



Full wwPDB EM Validation Report ⓘ

Oct 28, 2024 – 05:55 AM EDT

PDB ID : 7M7F
EMDB ID : EMD-23711
Title : 6-Deoxyerythronolide B synthase (DEBS) module 1 in complex with antibody fragment 1B2: State 1
Authors : Cogan, D.P.; Zhang, K.; Chiu, W.; Khosla, C.
Deposited on : 2021-03-28
Resolution : 3.20 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:

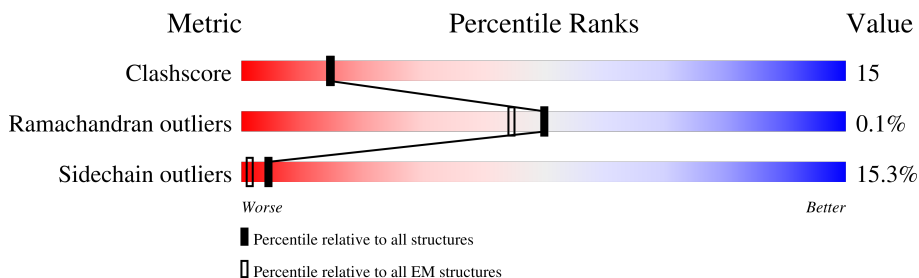
EMDB validation analysis : 0.0.1.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

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 3.20 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	A	1784	
1	B	1784	
2	C	249	
2	E	249	
3	D	236	
3	F	236	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 23971 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 EryAI,6-deoxyerythronolide-B synthase EryA3, modules 5 and 6 chimera.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	B	999	7417	4613	1363	1414	27	0	0
1	A	1390	10319	6413	1899	1972	35	0	0

There are 106 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1	MET	-	expression tag	UNP Q5UNP6
B	2	ALA	-	expression tag	UNP Q5UNP6
B	3	SER	-	expression tag	UNP Q5UNP6
B	4	THR	-	expression tag	UNP Q5UNP6
B	5	ASP	-	expression tag	UNP Q5UNP6
B	6	SER	-	expression tag	UNP Q5UNP6
B	7	GLU	-	expression tag	UNP Q5UNP6
B	8	LYS	-	expression tag	UNP Q5UNP6
B	9	VAL	-	expression tag	UNP Q5UNP6
B	10	ALA	-	expression tag	UNP Q5UNP6
B	11	GLU	-	expression tag	UNP Q5UNP6
B	12	TYR	-	expression tag	UNP Q5UNP6
B	13	LEU	-	expression tag	UNP Q5UNP6
B	14	ARG	-	expression tag	UNP Q5UNP6
B	15	ARG	-	expression tag	UNP Q5UNP6
B	16	ALA	-	expression tag	UNP Q5UNP6
B	17	THR	-	expression tag	UNP Q5UNP6
B	18	LEU	-	expression tag	UNP Q5UNP6
B	19	ASP	-	expression tag	UNP Q5UNP6
B	20	LEU	-	expression tag	UNP Q5UNP6
B	21	ARG	-	expression tag	UNP Q5UNP6
B	22	ALA	-	expression tag	UNP Q5UNP6
B	23	ALA	-	expression tag	UNP Q5UNP6
B	24	ARG	-	expression tag	UNP Q5UNP6
B	25	GLN	-	expression tag	UNP Q5UNP6

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Chain	Residue	Modelled	Actual	Comment	Reference
B	26	ARG	-	expression tag	UNP Q5UNP6
B	27	ILE	-	expression tag	UNP Q5UNP6
B	28	ARG	-	expression tag	UNP Q5UNP6
B	29	GLU	-	expression tag	UNP Q5UNP6
B	30	LEU	-	expression tag	UNP Q5UNP6
B	31	GLU	-	expression tag	UNP Q5UNP6
B	1486	THR	-	linker	UNP Q5UNP6
B	1487	SER	-	linker	UNP Q5UNP6
B	1488	GLU	-	linker	UNP Q5UNP6
B	1489	LEU	-	linker	UNP Q5UNP6
B	1490	GLY	-	linker	UNP Q5UNP6
B	1768	SER	-	expression tag	UNP Q03133
B	1769	SER	-	expression tag	UNP Q03133
B	1770	VAL	-	expression tag	UNP Q03133
B	1771	ASP	-	expression tag	UNP Q03133
B	1772	LYS	-	expression tag	UNP Q03133
B	1773	LEU	-	expression tag	UNP Q03133
B	1774	ALA	-	expression tag	UNP Q03133
B	1775	ALA	-	expression tag	UNP Q03133
B	1776	ALA	-	expression tag	UNP Q03133
B	1777	LEU	-	expression tag	UNP Q03133
B	1778	GLU	-	expression tag	UNP Q03133
B	1779	HIS	-	expression tag	UNP Q03133
B	1780	HIS	-	expression tag	UNP Q03133
B	1781	HIS	-	expression tag	UNP Q03133
B	1782	HIS	-	expression tag	UNP Q03133
B	1783	HIS	-	expression tag	UNP Q03133
B	1784	HIS	-	expression tag	UNP Q03133
A	1	MET	-	expression tag	UNP Q5UNP6
A	2	ALA	-	expression tag	UNP Q5UNP6
A	3	SER	-	expression tag	UNP Q5UNP6
A	4	THR	-	expression tag	UNP Q5UNP6
A	5	ASP	-	expression tag	UNP Q5UNP6
A	6	SER	-	expression tag	UNP Q5UNP6
A	7	GLU	-	expression tag	UNP Q5UNP6
A	8	LYS	-	expression tag	UNP Q5UNP6
A	9	VAL	-	expression tag	UNP Q5UNP6
A	10	ALA	-	expression tag	UNP Q5UNP6
A	11	GLU	-	expression tag	UNP Q5UNP6
A	12	TYR	-	expression tag	UNP Q5UNP6
A	13	LEU	-	expression tag	UNP Q5UNP6
A	14	ARG	-	expression tag	UNP Q5UNP6

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Chain	Residue	Modelled	Actual	Comment	Reference
A	15	ARG	-	expression tag	UNP Q5UNP6
A	16	ALA	-	expression tag	UNP Q5UNP6
A	17	THR	-	expression tag	UNP Q5UNP6
A	18	LEU	-	expression tag	UNP Q5UNP6
A	19	ASP	-	expression tag	UNP Q5UNP6
A	20	LEU	-	expression tag	UNP Q5UNP6
A	21	ARG	-	expression tag	UNP Q5UNP6
A	22	ALA	-	expression tag	UNP Q5UNP6
A	23	ALA	-	expression tag	UNP Q5UNP6
A	24	ARG	-	expression tag	UNP Q5UNP6
A	25	GLN	-	expression tag	UNP Q5UNP6
A	26	ARG	-	expression tag	UNP Q5UNP6
A	27	ILE	-	expression tag	UNP Q5UNP6
A	28	ARG	-	expression tag	UNP Q5UNP6
A	29	GLU	-	expression tag	UNP Q5UNP6
A	30	LEU	-	expression tag	UNP Q5UNP6
A	31	GLU	-	expression tag	UNP Q5UNP6
A	1486	THR	-	linker	UNP Q5UNP6
A	1487	SER	-	linker	UNP Q5UNP6
A	1488	GLU	-	linker	UNP Q5UNP6
A	1489	LEU	-	linker	UNP Q5UNP6
A	1490	GLY	-	linker	UNP Q5UNP6
A	1768	SER	-	expression tag	UNP Q03133
A	1769	SER	-	expression tag	UNP Q03133
A	1770	VAL	-	expression tag	UNP Q03133
A	1771	ASP	-	expression tag	UNP Q03133
A	1772	LYS	-	expression tag	UNP Q03133
A	1773	LEU	-	expression tag	UNP Q03133
A	1774	ALA	-	expression tag	UNP Q03133
A	1775	ALA	-	expression tag	UNP Q03133
A	1776	ALA	-	expression tag	UNP Q03133
A	1777	LEU	-	expression tag	UNP Q03133
A	1778	GLU	-	expression tag	UNP Q03133
A	1779	HIS	-	expression tag	UNP Q03133
A	1780	HIS	-	expression tag	UNP Q03133
A	1781	HIS	-	expression tag	UNP Q03133
A	1782	HIS	-	expression tag	UNP Q03133
A	1783	HIS	-	expression tag	UNP Q03133
A	1784	HIS	-	expression tag	UNP Q03133

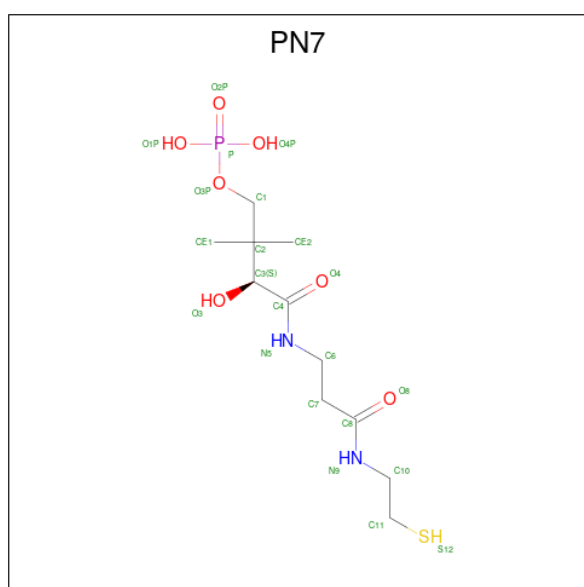
- Molecule 2 is a protein called 1B2 (heavy chain).

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	205	Total	C	N	O	S	0	0
			1539	978	257	298	6		
2	E	205	Total	C	N	O	S	0	0
			1539	978	257	298	6		

- Molecule 3 is a protein called 1B2 (light chain).

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	206	Total	C	N	O	S	0	0
			1568	983	262	317	6		
3	F	206	Total	C	N	O	S	0	0
			1568	984	262	316	6		

- Molecule 4 is N 3 -[(2S)-2-hydroxy-3,3-dimethyl-4-(phosphonoxy)butanoyl]-N-(2-sulfanylet hyl)-beta-alaninamide (three-letter code: PN7) (formula: C₁₁H₂₃N₂O₇PS).

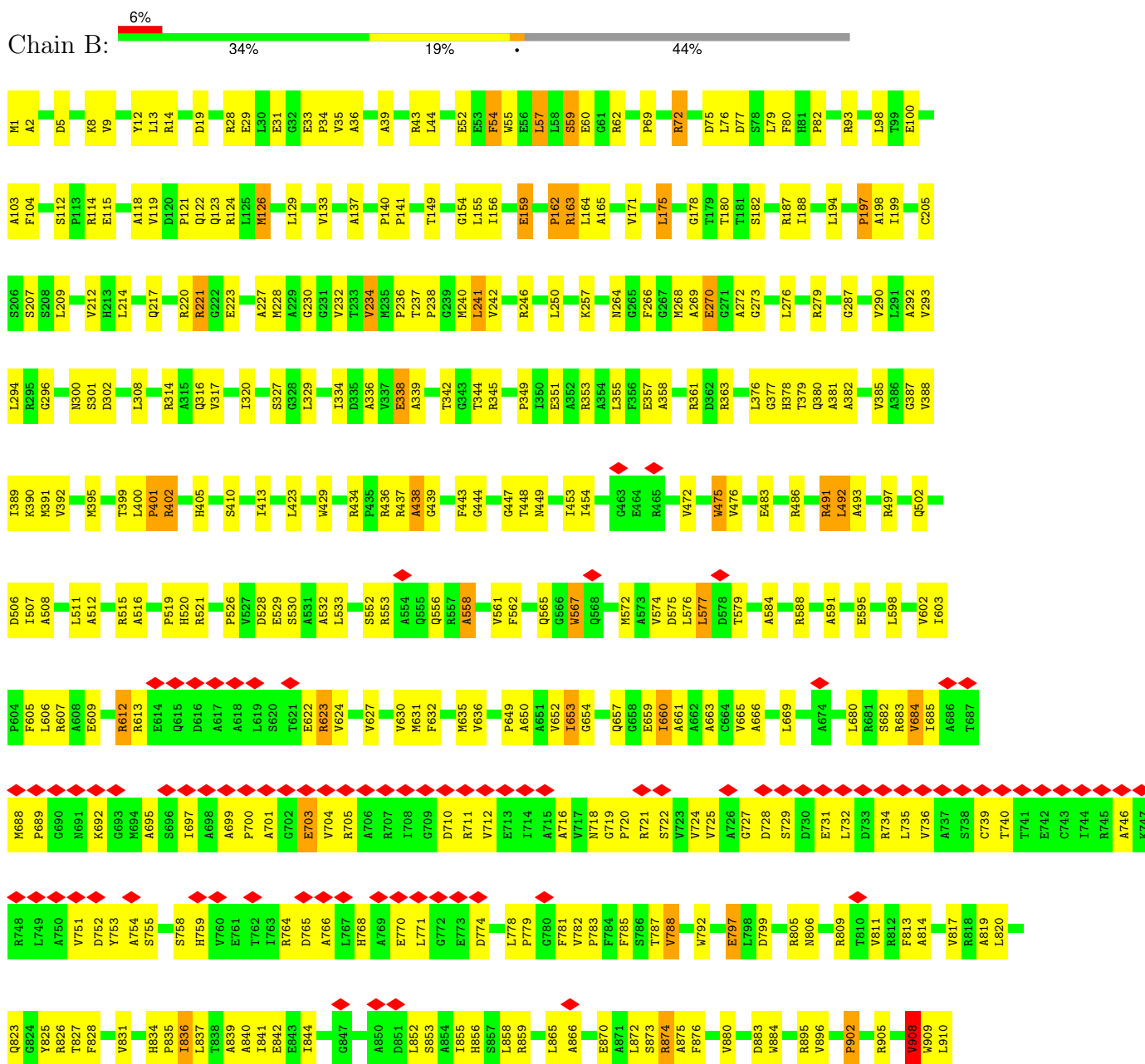


Mol	Chain	Residues	Atoms					AltConf	
4	B	1	Total	C	N	O	P	S	0
			21	11	2	6	1	1	

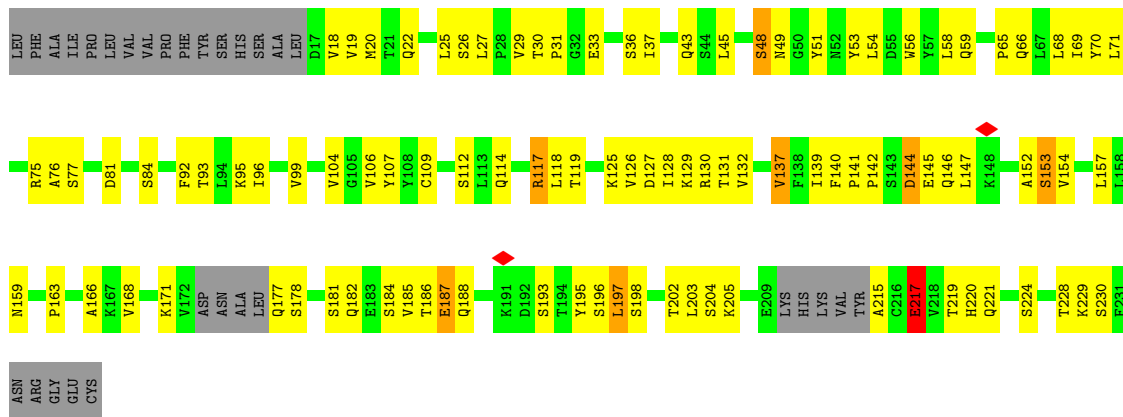
3 Residue-property plots

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.

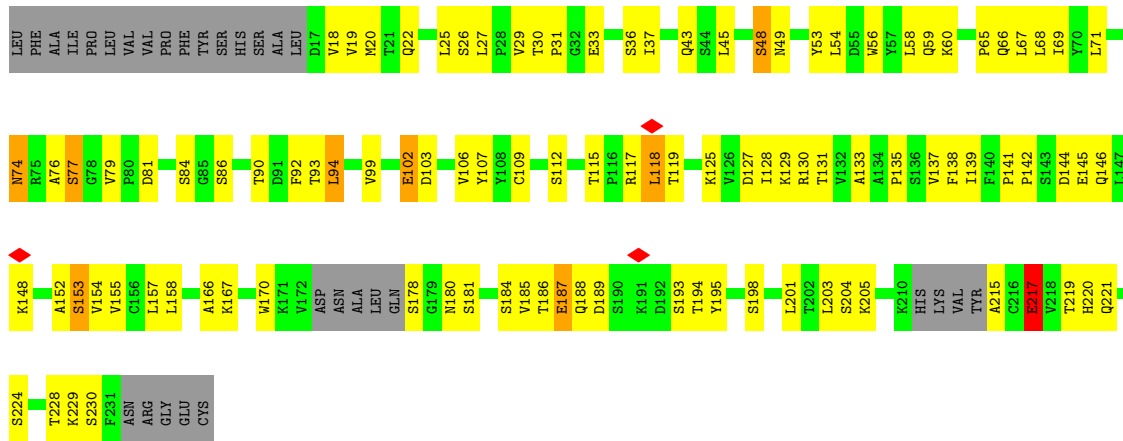
- Molecule 1: EryAI,6-deoxyerythronolide-B synthase EryA3, modules 5 and 6 chimera



L1362	D1363	V1364	R1365	W1366	F1367	R1368	F1369	L1370	L1371	Q1376	R1377	F1378	T1379	R1380	D1383	F1384	I1385	R1389	ALA	ALA	PRO	GLN	ALA	ALA	ALA	GLU	PRO	ARG	VAL	GLY	ALA	ALA	G1321	E1324	V1327	R1330	F1331	R1332	R1333	H1334	ALA	V1336	E1337	E1338	M1339	P1340	E1342	V1357	I1360	V1361						
L1285	D1286	T1287	T1288	A1289	F1290	W1291	L1292	S1297	Y1288	A1289	L1295	T1296	R1297	L1298	Q1301	R1302	R1303	D1304	G1306	L1307	F1308	T1309	T1310	A1311	V1312	A1313	W1317	A1318	G1321	E1324	V1327	R1330	F1331	R1332	R1333	H1334	ALA	V1336	E1337	E1338	M1339	P1340	E1342	V1357	I1360	V1361										
L1188	E1189	A1190	R1194	T1196	W1197	A1199	C1200	D1201	E1206	R1209	F1210	L1211	D1217	D1218	V1219	S1222	A1223	V1224	F1225	H1226	A1229	T1230	L1231	T1235	V1236	D1237	T1238	L1239	T1240	G1241	E1242	R1243	I1244	E1245	R1246	A1247	S1248	R1249	A1250	K1251	V1252	L1253	L1258	H1259	E1260	T1261	R1263	E1264								
P1089	A1090	V1093	L1096	L1100	S1105	E1110	D1111	Q1112	L1113	A1114	W1126	A1129	D1135	F1136	W1137	R1138	P1139	V1143	L1144	V1145	V1152	Q1155	I1156	A1157	R1158	W1159	L1160	R1163	G1164	A1165	P1166	H1167	L1168	L1169	L1170	V1171	S1172	R1173	P1176	D1177	A1178	D1179	E1183	L1184												
L1007	D1010	E1013	P1014	E1015	L1019	A1025	L1028	S1029	L1030	V1031	Q1032	M1034	A1037	E1038	L1039	L1043	W1044	E1048	S1049	G1054	P1055	F1056	R1060	M1061	A1062	A1063	A1066	L1067	W1068	G1069	V1070	G1071	V1073	I1074	A1075	M1078	P1079	A1080	W1081	M1082	L1085	V1086	D1087	V1088												
R907	V908	W909	E911	P912	K913	P914	V915	A916	R917	R918	S919	L928	R929	Y930	R931	I932	A943	R944	D946	T948	W949	G947	T948	W949	L950	A955	G956	T957	A958	E960	T961	R966	L969	A972	V976	R977	E978	L979	V980	V981	D982	L990	G998	E999	V1000	A1001	G1002	V1003								
A816	V817	L820	A821	E822	R826	L829	E830	V831	L837	T838	A839	A840	I841	E842	E843	I844	G845	D846	G847	S848	G849	A850	D851	L852	S853	A854	R855	H856	R859	R860	G861	L865	A866	D867	F868	G869	E870	W880	A881	V882	D883	W884	R894	R895	V896	P897	L898	P899	R905	E906						
D752	V753	A754	S755	H756	S758	H759	V760	V761	T762	I763	R764	D765	A766	L767	H768	A769	E770	L771	G772	E773	D774	F775	H776	P777	L778	P779	G780	F781	W782	F783	F784	F785	S786	W792	L793	Q794	P795	D796	E797	L798	D799	A800	G801	W802	M803	Y804	R805	N806	L807	R808	R809	T810	V811	F812	A814	D815
K692	G693	M694	A695	S696	I697	A698	A699	F700	Q628	P629	V630	M631	M635	L638	A639	S640	M641	W642	R643	G646	V647	V652	G654	H655	S656	Q657	G658	E659	I660	A666	G667	A668	D672	D673	A674	A675	R676	A679	L680	R681	S682	R683	V684	I685	A686	T687	M688	P689	G690	M691						
K929	G930	M931	A932	S933	I934	A935	A936	F937	Q938	P939	V940	M941	M945	L948	A949	S950	M951	W952	R953	G954	V955	V956	G957	H958	A959	E960	I961	A966	G967	A968	D972	D973	A974	A975	R976	A979	L980	R981	S982	R983	V984	I985	A986	T987	M988	P989	G990	M991								
Q655	Q656	R657	A658	V661	F662	P663	Q664	Q665	Q668	W669	A670	G571	A573	V574	D575	L576	L577	D578	T579	S580	A584	A585	R588	E589	C590	A591	D592	A593	L594	E595	P596	H597	L598	D599	F600	E601	V602	I603	P604	F605	L606	R607	A608	E609	A610	A611	R612	R613	E614	Q615	D616	A617	A618			
L453	I454	E455	V460	E462	G463	E464	V466	E467	V471	V476	A477	S478	A479	S480	L485	Q488	A493	A494	H495	E498	R505	D506	V388	I389	K390	P401	R402	T403	L404	S305	N306	G307	L308	A522	A523	F524	A525	P526	V527	D528	E529	S530	A531	A532	L533	R534	V535	L536	L539							
S224	S225	L226	V232	T233	V234	M235	P236	L241	V242	D243	F244	M247	L250	D253	G254	R255	G265	F266	G267	M268	A269	E270	G271	A272	L276	L277	E278	V283	D302	S305	N306	G307	L308	P311	N312	S421	L422	L423	A315	Q316	V317	R437	A438	G439	V440	L329	S441	S442	F443	N449						



• Molecule 3: 1B2 (light chain)



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	172352	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	7.734	Depositor
Minimum map value	-4.602	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.138	Depositor
Recommended contour level	0.53	Depositor
Map size (Å)	336.0, 336.0, 336.0	wwPDB
Map dimensions	336, 336, 336	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0, 1.0, 1.0	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: PN7

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.67	24/10522 (0.2%)	0.85	27/14323 (0.2%)
1	B	0.66	21/7566 (0.3%)	0.86	28/10293 (0.3%)
2	C	0.62	3/1575 (0.2%)	0.86	5/2141 (0.2%)
2	E	0.59	1/1575 (0.1%)	0.87	4/2141 (0.2%)
3	D	0.46	1/1601 (0.1%)	0.68	1/2175 (0.0%)
3	F	0.54	3/1601 (0.2%)	0.76	5/2174 (0.2%)
All	All	0.64	53/24440 (0.2%)	0.84	70/33247 (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	A	0	1
2	C	0	1
2	E	0	3
3	F	0	1
All	All	0	6

All (53) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	207	SER	CA-CB	-16.15	1.28	1.52
1	A	442	SER	CA-CB	-14.72	1.30	1.52
1	A	441	SER	CA-CB	-10.75	1.36	1.52
1	A	374	SER	CA-CB	-9.77	1.38	1.52
1	B	230	GLY	C-O	-8.63	1.09	1.23
1	B	59	SER	CA-CB	-8.29	1.40	1.52
1	B	197	PRO	C-O	-8.29	1.06	1.23
1	A	43	ARG	C-O	-8.23	1.07	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	908	VAL	C-O	-8.02	1.08	1.23
1	B	399	THR	C-O	-7.66	1.08	1.23
1	A	120	ASP	C-O	-7.28	1.09	1.23
1	A	442	SER	C-O	-7.11	1.09	1.23
1	B	439	GLY	C-O	-7.04	1.12	1.23
1	B	54	PHE	C-O	-6.99	1.10	1.23
1	B	388	VAL	C-O	-6.94	1.10	1.23
1	A	440	VAL	C-O	-6.82	1.10	1.23
1	B	43	ARG	C-O	-6.37	1.11	1.23
2	C	37	SER	CA-CB	-6.32	1.43	1.52
1	A	183	VAL	C-O	-6.21	1.11	1.23
1	B	57	LEU	C-O	-6.15	1.11	1.23
1	B	338	GLU	C-O	-6.04	1.11	1.23
1	A	524	PHE	C-O	-6.00	1.11	1.23
1	B	338	GLU	CD-OE2	-5.87	1.19	1.25
1	A	118	ALA	CA-CB	-5.82	1.40	1.52
3	F	198	SER	CA-CB	-5.78	1.44	1.52
1	A	270	GLU	CD-OE1	-5.77	1.19	1.25
1	A	243	ASP	C-O	-5.68	1.12	1.23
1	B	475	TRP	C-O	-5.68	1.12	1.23
2	E	103	GLY	C-O	-5.68	1.14	1.23
1	B	234	VAL	C-O	-5.64	1.12	1.23
1	A	116	ALA	C-O	-5.63	1.12	1.23
1	B	266	PHE	C-N	-5.46	1.23	1.33
1	A	270	GLU	C-O	-5.46	1.12	1.23
3	F	48	SER	CA-CB	-5.45	1.44	1.52
1	A	233	THR	C-O	-5.32	1.13	1.23
1	A	162	PRO	C-O	-5.23	1.12	1.23
2	C	99	TYR	C-O	-5.23	1.13	1.23
1	B	493	ALA	CA-CB	-5.23	1.41	1.52
3	F	74	ASN	C-O	-5.21	1.13	1.23
1	A	162	PRO	N-CA	-5.19	1.38	1.47
1	A	236	PRO	C-O	-5.18	1.12	1.23
1	A	157	PRO	N-CA	-5.18	1.38	1.47
3	D	48	SER	CA-CB	-5.17	1.45	1.52
1	B	454	ILE	C-O	-5.13	1.13	1.23
2	C	101	THR	C-O	-5.13	1.13	1.23
1	A	234	VAL	C-O	-5.13	1.13	1.23
1	B	266	PHE	C-O	-5.08	1.13	1.23
1	A	116	ALA	CA-CB	-5.06	1.41	1.52
1	A	207	SER	C-O	-5.05	1.13	1.23
1	B	198	ALA	CA-CB	-5.05	1.41	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	117	LEU	C-O	-5.04	1.13	1.23
1	B	438	ALA	C-N	-5.03	1.24	1.33
1	B	492	LEU	C-O	-5.00	1.13	1.23

All (70) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	162	PRO	N-CA-CB	-16.54	83.45	103.30
1	A	159	GLU	CB-CA-C	-16.14	78.12	110.40
1	B	883	ASP	CB-CA-C	-15.95	78.51	110.40
1	A	43	ARG	CB-CA-C	-13.60	83.20	110.40
1	A	157	PRO	N-CA-CB	-12.39	88.43	103.30
2	C	102	ARG	CB-CA-C	-10.26	89.87	110.40
2	E	102	ARG	CB-CA-C	-10.23	89.93	110.40
1	A	233	THR	CA-CB-OG1	-10.22	87.54	109.00
1	B	902	PRO	CB-CA-C	-10.16	86.60	112.00
1	B	401	PRO	N-CA-CB	-9.51	91.89	103.30
1	A	236	PRO	N-CA-CB	-9.43	91.98	103.30
1	B	401	PRO	N-CD-CG	-9.34	89.19	103.20
1	A	43	ARG	N-CA-CB	-9.19	94.06	110.60
1	A	63	ASP	CB-CA-C	-8.59	93.22	110.40
1	B	72	ARG	CB-CG-CD	-8.57	89.33	111.60
1	A	914	PRO	N-CA-C	8.49	134.18	112.10
1	A	243	ASP	CB-CA-C	-8.31	93.78	110.40
1	B	266	PHE	CB-CA-C	-8.09	94.22	110.40
1	A	233	THR	CB-CA-C	-7.80	90.54	111.60
2	C	101	THR	N-CA-CB	-7.79	95.50	110.30
1	B	198	ALA	N-CA-CB	-7.60	99.45	110.10
1	B	197	PRO	CB-CA-C	-7.49	93.27	112.00
1	A	403	THR	N-CA-C	-7.49	90.79	111.00
1	A	270	GLU	CB-CG-CD	-7.39	94.24	114.20
1	B	266	PHE	CA-CB-CG	7.35	131.55	113.90
1	B	54	PHE	CB-CA-C	-7.30	95.79	110.40
1	A	162	PRO	CB-CA-C	-7.22	93.95	112.00
1	A	174	TYR	CB-CA-C	-7.19	96.01	110.40
1	B	491	ARG	CG-CD-NE	-7.11	96.88	111.80
3	F	180	ASN	CB-CA-C	-6.91	96.58	110.40
1	B	5	ASP	CB-CA-C	6.82	124.05	110.40
1	A	162	PRO	CA-N-CD	-6.78	102.01	111.50
1	A	234	VAL	N-CA-C	-6.71	92.88	111.00
2	E	100	CYS	CB-CA-C	-6.44	97.53	110.40
1	A	62	ARG	CB-CA-C	-6.43	97.54	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1303	ARG	CB-CA-C	6.37	123.15	110.40
1	A	236	PRO	N-CD-CG	-6.37	93.65	103.20
1	B	266	PHE	N-CA-CB	6.36	122.05	110.60
2	E	101	THR	N-CA-CB	-6.32	98.29	110.30
1	B	390	LYS	CB-CA-C	-6.24	97.92	110.40
1	B	198	ALA	CB-CA-C	-6.20	100.80	110.10
1	A	441	SER	CB-CA-C	-6.17	98.37	110.10
2	E	108	ASP	CB-CG-OD1	-6.17	112.75	118.30
1	B	72	ARG	N-CA-CB	-5.86	100.05	110.60
1	B	57	LEU	CB-CA-C	-5.86	99.07	110.20
2	C	100	CYS	CB-CA-C	-5.84	98.72	110.40
1	B	197	PRO	N-CA-CB	-5.75	96.27	102.60
1	B	401	PRO	CA-N-CD	5.74	119.73	111.70
3	F	217	GLU	CA-CB-CG	5.70	125.94	113.40
3	D	217	GLU	CA-CB-CG	5.69	125.92	113.40
1	A	124	ARG	N-CA-CB	-5.61	100.50	110.60
1	A	176	MET	CB-CG-SD	-5.55	95.76	112.40
1	B	902	PRO	CA-N-CD	-5.50	103.81	111.50
1	B	43	ARG	N-CA-C	-5.46	96.26	111.00
1	A	1380	ARG	CB-CA-C	5.46	121.32	110.40
1	B	402	ARG	CB-CA-C	-5.45	99.51	110.40
3	F	166	ALA	N-CA-CB	-5.45	102.47	110.10
1	B	558	ALA	CB-CA-C	-5.44	101.93	110.10
1	A	524	PHE	CB-CA-C	-5.43	99.53	110.40
1	A	43	ARG	CA-C-O	-5.42	108.72	120.10
2	C	41	GLN	CB-CA-C	-5.41	99.58	110.40
1	B	902	PRO	N-CD-CG	-5.34	95.19	103.20
1	B	234	VAL	N-CA-C	-5.33	96.61	111.00
1	B	389	ILE	O-C-N	-5.31	114.20	122.70
1	A	92	GLN	CB-CG-CD	-5.29	97.84	111.60
2	C	101	THR	CA-CB-OG1	-5.25	97.98	109.00
3	F	48	SER	N-CA-CB	-5.17	102.75	110.50
1	B	387	GLY	O-C-N	-5.09	114.55	122.70
3	F	76	ALA	N-CA-CB	-5.04	103.05	110.10
1	B	399	THR	CB-CA-C	-5.03	98.01	111.60

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1301	GLN	Mainchain
2	C	155	GLU	Peptide

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Mol	Chain	Res	Type	Group
2	E	155	GLU	Peptide
2	E	21	ARG	Sidechain
2	E	96	ALA	Mainchain
3	F	115	THR	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	10319	0	10164	311	0
1	B	7417	0	7306	208	0
2	C	1539	0	1511	59	0
2	E	1539	0	1511	61	0
3	D	1568	0	1528	54	0
3	F	1568	0	1533	62	0
4	B	21	0	22	2	0
All	All	23971	0	23575	714	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 15.

All (714) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:777:PRO:HB3	1:A:796:ASP:HA	1.54	0.88
2:C:86:GLN:HA	2:C:86:GLN:HE21	1.38	0.87
1:B:567:TRP:HB3	1:B:834:HIS:HB3	1.68	0.74
1:A:1019:LEU:HD13	1:A:1244:ILE:HG22	1.70	0.73
2:E:108:ASP:CG	3:F:67:LEU:CD2	2.60	0.70
2:E:108:ASP:CG	3:F:67:LEU:HD23	2.11	0.70
1:A:1249:ARG:HB2	1:A:1253:LEU:HD13	1.74	0.69
1:A:526:PRO:HG3	1:A:532:ALA:HB2	1.74	0.69
1:B:528:ASP:OD1	1:B:530:SER:N	2.24	0.69
1:A:43:ARG:HG2	1:A:129:LEU:HD11	1.75	0.69
2:E:108:ASP:OD1	3:F:67:LEU:HD23	1.93	0.69
1:A:1157:ALA:HA	1:A:1160:LEU:HD12	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:120:ASP:HB3	1:A:123:GLN:HG3	1.76	0.67
2:E:87:MET:HE1	2:E:116:VAL:HG11	1.75	0.67
1:A:739:CYS:HB3	1:A:744:ILE:HG22	1.77	0.66
1:A:54:PHE:HE1	1:A:376:LEU:HD21	1.61	0.66
1:A:981:VAL:HB	1:A:990:LEU:HD21	1.78	0.66
1:A:734:ARG:HA	1:A:737:ALA:HB3	1.77	0.65
1:A:126:MET:HB3	1:A:188:ILE:HD11	1.79	0.65
1:A:1171:VAL:HG21	1:A:1211:LEU:HD21	1.77	0.65
2:C:86:GLN:HA	2:C:86:GLN:NE2	2.10	0.65
2:E:8:GLN:HE22	2:E:99:TYR:HA	1.62	0.65
1:B:14:ARG:HG2	3:D:51:TYR:HE2	1.62	0.64
2:C:144:ALA:HB3	3:D:140:PHE:HZ	1.63	0.64
1:A:1000:VAL:HB	1:A:1039:LEU:HD21	1.81	0.63
1:B:561:VAL:HG13	1:B:828:PHE:HB2	1.81	0.62
1:A:817:VAL:HA	1:A:820:LEU:HD12	1.81	0.62
2:E:87:MET:HB3	2:E:90:LEU:HD21	1.81	0.62
1:B:122:GLN:HB3	1:B:155:LEU:HD23	1.81	0.62
1:A:117:LEU:HA	1:A:908:VAL:CG1	2.29	0.62
1:B:1416:LEU:HD21	1:B:1485:LEU:HB3	1.79	0.62
2:E:146:GLY:HA3	2:E:188:VAL:HG22	1.81	0.62
1:A:1239:LEU:HD23	1:A:1243:ARG:HD3	1.81	0.62
3:F:99:VAL:HG13	3:F:103:ASP:HB2	1.82	0.62
2:C:163:SER:HA	2:C:204:ASN:HD21	1.65	0.61
1:A:704:VAL:HG11	1:A:723:VAL:HG21	1.81	0.61
1:B:1428:LEU:HD21	1:B:1447:VAL:HG22	1.82	0.61
1:A:721:ARG:HB2	1:A:843:GLU:HB3	1.82	0.61
1:A:562:PHE:HB2	1:A:654:GLY:HA2	1.82	0.61
1:B:76:LEU:H	1:B:79:LEU:HD13	1.65	0.61
1:A:13:LEU:HD21	3:F:71:LEU:HD11	1.81	0.61
1:A:1075:ALA:HB2	1:A:1082:TRP:HD1	1.66	0.61
1:A:1231:LEU:HD13	1:A:1288:TYR:HB2	1.83	0.61
3:D:188:GLN:NE2	3:D:193:SER:HB2	2.16	0.61
3:F:188:GLN:NE2	3:F:193:SER:HB2	2.16	0.61
1:A:149:THR:HB	1:A:194:LEU:HD22	1.83	0.60
1:A:155:LEU:HD11	1:A:184:ALA:HB3	1.83	0.60
1:A:766:ALA:HA	1:A:770:GLU:HB3	1.83	0.60
1:A:642:TRP:HB3	1:A:647:VAL:HB	1.83	0.60
3:D:203:LEU:HG	3:D:204:SER:H	1.66	0.60
3:F:68:LEU:HA	3:F:79:VAL:HG21	1.83	0.60
2:E:4:VAL:HA	2:E:28:GLY:HA3	1.83	0.60
3:F:69:ILE:HD12	3:F:94:LEU:HD12	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:118:ALA:HB2	1:A:171:VAL:HG12	1.84	0.60
1:B:205:CYS:HB2	1:B:444:GLY:HA2	1.84	0.60
1:A:117:LEU:HA	1:A:908:VAL:HG13	1.84	0.60
3:F:203:LEU:HG	3:F:204:SER:H	1.66	0.60
1:B:624:VAL:HA	1:B:627:VAL:HG12	1.84	0.60
1:B:855:ILE:HG23	1:B:874:ARG:HG3	1.83	0.60
1:B:1427:VAL:HG22	1:B:1451:SER:HA	1.84	0.60
1:A:830:GLU:HB2	1:A:838:THR:HG23	1.83	0.60
3:F:152:ALA:HB3	3:F:203:LEU:HB3	1.84	0.60
1:B:35:VAL:HA	1:B:279:ARG:HA	1.84	0.60
1:B:609:GLU:H	1:B:612:ARG:HG3	1.66	0.60
1:B:577:LEU:HD12	1:B:584:ALA:HA	1.84	0.59
1:B:783:PRO:HB3	1:B:792:TRP:HE1	1.67	0.59
1:A:629:PRO:HG3	1:A:679:ALA:HA	1.84	0.59
1:B:82:PRO:HB3	1:A:1306:GLY:HA2	1.83	0.59
2:C:9:SER:HG	2:C:23:SER:HG	1.50	0.59
3:D:29:VAL:O	3:D:129:LYS:N	2.36	0.59
2:E:149:VAL:O	2:E:152:TYR:HD1	1.85	0.59
3:F:135:PRO:HB2	3:F:158:LEU:HD12	1.85	0.59
3:F:137:VAL:HG22	3:F:158:LEU:HD11	1.84	0.59
1:B:1:MET:O	2:E:54:ARG:NH2	2.35	0.59
1:B:692:LYS:HB3	1:B:754:ALA:HB2	1.84	0.59
1:A:493:ALA:HB2	1:A:536:LEU:HB3	1.83	0.59
1:B:13:LEU:HD21	3:D:71:LEU:HD11	1.84	0.59
1:B:700:PRO:HB2	1:B:703:GLU:HB3	1.85	0.59
1:A:1230:THR:OG1	1:A:1247:ALA:O	2.16	0.59
1:B:395:MET:O	1:B:436:ARG:NH2	2.35	0.59
1:A:610:ALA:HB2	1:A:613:ARG:HH21	1.68	0.59
1:B:296:GLY:HA3	1:B:327:SER:HB3	1.84	0.58
1:B:692:LYS:HE2	1:B:728:ASP:HB3	1.85	0.58
1:B:162:PRO:HG2	1:B:175:LEU:HD11	1.86	0.58
1:A:1070:VAL:O	1:A:1074:ILE:HG13	2.01	0.58
3:D:152:ALA:HB3	3:D:203:LEU:HB3	1.84	0.58
1:B:835:PRO:HD3	1:B:858:LEU:O	2.03	0.58
1:A:928:LEU:HB3	1:A:1361:VAL:HG13	1.85	0.58
2:E:4:VAL:HG23	2:E:29:PHE:HD1	1.68	0.58
1:A:720:PRO:HB2	1:A:721:ARG:HH11	1.69	0.58
1:A:1222:SER:HA	1:A:1267:LEU:HA	1.86	0.58
2:E:65:ALA:HB1	3:F:118:LEU:HD11	1.85	0.58
3:F:29:VAL:O	3:F:129:LYS:N	2.36	0.58
1:A:1025:ALA:HB2	1:A:1241:GLY:HA3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:711:ARG:NH1	1:B:758:SER:OG	2.37	0.57
1:B:787:THR:HB	1:B:811:VAL:HG13	1.84	0.57
1:A:966:ARG:HA	1:A:969:LEU:HB2	1.86	0.57
1:B:828:PHE:CZ	1:B:841:ILE:HB	2.40	0.57
1:A:316:GLN:HA	1:A:319:VAL:HG12	1.86	0.57
1:A:331:PRO:O	1:A:363:ARG:NH1	2.38	0.57
1:A:929:ARG:NH2	1:A:1129:ALA:O	2.38	0.57
1:A:1125:TRP:HH2	1:A:1362:ILE:HG13	1.70	0.57
1:A:608:ALA:HB1	1:A:612:ARG:HG3	1.86	0.57
1:B:29:GLU:HA	1:B:33:GLU:HB2	1.86	0.57
1:B:316:GLN:O	1:B:320:ILE:HG13	2.05	0.57
1:A:580:SER:HB3	1:A:865:LEU:HD22	1.87	0.57
1:A:561:VAL:HG23	1:A:813:PHE:HZ	1.69	0.56
1:A:966:ARG:HB2	1:A:976:VAL:HG21	1.86	0.56
3:D:188:GLN:HE21	3:D:193:SER:HB2	1.71	0.56
3:F:188:GLN:HE21	3:F:193:SER:HB2	1.70	0.56
1:A:1060:ARG:HG3	1:A:1061:ASN:N	2.21	0.56
1:B:55:TRP:CH2	1:B:401:PRO:HG3	2.41	0.56
1:A:302:ASP:OD1	1:A:449:ASN:ND2	2.34	0.56
2:C:149:VAL:O	2:C:152:TYR:HD1	1.89	0.56
1:A:945:LEU:N	1:A:972:ALA:O	2.37	0.56
2:C:6:LEU:O	2:C:111:GLY:HA2	2.04	0.56
2:E:95:THR:HG23	2:E:117:THR:HG23	1.86	0.56
2:E:155:GLU:HG2	2:E:183:TYR:CE2	2.41	0.56
1:A:334:ILE:HD13	1:A:359:TYR:HE1	1.70	0.56
1:A:737:ALA:C	1:A:739:CYS:H	2.09	0.56
1:B:649:PRO:HB2	1:B:782:VAL:HG11	1.87	0.56
1:B:729:SER:HA	1:B:732:LEU:HB2	1.88	0.56
1:A:1226:HIS:HD2	1:A:1258:LEU:HD12	1.71	0.56
1:A:715:ALA:HB3	1:A:724:VAL:HG12	1.88	0.55
1:A:1031:VAL:HG13	1:A:1078:ASN:HD21	1.71	0.55
1:B:476:VAL:HG11	1:B:884:TRP:CZ2	2.41	0.55
1:B:624:VAL:HG11	1:B:685:ILE:HG22	1.89	0.55
1:A:1063:ALA:O	1:A:1066:ALA:HB3	2.07	0.55
1:A:565:GLN:OE1	1:A:657:GLN:NE2	2.40	0.55
1:A:1048:GLU:HG3	1:A:1090:ALA:HA	1.87	0.55
1:A:1236:VAL:HA	1:A:1239:LEU:HB2	1.89	0.55
2:E:150:LYS:NZ	3:F:146:GLN:OE1	2.35	0.55
1:B:241:LEU:HA	1:B:250:LEU:HD11	1.88	0.55
3:D:58:LEU:HB2	3:D:68:LEU:HD11	1.89	0.55
2:E:15:GLN:HB2	2:E:18:ARG:HE	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:54:LEU:HD11	3:F:109:CYS:SG	2.47	0.55
1:B:232:VAL:HG23	1:B:272:ALA:HB2	1.89	0.55
1:A:1222:SER:HB3	1:A:1268:THR:HG22	1.88	0.55
1:A:209:LEU:HD12	1:A:442:SER:OG	2.06	0.55
1:B:60:GLU:HG3	1:B:62:ARG:HG3	1.89	0.54
3:D:54:LEU:HD11	3:D:109:CYS:SG	2.47	0.54
1:A:8:LYS:HB2	2:C:105:THR:HG21	1.88	0.54
3:F:58:LEU:HB2	3:F:68:LEU:HD11	1.89	0.54
1:A:562:PHE:HB3	1:A:635:MET:HE1	1.89	0.54
1:A:65:VAL:HG21	1:A:255:ARG:HG3	1.89	0.54
2:C:22:LEU:HB2	2:C:85:LEU:HB3	1.90	0.54
1:B:126:MET:HB3	1:B:188:ILE:HD11	1.88	0.54
1:B:199:ILE:HG23	1:A:201:VAL:HG23	1.88	0.54
1:B:301:SER:HA	1:B:448:THR:HA	1.89	0.54
2:E:22:LEU:HB2	2:E:85:LEU:HB3	1.90	0.54
1:B:716:ALA:HB3	1:B:724:VAL:HB	1.90	0.54
1:B:104:PHE:HB3	1:B:908:VAL:HG21	1.90	0.54
1:B:778:LEU:HD12	1:B:779:PRO:HD2	1.89	0.53
1:A:1262:THR:HA	1:A:1265:LEU:HD13	1.88	0.53
2:E:77:ASP:O	2:E:81:SER:HA	2.08	0.53
3:F:130:ARG:NH1	3:F:133:ALA:HB2	2.23	0.53
3:D:171:LYS:HD3	3:D:177:GLN:HB3	1.90	0.53
1:A:340:HIS:CD2	1:A:442:SER:HA	2.44	0.53
2:E:149:VAL:HG13	2:E:205:VAL:HG11	1.89	0.53
1:A:945:LEU:HD21	1:A:1105:SER:HB3	1.90	0.53
2:C:40:ARG:HH22	2:C:68:VAL:HG11	1.73	0.53
3:F:30:THR:HB	3:F:129:LYS:HB3	1.91	0.53
1:B:287:GLY:O	1:B:895:ARG:NH1	2.42	0.53
1:A:646:GLY:HA3	1:A:883:ASP:HB3	1.90	0.53
3:F:19:VAL:HG11	3:F:45:LEU:HD21	1.90	0.53
3:F:56:TRP:HB2	3:F:69:ILE:HB	1.90	0.53
1:B:528:ASP:OD1	1:B:529:GLU:N	2.42	0.53
2:C:173:PHE:CZ	3:D:196:SER:HB3	2.43	0.53
1:A:162:PRO:HB2	1:A:175:LEU:HD21	1.90	0.53
1:A:1272:LEU:HD23	1:A:1295:LEU:HD22	1.91	0.53
1:B:187:ARG:HA	1:A:308:LEU:HD11	1.90	0.53
1:B:712:VAL:HA	1:B:727:GLY:HA3	1.90	0.53
1:A:233:THR:HG21	1:A:380:GLN:NE2	2.23	0.53
1:A:368:HIS:HB3	1:A:423:LEU:HD21	1.90	0.53
1:A:642:TRP:HZ3	1:A:831:VAL:HG13	1.72	0.53
1:A:1072:ARG:HG2	1:A:1112:GLN:HE21	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:103:ALA:HB1	1:B:905:ARG:HB3	1.90	0.53
1:A:613:ARG:NH2	1:A:620:SER:OG	2.42	0.53
1:A:692:LYS:HG3	1:A:728:ASP:HA	1.91	0.53
1:A:1028:LEU:HD11	1:A:1244:ILE:HD11	1.91	0.53
2:C:8:GLN:HE22	2:C:99:TYR:HA	1.74	0.53
3:F:142:PRO:HD3	3:F:154:VAL:HB	1.91	0.53
3:D:56:TRP:HB2	3:D:69:ILE:HB	1.90	0.53
1:B:591:ALA:HB2	1:B:602:VAL:HG22	1.91	0.52
1:B:680:LEU:HA	1:B:683:ARG:HE	1.73	0.52
3:D:142:PRO:HD3	3:D:154:VAL:HB	1.91	0.52
3:F:19:VAL:HG22	3:F:43:GLN:HB2	1.91	0.52
1:B:14:ARG:HG2	3:D:51:TYR:CE2	2.42	0.52
1:A:86:ARG:HG3	1:A:87:SER:H	1.73	0.52
1:A:950:LEU:HB2	1:A:1003:VAL:HG22	1.91	0.52
1:A:1313:ALA:HB3	1:A:1360:ILE:HG23	1.91	0.52
3:D:19:VAL:HG11	3:D:45:LEU:HD21	1.90	0.52
2:C:77:ASP:O	2:C:81:SER:HA	2.08	0.52
3:D:19:VAL:HG22	3:D:43:GLN:HB2	1.91	0.52
3:D:30:THR:HB	3:D:129:LYS:HB3	1.91	0.52
1:B:339:ALA:HB1	1:B:351:GLU:OE2	2.10	0.52
1:A:1074:ILE:HG22	1:A:1082:TRP:HB2	1.91	0.52
3:D:27:LEU:HD13	3:D:37:ILE:HG13	1.92	0.52
2:E:206:ASN:HB3	2:E:213:LYS:HG3	1.89	0.52
1:A:1259:HIS:CE1	1:A:1302:ARG:HG3	2.44	0.52
1:B:609:GLU:O	1:B:613:ARG:HB2	2.10	0.52
1:A:153:VAL:HG12	1:A:155:LEU:HG	1.92	0.52
1:A:906:GLU:HG2	1:A:907:ARG:H	1.75	0.52
2:C:177:LEU:HD13	2:C:183:TYR:CE1	2.44	0.52
3:D:127:ASP:OD1	3:D:195:TYR:OH	2.28	0.52
1:A:208:SER:HB2	1:A:385:VAL:HB	1.92	0.52
1:A:1170:LEU:H	1:A:1170:LEU:HD12	1.74	0.52
3:D:130:ARG:HG3	3:D:131:THR:O	2.11	0.52
1:B:817:VAL:O	1:B:820:LEU:HB3	2.09	0.51
1:A:154:GLY:HA3	1:A:207:SER:HB3	1.91	0.51
1:B:133:VAL:HG22	1:B:276:LEU:HB2	1.91	0.51
1:B:519:PRO:O	1:B:520:HIS:ND1	2.44	0.51
1:A:43:ARG:HB2	1:A:272:ALA:HB3	1.92	0.51
1:B:558:ALA:HB2	1:B:880:VAL:HG13	1.91	0.51
2:C:171:HIS:CE1	3:D:159:ASN:HD21	2.28	0.51
1:B:788:VAL:HB	1:B:806:ASN:HA	1.93	0.51
3:F:27:LEU:HD13	3:F:37:ILE:HG13	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1068:TRP:HZ2	1:A:1087:ASP:HB2	1.76	0.51
1:B:8:LYS:HG2	2:E:105:THR:HG21	1.92	0.51
1:B:605:PHE:CD2	1:B:630:VAL:HG11	2.46	0.51
1:B:605:PHE:HD2	1:B:630:VAL:HG11	1.74	0.51
1:A:511:LEU:HD13	1:A:898:LEU:HD13	1.93	0.51
1:A:571:GLY:O	1:A:574:VAL:HG13	2.10	0.51
2:E:101:THR:HG22	2:E:110:TRP:CD2	2.46	0.51
3:F:130:ARG:HG3	3:F:131:THR:O	2.10	0.51
1:B:1427:VAL:HG11	1:B:1455:LEU:HB2	1.93	0.51
1:A:293:VAL:HG23	1:A:455:GLU:HB3	1.93	0.51
1:A:619:LEU:HB2	1:A:623:ARG:HG3	1.91	0.51
1:A:1278:SER:OG	1:A:1289:ALA:O	2.29	0.51
2:C:150:LYS:NZ	3:D:146:GLN:OE1	2.39	0.51
1:B:149:THR:HB	1:B:194:LEU:HD22	1.92	0.51
1:A:38:VAL:N	1:A:276:LEU:O	2.40	0.51
1:A:155:LEU:HD23	1:A:232:VAL:HG13	1.92	0.51
1:B:602:VAL:HG12	1:B:630:VAL:HG12	1.93	0.51
1:A:92:GLN:HE21	1:A:254:GLY:HA2	1.75	0.51
1:A:269:ALA:O	1:A:380:GLN:NE2	2.44	0.51
1:A:390:LYS:HE3	1:A:401:PRO:HG2	1.92	0.51
1:A:1087:ASP:HB3	1:A:1114:ALA:HA	1.93	0.51
3:F:127:ASP:OD1	3:F:195:TYR:OH	2.28	0.51
1:A:558:ALA:HB2	1:A:880:VAL:HG13	1.92	0.51
1:A:1209:ARG:HA	1:A:1261:LEU:HD21	1.92	0.51
1:A:1301:GLN:C	1:A:1304:SER:H	2.15	0.51
2:E:24:CYS:HB3	2:E:83:ALA:HB3	1.92	0.51
1:B:828:PHE:HE1	1:B:852:LEU:HB3	1.76	0.50
1:A:367:LEU:HB3	1:A:420:ILE:HG12	1.92	0.50
1:A:471:VAL:HG11	1:A:865:LEU:HD23	1.93	0.50
1:A:577:LEU:HB2	1:A:584:ALA:HB2	1.93	0.50
1:A:692:LYS:HE3	1:A:754:ALA:HA	1.91	0.50
1:A:797:GLU:HB2	1:A:805:ARG:HH22	1.76	0.50
2:C:24:CYS:HB3	2:C:83:ALA:HB3	1.92	0.50
1:B:623:ARG:O	1:B:627:VAL:N	2.33	0.50
1:B:683:ARG:HD2	1:B:770:GLU:HG2	1.92	0.50
2:C:105:THR:HA	3:D:117:ARG:HH22	1.75	0.50
1:B:576:LEU:HD22	1:B:858:LEU:HD11	1.94	0.50
1:A:54:PHE:HZ	1:A:372:VAL:HG21	1.77	0.50
1:A:171:VAL:HG21	1:A:910:LEU:HD11	1.94	0.50
1:A:339:ALA:HB2	1:A:369:LEU:HD11	1.93	0.50
3:F:130:ARG:HD2	3:F:193:SER:OG	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1302:ARG:HA	1:A:1305:ASP:OD2	2.12	0.50
3:F:170:TRP:CD2	3:F:201:LEU:HD13	2.47	0.50
1:A:1337:ILE:HG22	1:A:1363:ASP:HB3	1.94	0.50
3:F:69:ILE:HG23	3:F:74:ASN:O	2.11	0.50
1:B:141:PRO:HD2	1:B:516:ALA:HB2	1.93	0.50
1:A:329:LEU:HD13	1:A:437:ARG:HD3	1.93	0.50
1:A:627:VAL:O	1:A:631:MET:HG2	2.12	0.50
2:C:91:LYS:HE3	2:C:93:GLU:HB3	1.94	0.50
2:C:178:GLN:OE1	2:C:184:SER:OG	2.15	0.50
2:E:178:GLN:OE1	2:E:184:SER:OG	2.15	0.50
1:B:292:ALA:HB3	1:B:392:VAL:HG22	1.94	0.50
1:B:666:ALA:O	1:B:781:PHE:N	2.29	0.50
1:B:701:ALA:HA	1:B:704:VAL:HG22	1.94	0.50
1:A:1302:ARG:HD3	1:A:1309:ALA:HB2	1.94	0.50
2:E:170:VAL:HG22	2:E:189:VAL:HG12	1.94	0.50
2:C:170:VAL:HG22	2:C:189:VAL:HG12	1.94	0.50
2:E:177:LEU:HB2	2:E:183:TYR:HE1	1.77	0.50
1:B:93:ARG:NH2	1:A:1055:PRO:O	2.27	0.49
1:B:595:GLU:HA	1:B:598:LEU:O	2.12	0.49
1:A:597:HIS:CE1	1:A:676:ARG:HB2	2.47	0.49
1:A:776:HIS:HB2	2:C:213:LYS:NZ	2.27	0.49
1:B:736:VAL:HG22	1:B:746:ALA:HB3	1.94	0.49
1:A:698:ALA:HA	1:A:722:SER:HA	1.94	0.49
1:A:837:LEU:O	1:A:841:ILE:N	2.45	0.49
1:A:800:ALA:HA	1:A:803:TRP:CD1	2.48	0.49
3:D:130:ARG:HD2	3:D:193:SER:OG	2.11	0.49
1:A:38:VAL:HG12	1:A:137:ALA:HB1	1.93	0.49
1:A:108:PHE:HZ	1:A:131:TRP:CE2	2.30	0.49
1:A:642:TRP:CD1	1:A:829:LEU:HD21	2.47	0.49
2:C:133:PRO:HG2	2:C:220:PRO:HB3	1.94	0.49
3:D:217:GLU:HB3	3:D:228:THR:HA	1.95	0.49
1:B:300:ASN:O	1:B:449:ASN:N	2.45	0.49
1:A:840:ALA:HA	1:A:843:GLU:OE1	2.13	0.49
1:B:77:ASP:OD2	1:A:931:ARG:NE	2.46	0.49
1:A:932:ILE:HD11	1:A:1125:TRP:CD1	2.47	0.49
2:E:177:LEU:HB2	2:E:183:TYR:CE1	2.47	0.49
1:A:103:ALA:HB1	1:A:905:ARG:HB3	1.95	0.49
1:A:841:ILE:O	1:A:844:ILE:HB	2.13	0.49
1:A:1068:TRP:CZ2	1:A:1087:ASP:HB2	2.48	0.49
1:B:162:PRO:HD2	1:B:175:LEU:HD21	1.94	0.49
1:A:1019:LEU:HG	1:A:1252:VAL:HG21	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:156:ILE:O	1:A:157:PRO:C	2.51	0.49
1:A:1383:ASP:OD1	1:A:1389:ARG:NH2	2.46	0.49
1:A:305:SER:OG	1:A:307:GLY:O	2.29	0.48
2:C:160:SER:HB3	2:C:164:GLY:H	1.78	0.48
2:C:177:LEU:HD13	2:C:183:TYR:HE1	1.76	0.48
3:D:25:LEU:O	3:D:125:LYS:N	2.41	0.48
2:E:133:PRO:HG2	2:E:220:PRO:HB3	1.95	0.48
1:A:704:VAL:HG22	1:A:714:ILE:HD11	1.95	0.48
1:A:1270:PHE:O	1:A:1272:LEU:HD12	2.13	0.48
2:C:6:LEU:HD11	2:C:102:ARG:HG3	1.95	0.48
1:A:838:THR:HA	1:A:841:ILE:HB	1.96	0.48
2:C:151:ASP:HA	2:C:182:LEU:HB3	1.95	0.48
1:B:98:LEU:HD12	1:B:234:VAL:HG22	1.96	0.48
1:B:688:MET:N	1:B:689:PRO:HD3	2.28	0.48
1:B:712:VAL:HG12	1:B:725:VAL:HG22	1.95	0.48
1:B:718:ASN:O	1:B:840:ALA:HB1	2.13	0.48
3:F:217:GLU:HB3	3:F:228:THR:HA	1.95	0.48
1:B:622:GLU:OE1	1:B:623:ARG:NH1	2.46	0.48
1:A:162:PRO:HD2	1:A:910:LEU:HG	1.95	0.48
1:A:1096:LEU:HA	1:A:1100:LEU:HG	1.94	0.48
2:C:131:LEU:HD11	2:C:148:LEU:HG	1.94	0.48
2:C:177:LEU:O	3:D:182:GLN:NE2	2.24	0.48
3:D:187:GLU:OE1	3:D:187:GLU:N	2.47	0.48
1:B:302:ASP:N	1:B:447:GLY:O	2.46	0.48
1:B:764:ARG:HE	1:B:768:HIS:CD2	2.32	0.48
1:A:71:ASP:O	1:A:907:ARG:NH2	2.46	0.48
1:A:156:ILE:HG13	1:A:381:ALA:HB2	1.95	0.48
1:A:385:VAL:O	1:A:389:ILE:HG13	2.13	0.48
1:A:1143:VAL:HG11	1:A:1160:LEU:HD13	1.94	0.48
3:F:187:GLU:N	3:F:187:GLU:OE1	2.47	0.48
1:B:257:LYS:HG3	1:B:405:HIS:HB3	1.96	0.48
1:B:491:ARG:HD3	1:B:902:PRO:HD3	1.96	0.48
2:C:149:VAL:CG1	2:C:205:VAL:HG11	2.43	0.48
1:B:562:PHE:HB2	1:B:654:GLY:HA2	1.96	0.48
1:B:663:ALA:HB1	1:B:669:LEU:HB2	1.96	0.48
1:B:680:LEU:HD23	1:B:771:LEU:HA	1.95	0.48
1:B:814:ALA:HB1	1:B:844:ILE:HD11	1.96	0.48
1:A:15:ARG:HH21	3:D:76:ALA:HB1	1.79	0.48
2:C:95:THR:HG23	2:C:117:THR:HG23	1.95	0.48
3:D:58:LEU:HD13	3:D:107:TYR:CZ	2.49	0.48
1:B:475:TRP:CD1	1:B:508:ALA:HB2	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:736:VAL:HA	1:A:739:CYS:HB2	1.96	0.48
1:A:784:PHE:O	1:A:792:TRP:HD1	1.96	0.47
1:B:19:ASP:OD1	3:F:77:SER:HB3	2.13	0.47
1:A:568:GLN:OE1	1:A:568:GLN:N	2.36	0.47
1:A:1171:VAL:HG22	1:A:1198:ALA:HB3	1.96	0.47
1:B:429:TRP:HH2	1:B:438:ALA:HB2	1.79	0.47
1:B:783:PRO:HB3	1:B:792:TRP:NE1	2.28	0.47
1:B:819:ALA:O	1:B:823:GLN:HB2	2.15	0.47
1:A:197:PRO:HD2	1:A:224:SER:HB3	1.96	0.47
1:A:1158:ARG:HG2	1:A:1188:LEU:HD23	1.96	0.47
1:A:1313:ALA:HB3	1:A:1360:ILE:HA	1.95	0.47
2:E:155:GLU:HG2	2:E:183:TYR:CD2	2.49	0.47
2:E:185:LEU:HD23	2:E:186:SER:N	2.29	0.47
1:B:273:GLY:HA3	1:B:385:VAL:HG13	1.97	0.47
1:B:329:LEU:HD13	1:B:437:ARG:HD3	1.97	0.47
2:E:151:ASP:HA	2:E:182:LEU:HB3	1.95	0.47
1:B:12:TYR:CD1	2:E:106:LEU:HD22	2.49	0.47
1:B:159:GLU:HG2	1:A:163:ARG:HE	1.79	0.47
3:D:184:SER:HB3	3:D:198:SER:HB3	1.96	0.47
3:F:58:LEU:HD13	3:F:107:TYR:CZ	2.49	0.47
1:B:502:GLN:HB2	1:B:507:ILE:HD11	1.96	0.47
1:A:652:VAL:HG21	1:A:666:ALA:HB2	1.96	0.47
1:B:242:VAL:O	1:B:246:ARG:HG2	2.14	0.47
1:B:308:LEU:HD21	1:A:183:VAL:HB	1.97	0.47
1:B:391:MET:O	1:B:395:MET:HG3	2.14	0.47
1:B:753:TYR:HE2	1:B:755:SER:HB2	1.79	0.47
4:B:1801:PN7:O2P	4:B:1801:PN7:O3	2.32	0.47
1:A:683:ARG:HA	1:A:683:ARG:HD3	1.69	0.47
1:A:688:MET:N	1:A:689:PRO:HD2	2.30	0.47
1:A:802:TYR:HA	1:A:805:ARG:HE	1.80	0.47
1:A:1152:VAL:HG22	1:A:1317:TRP:CD1	2.49	0.47
1:A:226:LEU:HD12	1:A:278:GLU:HB2	1.96	0.47
1:A:1000:VAL:HG12	1:A:1002:GLY:H	1.78	0.47
1:B:28:ARG:HH21	3:D:75:ARG:HH21	1.63	0.47
1:B:118:ALA:O	1:B:178:GLY:HA3	2.15	0.47
1:B:154:GLY:HA3	1:B:207:SER:HB3	1.97	0.47
1:A:312:ASN:HD22	1:A:315:ALA:HB2	1.80	0.47
1:A:340:HIS:HD2	1:A:442:SER:HA	1.80	0.47
1:A:478:SER:O	1:A:488:GLN:NE2	2.48	0.47
1:A:524:PHE:HE2	1:A:532:ALA:HB1	1.80	0.47
3:D:163:PRO:O	3:D:220:HIS:NE2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:472:VAL:HG21	1:B:866:ALA:HA	1.97	0.47
1:A:555:GLN:O	1:A:557:ARG:HG2	2.15	0.47
1:B:835:PRO:HB3	1:B:856:HIS:HB2	1.96	0.46
1:A:856:HIS:CE1	1:A:859:ARG:HG2	2.50	0.46
1:B:680:LEU:HG	1:B:770:GLU:HG3	1.98	0.46
1:B:476:VAL:HB	1:B:876:PHE:CE2	2.51	0.46
2:E:7:VAL:HG23	2:E:25:THR:HB	1.98	0.46
1:B:680:LEU:O	1:B:684:VAL:HG13	2.16	0.46
1:B:855:ILE:HG12	1:B:875:ALA:HA	1.97	0.46
1:A:638:LEU:HB3	1:A:642:TRP:CZ3	2.51	0.46
1:A:1079:PRO:HB3	1:A:1377:ARG:HG2	1.98	0.46
1:B:69:PRO:CG	1:B:72:ARG:HD2	2.45	0.46
1:A:485:LEU:HD21	1:A:522:ALA:HB2	1.95	0.46
1:A:495:HIS:NE2	1:A:897:PRO:O	2.47	0.46
1:A:756:HIS:H	1:A:807:LEU:HA	1.81	0.46
3:D:166:ALA:HB2	3:D:220:HIS:HB2	1.97	0.46
2:E:208:LYS:HA	2:E:208:LYS:HD2	1.70	0.46
1:B:562:PHE:CE1	1:B:652:VAL:HG13	2.51	0.46
1:B:632:PHE:CE1	1:B:660:ILE:HB	2.50	0.46
1:A:317:VAL:HG13	1:A:358:ALA:HB2	1.98	0.46
1:A:660:ILE:HG22	1:A:674:ALA:HB1	1.96	0.46
2:E:152:TYR:HB2	2:E:207:HIS:CD2	2.50	0.46
1:B:121:PRO:HG2	1:B:236:PRO:HB3	1.97	0.46
1:B:400:LEU:HD22	1:B:423:LEU:HD11	1.98	0.46
1:A:476:VAL:O	1:A:511:LEU:HG	2.16	0.46
1:A:1137:TRP:HE1	1:A:1268:THR:HG23	1.81	0.46
1:A:1176:PRO:HD2	1:A:1199:ALA:HB2	1.97	0.46
1:A:1272:LEU:HD23	1:A:1295:LEU:CD2	2.46	0.46
1:B:121:PRO:HG3	1:B:909:TRP:CZ3	2.51	0.46
1:B:336:ALA:HB2	1:B:400:LEU:HD11	1.98	0.46
1:B:1421:ARG:NH1	1:B:1436:VAL:H	2.14	0.46
2:E:13:LEU:HD13	2:E:117:THR:HB	1.98	0.46
2:E:31:PHE:HB3	2:E:78:ASP:OD1	2.16	0.46
1:B:207:SER:HB2	1:B:381:ALA:HB1	1.98	0.46
1:B:521:ARG:HD3	1:B:876:PHE:O	2.16	0.46
1:B:526:PRO:HB3	1:B:532:ALA:HB2	1.97	0.46
1:B:731:GLU:O	1:B:735:LEU:HG	2.16	0.46
1:A:349:PRO:HA	1:A:413:ILE:HG12	1.98	0.46
1:A:1209:ARG:HD2	1:A:1261:LEU:HD11	1.98	0.46
3:D:144:ASP:HA	3:D:147:LEU:HD12	1.98	0.46
2:E:31:PHE:CE2	2:E:76:ARG:HB2	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:521:ARG:NH1	1:B:552:SER:OG	2.49	0.45
1:A:241:LEU:HB3	1:A:268:MET:CE	2.47	0.45
1:A:584:ALA:O	1:A:588:ARG:HG2	2.15	0.45
1:A:692:LYS:NZ	1:A:726:ALA:HB1	2.31	0.45
2:E:143:ALA:HA	3:F:138:PHE:HE2	1.81	0.45
2:E:188:VAL:HG21	3:F:157:LEU:HD12	1.99	0.45
1:B:339:ALA:HB2	1:B:355:LEU:HD11	1.99	0.45
1:A:510:SER:HB3	1:A:895:ARG:HB2	1.98	0.45
2:E:37:SER:HB2	2:E:101:THR:OG1	2.15	0.45
3:F:58:LEU:O	3:F:66:GLN:N	2.40	0.45
1:B:205:CYS:HB3	1:B:378:HIS:NE2	2.32	0.45
1:B:165:ALA:O	1:A:242:VAL:HG11	2.15	0.45
1:B:351:GLU:HG3	1:B:443:PHE:HE2	1.81	0.45
1:B:443:PHE:CD1	1:B:449:ASN:HB3	2.50	0.45
1:B:632:PHE:HE1	1:B:661:ALA:N	2.14	0.45
1:A:340:HIS:HA	1:A:373:LYS:HZ3	1.81	0.45
1:A:388:VAL:HG22	1:A:440:VAL:HG21	1.99	0.45
2:C:31:PHE:HB3	2:C:78:ASP:OD1	2.16	0.45
1:B:2:ALA:HA	2:E:54:ARG:HH21	1.81	0.45
1:B:765:ASP:OD1	1:B:766:ALA:N	2.49	0.45
1:A:1229:ALA:HB1	1:A:1288:TYR:HE1	1.82	0.45
1:A:1377:ARG:HA	1:A:1377:ARG:HD2	1.77	0.45
2:C:31:PHE:CE2	2:C:76:ARG:HB2	2.51	0.45
1:A:17:THR:HG23	3:F:74:ASN:HD21	1.81	0.45
2:E:77:ASP:O	2:E:81:SER:CA	2.64	0.45
3:F:137:VAL:HB	3:F:229:LYS:NZ	2.32	0.45
1:A:805:ARG:HD2	1:A:809:ARG:NH2	2.32	0.45
2:C:77:ASP:O	2:C:81:SER:CA	2.64	0.45
1:B:797:GLU:H	1:B:797:GLU:HG3	1.66	0.45
1:A:539:LEU:HD22	1:A:539:LEU:HA	1.70	0.45
1:A:826:ARG:HG3	1:A:852:LEU:HA	1.99	0.45
2:C:7:VAL:HG23	2:C:25:THR:HB	1.98	0.45
1:A:696:SER:HB2	1:A:747:LYS:HE2	1.99	0.45
3:D:58:LEU:HD13	3:D:107:TYR:CE2	2.52	0.45
2:E:176:VAL:CG2	3:F:184:SER:HB2	2.47	0.45
1:B:561:VAL:CG1	1:B:828:PHE:HB2	2.47	0.45
1:B:565:GLN:HG2	1:B:657:GLN:HE22	1.82	0.45
1:B:782:VAL:HG12	1:B:783:PRO:O	2.17	0.45
1:A:103:ALA:HA	1:A:906:GLU:O	2.17	0.45
1:A:1034:MET:SD	1:A:1081:VAL:HG13	2.57	0.45
3:F:137:VAL:HG22	3:F:158:LEU:CD1	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:LEU:HD21	1:B:238:PRO:HB3	1.99	0.44
2:E:131:LEU:HD12	2:E:131:LEU:HA	1.81	0.44
1:B:661:ALA:O	1:B:665:VAL:HG22	2.18	0.44
1:A:243:ASP:O	1:A:244:PHE:C	2.52	0.44
1:A:1043:LEU:N	1:A:1081:VAL:O	2.48	0.44
1:A:1139:PRO:HB2	1:A:1165:ALA:HA	1.99	0.44
1:A:1310:THR:HG22	1:A:1312:VAL:HG13	1.98	0.44
1:A:1362:ILE:HB	1:A:1364:VAL:HG12	2.00	0.44
2:E:148:LEU:HD21	3:F:155:VAL:HG21	2.00	0.44
3:F:58:LEU:HD13	3:F:107:TYR:CE2	2.52	0.44
1:A:763:ILE:HB	1:A:767:LEU:HB2	1.99	0.44
1:A:784:PHE:CE2	1:A:798:LEU:HD11	2.52	0.44
1:A:1068:TRP:O	1:A:1072:ARG:HG3	2.16	0.44
1:A:1188:LEU:H	1:A:1188:LEU:HG	1.50	0.44
2:E:207:HIS:O	2:E:211:ASN:N	2.49	0.44
1:B:483:GLU:OE1	1:B:486:ARG:NH2	2.49	0.44
1:B:813:PHE:CE2	1:B:841:ILE:HD11	2.52	0.44
1:A:329:LEU:HD12	1:A:453:ILE:HG21	1.99	0.44
1:A:528:ASP:H	1:A:531:ALA:HB3	1.83	0.44
2:C:52:PHE:CE1	2:C:63:GLU:HB3	2.53	0.44
3:D:58:LEU:O	3:D:66:GLN:N	2.40	0.44
1:B:349:PRO:HA	1:B:413:ILE:HG12	1.99	0.44
1:A:480:SER:HB2	1:A:518:LEU:HD22	2.00	0.44
1:A:619:LEU:HD12	1:A:619:LEU:HA	1.71	0.44
1:A:720:PRO:HB2	1:A:721:ARG:HD2	1.99	0.44
3:F:158:LEU:HD13	3:F:158:LEU:HA	1.82	0.44
1:B:44:LEU:HD22	1:B:376:LEU:HD13	2.00	0.44
1:B:1459:LEU:HD12	1:B:1459:LEU:HA	1.82	0.44
1:A:302:ASP:HB3	1:A:312:ASN:HB2	2.00	0.44
1:A:568:GLN:HE21	1:A:621:THR:HG21	1.82	0.44
1:A:655:HIS:NE2	1:A:724:VAL:HG21	2.33	0.44
1:B:317:VAL:HG13	1:B:358:ALA:HB2	1.99	0.44
1:B:529:GLU:O	1:B:533:LEU:HD13	2.16	0.44
1:B:710:ASP:HB2	1:B:731:GLU:HG3	1.98	0.44
2:E:35:ALA:CB	2:E:54:ARG:HA	2.48	0.44
1:B:234:VAL:HA	1:B:270:GLU:HG3	2.00	0.44
1:A:682:SER:HA	1:A:685:ILE:HG22	2.00	0.44
1:A:1093:VAL:HB	1:A:1096:LEU:HD12	1.98	0.44
1:A:1143:VAL:HG21	1:A:1160:LEU:HD22	2.00	0.44
1:A:1224:VAL:HB	1:A:1270:PHE:HD1	1.83	0.44
2:C:37:SER:O	2:C:101:THR:OG1	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:25:LEU:O	3:F:125:LYS:N	2.41	0.44
1:B:512:ALA:HB1	1:B:884:TRP:HB3	2.00	0.43
1:B:588:ARG:HD2	1:B:603:ILE:HG13	2.00	0.43
1:A:69:PRO:HG3	1:A:97:PHE:HB3	2.00	0.43
1:A:778:LEU:HD22	1:A:778:LEU:HA	1.81	0.43
1:B:34:PRO:HB2	1:B:293:VAL:HG11	1.99	0.43
1:A:1028:LEU:HD21	1:A:1070:VAL:HG21	1.99	0.43
1:A:1096:LEU:HD22	1:A:1100:LEU:HD11	2.00	0.43
1:A:1110:GLU:HB2	1:A:1113:LEU:HD21	1.99	0.43
1:A:1298:LEU:O	1:A:1302:ARG:HB2	2.18	0.43
3:F:22:GLN:N	3:F:22:GLN:OE1	2.51	0.43
1:B:171:VAL:HG21	1:B:910:LEU:HD21	1.99	0.43
1:B:379:THR:HB	1:B:382:ALA:HB3	2.00	0.43
1:A:573:ALA:HB1	1:A:576:LEU:HB3	2.00	0.43
1:A:1071:GLY:HA3	1:A:1085:LEU:HD11	2.00	0.43
1:A:1167:HIS:CD2	1:A:1219:VAL:HG11	2.53	0.43
3:D:128:ILE:HB	3:D:188:GLN:NE2	2.34	0.43
1:A:177:THR:O	1:A:183:VAL:HG21	2.19	0.43
1:A:703:GLU:HG2	1:A:704:VAL:N	2.34	0.43
1:B:492:LEU:HD21	1:B:511:LEU:HD11	2.01	0.43
1:A:149:THR:HA	1:A:226:LEU:O	2.19	0.43
1:A:705:ARG:HG2	1:A:714:ILE:HG13	2.00	0.43
1:A:949:TRP:HZ3	1:A:1044:TRP:HD1	1.65	0.43
3:F:31:PRO:HA	3:F:99:VAL:O	2.19	0.43
1:B:80:PHE:CE1	1:B:93:ARG:HD2	2.53	0.43
1:B:338:GLU:O	1:B:338:GLU:HG3	2.18	0.43
1:A:641:MET:HG2	1:A:868:PHE:CZ	2.53	0.43
3:D:22:GLN:OE1	3:D:22:GLN:N	2.51	0.43
1:B:697:ILE:HG12	1:B:699:ALA:H	1.84	0.43
2:C:8:GLN:HE21	2:C:100:CYS:HB2	1.83	0.43
1:A:155:LEU:HD12	1:A:200:SER:OG	2.19	0.43
1:A:610:ALA:HA	1:A:613:ARG:HE	1.83	0.43
1:A:1088:VAL:HG11	1:A:1096:LEU:HD23	2.00	0.43
3:D:31:PRO:HA	3:D:99:VAL:O	2.19	0.43
3:D:137:VAL:HB	3:D:229:LYS:NZ	2.34	0.43
2:E:80:LYS:O	2:E:82:ILE:HG12	2.18	0.43
2:E:205:VAL:O	2:E:213:LYS:HA	2.19	0.43
1:B:632:PHE:O	1:B:636:VAL:HG12	2.19	0.43
1:A:39:ALA:HB2	1:A:137:ALA:HB2	2.00	0.43
1:A:593:ALA:HB1	1:A:672:ASP:HA	2.00	0.43
2:E:53:ILE:HB	2:E:74:ILE:HG22	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:108:ASP:CG	3:F:67:LEU:HD22	2.37	0.43
2:E:112:GLN:H	2:E:112:GLN:HG3	1.17	0.43
3:F:29:VAL:HB	3:F:99:VAL:HG11	2.00	0.43
3:F:106:VAL:HG22	3:F:125:LYS:HD2	2.01	0.43
1:B:739:CYS:SG	1:B:740:THR:N	2.91	0.43
1:B:836:ILE:H	1:B:836:ILE:HG13	1.36	0.43
1:A:406:ALA:HB1	1:A:422:LEU:HD13	2.01	0.43
1:A:512:ALA:HB1	1:A:884:TRP:CG	2.54	0.43
1:A:1155:GLN:HG3	1:A:1158:ARG:NH1	2.34	0.43
1:A:1173:ARG:HD2	1:A:1201:ASP:HA	2.00	0.43
3:F:58:LEU:HD21	3:F:60:LYS:HG3	2.01	0.43
1:A:64:ALA:N	1:A:375:ASN:O	2.45	0.42
1:A:235:MET:HA	1:A:236:PRO:HD2	1.83	0.42
1:A:367:LEU:O	1:A:421:SER:N	2.39	0.42
1:A:1033:ALA:O	1:A:1037:ALA:N	2.50	0.42
1:A:1143:VAL:HG11	1:A:1160:LEU:CD1	2.49	0.42
1:B:349:PRO:O	1:B:353:ARG:HG3	2.18	0.42
1:B:805:ARG:HG2	1:B:809:ARG:HH12	1.84	0.42
1:A:29:GLU:HA	1:A:33:GLU:HB2	2.01	0.42
1:A:532:ALA:HA	1:A:535:VAL:HG23	2.01	0.42
1:A:608:ALA:HA	1:A:612:ARG:HE	1.85	0.42
2:C:49:TRP:HZ2	2:C:52:PHE:HD1	1.66	0.42
2:C:80:LYS:O	2:C:82:ILE:HG12	2.19	0.42
2:C:185:LEU:HD23	2:C:186:SER:N	2.34	0.42
3:D:141:PRO:HA	3:D:154:VAL:HG23	2.01	0.42
3:F:215:ALA:HA	3:F:230:SER:HA	2.01	0.42
1:B:334:ILE:O	1:B:363:ARG:NH1	2.33	0.42
1:B:719:GLY:H	1:B:814:ALA:HB2	1.83	0.42
1:B:35:VAL:HG23	1:B:294:LEU:HB2	2.01	0.42
1:B:36:ALA:HB1	1:B:290:VAL:HG13	2.02	0.42
1:B:731:GLU:HA	1:B:734:ARG:HG2	2.00	0.42
4:B:1801:PN7:H15	1:A:311:PRO:HD3	2.01	0.42
1:A:337:VAL:HG23	1:A:367:LEU:HD11	2.02	0.42
1:A:668:ALA:HB2	1:A:795:PRO:HB2	2.01	0.42
1:A:1159:TRP:HE1	1:A:1163:ARG:CZ	2.32	0.42
1:B:774:ASP:OD1	1:B:774:ASP:N	2.52	0.42
1:A:495:HIS:CG	1:A:899:PRO:HD3	2.55	0.42
1:A:739:CYS:HA	1:A:742:GLU:HG2	2.02	0.42
1:A:1007:LEU:H	1:A:1007:LEU:HG	1.42	0.42
1:A:1301:GLN:C	1:A:1303:ARG:N	2.70	0.42
1:A:1339:MET:H	1:A:1339:MET:HG3	1.56	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:29:VAL:HB	3:D:99:VAL:HG11	2.00	0.42
3:D:54:LEU:HD13	3:D:92:PHE:CG	2.54	0.42
1:B:228:MET:HG2	1:B:276:LEU:HD13	2.02	0.42
1:B:410:SER:HB3	1:B:413:ILE:HD12	2.02	0.42
1:B:731:GLU:HG2	1:B:734:ARG:HH11	1.84	0.42
1:A:241:LEU:HB3	1:A:268:MET:HE2	2.01	0.42
1:A:944:ARG:HD3	1:A:944:ARG:HA	1.92	0.42
2:C:69:LYS:HA	2:C:69:LYS:HD3	1.84	0.42
2:C:206:ASN:HD22	2:C:213:LYS:HG3	1.85	0.42
1:B:269:ALA:HB2	1:B:377:GLY:HA3	2.01	0.42
1:B:434:ARG:HE	1:B:434:ARG:HB3	1.61	0.42
1:B:1465:VAL:HG21	1:B:1485:LEU:HD11	2.02	0.42
1:A:1049:SER:N	1:A:1088:VAL:O	2.50	0.42
1:A:1331:PHE:HB3	1:A:1336:VAL:HG13	2.02	0.42
3:F:128:ILE:HB	3:F:188:GLN:NE2	2.34	0.42
1:B:378:HIS:CD2	1:B:380:GLN:H	2.38	0.42
1:A:265:GLY:HA2	1:A:344:THR:HA	2.02	0.42
1:A:338:GLU:N	1:A:439:GLY:O	2.46	0.42
1:A:556:GLN:HG3	1:A:881:ALA:HB2	2.02	0.42
1:A:628:GLN:HB2	1:A:682:SER:HB2	2.02	0.42
1:A:737:ALA:C	1:A:739:CYS:N	2.70	0.42
3:F:102:GLU:H	3:F:102:GLU:HG2	1.66	0.42
1:B:652:VAL:C	1:B:653:ILE:HG12	2.40	0.42
1:A:506:ASP:OD2	1:A:894:ARG:NH1	2.53	0.42
1:A:577:LEU:HD23	1:A:577:LEU:H	1.85	0.42
1:A:589:GLU:HG2	1:A:590:CYS:N	2.35	0.42
1:A:1222:SER:HB3	1:A:1268:THR:H	1.85	0.42
3:D:168:VAL:HG21	3:D:197:LEU:HD22	2.02	0.42
1:A:465:ARG:HD2	1:A:465:ARG:HA	1.39	0.42
2:C:149:VAL:HG13	2:C:205:VAL:HG11	2.01	0.42
3:F:118:LEU:HD13	3:F:118:LEU:HA	1.83	0.42
1:B:400:LEU:HA	1:B:401:PRO:HD3	1.88	0.41
1:B:695:ALA:O	1:B:725:VAL:HG12	2.20	0.41
1:A:311:PRO:HG2	1:A:350:ILE:HD12	2.01	0.41
2:C:18:ARG:HA	2:C:18:ARG:HD3	1.74	0.41
2:C:38:TRP:O	2:C:50:VAL:HB	2.19	0.41
1:A:253:ASP:OD2	1:A:255:ARG:HD3	2.20	0.41
1:A:811:VAL:HG12	1:A:813:PHE:HB2	2.01	0.41
2:C:171:HIS:CE1	3:D:159:ASN:ND2	2.88	0.41
3:D:215:ALA:HA	3:D:230:SER:HA	2.01	0.41
2:E:49:TRP:HZ2	2:E:52:PHE:HD1	1.66	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:34:PRO:HB2	1:B:293:VAL:CG1	2.50	0.41
1:B:39:ALA:HB2	1:B:137:ALA:HB2	2.01	0.41
1:B:221:ARG:HD2	1:B:223:GLU:HB2	2.03	0.41
1:A:12:TYR:CE1	3:D:70:TYR:HB2	2.55	0.41
1:A:802:TYR:HD1	1:A:805:ARG:HH21	1.68	0.41
3:D:106:VAL:HG22	3:D:125:LYS:HD2	2.01	0.41
1:B:55:TRP:O	1:B:59:SER:HB3	2.20	0.41
1:B:650:ALA:HB1	1:B:825:TYR:CZ	2.56	0.41
1:B:1437:PRO:HB2	1:B:1440:GLN:HB2	2.02	0.41
1:A:604:PRO:HB3	1:A:607:ARG:HH21	1.86	0.41
2:E:21:ARG:NH1	2:E:84:TYR:CD2	2.88	0.41
2:E:53:ILE:HG23	2:E:76:ARG:HH11	1.84	0.41
2:E:80:LYS:NZ	2:E:82:ILE:HG13	2.36	0.41
1:B:227:ALA:O	1:B:276:LEU:HD12	2.21	0.41
1:B:1409:ALA:HB3	1:B:1411:GLU:CG	2.51	0.41
1:A:139:ILE:HD12	1:A:139:ILE:H	1.85	0.41
1:A:171:VAL:HG21	1:A:910:LEU:CD1	2.50	0.41
1:A:625:ASP:HB3	1:A:686:ALA:HB2	2.01	0.41
2:C:6:LEU:HD22	2:C:24:CYS:SG	2.61	0.41
3:D:146:GLN:OE1	3:D:153:SER:HB2	2.20	0.41
2:E:131:LEU:HB2	2:E:146:GLY:C	2.40	0.41
3:F:59:GLN:OE1	3:F:65:PRO:HG3	2.20	0.41
1:B:140:PRO:HA	1:B:141:PRO:HD3	1.96	0.41
1:B:1471:THR:HG23	1:B:1475:HIS:HD2	1.85	0.41
1:A:1030:LEU:O	1:A:1034:MET:HG3	2.21	0.41
2:E:77:ASP:O	2:E:81:SER:N	2.54	0.41
3:F:141:PRO:HA	3:F:154:VAL:HG23	2.01	0.41
3:F:146:GLN:OE1	3:F:153:SER:HB2	2.20	0.41
1:B:329:LEU:HD12	1:B:453:ILE:HG21	2.03	0.41
1:B:512:ALA:HB1	1:B:884:TRP:CG	2.56	0.41
1:B:562:PHE:HD2	1:B:635:MET:HE2	1.85	0.41
2:C:80:LYS:NZ	2:C:82:ILE:HG13	2.36	0.41
1:A:92:GLN:HB2	1:A:250:LEU:HD23	2.01	0.41
1:A:865:LEU:HD12	1:A:865:LEU:HA	1.86	0.41
2:C:126:PRO:HB3	2:C:149:VAL:CG1	2.51	0.41
3:D:59:GLN:OE1	3:D:65:PRO:HG3	2.20	0.41
3:F:189:ASP:OD1	3:F:194:THR:N	2.49	0.41
1:B:115:GLU:O	1:B:119:VAL:HG23	2.21	0.41
1:B:357:GLU:HA	1:B:361:ARG:HG2	2.02	0.41
1:A:141:PRO:HG2	1:A:516:ALA:HB2	2.03	0.41
1:A:1054:GLY:HA3	1:A:1056:PHE:CE1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:31:PHE:HE2	2:C:76:ARG:HB2	1.86	0.41
2:C:37:SER:HB3	2:C:52:PHE:HB3	2.03	0.41
2:C:149:VAL:HG12	2:C:152:TYR:CD1	2.55	0.41
2:C:161:TRP:HD1	2:C:170:VAL:HG13	1.85	0.41
1:B:511:LEU:O	1:B:515:ARG:HB2	2.20	0.41
1:B:839:ALA:HA	1:B:842:GLU:HB2	2.03	0.41
1:A:564:GLY:HA3	1:A:656:SER:HG	1.85	0.41
1:A:773:GLU:H	1:A:773:GLU:HG3	1.47	0.41
1:A:911:GLU:HA	1:A:912:PRO:HD2	1.86	0.41
1:A:1206:GLU:HA	1:A:1209:ARG:HB3	2.03	0.41
1:A:1318:ALA:HB3	1:A:1341:PRO:HD3	2.03	0.41
3:F:53:TYR:O	3:F:112:SER:N	2.54	0.41
3:F:130:ARG:HH12	3:F:133:ALA:HB2	1.85	0.41
1:B:689:PRO:HG3	1:B:753:TYR:HB3	2.02	0.40
1:B:692:LYS:HG3	1:B:759:HIS:CD2	2.56	0.40
1:B:712:VAL:HG22	1:B:727:GLY:HA3	2.02	0.40
1:A:692:LYS:HE2	1:A:757:SER:OG	2.20	0.40
1:A:1334:HIS:HA	1:A:1368:ARG:HB3	2.03	0.40
2:C:77:ASP:O	2:C:81:SER:N	2.54	0.40
2:C:159:VAL:HG22	2:C:205:VAL:HG13	2.03	0.40
1:A:533:LEU:HD13	1:A:533:LEU:HA	1.75	0.40
1:A:805:ARG:HD2	1:A:809:ARG:HH21	1.85	0.40
2:C:13:LEU:HD13	2:C:117:THR:HB	2.03	0.40
3:D:104:VAL:HG23	3:D:126:VAL:HG12	2.03	0.40
2:E:173:PHE:O	2:E:185:LEU:HG	2.21	0.40
3:F:135:PRO:HG3	3:F:220:HIS:HB3	2.04	0.40
1:B:506:ASP:HB3	1:B:896:VAL:HG21	2.03	0.40
1:B:1448:ASP:O	1:B:1449:SER:C	2.59	0.40
1:A:443:PHE:HA	1:A:449:ASN:HA	2.04	0.40
1:A:1239:LEU:HD23	1:A:1239:LEU:HA	1.95	0.40
2:E:31:PHE:O	2:E:76:ARG:NH2	2.54	0.40
1:A:133:VAL:HG22	1:A:276:LEU:HB2	2.04	0.40
1:A:609:GLU:O	1:A:613:ARG:N	2.54	0.40
1:A:1321:GLY:HA2	1:A:1324:GLU:HB3	2.04	0.40
1:A:1366:TRP:HA	1:A:1369:PHE:HB3	2.02	0.40
3:D:53:TYR:O	3:D:112:SER:N	2.54	0.40
1:B:163:ARG:HE	1:A:159:GLU:HG2	1.86	0.40
1:B:217:GLN:HG3	1:A:221:ARG:NH1	2.37	0.40
1:B:659:GLU:HG3	1:B:806:ASN:ND2	2.37	0.40
1:B:680:LEU:HD12	1:B:683:ARG:NH2	2.36	0.40
1:A:42:CYS:O	1:A:42:CYS:SG	2.80	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:93:ARG:HE	1:A:93:ARG:HB3	1.42	0.40
1:A:640:SER:HA	1:A:643:ARG:HD3	2.04	0.40
1:A:682:SER:O	1:A:685:ILE:HG22	2.21	0.40
2:C:6:LEU:HD23	2:C:6:LEU:HA	1.93	0.40
2:C:40:ARG:N	2:C:48:GLU:O	2.46	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1388/1784 (78%)	1264 (91%)	123 (9%)	1 (0%)	48	80
1	B	995/1784 (56%)	915 (92%)	78 (8%)	2 (0%)	44	75
2	C	199/249 (80%)	179 (90%)	20 (10%)	0	100	100
2	E	199/249 (80%)	176 (88%)	23 (12%)	0	100	100
3	D	200/236 (85%)	184 (92%)	16 (8%)	0	100	100
3	F	200/236 (85%)	187 (94%)	13 (6%)	0	100	100
All	All	3181/4538 (70%)	2905 (91%)	273 (9%)	3 (0%)	50	80

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	1449	SER
1	B	720	PRO
1	A	779	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	A	1028/1325 (78%)	884 (86%)	144 (14%)	3	14
1	B	746/1325 (56%)	653 (88%)	93 (12%)	3	18
2	C	170/203 (84%)	132 (78%)	38 (22%)	1	4
2	E	170/203 (84%)	136 (80%)	34 (20%)	1	5
3	D	182/208 (88%)	146 (80%)	36 (20%)	1	6
3	F	182/208 (88%)	147 (81%)	35 (19%)	1	6
All	All	2478/3472 (71%)	2098 (85%)	380 (15%)	4	11

All (380) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	9	VAL
1	B	31	GLU
1	B	52	GLU
1	B	54	PHE
1	B	57	LEU
1	B	75	ASP
1	B	100	GLU
1	B	112	SER
1	B	114	ARG
1	B	123	GLN
1	B	124	ARG
1	B	126	MET
1	B	129	LEU
1	B	156	ILE
1	B	159	GLU
1	B	162	PRO
1	B	163	ARG
1	B	164	LEU
1	B	175	LEU
1	B	180	THR
1	B	182	SER
1	B	197	PRO

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Mol	Chain	Res	Type
1	B	209	LEU
1	B	212	VAL
1	B	214	LEU
1	B	220	ARG
1	B	221	ARG
1	B	237	THR
1	B	240	MET
1	B	241	LEU
1	B	264	ASN
1	B	268	MET
1	B	270	GLU
1	B	314	ARG
1	B	342	THR
1	B	344	THR
1	B	345	ARG
1	B	402	ARG
1	B	497	ARG
1	B	553	ARG
1	B	556	GLN
1	B	567	TRP
1	B	572	MET
1	B	574	VAL
1	B	575	ASP
1	B	577	LEU
1	B	579	THR
1	B	606	LEU
1	B	607	ARG
1	B	612	ARG
1	B	623	ARG
1	B	631	MET
1	B	653	ILE
1	B	660	ILE
1	B	682	SER
1	B	684	VAL
1	B	703	GLU
1	B	705	ARG
1	B	721	ARG
1	B	722	SER
1	B	751	VAL
1	B	752	ASP
1	B	785	PHE
1	B	788	VAL

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Mol	Chain	Res	Type
1	B	797	GLU
1	B	799	ASP
1	B	826	ARG
1	B	827	THR
1	B	831	VAL
1	B	836	ILE
1	B	837	LEU
1	B	853	SER
1	B	859	ARG
1	B	865	LEU
1	B	870	GLU
1	B	872	LEU
1	B	873	SER
1	B	874	ARG
1	B	908	VAL
1	B	1407	LEU
1	B	1411	GLU
1	B	1412	ARG
1	B	1414	LYS
1	B	1435	ARG
1	B	1436	VAL
1	B	1448	ASP
1	B	1453	LEU
1	B	1455	LEU
1	B	1456	ARG
1	B	1459	LEU
1	B	1463	THR
1	B	1466	ARG
1	B	1485	LEU
1	A	1	MET
1	A	3	SER
1	A	5	ASP
1	A	6	SER
1	A	7	GLU
1	A	8	LYS
1	A	42	CYS
1	A	44	LEU
1	A	57	LEU
1	A	63	ASP
1	A	65	VAL
1	A	93	ARG
1	A	98	LEU

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Mol	Chain	Res	Type
1	A	117	LEU
1	A	124	ARG
1	A	157	PRO
1	A	158	GLN
1	A	159	GLU
1	A	162	PRO
1	A	163	ARG
1	A	171	VAL
1	A	176	MET
1	A	179	THR
1	A	180	THR
1	A	203	THR
1	A	207	SER
1	A	220	ARG
1	A	243	ASP
1	A	247	MET
1	A	266	PHE
1	A	342	THR
1	A	376	LEU
1	A	404	LEU
1	A	422	LEU
1	A	460	VAL
1	A	461	VAL
1	A	462	GLU
1	A	464	GLU
1	A	465	ARG
1	A	467	GLU
1	A	498	GLU
1	A	505	ARG
1	A	515	ARG
1	A	524	PHE
1	A	530	SER
1	A	533	LEU
1	A	534	ARG
1	A	535	VAL
1	A	539	LEU
1	A	599	ASP
1	A	601	GLU
1	A	619	LEU
1	A	623	ARG
1	A	627	VAL
1	A	683	ARG

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Mol	Chain	Res	Type
1	A	711	ARG
1	A	717	VAL
1	A	722	SER
1	A	723	VAL
1	A	731	GLU
1	A	732	LEU
1	A	735	LEU
1	A	736	VAL
1	A	745	ARG
1	A	748	ARG
1	A	759	HIS
1	A	762	THR
1	A	763	ILE
1	A	765	ASP
1	A	767	LEU
1	A	770	GLU
1	A	771	LEU
1	A	773	GLU
1	A	775	PHE
1	A	777	PRO
1	A	778	LEU
1	A	782	VAL
1	A	784	PHE
1	A	785	PHE
1	A	786	SER
1	A	797	GLU
1	A	799	ASP
1	A	826	ARG
1	A	853	SER
1	A	855	ILE
1	A	859	ARG
1	A	867	ASP
1	A	870	GLU
1	A	913	LYS
1	A	918	ARG
1	A	948	THR
1	A	950	LEU
1	A	960	GLU
1	A	961	THR
1	A	977	ARG
1	A	978	GLU
1	A	980	VAL

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Mol	Chain	Res	Type
1	A	981	VAL
1	A	982	ASP
1	A	1007	LEU
1	A	1010	ASP
1	A	1015	GLU
1	A	1060	ARG
1	A	1125	TRP
1	A	1144	LEU
1	A	1145	VAL
1	A	1168	LEU
1	A	1169	LEU
1	A	1173	ARG
1	A	1179	ASP
1	A	1184	LEU
1	A	1188	LEU
1	A	1194	ARG
1	A	1196	THR
1	A	1235	THR
1	A	1237	ASP
1	A	1238	THR
1	A	1244	ILE
1	A	1246	ARG
1	A	1249	ARG
1	A	1251	LYS
1	A	1253	LEU
1	A	1263	ARG
1	A	1296	ASP
1	A	1303	ARG
1	A	1307	LEU
1	A	1327	VAL
1	A	1330	ARG
1	A	1333	ARG
1	A	1336	VAL
1	A	1339	MET
1	A	1342	GLU
1	A	1357	VAL
1	A	1360	ILE
1	A	1362	ILE
1	A	1363	ASP
1	A	1364	VAL
1	A	1367	ASP
1	A	1371	LEU

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Mol	Chain	Res	Type
1	A	1376	GLN
1	A	1377	ARG
1	A	1379	THR
1	A	1380	ARG
1	A	1385	ILE
2	C	4	VAL
2	C	5	GLN
2	C	18	ARG
2	C	30	THR
2	C	36	MET
2	C	37	SER
2	C	45	LYS
2	C	56	LYS
2	C	61	THR
2	C	67	SER
2	C	69	LYS
2	C	77	ASP
2	C	78	ASP
2	C	80	LYS
2	C	84	TYR
2	C	86	GLN
2	C	87	MET
2	C	91	LYS
2	C	92	THR
2	C	93	GLU
2	C	101	THR
2	C	106	LEU
2	C	108	ASP
2	C	112	GLN
2	C	114	THR
2	C	124	LYS
2	C	145	LEU
2	C	150	LYS
2	C	158	THR
2	C	168	SER
2	C	172	THR
2	C	178	GLN
2	C	182	LEU
2	C	202	ILE
2	C	204	ASN
2	C	206	ASN
2	C	216	LYS

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Mol	Chain	Res	Type
2	C	219	GLU
3	D	18	VAL
3	D	20	MET
3	D	26	SER
3	D	33	GLU
3	D	36	SER
3	D	48	SER
3	D	49	ASN
3	D	77	SER
3	D	81	ASP
3	D	84	SER
3	D	93	THR
3	D	95	LYS
3	D	96	ILE
3	D	114	GLN
3	D	117	ARG
3	D	118	LEU
3	D	119	THR
3	D	132	VAL
3	D	137	VAL
3	D	139	ILE
3	D	144	ASP
3	D	145	GLU
3	D	153	SER
3	D	157	LEU
3	D	178	SER
3	D	181	SER
3	D	185	VAL
3	D	186	THR
3	D	187	GLU
3	D	197	LEU
3	D	202	THR
3	D	205	LYS
3	D	217	GLU
3	D	219	THR
3	D	221	GLN
3	D	224	SER
2	E	14	VAL
2	E	30	THR
2	E	33	ASP
2	E	36	MET
2	E	45	LYS

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Mol	Chain	Res	Type
2	E	55	SER
2	E	56	LYS
2	E	61	THR
2	E	67	SER
2	E	69	LYS
2	E	77	ASP
2	E	78	ASP
2	E	80	LYS
2	E	84	TYR
2	E	91	LYS
2	E	92	THR
2	E	93	GLU
2	E	97	VAL
2	E	105	THR
2	E	108	ASP
2	E	112	GLN
2	E	124	LYS
2	E	131	LEU
2	E	145	LEU
2	E	150	LYS
2	E	158	THR
2	E	160	SER
2	E	168	SER
2	E	172	THR
2	E	177	LEU
2	E	178	GLN
2	E	182	LEU
2	E	208	LYS
2	E	219	GLU
3	F	18	VAL
3	F	20	MET
3	F	26	SER
3	F	33	GLU
3	F	36	SER
3	F	48	SER
3	F	49	ASN
3	F	77	SER
3	F	81	ASP
3	F	84	SER
3	F	86	SER
3	F	90	THR
3	F	92	PHE

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Mol	Chain	Res	Type
3	F	93	THR
3	F	94	LEU
3	F	102	GLU
3	F	117	ARG
3	F	118	LEU
3	F	119	THR
3	F	139	ILE
3	F	144	ASP
3	F	145	GLU
3	F	148	LYS
3	F	153	SER
3	F	167	LYS
3	F	178	SER
3	F	181	SER
3	F	185	VAL
3	F	186	THR
3	F	187	GLU
3	F	205	LYS
3	F	217	GLU
3	F	219	THR
3	F	221	GLN
3	F	224	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	312	ASN
1	A	340	HIS
1	A	378	HIS
1	A	776	HIS
1	A	1226	HIS
2	C	8	GLN
2	C	41	GLN
2	C	86	GLN
2	C	112	GLN
2	C	171	HIS
2	C	204	ASN
2	C	206	ASN
3	D	188	GLN
3	F	188	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](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	PN7	B	1801	1	14,20,21	2.13	4 (28%)	18,26,29	1.42	5 (27%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	PN7	B	1801	1	-	12/24/26/27	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1801	PN7	C8-N9	4.99	1.45	1.33
4	B	1801	PN7	C4-N5	4.97	1.45	1.33
4	B	1801	PN7	O4-C4	-2.36	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1801	PN7	O8-C8	-2.15	1.19	1.23

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	1801	PN7	C6-C7-C8	2.43	116.44	112.39
4	B	1801	PN7	C6-N5-C4	-2.25	118.50	122.55
4	B	1801	PN7	CE2-C2-C3	2.20	112.52	108.77
4	B	1801	PN7	C11-C10-N9	-2.04	107.68	112.31
4	B	1801	PN7	C3-C4-N5	2.03	120.34	116.48

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1801	PN7	C1-C2-C3-O3
4	B	1801	PN7	C1-C2-C3-C4
4	B	1801	PN7	CE1-C2-C3-O3
4	B	1801	PN7	CE1-C2-C3-C4
4	B	1801	PN7	CE2-C2-C3-O3
4	B	1801	PN7	CE2-C2-C3-C4
4	B	1801	PN7	N9-C10-C11-S12
4	B	1801	PN7	N5-C6-C7-C8
4	B	1801	PN7	O3P-C1-C2-CE1
4	B	1801	PN7	O3P-C1-C2-CE2
4	B	1801	PN7	O3-C3-C4-N5
4	B	1801	PN7	O3P-C1-C2-C3

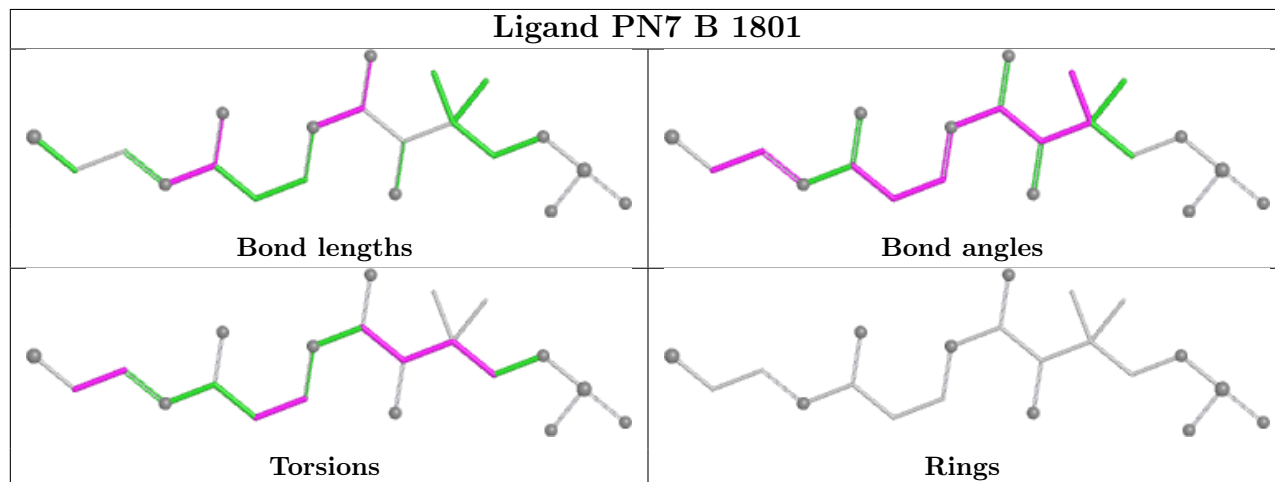
There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	1801	PN7	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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.

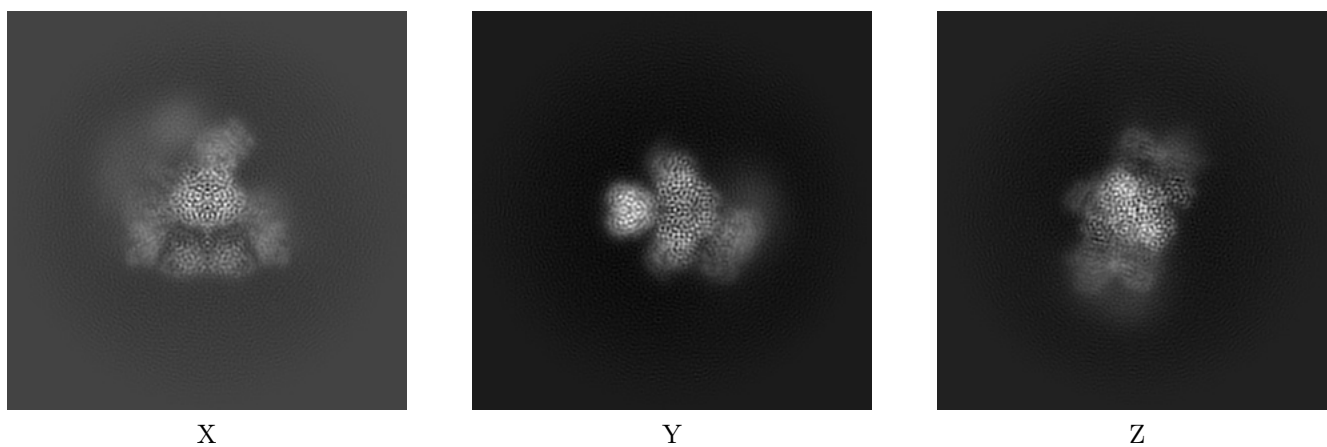
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23711. 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](#)

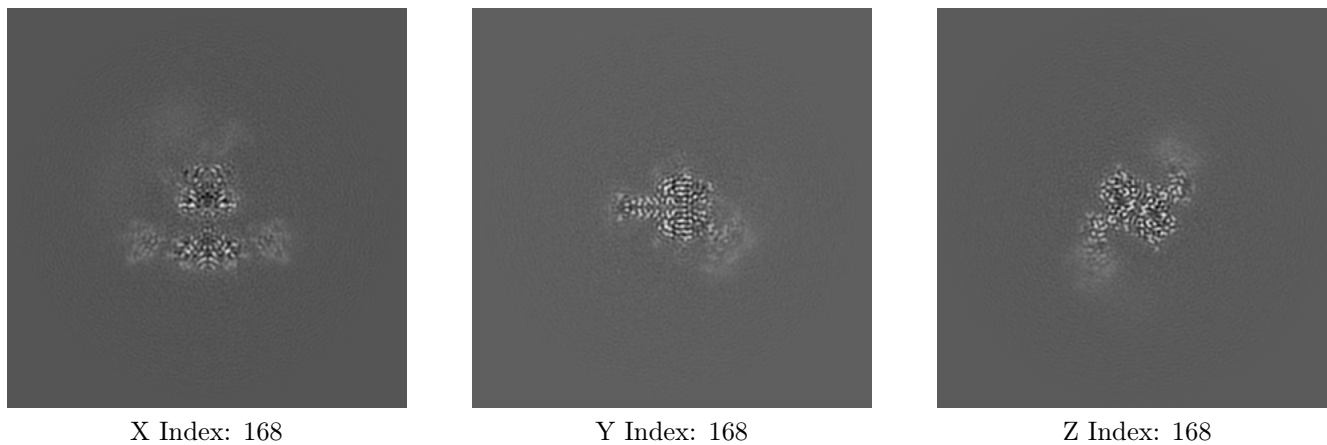
6.1.1 Primary map



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

6.2 Central slices [i](#)

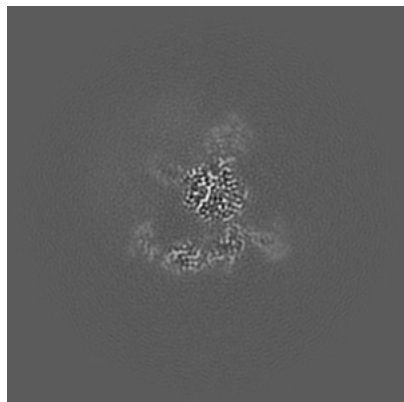
6.2.1 Primary map



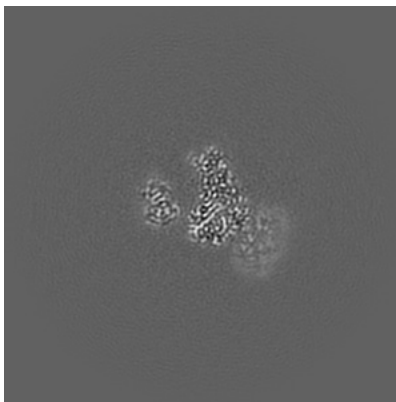
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

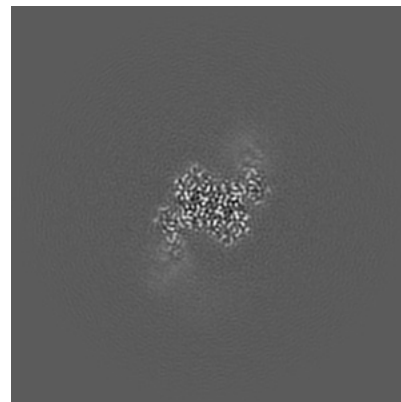
6.3.1 Primary map



X Index: 157



Y Index: 181

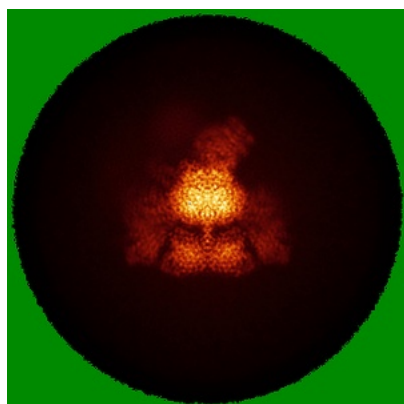


Z Index: 173

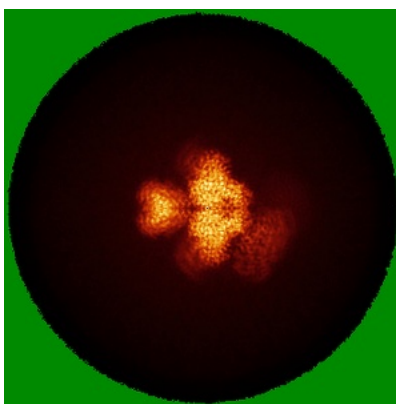
The images above show the largest variance slices of the map in three orthogonal directions.

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

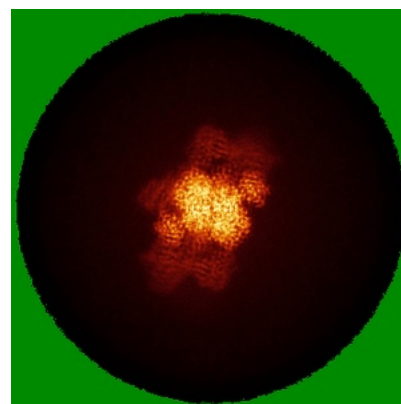
6.4.1 Primary map



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 0.53. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

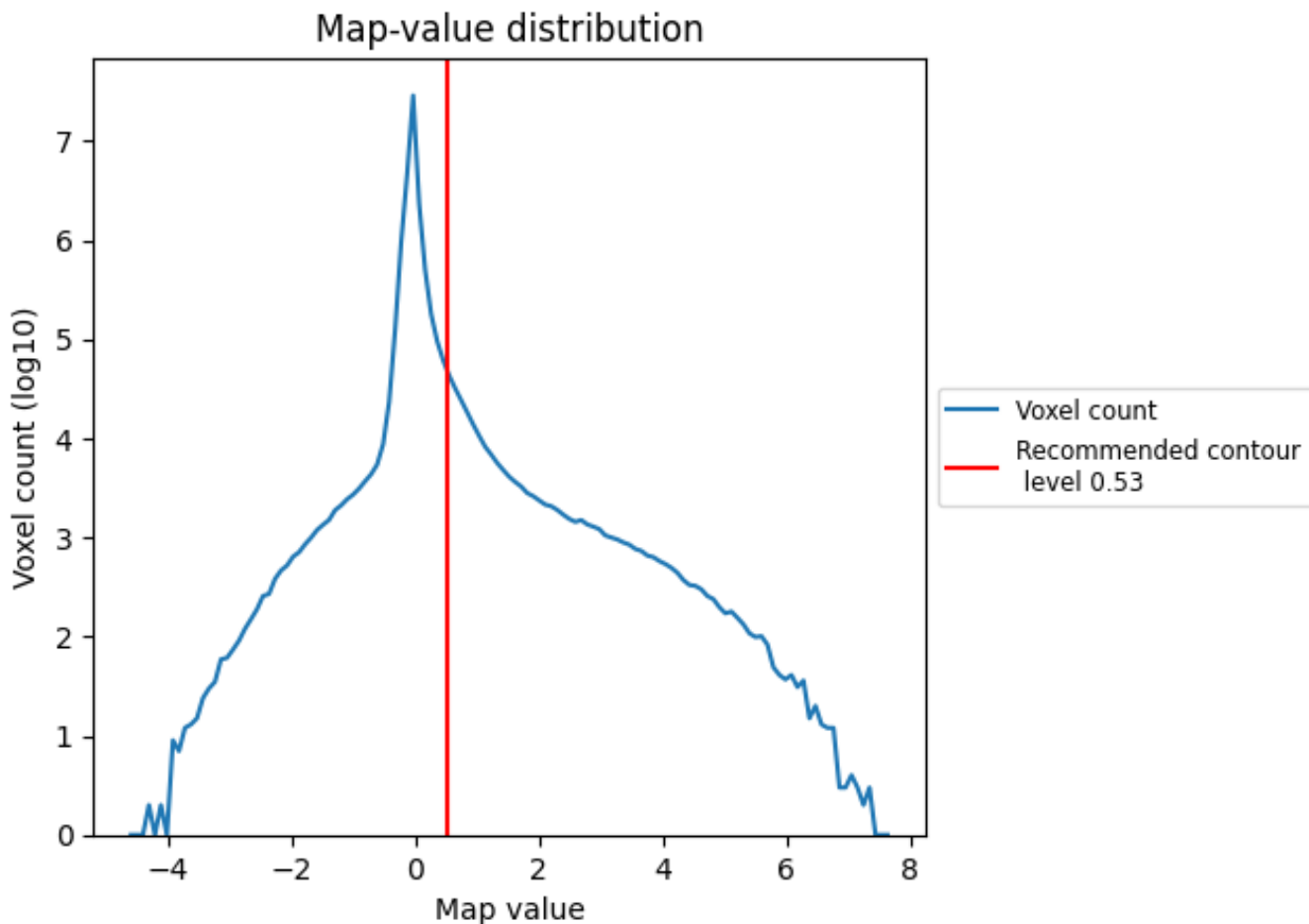
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

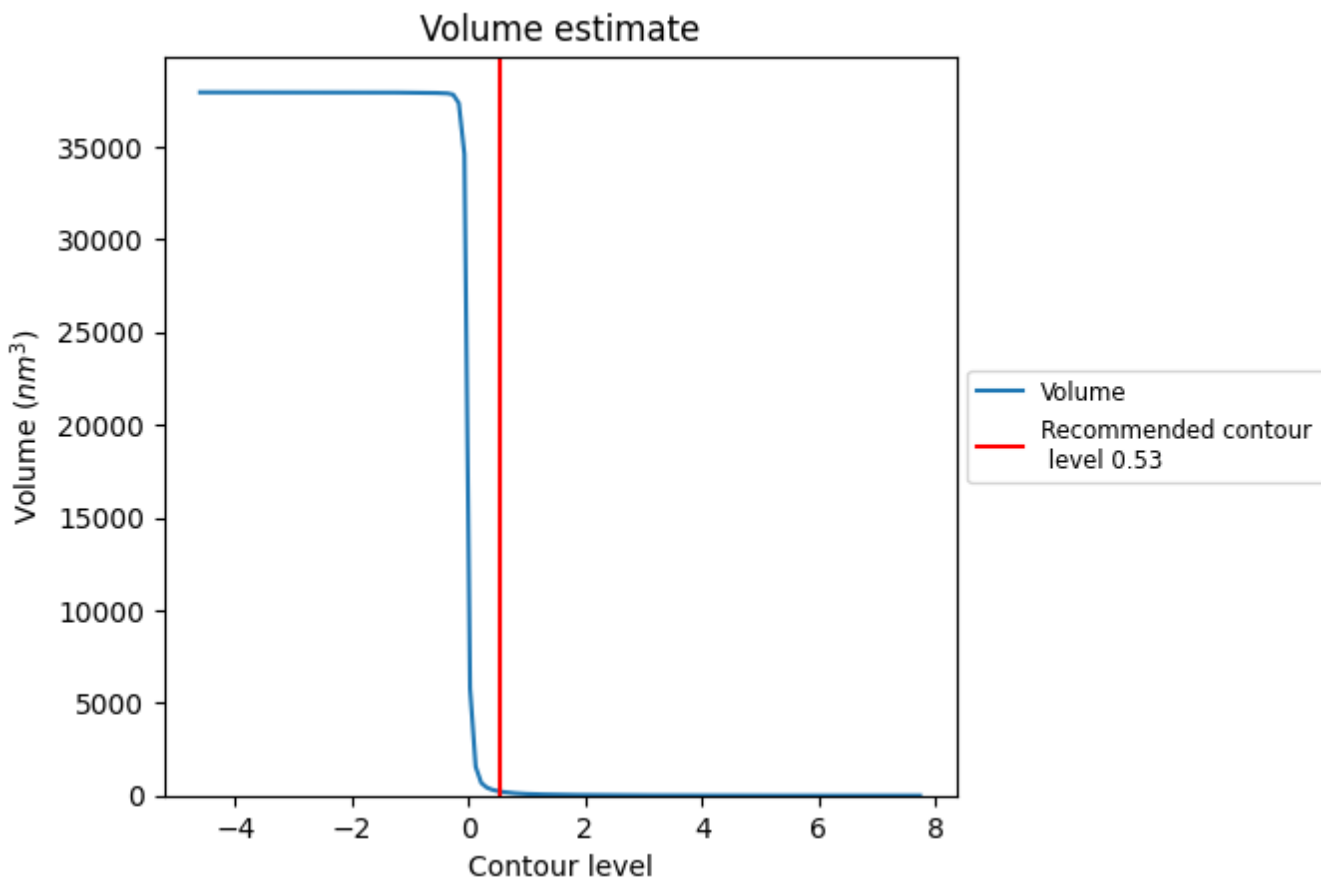
This section contains the results of statistical analysis of the map.

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.

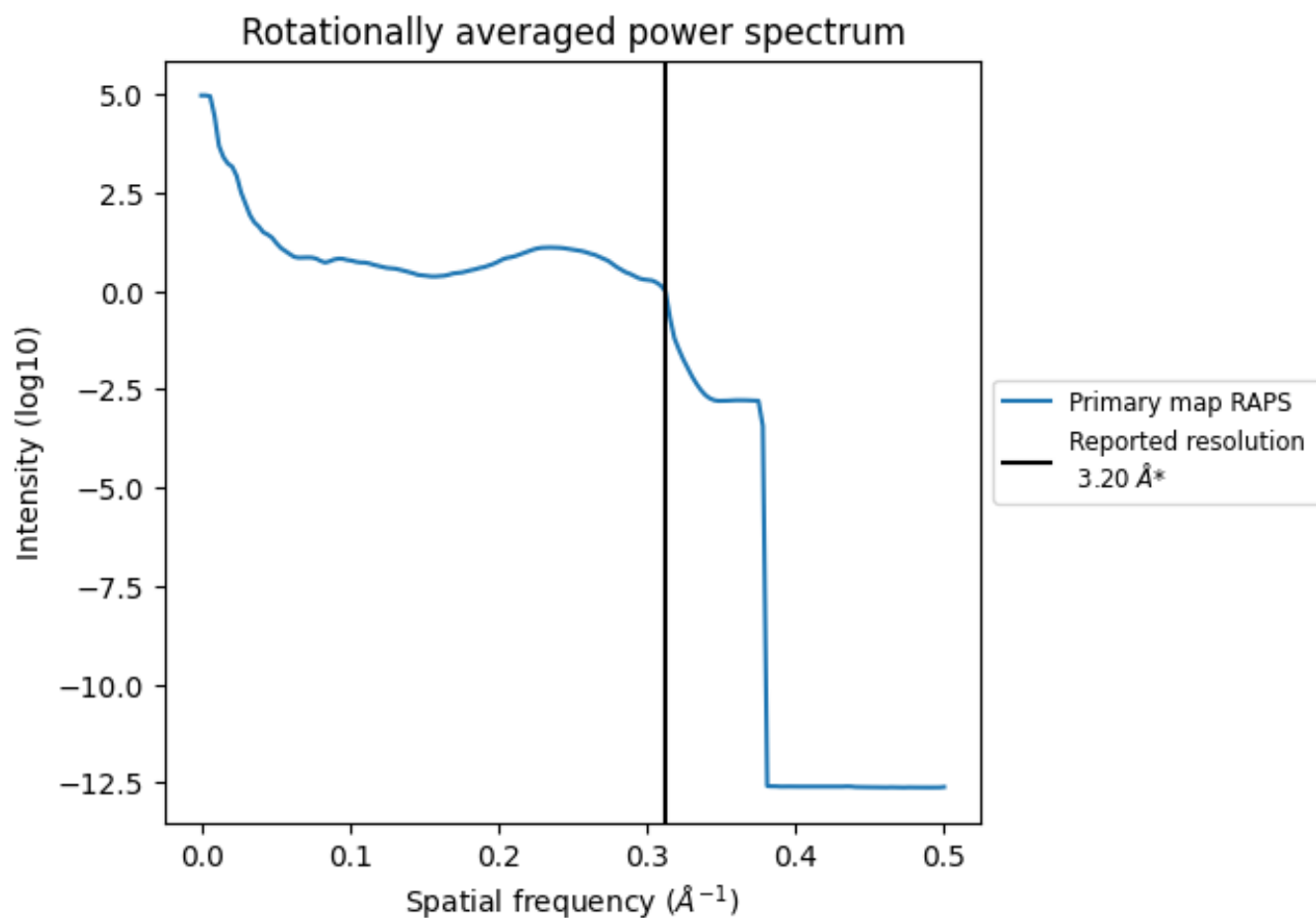
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 226 nm³; this corresponds to an approximate mass of 204 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 0.312\AA^{-1}

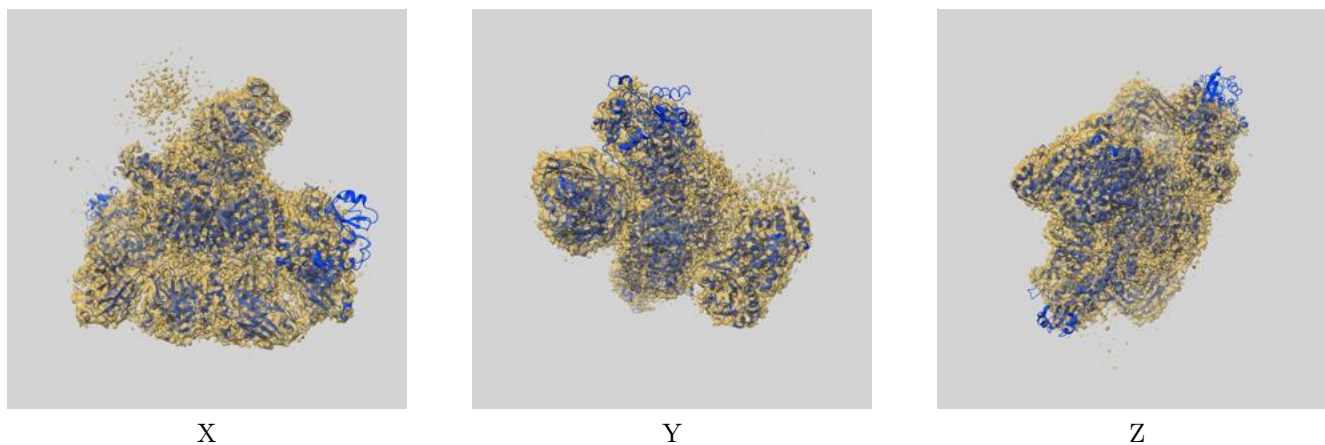
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

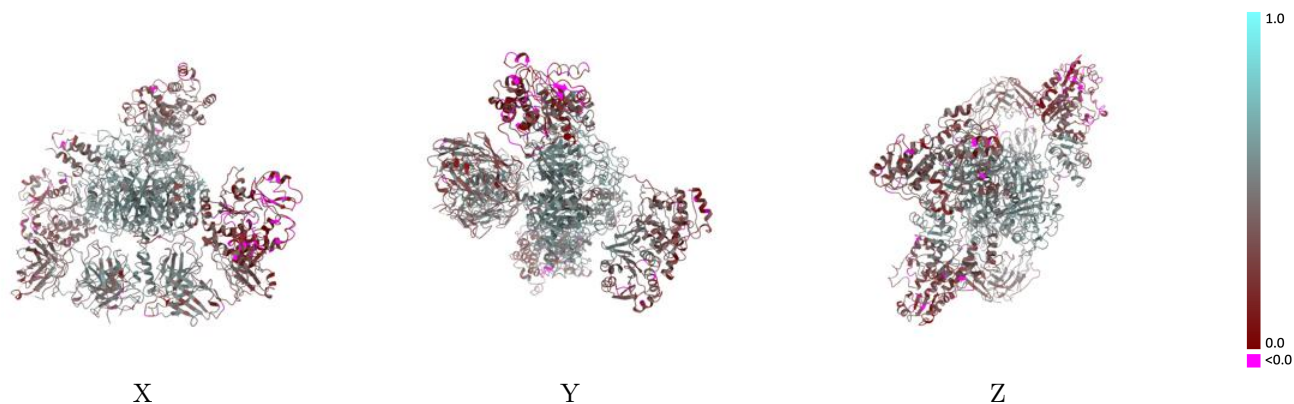
This section contains information regarding the fit between EMDB map EMD-23711 and PDB model 7M7F. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)



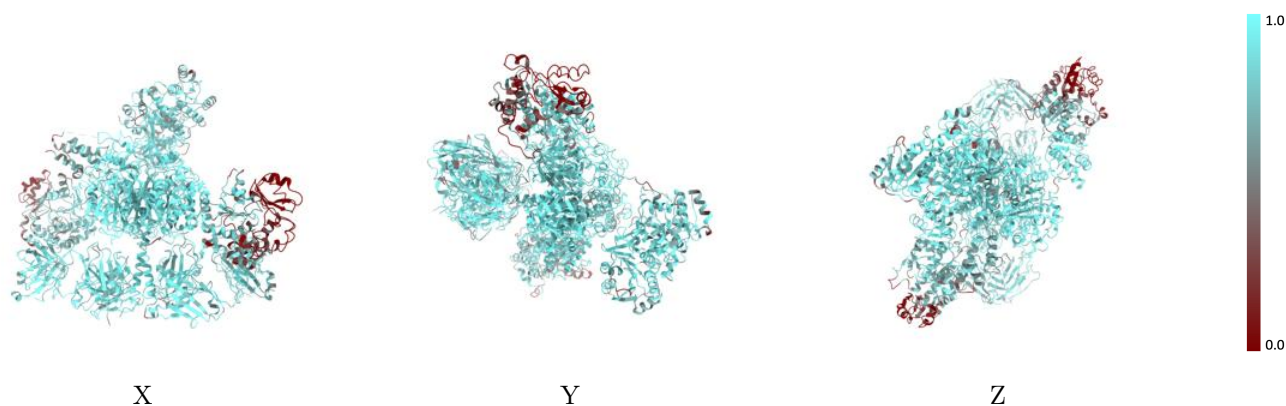
The images above show the 3D surface view of the map at the recommended contour level 0.53 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



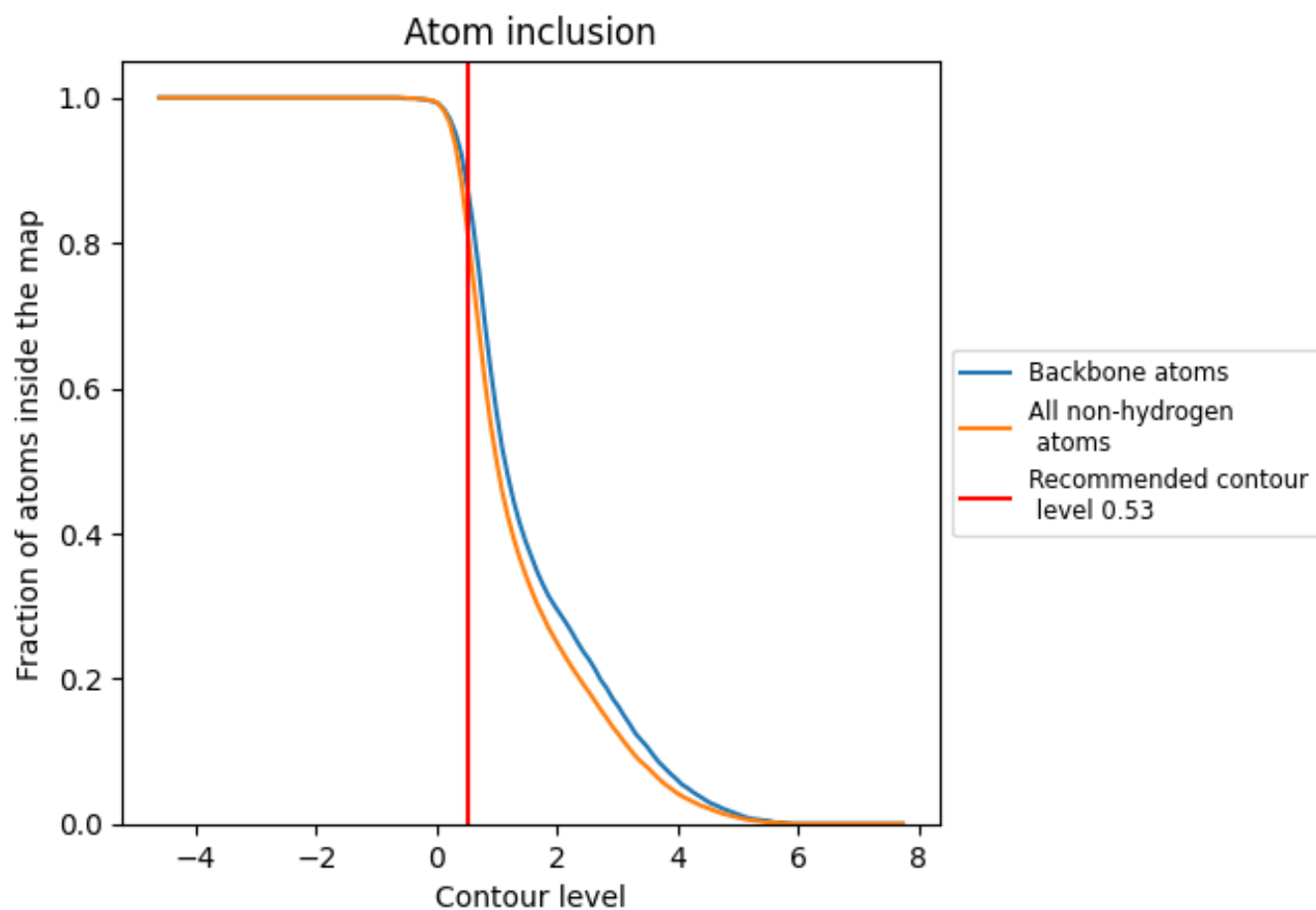
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.53).















9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 80% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.53) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8030	 0.4030
A	 0.7710	 0.3800
B	 0.8070	 0.4320
C	 0.8310	 0.3850
D	 0.8630	 0.4110
E	 0.8640	 0.4200
F	 0.8520	 0.4070

