



Full wwPDB EM Validation Report ⓘ

Mar 5, 2026 – 05:14 PM UTC

PDB ID : 7SFV / pdb_00007sfv
EMDB ID : EMD-25103
Title : CryoEM structure of Venezuelan Equine Encephalitis virus (VEEV) TC-83 strain VLP in complex with Fab hVEEV-63
Authors : Binshtein, E.; Crowe, J.E.
Deposited on : 2021-10-04
Resolution : 4.00 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

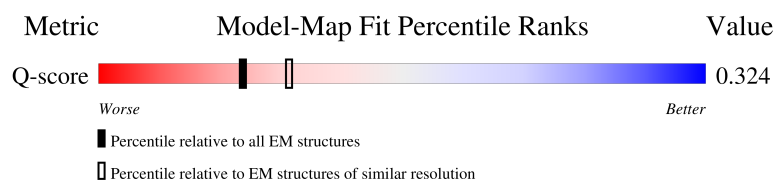
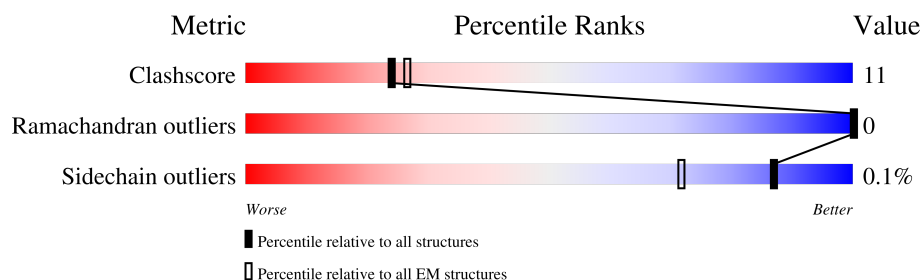
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 4.00 Å.

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



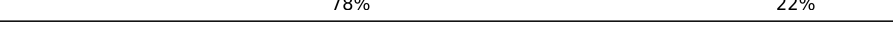
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	7587 (3.50 - 4.50)

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

Mol	Chain	Length	Quality of chain
1	A	440	
1	D	440	
1	G	440	
1	J	440	

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Mol	Chain	Length	Quality of chain
2	B	418	 73%27%
2	E	418	 76%24%
2	H	418	 75%25%
2	K	418	 76%24%
3	C	159	 74%26%
3	F	159	 64%36%
3	I	159	 70%30%
3	L	159	 67%33%
4	M	218	 78%22%
4	O	218	 73%27%
4	Q	218	 77%23%
4	S	218	 76%24%
5	N	209	 80%20%
5	P	209	 78%22%
5	R	209	 85%15%
5	T	209	 10%80%20%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 42538 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 Spike glycoprotein E1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	440	Total	C	N	O	S	0	0
			3351	2136	550	644	21		
1	D	440	Total	C	N	O	S	0	0
			3351	2136	550	644	21		
1	G	440	Total	C	N	O	S	0	0
			3351	2136	550	644	21		
1	J	440	Total	C	N	O	S	0	0
			3351	2136	550	644	21		

- Molecule 2 is a protein called Spike glycoprotein E2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	418	Total	C	N	O	S	0	0
			3264	2064	575	600	25		
2	E	418	Total	C	N	O	S	0	0
			3264	2064	575	600	25		
2	H	418	Total	C	N	O	S	0	0
			3264	2064	575	600	25		
2	K	418	Total	C	N	O	S	0	0
			3264	2064	575	600	25		

- Molecule 3 is a protein called Capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	159	Total	C	N	O	S	0	0
			1248	790	219	231	8		
3	F	159	Total	C	N	O	S	0	0
			1248	790	219	231	8		
3	I	159	Total	C	N	O	S	0	0
			1248	790	219	231	8		
3	L	159	Total	C	N	O	S	0	0
			1248	790	219	231	8		

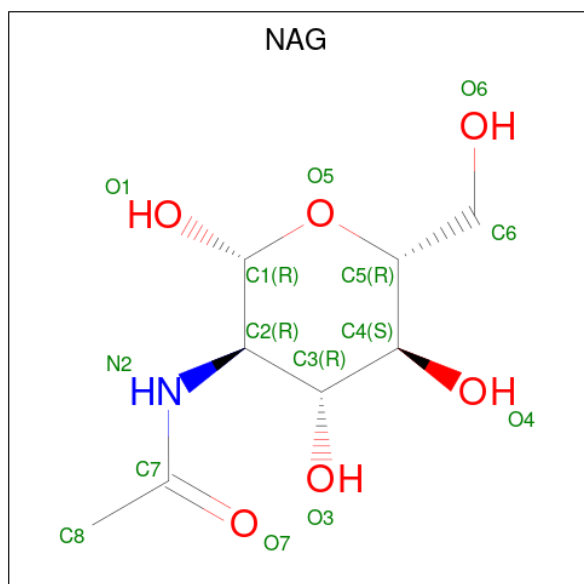
- Molecule 4 is a protein called hVEEV-63 Fab heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	M	218	Total	C	N	O	S	0	0
			1415	872	257	281	5		
4	O	218	Total	C	N	O	S	0	0
			1413	870	257	281	5		
4	Q	218	Total	C	N	O	S	0	0
			1415	872	257	281	5		
4	S	218	Total	C	N	O	S	0	0
			1413	870	257	281	5		

- Molecule 5 is a protein called hVEEV-63 Fab light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	N	209	Total	C	N	O	S	0	0
			1315	809	232	272	2		
5	P	209	Total	C	N	O	S	0	0
			1315	809	232	272	2		
5	R	209	Total	C	N	O	S	0	0
			1315	809	232	272	2		
5	T	209	Total	C	N	O	S	0	0
			1317	811	232	272	2		

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
6	A	1	Total	C	N	O	0
			14	8	1	5	

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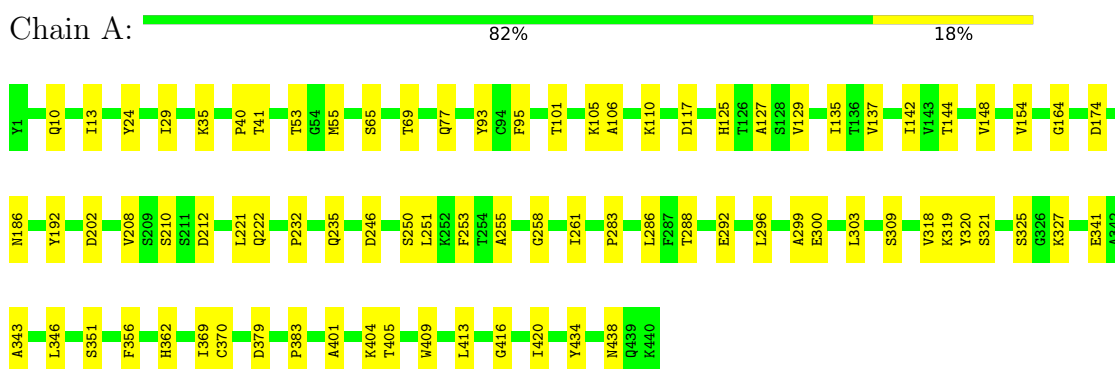
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Mol	Chain	Residues	Atoms				AltConf
6	B	1	Total	C	N	O	0
			14	8	1	5	
6	B	1	Total	C	N	O	0
			14	8	1	5	
6	D	1	Total	C	N	O	0
			14	8	1	5	
6	E	1	Total	C	N	O	0
			14	8	1	5	
6	E	1	Total	C	N	O	0
			14	8	1	5	
6	G	1	Total	C	N	O	0
			14	8	1	5	
6	H	1	Total	C	N	O	0
			14	8	1	5	
6	H	1	Total	C	N	O	0
			14	8	1	5	
6	J	1	Total	C	N	O	0
			14	8	1	5	
6	K	1	Total	C	N	O	0
			14	8	1	5	
6	K	1	Total	C	N	O	0
			14	8	1	5	

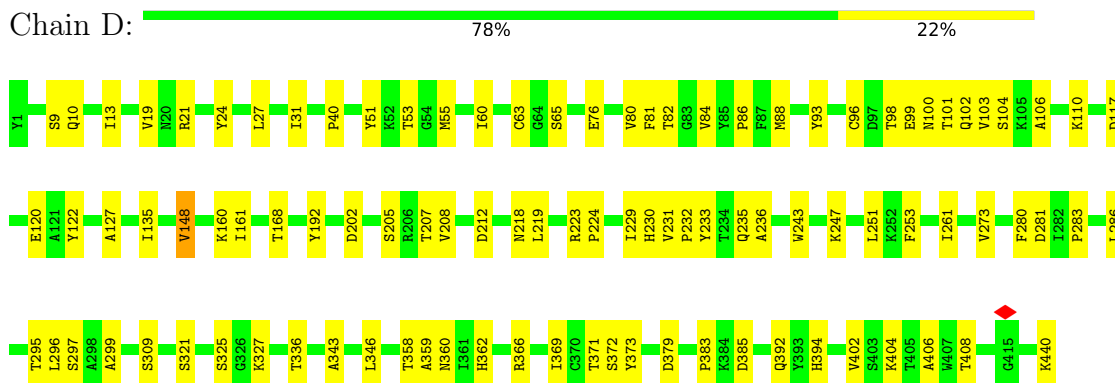
3 Residue-property plots

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

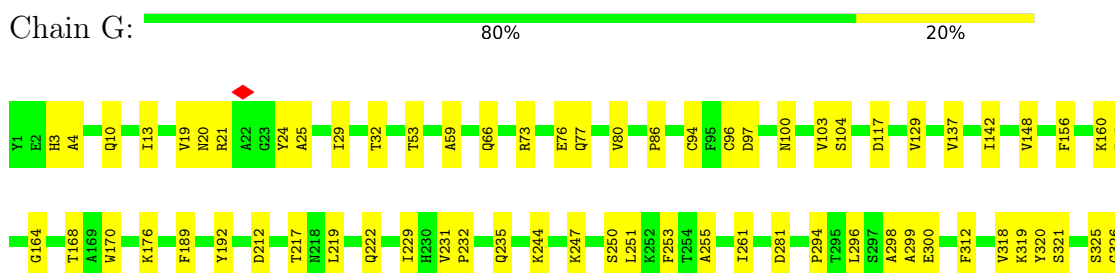
• Molecule 1: Spike glycoprotein E1



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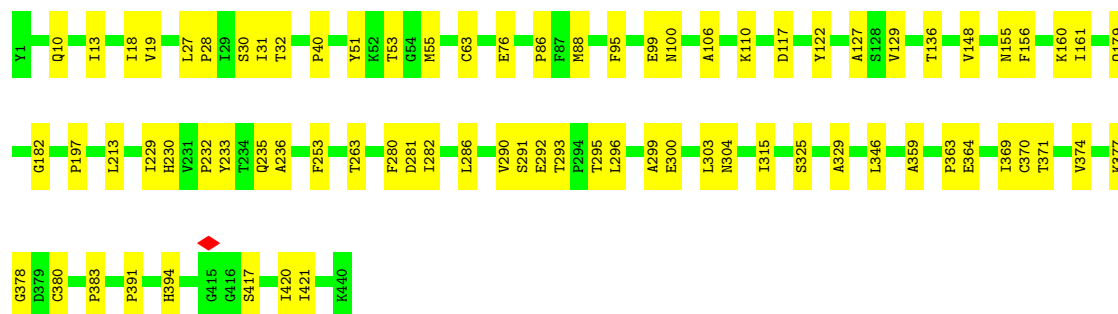
• Molecule 1: Spike glycoprotein E1





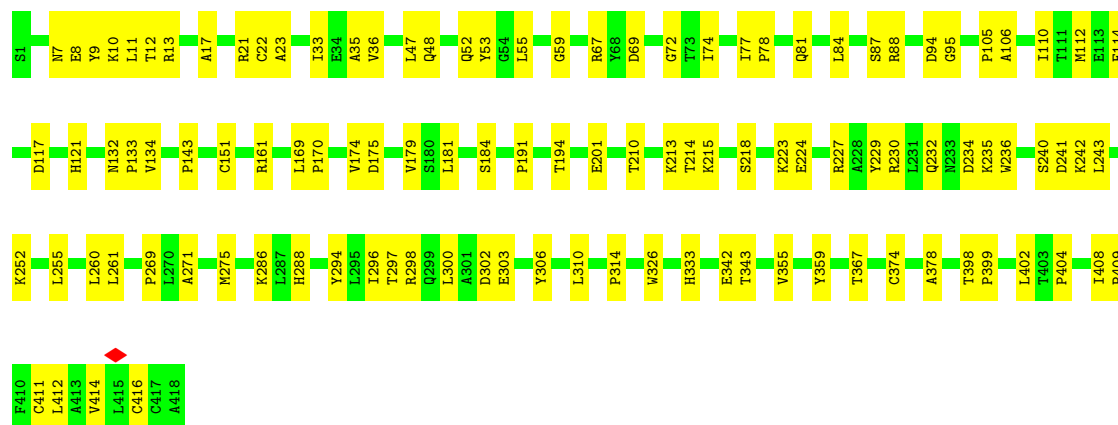
• Molecule 1: Spike glycoprotein E1

Chain J: 82% 18%



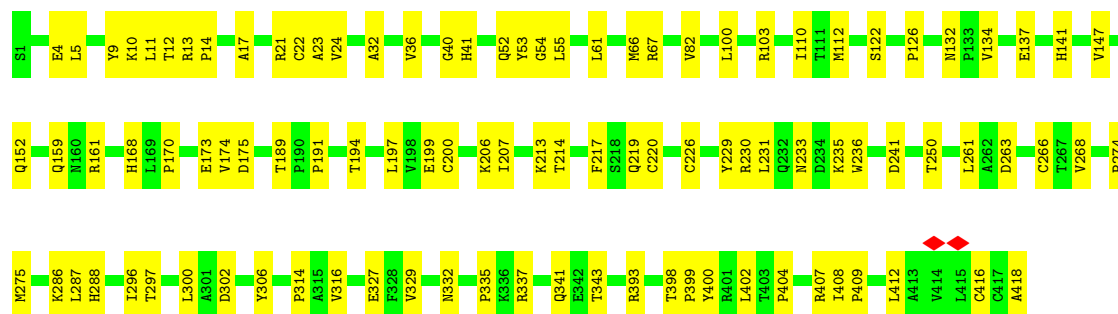
• Molecule 2: Spike glycoprotein E2

Chain B: 73% 27%

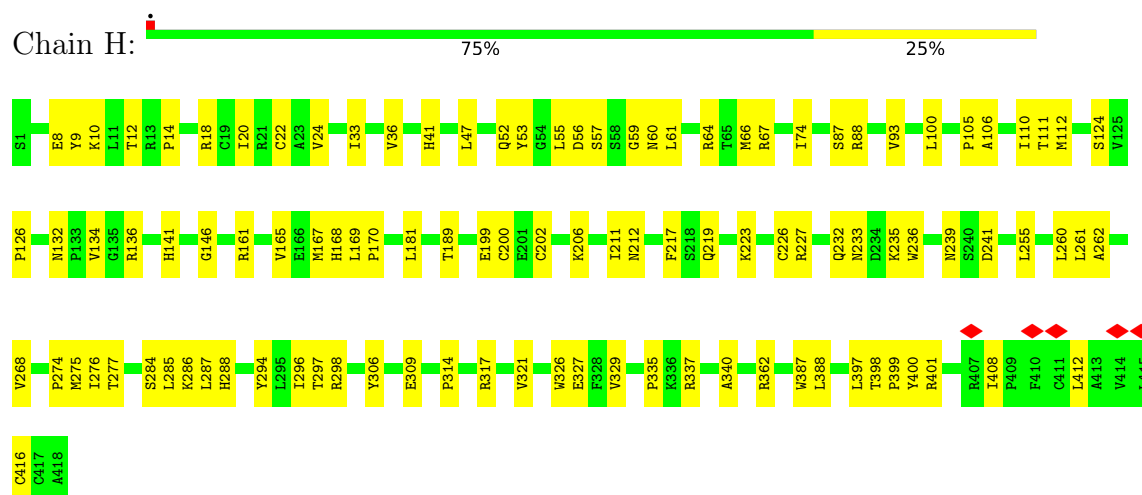


• Molecule 2: Spike glycoprotein E2

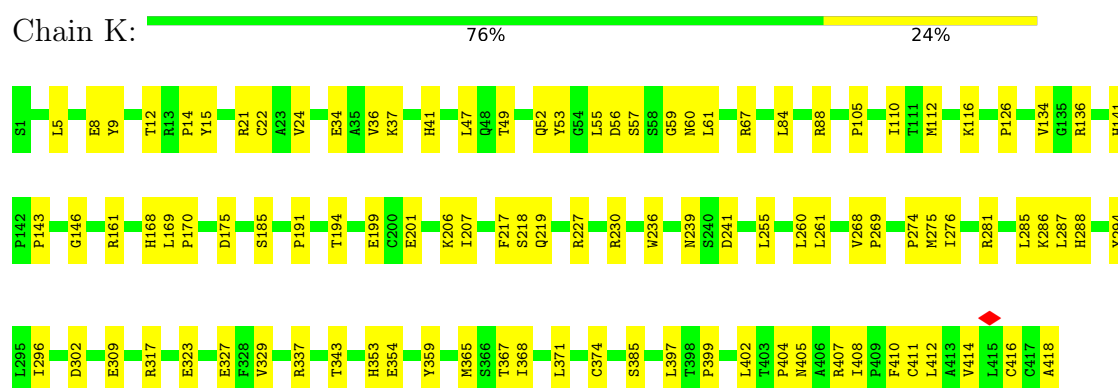
Chain E: 76% 24%



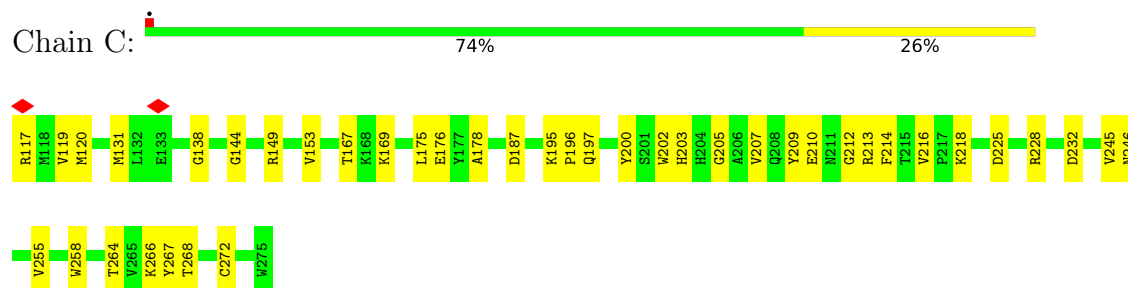
• Molecule 2: Spike glycoprotein E2



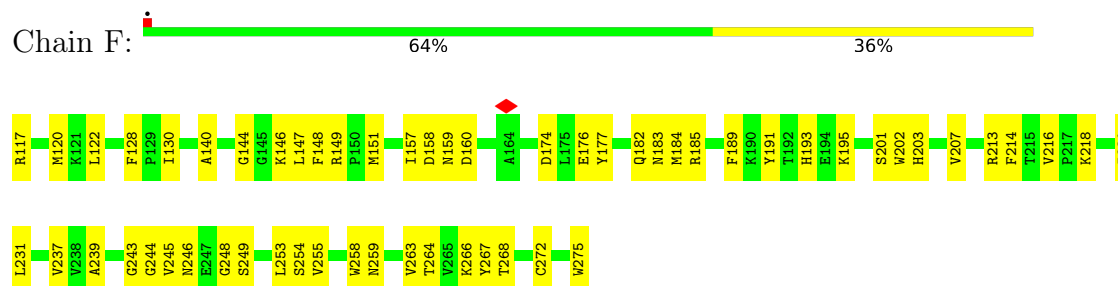
• Molecule 2: Spike glycoprotein E2



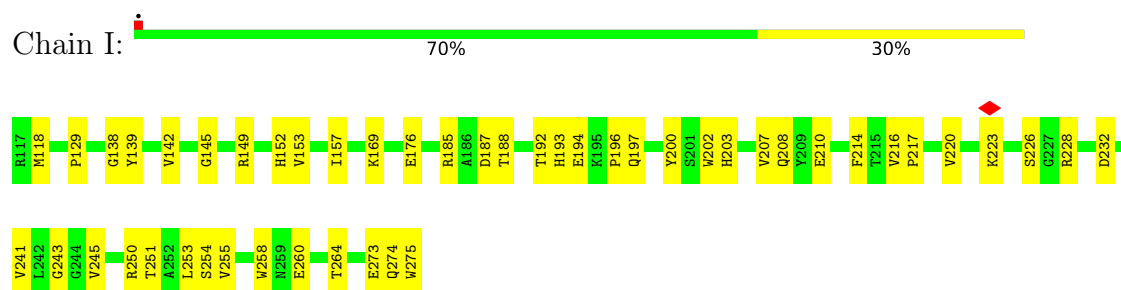
• Molecule 3: Capsid protein



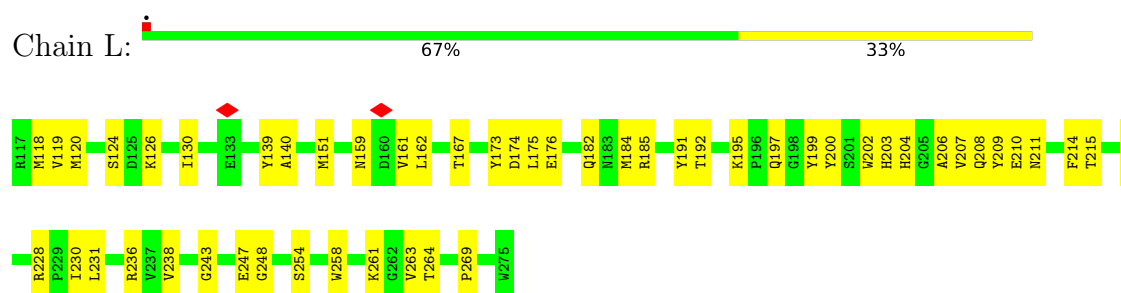
• Molecule 3: Capsid protein



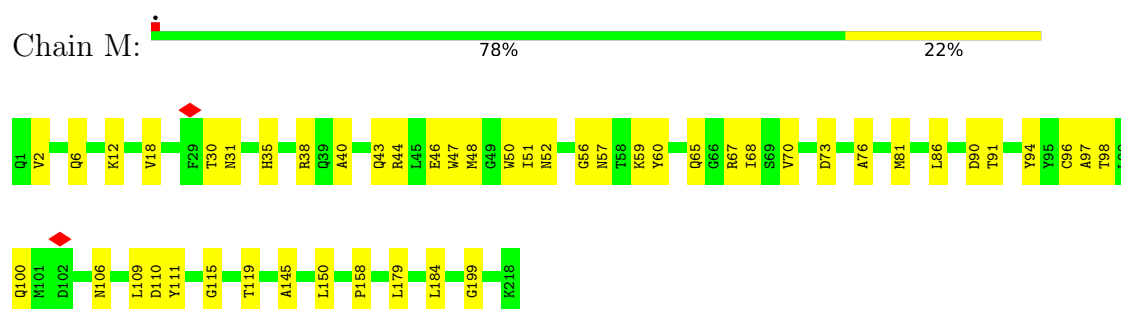
- Molecule 3: Capsid protein



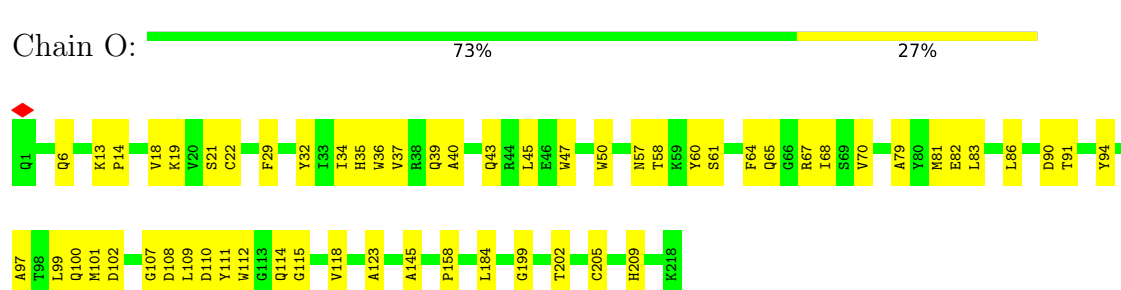
- Molecule 3: Capsid protein



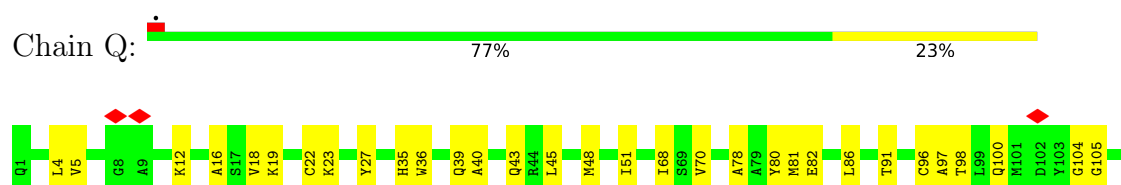
- Molecule 4: hVEEV-63 Fab heavy chain



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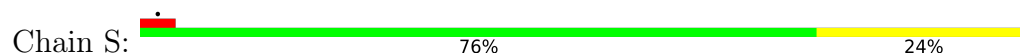


- Molecule 4: hVEEV-63 Fab heavy chain

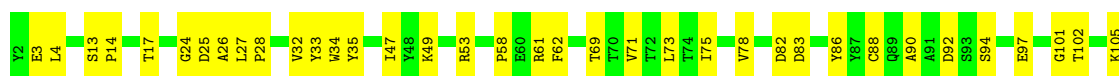
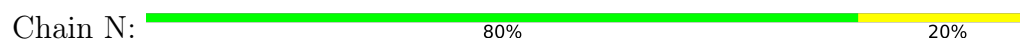




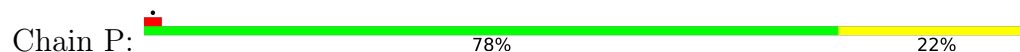
- Molecule 4: hVEEV-63 Fab heavy chain



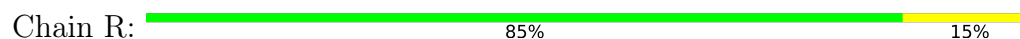
- Molecule 5: hVEEV-63 Fab light chain



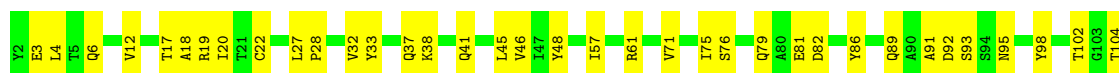
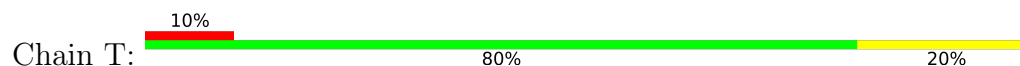
- Molecule 5: hVEEV-63 Fab light chain

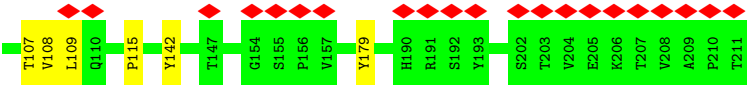


- Molecule 5: hVEEV-63 Fab light chain



- Molecule 5: hVEEV-63 Fab light chain





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	17500	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40.05	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.137	Depositor
Minimum map value	-0.064	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.015	Depositor
Map size (Å)	847.89655, 847.89655, 847.89655	wwPDB
Map dimensions	550, 550, 550	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.54163, 1.54163, 1.54163	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	0.13	0/3441	0.33	0/4705
1	D	0.20	0/3441	0.39	1/4705 (0.0%)
1	G	0.14	0/3441	0.32	0/4705
1	J	0.14	0/3441	0.36	0/4705
2	B	0.14	0/3355	0.36	0/4564
2	E	0.16	0/3355	0.38	0/4564
2	H	0.16	0/3355	0.39	0/4564
2	K	0.23	0/3355	0.44	2/4564 (0.0%)
3	C	0.12	0/1276	0.35	0/1720
3	F	0.13	0/1276	0.39	0/1720
3	I	0.12	0/1276	0.34	0/1720
3	L	0.13	0/1276	0.36	0/1720
4	M	0.11	0/1436	0.31	0/1962
4	O	0.12	0/1433	0.35	0/1957
4	Q	0.26	0/1436	0.49	0/1962
4	S	0.34	0/1433	0.54	2/1957 (0.1%)
5	N	0.09	0/1333	0.29	0/1835
5	P	0.11	0/1333	0.29	0/1835
5	R	0.09	0/1333	0.30	0/1835
5	T	0.52	0/1337	0.66	0/1843
All	All	0.19	0/43362	0.39	5/59142 (0.0%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	K	407	ARG	CA-C-N	6.00	124.02	120.24
2	K	407	ARG	C-N-CA	6.00	124.02	120.24
4	S	146	ALA	CA-C-N	-5.29	115.53	122.99
4	S	146	ALA	C-N-CA	-5.29	115.53	122.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	148	VAL	N-CA-C	-5.08	107.39	111.91

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	3351	0	3258	58	0
1	D	3351	0	3258	66	0
1	G	3351	0	3258	60	0
1	J	3351	0	3258	52	0
2	B	3264	0	3198	86	0
2	E	3264	0	3199	87	0
2	H	3264	0	3198	82	0
2	K	3264	0	3198	79	0
3	C	1248	0	1238	26	0
3	F	1248	0	1238	41	0
3	I	1248	0	1238	34	0
3	L	1248	0	1238	34	0
4	M	1415	0	1123	37	0
4	O	1413	0	1117	41	0
4	Q	1415	0	1123	33	0
4	S	1413	0	1117	44	0
5	N	1315	0	995	28	0
5	P	1315	0	995	33	0
5	R	1315	0	995	17	0
5	T	1317	0	1002	27	0
6	A	14	0	13	0	0
6	B	28	0	26	0	0
6	D	14	0	13	0	0
6	E	28	0	26	1	0
6	G	14	0	13	1	0
6	H	28	0	26	1	0
6	J	14	0	13	1	0
6	K	28	0	26	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	42538	0	39400	885	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 11.

All (885) 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:E:200:CYS:HA	2:E:226:CYS:HB2	1.48	0.95
1:G:299:ALA:HA	1:G:319:LYS:O	1.69	0.93
2:H:8:GLU:HA	2:H:255:LEU:HD22	1.55	0.89
1:J:325:SER:HA	1:J:346:LEU:O	1.75	0.86
4:O:94:TYR:O	4:O:115:GLY:HA2	1.75	0.86
4:Q:122:SER:HB3	4:Q:123:ALA:HB2	1.60	0.84
1:A:299:ALA:HA	1:A:319:LYS:O	1.76	0.84
5:N:34:TRP:HB2	5:N:47:ILE:HB	1.60	0.83
2:E:9:TYR:CD2	2:E:55:LEU:HD13	2.13	0.83
3:I:197:GLN:HE22	3:I:210:GLU:HG3	1.44	0.80
5:P:34:TRP:HB2	5:P:47:ILE:HB	1.63	0.80
1:D:218:ASN:ND2	2:H:275:MET:SD	2.55	0.80
5:R:34:TRP:HB2	5:R:47:ILE:HB	1.63	0.79
4:M:97:ALA:HB1	4:M:109:LEU:HB3	1.62	0.79
2:K:9:TYR:OH	2:K:56:ASP:O	2.00	0.79
2:H:9:TYR:OH	2:H:56:ASP:O	2.01	0.78
4:O:35:HIS:HB2	4:O:97:ALA:HB3	1.66	0.78
2:E:55:LEU:HG	2:E:61:LEU:HA	1.66	0.77
5:P:32:VAL:HG21	5:P:71:VAL:HG11	1.65	0.77
1:J:160:LYS:HB2	1:J:281:ASP:HB3	1.67	0.77
2:E:400:TYR:HB3	2:E:408:ILE:HG22	1.67	0.74
1:J:383:PRO:HG2	2:K:343:THR:HG22	1.68	0.74
2:E:327:GLU:HG3	2:E:337:ARG:HG2	1.67	0.73
4:S:100:GLN:HB2	4:S:111:TYR:HB2	1.70	0.73
1:D:53:THR:OG1	1:D:235:GLN:NE2	2.21	0.73
2:H:400:TYR:HB3	2:H:408:ILE:HG22	1.70	0.72
2:B:36:VAL:HG21	2:B:110:ILE:HG21	1.70	0.72
4:S:19:LYS:HD2	4:S:80:TYR:HB3	1.71	0.71
5:T:33:TYR:HB2	5:T:89:GLN:HE21	1.54	0.71
2:B:22:CYS:SG	2:B:23:ALA:N	2.64	0.71
4:O:123:ALA:HB2	4:O:205:CYS:H	1.56	0.71
4:Q:39:GLN:HB3	4:Q:45:LEU:HD13	1.73	0.71
1:D:80:VAL:HG22	1:D:103:VAL:HG22	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:12:THR:OG1	2:E:52:GLN:OE1	2.08	0.70
3:L:162:LEU:HD11	3:L:184:MET:HE1	1.72	0.70
5:T:17:THR:HA	5:T:75:ILE:O	1.92	0.70
2:K:219:GLN:NE2	4:S:104:GLY:O	2.25	0.70
2:B:359:TYR:O	2:B:367:THR:OG1	2.07	0.70
4:S:71:THR:HB	4:S:80:TYR:HB2	1.74	0.70
3:I:145:GLY:H	3:I:188:THR:HG21	1.57	0.69
4:M:94:TYR:O	4:M:115:GLY:HA2	1.92	0.69
2:H:200:CYS:HA	2:H:226:CYS:HB2	1.75	0.69
5:N:17:THR:HA	5:N:75:ILE:O	1.92	0.69
2:E:152:GLN:NE2	2:E:263:ASP:OD1	2.26	0.69
2:K:275:MET:HE1	2:K:288:HIS:CD2	2.29	0.68
4:O:99:LEU:HA	4:O:110:ASP:H	1.57	0.68
1:D:327:LYS:HD2	1:D:343:ALA:HB1	1.74	0.68
1:J:32:THR:HG21	6:J:501:NAG:H82	1.76	0.68
4:S:202:THR:HA	4:S:209:HIS:HA	1.76	0.68
1:A:144:THR:HG21	1:A:154:VAL:HG21	1.74	0.68
1:D:283:PRO:HG2	1:D:286:LEU:HD13	1.76	0.68
2:E:4:GLU:OE2	2:E:159:GLN:NE2	2.27	0.68
5:P:38:LYS:HB2	5:P:41:GLN:HE22	1.57	0.68
2:H:181:LEU:HG	2:H:223:LYS:HG3	1.76	0.68
5:P:30:GLN:NE2	5:P:95:ASN:OD1	2.27	0.68
1:A:53:THR:OG1	1:A:235:GLN:NE2	2.28	0.67
4:Q:91:THR:HG23	4:Q:118:VAL:HB	1.76	0.67
2:E:12:THR:OG1	2:E:67:ARG:NH2	2.26	0.67
2:E:9:TYR:HA	2:E:12:THR:HB	1.76	0.67
3:I:202:TRP:HE1	3:I:228:ARG:HB3	1.60	0.67
2:H:202:CYS:SG	2:H:206:LYS:NZ	2.65	0.67
4:O:19:LYS:HE3	4:O:82:GLU:OE2	1.95	0.67
2:E:141:HIS:CE1	2:K:21:ARG:HD3	2.30	0.66
2:B:402:LEU:HD11	3:C:264:THR:HG21	1.77	0.66
5:N:24:GLY:O	5:N:69:THR:OG1	2.13	0.66
2:B:8:GLU:HA	2:B:255:LEU:HD22	1.76	0.66
1:A:296:LEU:HD11	1:A:320:TYR:HB2	1.76	0.66
2:E:175:ASP:OD2	2:E:230:ARG:NH2	2.29	0.66
3:F:117:ARG:HB3	3:F:120:MET:HE1	1.77	0.65
1:G:21:ARG:HB2	1:G:24:TYR:HB2	1.78	0.65
2:B:21:ARG:NH1	2:B:22:CYS:O	2.30	0.65
2:E:200:CYS:HA	2:E:226:CYS:CB	2.24	0.65
4:S:1:GLN:HG2	4:S:3:GLN:HE22	1.61	0.65
2:B:69:ASP:HB3	2:B:74:ILE:HD13	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:253:PHE:HB3	2:B:296:ILE:HG21	1.80	0.64
1:D:336:THR:OG1	1:D:360:ASN:ND2	2.30	0.64
2:H:212:ASN:ND2	6:H:501:NAG:O4	2.30	0.64
4:M:52:ASN:ND2	4:M:57:ASN:OD1	2.29	0.64
1:A:383:PRO:HG2	2:B:343:THR:HG22	1.79	0.64
4:M:35:HIS:HB2	4:M:97:ALA:HB3	1.78	0.64
3:F:122:LEU:HD11	3:F:201:SER:HB3	1.79	0.64
1:J:155:ASN:HB2	1:J:160:LYS:HZ3	1.63	0.64
1:J:295:THR:HA	1:J:371:THR:HG21	1.78	0.63
4:M:52:ASN:ND2	4:M:57:ASN:O	2.31	0.63
2:K:88:ARG:HB2	2:K:105:PRO:HG3	1.81	0.63
4:S:40:ALA:HB3	4:S:43:GLN:HB2	1.80	0.63
2:E:9:TYR:HD2	2:E:55:LEU:HD13	1.60	0.63
5:P:61:ARG:HH12	5:P:79:GLN:HB2	1.62	0.63
4:Q:40:ALA:HB3	4:Q:43:GLN:HB2	1.80	0.63
5:R:32:VAL:HG21	5:R:71:VAL:HG21	1.79	0.63
4:S:100:GLN:HB3	4:S:110:ASP:HB2	1.80	0.63
2:B:55:LEU:HD23	2:B:59:GLY:HA2	1.81	0.63
1:G:80:VAL:HG22	1:G:103:VAL:HG22	1.79	0.63
4:Q:202:THR:HA	4:Q:209:HIS:HA	1.81	0.62
1:G:59:ALA:O	1:G:66:GLN:NE2	2.32	0.62
5:P:108:VAL:O	5:P:110:GLN:N	2.32	0.62
5:R:17:THR:HA	5:R:75:ILE:O	1.99	0.62
5:T:32:VAL:HG21	5:T:71:VAL:HG11	1.80	0.62
2:B:52:GLN:OE1	2:B:67:ARG:NH2	2.33	0.62
1:A:325:SER:HA	1:A:346:LEU:O	2.00	0.61
4:M:48:MET:HE2	4:M:68:ILE:HD13	1.82	0.61
3:C:266:LYS:NZ	3:C:268:THR:OG1	2.33	0.61
4:Q:19:LYS:HE2	4:Q:80:TYR:HB3	1.81	0.61
2:B:114:PHE:HD2	2:B:121:HIS:HB2	1.64	0.61
2:B:77:ILE:HG21	2:B:114:PHE:HE1	1.66	0.61
3:F:266:LYS:NZ	3:F:268:THR:OG1	2.34	0.61
3:L:119:VAL:HG23	3:L:120:MET:HE2	1.82	0.61
4:M:65:GLN:O	4:M:67:ARG:NH1	2.33	0.61
1:J:291:SER:OG	1:J:292:GLU:OE1	2.19	0.60
1:J:296:LEU:HD21	1:J:299:ALA:HB2	1.82	0.60
4:S:106:ASN:ND2	5:T:98:TYR:OH	2.34	0.60
3:I:241:VAL:HG21	3:I:253:LEU:HD22	1.83	0.60
4:O:61:SER:O	4:O:65:GLN:NE2	2.34	0.60
1:G:21:ARG:NH2	1:G:25:ALA:O	2.35	0.60
3:I:226:SER:HG	3:I:275:TRP:CD1	2.19	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:TYR:CZ	1:G:384:LYS:HG3	2.37	0.60
3:L:161:VAL:HG13	3:L:162:LEU:HD12	1.83	0.60
2:E:275:MET:HE1	2:E:288:HIS:CD2	2.35	0.60
1:D:362:HIS:ND1	1:D:379:ASP:OD1	2.34	0.60
2:H:10:LYS:O	2:H:235:LYS:NZ	2.31	0.59
4:S:170:SER:HA	5:T:179:TYR:HA	1.84	0.59
1:J:31:ILE:HD11	1:J:280:PHE:HZ	1.66	0.59
4:Q:35:HIS:HB2	4:Q:97:ALA:HB3	1.82	0.59
1:G:361:ILE:HG21	1:G:403:SER:H	1.67	0.59
1:A:10:GLN:HG2	1:A:13:ILE:HD12	1.85	0.59
2:H:167:MET:HE2	2:H:236:TRP:HE3	1.67	0.59
4:O:67:ARG:HE	4:O:83:LEU:HD11	1.67	0.59
2:H:9:TYR:HE1	2:H:59:GLY:HA2	1.67	0.59
3:I:250:ARG:HE	3:I:251:THR:H	1.51	0.59
1:A:362:HIS:ND1	1:A:379:ASP:OD1	2.31	0.59
5:N:94:SER:OG	5:N:97:GLU:OE1	2.19	0.59
2:B:161:ARG:HB2	2:B:260:LEU:HD12	1.84	0.59
2:E:12:THR:HG21	2:E:67:ARG:HH12	1.68	0.59
2:B:297:THR:O	2:B:306:TYR:HA	2.02	0.59
2:E:10:LYS:O	2:E:235:LYS:NZ	2.23	0.59
5:R:45:LEU:HD21	5:R:48:TYR:HB3	1.83	0.59
3:C:214:PHE:HD2	3:C:255:VAL:HG11	1.66	0.59
1:D:251:LEU:HB3	1:D:261:ILE:HG13	1.85	0.59
2:H:217:PHE:HA	4:Q:105:GLY:HA2	1.83	0.59
2:K:402:LEU:HD23	3:L:264:THR:HG21	1.85	0.59
5:N:61:ARG:NH1	5:N:82:ASP:OD2	2.35	0.59
1:D:96:CYS:O	1:D:100:ASN:ND2	2.35	0.58
3:I:149:ARG:NH1	3:I:176:GLU:OE2	2.32	0.58
5:P:92:ASP:OD1	5:P:93:SER:N	2.36	0.58
2:B:179:VAL:O	2:B:223:LYS:NZ	2.29	0.58
2:H:161:ARG:HH22	2:H:262:ALA:HB2	1.68	0.58
1:G:32:THR:HG21	6:G:501:NAG:H82	1.85	0.58
1:A:210:SER:OG	1:A:212:ASP:OD1	2.20	0.58
3:F:214:PHE:HD2	3:F:255:VAL:HG11	1.67	0.58
2:H:327:GLU:HB3	2:H:337:ARG:HG2	1.86	0.58
5:T:45:LEU:HD21	5:T:48:TYR:HB3	1.85	0.58
2:B:35:ALA:HB3	2:B:48:GLN:HB3	1.85	0.58
2:E:287:LEU:O	2:E:314:PRO:HA	2.03	0.58
3:F:244:GLY:HA2	3:F:253:LEU:HA	1.83	0.58
5:P:24:GLY:O	5:P:69:THR:OG1	2.22	0.58
3:F:151:MET:HG2	3:F:174:ASP:HA	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S:44:ARG:NH2	5:T:3:GLU:OE2	2.36	0.58
5:N:105:LYS:HE3	5:N:107:THR:HG22	1.86	0.58
5:N:75:ILE:HD11	5:N:86:TYR:HE2	1.68	0.57
2:E:52:GLN:OE1	2:E:67:ARG:NH2	2.37	0.57
1:D:82:THR:HG22	1:D:101:THR:HG22	1.86	0.57
2:E:54:GLY:O	2:E:55:LEU:HD12	2.05	0.57
2:E:297:THR:O	2:E:306:TYR:HA	2.04	0.57
1:G:59:ALA:HB3	1:G:103:VAL:HB	1.87	0.57
1:D:366:ARG:HH12	1:D:373:TYR:HB3	1.69	0.57
2:E:191:PRO:HG2	2:E:194:THR:HB	1.85	0.57
4:S:4:LEU:H	4:S:111:TYR:HE2	1.51	0.57
2:B:84:LEU:HD12	2:B:110:ILE:HD11	1.85	0.57
2:E:53:TYR:CE1	2:E:66:MET:HG3	2.40	0.57
2:K:219:GLN:HA	4:S:32:TYR:HE1	1.68	0.57
4:M:44:ARG:HH12	5:N:102:THR:HG22	1.70	0.57
4:Q:18:VAL:HG12	4:Q:86:LEU:HD11	1.85	0.57
2:B:170:PRO:HD3	2:B:236:TRP:HA	1.87	0.57
1:G:312:PHE:HA	1:G:357:SER:HB2	1.87	0.57
5:T:17:THR:HG22	5:T:76:SER:HA	1.86	0.57
1:J:182:GLY:HA2	1:J:263:THR:HG21	1.86	0.57
1:D:358:THR:OG1	1:D:360:ASN:OD1	2.23	0.57
2:E:402:LEU:HD11	3:F:264:THR:HG21	1.85	0.57
3:F:182:GLN:OE1	3:F:185:ARG:NH1	2.38	0.57
2:B:12:THR:OG1	2:B:52:GLN:OE1	2.23	0.57
2:E:11:LEU:HD13	2:E:236:TRP:CZ3	2.40	0.57
4:M:2:VAL:HB	4:M:100:GLN:HE21	1.70	0.57
4:M:47:TRP:HZ2	4:M:50:TRP:HD1	1.52	0.57
3:F:246:ASN:ND2	3:F:248:GLY:O	2.35	0.56
3:C:197:GLN:HE21	3:C:210:GLU:HA	1.70	0.56
2:K:9:TYR:HE1	2:K:59:GLY:HA2	1.70	0.56
5:R:145:ALA:HA	5:R:201:GLY:H	1.71	0.56
2:E:13:ARG:NH2	2:E:173:GLU:OE1	2.38	0.56
2:H:55:LEU:HD13	2:H:61:LEU:HD22	1.87	0.56
3:I:216:VAL:O	3:I:250:ARG:NH2	2.37	0.56
2:K:14:PRO:HG2	2:K:67:ARG:HG2	1.88	0.56
1:A:95:PHE:HD2	2:B:201:GLU:HG2	1.71	0.56
2:B:12:THR:HG21	2:B:67:ARG:HH12	1.70	0.56
4:O:60:TYR:HE1	4:O:70:VAL:HG12	1.69	0.56
3:I:200:TYR:HD1	3:I:232:ASP:HA	1.70	0.56
1:G:251:LEU:HB3	1:G:261:ILE:HG13	1.86	0.56
2:K:199:GLU:HA	2:K:206:LYS:O	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:193:HIS:O	3:F:195:LYS:NZ	2.27	0.56
3:F:243:GLY:O	3:F:254:SER:N	2.39	0.56
2:H:232:GLN:HG2	2:H:233:ASN:H	1.69	0.56
2:B:175:ASP:OD2	2:B:230:ARG:NH2	2.39	0.56
2:K:411:CYS:HA	2:K:414:VAL:HG22	1.88	0.56
2:B:215:LYS:NZ	5:N:33:TYR:OH	2.38	0.56
1:D:110:LYS:NZ	1:D:208:VAL:O	2.39	0.56
4:M:98:THR:O	4:M:110:ASP:N	2.35	0.56
2:B:412:LEU:HD12	2:B:416:CYS:HA	1.88	0.55
1:G:294:PRO:HG3	1:G:326:GLY:HA3	1.87	0.55
1:J:417:SER:O	1:J:421:ILE:HD12	2.06	0.55
2:H:288:HIS:ND1	2:H:314:PRO:HB3	2.21	0.55
2:H:329:VAL:HG22	2:H:335:PRO:HB3	1.88	0.55
3:L:243:GLY:O	3:L:254:SER:N	2.39	0.55
1:G:362:HIS:ND1	1:G:379:ASP:OD1	2.39	0.55
3:I:245:VAL:HB	3:I:273:GLU:H	1.71	0.55
5:P:61:ARG:NH2	5:P:82:ASP:OD1	2.39	0.55
4:Q:5:VAL:HG23	4:Q:23:LYS:HB2	1.89	0.55
2:E:5:LEU:HD13	2:E:55:LEU:HD11	1.87	0.55
3:I:208:GLN:HG3	3:I:210:GLU:OE1	2.07	0.55
2:E:13:ARG:NH1	2:E:14:PRO:O	2.39	0.55
3:I:258:TRP:CD1	3:I:264:THR:HG22	2.40	0.55
4:O:13:LYS:HD2	4:O:14:PRO:HD2	1.89	0.55
1:J:13:ILE:HD11	1:J:391:PRO:HG2	1.88	0.55
3:L:199:TYR:HA	3:L:208:GLN:HA	1.89	0.55
5:N:145:ALA:HA	5:N:201:GLY:H	1.72	0.55
3:C:218:LYS:NZ	3:C:246:ASN:HD21	2.05	0.55
5:N:25:ASP:OD1	5:N:26:ALA:N	2.40	0.55
2:B:288:HIS:ND1	2:B:314:PRO:HB3	2.22	0.55
2:E:329:VAL:HG22	2:E:335:PRO:HB3	1.88	0.55
3:C:138:GLY:HA3	3:C:153:VAL:HG11	1.89	0.54
1:J:296:LEU:HD13	1:J:369:ILE:HG21	1.88	0.54
1:A:110:LYS:NZ	1:A:208:VAL:O	2.40	0.54
1:D:296:LEU:HD21	1:D:299:ALA:HB2	1.89	0.54
4:S:158:PRO:HA	4:S:199:GLY:HA2	1.89	0.54
3:C:225:ASP:OD1	3:C:228:ARG:NH1	2.37	0.54
1:D:359:ALA:HB2	1:D:394:HIS:CD2	2.43	0.54
4:Q:12:LYS:HD2	4:Q:16:ALA:HB3	1.89	0.54
2:B:275:MET:SD	2:B:286:LYS:NZ	2.80	0.54
1:D:40:PRO:HA	1:D:127:ALA:HA	1.89	0.54
1:G:253:PHE:HB3	2:H:296:ILE:HG21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:65:SER:HA	1:A:101:THR:HG21	1.89	0.54
3:C:195:LYS:NZ	3:C:258:TRP:O	2.41	0.54
2:K:219:GLN:HE22	4:S:102:ASP:HB2	1.73	0.54
5:P:17:THR:HG22	5:P:19:ARG:NH1	2.22	0.54
1:A:69:THR:O	1:A:105:LYS:NZ	2.35	0.54
2:E:12:THR:HG23	2:E:13:ARG:H	1.72	0.54
2:H:55:LEU:HB2	2:H:60:ASN:O	2.08	0.54
4:S:19:LYS:HE2	4:S:82:GLU:HB3	1.89	0.54
2:H:232:GLN:HG2	2:H:233:ASN:N	2.23	0.54
2:K:41:HIS:CD2	2:K:134:VAL:HG22	2.43	0.54
4:M:18:VAL:HG22	4:M:86:LEU:HD21	1.90	0.54
2:E:206:LYS:NZ	2:E:220:CYS:SG	2.80	0.54
3:L:195:LYS:NZ	3:L:258:TRP:O	2.28	0.54
5:N:32:VAL:HG11	5:N:71:VAL:HG21	1.88	0.54
3:C:197:GLN:NE2	3:C:210:GLU:HA	2.23	0.54
2:K:136:ARG:HB3	2:K:294:TYR:HB2	1.89	0.54
1:A:40:PRO:HA	1:A:127:ALA:HA	1.90	0.53
1:A:117:ASP:HB2	2:B:261:LEU:HD23	1.90	0.53
4:O:97:ALA:HB1	4:O:109:LEU:HD13	1.90	0.53
3:I:217:PRO:HG2	3:I:220:VAL:HG21	1.90	0.53
2:K:309:GLU:OE2	2:K:317:ARG:NH2	2.36	0.53
4:S:12:LYS:HZ3	4:S:16:ALA:HB3	1.73	0.53
1:A:77:GLN:HB2	1:A:221:LEU:HD13	1.90	0.53
2:E:286:LYS:HG3	2:E:316:VAL:HG22	1.91	0.53
1:G:255:ALA:O	2:H:298:ARG:NH1	2.41	0.53
2:H:87:SER:HA	2:K:88:ARG:HD3	1.90	0.53
1:J:40:PRO:HA	1:J:127:ALA:HA	1.90	0.53
2:K:84:LEU:HD12	2:K:110:ILE:HD11	1.91	0.53
5:R:14:PRO:HG3	5:R:108:VAL:HB	1.90	0.53
2:B:191:PRO:HG2	2:B:194:THR:HB	1.90	0.53
3:C:117:ARG:HA	3:C:120:MET:HE2	1.90	0.53
1:G:53:THR:OG1	1:G:235:GLN:OE1	2.26	0.53
3:I:129:PRO:HA	3:I:139:TYR:HD1	1.71	0.53
4:M:12:LYS:HD3	4:M:18:VAL:HG12	1.89	0.53
4:Q:97:ALA:HB1	4:Q:109:LEU:HB3	1.91	0.53
1:A:95:PHE:CD2	2:B:201:GLU:HG2	2.44	0.53
1:A:258:GLY:HA3	2:B:300:LEU:HD13	1.91	0.53
2:K:9:TYR:CG	2:K:55:LEU:HD21	2.44	0.53
1:A:369:ILE:HG22	1:A:370:CYS:H	1.72	0.53
3:C:149:ARG:NH2	3:C:153:VAL:O	2.41	0.53
1:D:325:SER:HA	1:D:346:LEU:O	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:309:GLU:OE2	2:H:317:ARG:NH2	2.38	0.53
4:O:91:THR:HA	4:O:118:VAL:O	2.08	0.53
1:A:29:ILE:HG23	1:A:137:VAL:HG22	1.90	0.53
1:G:94:CYS:O	2:H:227:ARG:NH1	2.42	0.53
2:H:277:THR:OG1	2:H:284:SER:HB3	2.08	0.53
3:I:149:ARG:HD2	3:I:157:ILE:HD11	1.91	0.53
3:I:185:ARG:HB2	3:I:185:ARG:NH1	2.24	0.53
1:G:73:ARG:HB2	1:G:76:GLU:HG3	1.91	0.53
4:M:6:GLN:NE2	4:M:96:CYS:SG	2.82	0.53
2:B:9:TYR:HE1	2:B:52:GLN:HB3	1.74	0.52
1:G:231:VAL:N	2:H:241:ASP:OD1	2.42	0.52
2:K:217:PHE:HA	4:S:105:GLY:HA3	1.89	0.52
5:P:5:THR:OG1	5:P:23:SER:OG	2.24	0.52
2:K:412:LEU:HD12	2:K:416:CYS:HA	1.90	0.52
3:L:192:THR:HB	3:L:238:VAL:HG12	1.92	0.52
4:S:18:VAL:O	4:S:82:GLU:HA	2.09	0.52
1:D:385:ASP:OD1	2:E:341:GLN:NE2	2.43	0.52
1:G:129:VAL:HB	1:G:148:VAL:HB	1.91	0.52
2:H:161:ARG:HD2	2:H:260:LEU:HD12	1.90	0.52
2:H:200:CYS:HA	2:H:226:CYS:CB	2.39	0.52
5:R:28:PRO:HD3	5:R:69:THR:HA	1.91	0.52
1:D:296:LEU:HD13	1:D:369:ILE:HG21	1.90	0.52
2:E:82:VAL:HG11	2:E:112:MET:HE2	1.91	0.52
2:H:33:ILE:HG12	2:H:47:LEU:HD21	1.92	0.52
2:H:67:ARG:HD2	2:H:74:ILE:HG21	1.92	0.52
3:I:192:THR:HG22	3:I:194:GLU:H	1.74	0.52
1:A:413:LEU:HD21	2:B:378:ALA:HB2	1.91	0.52
3:F:258:TRP:CD1	3:F:264:THR:HG1	2.28	0.52
1:G:160:LYS:HB3	1:G:281:ASP:HB3	1.92	0.52
3:I:207:VAL:HG22	3:I:216:VAL:HG12	1.90	0.52
2:H:136:ARG:HB3	2:H:294:TYR:HB2	1.92	0.52
2:E:168:HIS:HB3	2:E:250:THR:HG22	1.91	0.52
4:O:67:ARG:NH2	4:O:90:ASP:OD1	2.43	0.52
3:I:193:HIS:HB2	3:I:260:GLU:HA	1.92	0.52
3:L:261:LYS:HG3	3:L:263:VAL:HG13	1.90	0.52
5:P:145:ALA:HA	5:P:201:GLY:H	1.75	0.52
1:A:255:ALA:O	2:B:298:ARG:NH1	2.43	0.52
3:C:167:THR:HG22	3:C:178:ALA:HB2	1.92	0.52
2:E:219:GLN:NE2	4:O:102:ASP:OD1	2.43	0.52
2:H:9:TYR:CG	2:H:55:LEU:HD21	2.45	0.51
2:H:14:PRO:HG3	2:H:52:GLN:HG3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:O:29:PHE:HE1	4:O:34:ILE:HD11	1.75	0.51
1:A:413:LEU:HD22	2:B:374:CYS:SG	2.50	0.51
2:B:88:ARG:HB2	2:B:105:PRO:HG3	1.91	0.51
1:G:387:ILE:HD13	2:H:340:ALA:HA	1.92	0.51
2:K:185:SER:HB2	2:K:218:SER:HA	1.91	0.51
4:O:70:VAL:HG23	4:O:81:MET:HB3	1.92	0.51
5:T:61:ARG:NH1	5:T:82:ASP:OD2	2.43	0.51
4:O:40:ALA:HB3	4:O:43:GLN:HB2	1.91	0.51
1:A:288:THR:OG1	1:A:292:GLU:OE1	2.28	0.51
2:B:402:LEU:HD22	3:C:175:LEU:HD11	1.92	0.51
1:D:60:ILE:HG21	1:D:86:PRO:HG2	1.92	0.51
4:O:100:GLN:HB2	4:O:111:TYR:HD2	1.76	0.51
2:H:170:PRO:HD3	2:H:236:TRP:HA	1.93	0.51
1:J:117:ASP:HB2	2:K:261:LEU:HD23	1.92	0.51
2:K:8:GLU:HA	2:K:255:LEU:HD22	1.93	0.51
4:Q:158:PRO:HA	4:Q:199:GLY:HA2	1.93	0.51
1:G:217:THR:OG1	1:G:235:GLN:NE2	2.41	0.51
1:A:251:LEU:HB3	1:A:261:ILE:HG13	1.92	0.51
2:B:17:ALA:HB1	2:B:242:LYS:HD3	1.92	0.51
2:E:407:ARG:HG2	2:E:409:PRO:HD3	1.92	0.51
2:K:161:ARG:HB2	2:K:260:LEU:HD12	1.93	0.51
3:L:197:GLN:HE22	3:L:210:GLU:HA	1.75	0.51
4:M:100:GLN:N	4:M:110:ASP:OD2	2.43	0.51
5:P:11:SER:HA	5:P:107:THR:HB	1.92	0.51
5:T:92:ASP:OD1	5:T:93:SER:N	2.39	0.51
1:A:106:ALA:HB3	1:A:221:LEU:HD11	1.93	0.51
3:C:245:VAL:HB	3:C:272:CYS:HA	1.92	0.51
3:F:151:MET:HE1	3:F:176:GLU:HG3	1.92	0.51
1:G:21:ARG:HH21	1:G:24:TYR:HB3	1.76	0.51
4:M:91:THR:HG23	4:M:119:THR:HG22	1.93	0.51
2:B:9:TYR:HA	2:B:12:THR:HB	1.92	0.51
1:D:440:LYS:HA	3:F:259:ASN:HD21	1.75	0.51
2:H:64:ARG:NH2	2:H:93:VAL:O	2.44	0.51
3:F:130:ILE:HD11	3:F:140:ALA:HB2	1.93	0.51
5:N:58:PRO:HG2	5:N:62:PHE:HE1	1.76	0.51
5:P:45:LEU:HD21	5:P:48:TYR:HB3	1.93	0.51
4:M:60:TYR:HE1	4:M:70:VAL:HG12	1.76	0.50
4:O:6:GLN:HE22	4:O:115:GLY:N	2.09	0.50
5:P:92:ASP:HB2	5:P:97:GLU:HB3	1.92	0.50
4:M:100:GLN:OE1	4:M:111:TYR:HB2	2.11	0.50
4:O:202:THR:HA	4:O:209:HIS:HA	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:P:25:ASP:OD1	5:P:26:ALA:N	2.45	0.50
2:E:54:GLY:C	2:E:55:LEU:HD12	2.36	0.50
1:J:55:MET:HE1	1:J:233:TYR:CE1	2.46	0.50
4:S:47:TRP:HZ2	4:S:50:TRP:HD1	1.60	0.50
2:K:274:PRO:HB3	2:K:287:LEU:HD23	1.93	0.50
4:Q:23:LYS:HG3	4:Q:78:ALA:HB2	1.93	0.50
1:G:435:VAL:O	1:G:439:GLN:HG2	2.11	0.50
4:S:41:PRO:O	4:S:43:GLN:NE2	2.44	0.50
1:A:362:HIS:CD2	1:A:404:LYS:HG2	2.47	0.50
3:C:131:MET:HE3	3:C:131:MET:HA	1.93	0.50
2:H:53:TYR:CE2	2:H:66:MET:HG3	2.46	0.50
2:H:397:LEU:O	2:H:401:ARG:N	2.45	0.50
5:N:14:PRO:HD3	5:N:109:LEU:H	1.76	0.50
2:B:342:GLU:O	2:B:342:GLU:HG2	2.12	0.50
2:H:169:LEU:HD12	2:H:170:PRO:HD2	1.93	0.50
3:I:142:VAL:HG22	3:I:188:THR:HG23	1.93	0.50
2:K:365:MET:HA	2:K:368:ILE:HG22	1.93	0.50
3:L:208:GLN:HE21	3:L:215:THR:HG23	1.77	0.50
2:E:412:LEU:HD12	2:E:416:CYS:HA	1.93	0.49
2:H:41:HIS:CD2	2:H:134:VAL:HG22	2.47	0.49
2:K:168:HIS:CD2	2:K:239:ASN:HB2	2.47	0.49
4:M:158:PRO:HA	4:M:199:GLY:HA2	1.93	0.49
1:D:297:SER:O	1:D:321:SER:OG	2.29	0.49
1:G:142:ILE:HD13	1:G:156:PHE:CG	2.47	0.49
1:G:298:ALA:HB3	1:G:321:SER:HB2	1.94	0.49
5:T:17:THR:OG1	5:T:19:ARG:NH1	2.44	0.49
1:D:31:ILE:HD11	1:D:280:PHE:HZ	1.77	0.49
2:B:300:LEU:HD23	2:B:326:TRP:N	2.26	0.49
1:A:192:TYR:OH	1:A:212:ASP:OD2	2.25	0.49
1:D:117:ASP:HB2	2:E:261:LEU:HD23	1.93	0.49
1:G:29:ILE:HG12	1:G:137:VAL:HG23	1.95	0.49
1:J:296:LEU:HD12	1:J:346:LEU:HD21	1.95	0.49
4:Q:145:ALA:HB2	4:Q:184:LEU:HA	1.94	0.49
2:B:240:SER:HB3	2:B:243:LEU:HD23	1.94	0.49
2:B:294:TYR:CE1	2:B:310:LEU:HB2	2.48	0.49
1:D:76:GLU:HA	1:D:106:ALA:O	2.12	0.49
3:F:160:ASP:OD1	3:F:160:ASP:N	2.46	0.49
1:G:117:ASP:HB2	2:H:261:LEU:HD23	1.93	0.49
1:G:222:GLN:HB2	1:G:232:PRO:HB2	1.95	0.49
3:I:243:GLY:O	3:I:254:SER:N	2.45	0.49
2:K:302:ASP:OD1	2:K:302:ASP:N	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:253:PHE:HB3	2:E:296:ILE:HG21	1.95	0.49
3:F:149:ARG:HG3	3:F:176:GLU:HB2	1.94	0.49
3:I:118:MET:SD	3:I:118:MET:N	2.84	0.49
3:L:207:VAL:HG21	3:L:230:ILE:HD11	1.95	0.49
5:P:61:ARG:NH1	5:P:79:GLN:OE1	2.45	0.49
2:B:411:CYS:HA	2:B:414:VAL:HG22	1.95	0.49
1:D:205:SER:OG	1:D:207:THR:O	2.28	0.49
2:E:404:PRO:HB3	3:F:144:GLY:HA3	1.94	0.49
1:J:300:GLU:HA	1:J:374:VAL:HG21	1.95	0.49
4:M:52:ASN:HB2	4:M:56:GLY:H	1.78	0.49
1:A:246:ASP:OD1	1:A:246:ASP:N	2.43	0.49
2:B:53:TYR:OH	2:B:112:MET:HE1	2.13	0.49
2:H:41:HIS:HA	2:H:132:ASN:HB2	1.94	0.49
3:I:202:TRP:CD1	3:I:203:HIS:H	2.31	0.49
1:J:364:GLU:OE1	1:J:377:LYS:NZ	2.39	0.49
4:S:4:LEU:HG	4:S:111:TYR:CE2	2.48	0.49
2:B:302:ASP:OD1	2:B:302:ASP:N	2.46	0.48
2:E:53:TYR:CE1	2:E:100:LEU:HD13	2.48	0.48
2:H:298:ARG:NE	2:H:327:GLU:OE2	2.36	0.48
3:L:124:SER:O	3:L:126:LYS:NZ	2.34	0.48
5:N:83:ASP:OD1	5:N:108:VAL:N	2.45	0.48
2:B:8:GLU:OE1	2:B:255:LEU:HB3	2.13	0.48
4:M:38:ARG:NH1	4:M:90:ASP:OD1	2.45	0.48
4:O:64:PHE:HB3	4:O:68:ILE:HG21	1.95	0.48
4:O:107:GLY:HA3	5:P:33:TYR:CD1	2.48	0.48
2:E:206:LYS:HE3	2:E:217:PHE:CD2	2.48	0.48
2:H:12:THR:HA	2:H:236:TRP:O	2.14	0.48
1:D:55:MET:HG3	2:E:241:ASP:HB3	1.94	0.48
1:J:303:LEU:HD12	1:J:378:GLY:HA3	1.95	0.48
4:M:59:LYS:NZ	5:N:97:GLU:HG3	2.28	0.48
2:B:181:LEU:HB2	2:B:223:LYS:HD2	1.94	0.48
1:D:21:ARG:HB3	1:D:24:TYR:HD1	1.78	0.48
1:D:230:HIS:CD2	1:D:232:PRO:HG3	2.49	0.48
4:O:39:GLN:HB2	4:O:45:LEU:HD23	1.96	0.48
4:S:52:ASN:HB3	4:S:55:ASN:HB3	1.95	0.48
1:A:300:GLU:HG3	1:A:319:LYS:HB3	1.96	0.48
2:B:87:SER:OG	2:B:106:ALA:O	2.25	0.48
1:D:9:SER:OG	1:D:273:VAL:O	2.30	0.48
1:D:84:VAL:HG21	1:D:102:GLN:HB2	1.96	0.48
4:M:145:ALA:HB2	4:M:184:LEU:HA	1.95	0.48
5:N:92:ASP:OD1	5:N:92:ASP:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:224:GLU:O	2:B:227:ARG:NH2	2.47	0.48
2:E:274:PRO:HB3	2:E:287:LEU:HD23	1.95	0.48
3:I:138:GLY:HA3	3:I:153:VAL:HG11	1.95	0.48
2:K:296:ILE:HB	2:K:329:VAL:HG22	1.96	0.48
2:E:126:PRO:HB3	2:H:141:HIS:HB3	1.96	0.48
2:E:137:GLU:HG3	2:E:332:ASN:ND2	2.29	0.48
2:H:36:VAL:HG21	2:H:110:ILE:HG21	1.96	0.47
2:H:146:GLY:HA3	2:H:268:VAL:O	2.14	0.47
1:J:51:TYR:OH	1:J:236:ALA:O	2.29	0.47
5:P:105:LYS:HA	5:P:105:LYS:HE2	1.97	0.47
1:A:401:ALA:O	2:B:359:TYR:OH	2.26	0.47
1:D:98:THR:HG23	1:D:99:GLU:OE1	2.13	0.47
3:F:140:ALA:HB1	3:F:147:LEU:HD11	1.96	0.47
1:G:176:LYS:HB3	1:G:189:PHE:CE2	2.49	0.47
2:H:168:HIS:CD2	2:H:239:ASN:HB3	2.49	0.47
2:K:146:GLY:HA3	2:K:268:VAL:O	2.14	0.47
2:K:201:GLU:HG3	2:K:201:GLU:O	2.14	0.47
4:M:47:TRP:CZ2	4:M:50:TRP:HD1	2.31	0.47
2:H:321:VAL:HG13	2:H:326:TRP:HB3	1.96	0.47
4:M:38:ARG:NE	4:M:46:GLU:OE2	2.42	0.47
5:P:9:SER:OG	5:P:105:LYS:O	2.27	0.47
1:D:192:TYR:OH	1:D:212:ASP:OD2	2.23	0.47
2:E:36:VAL:HG21	2:E:110:ILE:HG21	1.96	0.47
1:G:104:SER:HB3	1:G:231:VAL:HG13	1.96	0.47
1:G:168:THR:HG22	1:G:170:TRP:H	1.78	0.47
2:H:88:ARG:HB2	2:H:105:PRO:HG3	1.96	0.47
3:L:139:TYR:CD2	3:L:228:ARG:HD3	2.50	0.47
3:L:247:GLU:HG2	3:L:248:GLY:H	1.80	0.47
5:R:12:VAL:HG11	5:R:18:ALA:HB2	1.95	0.47
4:S:6:GLN:HA	4:S:22:CYS:HA	1.95	0.47
2:B:408:ILE:N	2:B:409:PRO:HD2	2.30	0.47
2:H:275:MET:HB2	2:H:286:LYS:HB3	1.96	0.47
5:N:13:SER:HB3	5:N:109:LEU:HD12	1.95	0.47
5:T:6:GLN:O	5:T:102:THR:OG1	2.30	0.47
2:E:40:GLY:O	2:E:132:ASN:ND2	2.34	0.47
2:E:408:ILE:N	2:E:409:PRO:HD3	2.30	0.47
3:F:147:LEU:O	3:F:177:TYR:HA	2.15	0.47
2:K:9:TYR:CZ	2:K:55:LEU:HG	2.49	0.47
3:L:151:MET:HB3	3:L:174:ASP:OD1	2.15	0.47
4:M:59:LYS:HZ2	5:N:97:GLU:HG3	1.79	0.47
1:D:65:SER:HA	1:D:101:THR:HG21	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:387:TRP:HE3	2:H:388:LEU:HD12	1.79	0.47
2:K:14:PRO:HG3	2:K:52:GLN:HG3	1.96	0.47
2:K:405:ASN:HB2	3:L:191:TYR:OH	2.14	0.47
3:L:204:HIS:NE2	3:L:225:ASP:OD2	2.48	0.47
2:B:7:ASN:OD1	2:B:8:GLU:N	2.47	0.47
2:B:169:LEU:HD12	2:B:252:LYS:HE2	1.96	0.47
2:B:271:ALA:O	2:B:333:HIS:NE2	2.43	0.47
2:E:197:LEU:HB2	2:E:231:LEU:HD11	1.97	0.47
2:E:5:LEU:HD13	2:E:55:LEU:CD1	2.45	0.47
4:O:21:SER:HA	4:O:79:ALA:O	2.14	0.47
4:O:100:GLN:HB2	4:O:111:TYR:CD2	2.50	0.47
4:Q:51:ILE:HG13	4:Q:70:VAL:HG11	1.97	0.47
1:D:148:VAL:HG12	1:D:148:VAL:O	2.15	0.47
2:E:288:HIS:ND1	2:E:314:PRO:HB3	2.30	0.47
1:G:148:VAL:O	1:G:148:VAL:HG12	2.15	0.47
1:G:296:LEU:HD11	1:G:320:TYR:HB2	1.97	0.47
2:K:14:PRO:HD3	2:K:67:ARG:NH2	2.29	0.47
2:K:327:GLU:HG3	2:K:337:ARG:HG2	1.97	0.47
3:L:182:GLN:HA	3:L:185:ARG:NH1	2.29	0.47
5:T:4:LEU:HD23	5:T:22:CYS:SG	2.55	0.47
1:A:202:ASP:OD1	1:A:202:ASP:N	2.47	0.46
1:A:321:SER:O	1:A:321:SER:OG	2.34	0.46
1:D:202:ASP:OD1	1:D:202:ASP:N	2.46	0.46
5:P:27:LEU:HD21	5:P:71:VAL:HG23	1.97	0.46
1:A:174:ASP:HB2	1:A:186:ASN:OD1	2.15	0.46
1:G:250:SER:OG	1:G:251:LEU:N	2.49	0.46
2:K:169:LEU:HD12	2:K:170:PRO:HD2	1.97	0.46
4:O:6:GLN:HE22	4:O:115:GLY:C	2.23	0.46
4:O:64:PHE:HD2	4:O:68:ILE:HB	1.81	0.46
5:T:27:LEU:HD11	5:T:32:VAL:CG1	2.46	0.46
3:F:189:PHE:HE1	3:F:231:LEU:HD11	1.80	0.46
1:A:250:SER:OG	1:A:251:LEU:N	2.45	0.46
1:G:328:CYS:SG	1:G:346:LEU:HD22	2.56	0.46
2:K:55:LEU:HB2	2:K:60:ASN:O	2.15	0.46
2:K:402:LEU:HD21	3:L:175:LEU:HD21	1.98	0.46
5:R:85:ASP:HB3	5:R:87:TYR:CE1	2.50	0.46
3:C:213:ARG:NH1	3:C:267:TYR:HB3	2.31	0.46
2:K:12:THR:HA	2:K:236:TRP:O	2.15	0.46
3:L:202:TRP:CD1	3:L:203:HIS:H	2.33	0.46
4:S:12:LYS:HD2	4:S:13:LYS:O	2.16	0.46
2:E:159:GLN:HB2	2:E:161:ARG:HH11	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:369:ILE:HG22	1:G:370:CYS:H	1.80	0.46
3:I:223:LYS:HA	3:I:275:TRP:HE3	1.81	0.46
1:J:363:PRO:HD3	1:J:380:CYS:SG	2.55	0.46
5:P:20:ILE:HG23	5:P:104:THR:HG21	1.97	0.46
1:G:3:HIS:HD2	1:G:4:ALA:H	1.64	0.46
3:L:209:TYR:HB2	3:L:214:PHE:CE1	2.50	0.46
5:N:3:GLU:OE2	5:N:4:LEU:N	2.49	0.46
5:P:30:GLN:NE2	5:P:91:ALA:HB3	2.31	0.46
5:T:115:PRO:HA	5:T:142:TYR:HA	1.98	0.46
1:A:327:LYS:HD2	1:A:343:ALA:HB1	1.98	0.46
2:B:143:PRO:HG3	2:B:269:PRO:HD3	1.97	0.46
2:H:9:TYR:CE1	2:H:59:GLY:HA2	2.49	0.46
2:B:10:LYS:O	2:B:235:LYS:NZ	2.39	0.46
2:B:12:THR:HG23	2:B:13:ARG:H	1.81	0.46
2:E:159:GLN:HB2	2:E:161:ARG:NH1	2.31	0.46
3:F:117:ARG:HH21	3:F:120:MET:HE3	1.81	0.46
1:G:19:VAL:HG23	1:G:21:ARG:NH1	2.31	0.46
4:Q:100:GLN:HB3	4:Q:110:ASP:HB2	1.97	0.46
5:N:34:TRP:CG	5:N:73:LEU:HD12	2.51	0.46
5:P:92:ASP:N	5:P:97:GLU:O	2.48	0.46
1:D:63:CYS:HA	1:D:99:GLU:HG2	1.98	0.45
3:F:189:PHE:CE1	3:F:231:LEU:HD11	2.51	0.45
2:H:9:TYR:CZ	2:H:55:LEU:HG	2.50	0.45
2:K:53:TYR:OH	2:K:112:MET:HE1	2.16	0.45
4:S:37:VAL:HG11	4:S:112:TRP:HZ3	1.79	0.45
1:A:222:GLN:HB2	1:A:232:PRO:HB2	1.97	0.45
2:K:5:LEU:HD13	2:K:55:LEU:HD22	1.99	0.45
4:Q:100:GLN:H	4:Q:110:ASP:HB2	1.81	0.45
4:S:21:SER:HB2	4:S:80:TYR:CD1	2.51	0.45
5:T:91:ALA:HB1	5:T:95:ASN:HA	1.99	0.45
3:L:159:ASN:HD21	3:L:162:LEU:HD13	1.80	0.45
5:T:46:VAL:HG23	5:T:57:ILE:HD12	1.99	0.45
1:A:409:TRP:HZ3	2:B:355:VAL:HG21	1.81	0.45
2:H:14:PRO:HG3	2:H:52:GLN:HB2	1.98	0.45
5:P:37:GLN:HB3	5:P:85:ASP:HB2	1.99	0.45
1:D:55:MET:HE1	1:D:233:TYR:CE1	2.50	0.45
1:D:160:LYS:HB2	1:D:281:ASP:HB2	1.99	0.45
1:G:156:PHE:HE1	1:G:161:ILE:HD11	1.82	0.45
2:H:412:LEU:HD12	2:H:416:CYS:HA	1.98	0.45
3:L:192:THR:OG1	3:L:236:ARG:HD2	2.16	0.45
4:M:94:TYR:O	4:M:115:GLY:CA	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:86:PRO:HB3	1:G:229:ILE:HG12	1.98	0.45
2:H:167:MET:HE2	2:H:236:TRP:HB2	1.99	0.45
2:K:37:LYS:HA	2:K:37:LYS:HD3	1.76	0.45
2:K:371:LEU:HA	2:K:374:CYS:HB3	1.98	0.45
5:P:6:GLN:HB3	5:P:102:THR:OG1	2.17	0.45
4:Q:70:VAL:HG22	4:Q:81:MET:HG2	1.98	0.45
4:Q:100:GLN:HB2	4:Q:111:TYR:HB2	1.97	0.45
4:S:13:LYS:HA	4:S:13:LYS:HD3	1.75	0.45
2:B:303:GLU:O	2:B:303:GLU:HG2	2.15	0.45
3:C:207:VAL:HG22	3:C:216:VAL:HG12	1.99	0.45
1:D:51:TYR:OH	1:D:236:ALA:O	2.32	0.45
1:D:404:LYS:O	1:D:408:THR:HG23	2.17	0.45
1:J:359:ALA:HB2	1:J:394:HIS:CD2	2.52	0.45
4:O:145:ALA:HB2	4:O:184:LEU:HA	1.98	0.45
4:Q:27:TYR:OH	4:Q:98:THR:HG21	2.17	0.45
4:Q:48:MET:HE2	4:Q:68:ILE:HD13	1.97	0.45
4:S:36:TRP:CZ3	4:S:70:VAL:HG22	2.51	0.45
2:H:14:PRO:HD3	2:H:67:ARG:NH2	2.32	0.45
1:J:76:GLU:HA	1:J:106:ALA:O	2.17	0.45
5:N:4:LEU:HD11	5:N:90:ALA:HB3	1.96	0.45
4:O:57:ASN:OD1	4:O:58:THR:N	2.49	0.45
3:F:202:TRP:CD1	3:F:203:HIS:H	2.35	0.45
3:F:213:ARG:NH1	3:F:267:TYR:HB3	2.32	0.45
1:G:300:GLU:O	1:G:318:VAL:HA	2.17	0.45
2:H:199:GLU:O	2:H:226:CYS:HB2	2.17	0.45
4:M:40:ALA:HB3	4:M:43:GLN:HB2	1.98	0.45
5:T:6:GLN:NE2	5:T:86:TYR:O	2.44	0.45
2:B:9:TYR:HB3	2:B:55:LEU:HD22	1.99	0.44
2:B:10:LYS:C	2:B:11:LEU:HD12	2.41	0.44
3:C:119:VAL:HG11	3:C:205:GLY:HA2	1.99	0.44
2:E:22:CYS:C	2:E:24:VAL:H	2.25	0.44
2:K:219:GLN:HG2	4:S:32:TYR:CE1	2.51	0.44
2:K:353:HIS:CE1	2:K:354:GLU:HG2	2.52	0.44
3:L:167:THR:HB	3:L:176:GLU:HB3	2.00	0.44
5:N:27:LEU:N	5:N:28:PRO:HD2	2.32	0.44
4:Q:120:VAL:HG22	4:Q:121:SER:H	1.82	0.44
1:A:93:TYR:HA	2:B:174:VAL:HG11	1.99	0.44
1:D:10:GLN:HG2	1:D:13:ILE:HD12	1.99	0.44
1:D:392:GLN:NE2	1:D:394:HIS:O	2.44	0.44
4:M:73:ASP:HB3	4:M:76:ALA:HB3	1.98	0.44
1:A:283:PRO:HG2	1:A:286:LEU:HD13	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:341:GLU:OE1	1:A:341:GLU:N	2.46	0.44
1:D:243:TRP:O	1:D:247:LYS:HB3	2.17	0.44
2:E:17:ALA:HB3	2:E:32:ALA:HB3	2.00	0.44
2:E:219:GLN:HG2	4:O:32:TYR:OH	2.17	0.44
3:F:146:LYS:HB3	3:F:148:PHE:HE1	1.81	0.44
3:I:214:PHE:CD1	3:I:255:VAL:HG11	2.52	0.44
2:K:276:ILE:HG12	2:K:285:LEU:HD23	1.98	0.44
5:R:20:ILE:HG23	5:R:104:THR:HG21	1.99	0.44
4:S:36:TRP:HZ3	4:S:70:VAL:HG22	1.82	0.44
2:E:170:PRO:O	2:E:233:ASN:ND2	2.51	0.44
1:J:19:VAL:CG2	1:J:27:LEU:HB3	2.48	0.44
5:T:6:GLN:HG2	5:T:104:THR:HG23	1.99	0.44
1:A:148:VAL:O	1:A:164:GLY:HA3	2.18	0.44
3:F:216:VAL:HG13	3:F:253:LEU:HD22	1.99	0.44
2:B:12:THR:HG23	2:B:13:ARG:N	2.33	0.44
1:G:13:ILE:HD11	1:G:391:PRO:HG2	2.00	0.44
2:H:53:TYR:OH	2:H:112:MET:HE1	2.18	0.44
4:M:70:VAL:HA	4:M:81:MET:HA	1.99	0.44
3:C:202:TRP:CD1	3:C:203:HIS:H	2.35	0.44
1:D:86:PRO:HB3	1:D:229:ILE:HG12	1.99	0.44
4:Q:100:GLN:N	4:Q:110:ASP:HB2	2.33	0.44
3:C:218:LYS:HZ2	3:C:246:ASN:HD21	1.64	0.44
2:E:199:GLU:HB2	2:E:229:TYR:HE1	1.83	0.44
3:F:259:ASN:HB2	3:F:263:VAL:HG22	2.00	0.44
1:J:53:THR:OG1	1:J:235:GLN:OE1	2.36	0.44
2:B:275:MET:HE1	2:B:288:HIS:HD2	1.83	0.44
1:G:96:CYS:O	1:G:100:ASN:ND2	2.44	0.44
2:H:165:VAL:HG23	2:H:255:LEU:HB2	2.00	0.44
3:L:182:GLN:HA	3:L:185:ARG:HH12	1.83	0.44
1:A:55:MET:HE3	2:B:241:ASP:OD2	2.18	0.43
3:F:207:VAL:HG12	3:F:216:VAL:HG12	1.99	0.43
1:J:18:ILE:HG22	1:J:28:PRO:HA	2.00	0.43
1:J:369:ILE:HG22	1:J:370:CYS:H	1.82	0.43
4:M:30:THR:O	4:M:31:ASN:ND2	2.51	0.43
5:P:85:ASP:OD2	5:P:87:TYR:OH	2.29	0.43
2:E:147:VAL:O	2:E:268:VAL:HG22	2.18	0.43
3:F:245:VAL:HB	3:F:272:CYS:HA	2.01	0.43
2:H:200:CYS:HB2	2:H:206:LYS:HE2	1.99	0.43
3:I:274:GLN:HG3	3:I:275:TRP:CD1	2.53	0.43
2:K:55:LEU:HB3	2:K:61:LEU:HA	2.00	0.43
1:D:219:LEU:HA	1:D:235:GLN:HB3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:52:GLN:OE1	2:H:67:ARG:NH2	2.42	0.43
3:I:129:PRO:HA	3:I:139:TYR:CD1	2.51	0.43
1:J:304:ASN:HB2	1:J:315:ILE:HG23	1.99	0.43
5:R:38:LYS:NZ	5:R:81:GLU:O	2.51	0.43
2:B:184:SER:OG	4:M:31:ASN:OD1	2.35	0.43
3:I:203:HIS:HB3	3:I:228:ARG:NH1	2.33	0.43
4:O:158:PRO:HA	4:O:199:GLY:HA2	2.00	0.43
4:S:167:ALA:HB1	4:S:185:TYR:HA	1.99	0.43
1:A:327:LYS:HA	1:A:327:LYS:HD3	1.85	0.43
1:J:63:CYS:H	1:J:100:ASN:HA	1.82	0.43
1:J:95:PHE:CE1	2:K:201:GLU:HB2	2.52	0.43
2:K:359:TYR:HB3	2:K:367:THR:HG21	2.00	0.43
3:C:169:LYS:HD3	3:C:176:GLU:HG3	2.00	0.43
2:E:41:HIS:ND1	2:E:134:VAL:HG22	2.33	0.43
2:E:275:MET:SD	1:J:197:PRO:HG2	2.59	0.43
3:I:187:ASP:OD1	3:I:187:ASP:N	2.48	0.43
1:J:19:VAL:HG23	1:J:27:LEU:HB3	2.00	0.43
1:J:63:CYS:HA	1:J:100:ASN:HA	2.00	0.43
2:K:15:TYR:OH	2:K:34:GLU:OE2	2.30	0.43
4:S:36:TRP:CE3	4:S:81:MET:HG3	2.53	0.43
2:E:134:VAL:HG21	2:E:266:CYS:SG	2.59	0.43
2:E:207:ILE:HG22	2:E:207:ILE:O	2.19	0.43
2:H:18:ARG:HH22	2:H:20:ILE:HD13	1.84	0.43
2:H:57:SER:HA	2:H:67:ARG:HD3	2.01	0.43
2:H:87:SER:OG	2:H:106:ALA:O	2.31	0.43
1:J:253:PHE:HB3	2:K:296:ILE:HG21	2.01	0.43
1:J:290:VAL:HA	1:J:293:THR:HG22	2.01	0.43
2:K:57:SER:HA	2:K:67:ARG:HD2	2.00	0.43
4:S:4:LEU:HA	4:S:23:LYS:O	2.19	0.43
3:F:151:MET:CE	3:F:176:GLU:HG3	2.48	0.43
1:G:192:TYR:OH	1:G:212:ASP:OD2	2.19	0.43
2:H:297:THR:O	2:H:306:TYR:HA	2.19	0.43
1:J:329:ALA:N	1:J:370:CYS:HB3	2.33	0.43
5:N:14:PRO:HA	5:N:78:VAL:HG13	2.01	0.43
4:Q:81:MET:SD	4:Q:82:GLU:N	2.91	0.43
1:A:35:LYS:HB2	1:A:35:LYS:HE2	1.76	0.43
1:A:135:ILE:HB	1:A:142:ILE:HG22	2.01	0.43
2:B:9:TYR:HB3	2:B:55:LEU:CD2	2.49	0.43
2:E:21:ARG:HD2	2:H:141:HIS:CE1	2.54	0.43
2:E:170:PRO:HD3	2:E:236:TRP:HA	2.01	0.43
3:F:264:THR:O	3:F:264:THR:HG22	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:416:GLY:O	1:G:420:ILE:HG12	2.19	0.43
1:J:10:GLN:HG2	1:J:13:ILE:HD12	2.01	0.43
4:O:18:VAL:HG12	4:O:86:LEU:HD11	2.01	0.43
4:Q:150:LEU:HA	4:Q:179:LEU:H	1.83	0.43
5:R:54:PRO:HD2	5:R:57:ILE:HG13	2.00	0.43
4:S:4:LEU:HG	4:S:111:TYR:HE2	1.84	0.43
4:S:60:TYR:HE1	4:S:70:VAL:HG23	1.84	0.43
1:D:120:GLU:HG3	1:D:122:TYR:CE2	2.54	0.43
3:F:128:PHE:HB2	3:F:157:ILE:HD11	1.99	0.43
3:F:158:ASP:OD1	3:F:159:ASN:N	2.52	0.43
1:G:402:VAL:O	1:G:406:ALA:HB3	2.18	0.43
2:K:175:ASP:OD2	2:K:230:ARG:NH1	2.51	0.43
2:K:281:ARG:NH2	2:K:323:GLU:OE1	2.42	0.43
4:O:22:CYS:HB2	4:O:36:TRP:CH2	2.54	0.43
4:Q:167:ALA:HB1	4:Q:185:TYR:HA	2.01	0.43
5:T:38:LYS:HB2	5:T:41:GLN:HB2	2.01	0.43
2:B:9:TYR:CG	2:B:55:LEU:HD13	2.53	0.42
3:C:196:PRO:O	3:C:200:TYR:OH	2.24	0.42
1:D:104:SER:HB2	1:D:231:VAL:HG22	1.99	0.42
1:G:328:CYS:SG	1:G:369:ILE:HG22	2.59	0.42
1:J:31:ILE:HD11	1:J:280:PHE:CZ	2.50	0.42
2:K:143:PRO:HG3	2:K:269:PRO:HD3	2.01	0.42
2:K:399:PRO:HG3	3:L:173:TYR:OH	2.18	0.42
5:N:88:CYS:O	5:N:101:GLY:N	2.51	0.42
5:P:197:VAL:HA	5:P:206:LYS:HA	2.00	0.42
1:G:10:GLN:HG2	1:G:13:ILE:HD12	2.01	0.42
1:G:148:VAL:O	1:G:164:GLY:HA3	2.19	0.42
1:G:369:ILE:O	1:G:370:CYS:C	2.63	0.42
2:H:398:THR:OG1	2:H:399:PRO:HD3	2.20	0.42
2:K:191:PRO:HG2	2:K:194:THR:HB	2.00	0.42
1:A:303:LEU:HD11	1:A:356:PHE:CZ	2.55	0.42
1:A:318:VAL:O	1:A:351:SER:HA	2.19	0.42
2:E:302:ASP:N	2:E:302:ASP:OD1	2.51	0.42
2:E:404:PRO:HG2	3:F:191:TYR:CG	2.54	0.42
2:K:55:LEU:HD13	2:K:61:LEU:HD12	2.02	0.42
2:K:404:PRO:HD3	3:L:258:TRP:CH2	2.54	0.42
3:L:197:GLN:HE22	3:L:211:ASN:H	1.65	0.42
5:R:170:SER:N	5:R:174:TYR:O	2.52	0.42
1:A:416:GLY:O	1:A:420:ILE:HG12	2.19	0.42
2:B:232:GLN:HG2	2:B:234:ASP:OD1	2.20	0.42
2:E:393:ARG:HH21	2:E:418:ALA:HA	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:169:LYS:HD3	3:I:169:LYS:N	2.35	0.42
2:K:408:ILE:O	2:K:410:PHE:N	2.53	0.42
3:L:130:ILE:HD11	3:L:140:ALA:HB2	2.00	0.42
4:O:47:TRP:HZ2	4:O:50:TRP:HD1	1.67	0.42
4:S:39:GLN:HE22	5:T:37:GLN:HE22	1.66	0.42
4:S:145:ALA:HB2	4:S:184:LEU:HA	2.01	0.42
5:T:12:VAL:HG21	5:T:18:ALA:HB2	2.00	0.42
5:T:27:LEU:N	5:T:28:PRO:HD2	2.35	0.42
2:E:11:LEU:HA	2:E:235:LYS:HD2	2.02	0.42
2:E:141:HIS:ND1	2:K:126:PRO:HG3	2.34	0.42
1:G:97:ASP:OD1	1:G:97:ASP:N	2.53	0.42
1:J:282:ILE:HG23	1:J:286:LEU:HD12	2.01	0.42
1:D:362:HIS:NE2	1:D:404:LYS:HG2	2.34	0.42
1:J:88:MET:HE2	1:J:88:MET:HB3	1.87	0.42
2:K:397:LEU:HD23	2:K:397:LEU:HA	1.90	0.42
4:O:99:LEU:HD12	4:O:110:ASP:HB2	2.02	0.42
5:P:14:PRO:HD3	5:P:109:LEU:H	1.84	0.42
1:D:295:THR:HA	1:D:371:THR:HG21	2.00	0.42
1:D:296:LEU:HD22	1:D:372:SER:HB2	2.01	0.42
2:H:22:CYS:C	2:H:24:VAL:H	2.28	0.42
2:K:55:LEU:CB	2:K:61:LEU:HA	2.50	0.42
5:T:79:GLN:NE2	5:T:81:GLU:OE2	2.53	0.42
2:B:134:VAL:HG11	2:B:151:CYS:SG	2.60	0.42
1:D:135:ILE:HG21	1:D:161:ILE:CD1	2.49	0.42
2:E:213:LYS:HE3	6:E:501:NAG:H83	2.02	0.42
3:F:191:TYR:HA	3:F:237:VAL:O	2.19	0.42
1:G:325:SER:HA	1:G:346:LEU:O	2.19	0.42
2:H:9:TYR:CZ	2:H:67:ARG:CZ	3.03	0.42
5:N:53:ARG:NH2	5:N:62:PHE:O	2.52	0.42
4:S:27:TYR:CE2	4:S:32:TYR:HD2	2.38	0.42
1:A:309:SER:HB3	1:A:383:PRO:HB3	2.02	0.42
2:B:94:ASP:OD1	2:B:95:GLY:N	2.51	0.42
2:B:132:ASN:HA	2:B:133:PRO:HD3	1.83	0.42
1:D:366:ARG:NH1	1:D:373:TYR:HB3	2.33	0.42
2:E:398:THR:OG1	2:E:399:PRO:HD3	2.20	0.42
2:H:53:TYR:CE2	2:H:100:LEU:HD13	2.55	0.42
3:L:200:TYR:HB3	3:L:231:LEU:O	2.20	0.42
1:D:230:HIS:NE2	1:D:232:PRO:HG3	2.34	0.42
1:G:244:LYS:HA	1:G:247:LYS:HG3	2.02	0.42
3:I:152:HIS:CE1	3:I:275:TRP:HE1	2.38	0.42
1:J:86:PRO:HB3	1:J:229:ILE:HG12	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:148:VAL:O	1:A:148:VAL:HG12	2.19	0.41
1:A:300:GLU:O	1:A:318:VAL:HA	2.20	0.41
2:B:210:THR:HG23	5:N:49:LYS:HD3	2.02	0.41
2:B:218:SER:H	4:M:106:ASN:HB2	1.85	0.41
2:E:12:THR:HG23	2:E:13:ARG:N	2.35	0.41
2:H:397:LEU:HD23	2:H:397:LEU:HA	1.87	0.41
4:O:37:VAL:HG21	4:O:112:TRP:HZ3	1.84	0.41
5:T:20:ILE:HG23	5:T:104:THR:HG21	2.01	0.41
5:T:86:TYR:HB2	5:T:104:THR:OG1	2.20	0.41
1:A:405:THR:HG22	1:A:409:TRP:CZ3	2.55	0.41
1:A:434:TYR:HE1	1:A:438:ASN:HD21	1.68	0.41
2:E:174:VAL:HA	2:E:229:TYR:HA	2.01	0.41
1:G:77:GLN:NE2	1:G:219:LEU:O	2.53	0.41
1:J:110:LYS:HG3	1:J:213:LEU:HD13	2.03	0.41
2:B:404:PRO:HB3	3:C:144:GLY:HA3	2.02	0.41
1:D:402:VAL:O	1:D:406:ALA:HB3	2.20	0.41
3:F:183:ASN:OD1	3:F:184:MET:N	2.53	0.41
2:H:126:PRO:HB3	2:K:141:HIS:HB3	2.00	0.41
3:L:247:GLU:HG2	3:L:248:GLY:N	2.35	0.41
1:D:168:THR:HG21	1:D:273:VAL:HG22	2.02	0.41
1:D:383:PRO:HG2	2:E:343:THR:HG22	2.01	0.41
3:F:218:LYS:HE3	3:F:249:SER:HA	2.02	0.41
3:F:230:ILE:HG22	3:F:239:ALA:O	2.20	0.41
3:F:239:ALA:HB1	3:F:255:VAL:HG22	2.01	0.41
2:H:362:ARG:HD2	2:H:362:ARG:HA	1.77	0.41
2:K:397:LEU:HD11	2:K:418:ALA:HB2	2.01	0.41
2:B:78:PRO:HG2	2:B:81:GLN:HG3	2.01	0.41
3:C:187:ASP:OD1	3:C:187:ASP:N	2.44	0.41
1:D:224:PRO:HA	1:D:232:PRO:HG2	2.01	0.41
2:E:9:TYR:CE2	2:E:55:LEU:HD13	2.53	0.41
2:E:23:ALA:HB2	2:E:122:SER:HB3	2.02	0.41
1:J:55:MET:HG3	2:K:241:ASP:HB3	2.03	0.41
2:K:116:LYS:HD3	2:K:116:LYS:HA	1.89	0.41
4:O:99:LEU:HD11	4:O:101:MET:HB2	2.02	0.41
4:Q:36:TRP:CE2	4:Q:81:MET:HB2	2.55	0.41
1:D:161:ILE:HG12	1:D:280:PHE:HD2	1.86	0.41
1:D:309:SER:HB3	1:D:383:PRO:HB3	2.02	0.41
1:J:30:SER:HB3	1:J:136:THR:OG1	2.20	0.41
1:J:63:CYS:HB2	1:J:99:GLU:OE2	2.20	0.41
4:M:150:LEU:HA	4:M:179:LEU:H	1.86	0.41
4:O:6:GLN:NE2	4:O:114:GLN:HG2	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:O:101:MET:HE1	5:P:48:TYR:CZ	2.56	0.41
4:Q:96:CYS:O	4:Q:112:TRP:HA	2.20	0.41
2:B:117:ASP:OD1	2:B:117:ASP:N	2.53	0.41
2:B:398:THR:OG1	2:B:399:PRO:HD3	2.21	0.41
3:C:200:TYR:HD2	3:C:232:ASP:HA	1.85	0.41
2:E:103:ARG:HD2	2:K:21:ARG:CZ	2.51	0.41
2:K:22:CYS:C	2:K:24:VAL:H	2.29	0.41
2:K:36:VAL:HG22	2:K:47:LEU:HD12	2.03	0.41
1:A:41:THR:OG1	1:A:125:HIS:O	2.30	0.41
2:E:275:MET:HB2	2:E:286:LYS:HB3	2.03	0.41
2:H:189:THR:O	2:H:189:THR:OG1	2.33	0.41
2:H:274:PRO:HB3	2:H:287:LEU:HD23	2.03	0.41
3:I:196:PRO:HD2	3:I:200:TYR:OH	2.20	0.41
4:O:18:VAL:O	4:O:82:GLU:HA	2.21	0.41
4:Q:4:LEU:H	4:Q:111:TYR:HE2	1.68	0.41
4:S:12:LYS:HZ1	4:S:16:ALA:C	2.29	0.41
1:A:129:VAL:HB	1:A:148:VAL:HB	2.03	0.41
2:B:9:TYR:OH	2:B:53:TYR:O	2.33	0.41
2:B:236:TRP:CZ2	2:B:252:LYS:HD2	2.56	0.41
1:D:19:VAL:CG1	1:D:27:LEU:HB3	2.51	0.41
1:D:93:TYR:HA	2:E:174:VAL:HG11	2.03	0.41
1:D:161:ILE:HG12	1:D:280:PHE:CD2	2.55	0.41
2:E:53:TYR:OH	2:E:112:MET:HE1	2.21	0.41
1:G:362:HIS:CD2	1:G:404:LYS:HG3	2.56	0.41
2:H:111:THR:HG23	2:H:124:SER:HB2	2.03	0.41
3:I:258:TRP:HD1	3:I:264:THR:HG22	1.83	0.41
2:K:36:VAL:HG22	2:K:47:LEU:CD1	2.51	0.41
2:K:49:THR:HG21	2:K:53:TYR:OH	2.21	0.41
2:K:207:ILE:HG22	2:K:207:ILE:O	2.21	0.41
2:K:219:GLN:NE2	4:S:102:ASP:HB2	2.36	0.41
4:Q:45:LEU:HD23	5:R:87:TYR:CZ	2.56	0.41
4:S:150:LEU:HA	4:S:179:LEU:CB	2.50	0.41
2:B:174:VAL:HA	2:B:229:TYR:HA	2.03	0.41
2:E:189:THR:HG22	2:E:214:THR:HG23	2.02	0.41
1:G:20:ASN:C	1:G:21:ARG:HD3	2.47	0.41
1:J:230:HIS:NE2	1:J:232:PRO:HG3	2.36	0.41
1:J:417:SER:HA	1:J:420:ILE:HD13	2.03	0.41
3:L:118:MET:SD	3:L:206:ALA:HB2	2.61	0.41
4:O:99:LEU:HB2	4:O:108:ASP:O	2.20	0.41
4:Q:22:CYS:HB2	4:Q:36:TRP:CH2	2.56	0.41
4:S:23:LYS:HA	4:S:78:ALA:HA	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:T:79:GLN:OE1	5:T:81:GLU:HG3	2.21	0.41
1:G:360:ASN:ND2	1:G:400:ALA:HA	2.36	0.40
4:O:99:LEU:HB2	4:O:109:LEU:HA	2.03	0.40
5:P:9:SER:HB2	5:P:105:LYS:HB2	2.02	0.40
4:S:6:GLN:HB3	4:S:22:CYS:HB3	2.04	0.40
2:B:12:THR:HG21	2:B:67:ARG:HH22	1.87	0.40
2:H:276:ILE:HG12	2:H:285:LEU:HD23	2.02	0.40
1:J:129:VAL:HB	1:J:148:VAL:HB	2.02	0.40
1:J:420:ILE:HG22	2:K:385:SER:OG	2.21	0.40
4:M:109:LEU:O	5:N:35:TYR:OH	2.27	0.40
5:P:85:ASP:HB3	5:P:87:TYR:CE2	2.57	0.40
5:R:79:GLN:N	5:R:82:ASP:OD2	2.43	0.40
2:B:33:ILE:HG12	2:B:47:LEU:HD21	2.02	0.40
1:D:81:PHE:HB3	1:D:223:ARG:NH1	2.36	0.40
1:J:156:PHE:HE1	1:J:161:ILE:HD11	1.86	0.40
2:K:14:PRO:HD3	2:K:67:ARG:CZ	2.51	0.40
4:M:30:THR:OG1	4:M:31:ASN:N	2.54	0.40
5:P:32:VAL:HG22	5:P:50:ASP:OD1	2.22	0.40
2:B:72:GLY:HA3	2:B:230:ARG:NH1	2.37	0.40
2:B:213:LYS:O	2:B:214:THR:OG1	2.32	0.40
3:C:209:TYR:CZ	3:C:212:GLY:HA2	2.56	0.40
1:D:88:MET:HE1	2:E:173:GLU:HG2	2.04	0.40
2:E:300:LEU:HD21	2:E:327:GLU:HB2	2.04	0.40
1:G:402:VAL:HG13	1:G:407:TRP:HE1	1.86	0.40
2:H:211:ILE:HG22	5:R:49:LYS:HE3	2.04	0.40
2:K:227:ARG:HA	2:K:227:ARG:HD3	1.91	0.40
5:R:86:TYR:O	5:R:103:GLY:HA2	2.22	0.40
3:F:243:GLY:HA2	3:F:275:TRP:HB2	2.02	0.40
2:H:219:GLN:NE2	4:Q:104:GLY:HA2	2.37	0.40
1:J:122:TYR:HE2	1:J:179:GLN:HE21	1.69	0.40
3:L:254:SER:OG	3:L:269:PRO:HD2	2.21	0.40
4:M:51:ILE:HG13	4:M:52:ASN:N	2.35	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	438/440 (100%)	419 (96%)	19 (4%)	0	100	100
1	D	438/440 (100%)	414 (94%)	24 (6%)	0	100	100
1	G	438/440 (100%)	423 (97%)	15 (3%)	0	100	100
1	J	438/440 (100%)	416 (95%)	22 (5%)	0	100	100
2	B	416/418 (100%)	384 (92%)	32 (8%)	0	100	100
2	E	416/418 (100%)	388 (93%)	28 (7%)	0	100	100
2	H	416/418 (100%)	385 (92%)	31 (8%)	0	100	100
2	K	416/418 (100%)	383 (92%)	33 (8%)	0	100	100
3	C	157/159 (99%)	149 (95%)	8 (5%)	0	100	100
3	F	157/159 (99%)	154 (98%)	3 (2%)	0	100	100
3	I	157/159 (99%)	153 (98%)	4 (2%)	0	100	100
3	L	157/159 (99%)	153 (98%)	4 (2%)	0	100	100
4	M	216/218 (99%)	200 (93%)	16 (7%)	0	100	100
4	O	216/218 (99%)	199 (92%)	17 (8%)	0	100	100
4	Q	216/218 (99%)	201 (93%)	15 (7%)	0	100	100
4	S	216/218 (99%)	197 (91%)	19 (9%)	0	100	100
5	N	205/209 (98%)	197 (96%)	8 (4%)	0	100	100
5	P	205/209 (98%)	200 (98%)	5 (2%)	0	100	100
5	R	205/209 (98%)	201 (98%)	4 (2%)	0	100	100
5	T	207/209 (99%)	190 (92%)	17 (8%)	0	100	100
All	All	5730/5776 (99%)	5406 (94%)	324 (6%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	366/366 (100%)	366 (100%)	0	100	100
1	D	366/366 (100%)	366 (100%)	0	100	100
1	G	366/366 (100%)	366 (100%)	0	100	100
1	J	366/366 (100%)	366 (100%)	0	100	100
2	B	361/361 (100%)	361 (100%)	0	100	100
2	E	361/361 (100%)	361 (100%)	0	100	100
2	H	361/361 (100%)	361 (100%)	0	100	100
2	K	361/361 (100%)	360 (100%)	1 (0%)	86	85
3	C	132/132 (100%)	132 (100%)	0	100	100
3	F	132/132 (100%)	132 (100%)	0	100	100
3	I	132/132 (100%)	132 (100%)	0	100	100
3	L	132/132 (100%)	132 (100%)	0	100	100
4	M	101/182 (56%)	101 (100%)	0	100	100
4	O	100/182 (55%)	100 (100%)	0	100	100
4	Q	101/182 (56%)	101 (100%)	0	100	100
4	S	100/182 (55%)	99 (99%)	1 (1%)	68	76
5	N	91/179 (51%)	91 (100%)	0	100	100
5	P	91/179 (51%)	91 (100%)	0	100	100
5	R	91/179 (51%)	91 (100%)	0	100	100
5	T	92/179 (51%)	89 (97%)	3 (3%)	33	56
All	All	4203/4880 (86%)	4198 (100%)	5 (0%)	87	89

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	K	286	LYS
4	S	120	VAL
5	T	107	THR
5	T	108	VAL
5	T	109	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (59) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	ASN

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Mol	Chain	Res	Type
1	A	20	ASN
1	A	140	HIS
1	A	157	ASN
1	A	179	GLN
1	A	235	GLN
1	A	242	GLN
1	A	270	ASN
1	A	381	HIS
2	B	288	HIS
3	C	197	GLN
3	C	211	ASN
3	C	274	GLN
1	D	16	ASN
1	D	66	GLN
1	D	102	GLN
1	D	140	HIS
1	D	179	GLN
1	D	235	GLN
1	D	386	HIS
2	E	145	HIS
2	E	159	GLN
2	E	256	HIS
2	E	288	HIS
2	E	349	HIS
3	F	137	ASN
1	G	3	HIS
1	G	125	HIS
1	G	140	HIS
1	G	392	GLN
2	H	71	HIS
2	H	121	HIS
2	H	159	GLN
2	H	160	ASN
2	H	225	GLN
2	H	233	ASN
2	H	405	ASN
3	I	197	GLN
1	J	331	HIS
1	J	386	HIS
1	J	438	ASN
2	K	145	HIS
2	K	219	GLN

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Mol	Chain	Res	Type
2	K	239	ASN
2	K	299	GLN
3	L	208	GLN
4	M	55	ASN
5	N	95	ASN
4	O	6	GLN
5	P	30	GLN
5	P	37	GLN
5	P	41	GLN
5	P	89	GLN
4	Q	3	GLN
4	Q	55	ASN
5	R	16	GLN
4	S	43	GLN
5	T	89	GLN
5	T	95	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

12 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
6	NAG	H	501	-	14,14,15	0.47	0	17,19,21	0.39	0
6	NAG	J	501	1	14,14,15	0.22	0	17,19,21	0.43	0
6	NAG	E	501	-	14,14,15	0.47	0	17,19,21	0.40	0
6	NAG	K	501	-	14,14,15	0.46	0	17,19,21	0.40	0
6	NAG	D	501	1	14,14,15	0.20	0	17,19,21	0.56	0
6	NAG	K	502	2	14,14,15	0.29	0	17,19,21	0.42	0
6	NAG	B	502	2	14,14,15	0.20	0	17,19,21	0.51	0
6	NAG	A	501	1	14,14,15	0.21	0	17,19,21	0.49	0
6	NAG	B	501	-	14,14,15	0.46	0	17,19,21	0.38	0
6	NAG	H	502	2	14,14,15	0.32	0	17,19,21	0.38	0
6	NAG	E	502	-	14,14,15	0.31	0	17,19,21	0.40	0
6	NAG	G	501	1	14,14,15	0.21	0	17,19,21	0.46	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
6	NAG	H	501	-	-	3/6/23/26	0/1/1/1
6	NAG	J	501	1	-	1/6/23/26	0/1/1/1
6	NAG	E	501	-	-	2/6/23/26	0/1/1/1
6	NAG	K	501	-	-	2/6/23/26	0/1/1/1
6	NAG	D	501	1	-	0/6/23/26	0/1/1/1
6	NAG	K	502	2	-	2/6/23/26	0/1/1/1
6	NAG	B	502	2	-	2/6/23/26	0/1/1/1
6	NAG	A	501	1	-	1/6/23/26	0/1/1/1
6	NAG	B	501	-	-	0/6/23/26	0/1/1/1
6	NAG	H	502	2	-	2/6/23/26	0/1/1/1
6	NAG	E	502	-	-	2/6/23/26	0/1/1/1
6	NAG	G	501	1	-	1/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	502	NAG	O5-C5-C6-O6

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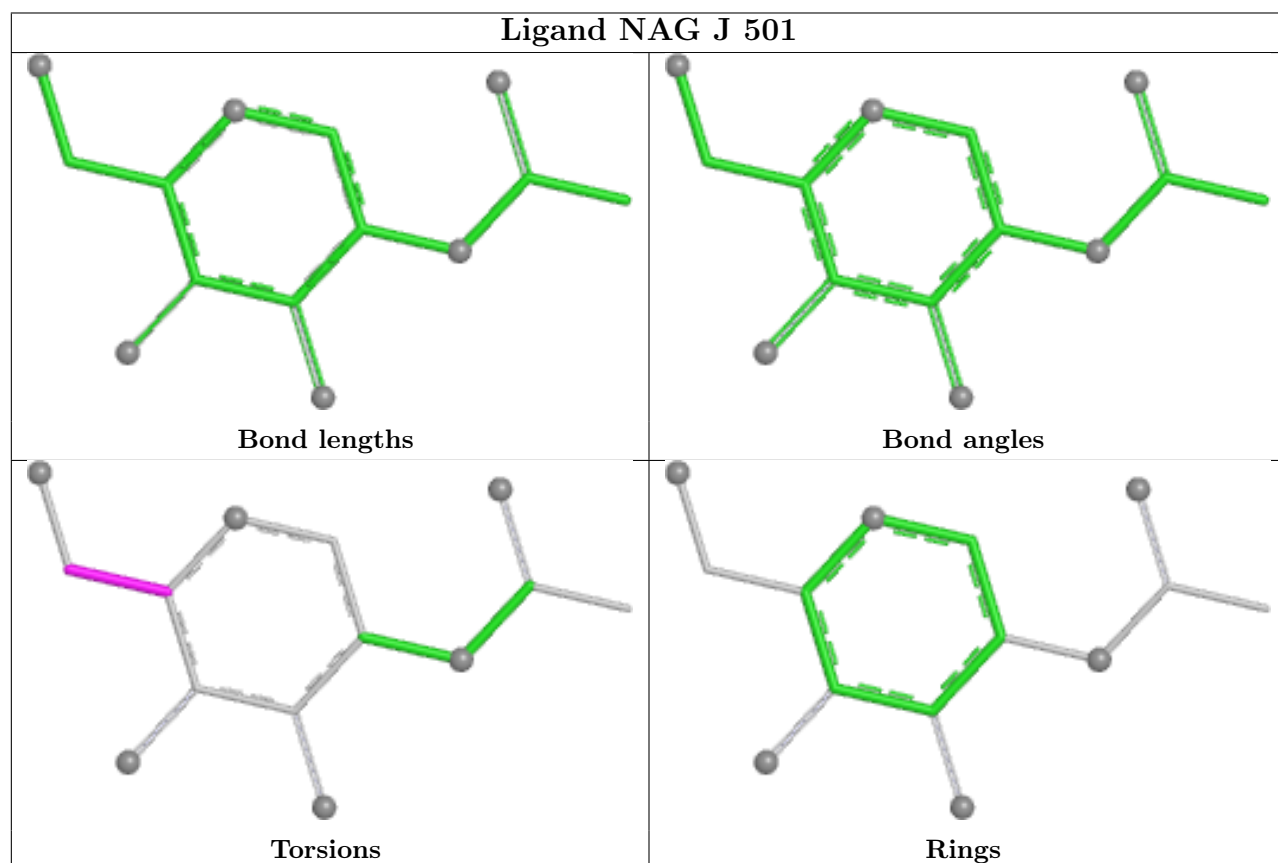
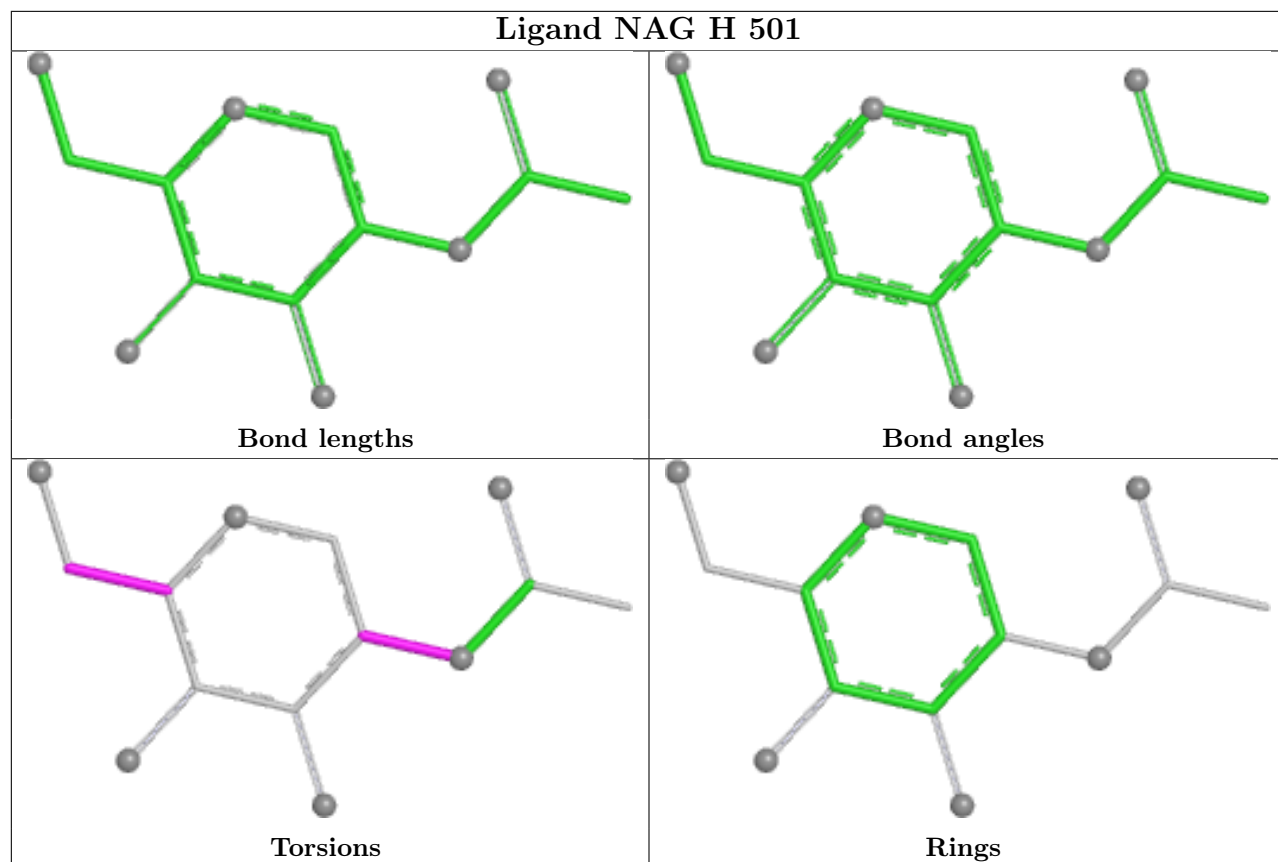
Mol	Chain	Res	Type	Atoms
6	H	501	NAG	O5-C5-C6-O6
6	K	502	NAG	O5-C5-C6-O6
6	K	501	NAG	O5-C5-C6-O6
6	E	501	NAG	O5-C5-C6-O6
6	B	502	NAG	C4-C5-C6-O6
6	H	501	NAG	C4-C5-C6-O6
6	E	501	NAG	C4-C5-C6-O6
6	K	501	NAG	C4-C5-C6-O6
6	E	502	NAG	O5-C5-C6-O6
6	K	502	NAG	C4-C5-C6-O6
6	H	502	NAG	O5-C5-C6-O6
6	E	502	NAG	C4-C5-C6-O6
6	J	501	NAG	O5-C5-C6-O6
6	H	502	NAG	C4-C5-C6-O6
6	G	501	NAG	C4-C5-C6-O6
6	A	501	NAG	C1-C2-N2-C7
6	H	501	NAG	C1-C2-N2-C7

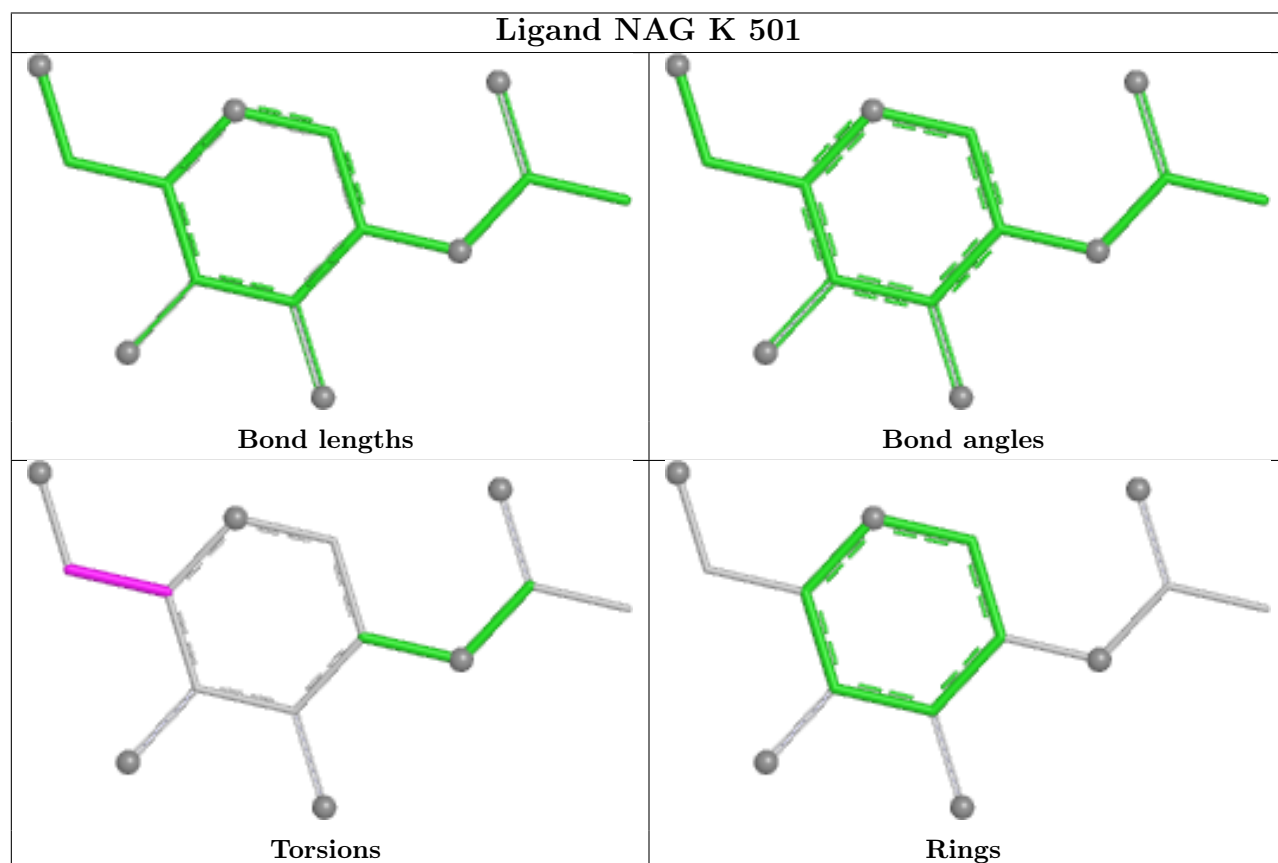
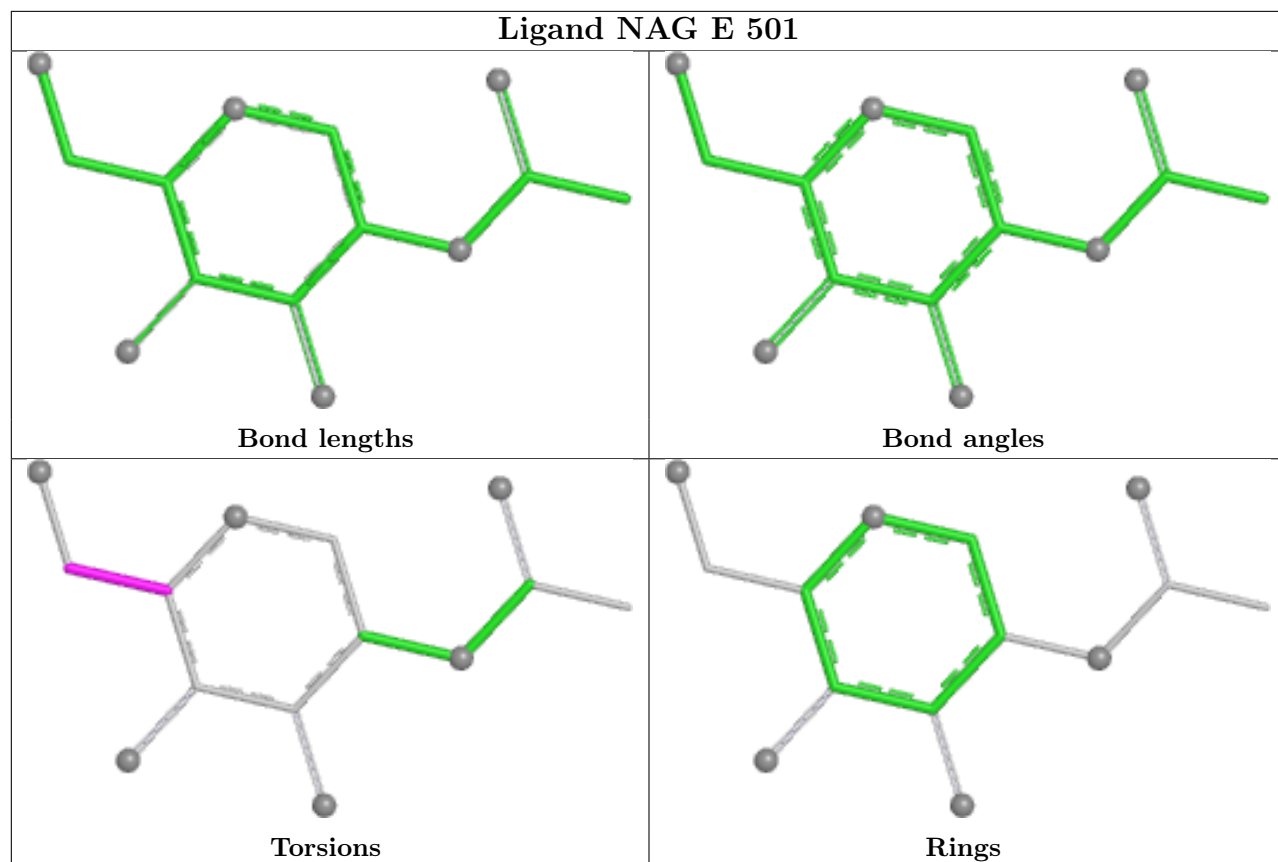
There are no ring outliers.

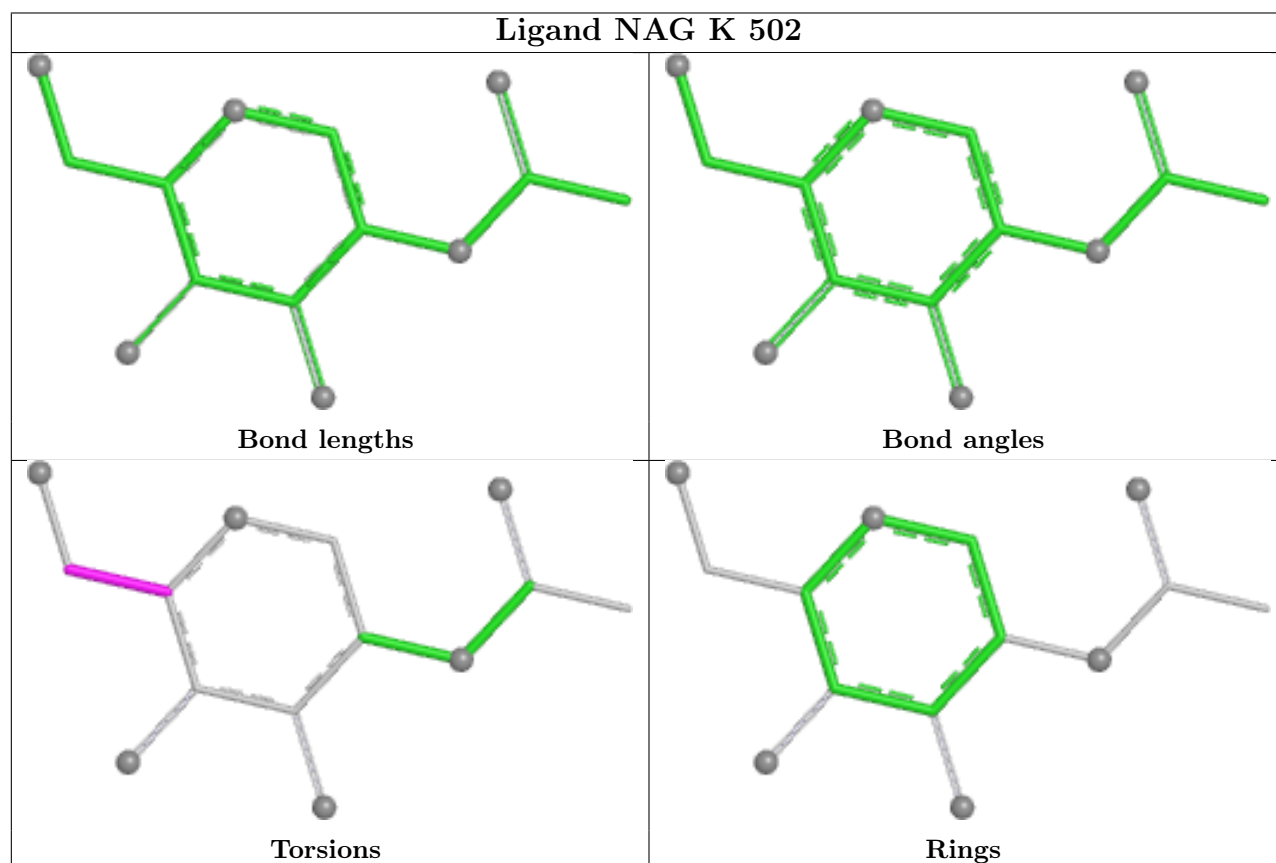
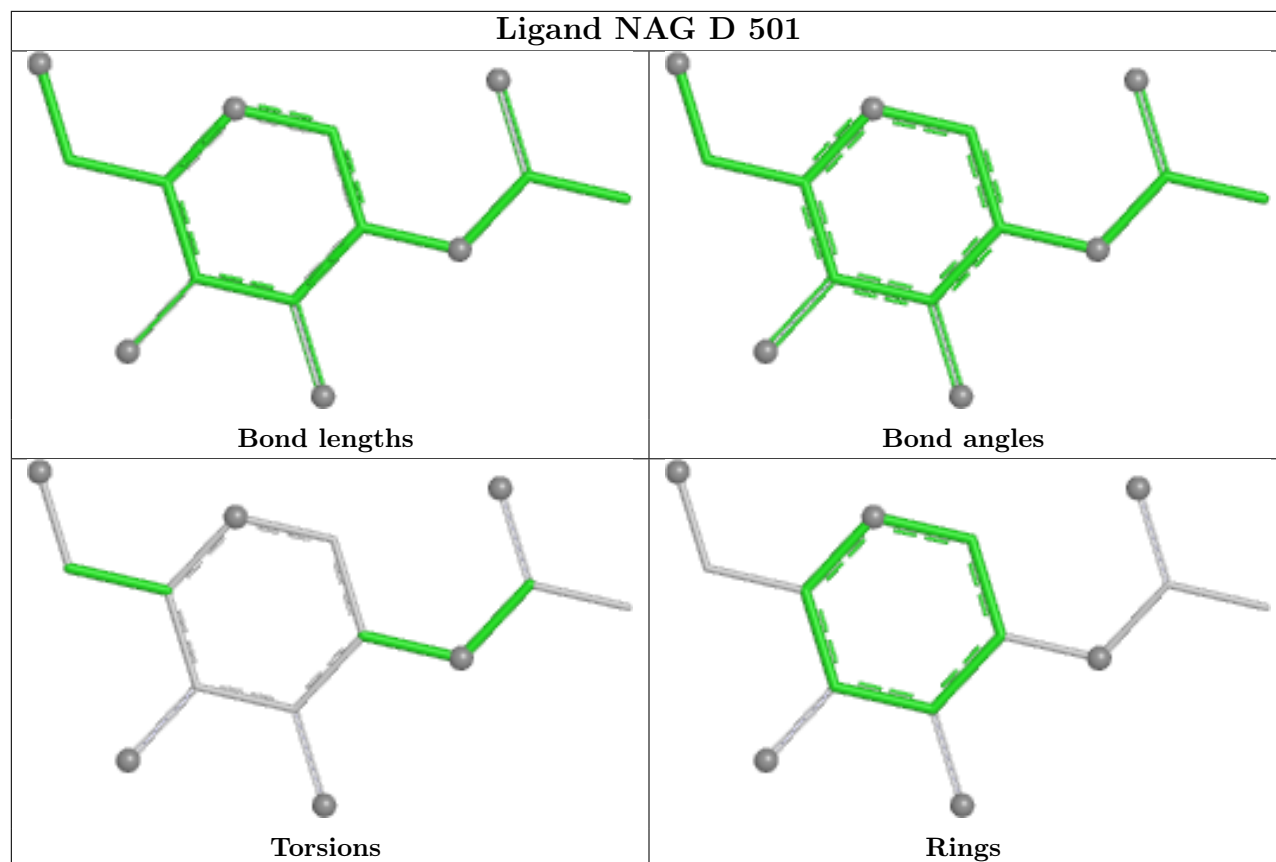
4 monomers are involved in 4 short contacts:

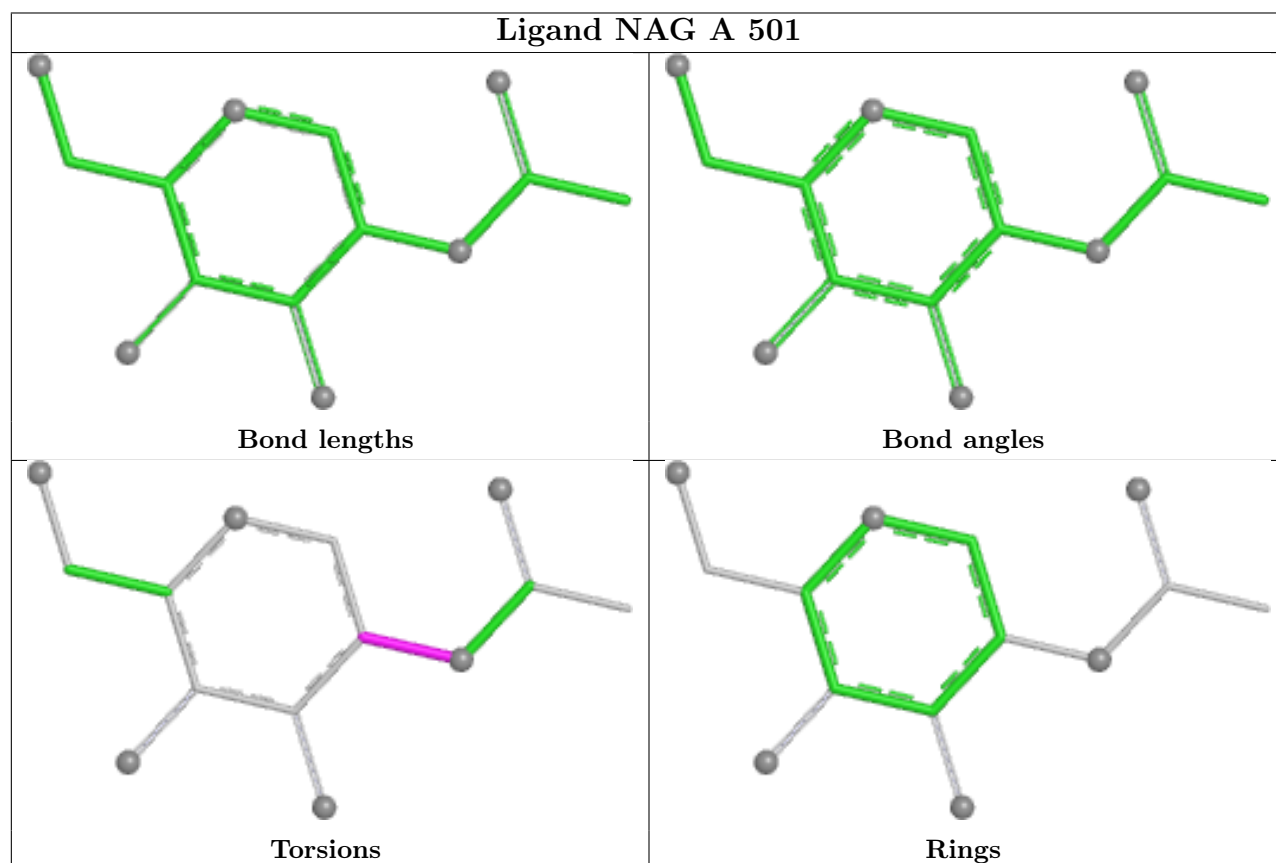
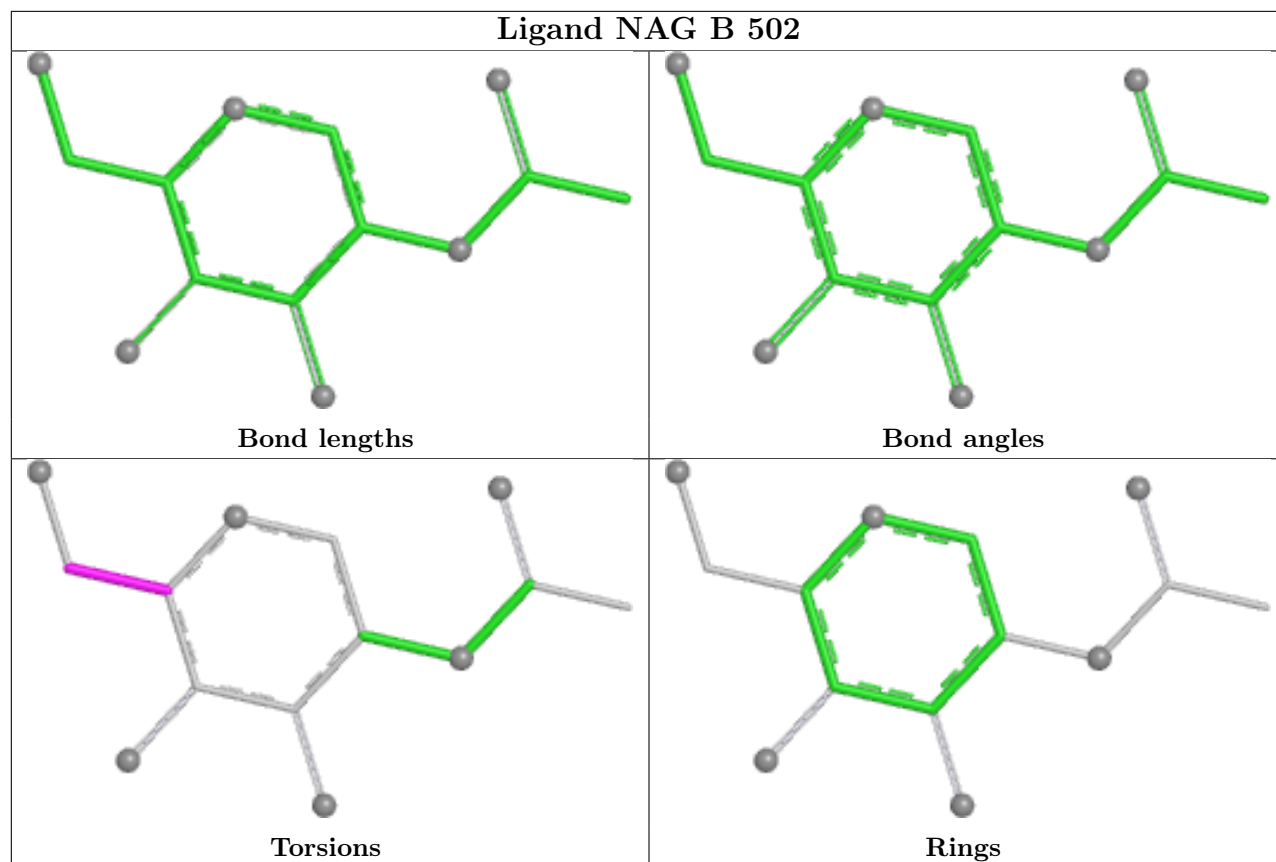
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	H	501	NAG	1	0
6	J	501	NAG	1	0
6	E	501	NAG	1	0
6	G	501	NAG	1	0

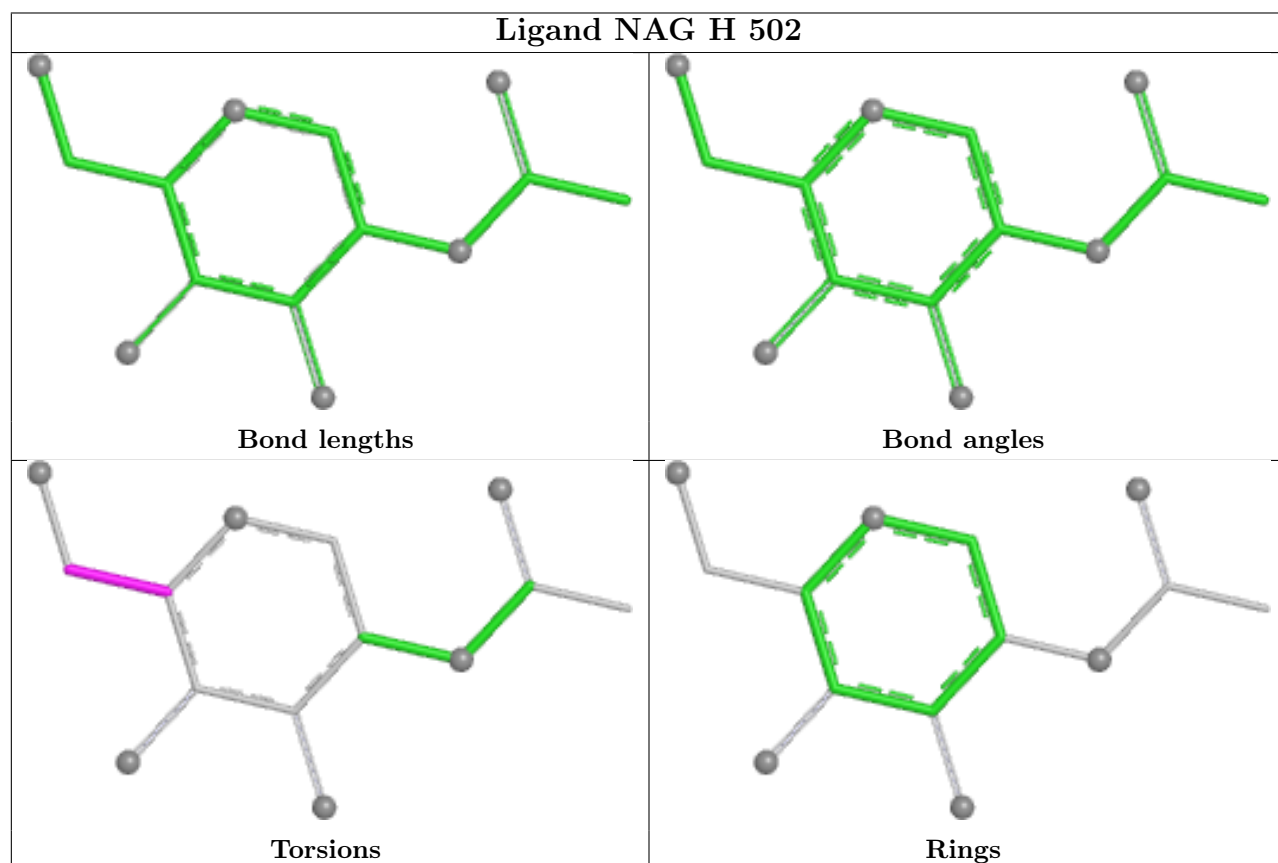
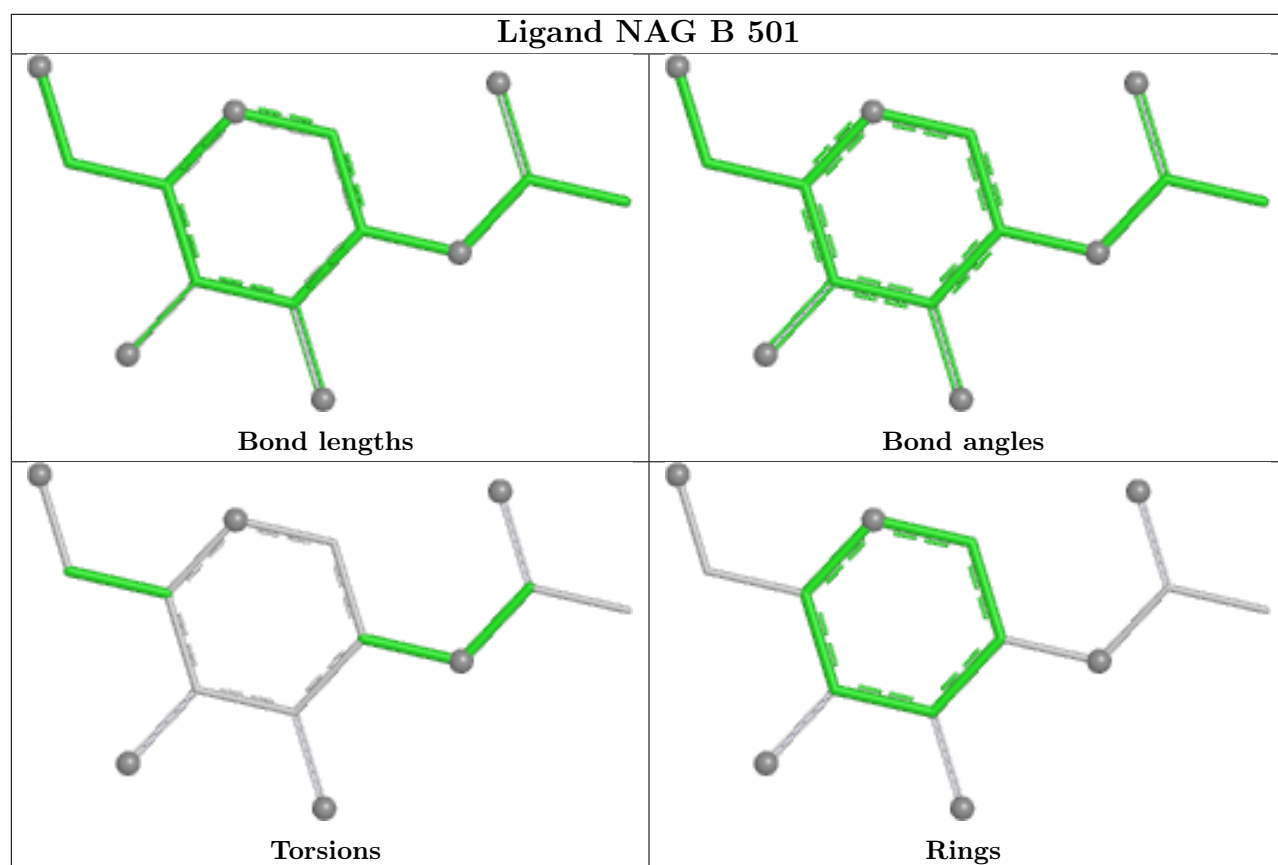
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

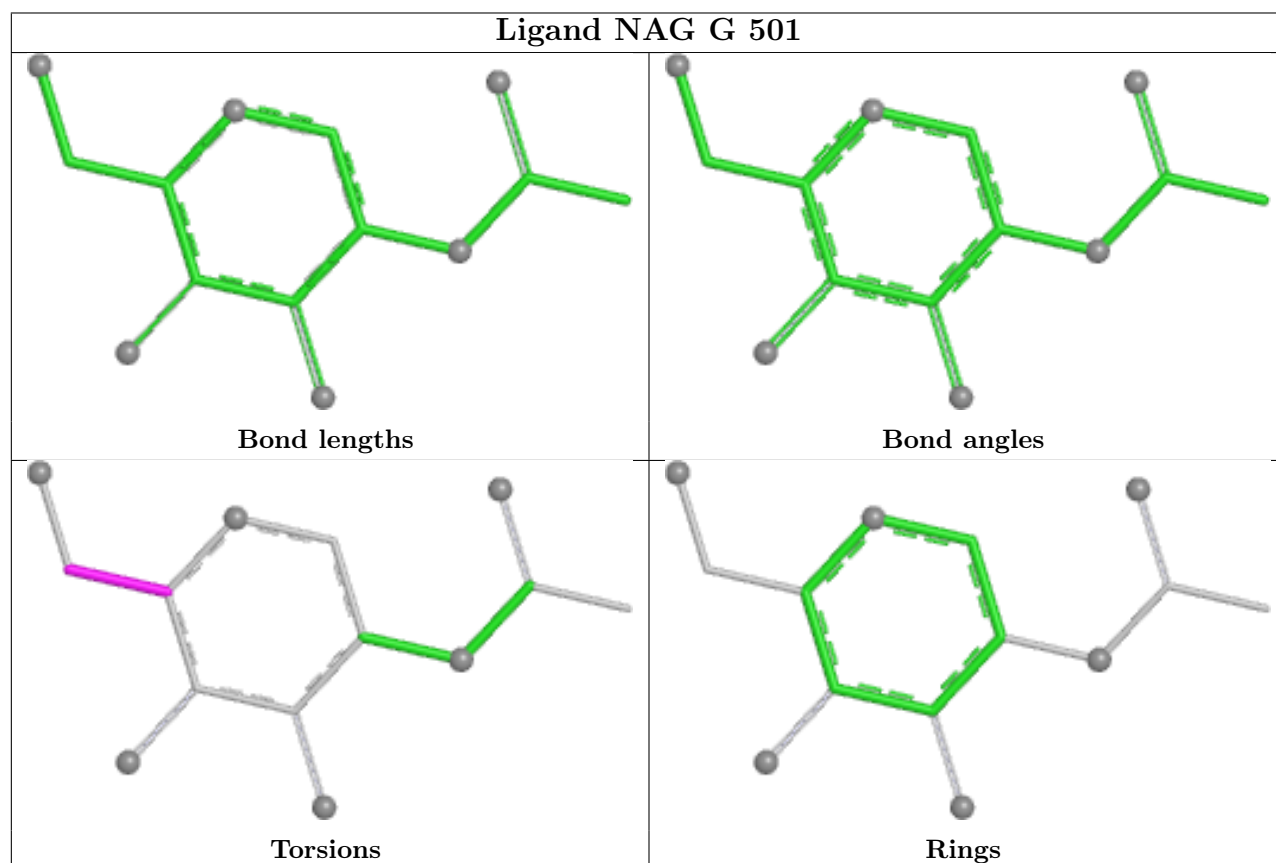
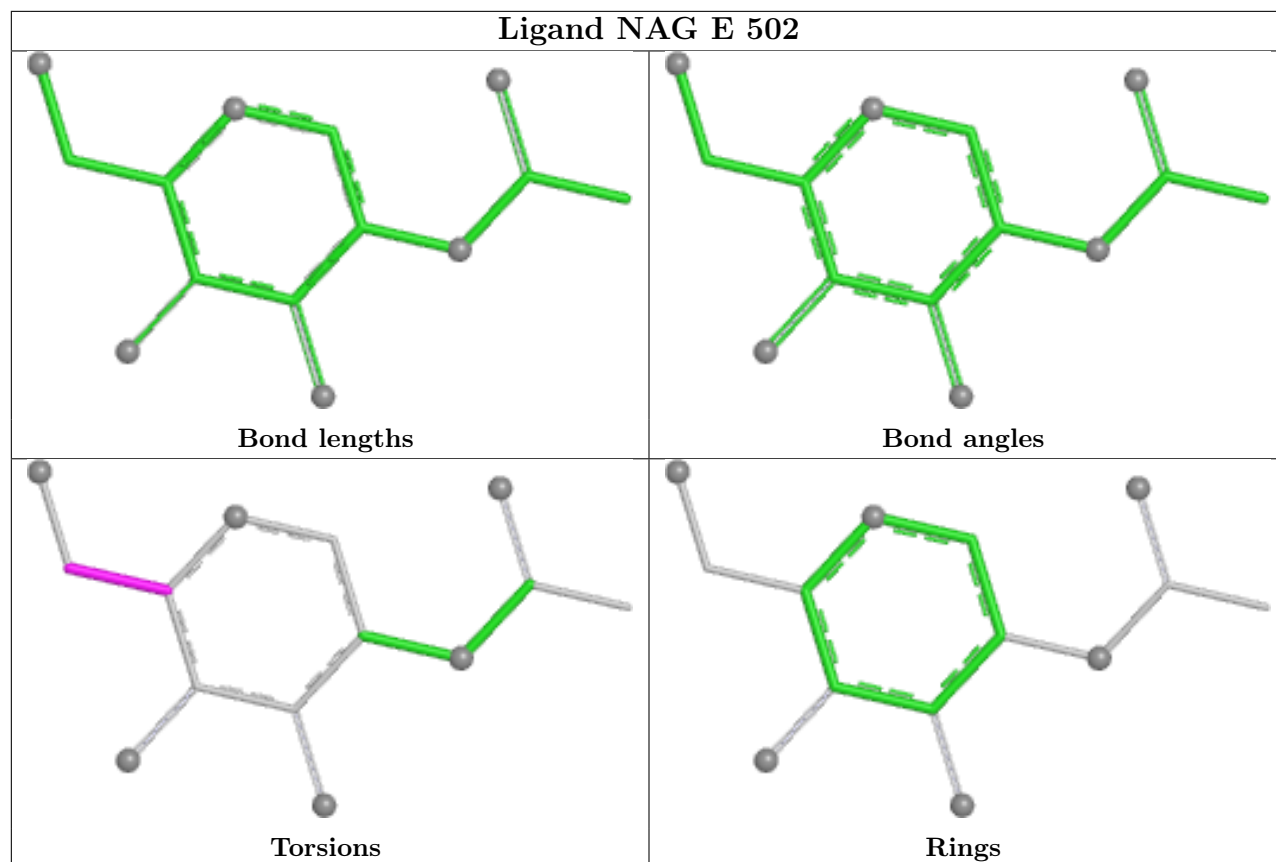












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
5	N	1
5	R	1
5	P	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	N	109:LEU	C	110:GLN	N	3.86
1	R	109:LEU	C	110:GLN	N	3.83
1	P	109:LEU	C	110:GLN	N	3.41

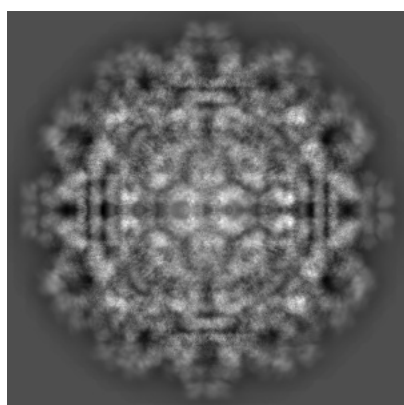
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25103. These allow visual inspection of the internal detail of the map and identification of artifacts.

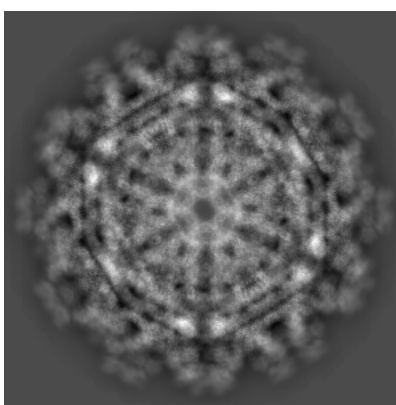
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

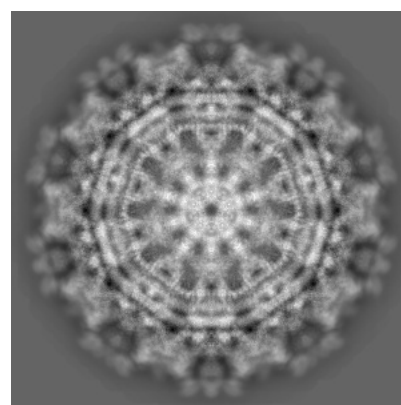
6.1.1 Primary map



X



Y

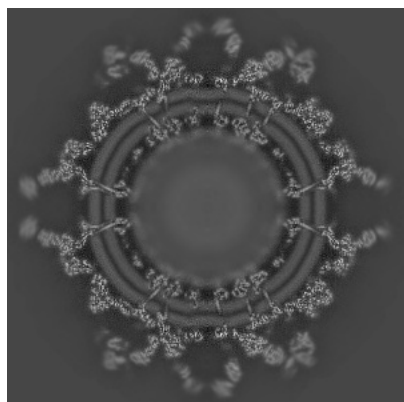


Z

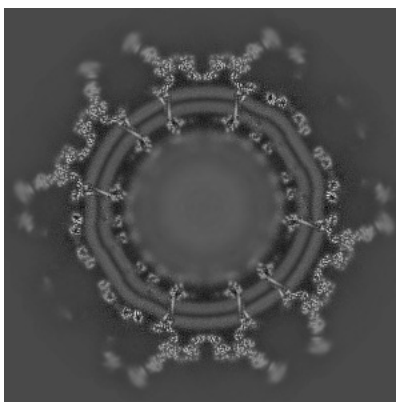
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

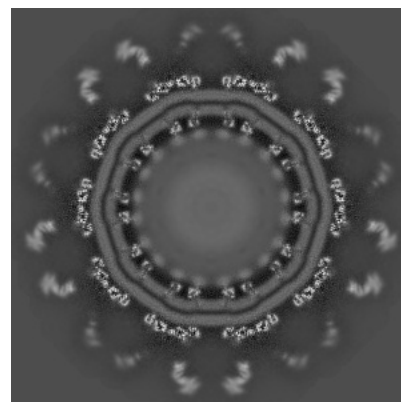
6.2.1 Primary map



X Index: 275



Y Index: 275

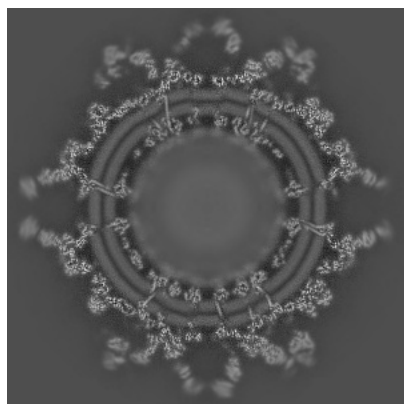


Z Index: 275

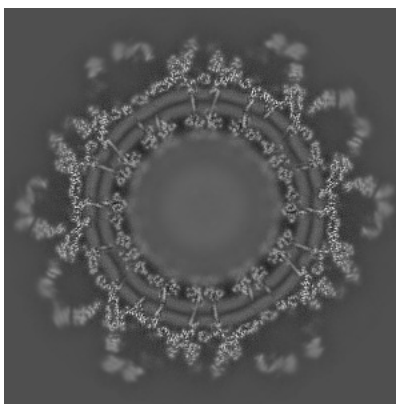
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

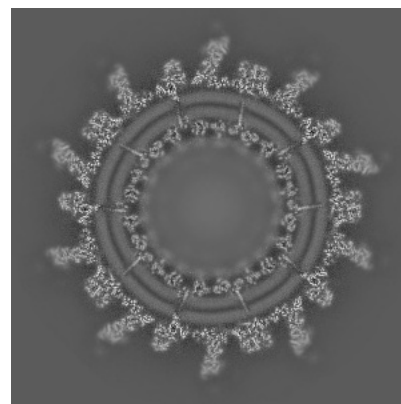
6.3.1 Primary map



X Index: 277



Y Index: 293

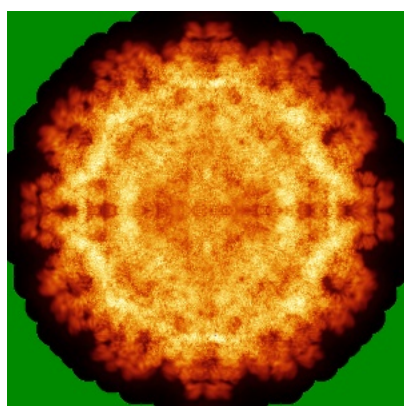


Z Index: 228

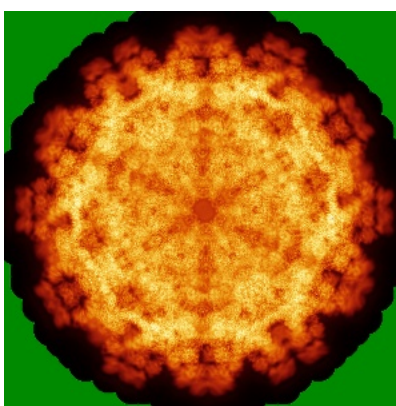
The images above show the largest variance slices of the map in three orthogonal directions.

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

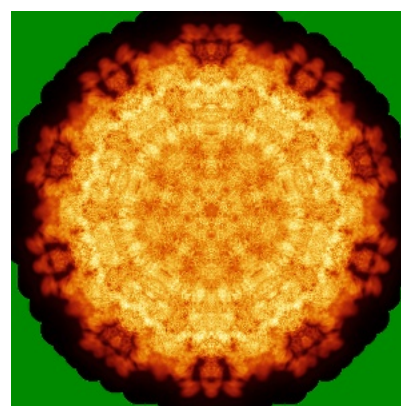
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views

This section was not generated.

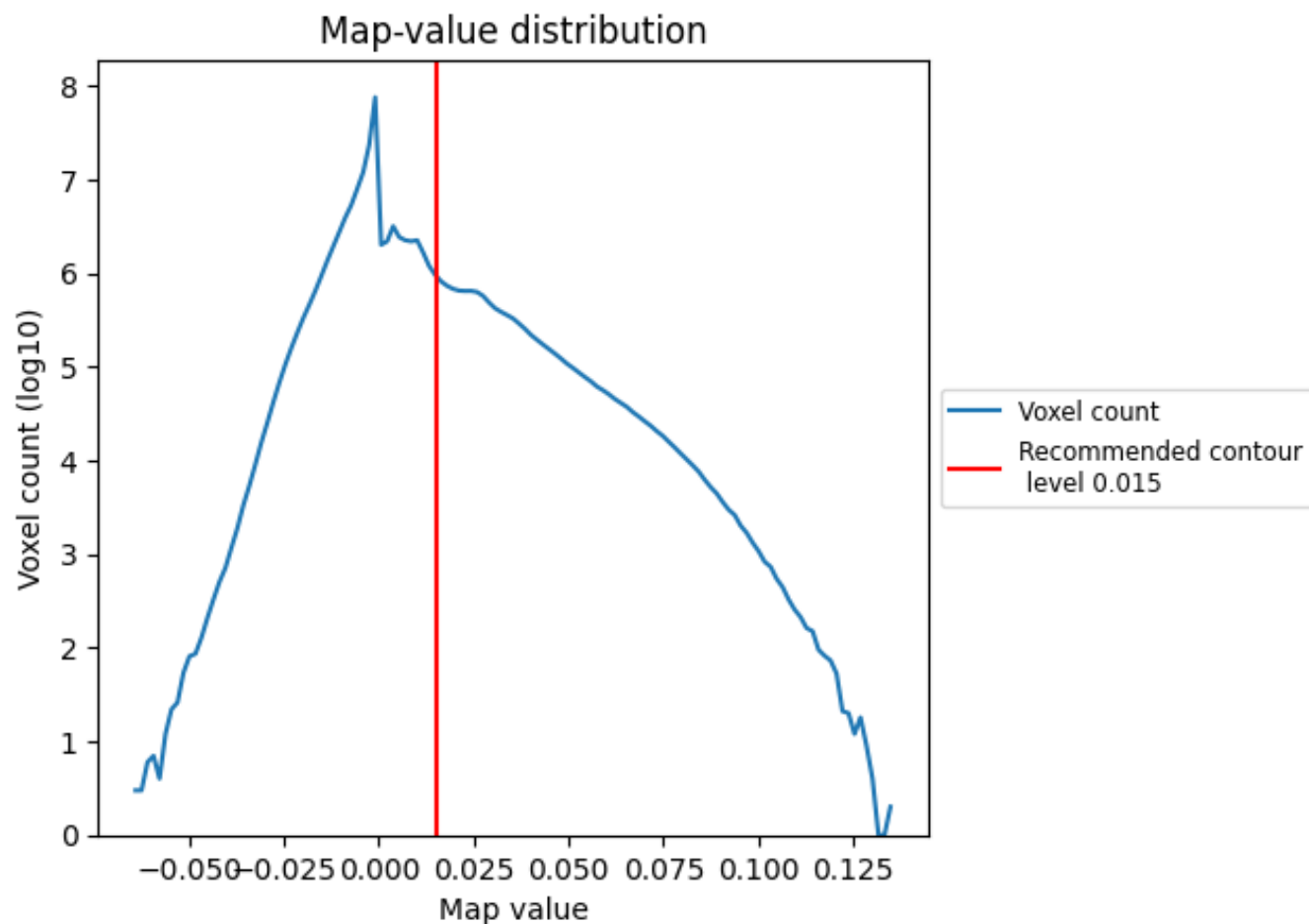
6.6 Mask visualisation

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

7 Map analysis [i](#)

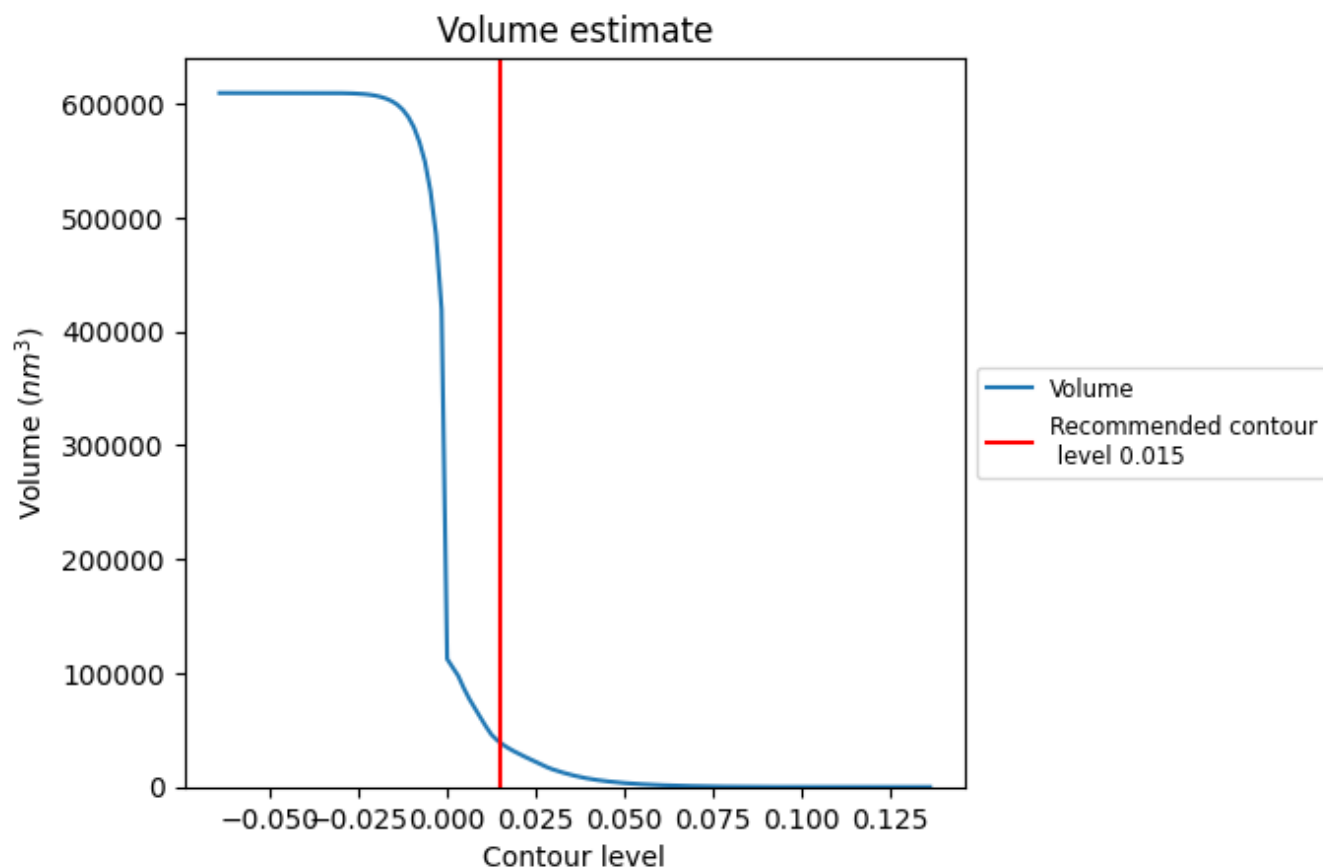
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

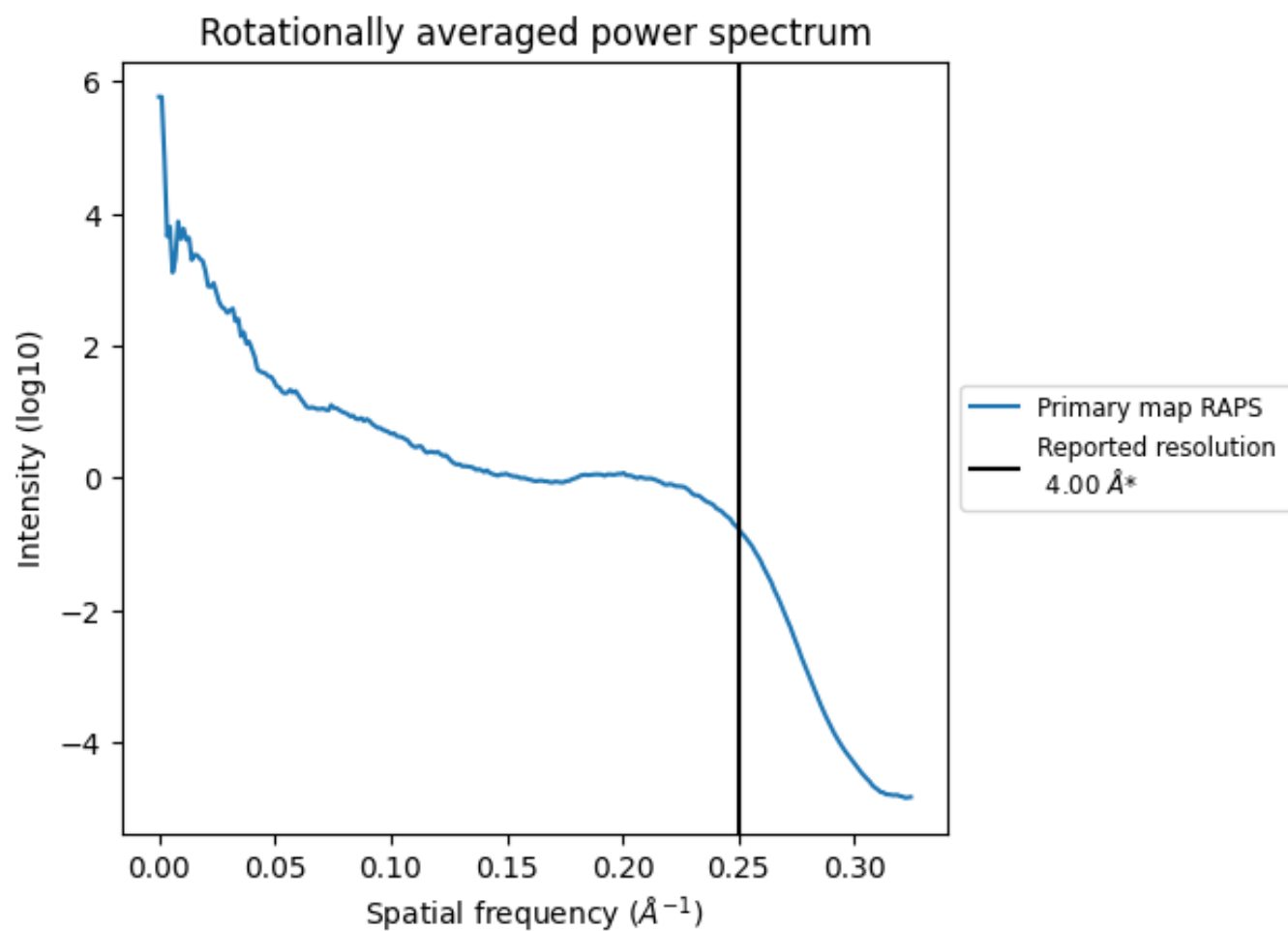
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 39253 nm^3 ; this corresponds to an approximate mass of 35458 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.250 Å⁻¹

8 Fourier-Shell correlation ⓘ

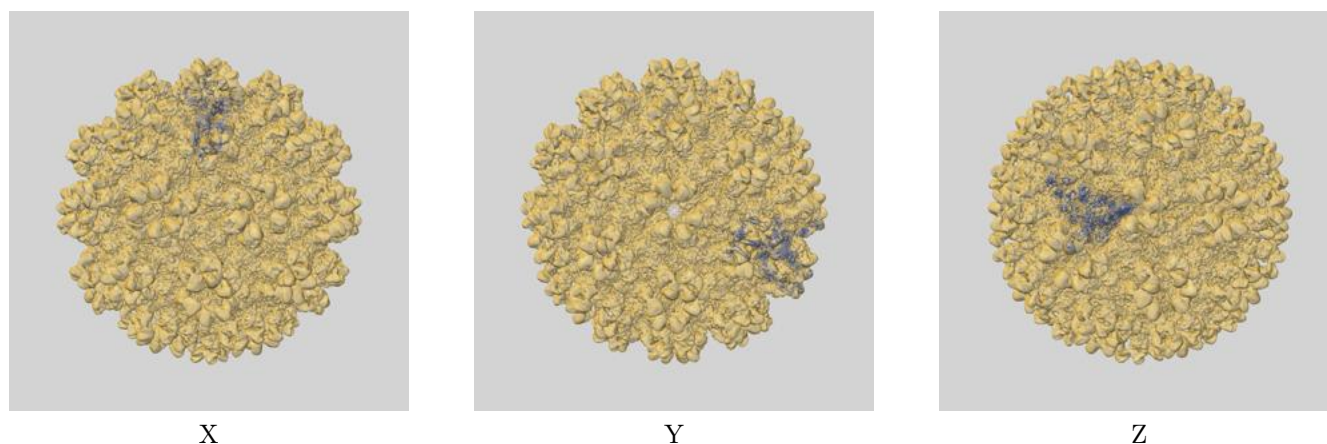
This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

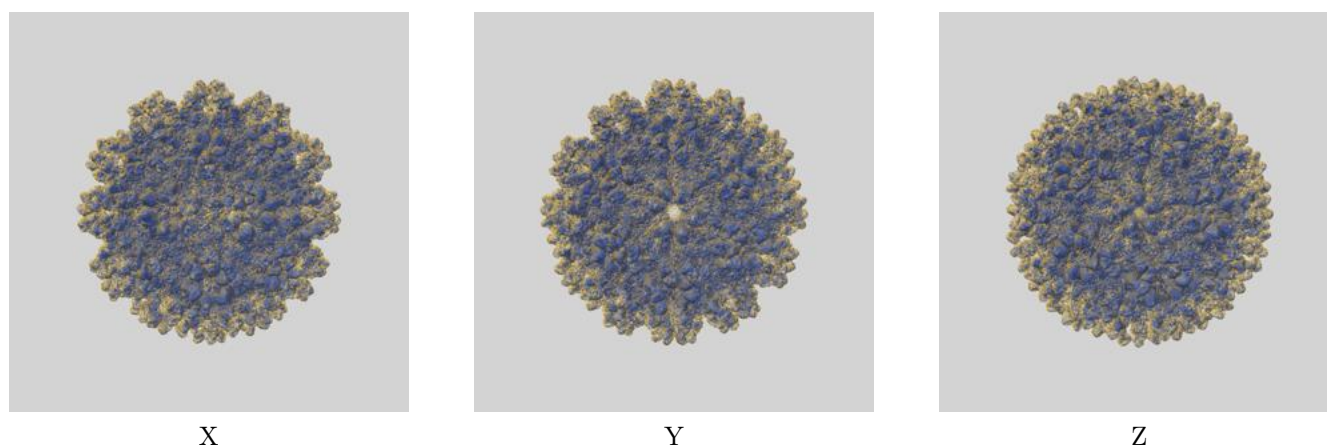
This section contains information regarding the fit between EMDB map EMD-25103 and PDB model 7SFV. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlays

9.1.1 Map-model overlay [i](#)

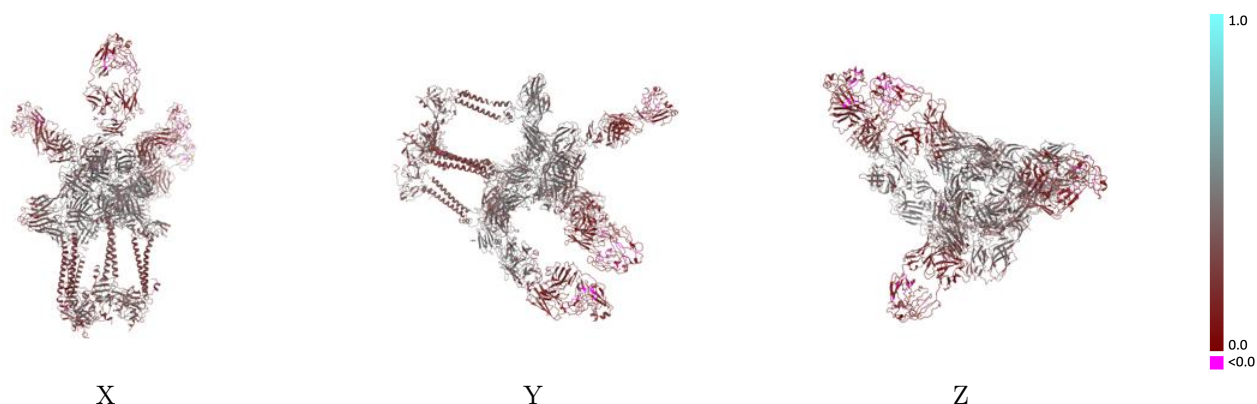


9.1.2 Map-model assembly overlay [i](#)



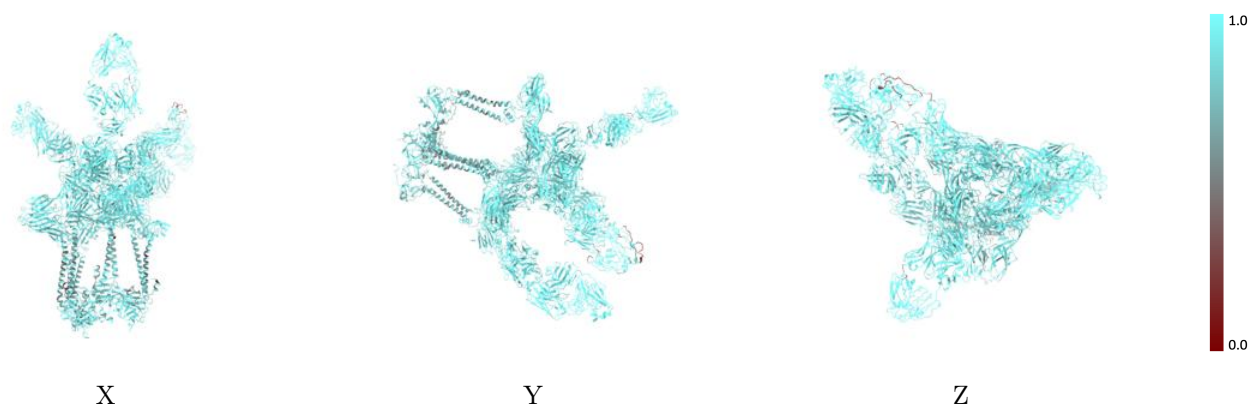
The images above show the 3D surface view of the map at the recommended contour level 0.015 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



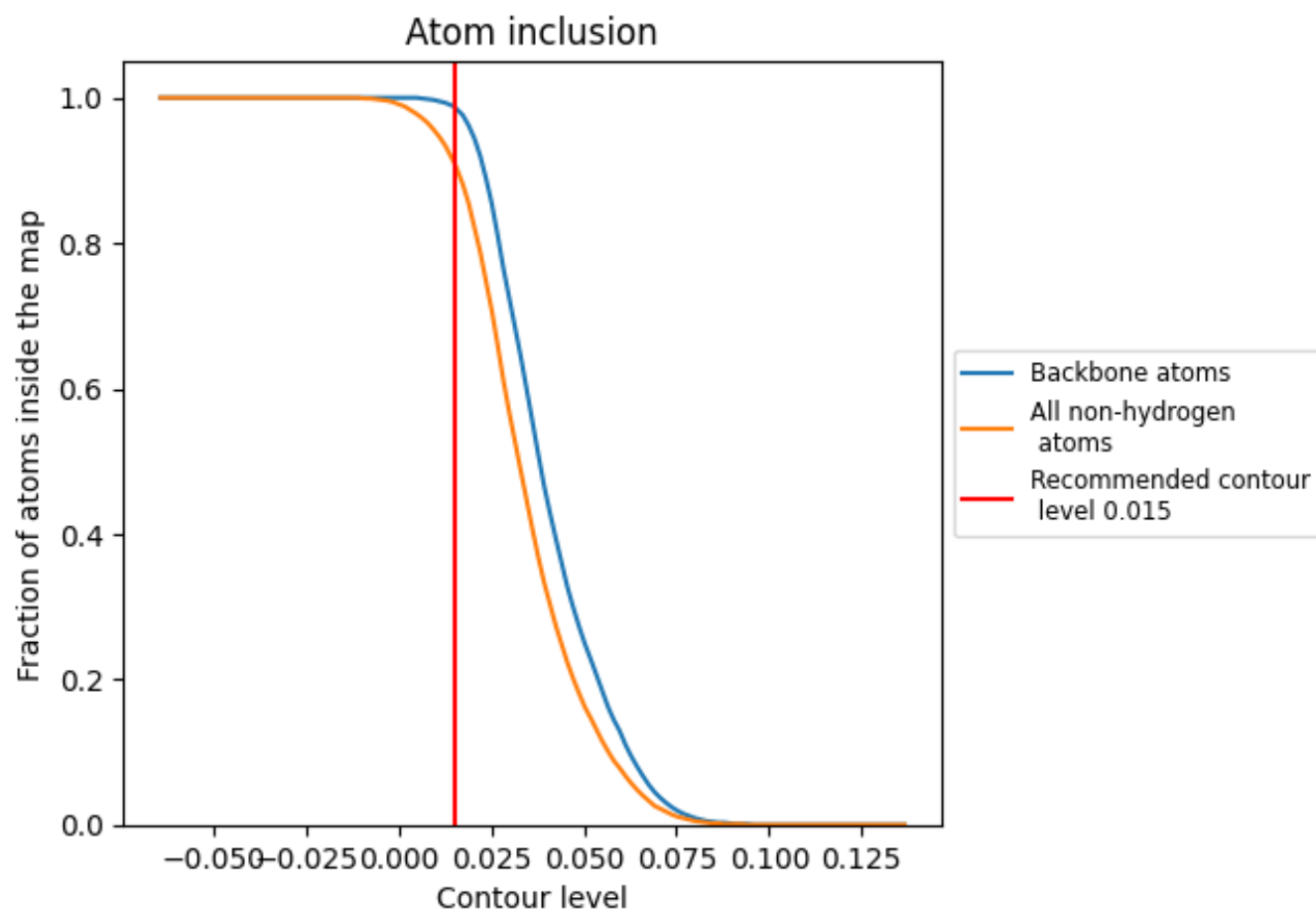
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.015).

9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 91% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9110	 0.3240
A	 0.9050	 0.3990
B	 0.9180	 0.3820
C	 0.8070	 0.3320
D	 0.9050	 0.3930
E	 0.9110	 0.3730
F	 0.8090	 0.3270
G	 0.8980	 0.3660
H	 0.9120	 0.3650
I	 0.7970	 0.3170
J	 0.9170	 0.4180
K	 0.9250	 0.3850
L	 0.8140	 0.3490
M	 0.9650	 0.1720
N	 0.9760	 0.1940
O	 0.9740	 0.1640
P	 0.9670	 0.1920
Q	 0.9600	 0.1610
R	 0.9790	 0.1890
S	 0.9370	 0.1510
T	 0.9030	 0.1600

