:Q:376:LEU:HB2	13:P:69:TRP:HB2	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:2:238:LYS:NZ	27:2:239:ILE:O	2.38	0.56
16:U:241:GLU:HG3	17:V:112:ARG:NH2	2.21	0.55
22:0:288:LYS:HE2	22:0:298:ILE:HG12	1.86	0.55
27:2:454:TYR:CZ	27:2:483:TRP:HB2	2.40	0.55
3:B:402:GLY:O	3:B:405:ARG:NH1	2.39	0.55
3:B:841:MET:SD	3:B:990:ILE:HG12	2.46	0.55
2:A:311:GLN:HG2	2:A:312:PRO:HD3	1.88	0.55
2:A:1159:ARG:NH1	2:A:1186:ASP:OD1	2.39	0.55
7:H:63:LEU:HB3	7:H:89:LEU:HD13	1.88	0.55
26:7:752:SER:HB2	26:7:755:GLU:HB2	1.89	0.55
3:B:260:GLY:C	3:B:267:ARG:HH22	2.09	0.55
4:C:54:ASN:ND2	4:C:60:ASP:OD1	2.37	0.55
22:0:11:LEU:HD22	22:0:93:ARG:HG2	1.87	0.55
22:0:588:LYS:O	22:0:592:ASN:ND2	2.39	0.55
25:6:327:ARG:HD2	25:6:347:TYR:HE1	1.72	0.55
2:A:75:ASN:HA	3:B:1116:ARG:HH22	1.72	0.55
2:A:840:ARG:NH1	2:A:1384:VAL:O	2.40	0.55
3:B:825:VAL:HG23	3:B:1010:LEU:HG	1.89	0.55
3:B:1156:ASP:OD2	3:B:1197:PRO:HA	2.07	0.55
12:Q:408:GLU:HA	12:Q:411:LYS:HE2	1.88	0.55
2:A:802:ASN:ND2	2:A:807:GLY:O	2.40	0.55
4:C:241:ASP:N	4:C:241:ASP:OD1	2.39	0.55
3:B:1133:MET:SD	3:B:1133:MET:N	2.79	0.55
9:J:5:VAL:HG12	9:J:6:ARG:HG2	1.89	0.55
1:M:84:ASN:OD1	1:M:151:LYS:NZ	2.40	0.55
16:U:257:ARG:NH1	16:U:258:TRP:O	2.38	0.55
24:4:292:CYS:HB3	24:4:308:CYS:SG	2.47	0.55
27:2:81:MET:HG3	27:2:87:LEU:HB2	1.88	0.55
1:M:63:TRP:HD1	1:M:64:ARG:HH12	1.55	0.55
23:1:265:ILE:HD11	23:1:314:TYR:HB3	1.89	0.55
27:2:392:THR:HG22	27:2:394:ASP:H	1.71	0.55
3:B:799:PRO:HB2	3:B:818:PRO:HG2	1.89	0.54
22:0:135:ARG:NH1	22:0:392:GLU:OE2	2.40	0.54
1:M:215:ARG:NH1	15:O:183:SER:O	2.39	0.54
3:B:1060:ARG:O	3:B:1060:ARG:NH1	2.38	0.54
22:0:542:PRO:HB3	22:0:626:PRO:HA	1.88	0.54
26:7:127:HIS:O	26:7:202:LYS:NZ	2.38	0.54
14:S:271:CYS:SG	14:S:272:GLY:N	2.80	0.54
22:0:287:GLU:OE1	22:0:291:GLN:NE2	2.41	0.54
15:O:91:ASN:ND2	15:O:105:ARG:O	2.41	0.54
29:N:17:DT:H2''	29:N:18:DA:H5''	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:194:GLU:HA	3:B:784:ASN:HD22	1.73	0.54
14:S:271:CYS:HB3	14:S:276:GLU:H	1.72	0.54
22:0:509:ARG:NH1	22:0:511:GLU:OE1	2.41	0.54
2:A:116:ASP:O	2:A:118:HIS:ND1	2.40	0.54
2:A:335:ARG:HH22	3:B:1114:LEU:HD21	1.73	0.54
2:A:745:GLN:O	2:A:749:ALA:CB	2.56	0.54
3:B:136:THR:N	3:B:138:GLU:OE2	2.41	0.54
3:B:296:GLU:O	3:B:300:HIS:ND1	2.31	0.54
26:7:487:LEU:HB2	26:7:512:GLY:HA2	1.88	0.54
26:7:573:THR:OG1	29:N:54:DA:O5'	2.26	0.54
3:B:74:LEU:HA	3:B:85:SER:HA	1.90	0.54
14:S:156:LEU:HA	14:S:159:VAL:HG22	1.90	0.54
2:A:1373:ASP:HA	2:A:1376:THR:HG22	1.90	0.54
25:6:347:TYR:CE2	25:6:359:LEU:HD13	2.42	0.54
2:A:184:SER:HB2	2:A:197:PRO:HB2	1.89	0.54
26:7:340:GLU:OE2	26:7:380:ARG:NH1	2.40	0.54
26:7:672:GLN:NE2	26:7:683:GLU:OE2	2.41	0.54
4:C:143:LEU:HD21	4:C:146:LYS:HE3	1.90	0.53
14:S:185:VAL:O	14:S:189:ASP:N	2.38	0.53
2:A:512:VAL:HA	2:A:519:PRO:HA	1.90	0.53
2:A:1115:SER:OG	2:A:1330:ASN:ND2	2.40	0.53
4:C:16:ASP:OD1	4:C:16:ASP:N	2.41	0.53
5:E:88:VAL:HB	5:E:116:ILE:HG23	1.90	0.53
22:0:509:ARG:HB2	22:0:512:ILE:HG12	1.89	0.53
22:0:545:LEU:N	23:1:357:THR:O	2.41	0.53
26:7:159:THR:HB	26:7:160:ILE:HD12	1.90	0.53
3:B:924:GLU:HG2	3:B:925:LEU:HD12	1.90	0.53
12:Q:141:ARG:NH1	12:Q:345:GLU:O	2.41	0.53
13:P:87:LEU:H	13:P:90:GLN:HE22	1.55	0.53
8:I:3:THR:O	8:I:5:ARG:NH1	2.42	0.53
16:U:22:ARG:HE	16:U:26:GLU:HG2	1.74	0.53
22:0:223:SER:O	22:0:452:ARG:NH2	2.41	0.53
22:0:507:SER:OG	22:0:685:ARG:NH2	2.42	0.53
4:C:177:GLU:OE2	4:C:231:ASN:ND2	2.42	0.53
18:W:120:ASN:HD22	18:W:158:GLU:HG2	1.73	0.53
23:1:563:HIS:O	23:1:567:HIS:ND1	2.32	0.53
2:A:894:GLU:O	2:A:898:ARG:HB3	2.08	0.53
3:B:326:ASP:OD1	12:Q:398:ARG:NH1	2.39	0.53
3:B:546:SER:OG	3:B:631:GLY:N	2.40	0.53
4:C:101:LEU:HB3	4:C:155:LEU:HB2	1.91	0.53
14:S:273:LYS:H	14:S:304:ASN:HD22	1.55	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:6:135:ALA:O	25:6:145:ARG:NH1	2.41	0.53
26:7:222:LYS:HB3	26:7:241:ILE:HG12	1.89	0.53
2:A:1199:ARG:NH2	2:A:1233:ASP:O	2.42	0.53
3:B:334:ILE:HA	3:B:347:LYS:HG3	1.90	0.53
10:K:11:LEU:O	10:K:37:LYS:NZ	2.36	0.53
19:X:228:SER:O	19:X:247:ASN:ND2	2.40	0.53
22:0:315:ASP:O	22:0:375:ARG:NH2	2.42	0.53
26:7:239:ALA:HA	26:7:242:LEU:HD23	1.91	0.53
22:0:270:ARG:NH2	22:0:389:GLU:O	2.41	0.53
2:A:40:THR:OG1	2:A:41:MET:N	2.42	0.53
9:J:19:GLU:O	9:J:23:ASN:ND2	2.41	0.53
14:S:266:THR:HG23	14:S:268:ARG:H	1.74	0.53
19:X:163:LEU:HG	19:X:169:ILE:HG21	1.91	0.53
24:4:317:ILE:HA	24:4:320:LEU:HD12	1.91	0.53
26:7:549:ILE:HD12	26:7:691:LEU:HD11	1.91	0.53
26:7:610:ASP:H	26:7:674:SER:HB3	1.74	0.53
27:2:186:ASN:ND2	27:2:390:GLY:O	2.42	0.53
3:B:911:ILE:HG13	3:B:912:ILE:HG12	1.89	0.53
20:D:39:ASN:ND2	20:D:41:GLN:OE1	2.42	0.53
22:0:310:PRO:HB3	22:0:404:THR:HG23	1.91	0.53
25:6:377:ALA:HA	25:6:380:TYR:CE2	2.44	0.53
2:A:252:PHE:HB3	2:A:256:GLN:HB2	1.91	0.52
3:B:146:GLU:HG2	3:B:147:LEU:H	1.74	0.52
3:B:352:ALA:HA	3:B:355:ILE:HD12	1.91	0.52
7:H:5:LEU:H	7:H:59:ILE:HB	1.74	0.52
15:O:67:LEU:HD21	15:O:220:ARG:HH12	1.73	0.52
22:0:111:ARG:O	22:0:115:CYS:N	2.42	0.52
25:6:120:ARG:HA	25:6:309:PRO:HA	1.91	0.52
22:0:310:PRO:HB2	22:0:408:LEU:HG	1.90	0.52
24:4:29:ILE:HB	24:4:178:VAL:HA	1.89	0.52
2:A:70:CYS:SG	2:A:80:HIS:CE1	3.02	0.52
2:A:1100:ARG:NH2	2:A:1351:GLU:OE2	2.42	0.52
3:B:540:SER:OG	3:B:541:LEU:N	2.43	0.52
3:B:1002:THR:OG1	3:B:1003:ALA:N	2.41	0.52
16:U:47:THR:HB	16:U:56:TRP:HD1	1.73	0.52
25:6:234:ILE:HB	25:6:263:VAL:HA	1.91	0.52
4:C:145:CYS:SG	4:C:146:LYS:N	2.82	0.52
3:B:232:SER:O	3:B:261:ARG:NH1	2.43	0.52
4:C:148:ARG:O	4:C:151:GLN:NE2	2.39	0.52
11:L:38:LEU:HB3	11:L:40:LEU:HD23	1.90	0.52
22:0:601:VAL:HG12	22:0:603:ARG:H	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:7:687:LEU:HG	26:7:726:LEU:HD21	1.90	0.52
2:A:14:VAL:HG21	2:A:1430:LEU:HD12	1.92	0.52
2:A:1446:ASP:OD2	2:A:1449:SER:N	2.39	0.52
3:B:576:ASP:OD1	3:B:576:ASP:N	2.43	0.52
22:0:447:LYS:NZ	22:0:474:ASN:O	2.43	0.52
18:W:3:ARG:NH2	18:W:192:SER:OG	2.39	0.52
3:B:364:ILE:HD11	3:B:374:LYS:HD3	1.92	0.52
2:A:379:VAL:O	2:A:384:ASN:ND2	2.43	0.52
2:A:802:ASN:HD21	2:A:806:ARG:HB2	1.75	0.52
3:B:755:ILE:O	3:B:983:ARG:NH2	2.40	0.52
16:U:244:MET:HB3	16:U:267:VAL:HG23	1.92	0.52
22:0:56:THR:HB	22:0:69:ILE:HD13	1.91	0.52
22:0:84:VAL:O	22:0:88:ASN:ND2	2.43	0.52
22:0:285:GLU:OE2	22:0:380:ARG:NH1	2.42	0.52
25:6:238:SER:OG	25:6:239:LEU:N	2.43	0.52
25:6:444:ILE:HG12	25:6:448:LEU:HD12	1.91	0.52
2:A:108:MET:SD	2:A:108:MET:N	2.83	0.52
2:A:802:ASN:ND2	2:A:803:SER:O	2.43	0.52
3:B:989:THR:OG1	3:B:990:ILE:N	2.42	0.52
7:H:13:SER:OG	7:H:27:GLU:OE2	2.28	0.52
22:0:114:LEU:HD13	22:0:193:TYR:HA	1.92	0.52
22:0:116:LEU:HD21	22:0:182:LEU:HD22	1.91	0.52
24:4:76:ILE:HG12	24:4:85:TYR:HA	1.91	0.52
25:6:260:ARG:HH21	25:6:281:ASN:HB3	1.75	0.52
26:7:132:LEU:HD23	26:7:201:SER:HB2	1.91	0.52
2:A:528:LEU:HD11	2:A:619:LYS:HB3	1.91	0.51
3:B:1219:ASP:OD1	3:B:1219:ASP:N	2.43	0.51
4:C:79:GLN:HB3	4:C:127:ARG:HH11	1.75	0.51
5:E:74:ASP:N	5:E:74:ASP:OD1	2.42	0.51
20:D:68:ARG:HD2	20:D:72:ARG:HH12	1.75	0.51
22:0:573:THR:OG1	22:0:575:ASP:O	2.26	0.51
4:C:72:LEU:HB3	4:C:130:GLY:HA2	1.91	0.51
22:0:20:GLU:HG2	22:0:485:MET:HA	1.92	0.51
22:0:571:VAL:HG13	22:0:599:LEU:HB2	1.92	0.51
25:6:175:ARG:NH1	25:6:203:GLU:O	2.38	0.51
3:B:216:GLU:HB3	3:B:406:LEU:HD13	1.91	0.51
3:B:1033:LYS:HD2	3:B:1059:LEU:HD11	1.92	0.51
7:H:100:THR:O	7:H:117:SER:N	2.44	0.51
18:W:180:GLN:NE2	18:W:184:ASP:OD1	2.40	0.51
20:D:130:LEU:HB3	20:D:138:ASN:HD21	1.75	0.51
23:1:473:LEU:HD22	24:4:140:ILE:HD13	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:2:167:LEU:HD22	27:2:173:MET:HB2	1.91	0.51
12:Q:29:ARG:HB3	12:Q:33:ARG:HH12	1.74	0.51
19:X:119:ILE:HG13	19:X:127:LYS:HE3	1.93	0.51
2:A:783:THR:OG1	2:A:784:LEU:N	2.44	0.51
16:U:249:ASP:N	16:U:261:SER:O	2.43	0.51
17:V:48:VAL:HA	17:V:51:THR:HG22	1.93	0.51
22:0:674:ASP:N	22:0:674:ASP:OD1	2.43	0.51
3:B:637:LEU:HD12	3:B:693:ILE:HG13	1.92	0.51
18:W:72:GLN:NE2	18:W:218:THR:O	2.43	0.51
26:7:357:LYS:NZ	26:7:427:TRP:O	2.43	0.51
26:7:460:VAL:HB	26:7:501:VAL:HG12	1.92	0.51
27:2:194:GLN:O	27:2:199:GLN:NE2	2.44	0.51
2:A:537:ARG:NH2	2:A:599:SER:OG	2.43	0.51
2:A:1205:LYS:HZ1	2:A:1274:ARG:HB3	1.75	0.51
14:S:201:ILE:O	14:S:205:ASN:ND2	2.42	0.51
14:S:239:ALA:HA	14:S:242:LYS:HB2	1.93	0.51
26:7:421:ARG:NH1	26:7:435:CYS:SG	2.83	0.51
2:A:782:ARG:HD3	2:A:789:LYS:HD3	1.91	0.51
14:S:232:ASP:HB3	14:S:235:ASP:HB3	1.92	0.51
18:W:127:CYS:SG	18:W:129:THR:OG1	2.68	0.51
22:0:259:ARG:NH2	22:0:394:GLU:O	2.43	0.51
25:6:190:GLN:NE2	25:6:194:ASP:OD1	2.43	0.51
27:2:25:LEU:HD22	27:2:222:LEU:HD13	1.93	0.51
2:A:949:ASP:OD1	2:A:949:ASP:N	2.41	0.51
2:A:1002:GLY:HA3	2:A:1007:ILE:HG21	1.93	0.51
3:B:996:ARG:HD3	3:B:1007:VAL:HG21	1.91	0.51
4:C:99:LEU:HB2	4:C:157:CYS:HB2	1.93	0.51
21:G:1:MET:SD	21:G:1:MET:N	2.82	0.51
25:6:394:THR:HA	25:6:398:PHE:HZ	1.76	0.51
26:7:425:LEU:HD13	26:7:432:PRO:HG3	1.93	0.51
3:B:120:ARG:NH2	3:B:957:ASN:O	2.44	0.51
16:U:258:TRP:CZ3	16:U:285:TRP:HB2	2.46	0.51
17:V:51:THR:O	17:V:55:ASN:CB	2.59	0.51
18:W:147:PHE:HB2	18:W:156:LEU:HB2	1.93	0.51
23:1:282:GLU:OE2	23:1:286:ARG:NH2	2.41	0.51
26:7:416:SER:HA	26:7:419:GLN:HG2	1.93	0.51
26:7:608:PHE:HB2	26:7:672:GLN:HG2	1.92	0.51
27:2:54:GLU:OE2	27:2:109:ARG:NH2	2.44	0.51
5:E:118:PRO:HA	5:E:121:MET:HB2	1.93	0.50
24:4:119:ARG:NH1	24:4:123:GLU:OE1	2.44	0.50
24:4:160:VAL:HG21	24:4:176:LEU:HD21	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:5:31:VAL:HG22	28:5:42:VAL:HG23	1.93	0.50
2:A:852:TYR:OH	6:F:89:GLU:OE2	2.29	0.50
2:A:873:MET:O	2:A:1366:ARG:NH1	2.44	0.50
2:A:1161:THR:HG22	2:A:1163:ILE:H	1.76	0.50
3:B:62:ILE:HD11	3:B:418:LYS:HB2	1.93	0.50
14:S:185:VAL:HB	14:S:189:ASP:HA	1.92	0.50
24:4:46:GLU:HB3	24:4:49:SER:HB3	1.93	0.50
27:2:409:ARG:HE	27:2:413:GLU:HG2	1.76	0.50
1:M:34:ILE:HG22	1:M:45:CYS:HA	1.94	0.50
2:A:131:SER:O	2:A:134:ARG:NH2	2.45	0.50
2:A:871:ASP:OD2	2:A:1366:ARG:NH2	2.44	0.50
13:P:70:LEU:HB3	13:P:221:GLU:HG2	1.93	0.50
25:6:115:ILE:O	25:6:387:LYS:NZ	2.45	0.50
26:7:496:ALA:O	26:7:500:ARG:NH1	2.35	0.50
27:2:150:MET:SD	27:2:173:MET:HG3	2.50	0.50
2:A:56:PRO:O	2:A:66:LYS:NZ	2.38	0.50
7:H:58:THR:HB	7:H:143:LEU:HB2	1.93	0.50
18:W:120:ASN:ND2	18:W:159:ASP:O	2.44	0.50
21:G:38:CYS:HA	21:G:44:TYR:HA	1.93	0.50
23:1:212:THR:OG1	23:1:213:ARG:NH1	2.44	0.50
2:A:1430:LEU:HB3	2:A:1432:GLN:HE22	1.76	0.50
3:B:862:GLN:HB3	3:B:963:PHE:HD1	1.76	0.50
19:X:163:LEU:HD12	19:X:166:LEU:HD12	1.94	0.50
2:A:457:ALA:N	2:A:505:CYS:O	2.44	0.50
2:A:519:PRO:HG3	2:A:631:HIS:HB2	1.93	0.50
3:B:304:ASP:OD1	3:B:306:ASN:ND2	2.42	0.50
20:D:192:LYS:O	20:D:199:ASN:ND2	2.45	0.50
22:0:37:ASN:HB2	22:0:477:THR:HA	1.94	0.50
22:0:67:ARG:NE	22:0:229:ASP:O	2.39	0.50
23:1:340:ASP:HA	23:1:343:ILE:HG12	1.93	0.50
26:7:411:CYS:HB2	26:7:488:ASP:HB2	1.93	0.50
29:N:38:DG:H2 ⁷	29:N:39:DA:C8	2.46	0.50
3:B:69:LEU:HD23	3:B:90:ILE:HD11	1.93	0.50
10:K:17:SER:OG	10:K:19:LEU:O	2.30	0.50
21:G:153:GLN:HG3	21:G:154:VAL:HG22	1.93	0.50
25:6:338:CYS:SG	25:6:339:HIS:N	2.85	0.50
26:7:551:ASN:H	26:7:701:PHE:HE2	1.58	0.50
15:O:144:GLN:NE2	15:O:150:ALA:O	2.44	0.50
17:V:87:VAL:HG12	17:V:88:GLU:HG3	1.92	0.50
18:W:198:THR:H	18:W:201:ILE:HB	1.77	0.50
26:7:401:CYS:O	26:7:404:LYS:NZ	2.38	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:445:LYS:HG3	3:B:446:LEU:HD22	1.94	0.50
23:1:567:HIS:HB3	23:1:579:VAL:HG22	1.92	0.50
2:A:451:HIS:HA	2:A:1070:GLN:HB3	1.93	0.49
2:A:855:THR:OG1	2:A:857:ARG:NH1	2.44	0.49
2:A:1293:SER:HB3	2:A:1297:GLU:H	1.76	0.49
3:B:616:ILE:HG12	3:B:697:GLU:HA	1.94	0.49
5:E:11:ARG:HH22	5:E:138:ALA:HB2	1.77	0.49
5:E:108:GLY:N	5:E:131:THR:O	2.37	0.49
26:7:679:SER:O	26:7:683:GLU:HB2	2.11	0.49
2:A:46:THR:O	2:A:47:ARG:NE	2.45	0.49
4:C:36:VAL:HG21	4:C:251:LEU:HD12	1.95	0.49
7:H:4:THR:HG21	7:H:7:ASP:HB2	1.94	0.49
22:0:86:LEU:HD22	22:0:175:VAL:HG11	1.94	0.49
22:0:112:LYS:HD3	22:0:129:VAL:HG21	1.94	0.49
27:2:503:ASP:OD1	27:2:507:ARG:NH1	2.45	0.49
3:B:76:GLN:HB2	12:Q:326:ARG:HE	1.77	0.49
3:B:1197:PRO:HB2	3:B:1200:ALA:H	1.76	0.49
5:E:97:VAL:HA	5:E:100:ILE:HD12	1.94	0.49
12:Q:371:ASP:OD1	12:Q:371:ASP:N	2.45	0.49
22:0:469:TYR:HA	22:0:472:MET:HG2	1.94	0.49
23:1:279:LYS:O	23:1:283:PHE:HB2	2.12	0.49
24:4:29:ILE:N	24:4:177:LEU:O	2.41	0.49
25:6:362:VAL:HA	25:6:369:MET:HA	1.95	0.49
3:B:391:ASP:O	8:I:90:GLN:NE2	2.45	0.49
3:B:914:LYS:HD2	3:B:937:ALA:HB3	1.95	0.49
12:Q:375:LEU:HD12	12:Q:387:ILE:HB	1.94	0.49
14:S:223:ILE:HG13	14:S:225:PRO:HD2	1.94	0.49
28:5:53:GLU:HA	28:5:56:ARG:HG2	1.93	0.49
2:A:346:ASP:H	3:B:1154:ALA:HB1	1.78	0.49
2:A:751:SER:OG	2:A:752:LYS:N	2.45	0.49
2:A:964:ILE:HG22	2:A:1045:VAL:HG21	1.94	0.49
3:B:271:ALA:O	3:B:280:ILE:N	2.44	0.49
6:F:86:THR:OG1	6:F:87:LYS:N	2.45	0.49
12:Q:134:HIS:ND1	12:Q:354:ASP:OD2	2.42	0.49
14:S:240:PRO:O	14:S:243:GLN:NE2	2.45	0.49
23:1:572:GLU:OE1	23:1:575:GLN:NE2	2.43	0.49
26:7:613:TYR:CZ	26:7:766:LYS:HE3	2.48	0.49
27:2:17:ILE:O	27:2:22:GLN:NE2	2.46	0.49
30:T:-46:DA:H2'	30:T:-45:DA:H8	1.75	0.49
2:A:363:GLN:O	2:A:458:HIS:ND1	2.46	0.49
2:A:1132:LYS:HA	2:A:1135:ARG:HG2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1208:THR:OG1	2:A:1211:GLN:OE1	2.29	0.49
3:B:179:CYS:SG	3:B:180:TYR:N	2.85	0.49
3:B:901:PRO:HA	3:B:949:VAL:HG13	1.94	0.49
18:W:139:LEU:O	18:W:148:LEU:N	2.45	0.49
19:X:119:ILE:HG12	19:X:151:LEU:HB2	1.95	0.49
22:0:197:ARG:HH22	22:0:221:ARG:HB3	1.78	0.49
25:6:403:CYS:HB3	25:6:408:SER:H	1.78	0.49
26:7:134:ILE:HD13	26:7:205:VAL:HG13	1.95	0.49
26:7:340:GLU:OE1	26:7:376:ASN:ND2	2.45	0.49
26:7:431:GLN:NE2	26:7:433:GLU:OE1	2.46	0.49
30:T:-16:DG:H2'	30:T:-15:DA:C8	2.48	0.49
2:A:843:LYS:HG2	2:A:1402:PHE:CD1	2.47	0.49
2:A:1158:PRO:O	2:A:1241:ARG:NH1	2.39	0.49
18:W:68:SER:N	18:W:88:TYR:O	2.46	0.49
22:0:275:ARG:NH1	22:0:329:GLU:OE2	2.46	0.49
25:6:178:LEU:O	25:6:180:GLN:NE2	2.45	0.49
26:7:578:MET:HA	26:7:581:TYR:CE1	2.48	0.49
1:M:239:ILE:HG23	1:M:282:ILE:HD11	1.94	0.49
2:A:147:VAL:HA	2:A:170:THR:HA	1.95	0.49
22:0:472:MET:HG3	22:0:473:LEU:HG	1.94	0.49
2:A:335:ARG:HH12	3:B:1114:LEU:HG	1.77	0.49
2:A:1005:GLU:OE2	2:A:1009:ASN:ND2	2.45	0.49
7:H:123:MET:SD	7:H:123:MET:N	2.86	0.49
13:P:318:LEU:HG	13:P:329:LEU:HD21	1.93	0.49
26:7:167:PRO:HD2	26:7:171:HIS:HA	1.94	0.49
27:2:125:VAL:H	27:2:237:TYR:HA	1.77	0.49
22:0:238:HIS:O	22:0:660:ARG:NH1	2.46	0.49
24:4:78:ALA:HB2	24:4:152:ALA:HB2	1.95	0.49
28:5:13:ASP:HB3	28:5:16:ILE:HG12	1.95	0.49
5:E:141:VAL:HG13	5:E:142:VAL:HG23	1.95	0.48
24:4:158:THR:HG22	25:6:443:PHE:HE2	1.77	0.48
26:7:494:PRO:HG2	26:7:523:LYS:HE3	1.95	0.48
3:B:301:ILE:HG21	3:B:314:LEU:HD11	1.95	0.48
22:0:352:ILE:HB	22:0:420:ILE:HB	1.95	0.48
22:0:544:TYR:HB3	23:1:358:MET:HA	1.95	0.48
23:1:214:ILE:HG22	23:1:218:ARG:HH12	1.78	0.48
27:2:168:LYS:HD2	27:2:175:GLU:HB2	1.94	0.48
14:S:298:THR:HA	14:S:305:ARG:HA	1.94	0.48
22:0:607:SER:O	22:0:668:ARG:NH2	2.47	0.48
27:2:337:GLY:H	27:2:351:SER:HB3	1.79	0.48
2:A:362:ASP:N	2:A:362:ASP:OD1	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:160:ILE:HG21	15:O:220:ARG:NH2	2.29	0.48
22:O:135:ARG:NH1	22:O:391:THR:OG1	2.46	0.48
26:7:349:ASN:O	26:7:405:LYS:NZ	2.47	0.48
27:2:186:ASN:HD21	27:2:392:THR:HG1	1.61	0.48
2:A:390:GLN:NE2	2:A:394:ASN:OD1	2.44	0.48
2:A:1146:VAL:HG23	2:A:1197:LEU:HD22	1.95	0.48
3:B:758:PHE:H	3:B:1044:ALA:HB1	1.78	0.48
15:O:114:LEU:HB2	15:O:122:VAL:HB	1.95	0.48
20:D:145:MET:HA	20:D:148:LEU:HD12	1.95	0.48
20:D:152:SER:HB2	20:D:155:ARG:NH2	2.28	0.48
22:O:498:THR:OG1	22:O:707:ASN:OD1	2.31	0.48
23:1:589:CYS:HA	23:1:592:LYS:HE3	1.96	0.48
27:2:152:GLY:HA2	27:2:182:PHE:HE1	1.78	0.48
2:A:1385:THR:OG1	2:A:1388:GLY:N	2.41	0.48
3:B:558:LEU:HD21	3:B:580:VAL:HG11	1.94	0.48
5:E:9:ILE:HG21	5:E:43:LYS:HD3	1.95	0.48
8:I:96:SER:OG	8:I:97:MET:N	2.47	0.48
22:O:114:LEU:HD22	22:O:192:PRO:HB2	1.96	0.48
22:O:192:PRO:HA	22:O:195:ILE:HB	1.95	0.48
24:4:182:GLY:N	24:4:215:ILE:O	2.47	0.48
24:4:188:ASP:O	24:4:192:GLN:NE2	2.46	0.48
26:7:642:ASN:HB3	26:7:649:ILE:HG13	1.94	0.48
27:2:352:ASN:ND2	27:2:370:PHE:O	2.47	0.48
27:2:497:GLY:HA2	27:2:500:GLN:HE21	1.78	0.48
1:M:43:VAL:HG23	1:M:52:LEU:HB3	1.96	0.48
12:Q:102:PRO:HB2	13:P:91:GLU:HB3	1.95	0.48
23:1:279:LYS:O	23:1:283:PHE:CB	2.61	0.48
25:6:363:CYS:N	25:6:368:LEU:O	2.43	0.48
26:7:234:VAL:HG21	26:7:318:ILE:HD12	1.95	0.48
26:7:763:VAL:O	26:7:767:ASN:ND2	2.46	0.48
17:V:85:VAL:O	17:V:106:ILE:N	2.44	0.48
27:2:90:ASN:O	27:2:97:MET:N	2.47	0.48
3:B:198:ASP:OD2	3:B:202:TYR:OH	2.31	0.48
3:B:801:LYS:HD3	3:B:815:ARG:HG3	1.96	0.48
13:P:322:THR:O	13:P:324:GLN:HG3	2.14	0.48
26:7:124:ARG:NH2	26:7:203:VAL:O	2.47	0.48
26:7:133:TRP:CH2	26:7:202:LYS:HE3	2.48	0.48
27:2:131:SER:HA	27:2:135:LEU:HD13	1.96	0.48
2:A:668:ASP:OD2	2:A:743:VAL:N	2.47	0.48
3:B:838:SER:OG	3:B:839:MET:N	2.46	0.48
15:O:108:GLU:HG2	15:O:109:PRO:HD3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:128:SER:OG	15:O:130:ASP:OD1	2.28	0.48
21:G:56:ILE:HG22	21:G:72:VAL:HG22	1.96	0.48
26:7:143:LEU:HB3	26:7:171:HIS:HB2	1.95	0.48
26:7:564:GLU:O	26:7:567:GLN:NE2	2.46	0.48
2:A:260:ASP:OD1	2:A:260:ASP:N	2.43	0.47
3:B:1065:GLN:OE1	3:B:1069:PHE:N	2.41	0.47
20:D:119:ARG:HH21	20:D:149:THR:HG23	1.78	0.47
20:D:123:LEU:HD11	20:D:149:THR:HG21	1.96	0.47
2:A:68:GLN:HE21	2:A:80:HIS:CE1	2.32	0.47
2:A:646:PHE:O	2:A:650:GLN:HB2	2.14	0.47
3:B:553:PRO:HG2	3:B:554:ILE:HD12	1.96	0.47
3:B:809:MET:HB2	3:B:814:PHE:HB3	1.97	0.47
4:C:11:ARG:HG3	4:C:20:PHE:HA	1.95	0.47
7:H:32:THR:OG1	7:H:33:GLN:OE1	2.32	0.47
14:S:285:GLN:HB3	14:S:293:LEU:HD23	1.96	0.47
22:0:104:ARG:O	22:0:204:ASN:N	2.47	0.47
25:6:146:HIS:CG	25:6:204:PRO:HG3	2.49	0.47
26:7:372:LYS:HA	26:7:372:LYS:HD3	1.76	0.47
2:A:1394:THR:HB	2:A:1399:ARG:HD3	1.96	0.47
13:P:96:ARG:NH2	13:P:103:LYS:O	2.47	0.47
21:G:62:LEU:HD23	21:G:65:ASP:HB2	1.96	0.47
3:B:521:LEU:HD22	3:B:633:VAL:HG12	1.95	0.47
3:B:983:ARG:HD2	3:B:1091:TYR:HB3	1.95	0.47
3:B:1000:PRO:HB2	3:B:1072:MET:HE3	1.95	0.47
22:0:625:ILE:HD11	22:0:685:ARG:HB2	1.96	0.47
13:P:66:ARG:HD3	13:P:66:ARG:HA	1.74	0.47
22:0:117:HIS:N	33:0:801:SF4:S3	2.85	0.47
25:6:131:ASP:HA	25:6:174:MET:HB3	1.96	0.47
26:7:409:VAL:HG22	26:7:486:ILE:HD13	1.95	0.47
26:7:462:ASN:O	26:7:466:ARG:NH1	2.40	0.47
26:7:634:GLN:NE2	29:N:42:DA:OP2	2.47	0.47
2:A:399:HIS:CE1	2:A:462:VAL:HG21	2.50	0.47
2:A:1132:LYS:NZ	2:A:1206:ASP:OD2	2.48	0.47
3:B:425:THR:HA	3:B:428:ILE:HD12	1.96	0.47
4:C:35:ARG:HH21	10:K:41:THR:HG23	1.80	0.47
4:C:221:TYR:CD1	4:C:222:LYS:HG3	2.50	0.47
12:Q:108:LYS:HE2	13:P:84:ARG:HE	1.79	0.47
21:G:150:CYS:HA	21:G:159:ALA:HA	1.96	0.47
22:0:731:LYS:HA	22:0:734:GLU:HB2	1.97	0.47
22:0:743:ASP:OD1	22:0:746:LYS:NZ	2.43	0.47
26:7:341:TYR:OH	26:7:349:ASN:OD1	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:277:ILE:HA	1:M:280:VAL:HG22	1.97	0.47
2:A:33:ALA:HB3	2:A:82:GLY:HA3	1.96	0.47
2:A:402:ALA:HA	2:A:434:ARG:HA	1.97	0.47
2:A:1159:ARG:NH2	2:A:1185:PHE:O	2.45	0.47
3:B:1074:ASN:ND2	3:B:1077:THR:OG1	2.47	0.47
12:Q:26:ARG:HA	12:Q:29:ARG:HH21	1.79	0.47
14:S:269:PHE:HB2	14:S:279:VAL:HG21	1.97	0.47
15:O:195:TYR:HB3	15:O:204:LEU:HB2	1.95	0.47
20:D:153:ARG:HH22	20:D:160:VAL:HA	1.79	0.47
22:O:161:ASN:ND2	22:O:189:THR:O	2.48	0.47
22:O:513:ARG:NH1	22:O:514:ASN:OD1	2.47	0.47
24:4:308:CYS:SG	24:4:310:SER:OG	2.68	0.47
26:7:383:ILE:HB	26:7:534:LYS:HA	1.96	0.47
26:7:634:GLN:HA	26:7:637:MET:HG3	1.97	0.47
28:5:20:ILE:HA	28:5:23:ILE:HD12	1.97	0.47
7:H:101:ALA:HA	7:H:116:TYR:HA	1.96	0.47
26:7:718:TYR:HB3	26:7:722:ARG:HH12	1.79	0.47
3:B:480:SER:O	3:B:480:SER:OG	2.29	0.47
10:K:36:GLU:HA	10:K:70:ARG:HA	1.97	0.47
18:W:192:SER:OG	18:W:193:ARG:N	2.46	0.47
22:O:380:ARG:HH22	22:O:384:LEU:HD13	1.80	0.47
2:A:376:TYR:OH	2:A:498:ARG:NH1	2.48	0.47
2:A:698:GLN:HG2	8:I:99:LEU:HD21	1.96	0.47
3:B:546:SER:OG	3:B:632:ARG:N	2.42	0.47
5:E:175:LEU:HD22	5:E:213:ILE:HB	1.96	0.47
8:I:74:GLU:HB3	8:I:81:ARG:HD3	1.96	0.47
17:V:67:ASP:HB3	17:V:79:ILE:HG22	1.96	0.47
17:V:109:ASP:OD2	17:V:110:LYS:N	2.47	0.47
23:1:208:GLU:HA	23:1:211:SER:HB3	1.96	0.47
25:6:402:ASP:OD1	25:6:402:ASP:N	2.48	0.47
27:2:208:LEU:HA	27:2:211:ILE:HG22	1.96	0.47
30:T:4:DC:N3	30:T:5:DA:N6	2.63	0.47
2:A:352:VAL:O	2:A:467:THR:OG1	2.33	0.46
3:B:363:HIS:O	3:B:365:THR:N	2.48	0.46
3:B:494:HIS:HA	3:B:497:ARG:HE	1.80	0.46
3:B:629:ASP:N	3:B:629:ASP:OD1	2.46	0.46
12:Q:106:ILE:HG12	12:Q:111:LEU:HD13	1.96	0.46
26:7:567:GLN:HB2	26:7:571:ARG:HH21	1.80	0.46
27:2:256:TYR:HB3	27:2:258:LEU:HD23	1.96	0.46
16:U:30:ILE:HD11	17:V:31:ARG:NH1	2.31	0.46
3:B:871:THR:OG1	3:B:872:GLU:N	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:125:MET:SD	4:C:127:ARG:NE	2.86	0.46
21:G:10:ASN:HA	21:G:71:ASN:HA	1.97	0.46
24:4:221:SER:HB3	24:4:224:LEU:HD13	1.97	0.46
2:A:4:GLN:O	3:B:1159:ARG:NH2	2.45	0.46
2:A:24:PRO:HA	2:A:27:VAL:HG12	1.97	0.46
2:A:116:ASP:HB3	2:A:164:ARG:HD3	1.97	0.46
2:A:1335:ILE:O	2:A:1339:LEU:HB2	2.15	0.46
3:B:363:HIS:HD2	3:B:364:ILE:HG23	1.81	0.46
3:B:796:LEU:HA	3:B:853:SER:HA	1.97	0.46
12:Q:113:ASN:HD21	13:P:139:ASN:HB2	1.80	0.46
1:M:161:LYS:O	1:M:164:LYS:HE2	2.14	0.46
2:A:544:ASP:O	2:A:548:ASN:ND2	2.36	0.46
2:A:1217:LYS:HE3	2:A:1221:LYS:HE2	1.97	0.46
3:B:76:GLN:OE1	12:Q:326:ARG:NH2	2.47	0.46
3:B:822:ASN:HD21	9:J:48:ARG:HD3	1.79	0.46
9:J:16:ASP:OD1	9:J:16:ASP:N	2.48	0.46
14:S:187:ASN:HB2	14:S:228:LEU:HD11	1.96	0.46
22:0:119:GLU:HA	22:0:122:LYS:HE2	1.97	0.46
22:0:436:ARG:HD3	22:0:634:ILE:HD11	1.96	0.46
22:0:612:PHE:O	22:0:671:ARG:NH1	2.48	0.46
22:0:690:ARG:HD2	22:0:706:LEU:HD11	1.97	0.46
23:1:542:LEU:HB2	23:1:547:LEU:HD12	1.96	0.46
1:M:84:ASN:HB3	1:M:87:LEU:HD12	1.97	0.46
1:M:321:ASP:OD1	1:M:321:ASP:N	2.46	0.46
2:A:562:THR:O	2:A:572:TRP:NE1	2.39	0.46
2:A:864:ILE:HD12	2:A:1377:THR:HG21	1.98	0.46
2:A:903:ASN:O	2:A:907:THR:OG1	2.32	0.46
12:Q:326:ARG:HH12	12:Q:330:ARG:HB3	1.80	0.46
19:X:234:ARG:HD3	19:X:239:LYS:HB3	1.97	0.46
24:4:288:ILE:HB	24:4:293:LEU:HA	1.98	0.46
25:6:261:VAL:HB	25:6:280:THR:HG21	1.97	0.46
26:7:642:ASN:O	26:7:646:ASN:CB	2.58	0.46
1:M:177:LEU:HD13	1:M:192:ILE:HD11	1.98	0.46
2:A:443:LEU:HD22	2:A:501:LEU:HD11	1.96	0.46
2:A:1279:ILE:HA	2:A:1310:GLY:HA3	1.97	0.46
3:B:205:ILE:O	3:B:208:SER:OG	2.32	0.46
4:C:96:SER:OG	4:C:97:VAL:N	2.49	0.46
16:U:253:ARG:HB3	16:U:258:TRP:CD1	2.51	0.46
17:V:51:THR:O	17:V:55:ASN:HB3	2.15	0.46
22:0:388:LEU:HB3	22:0:390:VAL:HG13	1.98	0.46
23:1:172:GLU:O	23:1:176:THR:OG1	2.26	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:7:154:GLN:HA	26:7:157:LEU:HB2	1.97	0.46
2:A:265:LYS:HZ1	2:A:302:THR:HG22	1.79	0.46
2:A:378:GLU:CD	2:A:434:ARG:HE	2.18	0.46
3:B:822:ASN:ND2	9:J:48:ARG:HD3	2.31	0.46
4:C:43:THR:HA	4:C:77:ILE:HG12	1.98	0.46
17:V:11:ARG:HD2	17:V:41:LEU:HD12	1.96	0.46
2:A:1198:ASP:HB3	2:A:1201:ALA:HB3	1.98	0.46
2:A:1229:SER:OG	2:A:1233:ASP:OD2	2.30	0.46
3:B:872:GLU:HG2	3:B:917:PRO:HD3	1.98	0.46
4:C:107:SER:OG	4:C:109:SER:O	2.33	0.46
17:V:68:THR:HB	17:V:79:ILE:HB	1.98	0.46
17:V:81:LYS:HA	17:V:110:LYS:HA	1.98	0.46
22:0:332:VAL:HG12	22:0:336:LYS:HE2	1.98	0.46
22:0:673:LYS:NZ	22:0:737:SER:O	2.47	0.46
22:0:683:ASP:OD2	22:0:685:ARG:NH2	2.40	0.46
24:4:216:GLY:O	24:4:237:HIS:NE2	2.43	0.46
26:7:323:VAL:HA	26:7:326:VAL:HG22	1.98	0.46
3:B:413:LEU:O	3:B:417:PHE:HB2	2.16	0.46
3:B:493:SER:HA	3:B:751:VAL:HG21	1.98	0.46
13:P:297:LYS:HE2	19:X:130:TRP:CZ2	2.51	0.46
18:W:149:CYS:HB3	18:W:154:GLU:H	1.81	0.46
22:0:67:ARG:NH2	22:0:455:SER:OG	2.49	0.46
22:0:201:SER:HB3	22:0:225:GLU:HB3	1.98	0.46
25:6:248:HIS:HA	25:6:251:ILE:HD12	1.98	0.46
2:A:841:LEU:HD11	2:A:1371:LEU:HD11	1.98	0.45
12:Q:117:HIS:ND1	12:Q:391:LYS:HB2	2.32	0.45
22:0:703:ASP:N	22:0:703:ASP:OD1	2.49	0.45
25:6:334:THR:N	25:6:343:VAL:O	2.47	0.45
2:A:769:SER:OG	2:A:773:LYS:O	2.29	0.45
3:B:1163:CYS:O	3:B:1167:GLY:N	2.39	0.45
4:C:217:ASP:OD1	4:C:217:ASP:N	2.49	0.45
19:X:186:VAL:HG13	19:X:191:GLU:HB2	1.98	0.45
26:7:207:GLU:HA	26:7:210:ILE:HB	1.98	0.45
26:7:679:SER:HB2	26:7:682:GLN:HB3	1.97	0.45
2:A:636:GLU:HB2	2:A:962:ARG:HH21	1.81	0.45
2:A:754:SER:H	2:A:757:ASN:HB2	1.80	0.45
5:E:136:ASN:HD21	5:E:138:ALA:HB3	1.82	0.45
9:J:1:MET:SD	9:J:2:ILE:N	2.71	0.45
15:O:143:ILE:HA	15:O:146:ILE:HD12	1.98	0.45
21:G:166:ASP:N	21:G:166:ASP:OD1	2.49	0.45
2:A:1135:ARG:HE	2:A:1282:VAL:HG23	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1254:ALA:N	2:A:1256:GLU:OE2	2.49	0.45
3:B:213:ILE:O	3:B:215:GLN:NE2	2.49	0.45
3:B:1049:ASP:OD1	3:B:1049:ASP:N	2.42	0.45
3:B:1065:GLN:OE1	3:B:1068:GLY:N	2.49	0.45
5:E:167:ARG:HD3	5:E:167:ARG:HA	1.81	0.45
7:H:128:ASN:OD1	7:H:131:ASN:ND2	2.49	0.45
12:Q:120:LYS:HD3	13:P:132:GLU:HG2	1.98	0.45
19:X:196:LEU:HB3	19:X:246:TYR:HB2	1.98	0.45
22:O:67:ARG:NH2	22:O:230:SER:O	2.50	0.45
23:1:184:LEU:HD21	23:1:217:LEU:HD23	1.98	0.45
23:1:302:MET:HG3	23:1:304:ASN:H	1.80	0.45
26:7:103:ASP:OD1	26:7:103:ASP:N	2.49	0.45
26:7:225:LEU:HD12	26:7:234:VAL:HG22	1.98	0.45
29:N:-4:DG:H1'	29:N:-3:DA:H5'	1.98	0.45
2:A:951:GLU:OE2	2:A:953:ASN:N	2.46	0.45
3:B:43:LEU:HD22	3:B:492:LEU:HD12	1.99	0.45
7:H:117:SER:OG	7:H:118:PHE:N	2.49	0.45
11:L:60:ARG:HE	11:L:61:THR:H	1.63	0.45
13:P:125:THR:OG1	13:P:221:GLU:OE1	2.34	0.45
15:O:171:ARG:NH2	15:O:238:ARG:O	2.48	0.45
17:V:61:THR:O	17:V:63:LYS:NZ	2.46	0.45
23:1:291:LYS:NZ	23:1:306:ARG:O	2.49	0.45
2:A:884:ASP:OD2	2:A:1025:ARG:NE	2.41	0.45
2:A:1194:ARG:NE	2:A:1196:GLU:OE2	2.50	0.45
5:E:202:SER:N	5:E:206:GLY:O	2.41	0.45
10:K:36:GLU:HG2	10:K:37:LYS:HG2	1.97	0.45
16:U:282:GLU:HB3	17:V:63:LYS:HG3	1.97	0.45
22:O:270:ARG:HG2	22:O:390:VAL:HG12	1.99	0.45
22:O:586:TYR:HD1	22:O:596:ALA:HB3	1.81	0.45
23:1:214:ILE:HA	23:1:217:LEU:HD12	1.98	0.45
24:4:21:GLU:OE1	24:4:257:SER:OG	2.33	0.45
30:T:3:DT:H2'	30:T:4:DC:C2	2.52	0.45
2:A:55:ASP:HA	2:A:58:LEU:HD23	1.98	0.45
2:A:567:LYS:HG2	7:H:96:VAL:H	1.81	0.45
2:A:1121:GLU:HG3	2:A:1123:GLY:H	1.80	0.45
2:A:1308:THR:OG1	2:A:1309:ASP:N	2.49	0.45
3:B:448:ILE:HD12	3:B:448:ILE:HA	1.78	0.45
13:P:112:ASP:OD1	13:P:118:HIS:NE2	2.50	0.45
22:O:68:LYS:NZ	22:O:203:CYS:O	2.43	0.45
1:M:239:ILE:HD12	1:M:282:ILE:HD11	1.99	0.45
4:C:116:LYS:HB3	4:C:134:ILE:HD11	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:145:ARG:HH11	7:H:145:ARG:HD2	1.68	0.45
13:P:138:GLN:HB2	13:P:211:LYS:HB3	1.97	0.45
20:D:23:ASN:H	21:G:83:LYS:HZ3	1.65	0.45
22:0:721:LEU:O	22:0:725:ALA:CB	2.65	0.45
23:1:493:ASN:HA	23:1:496:SER:HB3	1.98	0.45
25:6:150:ILE:HG21	25:6:200:ARG:HB2	1.98	0.45
26:7:485:ILE:HD11	26:7:510:LYS:HD2	1.99	0.45
26:7:560:PRO:HG2	26:7:586:THR:HG21	1.98	0.45
27:2:357:ILE:HD11	27:2:369:ARG:HD3	1.98	0.45
1:M:23:THR:HA	1:M:32:PRO:HG3	1.98	0.45
4:C:50:GLU:HB2	4:C:156:THR:HB	1.99	0.45
22:0:537:MET:HB3	22:0:597:ILE:HD12	1.99	0.45
23:1:587:LYS:HA	23:1:587:LYS:HD3	1.82	0.45
24:4:112:SER:HA	24:4:119:ARG:HE	1.82	0.45
25:6:325:PRO:HD3	25:6:370:LEU:HB3	1.97	0.45
26:7:587:LYS:HZ1	26:7:710:SER:HG	1.64	0.45
27:2:146:ILE:HD13	27:2:159:PRO:HB3	1.99	0.45
2:A:1453:TYR:CZ	6:F:149:GLU:HG3	2.52	0.45
12:Q:141:ARG:NH1	12:Q:348:TYR:O	2.48	0.45
12:Q:379:GLU:HB2	12:Q:383:SER:HB2	1.99	0.45
22:0:21:GLN:NE2	22:0:47:GLY:O	2.50	0.45
22:0:351:VAL:HG13	22:0:421:GLU:HG2	1.99	0.45
22:0:678:VAL:HG11	22:0:717:THR:HG22	1.99	0.45
23:1:606:GLU:OE2	23:1:610:ASN:ND2	2.50	0.45
25:6:127:ILE:HB	25:6:232:VAL:HG22	1.98	0.45
26:7:389:GLY:HA3	26:7:692:ARG:HB3	1.97	0.45
29:N:42:DA:H2 [?]	29:N:43:DC:H5 [?]	1.99	0.45
3:B:102:VAL:H	3:B:112:LEU:HD23	1.82	0.44
3:B:463:THR:HG22	3:B:465:ASN:H	1.82	0.44
17:V:10:TYR:O	17:V:13:SER:OG	2.35	0.44
21:G:12:THR:HA	21:G:69:GLU:HA	1.99	0.44
22:0:116:LEU:N	33:0:801:SF4:S3	2.90	0.44
25:6:165:PRO:HB2	25:6:360:PRO:HG3	1.99	0.44
25:6:446:GLU:HG3	25:6:447:ILE:HG12	2.00	0.44
2:A:254:GLU:O	3:B:935:ARG:NH1	2.50	0.44
3:B:412:LEU:HB3	3:B:466:TRP:HZ2	1.81	0.44
11:L:27:LEU:HD21	11:L:62:LYS:HE2	1.98	0.44
24:4:175:ARG:HE	24:4:177:LEU:HD21	1.83	0.44
2:A:121:LEU:O	2:A:124:GLN:NE2	2.50	0.44
4:C:191:TYR:HD2	4:C:201:TRP:CE2	2.35	0.44
5:E:198:ILE:O	5:E:210:SER:OG	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:68:GLN:HB2	15:O:161:VAL:HG12	1.99	0.44
21:G:115:MET:SD	21:G:115:MET:N	2.90	0.44
21:G:120:THR:OG1	21:G:131:GLN:O	2.35	0.44
22:0:567:LYS:HE3	22:0:595:GLY:HA3	2.00	0.44
1:M:312:GLY:HA2	1:M:315:ILE:HG22	2.00	0.44
2:A:190:ALA:HB2	18:W:224:GLY:HA2	1.99	0.44
3:B:627:PHE:O	3:B:632:ARG:NH1	2.50	0.44
3:B:883:LEU:HB2	3:B:935:ARG:HA	1.99	0.44
14:S:210:ASN:HA	14:S:211:ASN:HA	1.64	0.44
22:0:220:GLU:HA	22:0:223:SER:HB3	1.99	0.44
22:0:424:GLU:HB3	22:0:432:ASN:HB3	1.99	0.44
25:6:132:CYS:HB2	25:6:175:ARG:HB2	1.99	0.44
26:7:643:PHE:HB2	26:7:652:ILE:HD11	1.99	0.44
1:M:314:LYS:HE2	1:M:314:LYS:HB2	1.84	0.44
3:B:195:CYS:HB3	3:B:782:LEU:HD12	1.99	0.44
5:E:147:HIS:HE1	5:E:149:LEU:HD13	1.83	0.44
9:J:57:ILE:HA	9:J:60:PHE:HB2	1.99	0.44
14:S:235:ASP:HA	14:S:242:LYS:HD3	1.99	0.44
18:W:17:VAL:HA	18:W:21:TYR:HD2	1.82	0.44
19:X:204:GLY:HA3	19:X:243:TYR:HB3	1.99	0.44
20:D:14:ARG:HE	20:D:17:LYS:HD2	1.81	0.44
22:0:39:ILE:HD11	22:0:475:PHE:HZ	1.81	0.44
24:4:276:CYS:N	24:4:281:ARG:O	2.50	0.44
27:2:480:VAL:HG11	27:2:500:GLN:NE2	2.32	0.44
2:A:12:ARG:NH2	3:B:1218:THR:OG1	2.50	0.44
2:A:18:GLN:O	3:B:1215:ARG:N	2.51	0.44
2:A:375:THR:OG1	2:A:433:GLU:OE1	2.28	0.44
2:A:1205:LYS:O	2:A:1274:ARG:NH2	2.50	0.44
3:B:52:ASN:OD1	3:B:177:LYS:N	2.51	0.44
3:B:304:ASP:OD2	3:B:307:ASP:N	2.45	0.44
15:O:133:LYS:HB3	15:O:137:ARG:HH12	1.82	0.44
27:2:17:ILE:HG22	27:2:22:GLN:HG3	1.99	0.44
2:A:590:ARG:NH1	2:A:620:LYS:O	2.44	0.44
3:B:248:SER:H	3:B:418:LYS:HZ1	1.65	0.44
3:B:344:LYS:HD3	3:B:348:ARG:H	1.82	0.44
3:B:843:GLN:HB2	3:B:993:THR:HB	2.00	0.44
4:C:113:VAL:HG12	4:C:144:ILE:HD13	2.00	0.44
15:O:69:ASN:HB2	30:T:-6:DT:H1'	2.00	0.44
15:O:184:SER:N	15:O:194:ILE:O	2.51	0.44
22:0:107:GLY:HA3	22:0:178:PHE:HZ	1.82	0.44
25:6:128:LEU:N	25:6:170:GLY:O	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:2:32:CYS:SG	27:2:107:SER:OG	2.61	0.44
2:A:170:THR:HG21	2:A:187:LYS:HA	2.00	0.44
7:H:37:LYS:HD2	7:H:37:LYS:HA	1.82	0.44
7:H:118:PHE:HB2	7:H:121:LEU:HB2	1.99	0.44
25:6:451:CYS:HB3	25:6:454:CYS:SG	2.57	0.44
27:2:239:ILE:HG23	27:2:247:ARG:HD3	1.99	0.44
27:2:254:ARG:NH2	27:2:261:GLN:O	2.47	0.44
27:2:261:GLN:HA	27:2:269:PHE:HA	2.00	0.44
2:A:672:ASP:O	2:A:675:THR:OG1	2.29	0.44
2:A:1332:PHE:HA	2:A:1335:ILE:HD13	2.00	0.44
3:B:763:GLN:HG2	3:B:765:PRO:HD2	2.00	0.44
12:Q:379:GLU:HA	13:P:63:ARG:HH22	1.82	0.44
18:W:92:PRO:HB3	18:W:194:ILE:HD11	1.98	0.44
22:0:31:THR:HA	22:0:34:VAL:HG12	2.00	0.44
24:4:212:VAL:HG21	24:4:224:LEU:HB3	2.00	0.44
2:A:678:GLU:O	2:A:682:THR:OG1	2.30	0.43
2:A:794:PRO:O	2:A:799:PHE:N	2.51	0.43
3:B:69:LEU:HB3	3:B:90:ILE:HG13	1.99	0.43
4:C:46:ILE:HD13	4:C:46:ILE:HG21	1.85	0.43
14:S:288:SER:OG	14:S:289:ALA:N	2.51	0.43
20:D:121:LYS:O	20:D:125:SER:HB3	2.18	0.43
22:0:258:ARG:HD2	22:0:262:ARG:HH21	1.83	0.43
22:0:345:ARG:NH2	22:0:354:GLU:OE2	2.51	0.43
22:0:448:PRO:O	22:0:452:ARG:HB2	2.17	0.43
3:B:45:SER:OG	3:B:46:GLN:NE2	2.51	0.43
3:B:523:CYS:SG	3:B:526:GLU:HG3	2.59	0.43
3:B:780:VAL:HG21	3:B:817:LEU:HD12	2.00	0.43
10:K:85:ASP:HA	10:K:88:LYS:HG2	1.99	0.43
20:D:57:LEU:HD22	20:D:157:GLN:HB3	2.00	0.43
22:0:502:ASP:OD2	22:0:521:ASN:ND2	2.51	0.43
26:7:562:THR:O	26:7:566:TYR:HB2	2.18	0.43
28:5:5:ARG:HH12	28:5:32:LEU:HD13	1.82	0.43
28:5:35:LEU:HB2	28:5:39:HIS:HB2	2.00	0.43
2:A:605:MET:HG2	2:A:621:THR:HG21	2.00	0.43
2:A:858:ASN:OD1	2:A:861:GLY:N	2.51	0.43
3:B:363:HIS:CD2	3:B:364:ILE:H	2.36	0.43
5:E:171:LYS:O	5:E:173:SER:N	2.51	0.43
16:U:12:ILE:HG13	16:U:13:ILE:N	2.33	0.43
24:4:25:LEU:HD13	24:4:163:ILE:HG21	2.00	0.43
26:7:593:PHE:HB2	26:7:745:ILE:HG21	2.01	0.43
27:2:475:ALA:HA	27:2:478:ILE:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:742:ASN:O	2:A:746:MET:HG2	2.18	0.43
3:B:244:LEU:HD23	3:B:362:PRO:HB2	1.99	0.43
3:B:1156:ASP:OD1	3:B:1157:ALA:N	2.45	0.43
9:J:45:CYS:SG	9:J:46:CYS:N	2.92	0.43
15:O:68:GLN:HE21	30:T:-5:DA:H4'	1.83	0.43
16:U:22:ARG:NH2	16:U:26:GLU:OE2	2.52	0.43
21:G:54:ILE:HD12	21:G:54:ILE:HA	1.90	0.43
22:O:295:SER:HA	22:O:383:LEU:HD21	2.00	0.43
2:A:451:HIS:CD2	2:A:453:MET:HB2	2.54	0.43
3:B:139:ALA:N	3:B:150:GLU:O	2.51	0.43
3:B:445:LYS:HE2	3:B:445:LYS:HB2	1.86	0.43
19:X:168:ARG:O	19:X:181:LEU:N	2.52	0.43
21:G:84:GLY:N	21:G:147:ILE:O	2.41	0.43
21:G:135:ASP:HB3	21:G:170:ALA:HA	2.00	0.43
22:O:424:GLU:OE1	22:O:432:ASN:ND2	2.51	0.43
29:N:43:DC:H2''	29:N:44:DT:H5''	2.01	0.43
2:A:669:THR:HG22	2:A:805:LEU:HD22	2.01	0.43
2:A:843:LYS:HD3	2:A:846:GLU:OE2	2.18	0.43
2:A:1319:VAL:HG23	2:A:1322:ILE:HG13	2.01	0.43
3:B:750:GLY:H	3:B:753:ALA:HB3	1.82	0.43
9:J:44:TYR:HA	9:J:47:ARG:HB2	2.01	0.43
13:P:322:THR:O	13:P:323:ARG:HD3	2.18	0.43
14:S:242:LYS:O	14:S:245:ILE:N	2.52	0.43
15:O:66:THR:OG1	15:O:67:LEU:N	2.52	0.43
16:U:44:LYS:HA	16:U:47:THR:HG22	2.01	0.43
18:W:176:MET:HA	18:W:179:ILE:HG22	2.00	0.43
23:1:620:LEU:HA	23:1:623:ILE:HD12	1.99	0.43
24:4:65:LEU:HB2	24:4:118:PHE:HE1	1.83	0.43
27:2:189:PHE:HA	27:2:192:LEU:HD12	2.01	0.43
2:A:481:ASP:OD1	2:A:481:ASP:N	2.49	0.43
2:A:1135:ARG:HA	2:A:1138:ILE:HG22	2.00	0.43
2:A:1144:LYS:NZ	2:A:1268:LEU:O	2.43	0.43
6:F:97:ARG:HD2	6:F:97:ARG:HA	1.89	0.43
7:H:58:THR:HG21	7:H:143:LEU:HD12	2.01	0.43
15:O:193:LEU:HB3	15:O:206:ILE:HB	2.01	0.43
22:O:633:ARG:HH21	22:O:636:LYS:HE2	1.83	0.43
23:1:472:GLN:NE2	24:4:41:ASP:OD2	2.52	0.43
27:2:345:PHE:HD2	27:2:378:ILE:HB	1.84	0.43
3:B:391:ASP:OD2	8:I:92:ARG:HG2	2.19	0.43
3:B:805:THR:O	3:B:1044:ALA:N	2.51	0.43
18:W:37:VAL:HG12	18:W:88:TYR:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:W:44:LYS:HD3	18:W:51:LYS:HG3	2.01	0.43
18:W:127:CYS:HG	18:W:129:THR:HG1	1.56	0.43
19:X:124:ASP:OD1	19:X:124:ASP:N	2.52	0.43
19:X:202:PHE:O	19:X:245:TRP:NE1	2.47	0.43
22:0:228:LYS:HZ3	22:0:452:ARG:HH11	1.67	0.43
23:1:264:PRO:HA	23:1:267:LYS:HB3	2.01	0.43
26:7:621:LYS:HA	26:7:621:LYS:HD2	1.87	0.43
27:2:367:LYS:HG3	27:2:376:GLY:HA2	2.00	0.43
27:2:373:MET:SD	27:2:375:LEU:HB3	2.58	0.43
27:2:410:ARG:HE	27:2:410:ARG:HB2	1.67	0.43
1:M:202:GLU:O	1:M:206:THR:OG1	2.28	0.43
2:A:346:ASP:OD2	3:B:1106:ARG:NH1	2.51	0.43
2:A:1227:ILE:HB	2:A:1239:ARG:HB2	2.00	0.43
3:B:428:ILE:HA	3:B:445:LYS:HE3	1.99	0.43
8:I:7:CYS:HB2	8:I:14:LEU:HD21	2.00	0.43
18:W:12:LEU:HD11	18:W:182:ILE:HG23	2.00	0.43
21:G:116:PRO:HD2	21:G:119:LEU:HD22	2.00	0.43
25:6:277:CYS:O	25:6:281:ASN:HB2	2.19	0.43
26:7:494:PRO:HA	26:7:499:ARG:HD2	2.01	0.43
26:7:673:ILE:HG22	26:7:708:LEU:HB2	2.01	0.43
2:A:547:LEU:HG	10:K:58:PHE:CE1	2.54	0.43
18:W:29:LEU:HA	18:W:32:ILE:HG12	1.99	0.43
19:X:168:ARG:HA	19:X:181:LEU:HB3	2.01	0.43
19:X:218:ASP:HB3	19:X:241:PRO:HG3	2.01	0.43
22:0:19:PRO:O	22:0:23:ASN:ND2	2.36	0.43
22:0:254:THR:OG1	22:0:432:ASN:OD1	2.29	0.43
22:0:257:LEU:HD13	22:0:343:LYS:HG2	2.00	0.43
25:6:141:LEU:HD13	25:6:145:ARG:HG2	2.01	0.43
25:6:390:ALA:N	25:6:428:ARG:O	2.39	0.43
3:B:68:THR:HG21	12:Q:334:VAL:HG21	2.01	0.42
3:B:559:SER:HA	3:B:563:MET:SD	2.58	0.42
7:H:91:ASP:OD1	7:H:91:ASP:N	2.52	0.42
21:G:58:ARG:HD3	21:G:58:ARG:HA	1.73	0.42
22:0:529:PHE:CD2	22:0:621:LEU:HD21	2.53	0.42
27:2:91:LYS:HA	27:2:96:LEU:HA	1.99	0.42
1:M:127:GLN:HA	1:M:130:PHE:HB2	2.01	0.42
2:A:590:ARG:NH1	2:A:621:THR:OG1	2.52	0.42
3:B:1181:GLU:HA	3:B:1188:LYS:HE3	2.00	0.42
12:Q:117:HIS:HB2	13:P:135:PHE:CE1	2.55	0.42
20:D:148:LEU:O	20:D:152:SER:OG	2.29	0.42
21:G:100:GLU:HB3	21:G:107:LYS:HD2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:6:291:LEU:HD13	25:6:297:LEU:HD13	2.01	0.42
27:2:474:TYR:O	27:2:478:ILE:HG12	2.19	0.42
2:A:69:THR:HG21	18:W:151:LEU:HD22	2.01	0.42
2:A:1044:TRP:O	2:A:1048:ASN:ND2	2.39	0.42
5:E:180:ARG:HH21	5:E:192:ARG:HB2	1.83	0.42
7:H:130:ARG:O	7:H:133:ASN:N	2.53	0.42
7:H:134:ASN:N	7:H:134:ASN:OD1	2.51	0.42
8:I:17:ARG:HE	8:I:28:GLU:CD	2.23	0.42
16:U:260:CYS:HB3	16:U:281:VAL:HB	2.02	0.42
19:X:142:VAL:HB	19:X:146:GLU:HG3	2.01	0.42
22:0:631:GLU:HB3	22:0:633:ARG:HH22	1.84	0.42
23:1:546:LEU:HD11	23:1:600:VAL:HG13	2.01	0.42
26:7:664:LEU:HB2	26:7:689:ARG:HD2	2.01	0.42
1:M:45:CYS:HB3	1:M:48:CYS:SG	2.59	0.42
1:M:187:ARG:HA	1:M:187:ARG:HD3	1.74	0.42
1:M:306:GLU:HA	1:M:309:ILE:HD12	2.01	0.42
2:A:552:TRP:CD1	2:A:651:LYS:HB3	2.55	0.42
8:I:103:CYS:SG	8:I:104:LEU:N	2.92	0.42
22:0:690:ARG:HA	22:0:693:LEU:HD12	2.01	0.42
22:0:711:ASP:OD1	22:0:712:MET:N	2.51	0.42
24:4:23:PRO:HB2	24:4:172:LEU:HD22	2.01	0.42
24:4:164:SER:HA	24:4:172:LEU:HD12	2.02	0.42
27:2:242:LEU:O	27:2:247:ARG:NH2	2.52	0.42
28:5:9:LEU:HD11	28:5:39:HIS:HB3	2.01	0.42
2:A:834:THR:HA	2:A:837:ILE:HG22	2.01	0.42
3:B:614:SER:OG	3:B:632:ARG:NH1	2.52	0.42
3:B:983:ARG:HD2	3:B:1091:TYR:HD2	1.85	0.42
13:P:108:LEU:HB3	13:P:118:HIS:HA	2.00	0.42
15:O:172:LEU:HD22	15:O:193:LEU:HD13	2.01	0.42
17:V:68:THR:O	17:V:79:ILE:N	2.45	0.42
20:D:56:ARG:HH22	20:D:155:ARG:HH21	1.67	0.42
23:1:550:CYS:HB2	23:1:616:LEU:HD11	2.00	0.42
24:4:79:TYR:N	24:4:82:GLY:O	2.53	0.42
2:A:483:ASP:N	2:A:483:ASP:OD1	2.52	0.42
2:A:1003:LYS:HA	2:A:1003:LYS:HD3	1.85	0.42
14:S:278:LYS:HD2	14:S:301:ALA:HB2	2.00	0.42
15:O:130:ASP:OD1	15:O:130:ASP:N	2.53	0.42
18:W:90:LYS:HB3	18:W:93:HIS:HB2	2.01	0.42
18:W:90:LYS:HD2	18:W:196:GLU:HG3	2.02	0.42
25:6:116:THR:O	25:6:120:ARG:NH2	2.53	0.42
29:N:20:DA:C8	29:N:21:DT:H72	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:764:CYS:SG	2:A:765:VAL:N	2.93	0.42
5:E:202:SER:OG	5:E:206:GLY:N	2.53	0.42
22:0:543:SER:HB2	23:1:357:THR:HB	2.01	0.42
23:1:421:ILE:HG22	23:1:423:ASP:H	1.84	0.42
26:7:412:THR:HB	26:7:457:TYR:HB2	2.01	0.42
26:7:439:THR:OG1	26:7:440:SER:N	2.51	0.42
26:7:518:VAL:HG13	26:7:681:ARG:HB2	2.00	0.42
1:M:87:LEU:HD13	1:M:151:LYS:HD3	2.01	0.42
2:A:954:TRP:HE3	2:A:955:PRO:HD2	1.84	0.42
3:B:380:TYR:CZ	3:B:384:ARG:HD2	2.55	0.42
3:B:1074:ASN:ND2	3:B:1077:THR:H	2.18	0.42
5:E:50:MET:SD	5:E:50:MET:N	2.93	0.42
12:Q:29:ARG:HB3	12:Q:33:ARG:NH1	2.33	0.42
16:U:258:TRP:HH2	16:U:285:TRP:CD1	2.38	0.42
22:0:529:PHE:HD2	22:0:621:LEU:HD21	1.85	0.42
25:6:432:CYS:O	25:6:434:GLN:NE2	2.47	0.42
2:A:566:ILE:HB	7:H:96:VAL:HG13	2.01	0.42
2:A:1339:LEU:HD21	5:E:147:HIS:CD2	2.54	0.42
3:B:1038:SER:OG	3:B:1040:ASN:N	2.52	0.42
4:C:260:LEU:HA	4:C:263:THR:HG22	2.02	0.42
8:I:111:THR:OG1	8:I:112:SER:N	2.51	0.42
12:Q:363:GLY:HA2	12:Q:395:PHE:HA	2.02	0.42
18:W:352:GLU:HA	18:W:355:LYS:HE2	2.01	0.42
22:0:643:ARG:HH11	22:0:647:ARG:HH12	1.68	0.42
25:6:148:MET:O	25:6:152:TYR:HB2	2.20	0.42
25:6:218:ARG:HB2	25:6:254:LEU:HD21	2.02	0.42
26:7:495:ALA:HB3	26:7:498:PHE:HD2	1.84	0.42
27:2:22:GLN:OE1	27:2:85:HIS:ND1	2.37	0.42
27:2:87:LEU:HD12	27:2:87:LEU:HA	1.85	0.42
1:M:108:LYS:HD3	1:M:108:LYS:HA	1.78	0.42
2:A:691:LEU:HD23	2:A:691:LEU:HA	1.88	0.42
2:A:1093:LYS:HB3	2:A:1094:VAL:H	1.66	0.42
3:B:617:ARG:HE	3:B:619:ILE:HD13	1.85	0.42
4:C:207:CYS:SG	4:C:208:GLU:N	2.92	0.42
6:F:92:ARG:HD2	6:F:92:ARG:HA	1.80	0.42
9:J:3:VAL:HA	9:J:4:PRO:HD3	1.88	0.42
22:0:380:ARG:NH1	22:0:380:ARG:O	2.52	0.42
22:0:639:LEU:HB3	22:0:650:GLU:HG3	2.00	0.42
23:1:188:ASN:OD1	23:1:189:LYS:N	2.51	0.42
27:2:483:TRP:CZ2	27:2:485:ASP:HB2	2.55	0.42
2:A:336:ILE:HD11	3:B:1203:LEU:HD13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:431:LYS:HE2	2:A:431:LYS:HB2	1.90	0.41
22:0:216:PRO:HA	22:0:219:ALA:HB3	2.01	0.41
22:0:342:LEU:O	22:0:346:MET:HB2	2.19	0.41
22:0:639:LEU:HD23	22:0:642:MET:HE1	2.02	0.41
23:1:369:ASP:OD1	23:1:369:ASP:N	2.53	0.41
26:7:354:ILE:HG21	26:7:430:LEU:HB2	2.02	0.41
27:2:59:LEU:HB2	27:2:96:LEU:HB3	2.01	0.41
29:N:-5:DT:H6	29:N:-5:DT:H2'	1.65	0.41
2:A:467:THR:OG1	2:A:468:PHE:N	2.53	0.41
2:A:857:ARG:HB3	2:A:861:GLY:HA2	2.02	0.41
3:B:341:LEU:HB3	3:B:344:LYS:HG3	2.02	0.41
3:B:839:MET:O	3:B:991:GLY:N	2.43	0.41
4:C:211:ASP:N	4:C:211:ASP:OD1	2.53	0.41
12:Q:120:LYS:HE3	13:P:131:ASN:HB2	2.01	0.41
16:U:9:VAL:HA	16:U:12:ILE:HG12	2.02	0.41
21:G:56:ILE:HG13	21:G:57:GLN:H	1.85	0.41
25:6:452:PRO:HA	25:6:455:GLU:HG2	2.02	0.41
26:7:326:VAL:HA	26:7:329:ARG:HB3	2.02	0.41
26:7:490:VAL:HG12	26:7:514:THR:HB	2.03	0.41
1:M:211:LYS:NZ	15:O:184:SER:OG	2.42	0.41
2:A:120:GLU:OE1	2:A:123:ARG:NH1	2.54	0.41
2:A:397:ASN:HB3	10:K:2:ASN:ND2	2.35	0.41
2:A:789:LYS:HB2	8:I:69:PRO:HD3	2.01	0.41
2:A:1396:ALA:N	2:A:1419:ASP:OD2	2.53	0.41
7:H:111:LEU:HA	7:H:128:ASN:HB2	2.02	0.41
15:O:109:PRO:HB2	15:O:111:THR:HG23	2.03	0.41
15:O:200:PRO:HG2	15:O:202:ILE:HD12	2.02	0.41
22:0:133:CYS:O	22:0:137:THR:OG1	2.25	0.41
26:7:573:THR:O	26:7:577:ARG:HG3	2.20	0.41
2:A:265:LYS:O	2:A:269:ILE:HG12	2.20	0.41
2:A:528:LEU:HD22	2:A:751:SER:HB3	2.02	0.41
2:A:886:ILE:O	2:A:944:ARG:NH2	2.53	0.41
15:O:69:ASN:ND2	30:T:-7:DT:H2''	2.35	0.41
15:O:211:LYS:HB3	30:T:-4:DT:H4'	2.02	0.41
16:U:18:VAL:HG11	16:U:39:LYS:HD3	2.02	0.41
18:W:123:MET:CE	18:W:159:ASP:HB2	2.51	0.41
24:4:272:PHE:HB2	25:6:372:LEU:HD22	2.02	0.41
24:4:304:LYS:HE2	24:4:304:LYS:HB3	1.90	0.41
25:6:194:ASP:HA	25:6:197:LYS:HE3	2.02	0.41
26:7:126:ASP:OD2	26:7:130:ARG:NE	2.53	0.41
26:7:766:LYS:HB2	26:7:766:LYS:HE2	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:259:THR:HG1	1:M:281:SER:HG	1.65	0.41
2:A:32:VAL:N	2:A:81:PHE:O	2.51	0.41
2:A:239:LEU:HD12	2:A:240:PRO:HD2	2.03	0.41
2:A:603:ASN:OD1	2:A:603:ASN:N	2.50	0.41
2:A:1142:THR:O	2:A:1145:SER:OG	2.28	0.41
3:B:521:LEU:O	3:B:540:SER:N	2.50	0.41
3:B:526:GLU:O	3:B:538:ASN:ND2	2.54	0.41
6:F:116:ASP:OD2	6:F:119:ARG:N	2.50	0.41
9:J:30:LEU:HG	9:J:35:ALA:HB2	2.03	0.41
10:K:57:LEU:HG	10:K:77:THR:HA	2.03	0.41
13:P:121:ASP:OD1	13:P:121:ASP:N	2.52	0.41
14:S:238:PRO:HB2	14:S:240:PRO:HD2	2.02	0.41
18:W:90:LYS:HG3	18:W:92:PRO:HD2	2.03	0.41
23:1:432:TYR:HD1	25:6:311:ASN:HA	1.86	0.41
24:4:32:ILE:HG13	24:4:79:TYR:HA	2.02	0.41
25:6:133:SER:H	25:6:136:MET:HE2	1.86	0.41
26:7:525:GLY:O	26:7:528:ASN:ND2	2.47	0.41
29:N:12:DG:N2	30:T:-11:DC:O2	2.53	0.41
2:A:115:LEU:HD21	2:A:145:LYS:HD3	2.01	0.41
3:B:284:ILE:H	3:B:284:ILE:HG13	1.63	0.41
3:B:550:ASP:HA	3:B:551:PRO:HD3	1.82	0.41
3:B:605:ARG:NH2	3:B:691:GLU:OE1	2.53	0.41
4:C:162:GLY:HA3	4:C:170:TRP:CE2	2.55	0.41
16:U:3:ASN:HB3	16:U:6:ALA:HB3	2.01	0.41
18:W:35:HIS:HA	18:W:207:ILE:HB	2.03	0.41
20:D:202:ILE:HD13	20:D:207:LEU:HD13	2.02	0.41
22:0:104:ARG:NH2	22:0:171:LEU:O	2.54	0.41
22:0:609:GLY:H	22:0:668:ARG:NH1	2.18	0.41
26:7:568:GLU:HG3	26:7:580:LEU:HD21	2.01	0.41
27:2:59:LEU:HA	27:2:62:LEU:HD12	2.01	0.41
2:A:66:LYS:HE2	2:A:68:GLN:HA	2.03	0.41
2:A:185:TRP:HZ3	2:A:200:ARG:HB3	1.86	0.41
3:B:957:ASN:ND2	3:B:959:ASP:OD1	2.50	0.41
4:C:43:THR:HG23	4:C:170:TRP:HD1	1.85	0.41
17:V:63:LYS:N	17:V:84:GLN:O	2.51	0.41
24:4:71:ASN:OD1	24:4:71:ASN:N	2.52	0.41
26:7:569:TYR:CE1	26:7:577:ARG:HB3	2.56	0.41
1:M:157:CYS:HB3	1:M:213:ILE:HG21	2.02	0.41
2:A:96:ILE:HD13	2:A:99:ILE:HD12	2.03	0.41
2:A:113:LEU:HD21	2:A:218:ASP:HB3	2.02	0.41
3:B:1024:ALA:HA	3:B:1027:ILE:HG22	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:4:THR:HG23	7:H:58:THR:HG23	2.03	0.41
7:H:93:TYR:HD2	7:H:143:LEU:HB3	1.86	0.41
12:Q:381:ASP:OD1	12:Q:381:ASP:N	2.53	0.41
13:P:112:ASP:OD1	13:P:112:ASP:N	2.51	0.41
18:W:61:LEU:HD23	18:W:66:LEU:HD12	2.02	0.41
21:G:45:ILE:HA	21:G:78:VAL:HG12	2.03	0.41
21:G:101:VAL:HB	21:G:108:VAL:HG13	2.03	0.41
23:1:168:SER:HA	23:1:173:LYS:HG3	2.02	0.41
24:4:214:LYS:HD3	24:4:237:HIS:HB2	2.02	0.41
28:5:48:GLU:HA	28:5:51:LYS:HB2	2.03	0.41
28:5:57:LEU:HD23	28:5:57:LEU:HA	1.96	0.41
29:N:35:DG:H22	30:T:-35:DC:H42	1.68	0.41
1:M:137:CYS:HB2	1:M:142:LEU:HB2	2.01	0.41
2:A:85:ASP:O	2:A:273:ASN:ND2	2.54	0.41
2:A:172:PRO:HB3	2:A:185:TRP:CD2	2.55	0.41
2:A:1116:LEU:HG	2:A:1308:THR:HG21	2.03	0.41
2:A:1300:LYS:HZ3	14:S:302:CYS:HA	1.85	0.41
3:B:562:GLY:O	3:B:590:HIS:ND1	2.53	0.41
3:B:700:SER:O	3:B:700:SER:OG	2.35	0.41
3:B:802:PRO:HB3	3:B:1091:TYR:CG	2.56	0.41
3:B:826:ALA:HB3	3:B:1011:ILE:HG13	2.03	0.41
8:I:65:ASP:HA	8:I:66:PRO:HD3	1.91	0.41
12:Q:111:LEU:HA	12:Q:114:MET:HE2	2.03	0.41
13:P:74:PRO:HD2	13:P:77:LEU:HD12	2.03	0.41
16:U:239:PRO:O	16:U:270:ASN:N	2.54	0.41
16:U:274:TYR:HD2	17:V:87:VAL:HG11	1.85	0.41
17:V:86:THR:HB	17:V:105:VAL:HG12	2.03	0.41
18:W:123:MET:N	18:W:157:VAL:O	2.39	0.41
19:X:119:ILE:HA	19:X:121:LYS:HE3	2.03	0.41
22:0:70:ILE:N	22:0:231:ILE:O	2.38	0.41
22:0:111:ARG:NH1	22:0:130:ASP:O	2.54	0.41
22:0:567:LYS:HA	22:0:594:ARG:HE	1.86	0.41
27:2:26:TYR:OH	27:2:84:LEU:O	2.27	0.41
27:2:219:VAL:O	27:2:223:HIS:ND1	2.39	0.41
29:N:5:DT:H6	29:N:5:DT:H2'	1.63	0.41
29:N:47:DA:H2''	29:N:48:DC:H5'	2.03	0.41
1:M:171:ILE:HG13	1:M:172:MET:HE2	2.03	0.41
2:A:434:ARG:HD2	2:A:437:MET:HE1	2.02	0.41
2:A:635:ARG:HD3	2:A:635:ARG:HA	1.81	0.41
3:B:1164:GLY:N	3:B:1190:ASP:OD2	2.54	0.41
12:Q:114:MET:N	12:Q:114:MET:SD	2.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:78:CYS:SG	15:O:151:LYS:NZ	2.94	0.41
22:0:240:ILE:HD12	22:0:240:ILE:HA	1.95	0.41
22:0:344:THR:HA	22:0:347:LYS:HE2	2.03	0.41
22:0:493:LEU:HB3	22:0:678:VAL:HG12	2.03	0.41
29:N:34:DC:H2 ⁺	29:N:35:DG:N7	2.36	0.41
1:M:131:ALA:O	1:M:135:MET:HG2	2.21	0.40
1:M:199:LYS:HE3	1:M:202:GLU:HB2	2.03	0.40
2:A:315:LEU:HB2	2:A:321:PRO:HA	2.03	0.40
2:A:343:LYS:NZ	3:B:1151:LEU:HD12	2.35	0.40
2:A:356:ASP:HB2	2:A:469:ARG:HD2	2.03	0.40
2:A:357:PRO:HG3	3:B:832:GLY:HA2	2.02	0.40
2:A:1009:ASN:O	2:A:1013:ASP:HB2	2.21	0.40
3:B:1207:LEU:HD22	3:B:1212:ILE:HG13	2.02	0.40
4:C:18:VAL:HG12	4:C:20:PHE:HD1	1.86	0.40
13:P:136:THR:HG23	13:P:215:VAL:HG21	2.03	0.40
22:0:425:ILE:HB	22:0:428:ALA:HB2	2.03	0.40
25:6:378:ARG:O	25:6:381:HIS:NE2	2.54	0.40
26:7:162:GLU:N	26:7:174:LYS:O	2.45	0.40
26:7:190:THR:HG23	26:7:213:ILE:HG22	2.02	0.40
26:7:568:GLU:HA	26:7:571:ARG:HG2	2.03	0.40
2:A:391:LEU:HD23	2:A:402:ALA:HB2	2.04	0.40
9:J:51:LEU:HA	9:J:51:LEU:HD12	1.80	0.40
13:P:141:LYS:HE2	13:P:141:LYS:HB3	1.91	0.40
16:U:280:GLN:HB2	17:V:61:THR:HG22	2.03	0.40
17:V:23:LEU:HD23	17:V:23:LEU:HA	1.91	0.40
22:0:554:TRP:HZ3	22:0:559:ILE:HD12	1.86	0.40
26:7:250:VAL:HG21	26:7:329:ARG:HD3	2.04	0.40
27:2:131:SER:HB2	27:2:135:LEU:HD22	2.02	0.40
1:M:214:LEU:HD12	1:M:215:ARG:HG3	2.04	0.40
1:M:297:LYS:HD2	1:M:300:GLN:HE21	1.85	0.40
2:A:90:VAL:HG21	2:A:300:VAL:HG11	2.04	0.40
2:A:235:ILE:HD13	2:A:235:ILE:HA	1.93	0.40
2:A:977:LYS:HA	2:A:977:LYS:HD3	1.81	0.40
2:A:1215:ARG:O	2:A:1218:GLN:NE2	2.47	0.40
3:B:234:ILE:HG21	3:B:257:LYS:HD2	2.03	0.40
3:B:417:PHE:O	3:B:421:PHE:HB2	2.21	0.40
7:H:27:GLU:HA	7:H:39:THR:HA	2.02	0.40
13:P:77:LEU:O	13:P:81:TRP:HE3	2.04	0.40
17:V:24:ASP:HA	17:V:27:ILE:HB	2.02	0.40
22:0:19:PRO:HG3	22:0:739:TRP:CE2	2.57	0.40
23:1:567:HIS:CE1	23:1:582:LEU:HG	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:7:516:THR:HB	26:7:518:VAL:HG12	2.03	0.40
29:N:38:DG:H2'	29:N:39:DA:N7	2.37	0.40
1:M:286:ILE:HD11	1:M:291:ILE:HB	2.03	0.40
2:A:757:ASN:HD21	14:S:292:PRO:HB3	1.86	0.40
3:B:129:PHE:CD2	3:B:164:LYS:HB2	2.57	0.40
3:B:372:SER:OG	3:B:373:ARG:NH1	2.54	0.40
3:B:1191:ILE:HD12	3:B:1191:ILE:HA	1.89	0.40
8:I:81:ARG:HD3	8:I:81:ARG:HA	1.84	0.40
13:P:223:GLN:NE2	13:P:224:VAL:O	2.54	0.40
16:U:38:LEU:HA	16:U:41:ILE:HG22	2.03	0.40
20:D:39:ASN:HB2	20:D:45:GLU:HB2	2.02	0.40
22:0:259:ARG:HG2	22:0:262:ARG:HH12	1.86	0.40
26:7:558:TRP:HZ3	26:7:735:VAL:HA	1.86	0.40
26:7:676:HIS:NE2	29:N:51:DG:H3'	2.37	0.40
2:A:851:HIS:ND1	6:F:139:PRO:HG3	2.36	0.40
2:A:1452:LYS:HE3	2:A:1452:LYS:HB3	1.89	0.40
3:B:75:ALA:HB2	3:B:83:ASN:H	1.87	0.40
3:B:264:SER:OG	3:B:265:SER:N	2.54	0.40
4:C:56:THR:HG23	4:C:153:LEU:HD11	2.02	0.40
8:I:75:CYS:HA	8:I:76:PRO:HD3	1.95	0.40
13:P:300:LEU:HD23	13:P:303:LEU:HD21	2.03	0.40
16:U:267:VAL:HG22	16:U:269:ILE:HG23	2.02	0.40
22:0:112:LYS:HG2	23:1:344:GLN:OE1	2.21	0.40
22:0:529:PHE:HA	22:0:532:ILE:HG12	2.03	0.40
25:6:347:TYR:HE2	25:6:359:LEU:HD13	1.87	0.40
26:7:242:LEU:HD21	26:7:314:HIS:HB2	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [\(i\)](#)

5.3.1 Protein backbone [\(i\)](#)

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

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	M	273/345 (79%)	238 (87%)	35 (13%)	0	100	100
2	A	1417/1733 (82%)	1249 (88%)	168 (12%)	0	100	100
3	B	1150/1224 (94%)	1000 (87%)	148 (13%)	2 (0%)	44	74
4	C	263/318 (83%)	231 (88%)	32 (12%)	0	100	100
5	E	212/215 (99%)	193 (91%)	19 (9%)	0	100	100
6	F	85/155 (55%)	78 (92%)	7 (8%)	0	100	100
7	H	129/146 (88%)	109 (84%)	20 (16%)	0	100	100
8	I	112/122 (92%)	98 (88%)	14 (12%)	0	100	100
9	J	64/70 (91%)	55 (86%)	9 (14%)	0	100	100
10	K	113/120 (94%)	107 (95%)	6 (5%)	0	100	100
11	L	42/70 (60%)	30 (71%)	12 (29%)	0	100	100
12	Q	208/735 (28%)	198 (95%)	10 (5%)	0	100	100
13	P	173/400 (43%)	161 (93%)	12 (7%)	0	100	100
14	S	162/309 (52%)	143 (88%)	18 (11%)	1 (1%)	22	55
15	O	179/240 (75%)	168 (94%)	11 (6%)	0	100	100
16	U	101/286 (35%)	96 (95%)	5 (5%)	0	100	100
17	V	100/122 (82%)	97 (97%)	3 (3%)	0	100	100
18	W	241/482 (50%)	230 (95%)	11 (5%)	0	100	100
19	X	158/328 (48%)	145 (92%)	13 (8%)	0	100	100
20	D	164/221 (74%)	159 (97%)	5 (3%)	0	100	100
21	G	169/171 (99%)	154 (91%)	14 (8%)	1 (1%)	22	55
22	0	750/778 (96%)	715 (95%)	35 (5%)	0	100	100
23	1	407/642 (63%)	394 (97%)	13 (3%)	0	100	100
24	4	286/338 (85%)	276 (96%)	10 (4%)	0	100	100
25	6	351/461 (76%)	334 (95%)	17 (5%)	0	100	100
26	7	604/843 (72%)	564 (93%)	40 (7%)	0	100	100
27	2	435/513 (85%)	417 (96%)	18 (4%)	0	100	100
28	5	64/72 (89%)	55 (86%)	9 (14%)	0	100	100
All	All	8412/11459 (73%)	7694 (92%)	714 (8%)	4 (0%)	100	100

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	B	364	ILE
3	B	363	HIS
21	G	57	GLN
14	S	167	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	M	245/299 (82%)	245 (100%)	0	100	100
2	A	1235/1520 (81%)	1232 (100%)	3 (0%)	92	94
3	B	1000/1061 (94%)	997 (100%)	3 (0%)	91	92
4	C	233/274 (85%)	231 (99%)	2 (1%)	75	82
5	E	196/197 (100%)	196 (100%)	0	100	100
6	F	77/137 (56%)	77 (100%)	0	100	100
7	H	118/128 (92%)	116 (98%)	2 (2%)	56	72
8	I	108/116 (93%)	106 (98%)	2 (2%)	52	69
9	J	61/65 (94%)	61 (100%)	0	100	100
10	K	99/102 (97%)	99 (100%)	0	100	100
11	L	39/57 (68%)	39 (100%)	0	100	100
12	Q	147/641 (23%)	144 (98%)	3 (2%)	50	68
13	P	166/363 (46%)	165 (99%)	1 (1%)	84	88
14	S	141/274 (52%)	140 (99%)	1 (1%)	81	86
15	O	153/205 (75%)	153 (100%)	0	100	100
16	U	99/260 (38%)	96 (97%)	3 (3%)	36	58
17	V	94/108 (87%)	93 (99%)	1 (1%)	70	79
18	W	224/429 (52%)	223 (100%)	1 (0%)	89	91
19	X	144/295 (49%)	142 (99%)	2 (1%)	62	75
20	D	146/200 (73%)	146 (100%)	0	100	100
21	G	151/152 (99%)	151 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
22	0	684/707 (97%)	684 (100%)	0	100	100
23	1	389/589 (66%)	387 (100%)	2 (0%)	86	90
24	4	259/300 (86%)	259 (100%)	0	100	100
25	6	322/418 (77%)	322 (100%)	0	100	100
26	7	540/737 (73%)	537 (99%)	3 (1%)	84	88
27	2	394/468 (84%)	392 (100%)	2 (0%)	86	90
28	5	53/66 (80%)	53 (100%)	0	100	100
All	All	7517/10168 (74%)	7486 (100%)	31 (0%)	88	91

All (31) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	88	LYS
2	A	257	ARG
2	A	619	LYS
3	B	476	ARG
3	B	884	ARG
3	B	995	ARG
4	C	116	LYS
4	C	205	LYS
7	H	77	ARG
7	H	130	ARG
8	I	5	ARG
8	I	8	ARG
12	Q	24	ARG
12	Q	330	ARG
12	Q	333	LYS
13	P	323	ARG
14	S	234	LYS
16	U	44	LYS
16	U	50	LYS
16	U	257	ARG
17	V	46	LYS
18	W	351	ARG
19	X	155	LYS
19	X	208	LYS
23	1	306	ARG
23	1	353	ARG
26	7	344	ARG
26	7	348	ARG

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Mol	Chain	Res	Type
26	7	754	ARG
27	2	419	LYS
27	2	450	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	45	GLN
2	A	68	GLN
2	A	339	ASN
2	A	425	GLN
2	A	445	ASN
2	A	966	ASN
2	A	996	ASN
2	A	1188	GLN
2	A	1330	ASN
3	B	363	HIS
3	B	784	ASN
5	E	101	GLN
9	J	23	ASN
10	K	2	ASN
12	Q	113	ASN
13	P	90	GLN
13	P	139	ASN
14	S	183	ASN
14	S	304	ASN
16	U	40	ASN
18	W	50	ASN
20	D	138	ASN
20	D	173	HIS
21	G	153	GLN
22	0	577	GLN
23	1	342	ASN
23	1	554	HIS
23	1	602	ASN
23	1	610	ASN
23	1	639	ASN
24	4	71	ASN
25	6	163	GLN
26	7	584	ASN
26	7	589	GLN
26	7	672	GLN

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Mol	Chain	Res	Type
26	7	740	HIS
27	2	352	ASN
27	2	500	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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 18 ligands modelled in this entry, 17 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
33	SF4	0	801	-	0,12,12	-	-	-		

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
33	SF4	0	801	-	-	-	0/6/5/5

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
33	0	801	SF4	2	0

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.

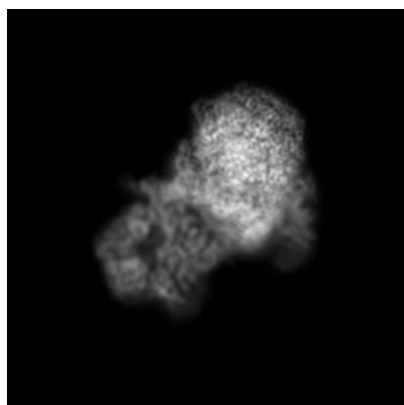
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-42437. These allow visual inspection of the internal detail of the map and identification of artifacts.

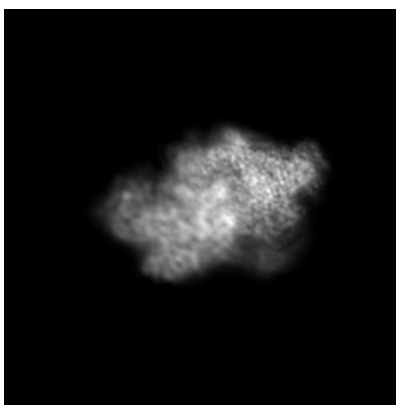
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

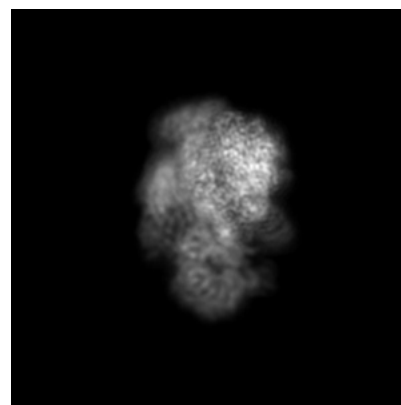
6.1.1 Primary map



X



Y



Z

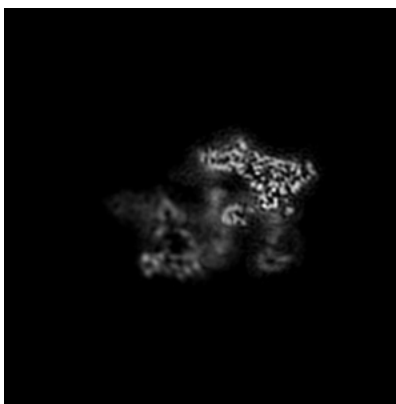
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

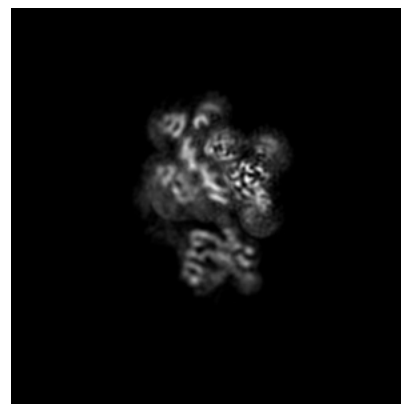
6.2.1 Primary map



X Index: 192



Y Index: 192

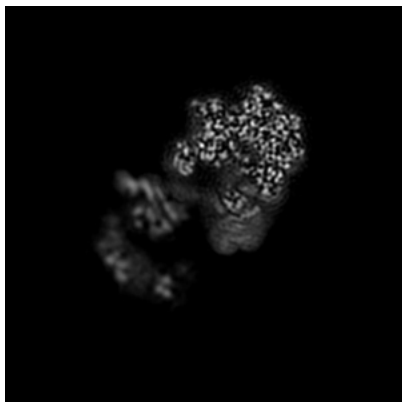


Z Index: 192

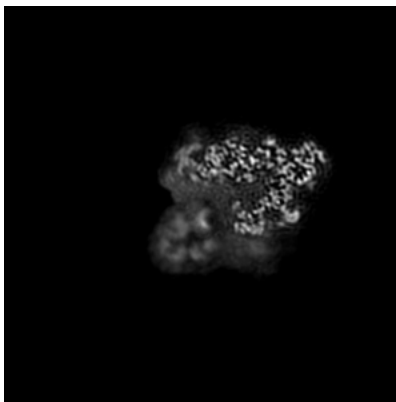
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

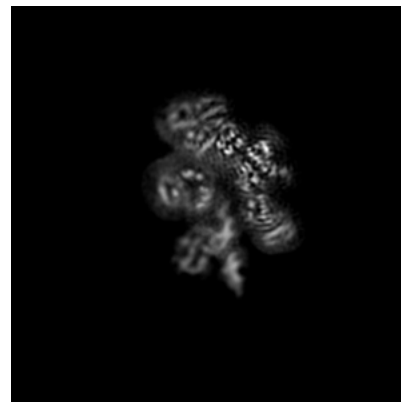
6.3.1 Primary map



X Index: 216



Y Index: 232

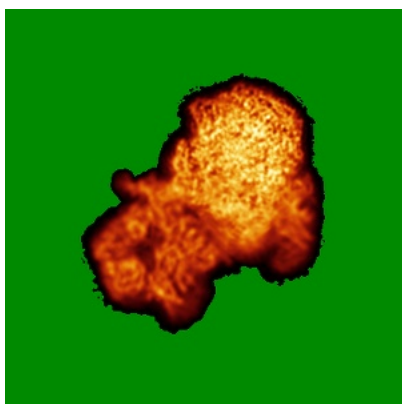


Z Index: 210

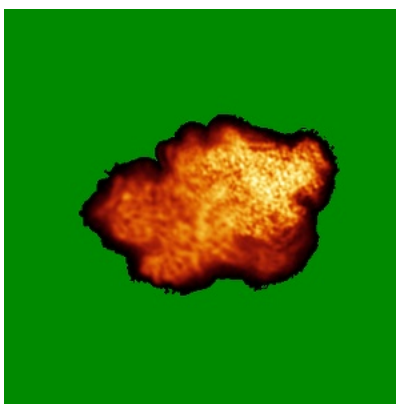
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

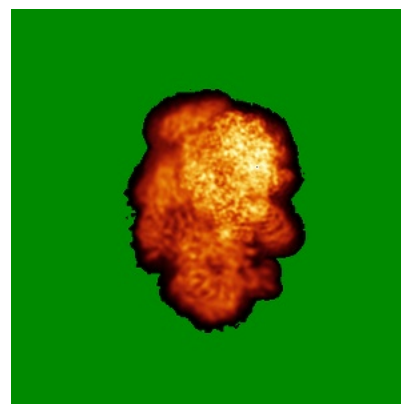
6.4.1 Primary map



X



Y

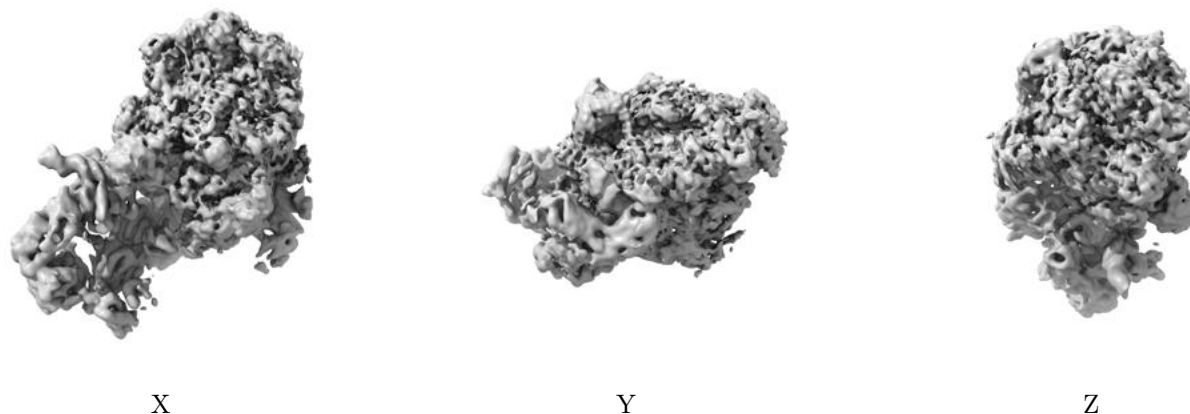


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

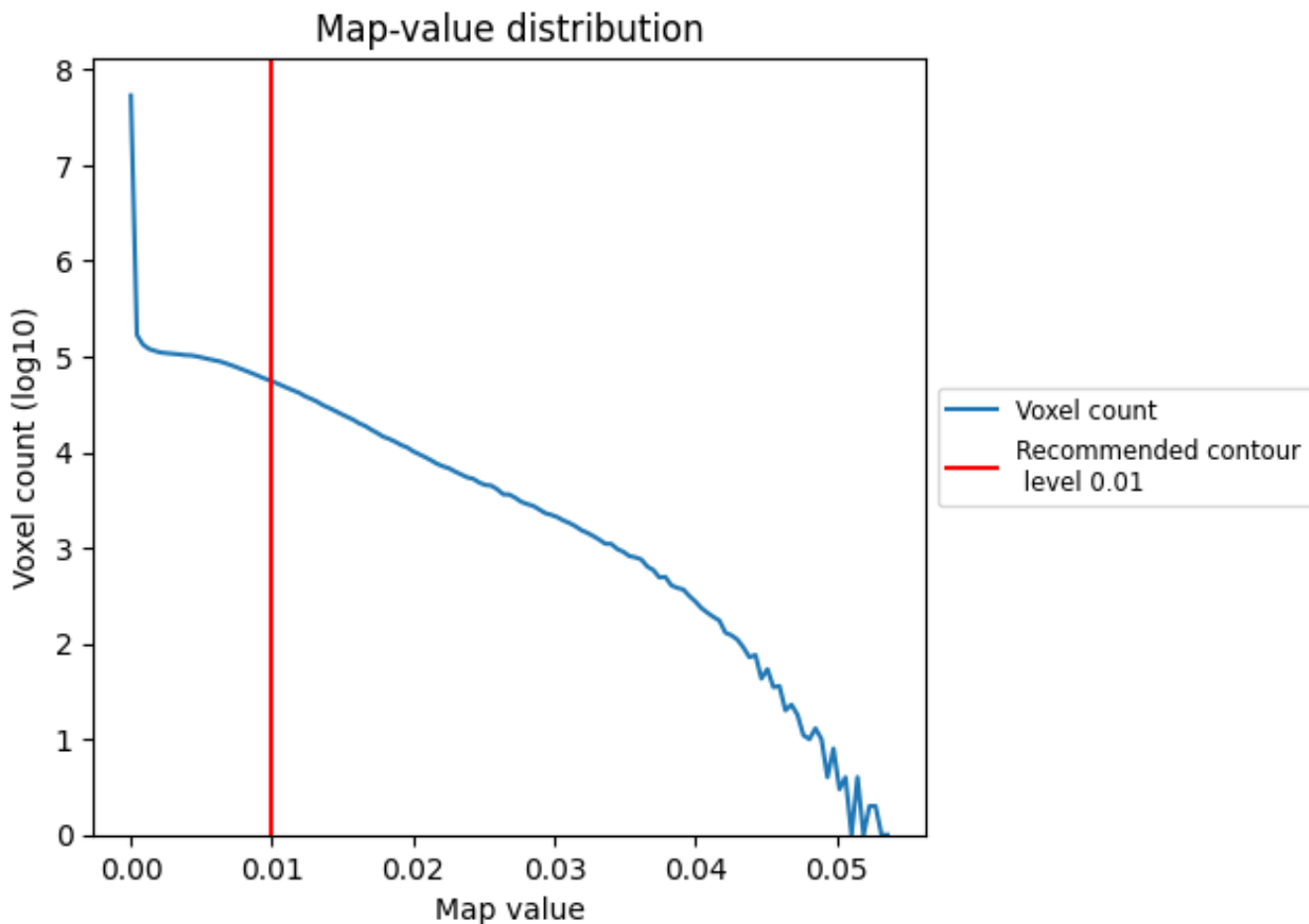
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

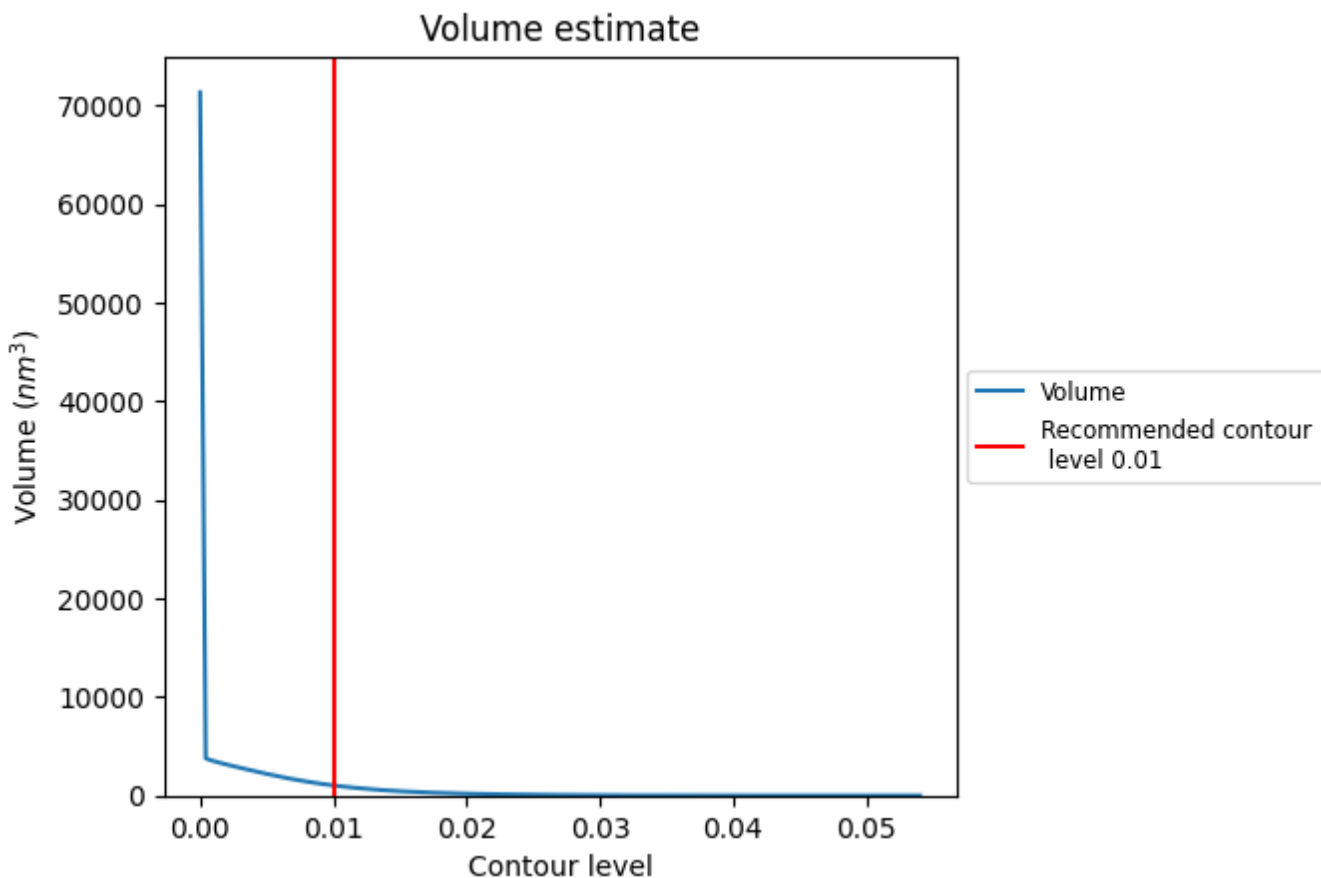
This section contains the results of statistical analysis of the map.

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.

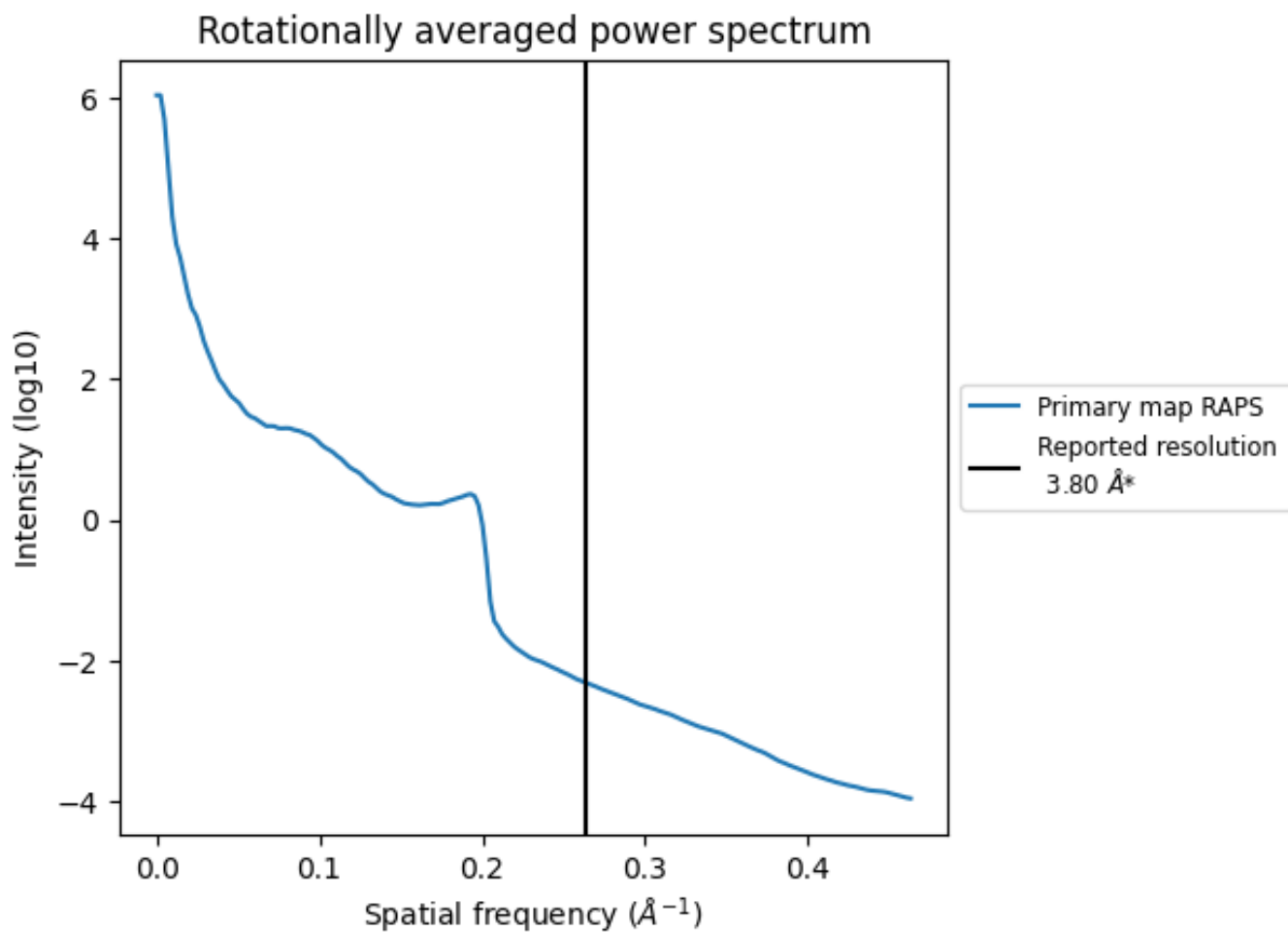
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1031 nm³; this corresponds to an approximate mass of 932 kDa.

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

7.3 Rotationally averaged power spectrum [i](#)



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

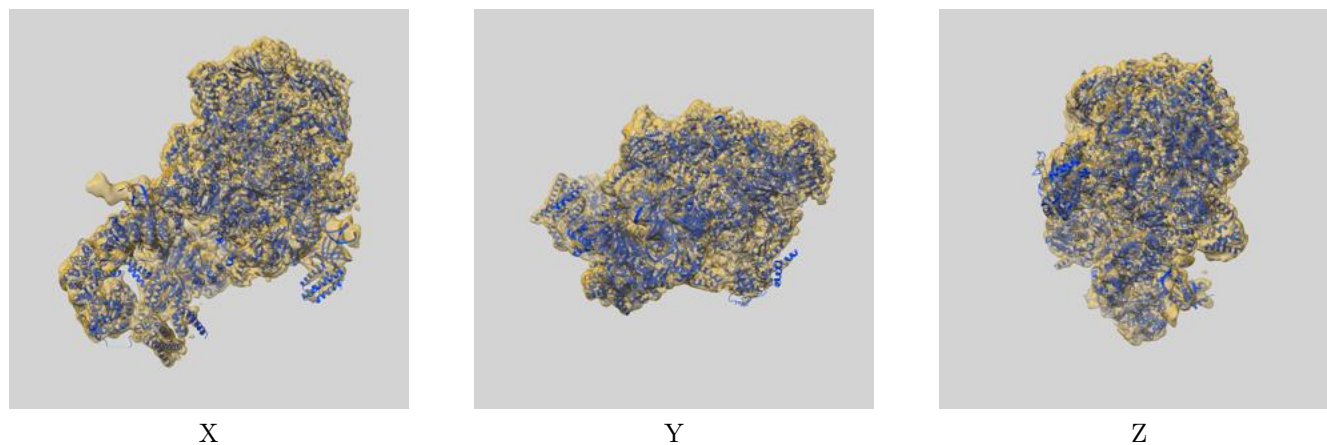
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

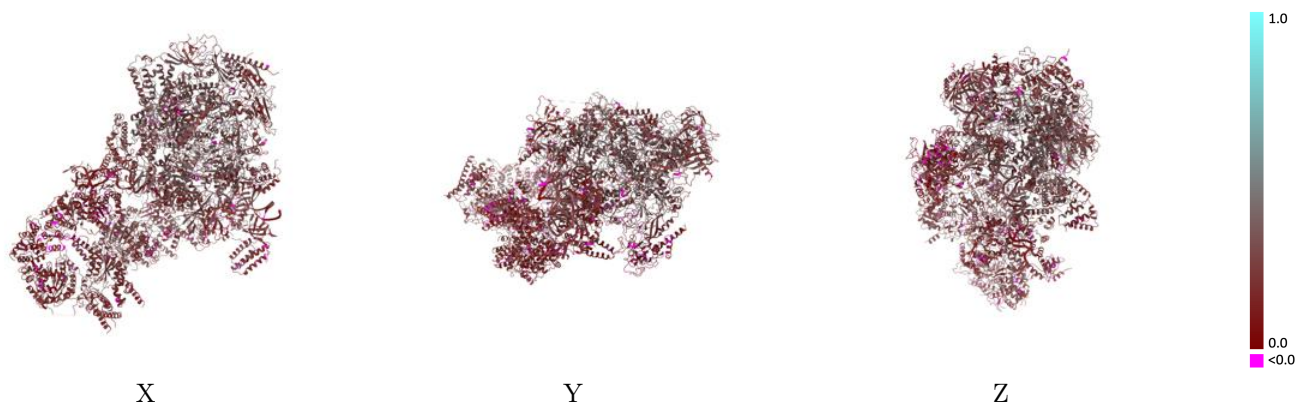
This section contains information regarding the fit between EMDB map EMD-42437 and PDB model 8UOQ. Per-residue inclusion information can be found in section [3](#) on page [11](#).

9.1 Map-model overlay [i](#)



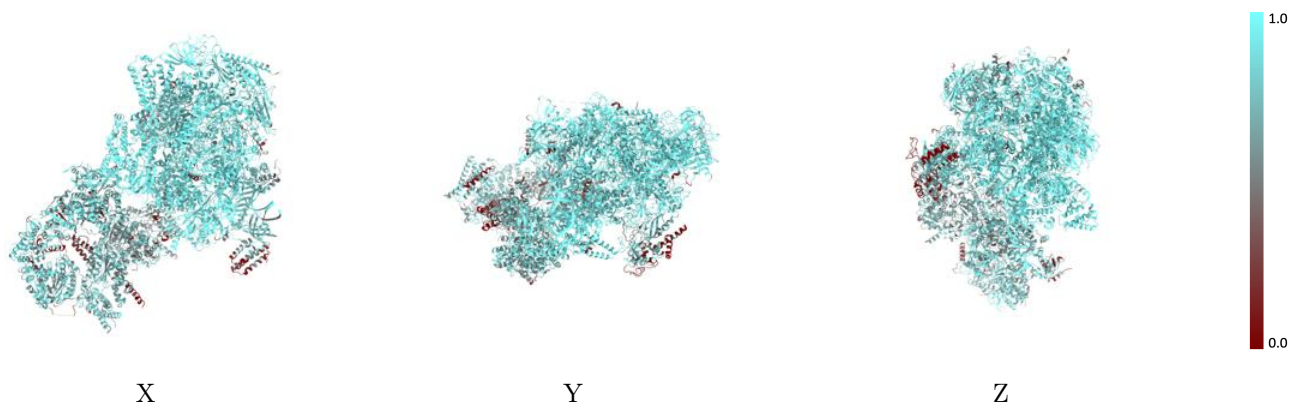
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



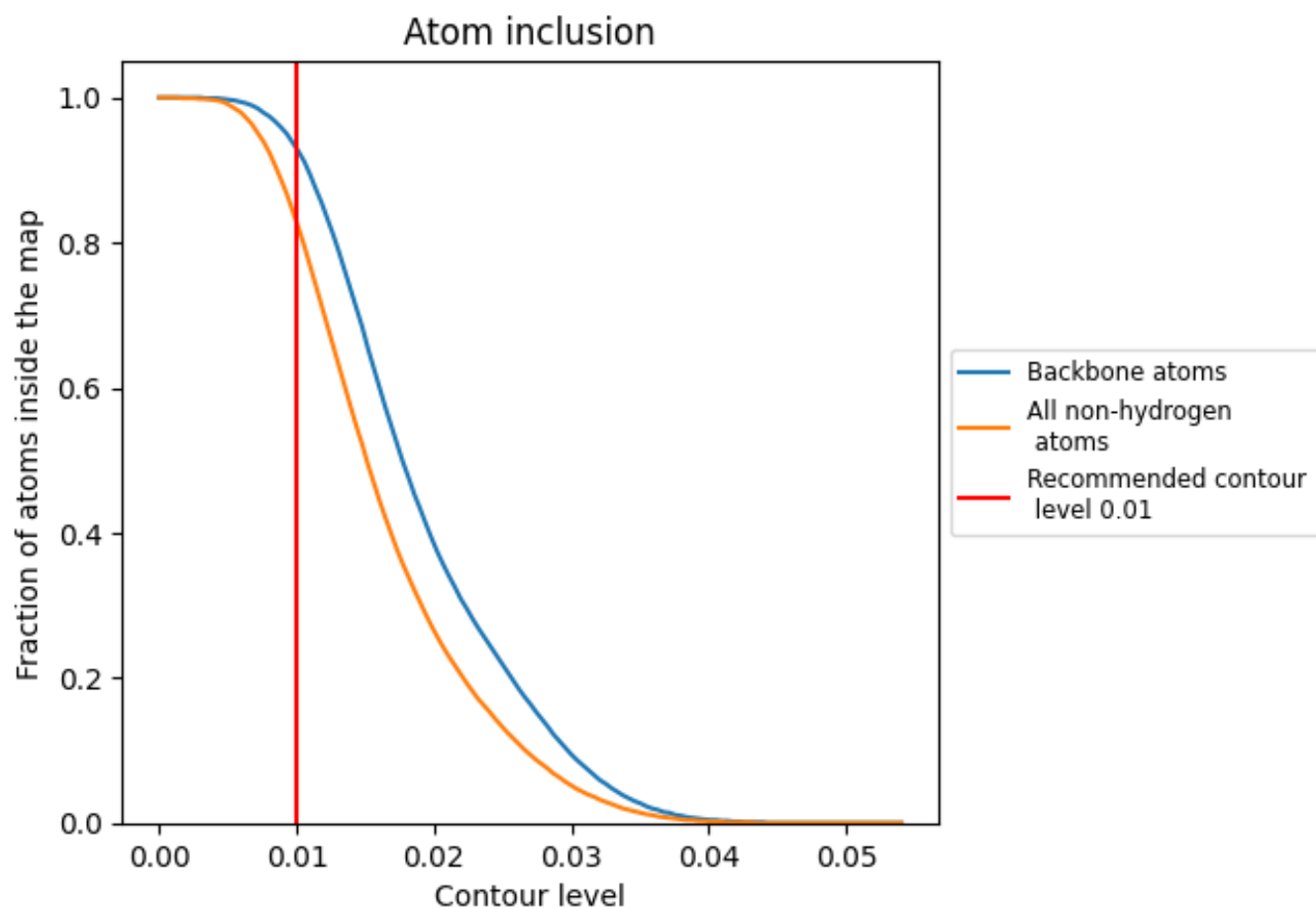
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).































































9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 83% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8280	 0.2390
0	 0.6950	 0.1780
1	 0.6570	 0.1870
2	 0.7450	 0.1480
4	 0.7750	 0.1900
5	 0.6180	 0.1540
6	 0.7370	 0.1850
7	 0.7490	 0.1710
A	 0.9580	 0.3280
B	 0.9520	 0.3380
C	 0.9020	 0.2690
D	 0.3700	 0.1540
E	 0.9640	 0.3190
F	 0.9300	 0.3100
G	 0.6530	 0.1970
H	 0.9270	 0.3000
I	 0.9470	 0.3070
J	 0.9010	 0.2700
K	 0.8330	 0.2730
L	 0.7940	 0.1800
M	 0.7590	 0.2010
N	 0.9490	 0.2210
O	 0.9000	 0.1860
P	 0.9170	 0.2080
Q	 0.8310	 0.2520
S	 0.9020	 0.1940
T	 0.9480	 0.2290
U	 0.5180	 0.1400
V	 0.6040	 0.1810
W	 0.8160	 0.1690
X	 0.8750	 0.1570

