Full wwPDB EM Validation Report (i)

Oct 23, 2025 – 06:51 PM EDT

PDB ID	:	9BNF / pdb_00009bnf
EMDB ID	:	EMD-44726
Title	:	SARS-CoV-2 spike HexaPro protein in complex with T5A trimeric antagonist
Authors	:	Young, T.
Deposited on	:	2024-05-02
Resolution	:	3.33 Å(reported)
Based on initial models	:	6M0J, 6VXX

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 (i) 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 (1)) were used in the production of this report:

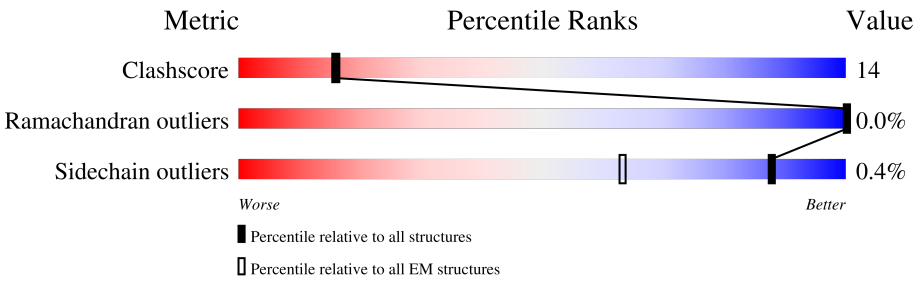
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

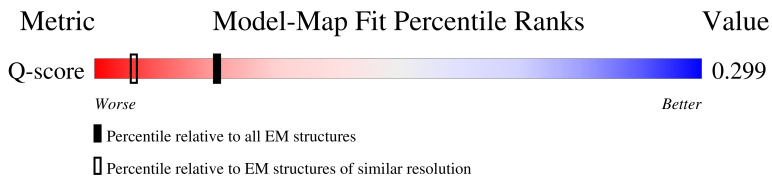
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.33 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	14484 (2.83 - 3.83)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	683	35% 61% 26% 13%
1	C	683	17% 56% 32% 13%
1	E	683	7% 53% 34% • 13%
2	B	1288	• 54% 24% 22%

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Mol	Chain	Length	Quality of chain
2	D	1288	56% 22% 22%
2	F	1288	55% 23% 22%
3	G	2	50% 50%
3	H	2	50% 50%
3	I	2	50% 50%
3	J	2	50% 50%
3	K	2	100%
3	L	2	50% 50%
3	M	2	100%
3	N	2	50% 50%
3	O	2	100%
3	P	2	100%
3	Q	2	50% 50%
3	R	2	100%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 38931 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 Collagen alpha-1(XVIII) chain,Processed angiotensin-converti ng enzyme 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	597	4870	3115	806	920	29	0	0
1	C	597	4864	3113	806	916	29	0	0
1	E	597	4870	3115	806	920	29	0	0

There are 90 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-67	MET	-	initiating methionine	UNP P39060
A	-66	GLY	-	expression tag	UNP P39060
A	-65	TRP	-	expression tag	UNP P39060
A	-64	SER	-	expression tag	UNP P39060
A	-63	LEU	-	expression tag	UNP P39060
A	-62	ILE	-	expression tag	UNP P39060
A	-61	LEU	-	expression tag	UNP P39060
A	-60	LEU	-	expression tag	UNP P39060
A	-59	PHE	-	expression tag	UNP P39060
A	-58	LEU	-	expression tag	UNP P39060
A	-57	VAL	-	expression tag	UNP P39060
A	-56	ALA	-	expression tag	UNP P39060
A	-55	VAL	-	expression tag	UNP P39060
A	-54	ALA	-	expression tag	UNP P39060
A	-53	THR	-	expression tag	UNP P39060
A	-52	ARG	-	expression tag	UNP P39060
A	-51	VAL	-	expression tag	UNP P39060
A	-50	LEU	-	expression tag	UNP P39060
A	-49	SER	-	expression tag	UNP P39060
A	-48	HIS	-	expression tag	UNP P39060
A	-47	HIS	-	expression tag	UNP P39060
A	-46	HIS	-	expression tag	UNP P39060
A	-45	HIS	-	expression tag	UNP P39060

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-44	HIS	-	expression tag	UNP P39060
A	-43	HIS	-	expression tag	UNP P39060
A	-42	GLY	-	expression tag	UNP P39060
A	15	GLY	-	linker	UNP P39060
A	16	GLY	-	linker	UNP P39060
A	17	SER	-	linker	UNP P39060
A	18	GLY	-	linker	UNP P39060
C	-67	MET	-	initiating methionine	UNP P39060
C	-66	GLY	-	expression tag	UNP P39060
C	-65	TRP	-	expression tag	UNP P39060
C	-64	SER	-	expression tag	UNP P39060
C	-63	LEU	-	expression tag	UNP P39060
C	-62	ILE	-	expression tag	UNP P39060
C	-61	LEU	-	expression tag	UNP P39060
C	-60	LEU	-	expression tag	UNP P39060
C	-59	PHE	-	expression tag	UNP P39060
C	-58	LEU	-	expression tag	UNP P39060
C	-57	VAL	-	expression tag	UNP P39060
C	-56	ALA	-	expression tag	UNP P39060
C	-55	VAL	-	expression tag	UNP P39060
C	-54	ALA	-	expression tag	UNP P39060
C	-53	THR	-	expression tag	UNP P39060
C	-52	ARG	-	expression tag	UNP P39060
C	-51	VAL	-	expression tag	UNP P39060
C	-50	LEU	-	expression tag	UNP P39060
C	-49	SER	-	expression tag	UNP P39060
C	-48	HIS	-	expression tag	UNP P39060
C	-47	HIS	-	expression tag	UNP P39060
C	-46	HIS	-	expression tag	UNP P39060
C	-45	HIS	-	expression tag	UNP P39060
C	-44	HIS	-	expression tag	UNP P39060
C	-43	HIS	-	expression tag	UNP P39060
C	-42	GLY	-	expression tag	UNP P39060
C	15	GLY	-	linker	UNP P39060
C	16	GLY	-	linker	UNP P39060
C	17	SER	-	linker	UNP P39060
C	18	GLY	-	linker	UNP P39060
E	-67	MET	-	initiating methionine	UNP P39060
E	-66	GLY	-	expression tag	UNP P39060
E	-65	TRP	-	expression tag	UNP P39060
E	-64	SER	-	expression tag	UNP P39060
E	-63	LEU	-	expression tag	UNP P39060

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-62	ILE	-	expression tag	UNP P39060
E	-61	LEU	-	expression tag	UNP P39060
E	-60	LEU	-	expression tag	UNP P39060
E	-59	PHE	-	expression tag	UNP P39060
E	-58	LEU	-	expression tag	UNP P39060
E	-57	VAL	-	expression tag	UNP P39060
E	-56	ALA	-	expression tag	UNP P39060
E	-55	VAL	-	expression tag	UNP P39060
E	-54	ALA	-	expression tag	UNP P39060
E	-53	THR	-	expression tag	UNP P39060
E	-52	ARG	-	expression tag	UNP P39060
E	-51	VAL	-	expression tag	UNP P39060
E	-50	LEU	-	expression tag	UNP P39060
E	-49	SER	-	expression tag	UNP P39060
E	-48	HIS	-	expression tag	UNP P39060
E	-47	HIS	-	expression tag	UNP P39060
E	-46	HIS	-	expression tag	UNP P39060
E	-45	HIS	-	expression tag	UNP P39060
E	-44	HIS	-	expression tag	UNP P39060
E	-43	HIS	-	expression tag	UNP P39060
E	-42	GLY	-	expression tag	UNP P39060
E	15	GLY	-	linker	UNP P39060
E	16	GLY	-	linker	UNP P39060
E	17	SER	-	linker	UNP P39060
E	18	GLY	-	linker	UNP P39060

- Molecule 2 is a protein called Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	1006	7840	5011	1302	1492	35	0	0
			Total	C	N	O	S		
2	D	1007	7851	5018	1303	1495	35	0	0
			Total	C	N	O	S		
2	F	1006	7838	5009	1301	1493	35	0	0

There are 267 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	682	GLY	ARG	engineered mutation	UNP P0DTC2
B	683	SER	ARG	engineered mutation	UNP P0DTC2
B	685	SER	ARG	engineered mutation	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	817	PRO	PHE	engineered mutation	UNP P0DTC2
B	892	PRO	ALA	engineered mutation	UNP P0DTC2
B	899	PRO	ALA	engineered mutation	UNP P0DTC2
B	942	PRO	ALA	engineered mutation	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	1209	GLY	-	expression tag	UNP P0DTC2
B	1210	SER	-	expression tag	UNP P0DTC2
B	1211	GLY	-	expression tag	UNP P0DTC2
B	1212	TYR	-	expression tag	UNP P0DTC2
B	1213	ILE	-	expression tag	UNP P0DTC2
B	1214	PRO	-	expression tag	UNP P0DTC2
B	1215	GLU	-	expression tag	UNP P0DTC2
B	1216	ALA	-	expression tag	UNP P0DTC2
B	1217	PRO	-	expression tag	UNP P0DTC2
B	1218	ARG	-	expression tag	UNP P0DTC2
B	1219	ASP	-	expression tag	UNP P0DTC2
B	1220	GLY	-	expression tag	UNP P0DTC2
B	1221	GLN	-	expression tag	UNP P0DTC2
B	1222	ALA	-	expression tag	UNP P0DTC2
B	1223	TYR	-	expression tag	UNP P0DTC2
B	1224	VAL	-	expression tag	UNP P0DTC2
B	1225	ARG	-	expression tag	UNP P0DTC2
B	1226	LYS	-	expression tag	UNP P0DTC2
B	1227	ASP	-	expression tag	UNP P0DTC2
B	1228	GLY	-	expression tag	UNP P0DTC2
B	1229	GLU	-	expression tag	UNP P0DTC2
B	1230	TRP	-	expression tag	UNP P0DTC2
B	1231	VAL	-	expression tag	UNP P0DTC2
B	1232	LEU	-	expression tag	UNP P0DTC2
B	1233	LEU	-	expression tag	UNP P0DTC2
B	1234	SER	-	expression tag	UNP P0DTC2
B	1235	THR	-	expression tag	UNP P0DTC2
B	1236	PHE	-	expression tag	UNP P0DTC2
B	1237	LEU	-	expression tag	UNP P0DTC2
B	1238	GLY	-	expression tag	UNP P0DTC2
B	1239	ARG	-	expression tag	UNP P0DTC2
B	1240	SER	-	expression tag	UNP P0DTC2
B	1241	LEU	-	expression tag	UNP P0DTC2
B	1242	GLU	-	expression tag	UNP P0DTC2
B	1243	VAL	-	expression tag	UNP P0DTC2
B	1244	LEU	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1245	PHE	-	expression tag	UNP P0DTC2
B	1246	GLN	-	expression tag	UNP P0DTC2
B	1247	GLY	-	expression tag	UNP P0DTC2
B	1248	PRO	-	expression tag	UNP P0DTC2
B	1249	GLY	-	expression tag	UNP P0DTC2
B	1250	HIS	-	expression tag	UNP P0DTC2
B	1251	HIS	-	expression tag	UNP P0DTC2
B	1252	HIS	-	expression tag	UNP P0DTC2
B	1253	HIS	-	expression tag	UNP P0DTC2
B	1254	HIS	-	expression tag	UNP P0DTC2
B	1255	HIS	-	expression tag	UNP P0DTC2
B	1256	HIS	-	expression tag	UNP P0DTC2
B	1257	HIS	-	expression tag	UNP P0DTC2
B	1258	SER	-	expression tag	UNP P0DTC2
B	1259	ALA	-	expression tag	UNP P0DTC2
B	1260	TRP	-	expression tag	UNP P0DTC2
B	1261	SER	-	expression tag	UNP P0DTC2
B	1262	HIS	-	expression tag	UNP P0DTC2
B	1263	PRO	-	expression tag	UNP P0DTC2
B	1264	GLN	-	expression tag	UNP P0DTC2
B	1265	PHE	-	expression tag	UNP P0DTC2
B	1266	GLU	-	expression tag	UNP P0DTC2
B	1267	LYS	-	expression tag	UNP P0DTC2
B	1268	GLY	-	expression tag	UNP P0DTC2
B	1269	GLY	-	expression tag	UNP P0DTC2
B	1270	GLY	-	expression tag	UNP P0DTC2
B	1271	SER	-	expression tag	UNP P0DTC2
B	1272	GLY	-	expression tag	UNP P0DTC2
B	1273	GLY	-	expression tag	UNP P0DTC2
B	1274	GLY	-	expression tag	UNP P0DTC2
B	1275	GLY	-	expression tag	UNP P0DTC2
B	1276	SER	-	expression tag	UNP P0DTC2
B	1277	GLY	-	expression tag	UNP P0DTC2
B	1278	GLY	-	expression tag	UNP P0DTC2
B	1279	SER	-	expression tag	UNP P0DTC2
B	1280	ALA	-	expression tag	UNP P0DTC2
B	1281	TRP	-	expression tag	UNP P0DTC2
B	1282	SER	-	expression tag	UNP P0DTC2
B	1283	HIS	-	expression tag	UNP P0DTC2
B	1284	PRO	-	expression tag	UNP P0DTC2
B	1285	GLN	-	expression tag	UNP P0DTC2
B	1286	PHE	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1287	GLU	-	expression tag	UNP P0DTC2
B	1288	LYS	-	expression tag	UNP P0DTC2
D	682	GLY	ARG	engineered mutation	UNP P0DTC2
D	683	SER	ARG	engineered mutation	UNP P0DTC2
D	685	SER	ARG	engineered mutation	UNP P0DTC2
D	817	PRO	PHE	engineered mutation	UNP P0DTC2
D	892	PRO	ALA	engineered mutation	UNP P0DTC2
D	899	PRO	ALA	engineered mutation	UNP P0DTC2
D	942	PRO	ALA	engineered mutation	UNP P0DTC2
D	986	PRO	LYS	engineered mutation	UNP P0DTC2
D	987	PRO	VAL	engineered mutation	UNP P0DTC2
D	1209	GLY	-	expression tag	UNP P0DTC2
D	1210	SER	-	expression tag	UNP P0DTC2
D	1211	GLY	-	expression tag	UNP P0DTC2
D	1212	TYR	-	expression tag	UNP P0DTC2
D	1213	ILE	-	expression tag	UNP P0DTC2
D	1214	PRO	-	expression tag	UNP P0DTC2
D	1215	GLU	-	expression tag	UNP P0DTC2
D	1216	ALA	-	expression tag	UNP P0DTC2
D	1217	PRO	-	expression tag	UNP P0DTC2
D	1218	ARG	-	expression tag	UNP P0DTC2
D	1219	ASP	-	expression tag	UNP P0DTC2
D	1220	GLY	-	expression tag	UNP P0DTC2
D	1221	GLN	-	expression tag	UNP P0DTC2
D	1222	ALA	-	expression tag	UNP P0DTC2
D	1223	TYR	-	expression tag	UNP P0DTC2
D	1224	VAL	-	expression tag	UNP P0DTC2
D	1225	ARG	-	expression tag	UNP P0DTC2
D	1226	LYS	-	expression tag	UNP P0DTC2
D	1227	ASP	-	expression tag	UNP P0DTC2
D	1228	GLY	-	expression tag	UNP P0DTC2
D	1229	GLU	-	expression tag	UNP P0DTC2
D	1230	TRP	-	expression tag	UNP P0DTC2
D	1231	VAL	-	expression tag	UNP P0DTC2
D	1232	LEU	-	expression tag	UNP P0DTC2
D	1233	LEU	-	expression tag	UNP P0DTC2
D	1234	SER	-	expression tag	UNP P0DTC2
D	1235	THR	-	expression tag	UNP P0DTC2
D	1236	PHE	-	expression tag	UNP P0DTC2
D	1237	LEU	-	expression tag	UNP P0DTC2
D	1238	GLY	-	expression tag	UNP P0DTC2
D	1239	ARG	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
D	1240	SER	-	expression tag	UNP P0DTC2
D	1241	LEU	-	expression tag	UNP P0DTC2
D	1242	GLU	-	expression tag	UNP P0DTC2
D	1243	VAL	-	expression tag	UNP P0DTC2
D	1244	LEU	-	expression tag	UNP P0DTC2
D	1245	PHE	-	expression tag	UNP P0DTC2
D	1246	GLN	-	expression tag	UNP P0DTC2
D	1247	GLY	-	expression tag	UNP P0DTC2
D	1248	PRO	-	expression tag	UNP P0DTC2
D	1249	GLY	-	expression tag	UNP P0DTC2
D	1250	HIS	-	expression tag	UNP P0DTC2
D	1251	HIS	-	expression tag	UNP P0DTC2
D	1252	HIS	-	expression tag	UNP P0DTC2
D	1253	HIS	-	expression tag	UNP P0DTC2
D	1254	HIS	-	expression tag	UNP P0DTC2
D	1255	HIS	-	expression tag	UNP P0DTC2
D	1256	HIS	-	expression tag	UNP P0DTC2
D	1257	HIS	-	expression tag	UNP P0DTC2
D	1258	SER	-	expression tag	UNP P0DTC2
D	1259	ALA	-	expression tag	UNP P0DTC2
D	1260	TRP	-	expression tag	UNP P0DTC2
D	1261	SER	-	expression tag	UNP P0DTC2
D	1262	HIS	-	expression tag	UNP P0DTC2
D	1263	PRO	-	expression tag	UNP P0DTC2
D	1264	GLN	-	expression tag	UNP P0DTC2
D	1265	PHE	-	expression tag	UNP P0DTC2
D	1266	GLU	-	expression tag	UNP P0DTC2
D	1267	LYS	-	expression tag	UNP P0DTC2
D	1268	GLY	-	expression tag	UNP P0DTC2
D	1269	GLY	-	expression tag	UNP P0DTC2
D	1270	GLY	-	expression tag	UNP P0DTC2
D	1271	SER	-	expression tag	UNP P0DTC2
D	1272	GLY	-	expression tag	UNP P0DTC2
D	1273	GLY	-	expression tag	UNP P0DTC2
D	1274	GLY	-	expression tag	UNP P0DTC2
D	1275	GLY	-	expression tag	UNP P0DTC2
D	1276	SER	-	expression tag	UNP P0DTC2
D	1277	GLY	-	expression tag	UNP P0DTC2
D	1278	GLY	-	expression tag	UNP P0DTC2
D	1279	SER	-	expression tag	UNP P0DTC2
D	1280	ALA	-	expression tag	UNP P0DTC2
D	1281	TRP	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
D	1282	SER	-	expression tag	UNP P0DTC2
D	1283	HIS	-	expression tag	UNP P0DTC2
D	1284	PRO	-	expression tag	UNP P0DTC2
D	1285	GLN	-	expression tag	UNP P0DTC2
D	1286	PHE	-	expression tag	UNP P0DTC2
D	1287	GLU	-	expression tag	UNP P0DTC2
D	1288	LYS	-	expression tag	UNP P0DTC2
F	682	GLY	ARG	engineered mutation	UNP P0DTC2
F	683	SER	ARG	engineered mutation	UNP P0DTC2
F	685	SER	ARG	engineered mutation	UNP P0DTC2
F	817	PRO	PHE	engineered mutation	UNP P0DTC2
F	892	PRO	ALA	engineered mutation	UNP P0DTC2
F	899	PRO	ALA	engineered mutation	UNP P0DTC2
F	942	PRO	ALA	engineered mutation	UNP P0DTC2
F	986	PRO	LYS	engineered mutation	UNP P0DTC2
F	987	PRO	VAL	engineered mutation	UNP P0DTC2
F	1209	GLY	-	expression tag	UNP P0DTC2
F	1210	SER	-	expression tag	UNP P0DTC2
F	1211	GLY	-	expression tag	UNP P0DTC2
F	1212	TYR	-	expression tag	UNP P0DTC2
F	1213	ILE	-	expression tag	UNP P0DTC2
F	1214	PRO	-	expression tag	UNP P0DTC2
F	1215	GLU	-	expression tag	UNP P0DTC2
F	1216	ALA	-	expression tag	UNP P0DTC2
F	1217	PRO	-	expression tag	UNP P0DTC2
F	1218	ARG	-	expression tag	UNP P0DTC2
F	1219	ASP	-	expression tag	UNP P0DTC2
F	1220	GLY	-	expression tag	UNP P0DTC2
F	1221	GLN	-	expression tag	UNP P0DTC2
F	1222	ALA	-	expression tag	UNP P0DTC2
F	1223	TYR	-	expression tag	UNP P0DTC2
F	1224	VAL	-	expression tag	UNP P0DTC2
F	1225	ARG	-	expression tag	UNP P0DTC2
F	1226	LYS	-	expression tag	UNP P0DTC2
F	1227	ASP	-	expression tag	UNP P0DTC2
F	1228	GLY	-	expression tag	UNP P0DTC2
F	1229	GLU	-	expression tag	UNP P0DTC2
F	1230	TRP	-	expression tag	UNP P0DTC2
F	1231	VAL	-	expression tag	UNP P0DTC2
F	1232	LEU	-	expression tag	UNP P0DTC2
F	1233	LEU	-	expression tag	UNP P0DTC2
F	1234	SER	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
F	1235	THR	-	expression tag	UNP P0DTC2
F	1236	PHE	-	expression tag	UNP P0DTC2
F	1237	LEU	-	expression tag	UNP P0DTC2
F	1238	GLY	-	expression tag	UNP P0DTC2
F	1239	ARG	-	expression tag	UNP P0DTC2
F	1240	SER	-	expression tag	UNP P0DTC2
F	1241	LEU	-	expression tag	UNP P0DTC2
F	1242	GLU	-	expression tag	UNP P0DTC2
F	1243	VAL	-	expression tag	UNP P0DTC2
F	1244	LEU	-	expression tag	UNP P0DTC2
F	1245	PHE	-	expression tag	UNP P0DTC2
F	1246	GLN	-	expression tag	UNP P0DTC2
F	1247	GLY	-	expression tag	UNP P0DTC2
F	1248	PRO	-	expression tag	UNP P0DTC2
F	1249	GLY	-	expression tag	UNP P0DTC2
F	1250	HIS	-	expression tag	UNP P0DTC2
F	1251	HIS	-	expression tag	UNP P0DTC2
F	1252	HIS	-	expression tag	UNP P0DTC2
F	1253	HIS	-	expression tag	UNP P0DTC2
F	1254	HIS	-	expression tag	UNP P0DTC2
F	1255	HIS	-	expression tag	UNP P0DTC2
F	1256	HIS	-	expression tag	UNP P0DTC2
F	1257	HIS	-	expression tag	UNP P0DTC2
F	1258	SER	-	expression tag	UNP P0DTC2
F	1259	ALA	-	expression tag	UNP P0DTC2
F	1260	TRP	-	expression tag	UNP P0DTC2
F	1261	SER	-	expression tag	UNP P0DTC2
F	1262	HIS	-	expression tag	UNP P0DTC2
F	1263	PRO	-	expression tag	UNP P0DTC2
F	1264	GLN	-	expression tag	UNP P0DTC2
F	1265	PHE	-	expression tag	UNP P0DTC2
F	1266	GLU	-	expression tag	UNP P0DTC2
F	1267	LYS	-	expression tag	UNP P0DTC2
F	1268	GLY	-	expression tag	UNP P0DTC2
F	1269	GLY	-	expression tag	UNP P0DTC2
F	1270	GLY	-	expression tag	UNP P0DTC2
F	1271	SER	-	expression tag	UNP P0DTC2
F	1272	GLY	-	expression tag	UNP P0DTC2
F	1273	GLY	-	expression tag	UNP P0DTC2
F	1274	GLY	-	expression tag	UNP P0DTC2
F	1275	GLY	-	expression tag	UNP P0DTC2
F	1276	SER	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
F	1277	GLY	-	expression tag	UNP P0DTC2
F	1278	GLY	-	expression tag	UNP P0DTC2
F	1279	SER	-	expression tag	UNP P0DTC2
F	1280	ALA	-	expression tag	UNP P0DTC2
F	1281	TRP	-	expression tag	UNP P0DTC2
F	1282	SER	-	expression tag	UNP P0DTC2
F	1283	HIS	-	expression tag	UNP P0DTC2
F	1284	PRO	-	expression tag	UNP P0DTC2
F	1285	GLN	-	expression tag	UNP P0DTC2
F	1286	PHE	-	expression tag	UNP P0DTC2
F	1287	GLU	-	expression tag	UNP P0DTC2
F	1288	LYS	-	expression tag	UNP P0DTC2

- Molecule 3 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	G	2	28	16	2	10	0	0
3	H	2	28	16	2	10	0	0
3	I	2	28	16	2	10	0	0
3	K	2	28	16	2	10	0	0
3	L	2	28	16	2	10	0	0
3	M	2	28	16	2	10	0	0
3	O	2	28	16	2	10	0	0
3	P	2	28	16	2	10	0	0
3	Q	2	28	16	2	10	0	0
3	R	2	28	16	2	10	0	0

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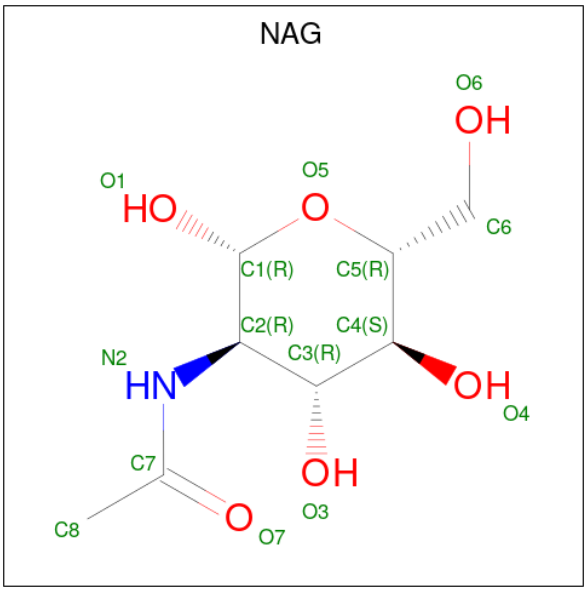
Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	J	2	28	16	2	10	0	0
			Total	C	N	O		
3	N	2	28	16	2	10	0	0

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0

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Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	B	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	D	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0

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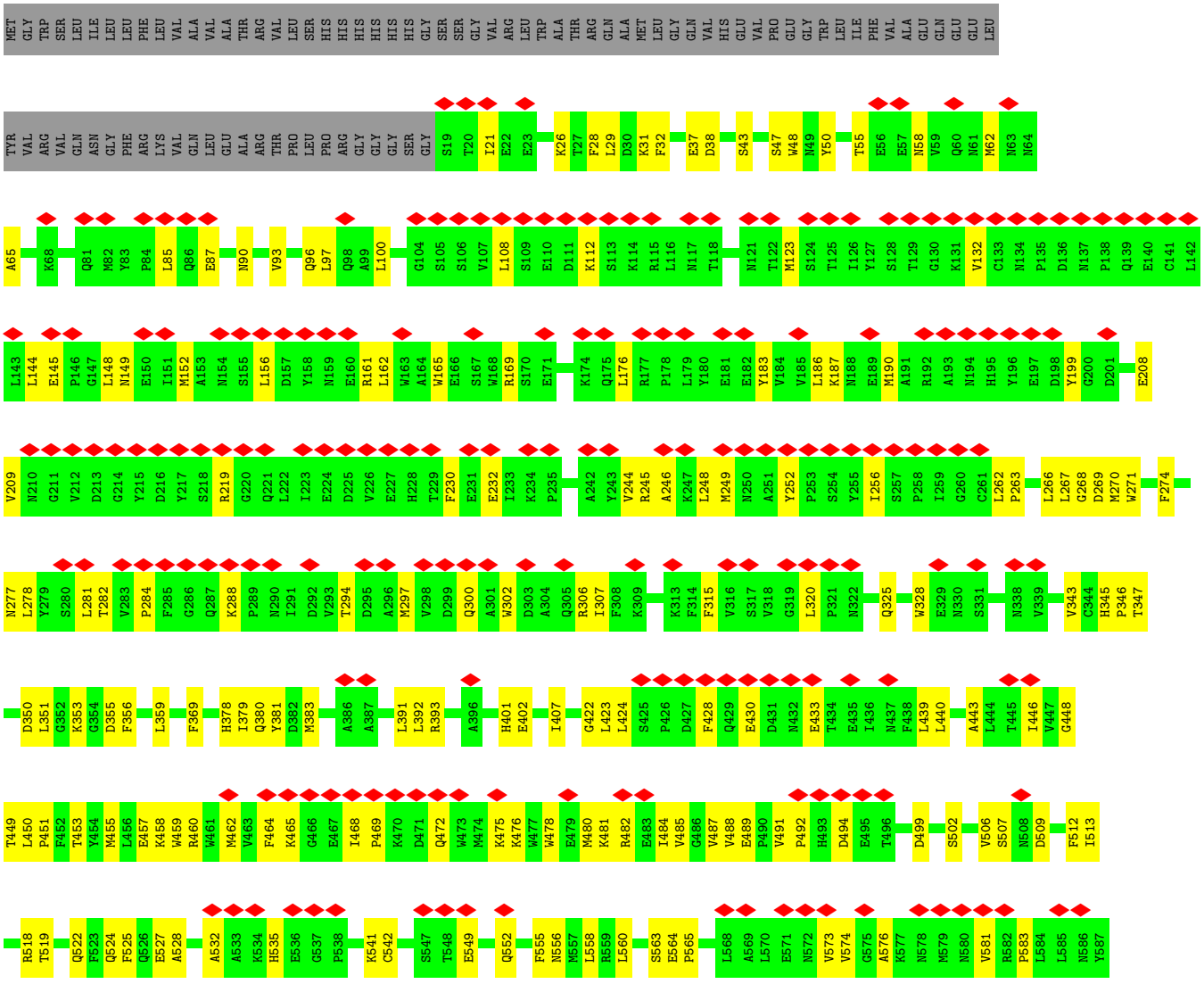
Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0
			Total	C	N	O	
4	F	1	14	8	1	5	0

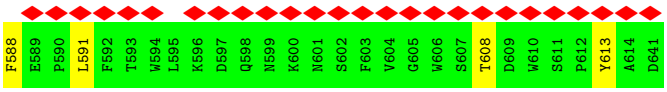
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Collagen alpha-1(XVIII) chain,Processed angiotensin-converting enzyme 2

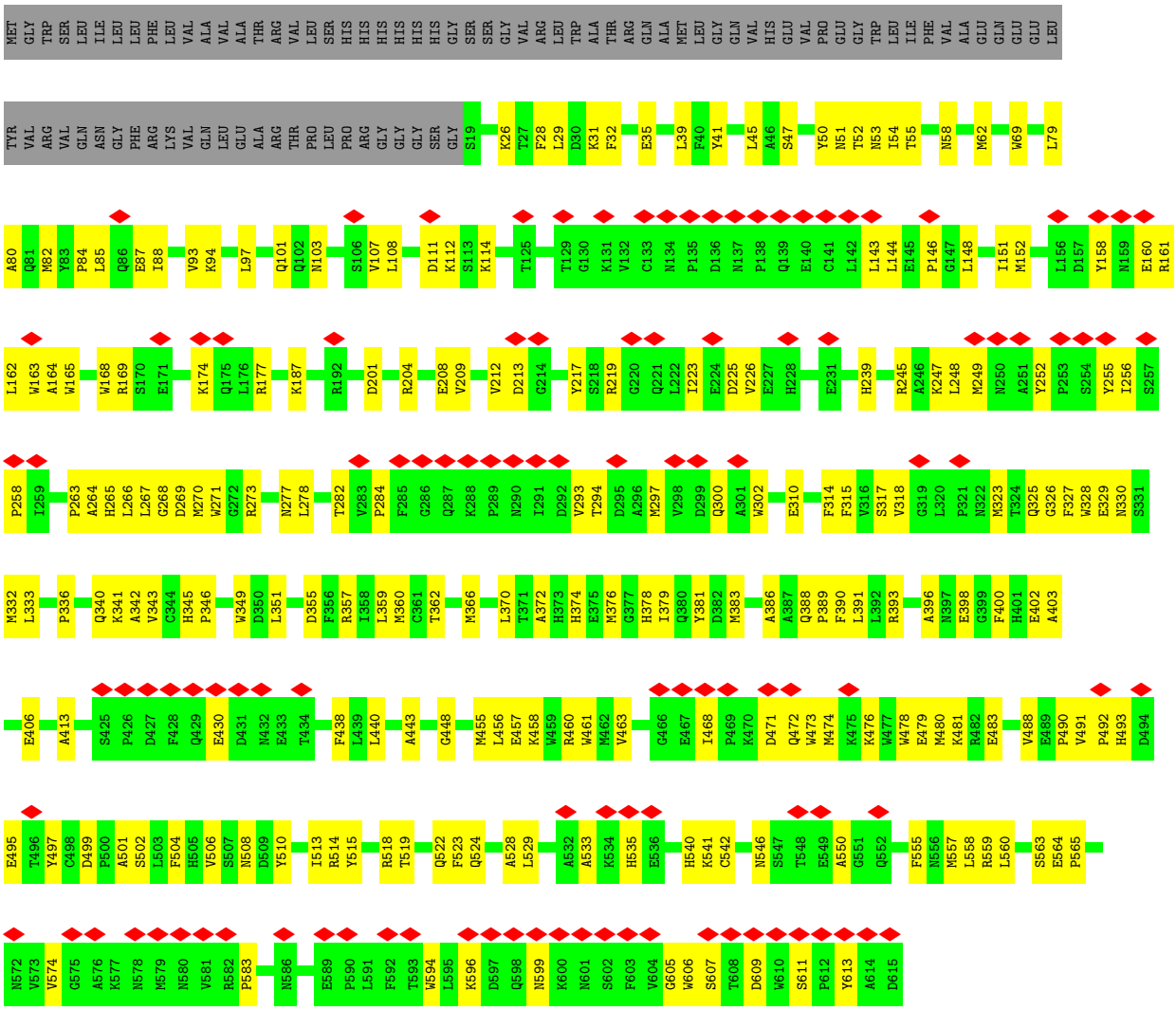
Chain A: 35% 61% 26% 13%





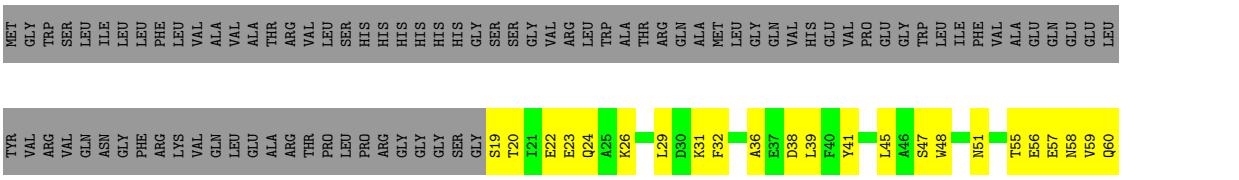
• Molecule 1: Collagen alpha-1(XVIII) chain,Processed angiotensin-converting enzyme 2

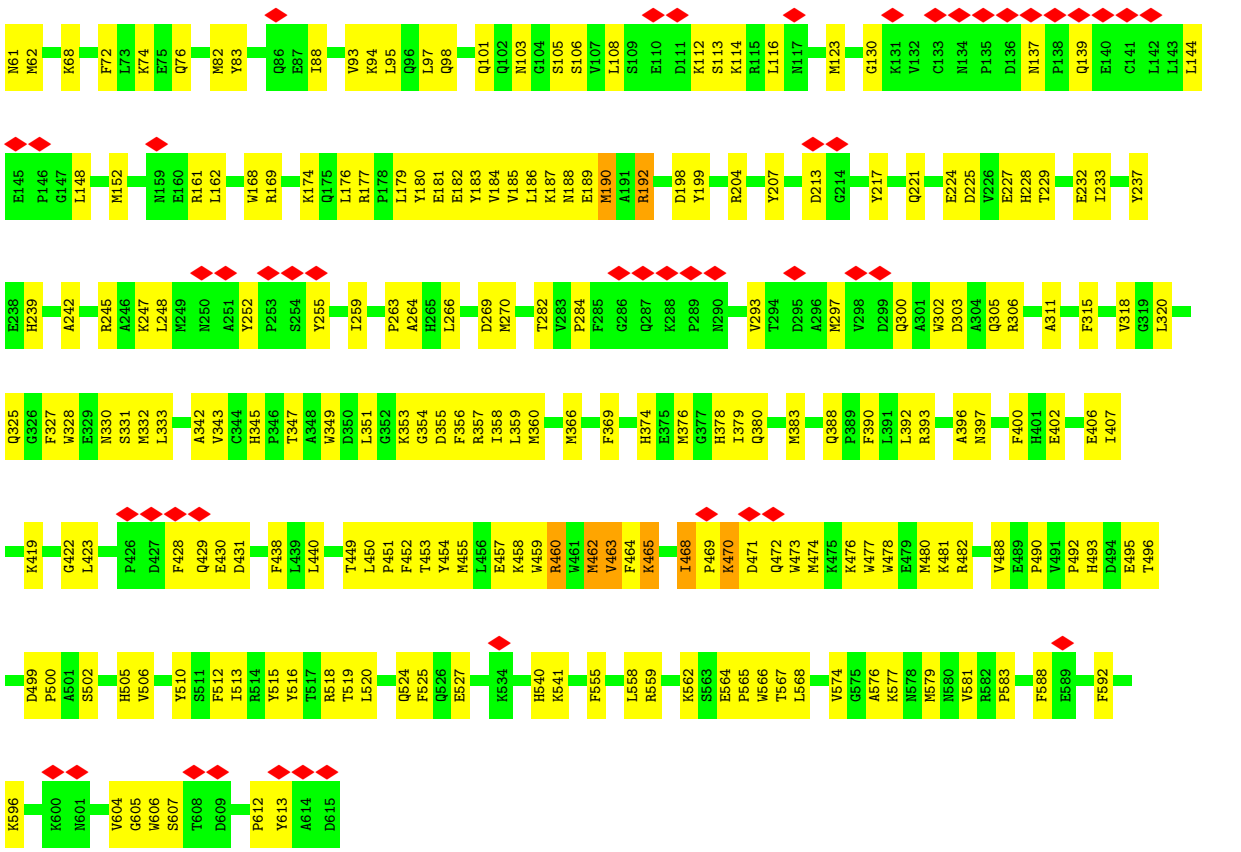
Chain C:



• Molecule 1: Collagen alpha-1(XVIII) chain,Processed angiotensin-converting enzyme 2

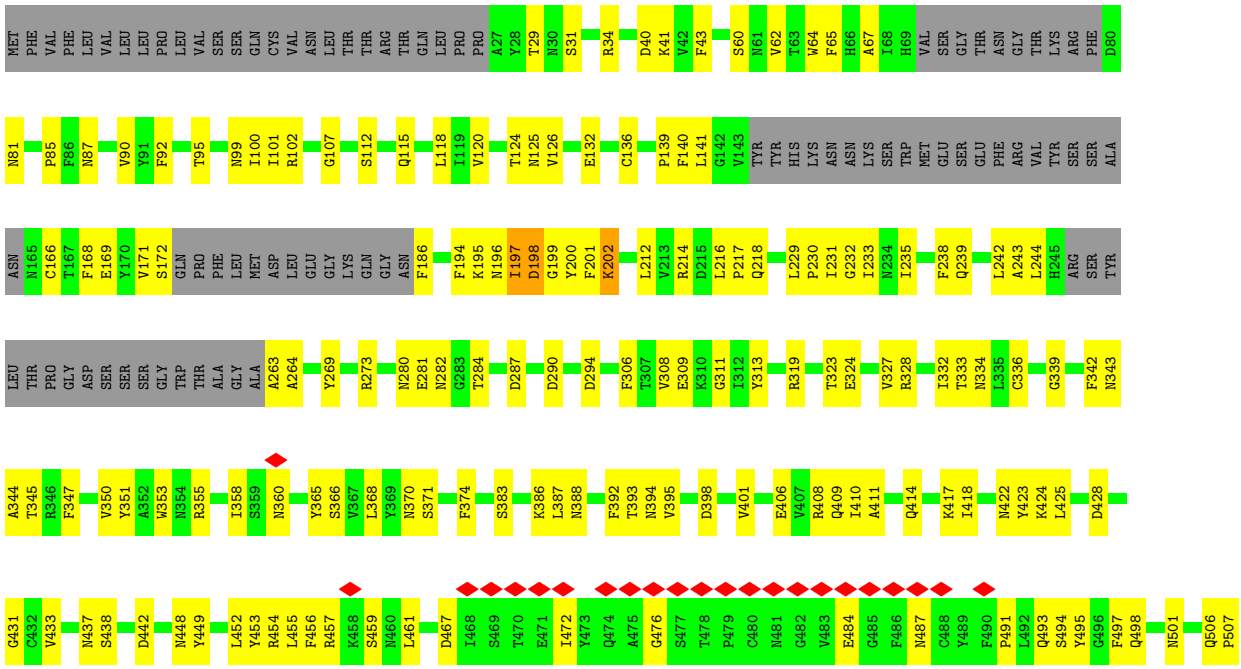
Chain E:

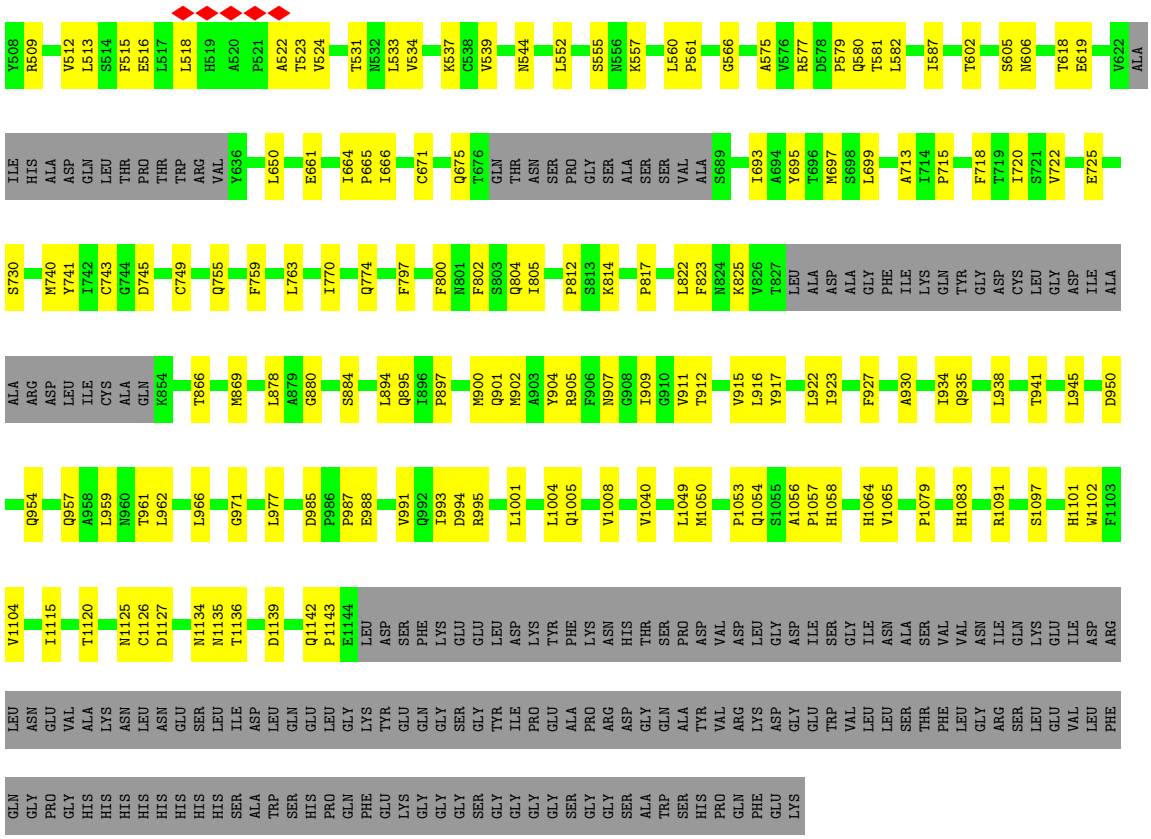




- Molecule 2: Spike glycoprotein

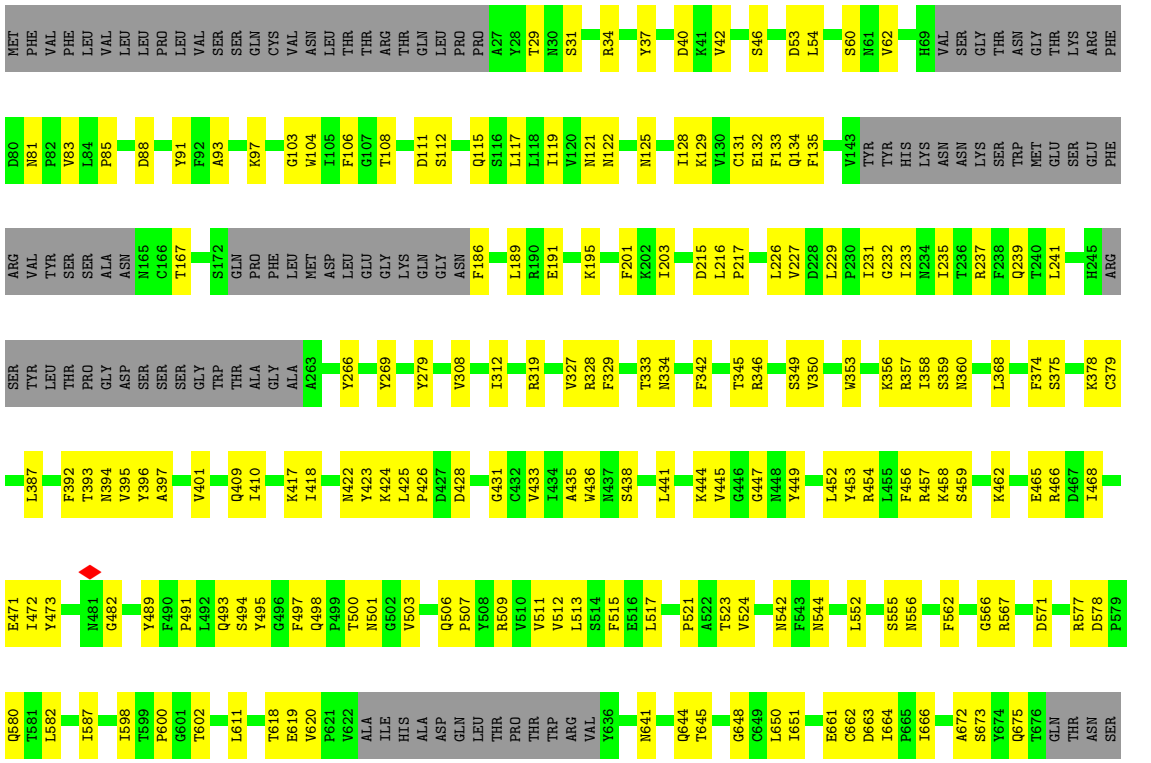
Chain B:

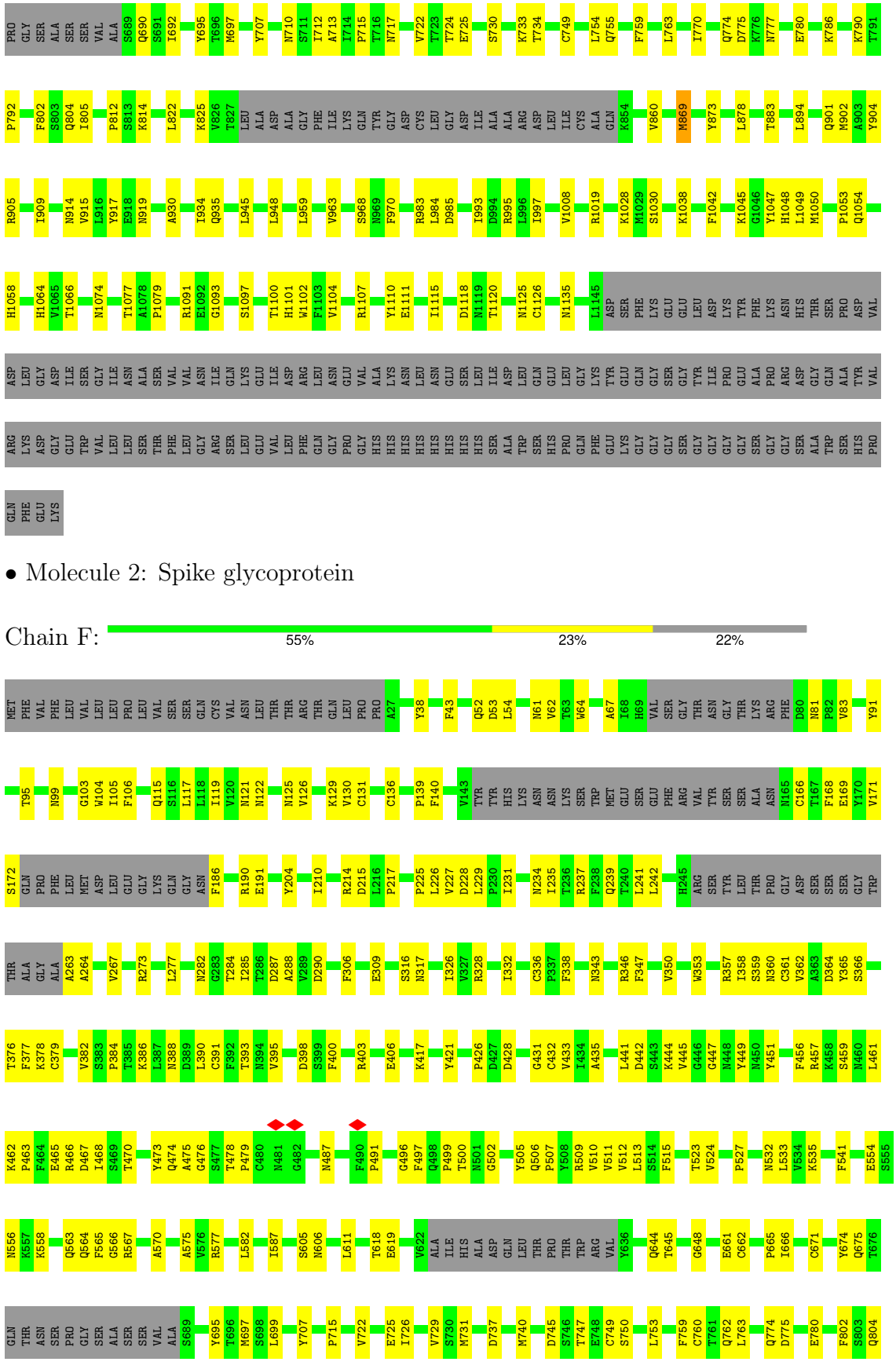




- Molecule 2: Spike glycoprotein

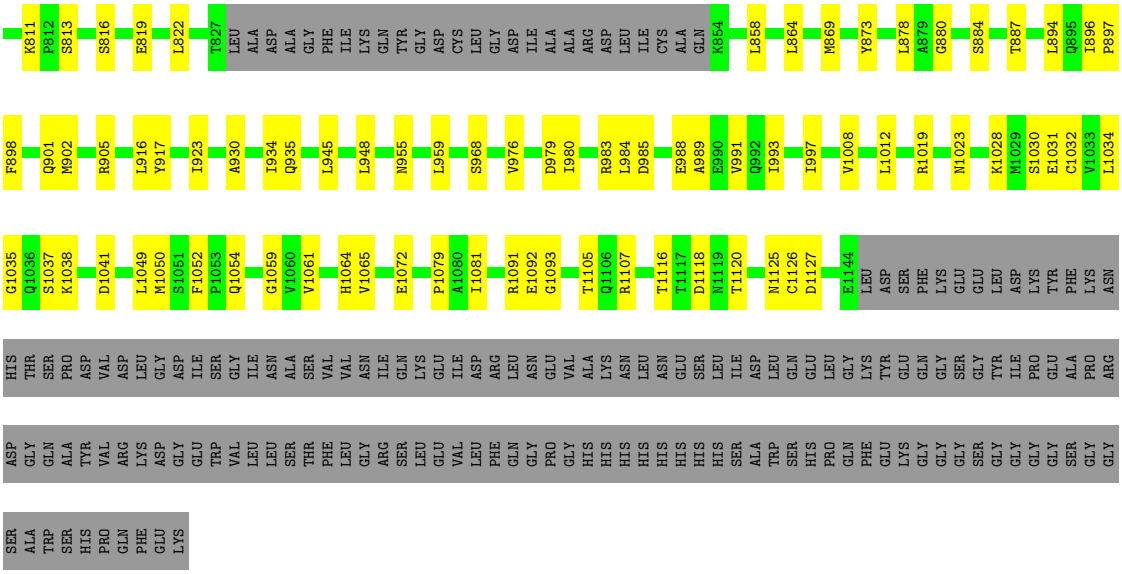
Chain D:





• Molecule 2: Spike glycoprotein

Chain F: 55% 23% 22%



• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain G:

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

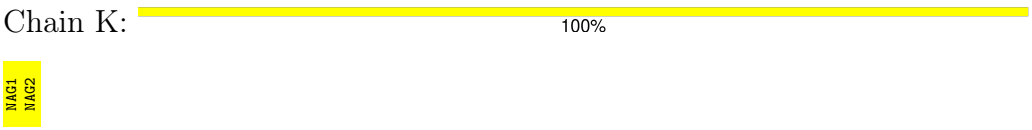
Chain H:

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:



• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain L: 50% 50%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain M: 100%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain O: 100%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain P: 100%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Q: 50% 50%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain R: 100%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain J: 50% 50%

NAG1 NAG2

• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain N:

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	220795	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; Patch motion correction and Patch CTF applied after Import Movies and before Blob Picker	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.396	Depositor
Minimum map value	-0.137	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.013	Depositor
Recommended contour level	0.04	Depositor
Map size (Å)	319.488, 319.488, 319.488	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.832, 0.832, 0.832	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: NAG

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	0.10	0/5007	0.28	0/6803
1	C	0.10	0/5001	0.28	0/6795
1	E	0.21	0/5007	0.37	0/6803
2	B	0.21	0/8021	0.33	1/10923 (0.0%)
2	D	0.20	0/8032	0.32	0/10938
2	F	0.20	0/8019	0.33	0/10920
All	All	0.18	0/39087	0.32	1/53182 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	87	ASN	CB-CA-C	-5.15	110.23	117.23

There are no chirality outliers.

There are no planarity outliers.

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	4870	0	4643	120	0
1	C	4864	0	4639	155	0
1	E	4870	0	4643	201	0
2	B	7840	0	7633	226	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	7851	0	7646	208	0
2	F	7838	0	7627	215	0
3	G	28	0	25	2	0
3	H	28	0	25	1	0
3	I	28	0	25	1	0
3	J	28	0	25	1	0
3	K	28	0	25	1	0
3	L	28	0	25	1	0
3	M	28	0	25	0	0
3	N	28	0	25	2	0
3	O	28	0	25	0	0
3	P	28	0	25	0	0
3	Q	28	0	25	0	0
3	R	28	0	25	0	0
4	B	154	0	143	4	0
4	D	154	0	143	2	0
4	F	154	0	143	7	0
All	All	38931	0	37560	1086	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 14.

All (1086) 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)
2:F:417:LYS:O	2:F:421:TYR:HB2	1.54	1.08
2:D:431:GLY:HA3	2:D:513:LEU:O	1.65	0.95
1:E:455:MET:HE2	1:E:480:MET:HE1	1.51	0.92
2:B:431:GLY:HA3	2:B:513:LEU:O	1.69	0.90
1:E:116:LEU:HD13	1:E:186:LEU:HB3	1.56	0.86
2:F:431:GLY:HA3	2:F:513:LEU:O	1.76	0.85
1:E:478:TRP:HE1	1:E:493:HIS:HB2	1.41	0.85
1:E:108:LEU:HD11	1:E:189:GLU:HG3	1.57	0.85
1:E:192:ARG:HH12	1:E:198:ASP:HA	1.41	0.84
2:D:46:SER:HA	2:D:279:TYR:O	1.79	0.81
1:A:245:ARG:HG2	1:A:249:MET:HE1	1.62	0.80
2:D:360:ASN:H	2:D:523:THR:HB	1.47	0.79
2:F:360:ASN:H	2:F:523:THR:HB	1.46	0.79
1:C:82:MET:H	1:C:82:MET:HE3	1.49	0.78
2:F:466:ARG:HH21	2:F:468:ILE:HD11	1.48	0.78
2:D:226:LEU:HG	2:D:227:VAL:HG23	1.66	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:524:GLN:HB3	1:C:574:VAL:HG11	1.66	0.76
2:B:360:ASN:H	2:B:523:THR:HB	1.50	0.75
1:A:325:GLN:HA	1:A:328:TRP:HD1	1.51	0.75
2:B:196:ASN:HA	2:B:201:PHE:HA	1.68	0.75
1:E:462:MET:HB3	1:E:468:ILE:HG12	1.68	0.75
2:F:445:VAL:HA	2:F:499:PRO:HD3	1.69	0.75
2:F:462:LYS:HG3	2:F:465:GLU:HB2	1.69	0.73
1:E:468:ILE:HG22	1:E:476:LYS:HG2	1.70	0.73
2:D:34:ARG:NH2	2:D:217:PRO:O	2.14	0.72
2:B:200:TYR:HA	2:B:229:LEU:O	1.89	0.72
1:A:169:ARG:NH1	1:A:270:MET:SD	2.62	0.71
1:E:459:TRP:HA	1:E:462:MET:HE2	1.72	0.71
1:A:97:LEU:HA	1:A:100:LEU:HD12	1.73	0.71
2:D:804:GLN:NE2	2:D:935:GLN:OE1	2.23	0.71
1:E:284:PRO:HG3	1:E:440:LEU:HD13	1.73	0.71
2:D:438:SER:HB2	2:D:441:LEU:HB2	1.71	0.70
1:C:515:TYR:HD1	1:C:518:ARG:HE	1.38	0.70
2:B:461:LEU:HD21	2:B:467:ASP:HB2	1.74	0.70
1:E:330:ASN:HB3	1:E:357:ARG:HE	1.57	0.70
2:F:1028:LYS:O	2:F:1032:CYS:HB2	1.92	0.69
2:B:740:MET:HB2	2:D:319:ARG:HH22	1.58	0.69
2:D:763:LEU:HD22	2:D:1008:VAL:HG21	1.74	0.69
2:F:81:ASN:O	2:F:239:GLN:NE2	2.25	0.69
2:F:61:ASN:HB3	4:F:1301:NAG:N2	2.08	0.69
1:E:62:MET:SD	1:E:62:MET:N	2.67	0.68
1:E:331:SER:HB3	1:E:358:ILE:HG22	1.75	0.68
2:F:763:LEU:HD22	2:F:1008:VAL:HG21	1.75	0.68
2:D:34:ARG:HH21	2:D:216:LEU:HB3	1.59	0.68
1:A:165:TRP:HA	1:A:270:MET:HE1	1.75	0.68
1:E:192:ARG:NH1	1:E:198:ASP:HA	2.09	0.68
1:A:524:GLN:HB3	1:A:574:VAL:HG11	1.75	0.67
1:C:84:PRO:HG2	1:C:87:GLU:HG2	1.76	0.67
2:D:350:VAL:HG21	2:D:418:ILE:HD12	1.75	0.67
2:F:816:SER:HB2	2:F:819:GLU:HG3	1.77	0.67
2:F:644:GLN:NE2	2:F:648:GLY:O	2.28	0.67
2:D:722:VAL:HG22	2:D:930:ALA:HB1	1.75	0.67
2:F:106:PHE:HB2	2:F:117:LEU:HB2	1.75	0.67
1:A:460:ARG:HH21	1:A:506:VAL:HG22	1.59	0.66
1:E:108:LEU:HB3	1:E:112:LYS:HE3	1.75	0.66
1:A:50:TYR:HA	1:A:58:ASN:HB3	1.77	0.66
1:A:351:LEU:HB2	1:A:355:ASP:HB3	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:319:ARG:HD2	2:F:740:MET:HE1	1.78	0.66
2:B:866:THR:HG22	2:B:869:MET:HG2	1.77	0.66
1:E:180:TYR:OH	1:E:463:VAL:HG11	1.95	0.66
2:D:112:SER:HA	2:D:132:GLU:HB3	1.76	0.66
2:F:357:ARG:NH1	2:F:359:SER:OG	2.28	0.66
1:A:263:PRO:HG2	1:A:266:LEU:HD12	1.79	0.65
2:B:194:PHE:HB3	2:B:201:PHE:CZ	2.32	0.65
1:E:229:THR:HG21	1:E:520:LEU:HD21	1.79	0.65
2:B:336:CYS:HB3	2:B:358:ILE:HD12	1.77	0.65
2:F:979:ASP:OD2	2:F:983:ARG:NH2	2.29	0.65
2:F:1091:ARG:NH1	2:F:1118:ASP:O	2.30	0.65
2:D:666:ILE:HD11	2:D:672:ALA:HB2	1.79	0.65
2:F:645:THR:HG23	2:F:648:GLY:H	1.62	0.65
2:D:106:PHE:HB2	2:D:117:LEU:HB2	1.79	0.65
2:F:804:GLN:NE2	2:F:935:GLN:OE1	2.31	0.64
2:D:81:ASN:O	2:D:239:GLN:NE2	2.30	0.64
1:E:430:GLU:OE1	1:E:541:LYS:NZ	2.30	0.64
2:B:544:ASN:HD21	2:B:579:PRO:HB3	1.62	0.64
2:B:393:THR:N	2:B:516:GLU:O	2.31	0.64
2:F:61:ASN:HB3	4:F:1301:NAG:HN2	1.63	0.64
1:E:524:GLN:HB3	1:E:574:VAL:HG11	1.80	0.64
2:F:204:TYR:HD1	2:F:225:PRO:HA	1.62	0.64
2:D:334:ASN:ND2	2:D:360:ASN:O	2.31	0.64
2:B:1053:PRO:O	2:B:1054:GLN:NE2	2.27	0.64
2:D:353:TRP:O	2:D:466:ARG:NH1	2.31	0.64
1:C:245:ARG:NH2	1:C:605:GLY:O	2.30	0.63
2:D:963:VAL:HG11	2:F:570:ALA:HB1	1.80	0.63
2:D:970:PHE:O	2:D:995:ARG:NH1	2.31	0.63
1:E:332:MET:HE1	1:E:342:ALA:HB1	1.80	0.63
1:E:469:PRO:HG2	1:E:472:GLN:HB3	1.79	0.63
1:A:38:ASP:HA	1:A:353:LYS:HD2	1.80	0.63
2:D:329:PHE:O	2:D:580:GLN:NE2	2.30	0.63
1:C:346:PRO:HA	1:C:360:MET:HB2	1.78	0.63
2:D:454:ARG:NH1	2:D:456:PHE:O	2.31	0.63
2:D:644:GLN:NE2	2:D:648:GLY:O	2.30	0.63
2:B:29:THR:HG23	2:B:62:VAL:HG13	1.80	0.63
2:D:356:LYS:NZ	2:D:357:ARG:O	2.31	0.63
1:C:398:GLU:HB2	1:C:514:ARG:HD2	1.80	0.63
1:C:460:ARG:NH1	1:C:510:TYR:O	2.28	0.63
2:F:376:THR:HB	2:F:435:ALA:HB3	1.80	0.63
1:A:457:GLU:HG2	1:A:513:ILE:HB	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1097:SER:HB2	2:D:1102:TRP:CD2	2.34	0.63
1:E:468:ILE:HB	1:E:473:TRP:CD1	2.34	0.63
2:B:1134:ASN:OD1	4:B:1310:NAG:N2	2.32	0.63
2:B:448:ASN:HB3	2:B:497:PHE:HB2	1.81	0.62
2:F:433:VAL:HG22	2:F:512:VAL:HG22	1.81	0.62
2:B:722:VAL:HG22	2:B:930:ALA:HB1	1.81	0.62
2:F:722:VAL:HG12	2:F:1065:VAL:HG22	1.81	0.62
1:A:469:PRO:HD2	1:A:472:GLN:HE21	1.63	0.62
1:C:443:ALA:O	1:C:448:GLY:N	2.31	0.62
2:D:387:LEU:HD22	2:D:515:PHE:HE2	1.65	0.62
1:E:116:LEU:HD13	1:E:186:LEU:CB	2.28	0.62
1:C:85:LEU:HD22	1:C:94:LYS:HG3	1.82	0.62
2:F:431:GLY:CA	2:F:513:LEU:O	2.46	0.61
2:B:136:CYS:H	2:B:139:PRO:HG3	1.65	0.61
1:C:55:THR:OG1	1:C:58:ASN:ND2	2.33	0.61
2:D:458:LYS:NZ	2:D:471:GLU:OE1	2.32	0.61
1:E:311:ALA:HB1	1:E:376:MET:HE2	1.81	0.61
2:F:398:ASP:O	2:F:511:VAL:HA	2.00	0.61
1:C:53:ASN:O	1:C:58:ASN:ND2	2.33	0.61
4:B:1305:NAG:H3	4:B:1305:NAG:H83	1.81	0.61
2:B:31:SER:OG	2:B:60:SER:N	2.33	0.61
1:C:212:VAL:HG11	1:C:565:PRO:HG2	1.81	0.61
2:F:916:LEU:HD12	2:F:923:ILE:HD12	1.83	0.61
2:D:53:ASP:OD2	2:D:195:LYS:NZ	2.34	0.61
2:B:34:ARG:NH2	2:B:218:GLN:O	2.34	0.61
2:D:417:LYS:NZ	2:D:453:TYR:HB2	2.16	0.61
1:A:574:VAL:HG23	1:A:576:ALA:H	1.66	0.60
1:C:248:LEU:O	1:C:252:TYR:N	2.27	0.60
1:E:356:PHE:CZ	1:E:383:MET:HB3	2.36	0.60
2:B:31:SER:HG	2:B:60:SER:H	1.49	0.60
2:D:749:CYS:SG	2:D:997:ILE:HD11	2.42	0.60
2:F:887:THR:HG21	2:F:894:LEU:HB2	1.83	0.60
3:K:1:NAG:H62	3:K:2:NAG:H83	1.83	0.60
2:F:880:GLY:O	2:F:884:SER:OG	2.18	0.60
2:B:100:ILE:HG22	2:B:242:LEU:HD12	1.82	0.60
1:E:300:GLN:NE2	1:E:422:GLY:O	2.34	0.60
2:F:811:LYS:HD3	2:F:813:SER:H	1.67	0.60
1:C:41:TYR:OH	2:D:500:THR:OG1	2.17	0.60
1:C:168:TRP:HE1	1:C:502:SER:HB2	1.67	0.60
1:C:403:ALA:HA	1:C:522:GLN:HB3	1.84	0.60
1:E:380:GLN:HA	1:E:383:MET:SD	2.41	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:556:ASN:O	2:F:558:LYS:NZ	2.35	0.60
1:E:152:MET:O	1:E:161:ARG:NH1	2.35	0.59
2:F:83:VAL:HB	2:F:237:ARG:HH21	1.66	0.59
2:B:287:ASP:HB3	2:B:306:PHE:HE2	1.66	0.59
2:F:722:VAL:HG22	2:F:930:ALA:HB1	1.85	0.59
2:B:393:THR:HA	2:B:522:ALA:HA	1.83	0.59
2:F:350:VAL:HA	2:F:400:PHE:HB2	1.83	0.59
1:C:29:LEU:HD11	1:C:97:LEU:HG	1.84	0.59
1:E:366:MET:HE2	1:E:366:MET:HA	1.83	0.59
2:B:126:VAL:HB	2:B:172:SER:HB2	1.83	0.59
2:B:199:GLY:CA	2:B:232:GLY:HA2	2.33	0.59
2:D:328:ARG:NH1	2:D:578:ASP:OD1	2.35	0.59
2:F:470:THR:HB	2:F:491:PRO:HG3	1.84	0.59
1:E:189:GLU:HA	1:E:192:ARG:HD2	1.83	0.59
2:F:316:SER:OG	2:F:317:ASN:N	2.36	0.59
2:B:186:PHE:N	2:B:212:LEU:O	2.36	0.58
2:B:822:LEU:HD23	2:B:1056:ALA:HB2	1.83	0.58
1:E:57:GLU:O	1:E:61:ASN:ND2	2.36	0.58
2:B:95:THR:HB	2:B:186:PHE:HB2	1.85	0.58
2:B:763:LEU:HD22	2:B:1008:VAL:HG21	1.85	0.58
1:C:160:GLU:HA	1:C:163:TRP:CD1	2.38	0.58
2:B:408:ARG:NH1	2:B:414:GLN:OE1	2.35	0.58
2:B:1135:ASN:OD1	2:B:1136:THR:N	2.33	0.58
2:B:366:SER:O	2:B:370:ASN:ND2	2.33	0.58
1:C:455:MET:HE2	1:C:480:MET:HG3	1.85	0.58
2:D:662:CYS:HB2	2:D:697:MET:SD	2.42	0.58
1:E:187:LYS:HB3	1:E:199:TYR:CD2	2.37	0.58
1:E:474:MET:O	1:E:477:TRP:HB3	2.03	0.58
1:E:22:GLU:HG2	1:E:26:LYS:HE2	1.84	0.58
1:E:41:TYR:OH	2:F:500:THR:O	2.20	0.58
2:D:108:THR:O	2:D:237:ARG:NH1	2.37	0.58
2:D:333:THR:OG1	2:D:334:ASN:N	2.37	0.58
2:D:374:PHE:HA	2:D:436:TRP:HB3	1.85	0.58
1:E:396:ALA:HB3	1:E:400:PHE:HD2	1.68	0.58
2:F:282:ASN:OD1	4:F:1304:NAG:N2	2.36	0.58
1:E:123:MET:HG3	1:E:176:LEU:HD22	1.85	0.58
1:A:379:ILE:HG22	1:A:383:MET:HE1	1.85	0.58
1:E:233:ILE:HD11	1:E:581:VAL:HG11	1.86	0.58
1:E:245:ARG:NH2	1:E:605:GLY:O	2.35	0.58
2:B:196:ASN:HB2	2:B:201:PHE:HD1	1.69	0.57
2:F:474:GLN:HB2	2:F:479:PRO:HA	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:577:ARG:HE	2:D:582:LEU:HD12	1.69	0.57
3:I:2:NAG:H3	3:I:2:NAG:H83	1.86	0.57
1:A:208:GLU:OE1	1:A:219:ARG:NH1	2.38	0.57
1:C:148:LEU:HB3	1:C:152:MET:HE1	1.85	0.57
1:C:523:PHE:HB3	1:C:583:PRO:HB2	1.86	0.57
1:E:303:ASP:OD2	1:E:305:GLN:NE2	2.37	0.57
2:F:441:LEU:HB3	2:F:509:ARG:HH21	1.69	0.57
1:E:24:GLN:HB3	2:F:474:GLN:HE22	1.69	0.57
1:E:564:GLU:HB3	1:E:568:LEU:HD23	1.86	0.57
1:A:532:ALA:HB1	1:A:549:GLU:HG2	1.85	0.57
2:B:994:ASP:OD1	2:D:995:ARG:NH2	2.38	0.57
1:C:47:SER:HA	1:C:62:MET:SD	2.44	0.57
1:C:249:MET:HE1	1:C:258:PRO:HA	1.87	0.57
1:C:264:ALA:H	1:C:490:PRO:HD3	1.69	0.57
1:A:284:PRO:HG3	1:A:440:LEU:HD13	1.87	0.57
2:B:64:TRP:HE1	2:B:264:ALA:HB1	1.69	0.57
2:B:804:GLN:NE2	2:B:935:GLN:OE1	2.30	0.57
1:C:144:LEU:HA	1:C:148:LEU:HD12	1.86	0.57
2:F:234:ASN:HB2	4:F:1303:NAG:H2	1.86	0.57
2:F:1093:GLY:HA3	2:F:1105:THR:O	2.04	0.57
1:A:350:ASP:OD1	1:A:393:ARG:NH2	2.38	0.57
2:D:472:ILE:HD13	2:D:482:GLY:HA2	1.87	0.57
1:A:248:LEU:O	1:A:252:TYR:N	2.31	0.57
2:D:902:MET:HE3	2:D:1049:LEU:HD13	1.87	0.57
1:A:43:SER:HA	1:A:65:ALA:HB1	1.87	0.56
2:F:393:THR:O	2:F:523:THR:OG1	2.24	0.56
2:B:577:ARG:HD3	2:B:582:LEU:HD12	1.88	0.56
1:C:284:PRO:HG3	1:C:440:LEU:HD13	1.86	0.56
1:C:430:GLU:OE1	1:C:541:LYS:NZ	2.37	0.56
2:B:456:PHE:HB2	2:B:491:PRO:HA	1.87	0.56
2:F:359:SER:HA	2:F:524:VAL:HG13	1.87	0.56
2:F:435:ALA:HB2	2:F:510:VAL:HG13	1.87	0.56
1:A:450:LEU:HD21	1:A:519:THR:HG21	1.87	0.56
1:E:47:SER:HA	1:E:62:MET:HE1	1.86	0.56
1:A:288:LYS:HE3	1:A:433:GLU:HG3	1.88	0.56
1:E:177:ARG:HH21	1:E:470:LYS:HE2	1.70	0.56
2:D:577:ARG:HH21	2:D:582:LEU:HB3	1.71	0.56
2:D:993:ILE:O	2:D:997:ILE:HG12	2.06	0.56
2:F:53:ASP:OD1	2:F:54:LEU:N	2.38	0.56
1:A:186:LEU:O	1:A:190:MET:HE3	2.05	0.56
1:C:493:HIS:ND1	1:C:499:ASP:OD2	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:46:SER:CA	2:D:279:TYR:O	2.53	0.56
1:E:315:PHE:HB3	1:E:320:LEU:HB2	1.87	0.56
2:F:662:CYS:HB2	2:F:697:MET:HG2	1.88	0.56
1:A:527:GLU:HB2	1:A:583:PRO:HB3	1.87	0.56
1:E:55:THR:OG1	1:E:58:ASN:OD1	2.23	0.56
1:C:263:PRO:HG2	1:C:266:LEU:HD12	1.88	0.56
1:E:19:SER:N	1:E:23:GLU:OE1	2.39	0.56
2:F:136:CYS:H	2:F:139:PRO:HG3	1.70	0.56
1:C:402:GLU:HB3	1:C:518:ARG:HD2	1.88	0.55
1:C:323:MET:HE1	1:C:327:PHE:HB3	1.88	0.55
2:D:1125:ASN:OD1	2:D:1126:CYS:N	2.39	0.55
1:E:177:ARG:HE	1:E:470:LYS:HE2	1.72	0.55
1:C:515:TYR:O	1:C:518:ARG:HG2	2.07	0.55
1:E:221:GLN:NE2	1:E:224:GLU:OE2	2.40	0.55
2:B:961:THR:HG21	2:F:762:GLN:HE21	1.72	0.55
1:E:123:MET:HE1	1:E:180:TYR:HD1	1.71	0.55
2:F:104:TRP:HB3	2:F:106:PHE:CE1	2.41	0.55
2:D:357:ARG:NH1	2:D:396:TYR:OH	2.40	0.55
1:E:438:PHE:HE2	1:E:540:HIS:HB2	1.69	0.55
2:F:38:TYR:HH	2:F:284:THR:HG1	1.52	0.55
1:A:307:ILE:HG12	1:A:369:PHE:HD1	1.72	0.55
2:B:605:SER:OG	2:B:606:ASN:N	2.38	0.55
2:D:401:VAL:HG12	2:D:509:ARG:HG2	1.87	0.55
1:E:217:TYR:OH	1:E:225:ASP:OD2	2.22	0.55
2:B:902:MET:HE1	2:B:1050:MET:SD	2.47	0.55
1:C:492:PRO:HD3	1:C:613:TYR:CG	2.42	0.55
2:D:552:LEU:HG	2:D:587:ILE:HG22	1.88	0.55
2:F:456:PHE:HB2	2:F:491:PRO:HA	1.88	0.55
1:A:152:MET:O	1:A:161:ARG:NH1	2.40	0.55
2:B:229:LEU:HB3	2:B:231:ILE:HG23	1.88	0.55
2:B:442:ASP:O	2:B:448:ASN:ND2	2.38	0.55
2:D:619:GLU:N	2:D:619:GLU:OE2	2.39	0.55
2:D:812:PRO:O	2:D:814:LYS:NZ	2.40	0.55
2:D:1097:SER:HB2	2:D:1102:TRP:CE3	2.41	0.55
4:F:1311:NAG:H83	4:F:1311:NAG:H3	1.88	0.55
1:E:188:ASN:HD21	1:E:464:PHE:HA	1.71	0.55
2:F:1030:SER:HA	2:F:1034:LEU:HD12	1.89	0.55
1:C:317:SER:HB2	1:C:546:ASN:H	1.72	0.55
2:D:904:TYR:CZ	2:F:1107:ARG:HD3	2.42	0.55
2:D:1091:ARG:NH1	2:D:1120:THR:O	2.40	0.55
2:B:476:GLY:H	2:B:487:ASN:HB3	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:697:MET:HB3	2:F:869:MET:HE1	1.88	0.54
2:B:722:VAL:HG12	2:B:1065:VAL:HG22	1.89	0.54
2:D:359:SER:OG	2:D:394:ASN:OD1	2.23	0.54
1:E:188:ASN:HB3	1:E:192:ARG:CZ	2.37	0.54
1:E:213:ASP:OD1	1:E:213:ASP:N	2.41	0.54
2:F:993:ILE:O	2:F:997:ILE:HG12	2.06	0.54
2:B:671:CYS:SG	2:B:697:MET:HE2	2.48	0.54
2:D:349:SER:OG	2:D:452:LEU:O	2.24	0.54
1:E:449:THR:O	1:E:453:THR:N	2.33	0.54
2:F:753:LEU:HD21	2:F:760:CYS:SG	2.47	0.54
1:A:244:VAL:HG13	1:A:282:THR:HG21	1.89	0.54
1:A:262:LEU:HB2	1:A:487:VAL:HG22	1.89	0.54
2:D:88:ASP:OD1	2:D:88:ASP:N	2.39	0.54
2:D:129:LYS:HD3	2:D:131:CYS:HB2	1.89	0.54
2:D:358:ILE:HB	2:D:395:VAL:HB	1.89	0.54
1:A:552:GLN:NE2	1:A:556:ASN:OD1	2.41	0.54
1:C:456:LEU:HD21	1:C:506:VAL:HG22	1.90	0.54
2:D:91:TYR:OH	2:D:191:GLU:OE2	2.18	0.54
2:D:457:ARG:NH1	2:D:459:SER:OG	2.41	0.54
2:D:618:THR:OG1	2:D:619:GLU:OE2	2.23	0.54
1:E:204:ARG:HH12	1:E:465:LYS:NZ	2.04	0.54
1:A:270:MET:HG3	1:A:271:TRP:CE2	2.43	0.54
1:E:524:GLN:HA	1:E:583:PRO:HG2	1.88	0.54
2:B:812:PRO:O	2:B:814:LYS:NZ	2.41	0.54
2:B:880:GLY:O	2:B:884:SER:OG	2.19	0.54
2:D:873:TYR:CZ	2:F:699:LEU:HD22	2.42	0.54
1:E:315:PHE:CE2	1:E:380:GLN:HG3	2.43	0.54
1:C:333:LEU:O	1:C:362:THR:N	2.38	0.54
2:D:1028:LYS:NZ	2:D:1042:PHE:O	2.40	0.54
2:B:457:ARG:NE	2:B:467:ASP:OD2	2.41	0.54
2:D:452:LEU:HG	2:D:494:SER:HA	1.90	0.54
1:A:392:LEU:HD13	1:A:563:SER:HB3	1.88	0.54
2:D:327:VAL:HG22	2:D:542:ASN:HB3	1.90	0.54
1:E:192:ARG:HH22	1:E:198:ASP:HA	1.72	0.54
2:F:126:VAL:H	2:F:172:SER:HB2	1.72	0.54
2:F:1092:GLU:N	2:F:1092:GLU:OE1	2.41	0.54
1:C:52:THR:HG22	1:C:332:MET:SD	2.48	0.53
1:C:201:ASP:OD1	1:C:204:ARG:NH2	2.41	0.53
2:F:661:GLU:O	2:F:695:TYR:OH	2.24	0.53
1:C:267:LEU:HA	1:C:278:LEU:HD11	1.90	0.53
2:D:83:VAL:HG11	2:D:237:ARG:HE	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:58:ASN:HA	1:E:61:ASN:HD21	1.72	0.53
2:F:745:ASP:OD2	2:F:745:ASP:N	2.40	0.53
2:D:392:PHE:HD1	2:D:517:LEU:HB2	1.72	0.53
2:F:725:GLU:OE1	2:F:1064:HIS:NE2	2.35	0.53
1:A:90:ASN:HB3	1:A:93:VAL:HB	1.90	0.53
2:B:449:TYR:O	2:B:494:SER:OG	2.27	0.53
2:D:410:ILE:HD13	2:D:425:LEU:HD11	1.90	0.53
1:E:152:MET:HB2	1:E:161:ARG:HG2	1.91	0.53
1:E:407:ILE:HG21	1:E:525:PHE:HB2	1.90	0.53
2:B:715:PRO:HD3	2:F:894:LEU:HD21	1.89	0.53
2:D:567:ARG:NH1	2:D:571:ASP:OD1	2.42	0.53
2:F:364:ASP:OD1	2:F:366:SER:OG	2.26	0.53
2:F:457:ARG:NH1	2:F:459:SER:OG	2.38	0.53
1:A:145:GLU:OE1	1:A:149:ASN:ND2	2.40	0.53
1:A:528:ALA:HB2	1:A:574:VAL:HG12	1.90	0.53
2:B:199:GLY:HA3	2:B:232:GLY:HA2	1.91	0.53
1:C:390:PHE:HA	1:C:393:ARG:HD2	1.90	0.53
1:E:450:LEU:HD11	1:E:519:THR:HG21	1.91	0.53
1:E:452:PHE:O	1:E:455:MET:HG3	2.09	0.53
1:A:29:LEU:HA	1:A:32:PHE:CE2	2.44	0.53
1:A:325:GLN:HA	1:A:328:TRP:CD1	2.39	0.53
1:C:293:VAL:HG23	1:C:297:MET:HE3	1.91	0.53
1:C:488:VAL:HG21	1:C:611:SER:HA	1.90	0.53
1:E:148:LEU:O	1:E:152:MET:HG3	2.08	0.53
1:E:269:ASP:OD1	1:E:269:ASP:N	2.40	0.53
1:A:353:LYS:HE2	2:B:449:TYR:HE1	1.73	0.53
2:B:904:TYR:CZ	2:D:1107:ARG:HD3	2.43	0.53
1:C:217:TYR:OH	1:C:225:ASP:OD2	2.27	0.53
2:D:29:THR:OG1	2:D:215:ASP:OD2	2.19	0.53
2:D:600:PRO:HD3	2:D:692:ILE:HD11	1.91	0.53
1:A:478:TRP:HA	1:A:481:LYS:HB2	1.92	0.52
1:C:519:THR:O	1:C:522:GLN:HG3	2.09	0.52
2:D:31:SER:OG	2:D:60:SER:N	2.42	0.52
1:A:108:LEU:HD13	1:A:112:LYS:HD3	1.92	0.52
2:B:878:LEU:HD11	2:B:1054:GLN:HE22	1.74	0.52
1:E:229:THR:O	1:E:233:ILE:HG13	2.09	0.52
2:F:95:THR:HB	2:F:186:PHE:HB2	1.91	0.52
2:D:231:ILE:HB	2:D:233:ILE:HD11	1.91	0.52
2:D:645:THR:HG23	2:D:648:GLY:H	1.75	0.52
2:D:393:THR:O	2:D:523:THR:OG1	2.22	0.52
1:A:343:VAL:HG12	1:A:345:HIS:H	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:37:TYR:OH	2:D:54:LEU:O	2.15	0.52
2:D:777:ASN:OD1	2:D:1019:ARG:NH1	2.38	0.52
2:D:914:ASN:ND2	2:D:1111:GLU:OE2	2.40	0.52
1:E:177:ARG:NH1	1:E:495:GLU:O	2.42	0.52
2:B:43:PHE:HB3	2:D:566:GLY:HA2	1.92	0.52
1:E:247:LYS:HG3	1:E:282:THR:HA	1.91	0.52
1:A:108:LEU:HD12	1:A:190:MET:HE2	1.92	0.52
2:B:802:PHE:HB3	2:B:805:ILE:HG22	1.92	0.52
2:B:40:ASP:OD1	2:B:40:ASP:N	2.42	0.52
1:C:208:GLU:OE1	1:C:219:ARG:NH1	2.43	0.52
2:D:503:VAL:HA	2:D:506:GLN:HB2	1.91	0.52
2:D:1030:SER:HB3	2:F:1041:ASP:HB3	1.92	0.52
1:E:360:MET:HA	1:E:360:MET:HE3	1.91	0.52
1:E:390:PHE:HA	1:E:393:ARG:HD2	1.92	0.52
2:F:496:GLY:O	2:F:505:TYR:OH	2.23	0.52
2:B:344:ALA:O	2:B:509:ARG:NH1	2.43	0.52
2:D:755:GLN:O	2:F:968:SER:OG	2.24	0.52
1:E:48:TRP:CD2	1:E:357:ARG:HD3	2.44	0.52
2:F:985:ASP:OD1	2:F:985:ASP:N	2.41	0.52
3:G:1:NAG:H4	3:G:2:NAG:N2	2.22	0.52
1:A:47:SER:HA	1:A:62:MET:HG3	1.92	0.52
2:B:350:VAL:HG22	2:B:422:ASN:HB3	1.92	0.52
1:C:336:PRO:HG2	1:C:340:GLN:HB3	1.91	0.52
2:D:342:PHE:HE1	2:D:511:VAL:HG11	1.74	0.52
2:D:909:ILE:HG12	2:D:1047:TYR:HB3	1.92	0.52
2:B:897:PRO:HG3	2:D:710:ASN:HA	1.91	0.51
1:E:19:SER:OG	1:E:20:THR:N	2.43	0.51
1:E:56:GLU:OE1	1:E:60:GLN:NE2	2.43	0.51
1:E:242:ALA:HB2	1:E:604:VAL:HA	1.92	0.51
1:E:354:GLY:HA3	2:F:502:GLY:HA3	1.91	0.51
2:F:125:ASN:HB3	2:F:171:VAL:HG13	1.91	0.51
2:B:1079:PRO:HB3	2:F:917:TYR:CZ	2.46	0.51
1:E:184:VAL:HA	1:E:464:PHE:HE1	1.75	0.51
2:B:125:ASN:HB2	4:B:1302:NAG:H3	1.93	0.51
2:B:472:ILE:HD12	2:B:484:GLU:HG3	1.92	0.51
1:C:62:MET:HE3	1:C:62:MET:HA	1.92	0.51
2:B:387:LEU:HD22	2:B:515:PHE:HE2	1.74	0.51
2:B:725:GLU:OE1	2:B:1064:HIS:NE2	2.40	0.51
1:E:474:MET:HA	1:E:474:MET:HE2	1.93	0.51
1:A:269:ASP:OD1	1:A:269:ASP:N	2.43	0.51
2:B:922:LEU:HD11	3:H:1:NAG:H3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1040:VAL:HG21	2:F:1035:GLY:HA3	1.93	0.51
2:D:734:THR:HG22	2:D:860:VAL:HG12	1.92	0.51
1:E:347:THR:HB	1:E:359:LEU:HB2	1.93	0.51
2:F:1125:ASN:OD1	2:F:1126:CYS:N	2.43	0.51
1:A:468:ILE:HD13	1:A:476:LYS:HG2	1.92	0.51
2:B:534:VAL:HG21	2:B:539:VAL:HG11	1.93	0.51
1:C:174:LYS:HE2	1:C:497:TYR:HE1	1.74	0.51
1:C:370:LEU:HD21	1:C:413:ALA:HB2	1.92	0.51
1:C:460:ARG:HH21	1:C:506:VAL:HG22	1.76	0.51
2:D:901:GLN:O	2:D:905:ARG:HG2	2.10	0.51
1:E:162:LEU:HD13	1:E:490:PRO:HB2	1.93	0.51
1:E:469:PRO:O	1:E:473:TRP:N	2.44	0.51
1:E:527:GLU:HB2	1:E:583:PRO:HB3	1.92	0.51
1:A:315:PHE:CE1	1:A:380:GLN:HG3	2.46	0.51
1:C:79:LEU:C	1:C:82:MET:HE1	2.36	0.51
1:C:455:MET:HE3	1:C:481:LYS:HG2	1.91	0.51
2:F:104:TRP:HB2	2:F:119:ILE:HB	1.92	0.51
2:F:674:TYR:O	2:F:675:GLN:NE2	2.43	0.51
2:B:199:GLY:HA2	2:B:232:GLY:HA2	1.93	0.51
2:B:414:GLN:O	2:B:424:LYS:NZ	2.44	0.51
2:B:433:VAL:HG22	2:B:512:VAL:HG22	1.91	0.51
2:B:823:PHE:CD1	2:B:1057:PRO:HD3	2.46	0.51
1:E:207:TYR:O	1:E:566:TRP:NE1	2.42	0.51
1:E:228:HIS:NE2	1:E:232:GLU:OE2	2.44	0.51
2:F:618:THR:OG1	2:F:619:GLU:OE1	2.23	0.51
2:B:311:GLY:HA2	2:B:664:ILE:HD12	1.92	0.50
2:B:552:LEU:HG	2:B:587:ILE:HG22	1.92	0.50
2:B:560:LEU:O	2:B:577:ARG:NH2	2.44	0.50
1:C:247:LYS:HB2	1:C:282:THR:HG22	1.92	0.50
2:B:168:PHE:HE2	2:B:229:LEU:HD13	1.76	0.50
2:B:661:GLU:H	2:B:661:GLU:CD	2.19	0.50
2:B:1104:VAL:HG23	2:B:1115:ILE:HD13	1.93	0.50
1:E:36:ALA:HB2	1:E:72:PHE:HE2	1.75	0.50
1:E:82:MET:SD	1:E:83:TYR:N	2.84	0.50
1:E:293:VAL:HG21	1:E:423:LEU:HB3	1.93	0.50
2:F:204:TYR:CD1	2:F:225:PRO:HA	2.44	0.50
2:F:328:ARG:HH21	2:F:532:ASN:HA	1.75	0.50
1:A:32:PHE:HZ	1:A:100:LEU:HD11	1.76	0.50
2:D:466:ARG:HB3	2:D:468:ILE:HD11	1.93	0.50
2:D:473:TYR:H	2:D:491:PRO:HD3	1.76	0.50
1:E:116:LEU:HB2	1:E:186:LEU:HD22	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:248:LEU:O	1:E:252:TYR:N	2.32	0.50
1:E:470:LYS:C	1:E:472:GLN:H	2.19	0.50
2:B:438:SER:O	2:B:442:ASP:N	2.41	0.50
1:C:152:MET:HG3	1:C:161:ARG:HG2	1.94	0.50
1:C:478:TRP:HA	1:C:481:LYS:HB2	1.92	0.50
1:E:83:TYR:OH	2:F:476:GLY:O	2.29	0.50
3:G:1:NAG:H4	3:G:2:NAG:C7	2.41	0.50
1:A:482:ARG:NH1	1:A:608:THR:O	2.40	0.50
2:B:368:LEU:O	2:B:374:PHE:HE2	1.95	0.50
1:C:80:ALA:O	1:C:101:GLN:NE2	2.44	0.50
1:C:252:TYR:HB3	1:C:255:TYR:HD2	1.76	0.50
2:D:641:ASN:OD1	2:D:641:ASN:N	2.45	0.50
2:B:294:ASP:N	2:B:294:ASP:OD1	2.44	0.50
2:B:383:SER:HB3	2:B:386:LYS:HG2	1.93	0.50
2:D:40:ASP:OD1	2:D:40:ASP:N	2.43	0.50
2:F:1050:MET:HE2	2:F:1052:PHE:CZ	2.46	0.50
1:A:37:GLU:OE2	1:A:353:LYS:N	2.36	0.50
2:B:339:GLY:O	2:B:343:ASN:N	2.44	0.50
1:C:457:GLU:HG2	1:C:513:ILE:HD13	1.93	0.50
2:F:731:MET:HB2	2:F:955:ASN:HD21	1.77	0.50
2:B:351:TYR:HE1	2:B:452:LEU:HB2	1.77	0.50
2:B:800:PHE:HD2	2:B:927:PHE:HD2	1.58	0.50
1:C:248:LEU:HB3	1:C:256:ILE:HD12	1.93	0.50
2:D:611:LEU:HD22	2:D:666:ILE:HG23	1.93	0.50
1:E:311:ALA:HB1	1:E:376:MET:CE	2.41	0.50
1:E:325:GLN:HA	1:E:328:TRP:HD1	1.77	0.50
2:F:535:LYS:NZ	2:F:554:GLU:OE2	2.44	0.50
1:A:209:VAL:HG21	1:A:565:PRO:HB3	1.94	0.50
2:D:42:VAL:O	2:F:563:GLN:NE2	2.44	0.50
1:E:29:LEU:HD11	1:E:97:LEU:HG	1.94	0.50
1:E:468:ILE:HB	1:E:473:TRP:HD1	1.76	0.50
1:C:226:VAL:HG21	1:C:513:ILE:HD11	1.92	0.49
2:D:1053:PRO:O	2:D:1054:GLN:NE2	2.30	0.49
2:D:1091:ARG:NH1	2:D:1118:ASP:O	2.45	0.49
2:F:117:LEU:HD21	2:F:231:ILE:HD12	1.94	0.49
2:F:130:VAL:HG22	2:F:168:PHE:H	1.77	0.49
2:F:566:GLY:N	2:F:575:ALA:O	2.39	0.49
1:A:29:LEU:HD22	1:A:93:VAL:HG13	1.92	0.49
1:A:162:LEU:HD11	1:A:491:VAL:HG23	1.94	0.49
2:B:1091:ARG:NH1	2:B:1120:THR:O	2.44	0.49
1:C:609:ASP:OD1	1:C:609:ASP:N	2.40	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:388:GLN:O	1:E:393:ARG:NE	2.45	0.49
1:E:392:LEU:HD23	1:E:562:LYS:HE2	1.93	0.49
2:B:358:ILE:HB	2:B:395:VAL:HB	1.93	0.49
1:C:346:PRO:HA	1:C:359:LEU:O	2.11	0.49
1:C:472:GLN:O	1:C:476:LYS:N	2.41	0.49
2:D:103:GLY:HA3	2:D:241:LEU:HB2	1.95	0.49
1:E:97:LEU:O	1:E:101:GLN:N	2.37	0.49
1:E:343:VAL:HG12	1:E:345:HIS:H	1.76	0.49
2:F:358:ILE:HB	2:F:395:VAL:HB	1.94	0.49
2:B:393:THR:O	2:B:523:THR:OG1	2.20	0.49
1:C:560:LEU:HD13	1:C:564:GLU:HG3	1.93	0.49
2:F:99:ASN:ND2	2:F:122:ASN:O	2.41	0.49
2:B:1139:ASP:OD2	2:B:1142:GLN:N	2.45	0.49
1:C:557:MET:HE3	1:C:558:LEU:HD23	1.95	0.49
2:D:392:PHE:HA	2:D:517:LEU:HD13	1.95	0.49
2:D:945:LEU:HD12	2:D:948:LEU:HD12	1.93	0.49
1:E:225:ASP:HB3	1:E:579:MET:HB2	1.95	0.49
2:F:64:TRP:HE1	2:F:264:ALA:HB1	1.77	0.49
2:F:365:TYR:HD2	2:F:388:ASN:HA	1.78	0.49
2:F:382:VAL:HG23	2:F:386:LYS:HE3	1.94	0.49
2:F:497:PHE:CG	2:F:507:PRO:HG3	2.47	0.49
2:B:661:GLU:O	2:B:695:TYR:OH	2.22	0.49
1:C:143:LEU:HB3	1:C:146:PRO:HD2	1.93	0.49
1:C:351:LEU:HB2	1:C:355:ASP:HB3	1.93	0.49
1:C:386:ALA:HA	1:C:393:ARG:HG2	1.94	0.49
1:C:468:ILE:O	1:C:473:TRP:NE1	2.46	0.49
2:D:417:LYS:HZ2	2:D:453:TYR:HB2	1.76	0.49
2:D:431:GLY:CA	2:D:513:LEU:O	2.52	0.49
2:D:449:TYR:HA	2:D:494:SER:HB3	1.94	0.49
1:E:305:GLN:HG3	1:E:333:LEU:HD12	1.95	0.49
1:E:358:ILE:HG12	1:E:360:MET:HG2	1.94	0.49
1:E:419:LYS:HE2	1:E:428:PHE:HB3	1.94	0.49
2:F:780:GLU:OE2	2:F:1019:ARG:NH1	2.39	0.49
1:C:212:VAL:HG21	1:C:565:PRO:HG3	1.95	0.49
1:C:245:ARG:O	1:C:249:MET:HG2	2.13	0.49
1:C:379:ILE:O	1:C:383:MET:HG2	2.12	0.49
2:F:121:ASN:OD1	2:F:190:ARG:NH2	2.38	0.49
1:A:443:ALA:O	1:A:448:GLY:N	2.36	0.49
1:C:31:LYS:HE3	2:D:489:TYR:CD1	2.48	0.49
2:D:724:THR:HG23	2:D:934:ILE:HD12	1.95	0.49
2:D:917:TYR:CZ	2:F:1079:PRO:HB3	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:47:SER:HB3	1:E:349:TRP:HZ3	1.77	0.49
1:A:123:MET:HG3	1:A:176:LEU:HD22	1.95	0.48
1:A:407:ILE:HG21	1:A:525:PHE:HB2	1.94	0.48
1:A:555:PHE:HA	1:A:558:LEU:HB2	1.95	0.48
2:B:196:ASN:HD21	2:B:231:ILE:HD11	1.77	0.48
1:E:482:ARG:NH2	1:E:613:TYR:OH	2.46	0.48
2:F:115:GLN:NE2	4:F:1311:NAG:O5	2.45	0.48
1:A:315:PHE:HD1	1:A:320:LEU:HD12	1.78	0.48
2:B:1102:TRP:CD1	2:B:1135:ASN:HD22	2.31	0.48
2:B:64:TRP:HD1	2:B:65:PHE:H	1.61	0.48
2:B:90:VAL:HG11	2:B:238:PHE:CE2	2.47	0.48
2:B:438:SER:HB3	2:B:509:ARG:HG3	1.94	0.48
2:D:883:THR:HB	2:F:707:TYR:HB2	1.95	0.48
2:F:456:PHE:HA	2:F:473:TYR:CD1	2.49	0.48
1:A:267:LEU:HD11	1:A:487:VAL:HG21	1.95	0.48
1:C:302:TRP:CH2	1:C:310:GLU:HG3	2.49	0.48
1:E:29:LEU:HD12	1:E:93:VAL:HG13	1.95	0.48
1:E:32:PHE:CD1	1:E:76:GLN:HG3	2.48	0.48
1:E:192:ARG:HH12	1:E:198:ASP:CA	2.21	0.48
1:C:314:PHE:O	1:C:317:SER:OG	2.29	0.48
2:F:103:GLY:HA3	2:F:241:LEU:HB2	1.95	0.48
2:F:336:CYS:HB2	2:F:338:PHE:CE1	2.48	0.48
2:F:502:GLY:O	2:F:506:GLN:N	2.46	0.48
2:F:577:ARG:HH11	2:F:582:LEU:HD12	1.78	0.48
2:B:437:ASN:ND2	2:B:506:GLN:OE1	2.46	0.48
2:B:745:ASP:OD1	2:B:745:ASP:N	2.45	0.48
1:C:269:ASP:OD1	1:C:269:ASP:N	2.44	0.48
2:F:619:GLU:OE1	2:F:619:GLU:N	2.45	0.48
2:F:901:GLN:O	2:F:905:ARG:HG2	2.14	0.48
2:B:905:ARG:HD2	2:B:1049:LEU:O	2.14	0.48
1:C:158:TYR:HD1	1:C:266:LEU:HD11	1.78	0.48
1:C:177:ARG:NH2	1:C:495:GLU:OE1	2.40	0.48
1:C:463:VAL:HG22	1:C:473:TRP:CE2	2.49	0.48
2:D:759:PHE:O	2:D:763:LEU:HG	2.13	0.48
1:A:132:VAL:HG21	1:A:148:LEU:HD21	1.95	0.48
2:B:498:GLN:H	2:B:501:ASN:ND2	2.12	0.48
1:E:315:PHE:HA	1:E:318:VAL:HG22	1.95	0.48
1:E:588:PHE:O	1:E:592:PHE:N	2.42	0.48
2:F:474:GLN:NE2	2:F:476:GLY:O	2.47	0.48
1:A:378:HIS:HE1	1:A:401:HIS:HD2	1.61	0.48
2:D:725:GLU:OE1	2:D:1064:HIS:NE2	2.38	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1045:LYS:O	2:D:1066:THR:HG21	2.13	0.48
1:E:185:VAL:O	1:E:189:GLU:HG2	2.14	0.48
2:F:661:GLU:OE2	2:F:662:CYS:N	2.44	0.48
1:A:183:TYR:OH	1:A:509:ASP:OD1	2.23	0.47
1:C:85:LEU:HD23	1:C:88:ILE:HD12	1.96	0.47
2:D:115:GLN:HA	2:D:115:GLN:OE1	2.14	0.47
2:D:780:GLU:OE2	2:D:1019:ARG:NH1	2.42	0.47
1:E:263:PRO:HG2	1:E:266:LEU:HD12	1.95	0.47
1:E:264:ALA:H	1:E:490:PRO:HD3	1.79	0.47
2:B:347:PHE:HB2	2:B:401:VAL:HG23	1.95	0.47
2:D:418:ILE:HA	2:D:422:ASN:HD22	1.79	0.47
1:E:130:GLY:HA3	1:E:168:TRP:HZ3	1.79	0.47
2:B:273:ARG:NH1	2:B:290:ASP:OD2	2.47	0.47
2:B:977:LEU:HD13	2:B:993:ILE:HD12	1.96	0.47
2:D:353:TRP:CD1	2:D:423:TYR:HB2	2.49	0.47
1:E:325:GLN:HA	1:E:328:TRP:CD1	2.50	0.47
1:A:55:THR:OG1	1:A:58:ASN:OD1	2.33	0.47
2:B:797:PHE:HE1	2:D:707:TYR:HE2	1.62	0.47
2:D:356:LYS:HB3	2:D:397:ALA:HB3	1.95	0.47
1:E:515:TYR:O	1:E:518:ARG:HG2	2.14	0.47
2:F:737:ASP:HB3	2:F:740:MET:HB3	1.95	0.47
2:F:353:TRP:O	2:F:466:ARG:NH1	2.48	0.47
2:B:125:ASN:HB3	2:B:171:VAL:HG13	1.96	0.47
1:C:148:LEU:HD22	1:C:164:ALA:HB1	1.96	0.47
1:C:458:LYS:HD2	1:C:461:TRP:HE3	1.79	0.47
1:E:187:LYS:HB3	1:E:199:TYR:CG	2.50	0.47
2:F:759:PHE:O	2:F:763:LEU:HG	2.15	0.47
2:B:124:THR:OG1	4:B:1302:NAG:O7	2.32	0.47
2:B:394:ASN:OD1	2:B:395:VAL:N	2.47	0.47
2:B:718:PHE:HE1	2:B:923:ILE:HG12	1.80	0.47
2:B:822:LEU:HG	2:B:945:LEU:HD21	1.97	0.47
1:C:111:ASP:O	1:C:114:LYS:HG3	2.15	0.47
1:C:323:MET:HE1	1:C:327:PHE:CB	2.45	0.47
1:C:396:ALA:HB3	1:C:400:PHE:CE2	2.50	0.47
2:D:378:LYS:NZ	2:D:379:CYS:O	2.46	0.47
1:E:374:HIS:CE1	1:E:406:GLU:HG2	2.50	0.47
2:F:403:ARG:N	2:F:406:GLU:OE1	2.34	0.47
2:F:869:MET:HE3	2:F:869:MET:HB3	1.76	0.47
2:F:902:MET:HE1	2:F:1050:MET:SD	2.55	0.47
2:F:905:ARG:HD2	2:F:1049:LEU:O	2.15	0.47
2:F:1019:ARG:NH1	2:F:1023:ASN:OD1	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:GLU:HB2	1:A:518:ARG:HG3	1.96	0.47
2:B:333:THR:OG1	2:B:334:ASN:N	2.46	0.47
2:B:755:GLN:O	2:D:968:SER:OG	2.32	0.47
1:C:329:GLU:OE2	1:C:330:ASN:ND2	2.47	0.47
2:D:122:ASN:HB2	2:D:125:ASN:O	2.15	0.47
2:F:565:PHE:HE2	2:F:567:ARG:HH21	1.62	0.47
2:B:64:TRP:HD1	2:B:65:PHE:N	2.13	0.47
2:B:406:GLU:HA	2:B:409:GLN:HG3	1.97	0.47
1:A:48:TRP:CZ3	1:A:359:LEU:HB2	2.50	0.47
1:A:439:LEU:HB3	1:A:591:LEU:HB2	1.96	0.47
2:B:85:PRO:O	2:B:269:TYR:OH	2.32	0.47
2:D:417:LYS:HZ3	2:D:418:ILE:HD13	1.80	0.47
2:D:497:PHE:CD2	2:D:507:PRO:HB3	2.50	0.47
1:E:297:MET:SD	1:E:302:TRP:HB2	2.55	0.47
1:E:505:HIS:HA	1:E:510:TYR:HB2	1.96	0.47
2:F:62:VAL:HG23	2:F:267:VAL:C	2.40	0.47
1:A:524:GLN:HA	1:A:583:PRO:HG2	1.97	0.46
2:D:125:ASN:HB3	4:D:1302:NAG:HN2	1.81	0.46
2:D:203:ILE:HG22	2:D:226:LEU:HD21	1.96	0.46
1:E:402:GLU:HG2	1:E:518:ARG:HD2	1.97	0.46
1:E:460:ARG:HE	1:E:506:VAL:HG22	1.81	0.46
2:F:456:PHE:HA	2:F:473:TYR:HD1	1.79	0.46
2:F:858:LEU:HD13	2:F:959:LEU:HD22	1.97	0.46
2:B:280:ASN:HD21	2:B:284:THR:HB	1.80	0.46
2:B:909:ILE:O	2:B:909:ILE:HG13	2.15	0.46
2:B:1127:ASP:OD1	2:B:1127:ASP:N	2.45	0.46
1:C:26:LYS:HE2	1:C:93:VAL:HG21	1.97	0.46
2:F:273:ARG:NH1	2:F:290:ASP:OD2	2.47	0.46
2:F:476:GLY:HA3	2:F:487:ASN:ND2	2.31	0.46
2:F:976:VAL:O	2:F:980:ILE:HG12	2.15	0.46
1:A:269:ASP:OD2	1:A:274:PHE:N	2.35	0.46
2:B:763:LEU:HD21	2:B:1005:GLN:NE2	2.31	0.46
2:B:823:PHE:HD1	2:B:1057:PRO:HD3	1.80	0.46
2:D:117:LEU:HD21	2:D:231:ILE:HD12	1.98	0.46
2:D:712:ILE:HG22	2:D:1077:THR:HB	1.96	0.46
2:F:214:ARG:HD3	2:F:214:ARG:H	1.80	0.46
1:A:28:PHE:HD1	1:A:31:LYS:HE3	1.80	0.46
2:B:911:VAL:HB	2:B:915:VAL:HG11	1.97	0.46
1:C:471:ASP:HA	1:C:495:GLU:HG3	1.97	0.46
2:D:203:ILE:O	2:D:226:LEU:HD23	2.15	0.46
2:D:231:ILE:HG13	2:D:232:GLY:H	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1093:GLY:H	2:D:1107:ARG:CZ	2.29	0.46
2:F:878:LEU:HD11	2:F:1054:GLN:HE22	1.79	0.46
2:D:104:TRP:HB3	2:D:106:PHE:HE1	1.80	0.46
2:F:332:ILE:HD11	2:F:527:PRO:HB3	1.97	0.46
2:B:308:VAL:HB	2:B:602:THR:HG23	1.98	0.46
2:F:336:CYS:N	2:F:362:VAL:O	2.45	0.46
2:F:353:TRP:CZ2	2:F:466:ARG:HD2	2.50	0.46
2:F:428:ASP:OD1	2:F:428:ASP:N	2.43	0.46
2:F:731:MET:HG2	2:F:774:GLN:CD	2.41	0.46
1:A:230:PHE:HE2	1:A:484:ILE:HD12	1.81	0.46
1:C:45:LEU:HD13	1:C:357:ARG:HH12	1.80	0.46
1:C:213:ASP:OD1	1:C:213:ASP:N	2.43	0.46
1:C:326:GLY:O	1:C:330:ASN:HB2	2.16	0.46
1:C:504:PHE:O	1:C:508:ASN:ND2	2.37	0.46
2:D:312:ILE:HB	2:D:664:ILE:HD11	1.96	0.46
1:E:468:ILE:HG13	1:E:473:TRP:NE1	2.30	0.46
2:B:81:ASN:O	2:B:239:GLN:NE2	2.49	0.46
2:B:327:VAL:H	2:B:531:THR:HG22	1.81	0.46
2:B:371:SER:HB3	2:B:374:PHE:CZ	2.51	0.46
2:B:457:ARG:NH1	2:B:459:SER:O	2.42	0.46
2:B:895:GLN:HB2	2:D:707:TYR:HB2	1.98	0.46
1:C:239:HIS:O	1:C:599:ASN:ND2	2.46	0.46
1:C:268:GLY:O	1:C:277:ASN:ND2	2.40	0.46
2:D:119:ILE:HG23	2:D:128:ILE:HG13	1.97	0.46
1:E:47:SER:HA	1:E:62:MET:CE	2.46	0.46
1:E:455:MET:HE3	1:E:481:LYS:HG2	1.98	0.46
2:B:916:LEU:HD12	2:B:923:ILE:HD12	1.98	0.46
2:D:308:VAL:HB	2:D:602:THR:HG23	1.98	0.46
1:E:460:ARG:HH12	1:E:512:PHE:N	2.14	0.46
2:B:41:LYS:NZ	2:D:562:PHE:O	2.35	0.46
2:B:101:ILE:HA	2:B:242:LEU:HD13	1.98	0.46
1:E:227:GLU:OE2	1:E:458:LYS:NZ	2.46	0.46
1:A:85:LEU:HD21	1:A:97:LEU:HB2	1.97	0.45
1:A:302:TRP:CG	1:A:306:ARG:HG2	2.52	0.45
2:B:365:TYR:CD2	2:B:388:ASN:HA	2.50	0.45
1:C:284:PRO:HB3	1:C:594:TRP:CH2	2.51	0.45
2:D:115:GLN:HE21	2:D:167:THR:HG23	1.81	0.45
2:F:228:ASP:C	2:F:229:LEU:HD23	2.41	0.45
2:F:444:LYS:NZ	2:F:447:GLY:O	2.30	0.45
2:B:350:VAL:HG21	2:B:418:ILE:HG23	1.97	0.45
2:B:618:THR:OG1	2:B:619:GLU:OE1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:80:ALA:HB1	1:C:97:LEU:HD22	1.97	0.45
1:C:209:VAL:HB	1:C:217:TYR:H	1.81	0.45
1:C:325:GLN:HG3	1:C:328:TRP:CZ3	2.51	0.45
2:D:915:VAL:O	2:D:919:ASN:ND2	2.38	0.45
2:F:287:ASP:HB3	2:F:306:PHE:HE2	1.81	0.45
2:B:566:GLY:N	2:B:575:ALA:O	2.39	0.45
2:B:665:PRO:HA	2:B:671:CYS:SG	2.56	0.45
2:B:697:MET:HE1	2:F:864:LEU:HD23	1.98	0.45
2:D:375:SER:N	2:D:435:ALA:O	2.49	0.45
1:E:204:ARG:HH12	1:E:465:LYS:HZ1	1.63	0.45
2:F:502:GLY:H	2:F:505:TYR:HB3	1.81	0.45
2:B:323:THR:OG1	2:B:324:GLU:OE1	2.22	0.45
2:D:115:GLN:NE2	2:D:167:THR:HG23	2.32	0.45
2:D:428:ASP:OD1	2:D:428:ASP:N	2.45	0.45
1:E:252:TYR:HB3	1:E:255:TYR:HD2	1.82	0.45
1:C:50:TYR:HD1	1:C:58:ASN:HB3	1.82	0.45
1:E:397:ASN:OD1	1:E:400:PHE:N	2.42	0.45
2:F:346:ARG:NH1	2:F:347:PHE:O	2.49	0.45
2:F:611:LEU:HD22	2:F:666:ILE:HG23	1.99	0.45
2:D:85:PRO:O	2:D:269:TYR:OH	2.22	0.45
2:D:445:VAL:HA	2:D:498:GLN:HG3	1.99	0.45
1:E:38:ASP:HA	1:E:353:LYS:HZ1	1.82	0.45
2:F:129:LYS:HG2	2:F:169:GLU:HG3	1.98	0.45
2:F:234:ASN:HB2	4:F:1303:NAG:C2	2.47	0.45
2:F:379:CYS:HB2	2:F:432:CYS:HB3	1.95	0.45
1:A:455:MET:HE3	1:A:485:VAL:HG21	1.99	0.45
2:B:699:LEU:HD12	2:F:873:TYR:CZ	2.52	0.45
2:D:985:ASP:N	2:D:985:ASP:OD1	2.49	0.45
1:E:470:LYS:C	1:E:472:GLN:N	2.74	0.45
2:B:417:LYS:NZ	2:B:455:LEU:O	2.41	0.45
2:B:804:GLN:HA	2:B:817:PRO:HG2	1.98	0.45
1:C:47:SER:HB3	1:C:349:TRP:HZ3	1.82	0.45
1:C:148:LEU:O	1:C:151:ILE:N	2.49	0.45
1:C:223:ILE:HG12	1:C:461:TRP:CH2	2.52	0.45
1:C:529:LEU:HD22	1:C:550:ALA:HB1	1.98	0.45
1:E:388:GLN:NE2	1:E:559:ARG:O	2.40	0.45
2:F:699:LEU:HD23	2:F:699:LEU:HA	1.85	0.45
1:C:108:LEU:HD13	1:C:112:LYS:HE2	1.98	0.45
2:D:822:LEU:HD22	2:D:945:LEU:HD11	1.99	0.45
2:F:226:LEU:HG	2:F:227:VAL:HG23	1.99	0.45
2:F:729:VAL:HG23	2:F:1059:GLY:HA2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:747:THR:O	2:F:750:SER:OG	2.26	0.45
1:A:32:PHE:CD1	1:A:32:PHE:C	2.95	0.45
2:B:118:LEU:HD11	2:B:120:VAL:HG23	1.98	0.45
2:D:869:MET:H	2:D:869:MET:HG2	1.59	0.45
1:E:302:TRP:CG	1:E:306:ARG:HG2	2.52	0.45
2:F:106:PHE:HB3	2:F:235:ILE:HD13	1.99	0.45
2:F:740:MET:HE2	2:F:740:MET:HB2	1.63	0.45
2:B:107:GLY:HA2	2:B:235:ILE:HG22	1.99	0.44
2:B:901:GLN:O	2:B:905:ARG:HG2	2.16	0.44
2:D:93:ALA:HB1	2:D:189:LEU:HD11	1.99	0.44
1:E:47:SER:O	1:E:51:ASN:ND2	2.35	0.44
1:E:88:ILE:HG22	1:E:94:LYS:HG3	1.99	0.44
2:F:336:CYS:HB2	2:F:338:PHE:HE1	1.83	0.44
2:F:366:SER:N	2:F:388:ASN:OD1	2.50	0.44
2:B:392:PHE:O	2:B:524:VAL:N	2.43	0.44
2:D:93:ALA:HB3	2:D:266:TYR:HB2	1.99	0.44
1:E:315:PHE:CG	1:E:320:LEU:HD12	2.52	0.44
1:A:246:ALA:HA	1:A:249:MET:HE2	1.99	0.44
1:A:356:PHE:CE1	1:A:383:MET:HG3	2.52	0.44
2:B:666:ILE:HG12	2:B:671:CYS:HA	2.00	0.44
1:C:501:ALA:HA	1:C:506:VAL:HB	1.99	0.44
2:D:395:VAL:HG23	2:D:524:VAL:HG11	2.00	0.44
1:E:465:LYS:HE2	1:E:465:LYS:HB2	1.56	0.44
1:A:267:LEU:HD11	1:A:487:VAL:HG11	1.98	0.44
1:A:450:LEU:HB2	1:A:451:PRO:HD3	1.99	0.44
1:E:192:ARG:NH2	1:E:198:ASP:HA	2.32	0.44
1:E:259:ILE:HG12	1:E:607:SER:HB2	1.99	0.44
2:F:357:ARG:CZ	2:F:357:ARG:HB3	2.48	0.44
1:A:199:TYR:HB3	1:A:464:PHE:CD2	2.52	0.44
1:A:248:LEU:HD23	1:A:248:LEU:HA	1.79	0.44
1:A:356:PHE:HB3	1:A:379:ILE:HG23	2.00	0.44
1:C:476:LYS:O	1:C:479:GLU:HB3	2.17	0.44
1:C:529:LEU:O	1:C:533:ALA:N	2.50	0.44
2:F:988:GLU:O	2:F:991:VAL:HG12	2.17	0.44
1:A:294:THR:HA	1:A:297:MET:HB3	1.99	0.44
2:D:342:PHE:HE2	2:D:368:LEU:HD22	1.82	0.44
1:E:396:ALA:HB3	1:E:400:PHE:CD2	2.51	0.44
2:B:202:LYS:H	2:B:202:LYS:HG2	1.52	0.44
2:B:560:LEU:HD13	2:B:561:PRO:HD2	1.99	0.44
1:C:41:TYR:CE1	2:D:501:ASN:HB3	2.53	0.44
1:C:474:MET:HE1	1:C:497:TYR:HB2	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:483:GLU:O	1:C:606:TRP:NE1	2.50	0.44
1:A:268:GLY:C	1:A:277:ASN:HD22	2.25	0.44
1:A:525:PHE:CD1	1:A:573:VAL:HG11	2.53	0.44
1:E:31:LYS:HG2	2:F:475:ALA:HB1	2.00	0.44
1:E:58:ASN:HA	1:E:61:ASN:ND2	2.32	0.44
1:E:376:MET:SD	1:E:376:MET:C	3.00	0.44
2:F:105:ILE:HG12	2:F:241:LEU:HD11	2.00	0.44
2:B:115:GLN:HA	2:B:132:GLU:HG2	1.99	0.44
2:B:580:GLN:O	2:B:581:THR:C	2.61	0.44
2:B:619:GLU:OE1	2:B:619:GLU:N	2.51	0.44
1:C:152:MET:HE3	1:C:270:MET:HB2	2.00	0.44
1:C:271:TRP:NE1	1:C:502:SER:O	2.51	0.44
2:D:201:PHE:HB3	2:D:229:LEU:HB2	2.00	0.44
2:D:1104:VAL:HG12	2:D:1115:ILE:HD13	2.00	0.44
1:E:555:PHE:HA	1:E:558:LEU:HB2	1.99	0.44
2:F:1072:GLU:OE1	2:F:1072:GLU:N	2.51	0.44
1:A:430:GLU:OE1	1:A:541:LYS:NZ	2.47	0.43
1:A:494:ASP:OD1	1:A:494:ASP:N	2.51	0.43
2:B:332:ILE:C	2:B:333:THR:HG1	2.26	0.43
2:B:422:ASN:OD1	2:B:454:ARG:N	2.35	0.43
1:C:294:THR:HA	1:C:297:MET:SD	2.58	0.43
1:C:388:GLN:NE2	1:C:559:ARG:O	2.44	0.43
1:E:74:LYS:HA	1:E:74:LYS:HD3	1.70	0.43
1:E:105:SER:O	1:E:113:SER:OG	2.31	0.43
1:E:199:TYR:HD2	1:E:464:PHE:CZ	2.35	0.43
2:F:564:GLN:O	2:F:577:ARG:HB3	2.18	0.43
1:A:144:LEU:HA	1:A:148:LEU:HB2	2.00	0.43
1:C:374:HIS:HE1	1:C:406:GLU:HG2	1.83	0.43
2:D:104:TRP:HB3	2:D:106:PHE:CE1	2.53	0.43
1:E:144:LEU:HD13	1:E:168:TRP:CE2	2.53	0.43
2:F:326:ILE:HG21	2:F:533:LEU:HA	2.00	0.43
1:A:123:MET:SD	1:A:507:SER:HA	2.58	0.43
1:A:459:TRP:HB2	1:A:480:MET:HE1	2.01	0.43
2:B:453:TYR:HB3	2:B:495:TYR:CE2	2.53	0.43
2:B:1004:LEU:HD12	2:B:1004:LEU:HA	1.80	0.43
2:D:133:PHE:CG	2:D:134:GLN:N	2.86	0.43
1:E:59:VAL:HA	1:E:62:MET:HG2	2.00	0.43
1:E:327:PHE:HD2	1:E:356:PHE:HB2	1.83	0.43
1:E:472:GLN:OE1	1:E:476:LYS:HB2	2.18	0.43
2:F:431:GLY:HA2	2:F:515:PHE:CE2	2.53	0.43
3:J:1:NAG:O6	3:J:2:NAG:N2	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:99:ASN:O	2:B:102:ARG:NE	2.44	0.43
2:B:566:GLY:HA2	2:F:43:PHE:HB3	2.00	0.43
2:B:675:GLN:HG2	2:B:693:ILE:HD13	2.00	0.43
2:B:878:LEU:HD11	2:B:1054:GLN:NE2	2.33	0.43
2:B:897:PRO:HB2	2:B:900:MET:HG3	2.01	0.43
1:E:349:TRP:H	1:E:379:ILE:HD11	1.84	0.43
2:F:91:TYR:OH	2:F:191:GLU:OE2	2.30	0.43
2:F:214:ARG:NH1	2:F:215:ASP:O	2.51	0.43
2:F:1030:SER:O	2:F:1034:LEU:HB2	2.18	0.43
2:B:166:CYS:HB3	2:B:169:GLU:OE2	2.19	0.43
2:B:168:PHE:CE2	2:B:229:LEU:HD13	2.53	0.43
2:B:392:PHE:CG	2:B:515:PHE:HB3	2.54	0.43
2:D:97:LYS:HG3	2:D:186:PHE:HD2	1.82	0.43
1:E:95:LEU:O	1:E:98:GLN:HG3	2.19	0.43
1:E:492:PRO:HD3	1:E:613:TYR:CG	2.53	0.43
2:F:426:PRO:HB3	2:F:463:PRO:HB3	2.01	0.43
1:A:588:PHE:HD2	1:A:591:LEU:HD23	1.83	0.43
2:B:141:LEU:HD23	2:B:243:ALA:HB2	2.01	0.43
2:B:353:TRP:CZ3	2:B:355:ARG:HB2	2.54	0.43
1:C:297:MET:HB3	1:C:302:TRP:HB2	2.01	0.43
1:C:300:GLN:HB2	1:C:302:TRP:CD1	2.54	0.43
2:D:345:THR:O	2:D:346:ARG:NE	2.50	0.43
2:D:786:LYS:H	2:D:786:LYS:HG2	1.66	0.43
1:A:446:ILE:O	1:A:449:THR:HG22	2.19	0.43
1:C:165:TRP:HA	1:C:270:MET:HE1	2.00	0.43
1:C:560:LEU:O	1:C:563:SER:OG	2.34	0.43
2:D:111:ASP:HA	2:D:135:PHE:HB2	2.00	0.43
2:D:792:PRO:HG3	2:F:707:TYR:HD2	1.82	0.43
1:E:351:LEU:HB2	1:E:355:ASP:HB3	2.01	0.43
1:E:567:THR:HB	1:E:577:LYS:HG2	2.00	0.43
2:F:67:ALA:N	2:F:263:ALA:O	2.38	0.43
2:F:457:ARG:HH11	2:F:459:SER:H	1.66	0.43
1:A:270:MET:HG3	1:A:271:TRP:CD2	2.53	0.43
2:B:497:PHE:CD2	2:B:507:PRO:HB3	2.54	0.43
2:D:598:ILE:HG23	2:D:664:ILE:HD13	2.01	0.43
1:E:392:LEU:HA	1:E:562:LYS:HG3	2.01	0.43
2:B:230:PRO:HB2	2:D:521:PRO:HB2	2.00	0.43
2:B:411:ALA:HB3	2:B:414:GLN:HG3	2.00	0.43
2:B:954:GLN:O	2:B:957:GLN:HB2	2.18	0.43
1:C:103:ASN:HD21	1:C:107:VAL:HG23	1.84	0.43
1:E:574:VAL:HG23	1:E:576:ALA:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:390:LEU:HD23	2:F:391:CYS:N	2.34	0.43
2:F:605:SER:OG	2:F:606:ASN:N	2.52	0.43
2:F:775:ASP:CG	2:F:864:LEU:HB2	2.43	0.43
1:A:300:GLN:NE2	1:A:422:GLY:O	2.37	0.43
2:D:121:ASN:OD1	2:D:122:ASN:N	2.52	0.43
2:D:329:PHE:CE1	2:D:544:ASN:HA	2.54	0.43
2:D:713:ALA:HA	2:D:1074:ASN:HA	2.00	0.43
2:D:715:PRO:O	2:D:1110:TYR:N	2.42	0.43
1:E:245:ARG:HH12	1:E:606:TRP:HA	1.84	0.43
1:E:450:LEU:HB2	1:E:451:PRO:HD3	2.01	0.43
2:F:456:PHE:CZ	2:F:475:ALA:HB2	2.53	0.43
2:F:1127:ASP:N	2:F:1127:ASP:OD1	2.52	0.43
1:A:262:LEU:O	1:A:488:VAL:N	2.46	0.42
2:D:329:PHE:HE1	2:D:544:ASN:HA	1.83	0.42
2:D:802:PHE:HB3	2:D:805:ILE:HG22	2.01	0.42
1:E:187:LYS:O	1:E:190:MET:HG3	2.19	0.42
1:E:327:PHE:HZ	1:E:358:ILE:HB	1.84	0.42
1:E:453:THR:HG21	1:E:516:TYR:HB2	2.01	0.42
1:E:488:VAL:HG13	1:E:612:PRO:HD3	2.01	0.42
2:F:457:ARG:HG3	2:F:459:SER:O	2.19	0.42
1:A:347:THR:OG1	1:A:359:LEU:HB3	2.19	0.42
1:C:26:LYS:HG2	1:C:93:VAL:HG21	2.01	0.42
1:C:325:GLN:HG3	1:C:328:TRP:CE3	2.55	0.42
2:D:424:LYS:HZ3	2:D:426:PRO:HA	1.83	0.42
2:D:453:TYR:HB3	2:D:495:TYR:CE1	2.54	0.42
2:D:661:GLU:O	2:D:695:TYR:OH	2.18	0.42
1:E:179:LEU:HD13	1:E:182:GLU:OE2	2.19	0.42
1:E:477:TRP:CE3	1:E:500:PRO:HG3	2.54	0.42
1:A:248:LEU:HB3	1:A:256:ILE:HD12	1.99	0.42
2:B:212:LEU:HD21	2:B:214:ARG:NE	2.33	0.42
2:D:1048:HIS:NE2	2:D:1050:MET:O	2.51	0.42
2:D:1102:TRP:HB2	2:D:1135:ASN:ND2	2.34	0.42
1:E:239:HIS:CE1	1:E:596:LYS:HG2	2.54	0.42
2:F:309:GLU:OE2	2:F:309:GLU:HA	2.19	0.42
2:F:945:LEU:HD12	2:F:948:LEU:HD12	2.01	0.42
1:A:21:ILE:HD11	1:A:87:GLU:HB2	2.01	0.42
2:B:347:PHE:CE2	2:B:509:ARG:HB3	2.55	0.42
2:B:912:THR:O	2:B:915:VAL:HG12	2.20	0.42
1:C:169:ARG:HE	1:C:499:ASP:HB3	1.84	0.42
1:C:386:ALA:O	1:C:393:ARG:NE	2.51	0.42
2:D:409:GLN:HB3	2:D:418:ILE:HB	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:555:SER:OG	2:D:556:ASN:N	2.53	0.42
1:E:457:GLU:HG2	1:E:513:ILE:HB	2.00	0.42
2:F:378:LYS:HD3	2:F:378:LYS:HA	1.79	0.42
2:F:577:ARG:NH1	2:F:582:LEU:HD12	2.33	0.42
2:F:665:PRO:HA	2:F:671:CYS:SG	2.59	0.42
2:B:428:ASP:OD1	2:B:428:ASP:N	2.53	0.42
2:B:950:ASP:OD2	2:B:950:ASP:C	2.62	0.42
2:B:985:ASP:HB2	2:B:987:PRO:HD2	2.01	0.42
1:C:39:LEU:HB3	1:C:69:TRP:CZ3	2.54	0.42
1:C:51:ASN:HB3	1:C:359:LEU:HD11	2.02	0.42
1:C:269:ASP:OD2	1:C:273:ARG:N	2.52	0.42
2:D:462:LYS:N	2:D:465:GLU:OE1	2.52	0.42
2:D:805:ILE:HG13	2:D:878:LEU:HD21	2.01	0.42
1:E:169:ARG:NE	1:E:499:ASP:HB3	2.35	0.42
2:B:309:GLU:O	2:B:313:TYR:OH	2.30	0.42
2:B:917:TYR:CZ	2:D:1079:PRO:HB3	2.55	0.42
2:B:1097:SER:HB3	2:B:1102:TRP:CE2	2.55	0.42
1:C:381:TYR:CD1	1:C:558:LEU:HD22	2.54	0.42
2:D:122:ASN:HB3	4:D:1302:NAG:N2	2.34	0.42
2:D:1049:LEU:HD23	2:D:1049:LEU:HA	1.87	0.42
1:E:429:GLN:NE2	1:E:431:ASP:OD2	2.41	0.42
1:C:28:PHE:HE2	1:C:80:ALA:HB2	1.84	0.42
1:C:162:LEU:HD11	1:C:491:VAL:HG23	2.02	0.42
1:C:378:HIS:NE2	1:C:402:GLU:HA	2.34	0.42
1:C:499:ASP:O	1:C:502:SER:OG	2.24	0.42
2:D:229:LEU:HB3	2:D:231:ILE:HG12	2.01	0.42
2:D:730:SER:O	2:D:1058:HIS:HB3	2.19	0.42
1:E:187:LYS:HA	1:E:187:LYS:HD3	1.75	0.42
1:E:453:THR:HA	1:E:512:PHE:CE2	2.54	0.42
2:F:277:LEU:HD13	2:F:285:ILE:HD13	2.01	0.42
2:F:332:ILE:HD12	2:F:332:ILE:HA	1.82	0.42
1:A:232:GLU:HG3	1:A:581:VAL:HG21	2.01	0.42
1:A:248:LEU:HD12	1:A:262:LEU:HD22	2.01	0.42
2:B:231:ILE:HG13	2:B:233:ILE:H	1.84	0.42
2:B:238:PHE:HD1	2:B:239:GLN:N	2.18	0.42
2:B:342:PHE:CZ	2:B:374:PHE:CE1	3.08	0.42
2:B:398:ASP:OD2	2:B:423:TYR:OH	2.28	0.42
1:C:389:PRO:O	1:C:393:ARG:N	2.53	0.42
1:E:359:LEU:HD23	1:E:359:LEU:HA	1.89	0.42
1:E:460:ARG:HH12	1:E:512:PHE:H	1.67	0.42
2:F:822:LEU:HD22	2:F:945:LEU:HD11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:267:LEU:HA	1:A:278:LEU:HD11	2.02	0.42
2:B:971:GLY:C	2:B:995:ARG:HH11	2.27	0.42
1:C:29:LEU:HD12	1:C:93:VAL:HG13	2.01	0.42
1:C:555:PHE:HA	1:C:558:LEU:HB2	2.01	0.42
2:D:29:THR:HG23	2:D:62:VAL:HG13	2.01	0.42
2:D:392:PHE:CD1	2:D:515:PHE:HB3	2.55	0.42
2:D:620:VAL:HG11	2:D:651:ILE:HD11	2.01	0.42
2:D:825:LYS:HA	2:D:825:LYS:HD2	1.90	0.42
2:F:228:ASP:O	2:F:229:LEU:HD23	2.19	0.42
1:A:28:PHE:CD1	1:A:31:LYS:HE3	2.55	0.42
1:A:472:GLN:HA	1:A:475:LYS:HE2	2.02	0.42
1:C:31:LYS:HE3	2:D:489:TYR:CG	2.55	0.42
1:C:97:LEU:HD23	1:C:97:LEU:HA	1.84	0.42
1:C:438:PHE:HE2	1:C:540:HIS:HB2	1.84	0.42
2:D:106:PHE:HD2	2:D:235:ILE:HG21	1.85	0.42
2:D:717:ASN:HD22	3:L:1:NAG:H83	1.85	0.42
2:F:131:CYS:N	2:F:166:CYS:SG	2.93	0.42
2:F:884:SER:O	2:F:887:THR:HG22	2.20	0.42
2:B:959:LEU:HD23	2:B:959:LEU:HA	1.82	0.41
2:B:1101:HIS:CG	3:N:2:NAG:H81	2.55	0.41
2:F:896:ILE:HD12	2:F:897:PRO:HD2	2.02	0.41
2:F:1038:LYS:HB3	2:F:1038:LYS:HE3	1.76	0.41
1:A:26:LYS:HE3	1:A:93:VAL:HG21	2.02	0.41
1:A:187:LYS:HD3	1:A:187:LYS:HA	1.86	0.41
2:B:140:PHE:CE2	2:B:244:LEU:HB2	2.54	0.41
2:B:518:LEU:HD23	2:B:518:LEU:HA	1.90	0.41
2:B:555:SER:OG	2:B:557:LYS:HG2	2.20	0.41
2:B:930:ALA:O	2:B:934:ILE:HG22	2.20	0.41
1:C:343:VAL:HG12	1:C:345:HIS:H	1.85	0.41
2:D:790:LYS:HE2	2:D:790:LYS:HB3	1.87	0.41
1:E:48:TRP:CG	1:E:357:ARG:HD3	2.55	0.41
1:E:103:ASN:O	1:E:106:SER:OG	2.32	0.41
2:F:984:LEU:HB3	2:F:989:ALA:HB2	2.01	0.41
2:B:216:LEU:HD12	2:B:217:PRO:HD2	2.02	0.41
2:B:713:ALA:O	2:F:894:LEU:HD23	2.21	0.41
2:B:741:TYR:CE1	2:B:966:LEU:HD11	2.54	0.41
1:C:239:HIS:NE2	1:C:596:LYS:HG2	2.35	0.41
2:D:353:TRP:CD1	2:D:353:TRP:H	2.38	0.41
2:D:770:ILE:O	2:D:774:GLN:HG2	2.20	0.41
2:D:1100:THR:HG22	2:D:1101:HIS:CD2	2.55	0.41
1:E:181:GLU:OE1	1:E:470:LYS:HE3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:930:ALA:O	2:F:934:ILE:HG22	2.21	0.41
2:F:1031:GLU:O	2:F:1037:SER:HB2	2.20	0.41
2:B:409:GLN:OE1	2:B:418:ILE:N	2.53	0.41
2:B:720:ILE:HG13	2:B:923:ILE:HG23	2.02	0.41
2:B:770:ILE:O	2:B:774:GLN:HG2	2.21	0.41
2:B:962:LEU:HD12	2:B:962:LEU:HA	1.81	0.41
1:C:51:ASN:O	1:C:342:ALA:HA	2.20	0.41
2:D:894:LEU:HD21	2:F:715:PRO:HG3	2.02	0.41
1:E:174:LYS:NZ	1:E:496:THR:OG1	2.50	0.41
1:C:32:PHE:HE2	1:C:391:LEU:HG	1.86	0.41
2:D:754:LEU:HD23	2:D:754:LEU:HA	1.87	0.41
2:D:959:LEU:HD23	2:D:959:LEU:HA	1.81	0.41
2:D:983:ARG:O	2:D:984:LEU:HD22	2.20	0.41
1:E:207:TYR:HB3	1:E:566:TRP:CZ2	2.56	0.41
1:E:378:HIS:NE2	1:E:402:GLU:HA	2.36	0.41
1:E:478:TRP:HA	1:E:481:LYS:HB2	2.02	0.41
1:A:156:LEU:HD13	1:A:281:LEU:HD11	2.03	0.41
1:A:424:LEU:HD21	1:A:428:PHE:CD2	2.56	0.41
2:B:730:SER:O	2:B:1058:HIS:HB3	2.20	0.41
1:C:187:LYS:HD3	1:C:187:LYS:HA	1.77	0.41
1:E:114:LYS:HA	1:E:114:LYS:HD3	1.86	0.41
1:E:137:ASN:HD21	1:E:139:GLN:HE21	1.69	0.41
1:A:96:GLN:HG2	1:A:391:LEU:HB2	2.03	0.41
2:B:238:PHE:CD1	2:B:239:GLN:N	2.89	0.41
2:B:453:TYR:CZ	2:B:493:GLN:HB3	2.55	0.41
2:B:1125:ASN:OD1	2:B:1126:CYS:N	2.40	0.41
2:D:733:LYS:NZ	2:D:775:ASP:OD2	2.43	0.41
1:E:39:LEU:HD22	1:E:68:LYS:HD3	2.03	0.41
1:E:116:LEU:HD21	1:E:187:LYS:HE2	2.02	0.41
2:F:210:ILE:HG21	2:F:217:PRO:HG3	2.02	0.41
2:F:461:LEU:HD21	2:F:467:ASP:OD2	2.20	0.41
2:B:328:ARG:HH12	2:B:533:LEU:HD22	1.86	0.41
2:B:740:MET:SD	2:D:319:ARG:NH1	2.93	0.41
1:C:372:ALA:O	1:C:376:MET:HG3	2.20	0.41
2:D:444:LYS:HE3	2:D:447:GLY:O	2.20	0.41
2:D:453:TYR:OH	2:D:493:GLN:OE1	2.21	0.41
1:E:353:LYS:HD2	2:F:505:TYR:CE1	2.55	0.41
1:E:366:MET:HA	1:E:369:PHE:HB3	2.03	0.41
2:F:140:PHE:HB2	2:F:242:LEU:O	2.21	0.41
2:F:749:CYS:SG	2:F:997:ILE:HD11	2.60	0.41
2:F:1081:ILE:HD13	2:F:1081:ILE:HA	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:378:HIS:NE2	1:A:402:GLU:HA	2.35	0.41
1:A:478:TRP:CZ3	1:A:489:GLU:HB3	2.56	0.41
2:B:743:CYS:HB3	2:B:749:CYS:HB3	1.97	0.41
2:B:825:LYS:HA	2:B:825:LYS:HD2	1.83	0.41
2:B:825:LYS:NZ	2:B:941:THR:O	2.53	0.41
2:B:938:LEU:HD23	2:B:938:LEU:HA	1.89	0.41
1:C:315:PHE:HA	1:C:318:VAL:HG22	2.03	0.41
1:C:524:GLN:HA	1:C:583:PRO:HG2	2.03	0.41
2:D:650:LEU:HD12	2:D:650:LEU:HA	1.86	0.41
1:E:45:LEU:HD23	1:E:351:LEU:HD22	2.03	0.41
1:E:499:ASP:O	1:E:502:SER:OG	2.35	0.41
2:F:447:GLY:HA2	2:F:497:PHE:C	2.46	0.41
2:F:541:PHE:CZ	2:F:587:ILE:HD13	2.56	0.41
2:F:558:LYS:HD3	2:F:558:LYS:HA	1.85	0.41
2:F:802:PHE:HZ	2:F:898:PHE:CZ	2.39	0.41
2:F:1116:THR:O	2:F:1120:THR:HG22	2.21	0.41
1:A:458:LYS:HG2	1:A:462:MET:SD	2.61	0.41
1:A:465:LYS:HE3	1:A:465:LYS:HB2	1.89	0.41
2:B:67:ALA:N	2:B:263:ALA:O	2.54	0.41
2:B:328:ARG:NH1	2:B:533:LEU:HB2	2.36	0.41
2:B:345:THR:C	2:B:509:ARG:HH22	2.29	0.41
2:B:410:ILE:HG23	2:B:425:LEU:HD11	2.03	0.41
2:B:557:LYS:HE2	2:B:557:LYS:HB3	1.95	0.41
2:B:797:PHE:CE1	2:D:707:TYR:HE2	2.39	0.41
2:B:1101:HIS:CD2	3:N:2:NAG:H81	2.56	0.41
1:C:265:HIS:ND1	1:C:490:PRO:HG3	2.35	0.41
1:C:478:TRP:O	1:C:481:LYS:HB2	2.21	0.41
2:D:675:GLN:O	2:D:690:GLN:HA	2.21	0.41
2:F:361:CYS:O	2:F:524:VAL:HA	2.20	0.41
2:F:377:PHE:HE1	2:F:384:PRO:HB3	1.86	0.41
1:A:345:HIS:HA	1:A:346:PRO:HD3	1.96	0.40
1:A:519:THR:O	1:A:522:GLN:HG2	2.21	0.40
1:C:278:LEU:O	1:C:282:THR:N	2.53	0.40
1:C:607:SER:HB3	1:C:609:ASP:OD1	2.21	0.40
2:D:497:PHE:CE2	2:D:507:PRO:HB3	2.57	0.40
2:D:663:ASP:OD2	2:D:673:SER:OG	2.34	0.40
1:E:152:MET:HE3	1:E:270:MET:SD	2.61	0.40
1:E:177:ARG:HE	1:E:470:LYS:CE	2.34	0.40
1:E:331:SER:OG	1:E:357:ARG:HA	2.20	0.40
1:E:351:LEU:HD11	1:E:357:ARG:HB2	2.04	0.40
1:E:454:TYR:CE1	1:E:458:LYS:HD2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:565:PRO:HD2	1:E:568:LEU:HD23	2.02	0.40
2:F:52:GLN:C	2:F:52:GLN:OE1	2.64	0.40
2:F:1093:GLY:CA	2:F:1105:THR:O	2.69	0.40
1:A:535:HIS:CD2	1:A:542:CYS:HB2	2.56	0.40
2:B:112:SER:HA	2:B:132:GLU:HB3	2.03	0.40
1:C:528:ALA:HB2	1:C:574:VAL:HG12	2.03	0.40
2:D:353:TRP:CZ2	2:D:466:ARG:HG2	2.56	0.40
1:E:237:TYR:CD1	1:E:451:PRO:HG2	2.56	0.40
1:E:459:TRP:CG	1:E:477:TRP:HE3	2.39	0.40
2:F:449:TYR:CE1	2:F:496:GLY:HA2	2.57	0.40
2:F:478:THR:N	2:F:487:ASN:OD1	2.45	0.40
2:F:959:LEU:HD23	2:F:959:LEU:HA	1.83	0.40
1:A:458:LYS:O	1:A:462:MET:SD	2.80	0.40
2:B:197:ILE:O	2:B:198:ASP:C	2.63	0.40
2:B:280:ASN:ND2	2:B:284:THR:HB	2.37	0.40
2:B:281:GLU:HG2	2:B:282:ASN:OD1	2.22	0.40
2:B:350:VAL:HG11	2:B:418:ILE:HD12	2.03	0.40
2:B:894:LEU:HD21	2:D:715:PRO:HG3	2.04	0.40
1:C:54:ILE:H	1:C:341:LYS:HB3	1.85	0.40
2:D:433:VAL:HG22	2:D:512:VAL:HG13	2.03	0.40
2:D:1038:LYS:HE3	2:D:1038:LYS:HB3	1.88	0.40
2:D:1049:LEU:C	2:D:1050:MET:HG3	2.47	0.40
1:E:189:GLU:HG2	1:E:189:GLU:H	1.67	0.40
1:A:381:TYR:CD1	1:A:558:LEU:HD22	2.56	0.40
1:A:423:LEU:HD23	1:A:423:LEU:HA	1.87	0.40
1:A:453:THR:HA	1:A:512:PHE:CE2	2.57	0.40
2:B:650:LEU:HD12	2:B:650:LEU:HA	1.81	0.40
2:B:759:PHE:CD2	2:B:1001:LEU:HD21	2.57	0.40
1:C:535:HIS:CE1	1:C:542:CYS:HA	2.57	0.40
1:E:469:PRO:C	1:E:473:TRP:CD1	3.00	0.40
2:F:38:TYR:CE2	2:F:285:ILE:HG13	2.57	0.40
2:F:287:ASP:OD1	2:F:288:ALA:N	2.54	0.40
1:A:492:PRO:HD3	1:A:613:TYR:CD2	2.56	0.40
1:A:499:ASP:O	1:A:502:SER:OG	2.23	0.40
1:A:560:LEU:HB3	1:A:564:GLU:OE1	2.21	0.40
2:B:92:PHE:HD2	2:B:238:PHE:HZ	1.70	0.40
2:B:537:LYS:HB3	2:B:537:LYS:HE2	1.66	0.40
2:B:988:GLU:O	2:B:991:VAL:HG12	2.21	0.40
2:B:1083:HIS:CD2	2:B:1136:THR:HA	2.56	0.40
2:B:1142:GLN:N	2:B:1143:PRO:HD2	2.37	0.40
1:C:35:GLU:OE2	2:D:493:GLN:NE2	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:474:MET:SD	1:E:478:TRP:NE1	2.95	0.40
2:F:442:ASP:OD1	2:F:451:TYR:OH	2.31	0.40
2:F:726:ILE:HG13	2:F:1061:VAL:HG22	2.03	0.40
2:F:1012:LEU:HD23	2:F:1012:LEU:HA	1.87	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	595/683 (87%)	591 (99%)	4 (1%)	0	100	100
1	C	595/683 (87%)	582 (98%)	13 (2%)	0	100	100
1	E	595/683 (87%)	581 (98%)	13 (2%)	1 (0%)	44	72
2	B	990/1288 (77%)	943 (95%)	47 (5%)	0	100	100
2	D	991/1288 (77%)	936 (94%)	55 (6%)	0	100	100
2	F	990/1288 (77%)	929 (94%)	61 (6%)	0	100	100
All	All	4756/5913 (80%)	4562 (96%)	193 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	471	ASP

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	527/597 (88%)	527 (100%)	0	100	100
1	C	525/597 (88%)	524 (100%)	1 (0%)	92	95
1	E	527/597 (88%)	518 (98%)	9 (2%)	56	75
2	B	877/1116 (79%)	872 (99%)	5 (1%)	84	90
2	D	879/1116 (79%)	878 (100%)	1 (0%)	92	96
2	F	877/1116 (79%)	876 (100%)	1 (0%)	92	96
All	All	4212/5139 (82%)	4195 (100%)	17 (0%)	88	93

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	195	LYS
2	B	197	ILE
2	B	198	ASP
2	B	202	LYS
2	B	907	ASN
1	C	366	MET
2	D	869	MET
1	E	183	TYR
1	E	190	MET
1	E	192	ARG
1	E	460	ARG
1	E	462	MET
1	E	463	VAL
1	E	465	LYS
1	E	468	ILE
1	E	470	LYS
2	F	343	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (48) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	34	HIS
1	A	58	ASN
1	A	63	ASN
1	A	194	ASN
1	A	277	ASN
1	A	401	HIS

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Mol	Chain	Res	Type
1	A	442	GLN
1	A	552	GLN
2	B	49	HIS
2	B	196	ASN
2	B	493	GLN
2	B	519	HIS
2	B	564	GLN
2	B	641	ASN
2	B	690	GLN
2	B	907	ASN
2	B	913	GLN
1	C	58	ASN
1	C	139	GLN
1	C	154	ASN
1	C	194	ASN
1	C	330	ASN
1	C	472	GLN
2	D	474	GLN
2	D	487	ASN
2	D	764	ASN
2	D	784	GLN
1	E	53	ASN
1	E	61	ASN
1	E	63	ASN
1	E	64	ASN
1	E	89	GLN
1	E	139	GLN
1	E	149	ASN
1	E	194	ASN
1	E	221	GLN
1	E	345	HIS
1	E	374	HIS
1	E	526	GLN
1	E	552	GLN
1	E	556	ASN
1	E	586	ASN
2	F	245	HIS
2	F	334	ASN
2	F	474	GLN
2	F	644	GLN
2	F	762	GLN
2	F	1011	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)

24 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	NAG	G	1	3,2	14,14,15	0.20	0	17,19,21	0.57	0
3	NAG	G	2	3	14,14,15	0.69	1 (7%)	17,19,21	0.57	0
3	NAG	H	1	3,2	14,14,15	0.23	0	17,19,21	0.46	0
3	NAG	H	2	3	14,14,15	0.17	0	17,19,21	0.45	0
3	NAG	I	1	3,2	14,14,15	0.54	0	17,19,21	0.93	1 (5%)
3	NAG	I	2	3	14,14,15	0.40	0	17,19,21	1.38	2 (11%)
3	NAG	J	1	3,2	14,14,15	0.82	1 (7%)	17,19,21	0.85	0
3	NAG	J	2	3	14,14,15	0.24	0	17,19,21	0.51	0
3	NAG	K	1	3,2	14,14,15	0.28	0	17,19,21	0.54	0
3	NAG	K	2	3	14,14,15	0.34	0	17,19,21	0.54	0
3	NAG	L	1	3,2	14,14,15	0.28	0	17,19,21	0.47	0
3	NAG	L	2	3	14,14,15	0.19	0	17,19,21	0.43	0
3	NAG	M	1	3,2	14,14,15	0.25	0	17,19,21	0.46	0
3	NAG	M	2	3	14,14,15	0.26	0	17,19,21	0.53	0
3	NAG	N	1	3,2	14,14,15	0.19	0	17,19,21	0.60	0
3	NAG	N	2	3	14,14,15	0.23	0	17,19,21	0.43	0
3	NAG	O	1	3,2	14,14,15	0.21	0	17,19,21	0.47	0
3	NAG	O	2	3	14,14,15	0.25	0	17,19,21	0.51	0
3	NAG	P	1	3,2	14,14,15	0.17	0	17,19,21	0.60	0
3	NAG	P	2	3	14,14,15	0.19	0	17,19,21	0.43	0
3	NAG	Q	1	3,2	14,14,15	0.79	1 (7%)	17,19,21	1.33	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	NAG	Q	2	3	14,14,15	0.17	0	17,19,21	0.45	0
3	NAG	R	1	3,2	14,14,15	0.25	0	17,19,21	0.42	0
3	NAG	R	2	3	14,14,15	0.24	0	17,19,21	0.40	0

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
3	NAG	G	1	3,2	-	0/6/23/26	0/1/1/1
3	NAG	G	2	3	-	2/6/23/26	0/1/1/1
3	NAG	H	1	3,2	-	0/6/23/26	0/1/1/1
3	NAG	H	2	3	-	2/6/23/26	0/1/1/1
3	NAG	I	1	3,2	-	2/6/23/26	0/1/1/1
3	NAG	I	2	3	-	5/6/23/26	0/1/1/1
3	NAG	J	1	3,2	-	4/6/23/26	0/1/1/1
3	NAG	J	2	3	-	4/6/23/26	0/1/1/1
3	NAG	K	1	3,2	-	3/6/23/26	0/1/1/1
3	NAG	K	2	3	-	2/6/23/26	0/1/1/1
3	NAG	L	1	3,2	-	4/6/23/26	0/1/1/1
3	NAG	L	2	3	-	2/6/23/26	0/1/1/1
3	NAG	M	1	3,2	-	4/6/23/26	0/1/1/1
3	NAG	M	2	3	-	3/6/23/26	0/1/1/1
3	NAG	N	1	3,2	-	2/6/23/26	0/1/1/1
3	NAG	N	2	3	-	2/6/23/26	0/1/1/1
3	NAG	O	1	3,2	-	2/6/23/26	0/1/1/1
3	NAG	O	2	3	-	2/6/23/26	0/1/1/1
3	NAG	P	1	3,2	-	4/6/23/26	0/1/1/1
3	NAG	P	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Q	1	3,2	-	2/6/23/26	0/1/1/1
3	NAG	Q	2	3	-	2/6/23/26	0/1/1/1
3	NAG	R	1	3,2	-	2/6/23/26	0/1/1/1
3	NAG	R	2	3	-	0/6/23/26	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	Q	1	NAG	O5-C1	2.87	1.48	1.43
3	J	1	NAG	O5-C1	-2.86	1.38	1.43
3	G	2	NAG	C1-C2	2.48	1.55	1.52

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	Q	1	NAG	C1-O5-C5	5.25	119.22	112.19
3	I	2	NAG	C2-N2-C7	4.61	129.07	122.90
3	I	1	NAG	C1-O5-C5	2.84	115.99	112.19
3	I	2	NAG	C1-C2-N2	2.23	113.94	110.43

There are no chirality outliers.

All (57) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	L	2	NAG	O5-C5-C6-O6
3	O	2	NAG	O5-C5-C6-O6
3	P	1	NAG	O5-C5-C6-O6
3	L	1	NAG	O5-C5-C6-O6
3	P	2	NAG	O5-C5-C6-O6
3	I	1	NAG	O5-C5-C6-O6
3	M	1	NAG	O5-C5-C6-O6
3	Q	2	NAG	O5-C5-C6-O6
3	G	2	NAG	O5-C5-C6-O6
3	L	1	NAG	C4-C5-C6-O6
3	P	1	NAG	C4-C5-C6-O6
3	J	2	NAG	O5-C5-C6-O6
3	M	1	NAG	C4-C5-C6-O6
3	O	1	NAG	C4-C5-C6-O6
3	G	2	NAG	C4-C5-C6-O6
3	L	2	NAG	C4-C5-C6-O6
3	O	2	NAG	C4-C5-C6-O6
3	P	2	NAG	C4-C5-C6-O6
3	Q	2	NAG	C4-C5-C6-O6
3	H	2	NAG	O5-C5-C6-O6
3	N	1	NAG	C4-C5-C6-O6
3	I	2	NAG	C8-C7-N2-C2
3	I	2	NAG	O7-C7-N2-C2
3	K	1	NAG	C8-C7-N2-C2
3	K	1	NAG	O7-C7-N2-C2
3	L	1	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
3	L	1	NAG	O7-C7-N2-C2
3	M	1	NAG	C8-C7-N2-C2
3	M	1	NAG	O7-C7-N2-C2
3	R	1	NAG	C8-C7-N2-C2
3	R	1	NAG	O7-C7-N2-C2
3	J	1	NAG	C8-C7-N2-C2
3	J	1	NAG	O7-C7-N2-C2
3	J	2	NAG	C8-C7-N2-C2
3	J	2	NAG	O7-C7-N2-C2
3	N	2	NAG	C8-C7-N2-C2
3	N	2	NAG	O7-C7-N2-C2
3	J	1	NAG	O5-C5-C6-O6
3	H	2	NAG	C4-C5-C6-O6
3	O	1	NAG	O5-C5-C6-O6
3	N	1	NAG	O5-C5-C6-O6
3	Q	1	NAG	C4-C5-C6-O6
3	K	1	NAG	O5-C5-C6-O6
3	I	1	NAG	C4-C5-C6-O6
3	K	2	NAG	C1-C2-N2-C7
3	M	2	NAG	C1-C2-N2-C7
3	P	1	NAG	C1-C2-N2-C7
3	J	2	NAG	C4-C5-C6-O6
3	Q	1	NAG	O5-C5-C6-O6
3	M	2	NAG	C4-C5-C6-O6
3	K	2	NAG	C3-C2-N2-C7
3	M	2	NAG	C3-C2-N2-C7
3	J	1	NAG	C4-C5-C6-O6
3	I	2	NAG	C1-C2-N2-C7
3	I	2	NAG	C3-C2-N2-C7
3	P	1	NAG	C3-C2-N2-C7
3	I	2	NAG	C4-C5-C6-O6

There are no ring outliers.

10 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	J	1	NAG	1	0
3	N	2	NAG	2	0
3	G	1	NAG	2	0
3	L	1	NAG	1	0
3	K	1	NAG	1	0
3	J	2	NAG	1	0

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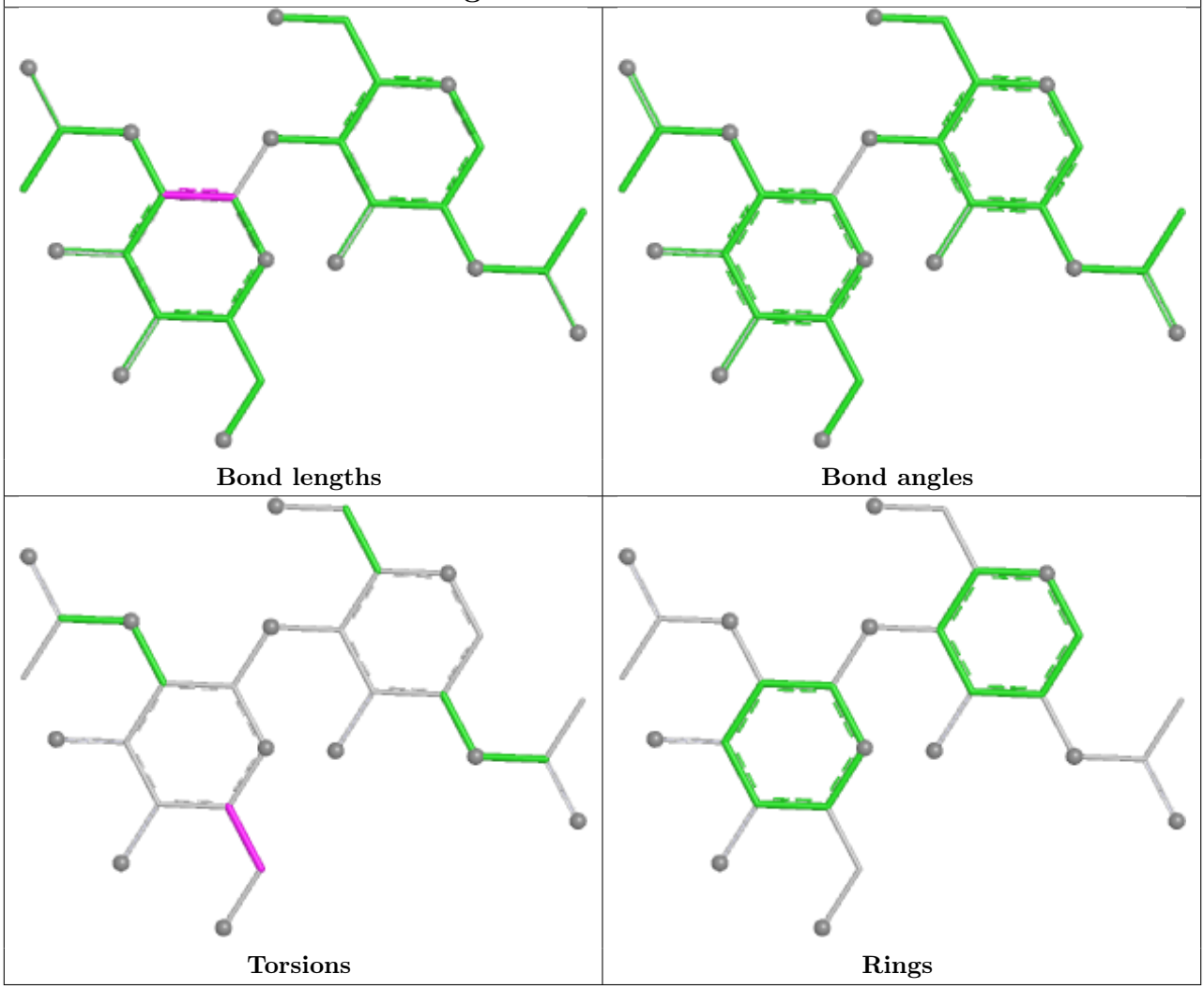
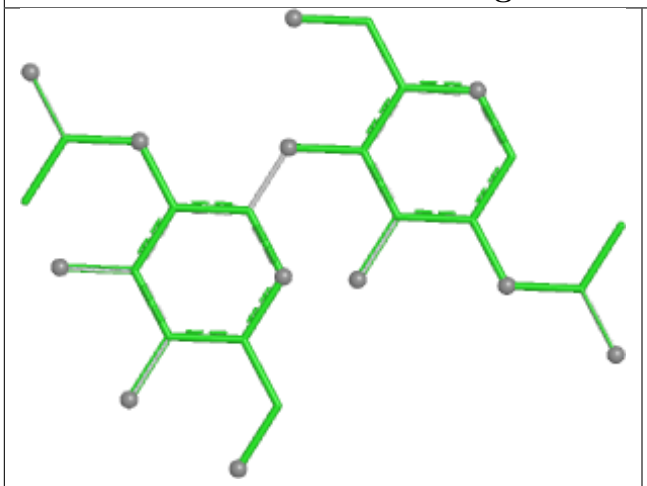
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	K	2	NAG	1	0
3	I	2	NAG	1	0
3	H	1	NAG	1	0
3	G	2	NAG	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

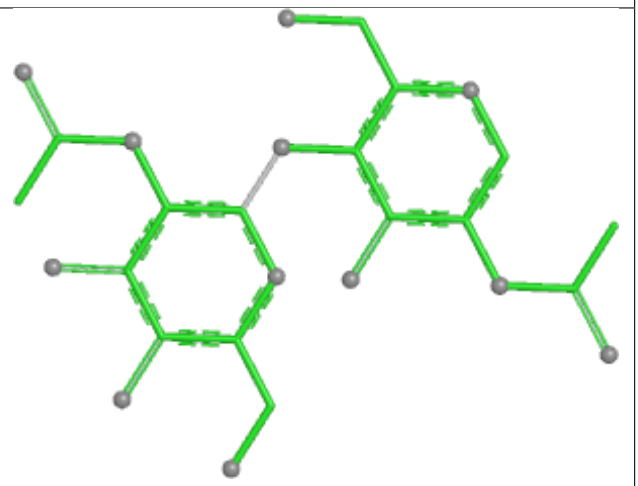
Oligosaccharide Chain G



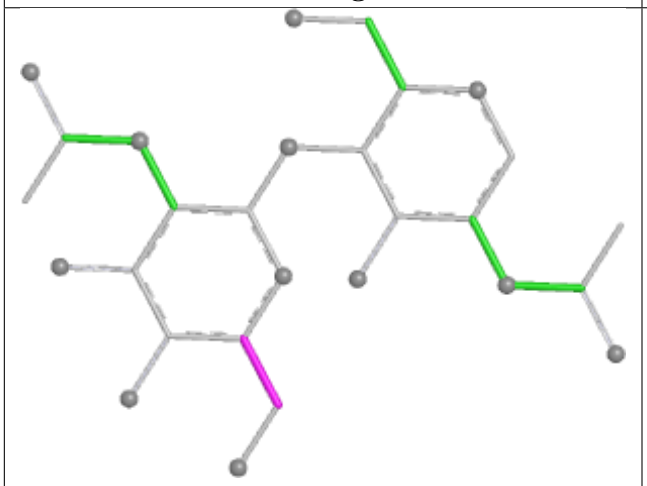
Oligosaccharide Chain H



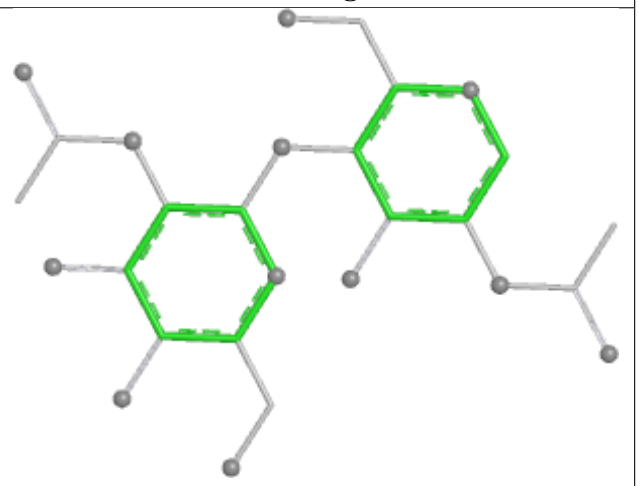
Bond lengths



Bond angles

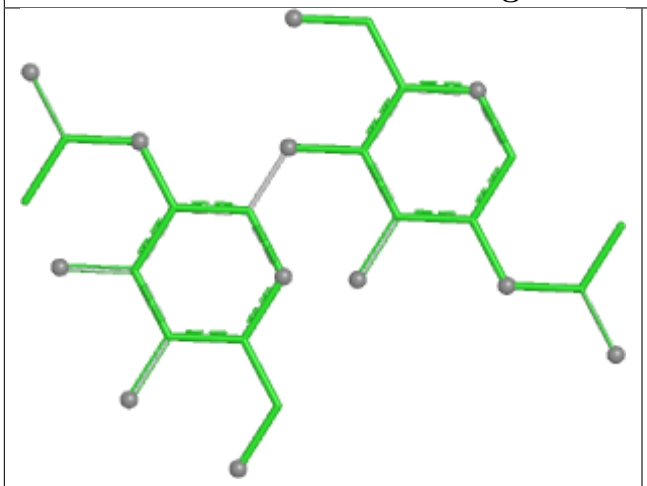


Torsions

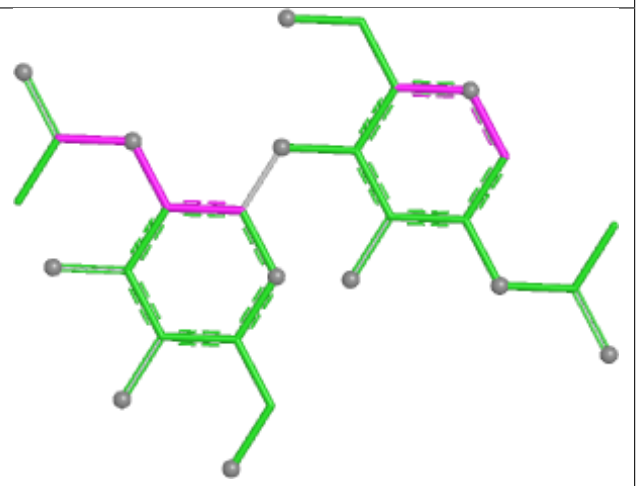


Rings

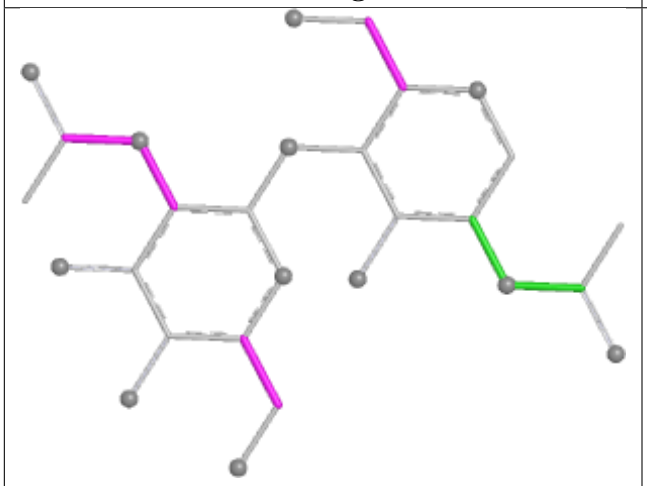
Oligosaccharide Chain I



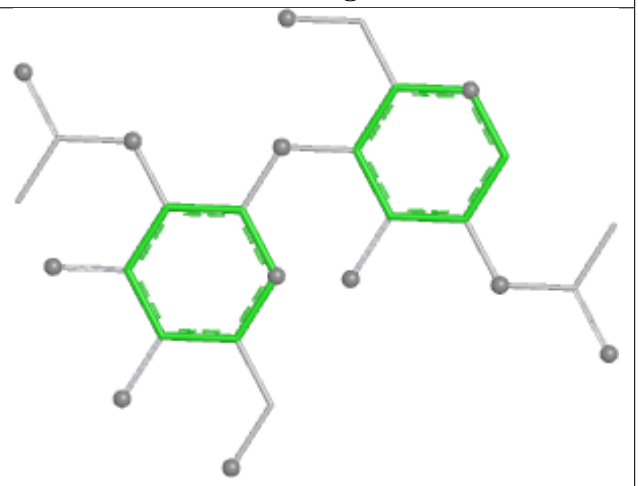
Bond lengths



Bond angles

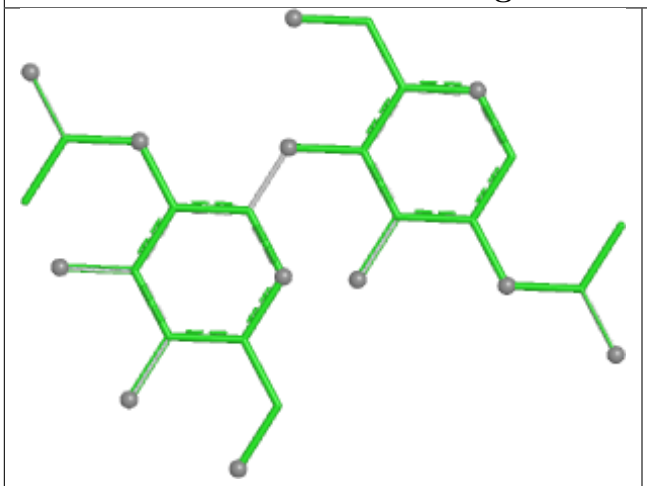


Torsions

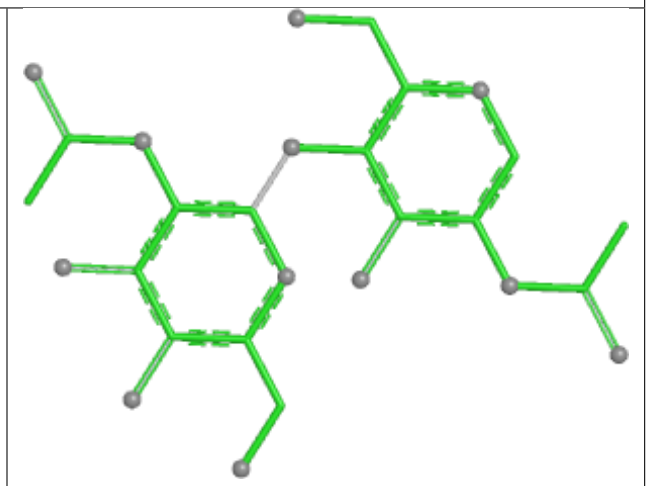


Rings

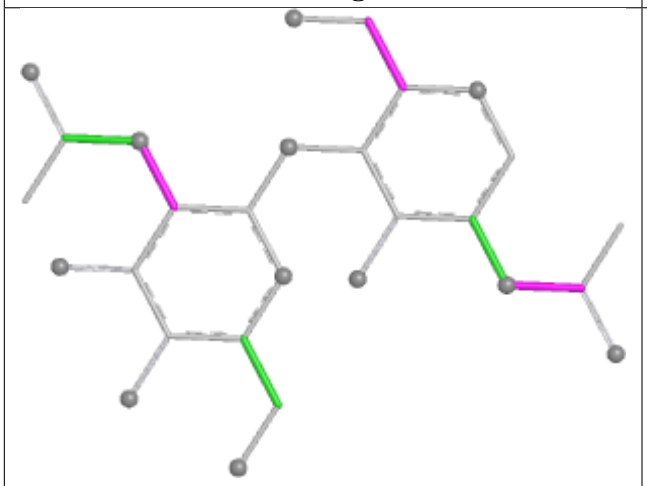
Oligosaccharide Chain K



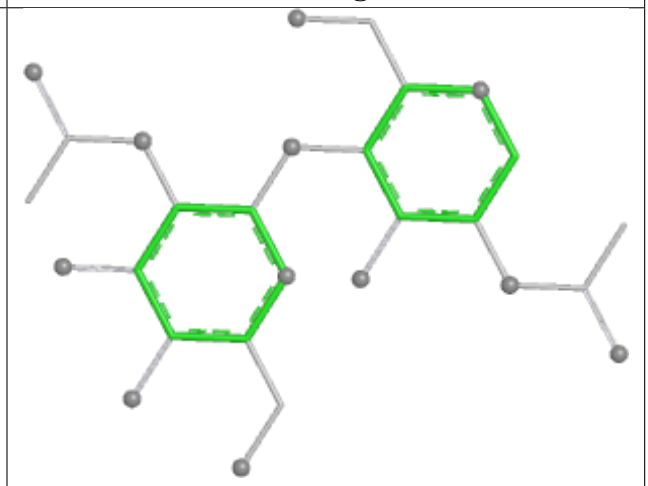
Bond lengths



Bond angles

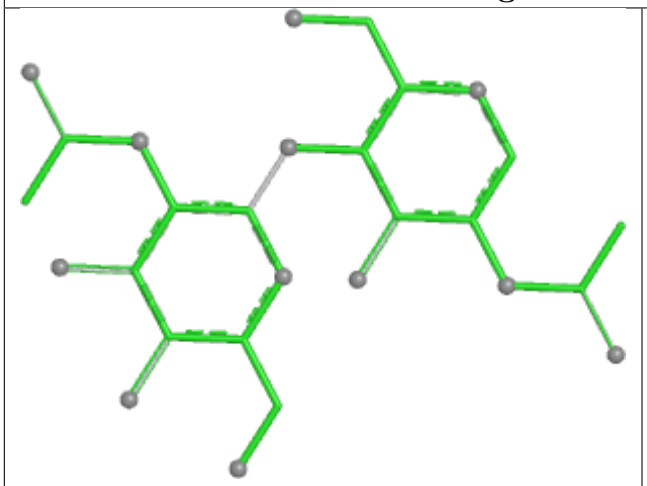


Torsions

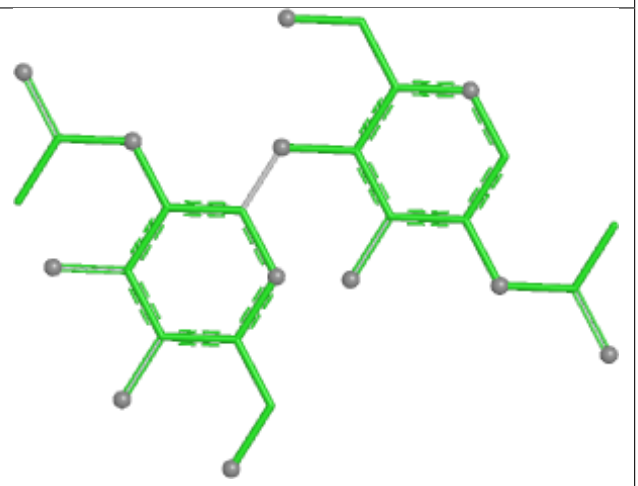


Rings

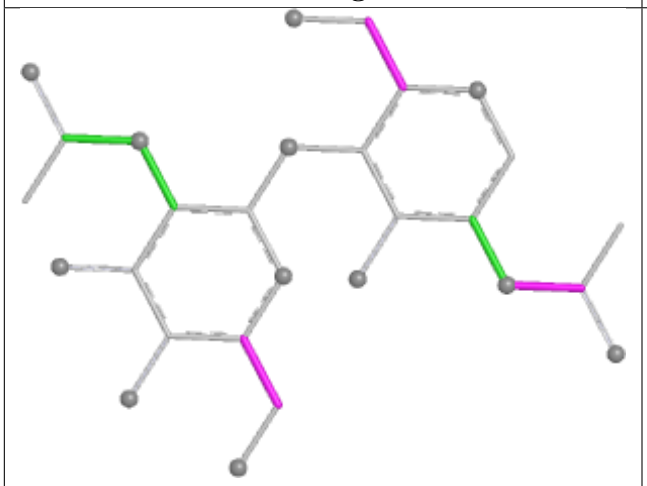
Oligosaccharide Chain L



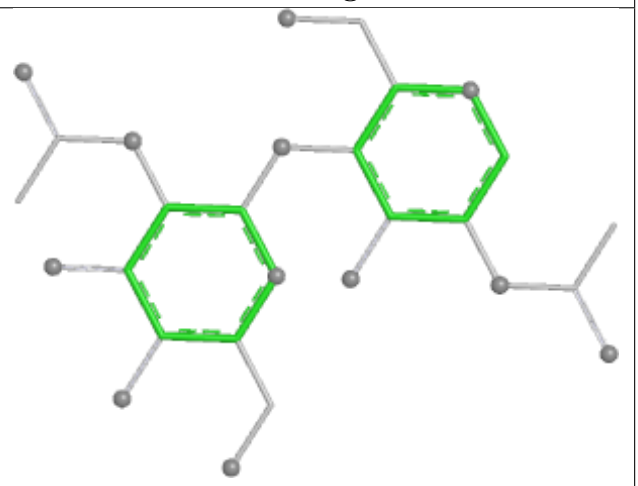
Bond lengths



Bond angles

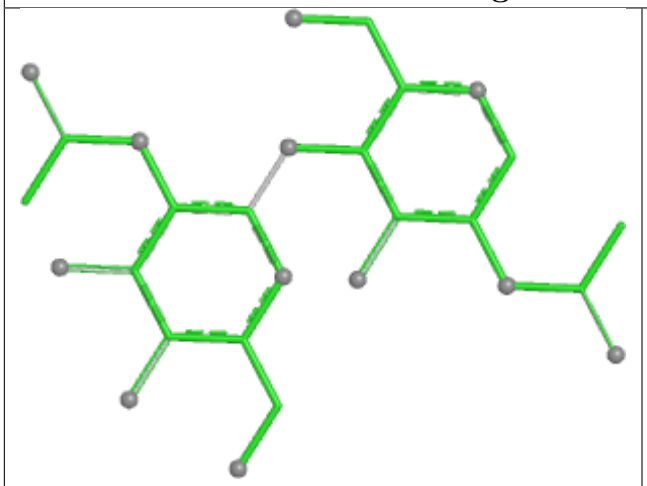


Torsions

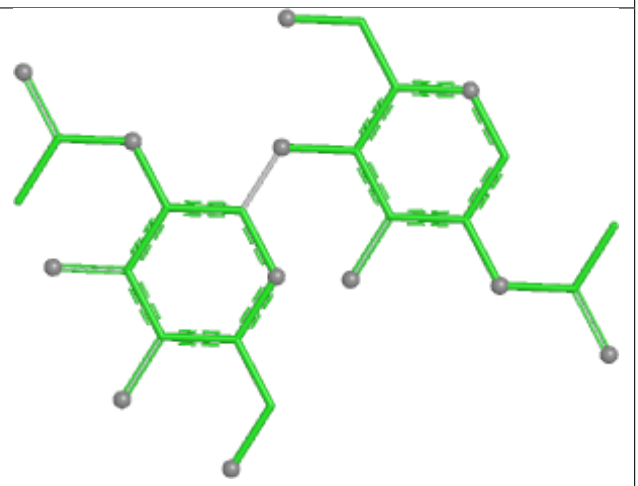


Rings

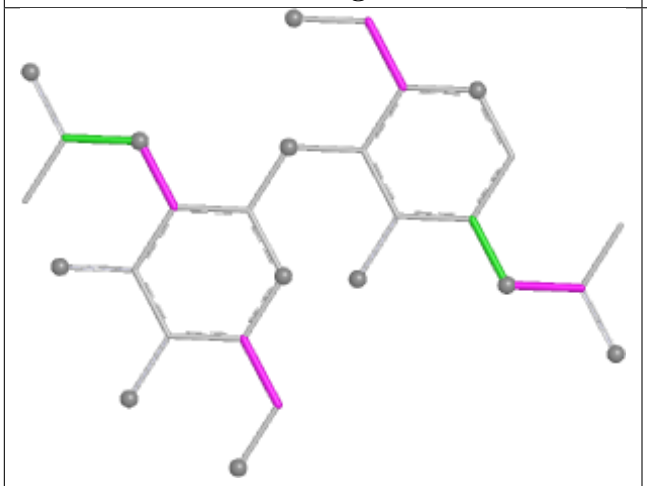
Oligosaccharide Chain M



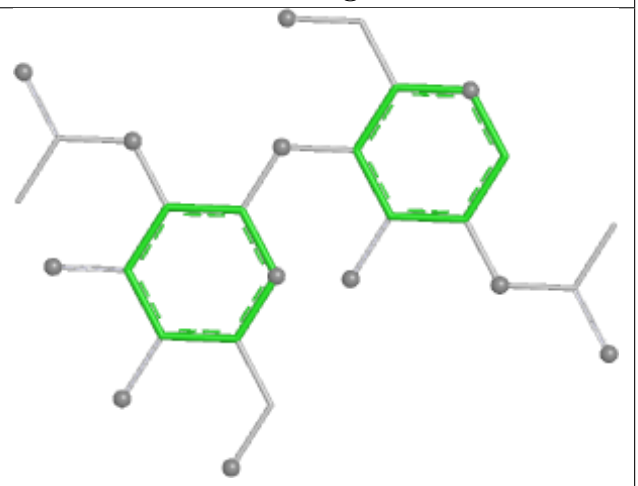
Bond lengths



Bond angles

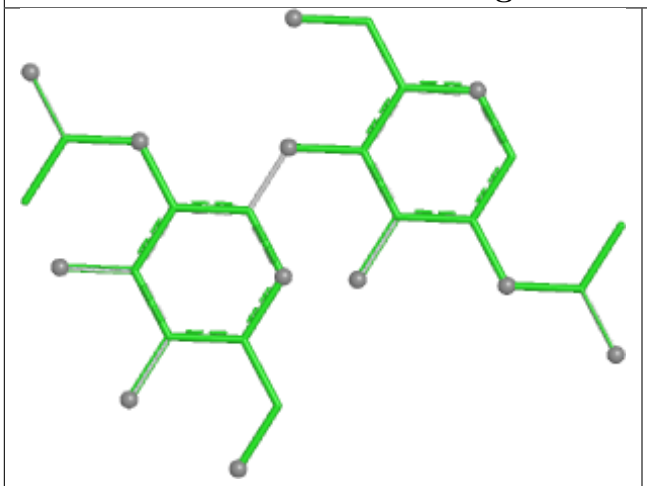


Torsions

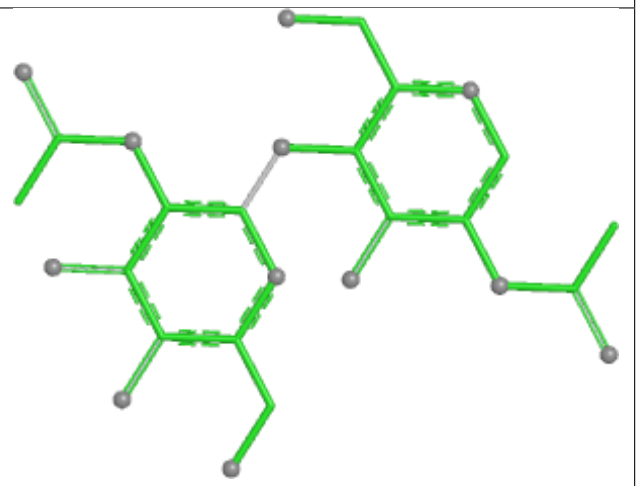


Rings

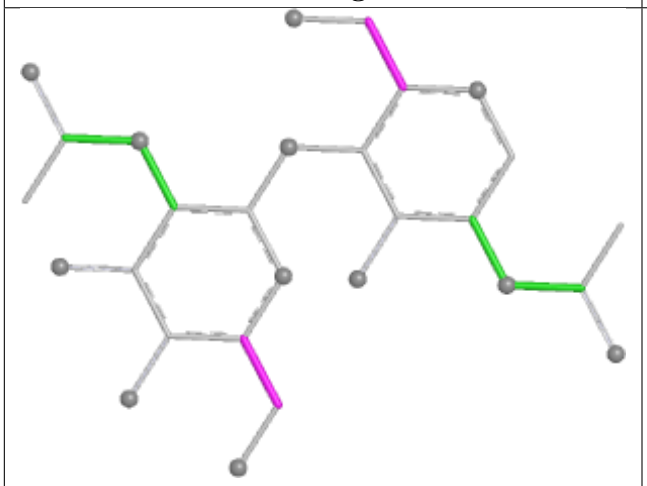
Oligosaccharide Chain O



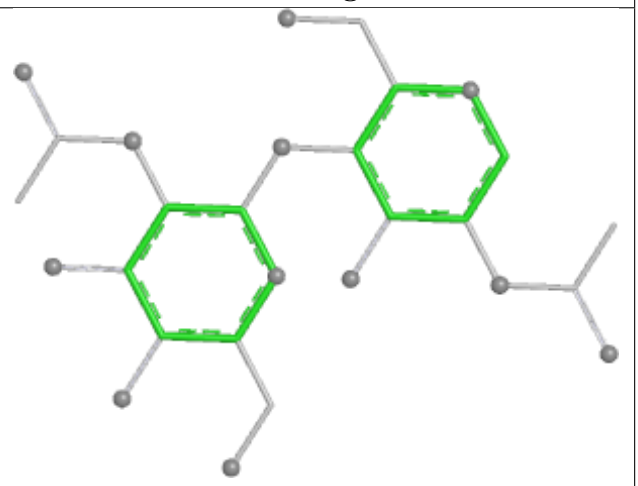
Bond lengths



Bond angles

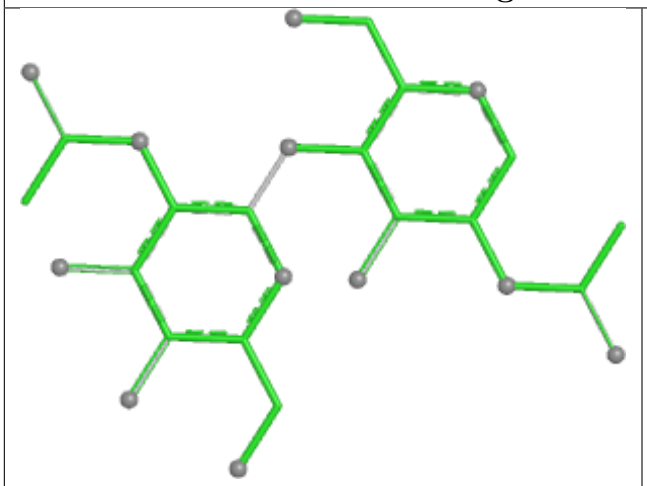


Torsions

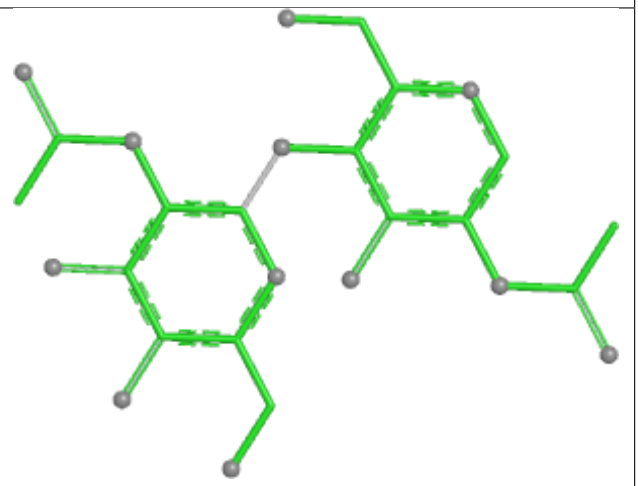


Rings

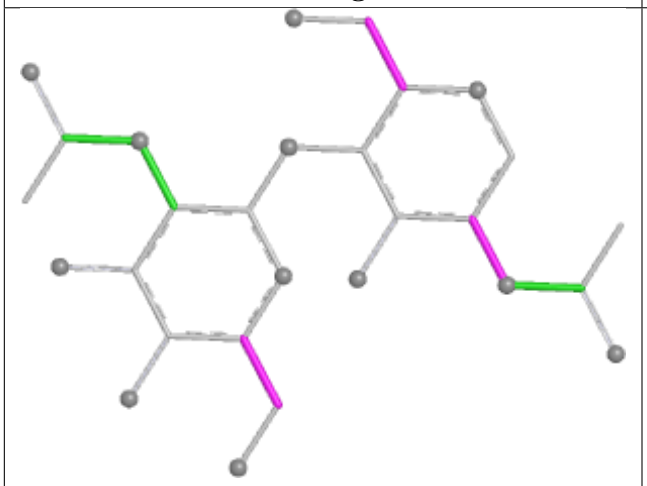
Oligosaccharide Chain P



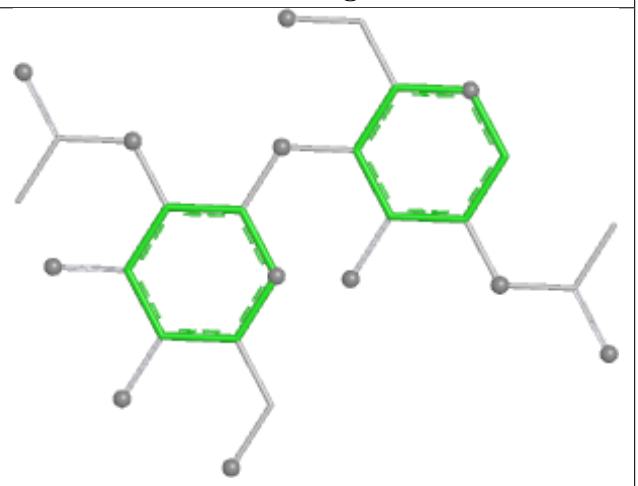
Bond lengths



Bond angles

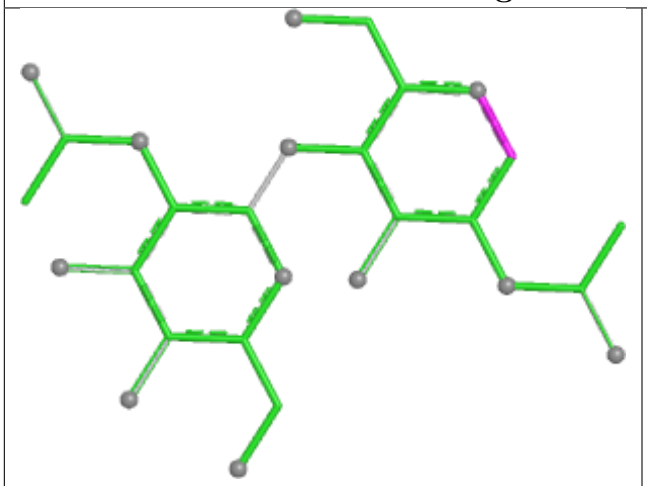


Torsions

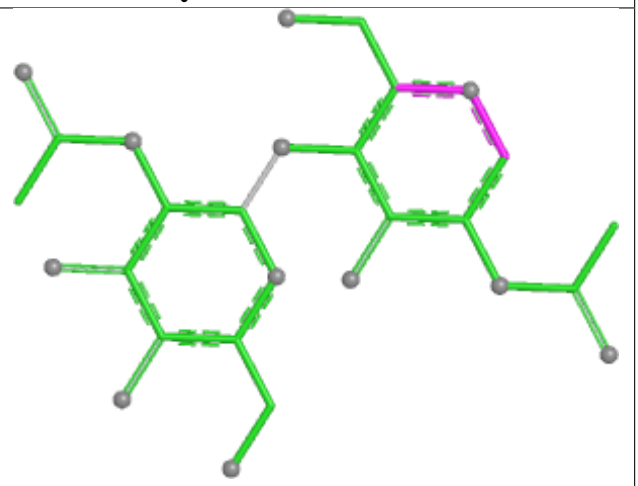


Rings

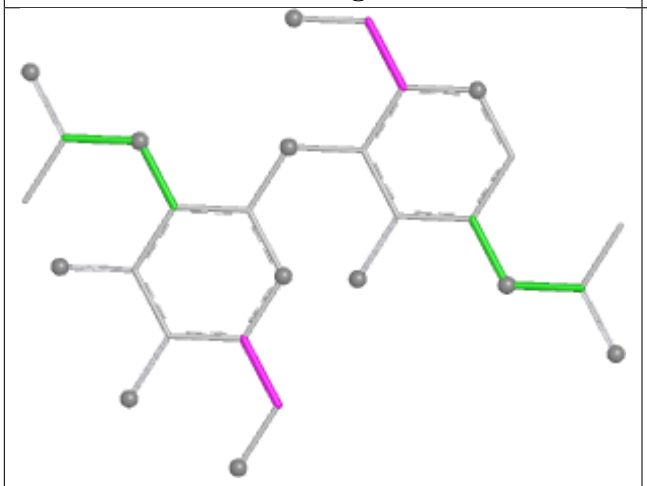
Oligosaccharide Chain Q



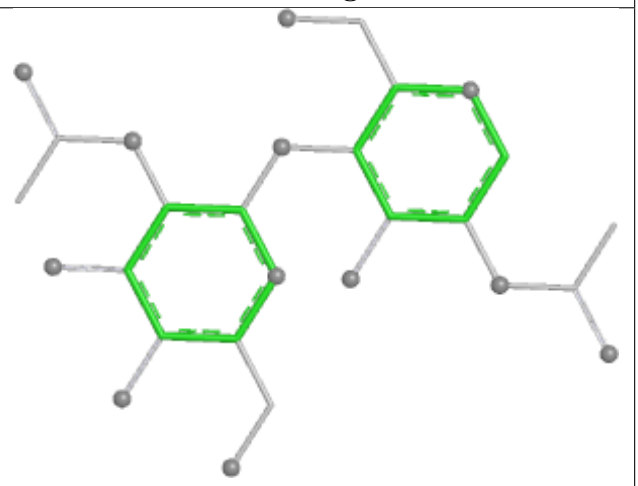
Bond lengths



Bond angles

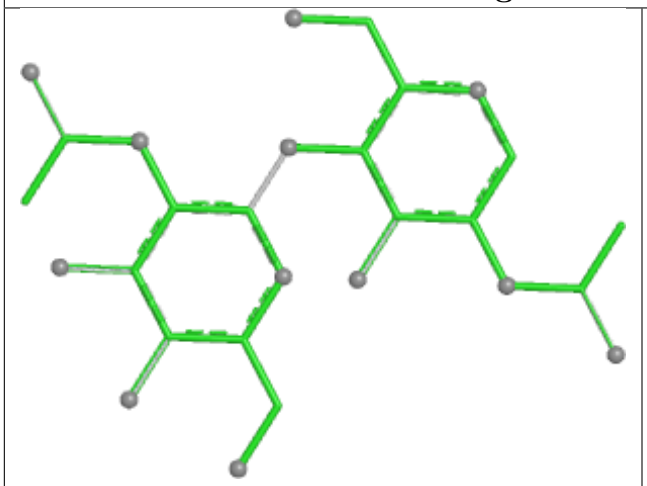


Torsions

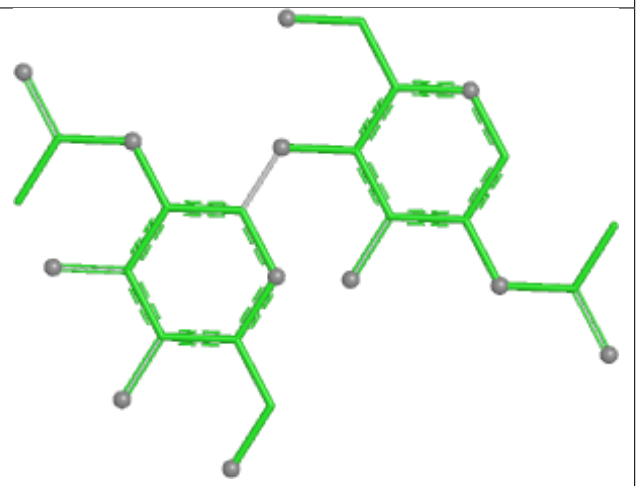


Rings

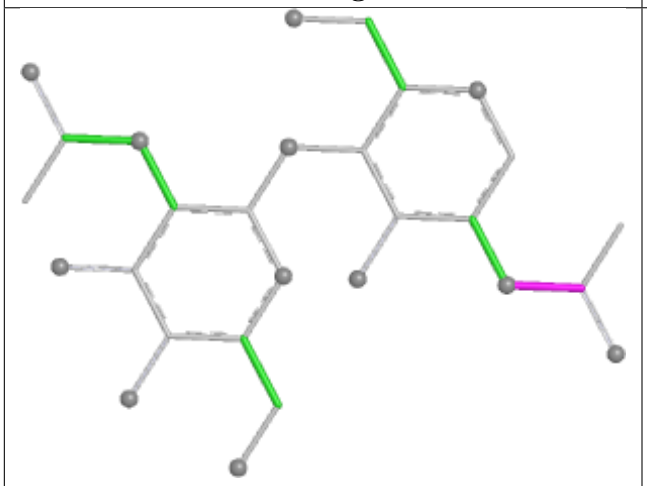
Oligosaccharide Chain R



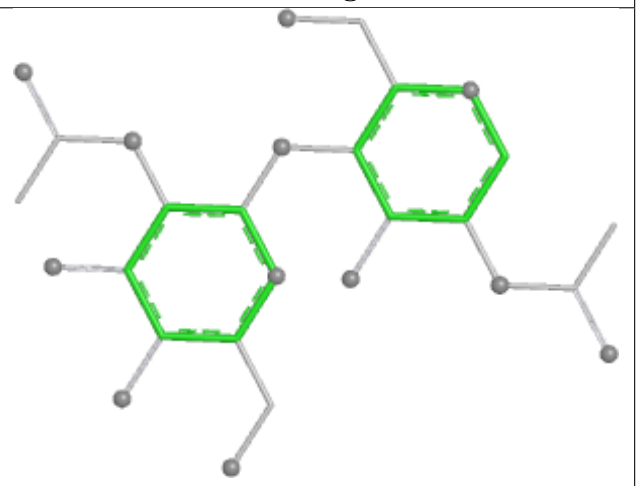
Bond lengths



Bond angles

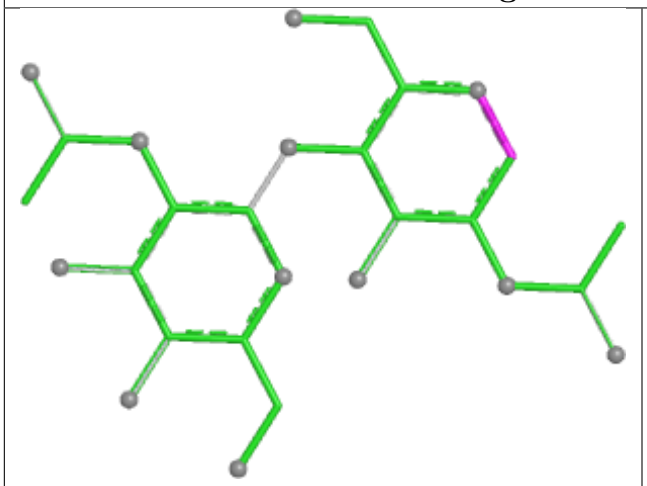


Torsions

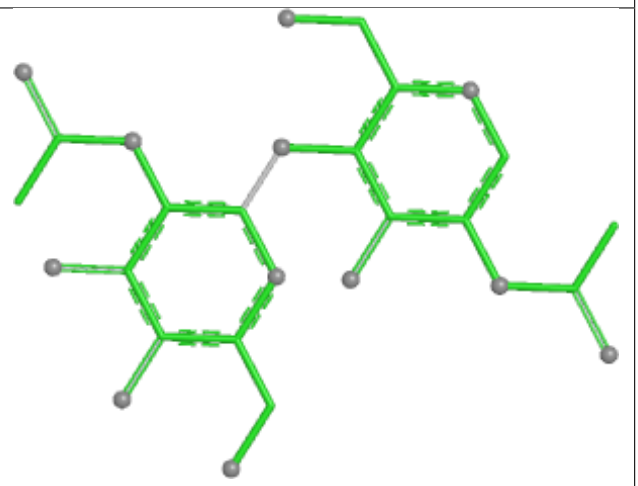


Rings

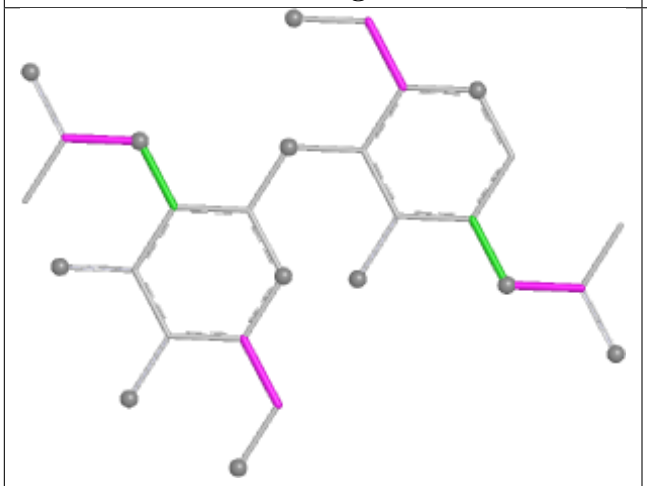
Oligosaccharide Chain J



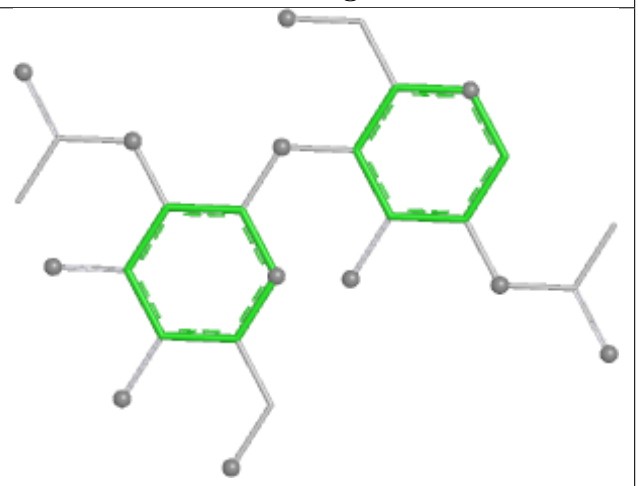
Bond lengths



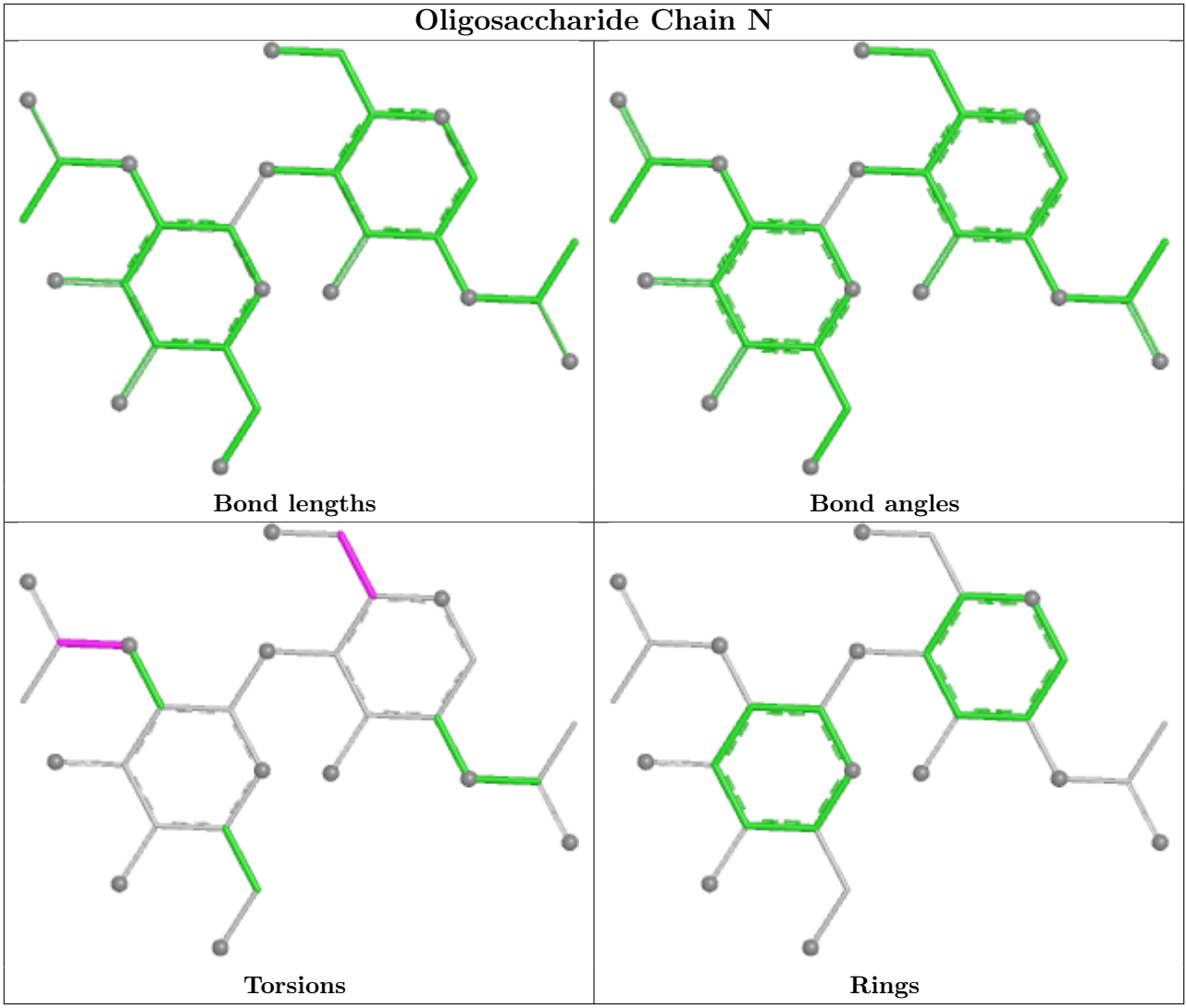
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

33 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	NAG	D	1305	2	14,14,15	0.25	0	17,19,21	0.39	0
4	NAG	F	1305	2	14,14,15	0.17	0	17,19,21	0.52	0
4	NAG	B	1306	2	14,14,15	0.40	0	17,19,21	0.37	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
4	NAG	F	1304	2	14,14,15	0.37	0	17,19,21	0.51	0
4	NAG	F	1310	2	14,14,15	0.19	0	17,19,21	0.42	0
4	NAG	F	1309	2	14,14,15	0.86	1 (7%)	17,19,21	1.11	1 (5%)
4	NAG	D	1303	2	14,14,15	0.17	0	17,19,21	0.48	0
4	NAG	D	1309	2	14,14,15	0.34	0	17,19,21	0.50	0
4	NAG	F	1301	2	14,14,15	0.47	0	17,19,21	0.62	0
4	NAG	D	1304	2	14,14,15	0.43	0	17,19,21	0.37	0
4	NAG	B	1302	2	14,14,15	0.23	0	17,19,21	0.49	0
4	NAG	B	1304	2	14,14,15	0.45	0	17,19,21	0.38	0
4	NAG	B	1309	2	14,14,15	0.36	0	17,19,21	0.57	0
4	NAG	D	1301	2	14,14,15	0.26	0	17,19,21	0.46	0
4	NAG	F	1308	2	14,14,15	0.21	0	17,19,21	0.63	0
4	NAG	F	1302	2	14,14,15	0.24	0	17,19,21	0.54	0
4	NAG	F	1303	2	14,14,15	0.29	0	17,19,21	0.39	0
4	NAG	D	1311	2	14,14,15	0.18	0	17,19,21	0.42	0
4	NAG	F	1311	2	14,14,15	0.45	0	17,19,21	1.33	2 (11%)
4	NAG	B	1308	2	14,14,15	0.18	0	17,19,21	0.46	0
4	NAG	B	1311	2	14,14,15	0.24	0	17,19,21	0.35	0
4	NAG	B	1303	2	14,14,15	0.94	2 (14%)	17,19,21	0.90	1 (5%)
4	NAG	D	1308	2	14,14,15	0.38	0	17,19,21	0.39	0
4	NAG	B	1301	2	14,14,15	0.80	1 (7%)	17,19,21	1.03	1 (5%)
4	NAG	D	1306	2	14,14,15	0.18	0	17,19,21	0.46	0
4	NAG	D	1310	2	14,14,15	0.21	0	17,19,21	0.45	0
4	NAG	B	1310	2	14,14,15	0.50	0	17,19,21	0.69	1 (5%)
4	NAG	B	1305	2	14,14,15	0.57	0	17,19,21	1.31	1 (5%)
4	NAG	D	1302	2	14,14,15	0.64	0	17,19,21	0.79	1 (5%)
4	NAG	F	1307	2	14,14,15	0.26	0	17,19,21	0.42	0
4	NAG	F	1306	2	14,14,15	0.41	0	17,19,21	0.36	0
4	NAG	B	1307	2	14,14,15	0.20	0	17,19,21	0.39	0
4	NAG	D	1307	2	14,14,15	0.32	0	17,19,21	0.44	0

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	NAG	D	1305	2	-	2/6/23/26	0/1/1/1
4	NAG	F	1305	2	-	2/6/23/26	0/1/1/1
4	NAG	B	1306	2	-	4/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	F	1304	2	-	1/6/23/26	0/1/1/1
4	NAG	F	1310	2	-	1/6/23/26	0/1/1/1
4	NAG	F	1309	2	-	0/6/23/26	0/1/1/1
4	NAG	D	1303	2	-	0/6/23/26	0/1/1/1
4	NAG	D	1309	2	-	1/6/23/26	0/1/1/1
4	NAG	F	1301	2	-	2/6/23/26	0/1/1/1
4	NAG	D	1304	2	-	3/6/23/26	0/1/1/1
4	NAG	B	1302	2	-	4/6/23/26	0/1/1/1
4	NAG	B	1304	2	-	3/6/23/26	0/1/1/1
4	NAG	B	1309	2	-	2/6/23/26	0/1/1/1
4	NAG	D	1301	2	-	2/6/23/26	0/1/1/1
4	NAG	F	1308	2	-	4/6/23/26	0/1/1/1
4	NAG	F	1302	2	-	2/6/23/26	0/1/1/1
4	NAG	F	1303	2	-	1/6/23/26	0/1/1/1
4	NAG	D	1311	2	-	0/6/23/26	0/1/1/1
4	NAG	F	1311	2	-	6/6/23/26	0/1/1/1
4	NAG	B	1308	2	-	2/6/23/26	0/1/1/1
4	NAG	B	1311	2	-	2/6/23/26	0/1/1/1
4	NAG	B	1303	2	-	0/6/23/26	0/1/1/1
4	NAG	D	1308	2	-	3/6/23/26	0/1/1/1
4	NAG	B	1301	2	-	4/6/23/26	0/1/1/1
4	NAG	D	1306	2	-	2/6/23/26	0/1/1/1
4	NAG	D	1310	2	-	2/6/23/26	0/1/1/1
4	NAG	B	1310	2	-	4/6/23/26	0/1/1/1
4	NAG	B	1305	2	-	6/6/23/26	0/1/1/1
4	NAG	D	1302	2	-	2/6/23/26	0/1/1/1
4	NAG	F	1307	2	-	0/6/23/26	0/1/1/1
4	NAG	F	1306	2	-	0/6/23/26	0/1/1/1
4	NAG	B	1307	2	-	2/6/23/26	0/1/1/1
4	NAG	D	1307	2	-	2/6/23/26	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	F	1309	NAG	O5-C1	2.88	1.48	1.43
4	B	1303	NAG	O5-C1	2.61	1.48	1.43
4	B	1301	NAG	O5-C1	2.36	1.47	1.43
4	B	1303	NAG	C1-C2	2.21	1.55	1.52

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	F	1311	NAG	C2-N2-C7	4.57	129.03	122.90
4	B	1305	NAG	C2-N2-C7	4.43	128.84	122.90
4	F	1309	NAG	C1-O5-C5	4.33	117.98	112.19
4	B	1301	NAG	C1-O5-C5	3.78	117.25	112.19
4	B	1303	NAG	C1-O5-C5	3.46	116.82	112.19
4	D	1302	NAG	C1-O5-C5	2.83	115.97	112.19
4	F	1311	NAG	C1-C2-N2	2.13	113.78	110.43
4	B	1310	NAG	C1-O5-C5	2.05	114.94	112.19

There are no chirality outliers.

All (71) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1302	NAG	C4-C5-C6-O6
4	B	1309	NAG	C4-C5-C6-O6
4	B	1301	NAG	C4-C5-C6-O6
4	D	1308	NAG	O5-C5-C6-O6
4	B	1309	NAG	O5-C5-C6-O6
4	B	1302	NAG	O5-C5-C6-O6
4	B	1301	NAG	O5-C5-C6-O6
4	B	1305	NAG	C4-C5-C6-O6
4	B	1306	NAG	O5-C5-C6-O6
4	D	1307	NAG	C4-C5-C6-O6
4	F	1308	NAG	O5-C5-C6-O6
4	D	1308	NAG	C4-C5-C6-O6
4	D	1305	NAG	O5-C5-C6-O6
4	B	1311	NAG	O5-C5-C6-O6
4	D	1301	NAG	O5-C5-C6-O6
4	D	1310	NAG	O5-C5-C6-O6
4	B	1305	NAG	O5-C5-C6-O6
4	B	1306	NAG	C4-C5-C6-O6
4	D	1304	NAG	O5-C5-C6-O6
4	D	1305	NAG	C4-C5-C6-O6
4	D	1301	NAG	C4-C5-C6-O6
4	D	1306	NAG	O5-C5-C6-O6
4	F	1308	NAG	C4-C5-C6-O6
4	B	1302	NAG	C8-C7-N2-C2
4	B	1302	NAG	O7-C7-N2-C2
4	B	1304	NAG	C8-C7-N2-C2
4	B	1304	NAG	O7-C7-N2-C2
4	B	1305	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
4	B	1305	NAG	O7-C7-N2-C2
4	B	1306	NAG	C8-C7-N2-C2
4	B	1306	NAG	O7-C7-N2-C2
4	B	1307	NAG	C8-C7-N2-C2
4	B	1307	NAG	O7-C7-N2-C2
4	D	1302	NAG	C8-C7-N2-C2
4	D	1302	NAG	O7-C7-N2-C2
4	F	1301	NAG	C8-C7-N2-C2
4	F	1301	NAG	O7-C7-N2-C2
4	F	1302	NAG	C8-C7-N2-C2
4	F	1302	NAG	O7-C7-N2-C2
4	F	1311	NAG	C8-C7-N2-C2
4	F	1311	NAG	O7-C7-N2-C2
4	D	1307	NAG	O5-C5-C6-O6
4	D	1306	NAG	C4-C5-C6-O6
4	D	1310	NAG	C4-C5-C6-O6
4	D	1304	NAG	C4-C5-C6-O6
4	F	1311	NAG	C4-C5-C6-O6
4	B	1311	NAG	C4-C5-C6-O6
4	B	1310	NAG	C4-C5-C6-O6
4	F	1303	NAG	O5-C5-C6-O6
4	F	1311	NAG	O5-C5-C6-O6
4	B	1308	NAG	O5-C5-C6-O6
4	F	1310	NAG	O5-C5-C6-O6
4	B	1304	NAG	O5-C5-C6-O6
4	B	1310	NAG	O5-C5-C6-O6
4	B	1301	NAG	C1-C2-N2-C7
4	F	1305	NAG	C1-C2-N2-C7
4	F	1308	NAG	C1-C2-N2-C7
4	B	1305	NAG	C3-C2-N2-C7
4	B	1310	NAG	C3-C2-N2-C7
4	F	1308	NAG	C3-C2-N2-C7
4	B	1305	NAG	C1-C2-N2-C7
4	B	1308	NAG	C1-C2-N2-C7
4	B	1310	NAG	C1-C2-N2-C7
4	F	1311	NAG	C1-C2-N2-C7
4	D	1309	NAG	O5-C5-C6-O6
4	B	1301	NAG	C3-C2-N2-C7
4	D	1304	NAG	C3-C2-N2-C7
4	D	1308	NAG	C3-C2-N2-C7
4	F	1305	NAG	C3-C2-N2-C7
4	F	1311	NAG	C3-C2-N2-C7

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Mol	Chain	Res	Type	Atoms
4	F	1304	NAG	O5-C5-C6-O6

There are no ring outliers.

8 monomers are involved in 13 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	F	1304	NAG	1	0
4	F	1301	NAG	2	0
4	B	1302	NAG	2	0
4	F	1303	NAG	2	0
4	F	1311	NAG	2	0
4	B	1310	NAG	1	0
4	B	1305	NAG	1	0
4	D	1302	NAG	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.

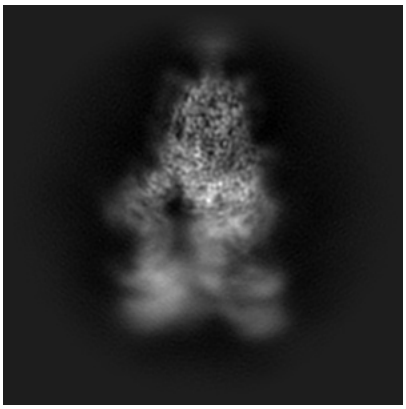
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-44726. These allow visual inspection of the internal detail of the map and identification of artifacts.

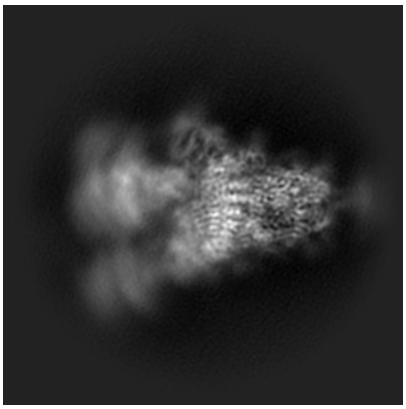
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections (i)

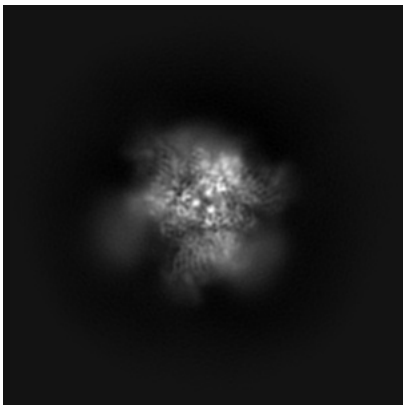
6.1.1 Primary map



X

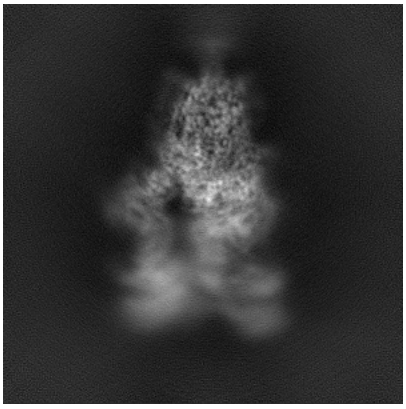


Y

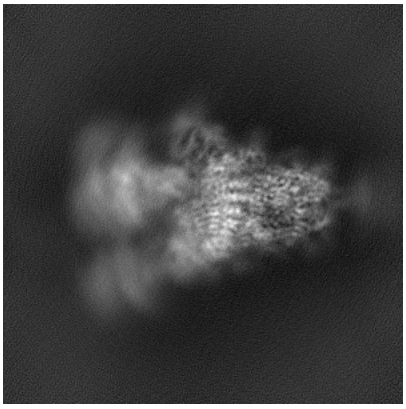


Z

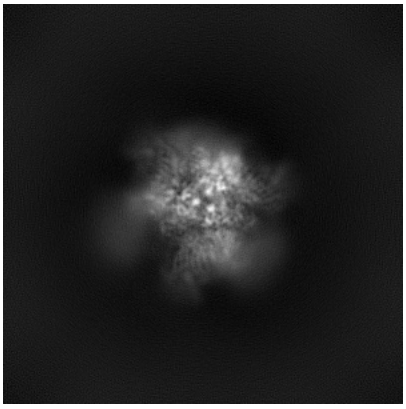
6.1.2 Raw map



X



Y

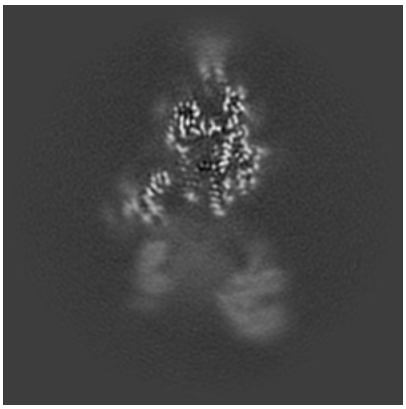


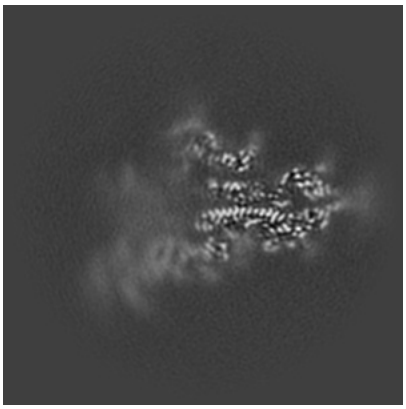
Z

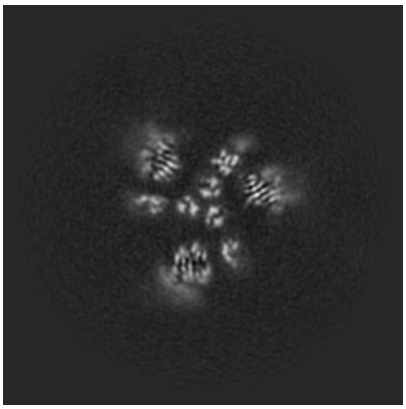
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

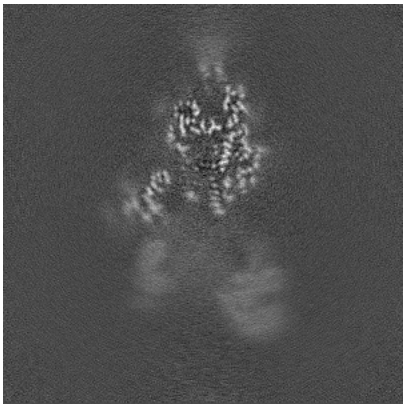
6.2.1 Primary map

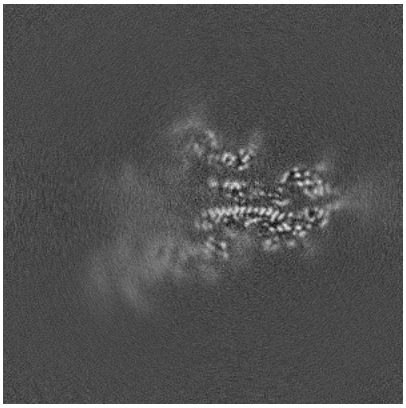

X Index: 192

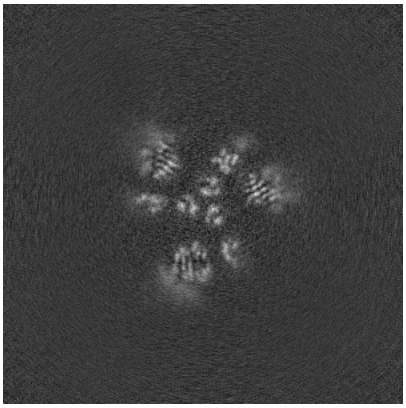

Y Index: 192


Z Index: 192

6.2.2 Raw map


X Index: 192

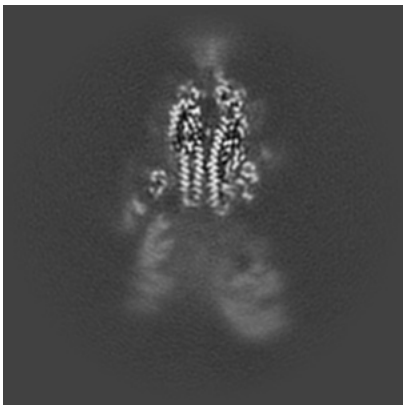

Y Index: 192

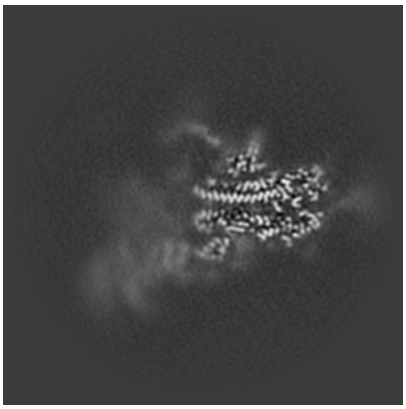

Z Index: 192

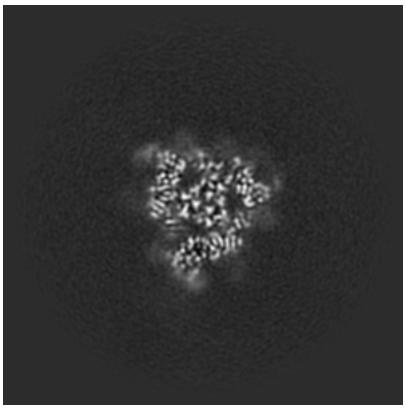
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

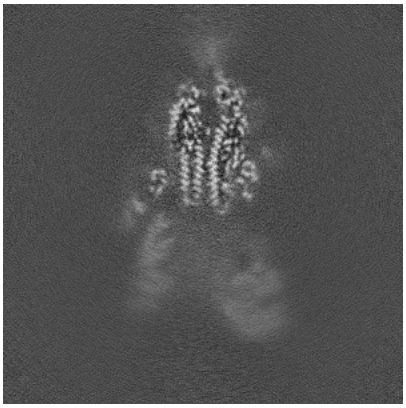
6.3.1 Primary map

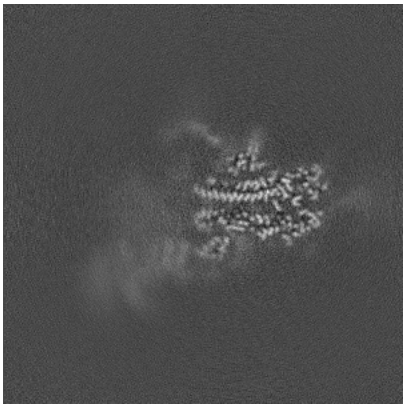

X Index: 197

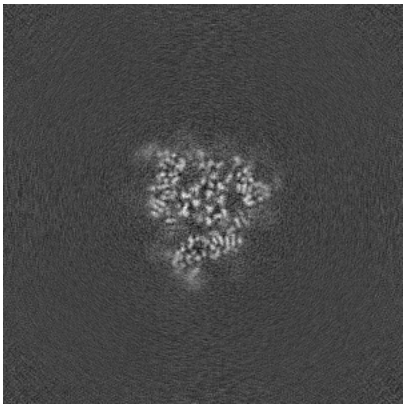

Y Index: 187


Z Index: 212

6.3.2 Raw map


X Index: 197

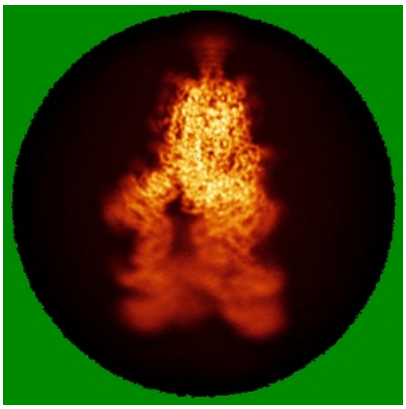

Y Index: 187

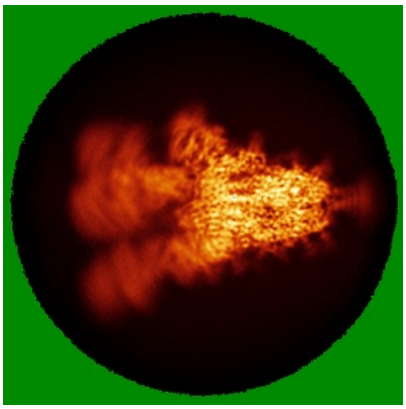

Z Index: 212

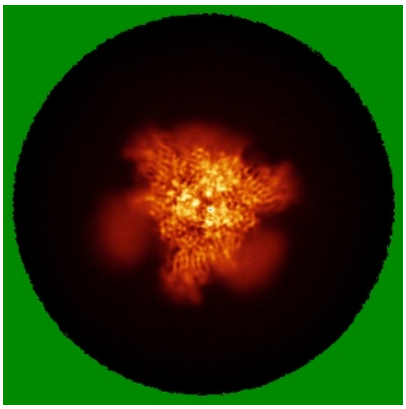
The images above show the largest variance slices of the map in three orthogonal directions.

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

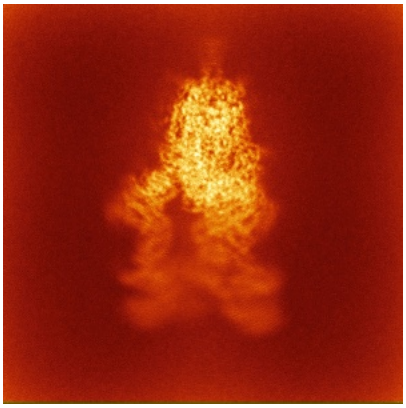
6.4.1 Primary map

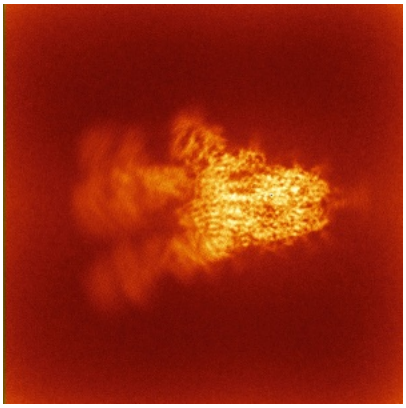

X

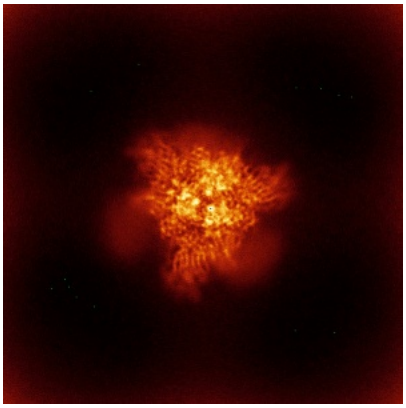

Y


Z

6.4.2 Raw map


X

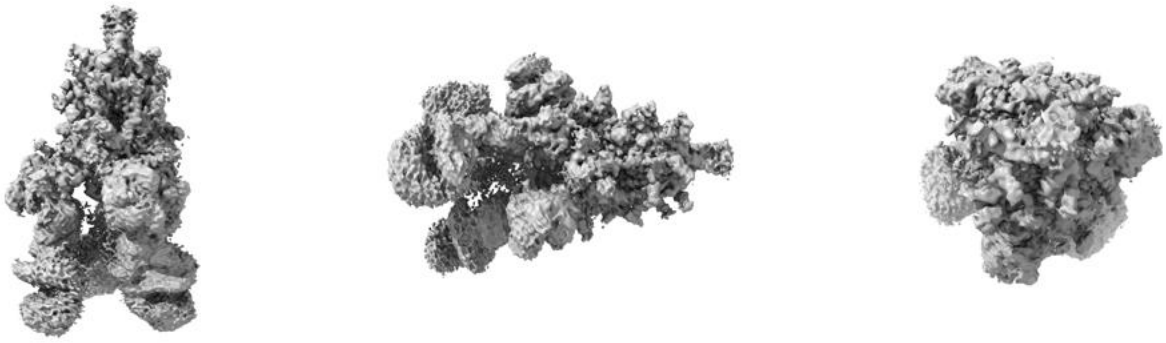

Y


Z

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

6.5 Orthogonal surface views (i)

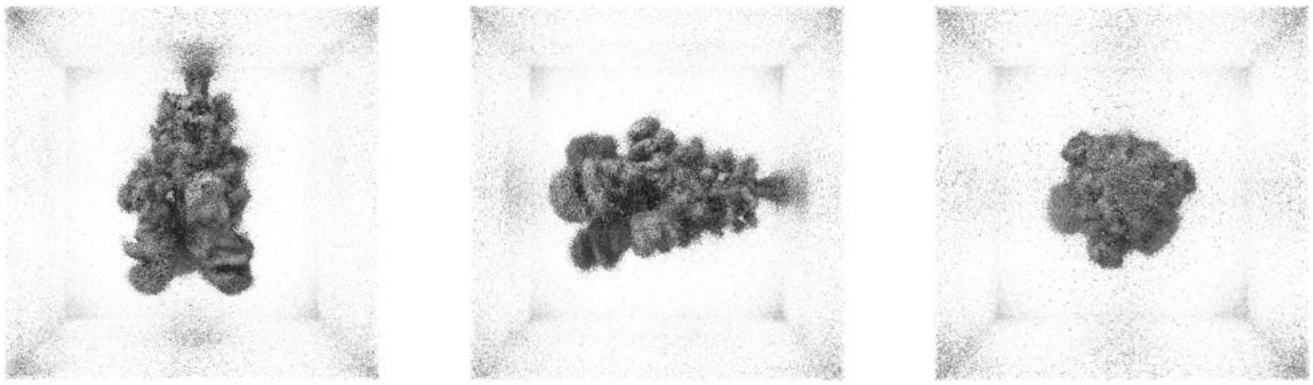
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.04. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

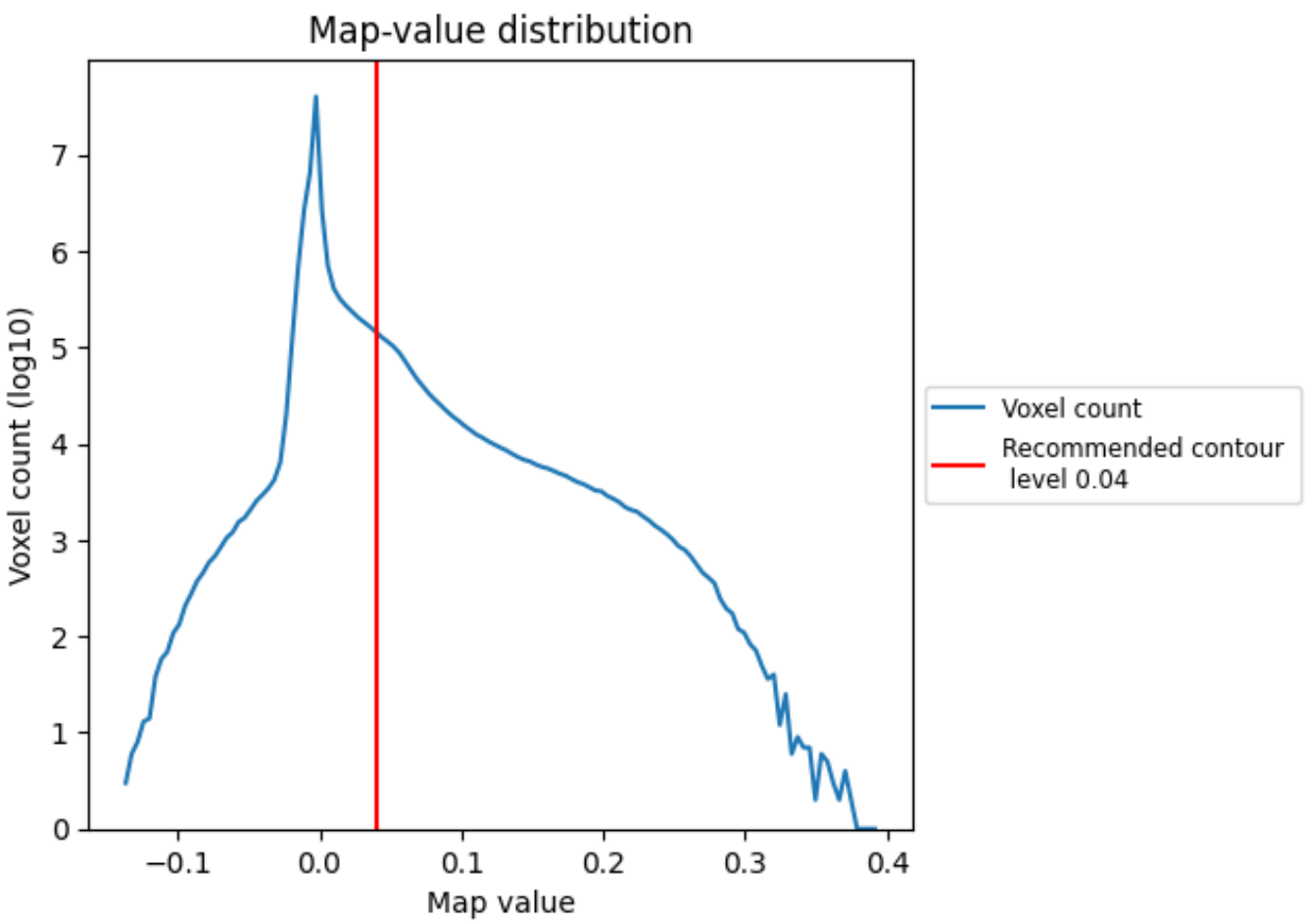
6.6 Mask visualisation (i)

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

7 Map analysis (i)

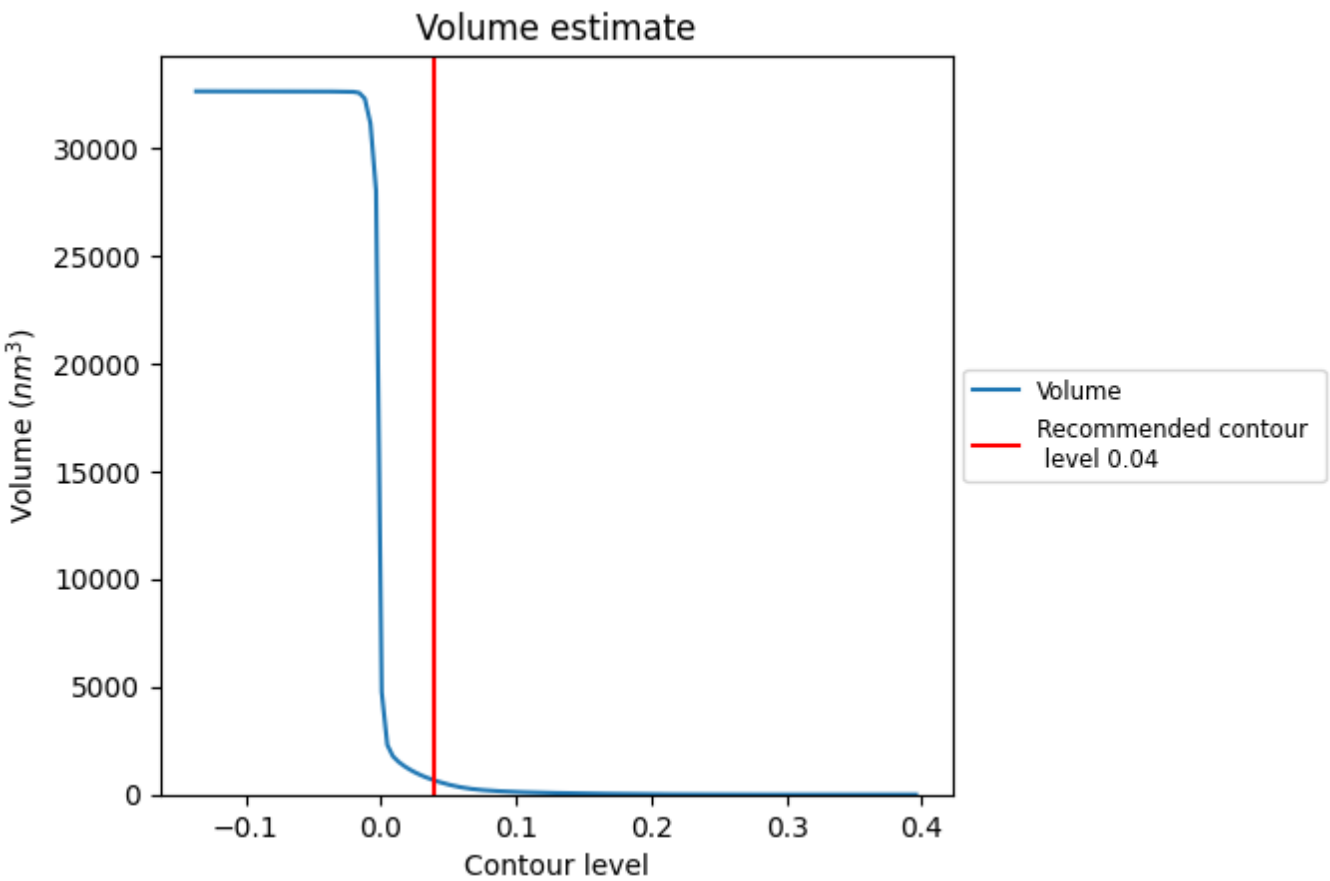
This section contains the results of statistical analysis of the map.

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.

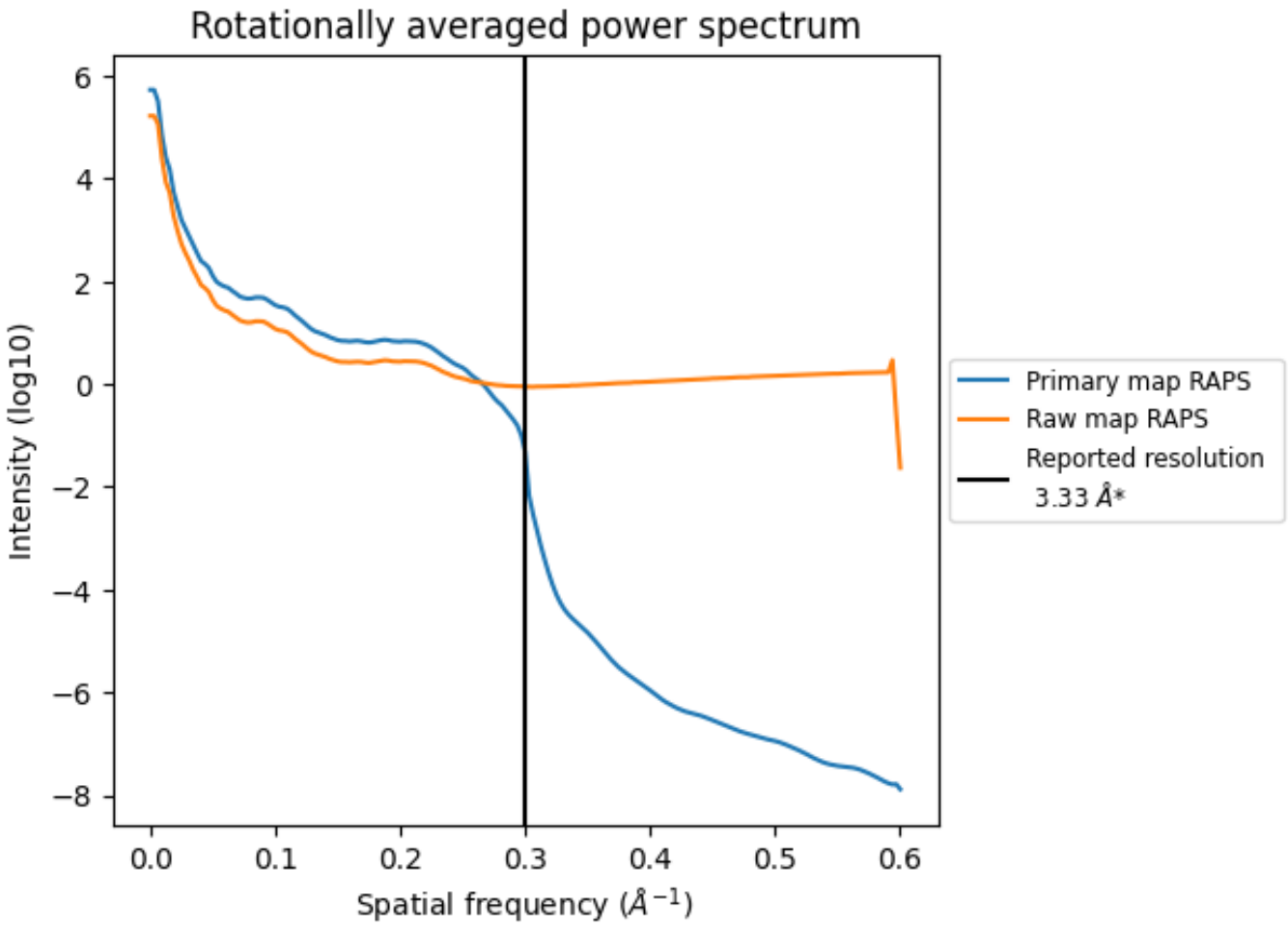
7.2 Volume estimate (i)



The volume at the recommended contour level is 647 nm^3; this corresponds to an approximate mass of 585 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)

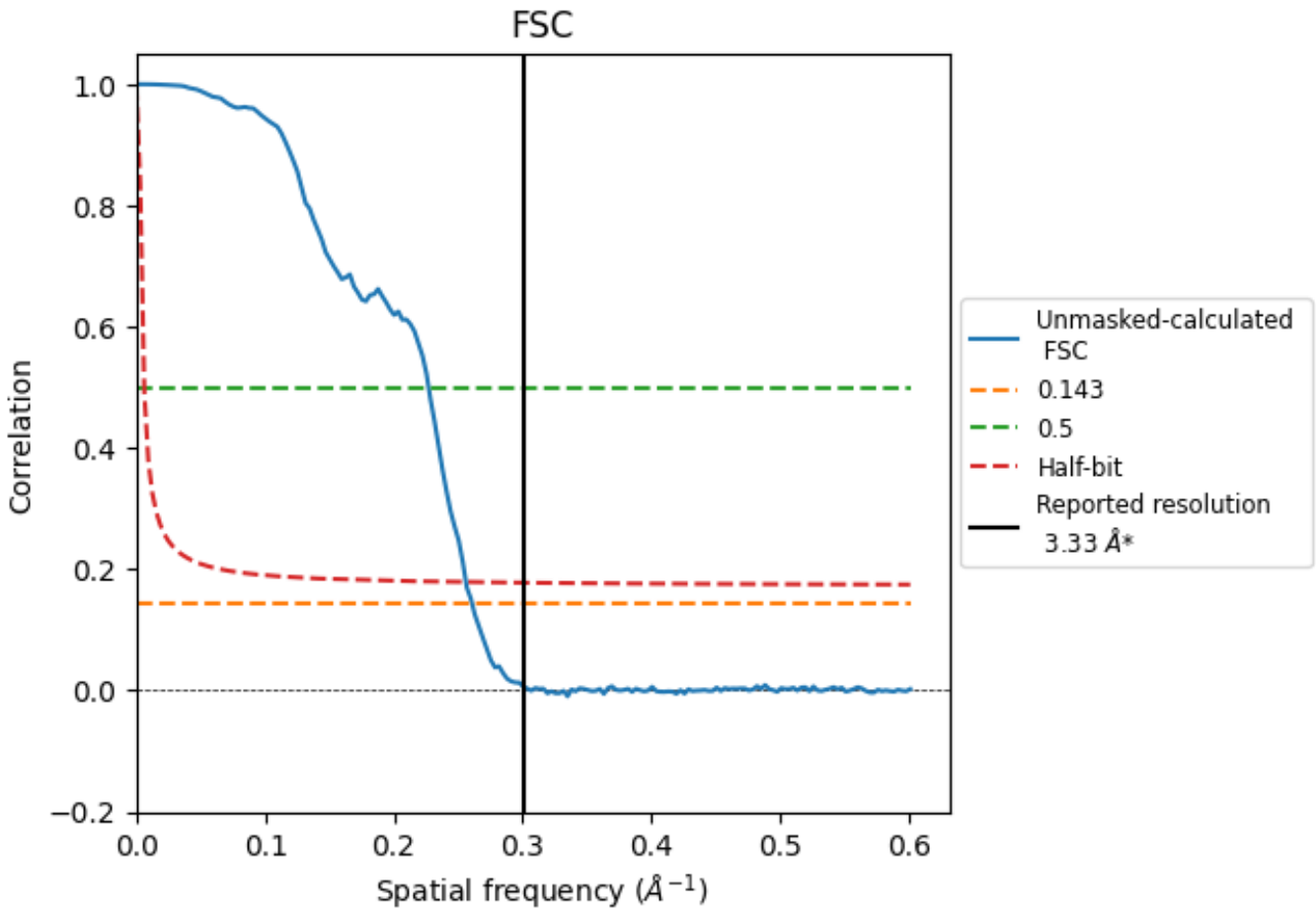


*Reported resolution corresponds to spatial frequency of 0.300 Å^{-1}

8 Fourier-Shell correlation (i)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC (i)



*Reported resolution corresponds to spatial frequency of 0.300 Å^{-1}

8.2 Resolution estimates (i)

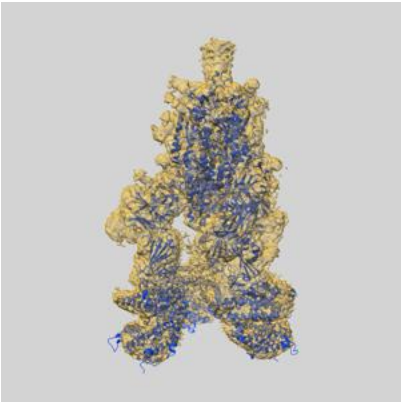
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.33	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.83	4.41	3.91

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.83 differs from the reported value 3.33 by more than 10 %

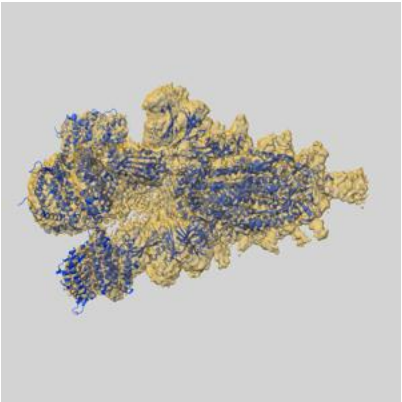
9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-44726 and PDB model 9BNF. Per-residue inclusion information can be found in section 3 on page 17.

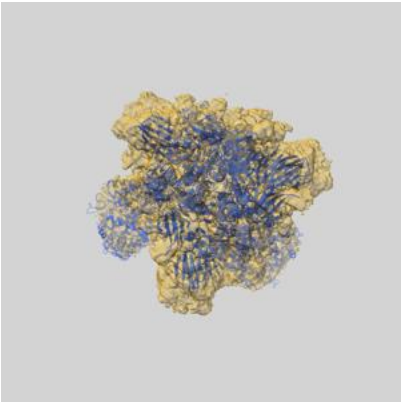
9.1 Map-model overlay (i)



X



Y



Z

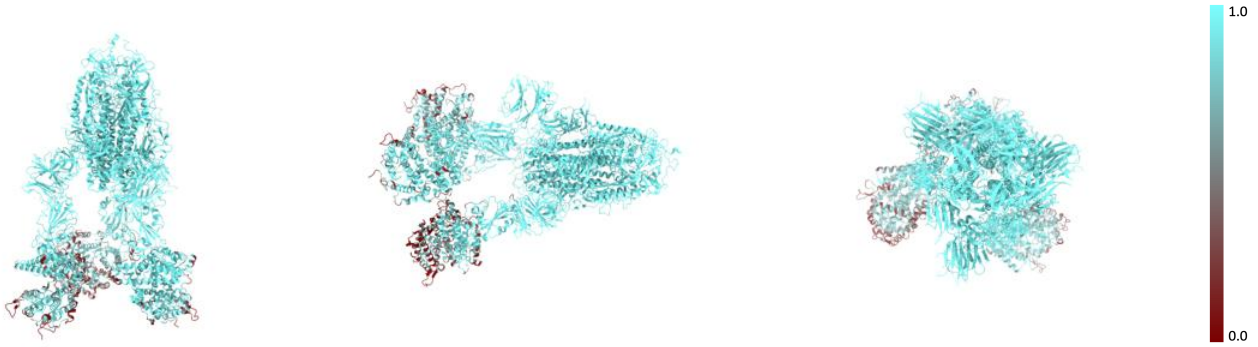
The images above show the 3D surface view of the map at the recommended contour level 0.04 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model (i)

X Y Z

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

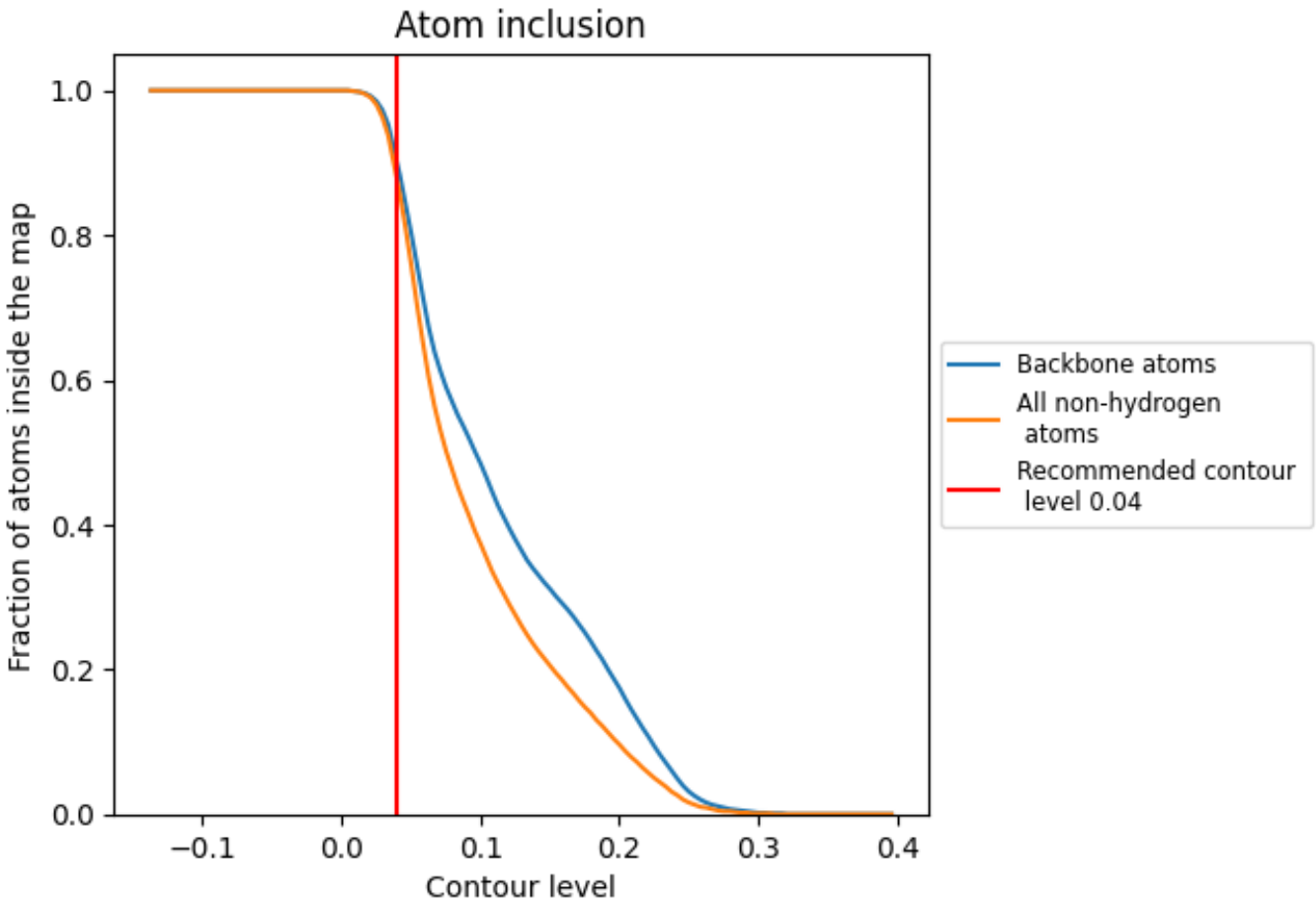
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.04).

9.4 Atom inclusion (i)



At the recommended contour level, 90% of all backbone atoms, 88% 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 (0.04) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8800	0.2990
A	0.5520	0.0850
B	0.9580	0.4040
C	0.7570	0.1120
D	0.9820	0.4190
E	0.8610	0.1300
F	0.9810	0.4170
G	0.9290	0.3410
H	1.0000	0.4660
I	0.9640	0.3890
J	1.0000	0.3410
K	1.0000	0.4030
L	1.0000	0.4550
M	0.9640	0.4290
N	0.8930	0.3330
O	0.9640	0.4120
P	1.0000	0.4580
Q	1.0000	0.4270
R	0.9640	0.3170