



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 20, 2023 – 12:59 pm GMT

PDB ID : 8BZ5
Title : Crystal structure of the *L. monocytogenes* RmlT in complex with HEPES
Authors : Cereija, T.B.; Morais-Cabral, J.H.
Deposited on : 2022-12-14
Resolution : 2.30 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp>

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:

MolProbity : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

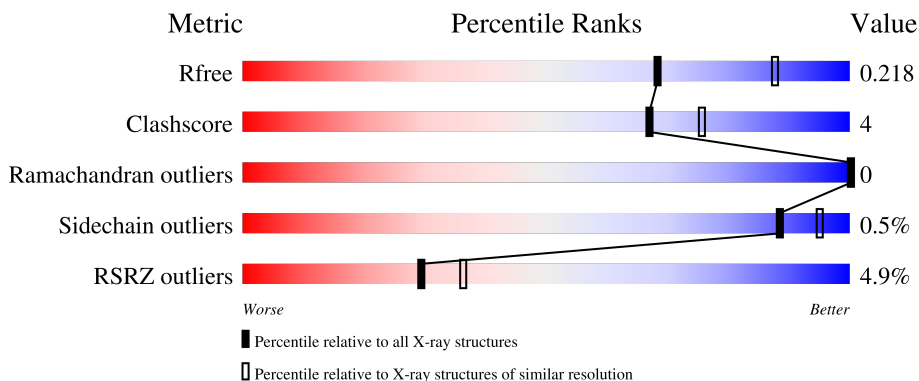
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION



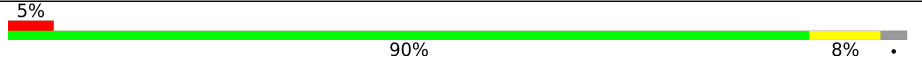
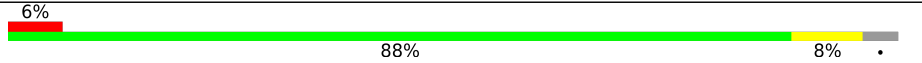
The reported resolution of this entry is 2.30 Å.

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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	624	
1	B	624	
1	C	624	
1	D	624	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 20336 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Glycosyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	603	4891	3122	813	944	12	0	0	0
1	B	600	4881	3114	812	943	12	0	2	0
1	C	608	4932	3143	822	955	12	0	1	0
1	D	598	4860	3101	807	940	12	0	1	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	expression tag	UNP A0A401AAP7
B	0	GLY	-	expression tag	UNP A0A401AAP7
C	0	GLY	-	expression tag	UNP A0A401AAP7
D	0	GLY	-	expression tag	UNP A0A401AAP7

- Molecule 2 is 4-(2-HYDROXYETHYL)-1-PIPERAZINE ETHANESULFONIC ACID (three-letter code: EPE) (formula: $C_8H_{18}N_2O_4S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
2	A	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	A	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	A	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	A	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	A	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	B	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	B	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	B	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	B	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	B	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	B	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	C	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	C	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	C	1	Total	C	N	O	S	0	0
			15	8	2	4	1		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	D	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	D	1	Total	C	N	O	S	0	0
			15	8	2	4	1		
2	D	1	Total	C	N	O	S	0	0
			15	8	2	4	1		

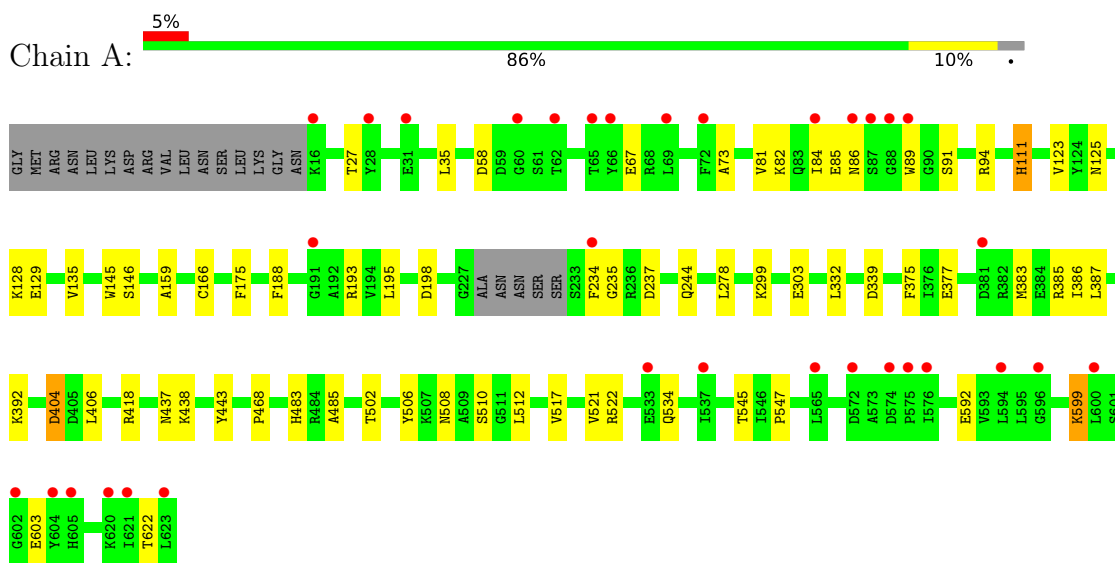
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	155	Total	O	0	0
			155	155		
3	B	148	Total	O	0	0
			148	148		
3	C	89	Total	O	0	0
			89	89		
3	D	110	Total	O	0	0
			110	110		

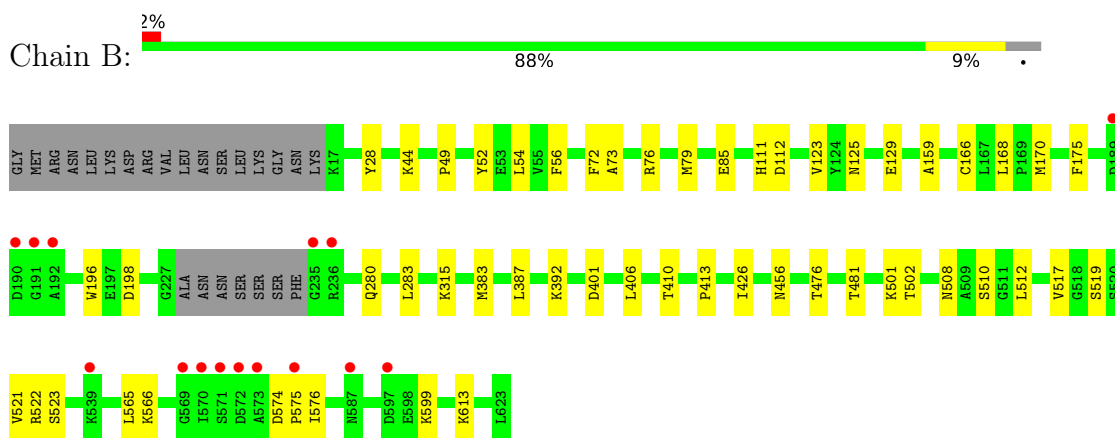
3 Residue-property plots [i](#)

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 electron 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 dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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.

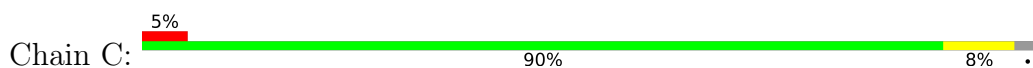
- Molecule 1: Glycosyltransferase

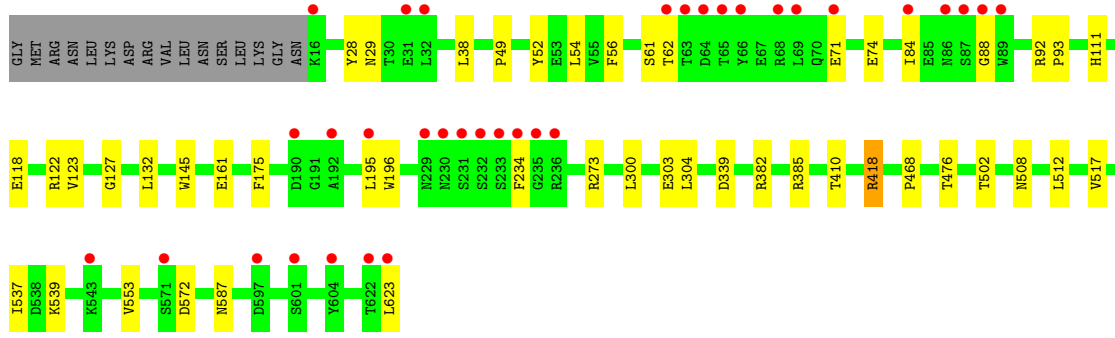


- Molecule 1: Glycosyltransferase

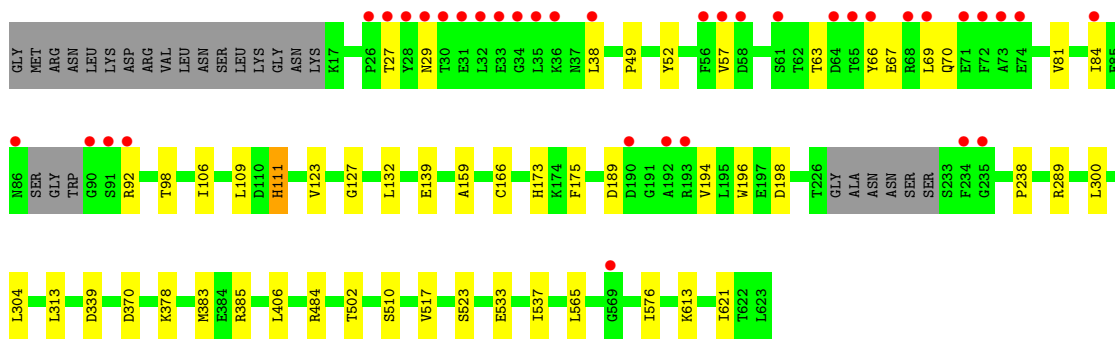
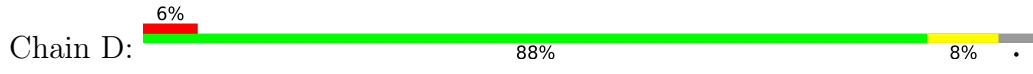


- Molecule 1: Glycosyltransferase





• Molecule 1: Glycosyltransferase



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	82.08Å 178.37Å 92.15Å 90.00° 93.52° 90.00°	Depositor
Resolution (Å)	48.12 – 2.30 48.12 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.1 (48.12-2.30) 99.1 (48.12-2.30)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	0.11	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.61 (at 2.29Å)	Xtrriage
Refinement program	PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.193 , 0.220 0.191 , 0.218	Depositor DCC
R_{free} test set	5698 reflections (4.91%)	wwPDB-VP
Wilson B-factor (Å ²)	49.1	Xtrriage
Anisotropy	0.233	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 37.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	20336	wwPDB-VP
Average B, all atoms (Å ²)	60.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.74% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

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: EPE

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	0.28	0/4991	0.49	0/6736
1	B	0.27	0/4980	0.48	0/6722
1	C	0.26	0/5033	0.48	0/6795
1	D	0.27	0/4957	0.49	0/6689
All	All	0.27	0/19961	0.49	0/26942

There are no bond length outliers.

There are no bond angle outliers.

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	4891	0	4842	45	0
1	B	4881	0	4833	35	0
1	C	4932	0	4875	29	0
1	D	4860	0	4811	39	0
2	A	75	0	87	6	0
2	B	90	0	104	8	0
2	C	60	0	68	4	0
2	D	45	0	51	3	0
3	A	155	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	148	0	0	0	0
3	C	89	0	0	0	0
3	D	110	0	0	0	0
All	All	20336	0	19671	154	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 4.

All (154) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:510:SER:OG	2:D:702:EPE:H32	1.62	0.98
1:D:69:LEU:C	1:D:69:LEU:HD13	1.98	0.83
1:D:69:LEU:HD11	1:D:81:VAL:HG21	1.61	0.82
1:C:196:TRP:HD1	2:C:701:EPE:H32	1.45	0.80
1:D:69:LEU:CD1	1:D:81:VAL:HG21	2.11	0.79
1:A:521:VAL:HG23	1:A:522:ARG:HG3	1.67	0.76
1:C:145:TRP:HZ2	2:C:703:EPE:H61	1.51	0.75
1:A:89:TRP:HD1	1:A:91:SER:H	1.38	0.71
1:A:545:THR:HG22	1:A:592:GLU:HG2	1.73	0.70
1:A:404:ASP:OD2	1:A:404:ASP:N	2.21	0.70
1:B:125:ASN:O	1:B:129:GLU:HG2	1.93	0.68
2:A:703:EPE:H102	3:A:804:HOH:O	1.93	0.68
1:D:383:MET:HG3	1:D:406:LEU:HD11	1.76	0.66
1:B:73:ALA:HA	1:B:79:MET:HE3	1.79	0.65
1:D:69:LEU:C	1:D:69:LEU:CD1	2.66	0.63
1:D:300:LEU:HG	1:D:304:LEU:HD12	1.80	0.63
1:B:521:VAL:HG12	1:B:522:ARG:HG3	1.79	0.63
1:D:27:THR:HG21	1:D:57:VAL:O	1.99	0.62
1:C:410:THR:HG1	1:C:476:THR:HG1	1.46	0.62
1:A:195:LEU:HD11	1:A:235:GLY:HA3	1.82	0.62
1:D:69:LEU:HD12	1:D:70:GLN:HG2	1.82	0.61
1:D:29:ASN:H	1:D:111:HIS:CE1	2.17	0.61
1:A:510:SER:OG	2:A:702:EPE:H32	2.01	0.61
1:B:413:PRO:HG2	1:B:426:ILE:HB	1.83	0.60
1:B:512:LEU:HD11	2:B:705:EPE:H32	1.83	0.60
1:D:69:LEU:HD11	1:D:81:VAL:CG2	2.30	0.59
1:A:125:ASN:O	1:A:129:GLU:HG2	2.02	0.59
1:B:123:VAL:HG11	1:B:175:PHE:CG	2.38	0.59
1:D:84:ILE:HG23	1:D:92:ARG:HH21	1.68	0.58
1:A:387:LEU:HB2	1:A:392:LYS:HG3	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:315:LYS:NZ	1:B:401:ASP:O	2.36	0.58
1:D:63:THR:HA	1:D:67:GLU:HB2	1.86	0.58
1:A:599:LYS:HD3	1:A:599:LYS:H	1.68	0.58
1:C:145:TRP:CZ2	2:C:703:EPE:H61	2.36	0.58
1:A:377:GLU:HG3	1:A:386:ILE:HG12	1.85	0.58
1:A:84:ILE:HG22	1:A:86:ASN:H	1.67	0.57
1:B:383:MET:HG3	1:B:406:LEU:HD11	1.85	0.57
1:D:98:THR:HG23	1:D:106:ILE:HD12	1.86	0.57
2:A:704:EPE:H31	2:A:704:EPE:O8	2.03	0.57
1:A:508:ASN:HD21	1:A:512:LEU:HB2	1.70	0.57
1:A:339:ASP:OD1	1:A:385:ARG:NH2	2.38	0.56
1:A:89:TRP:HB3	1:A:193:ARG:HE	1.68	0.56
1:D:159:ALA:HB1	1:D:166:CYS:HB2	1.88	0.56
1:C:418:ARG:HB3	1:C:468:PRO:HG2	1.87	0.56
1:D:139:GLU:OE2	1:D:173:HIS:ND1	2.34	0.56
1:D:38:LEU:HD11	1:D:109:LEU:HD21	1.87	0.55
1:A:123:VAL:HG11	1:A:175:PHE:CG	2.41	0.54
1:C:303:GLU:HB2	1:C:304:LEU:HD12	1.89	0.54
1:D:370:ASP:OD1	1:D:484:ARG:NH1	2.39	0.54
1:B:280:GLN:N	2:B:706:EPE:O3S	2.24	0.54
1:A:534:GLN:HB3	1:A:547:PRO:HG2	1.90	0.53
1:C:84:ILE:HD11	1:C:93:PRO:HG3	1.90	0.53
1:B:476:THR:HG22	1:B:481:THR:HG23	1.89	0.52
1:C:123:VAL:HG11	1:C:175:PHE:CG	2.44	0.52
1:D:196:TRP:HD1	2:D:701:EPE:H51	1.74	0.52
1:D:523:SER:HB2	1:D:613:LYS:HB3	1.90	0.52
1:C:196:TRP:CD1	2:C:701:EPE:H32	2.36	0.52
1:A:234:PHE:HE1	1:A:244:GLN:HE21	1.58	0.52
2:A:705:EPE:O2S	2:A:705:EPE:H51	2.10	0.52
1:C:300:LEU:HG	1:C:304:LEU:HD13	1.90	0.52
1:A:599:LYS:HD3	1:A:599:LYS:N	2.25	0.51
1:A:85:GLU:H	1:A:85:GLU:CD	2.14	0.51
1:B:523:SER:HB2	1:B:613:LYS:HB3	1.92	0.51
1:A:198:ASP:N	1:A:198:ASP:OD1	2.44	0.51
1:A:145:TRP:CZ2	1:A:485:ALA:HB2	2.46	0.51
1:C:118:GLU:O	1:C:122:ARG:HG2	2.12	0.50
1:B:196:TRP:HD1	2:B:701:EPE:H51	1.75	0.50
1:B:410:THR:HG1	1:B:476:THR:HG1	1.52	0.50
1:C:339:ASP:OD1	1:C:385:ARG:NH2	2.38	0.50
1:D:339:ASP:OD2	1:D:385:ARG:NH2	2.45	0.50
3:A:843:HOH:O	1:B:599:LYS:HD3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:508:ASN:HB2	2:A:702:EPE:H92	1.94	0.49
1:A:35:LEU:HD12	1:A:35:LEU:O	2.13	0.49
1:B:72:PHE:HB3	1:B:79:MET:HE1	1.93	0.49
1:C:28:TYR:CG	1:C:29:ASN:N	2.82	0.48
1:D:533:GLU:H	1:D:533:GLU:CD	2.17	0.48
1:A:111:HIS:H	1:A:111:HIS:CD2	2.32	0.47
1:D:29:ASN:O	1:D:111:HIS:NE2	2.47	0.47
1:D:537:ILE:HD11	1:D:621:ILE:HB	1.97	0.47
1:A:383:MET:HG3	1:A:406:LEU:HD11	1.97	0.47
1:B:159:ALA:HB1	1:B:166:CYS:HB2	1.95	0.47
1:D:238:PRO:HD3	1:D:289:ARG:NH1	2.29	0.47
1:A:299:LYS:HE2	1:A:303:GLU:OE2	2.15	0.47
1:B:565:LEU:HB2	1:B:576:ILE:HB	1.97	0.47
1:C:127:GLY:HA2	1:C:132:LEU:HD12	1.97	0.47
1:C:38:LEU:HD13	1:C:111:HIS:HA	1.97	0.47
1:B:49:PRO:HA	1:B:52:TYR:CE2	2.51	0.46
1:A:159:ALA:HB1	1:A:166:CYS:HB2	1.96	0.46
1:B:387:LEU:HB2	1:B:392:LYS:HG3	1.97	0.46
1:A:375:PHE:CZ	1:A:438:LYS:HD3	2.50	0.46
1:D:66:TYR:O	1:D:69:LEU:HB3	2.15	0.46
1:C:88:GLY:HA3	1:C:93:PRO:HD3	1.96	0.46
1:B:510:SER:HB3	2:B:705:EPE:H31	1.98	0.46
1:B:112:ASP:OD1	1:B:112:ASP:N	2.48	0.45
1:C:49:PRO:HA	1:C:52:TYR:CE2	2.51	0.45
1:D:370:ASP:CG	1:D:484:ARG:HH12	2.20	0.45
1:C:61:SER:OG	1:C:62:THR:N	2.48	0.45
2:B:702:EPE:O8	2:B:705:EPE:H22	2.17	0.45
1:B:566:LYS:HD3	1:B:575:PRO:HG3	1.99	0.45
1:D:123:VAL:HG11	1:D:175:PHE:CG	2.51	0.45
1:A:94:ARG:NH2	3:A:818:HOH:O	2.49	0.44
1:C:88:GLY:HA3	1:C:92:ARG:HB3	1.98	0.44
1:D:198:ASP:N	1:D:198:ASP:OD1	2.49	0.44
1:B:508:ASN:HB2	2:B:702:EPE:H91	1.98	0.44
2:B:705:EPE:H31	2:B:705:EPE:H82	1.50	0.44
2:A:701:EPE:H31	2:A:701:EPE:H82	1.41	0.44
1:C:71:GLU:HA	1:C:74:GLU:HG2	1.99	0.44
1:C:572:ASP:N	1:C:572:ASP:OD1	2.49	0.44
1:D:49:PRO:HA	1:D:52:TYR:CE2	2.53	0.44
1:A:375:PHE:HZ	1:A:438:LYS:HD3	1.83	0.44
1:B:519:SER:HB3	1:B:613:LYS:HG3	1.99	0.43
1:A:27:THR:OG1	1:A:58:ASP:HB3	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:603:GLU:HA	1:A:622:THR:HA	2.00	0.43
1:C:54:LEU:HB3	1:C:56:PHE:HE1	1.83	0.43
1:A:73:ALA:HB2	1:A:81:VAL:HG23	1.99	0.43
1:B:502:THR:O	1:B:517:VAL:HA	2.18	0.43
1:A:278:LEU:HD22	1:A:332:LEU:HD13	2.01	0.43
1:A:599:LYS:H	1:A:599:LYS:CD	2.31	0.43
1:A:89:TRP:CD1	1:A:91:SER:HB2	2.54	0.42
1:A:502:THR:O	1:A:517:VAL:HA	2.19	0.42
1:D:565:LEU:HB2	1:D:576:ILE:HB	2.01	0.42
1:B:168:LEU:HD23	1:B:170:MET:HG3	2.01	0.42
1:A:123:VAL:HG13	1:A:135:VAL:HG11	2.01	0.42
1:D:189:ASP:OD2	1:D:194:VAL:HG11	2.18	0.42
1:D:313:LEU:HD23	1:D:313:LEU:HA	1.91	0.42
1:A:82:LYS:HG3	1:C:161:GLU:OE2	2.20	0.42
1:A:418:ARG:HB3	1:A:468:PRO:HG2	2.00	0.42
1:B:54:LEU:HD23	1:B:56:PHE:HE1	1.84	0.42
1:D:69:LEU:CD1	1:D:81:VAL:HG11	2.49	0.42
1:A:67:GLU:H	1:A:67:GLU:CD	2.23	0.42
1:C:502:THR:O	1:C:517:VAL:HA	2.20	0.41
1:C:537:ILE:HG21	1:C:623:LEU:HG	2.02	0.41
1:D:383:MET:HG3	1:D:406:LEU:CD1	2.48	0.41
2:D:703:EPE:H102	2:D:703:EPE:H21	1.67	0.41
1:A:437:ASN:HB2	1:A:443:TYR:CE2	2.56	0.41
1:A:506:TYR:OH	1:A:521:VAL:HG21	2.19	0.41
1:B:123:VAL:HG11	1:B:175:PHE:CD1	2.56	0.41
1:D:127:GLY:HA2	1:D:132:LEU:HD12	2.01	0.41
1:B:456:ASN:OD1	1:B:501:LYS:HE2	2.21	0.41
1:C:539:LYS:HB2	1:C:539:LYS:HE2	1.89	0.41
1:D:69:LEU:HD11	1:D:81:VAL:CB	2.50	0.41
1:B:198:ASP:N	1:B:198:ASP:OD1	2.54	0.41
1:D:502:THR:O	1:D:517:VAL:HA	2.21	0.41
1:B:76:ARG:HD2	1:B:79:MET:CE	2.51	0.41
1:B:574:ASP:OD1	1:B:574:ASP:N	2.53	0.41
1:D:378:LYS:HE3	1:D:383:MET:CE	2.50	0.41
1:B:28:TYR:CD2	2:B:703:EPE:H71	2.56	0.41
1:C:508:ASN:HD21	1:C:512:LEU:HB2	1.86	0.40
1:C:553:VAL:HB	1:C:587:ASN:HA	2.04	0.40
1:B:44[B]:LYS:N	1:B:44[B]:LYS:HD3	2.36	0.40
1:B:280:GLN:OE1	1:B:283:LEU:HD12	2.21	0.40
1:A:91:SER:HB3	1:A:188:PHE:HB3	2.03	0.40
1:A:146:SER:HB3	1:A:483:HIS:CE1	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:195:LEU:HD11	1:C:234:PHE:CG	2.56	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 X-ray entries followed by that with respect to entries of similar resolution.

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	599/624 (96%)	574 (96%)	25 (4%)	0	100	100
1	B	598/624 (96%)	571 (96%)	27 (4%)	0	100	100
1	C	607/624 (97%)	573 (94%)	34 (6%)	0	100	100
1	D	593/624 (95%)	574 (97%)	19 (3%)	0	100	100
All	All	2397/2496 (96%)	2292 (96%)	105 (4%)	0	100	100

There are no Ramachandran outliers to report.

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 X-ray entries followed by that with respect to entries of similar resolution.

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	535/553 (97%)	530 (99%)	5 (1%)	78	89
1	B	534/553 (97%)	532 (100%)	2 (0%)	91	96
1	C	540/553 (98%)	537 (99%)	3 (1%)	86	94
1	D	533/553 (96%)	532 (100%)	1 (0%)	93	97

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	2142/2212 (97%)	2131 (100%)	11 (0%)	88 95

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	111	HIS
1	A	128	LYS
1	A	237	ASP
1	A	404	ASP
1	A	599	LYS
1	B	85	GLU
1	B	111	HIS
1	C	273	ARG
1	C	382	ARG
1	C	418	ARG
1	D	111	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

18 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
2	EPE	B	706	-	15,15,15	0.81	1 (6%)	18,20,20	1.18	2 (11%)
2	EPE	D	702	-	15,15,15	0.68	0	18,20,20	0.99	1 (5%)
2	EPE	B	704	-	15,15,15	0.92	1 (6%)	18,20,20	1.23	2 (11%)
2	EPE	B	705	-	15,15,15	0.45	0	18,20,20	0.77	0
2	EPE	A	705	-	15,15,15	0.75	1 (6%)	18,20,20	1.35	2 (11%)
2	EPE	C	702	-	15,15,15	0.91	1 (6%)	18,20,20	1.25	2 (11%)
2	EPE	D	701	-	15,15,15	0.71	0	18,20,20	0.64	0
2	EPE	B	701	-	15,15,15	0.79	0	18,20,20	0.93	1 (5%)
2	EPE	A	703	-	15,15,15	0.76	0	18,20,20	1.06	2 (11%)
2	EPE	B	702	-	15,15,15	0.70	0	18,20,20	1.14	2 (11%)
2	EPE	A	704	-	15,15,15	0.88	1 (6%)	18,20,20	1.13	2 (11%)
2	EPE	C	701	-	15,15,15	0.75	0	18,20,20	1.11	1 (5%)
2	EPE	C	704	-	15,15,15	0.83	1 (6%)	18,20,20	0.74	1 (5%)
2	EPE	D	703	-	15,15,15	0.79	1 (6%)	18,20,20	0.88	1 (5%)
2	EPE	C	703	-	15,15,15	0.82	1 (6%)	18,20,20	1.43	2 (11%)
2	EPE	A	702	-	15,15,15	0.59	1 (6%)	18,20,20	0.55	0
2	EPE	B	703	-	15,15,15	0.58	1 (6%)	18,20,20	0.55	0
2	EPE	A	701	-	15,15,15	0.75	0	18,20,20	0.67	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
2	EPE	B	706	-	-	8/9/19/19	0/1/1/1
2	EPE	D	702	-	-	6/9/19/19	0/1/1/1
2	EPE	B	704	-	-	9/9/19/19	0/1/1/1
2	EPE	B	705	-	-	6/9/19/19	0/1/1/1
2	EPE	A	705	-	-	4/9/19/19	0/1/1/1
2	EPE	C	702	-	-	2/9/19/19	0/1/1/1
2	EPE	D	701	-	-	1/9/19/19	0/1/1/1
2	EPE	B	701	-	-	3/9/19/19	0/1/1/1
2	EPE	A	703	-	-	2/9/19/19	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	EPE	B	702	-	-	4/9/19/19	0/1/1/1
2	EPE	A	704	-	-	7/9/19/19	0/1/1/1
2	EPE	C	701	-	-	2/9/19/19	0/1/1/1
2	EPE	C	704	-	-	5/9/19/19	0/1/1/1
2	EPE	D	703	-	-	5/9/19/19	0/1/1/1
2	EPE	C	703	-	-	7/9/19/19	0/1/1/1
2	EPE	A	702	-	-	5/9/19/19	0/1/1/1
2	EPE	B	703	-	-	6/9/19/19	0/1/1/1
2	EPE	A	701	-	-	6/9/19/19	0/1/1/1

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	702	EPE	O2S-S	3.22	1.54	1.45
2	A	704	EPE	O2S-S	3.10	1.54	1.45
2	B	704	EPE	O2S-S	3.06	1.54	1.45
2	C	704	EPE	O1S-S	2.80	1.53	1.45
2	B	706	EPE	O2S-S	2.75	1.53	1.45
2	C	703	EPE	O1S-S	2.74	1.53	1.45
2	D	703	EPE	O1S-S	2.44	1.52	1.45
2	A	705	EPE	O1S-S	2.36	1.52	1.45
2	A	702	EPE	O3S-S	2.18	1.55	1.47
2	B	703	EPE	O3S-S	2.16	1.55	1.47

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	704	EPE	O2S-S-C10	-4.36	101.66	106.92
2	C	703	EPE	O3S-S-O2S	4.18	121.48	111.27
2	C	702	EPE	O2S-S-C10	-3.98	102.12	106.92
2	A	705	EPE	O1S-S-C10	-3.71	102.44	106.92
2	C	703	EPE	O1S-S-C10	-3.65	102.52	106.92
2	B	702	EPE	O3S-S-O2S	3.54	119.94	111.27
2	B	706	EPE	O3S-S-O1S	3.51	119.85	111.27
2	A	704	EPE	O3S-S-O1S	3.47	119.74	111.27
2	A	705	EPE	O3S-S-O2S	3.46	119.73	111.27
2	C	701	EPE	O3S-S-O1S	3.34	119.44	111.27
2	B	701	EPE	O3S-S-O2S	3.17	119.03	111.27
2	C	702	EPE	O3S-S-O1S	3.13	118.93	111.27
2	D	702	EPE	O3S-S-O2S	3.04	118.70	111.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	703	EPE	O1S-S-C10	-3.01	103.29	106.92
2	A	703	EPE	O3S-S-O2S	2.86	118.26	111.27
2	D	703	EPE	O3S-S-O2S	2.80	118.12	111.27
2	A	704	EPE	O2S-S-C10	-2.50	103.90	106.92
2	C	704	EPE	O3S-S-O2S	2.35	117.01	111.27
2	B	704	EPE	O3S-S-O1S	2.14	116.49	111.27
2	B	706	EPE	O2S-S-C10	-2.05	104.45	106.92
2	B	702	EPE	O2S-S-O1S	-2.04	106.89	113.95

There are no chirality outliers.

All (88) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	701	EPE	C10-C9-N1-C6
2	A	701	EPE	C8-C7-N4-C3
2	A	701	EPE	N4-C7-C8-O8
2	A	702	EPE	C10-C9-N1-C2
2	A	703	EPE	S-C10-C9-N1
2	A	704	EPE	S-C10-C9-N1
2	A	704	EPE	C9-C10-S-O2S
2	A	705	EPE	S-C10-C9-N1
2	A	705	EPE	C9-C10-S-O1S
2	A	705	EPE	C9-C10-S-O3S
2	B	703	EPE	C8-C7-N4-C3
2	B	703	EPE	C9-C10-S-O1S
2	B	703	EPE	C9-C10-S-O2S
2	B	704	EPE	S-C10-C9-N1
2	B	704	EPE	C9-C10-S-O1S
2	B	704	EPE	C9-C10-S-O2S
2	B	704	EPE	C9-C10-S-O3S
2	B	705	EPE	C8-C7-N4-C3
2	B	705	EPE	S-C10-C9-N1
2	B	705	EPE	C9-C10-S-O1S
2	B	705	EPE	C9-C10-S-O3S
2	B	706	EPE	C9-C10-S-O2S
2	C	702	EPE	C10-C9-N1-C2
2	C	703	EPE	S-C10-C9-N1
2	C	703	EPE	C9-C10-S-O1S
2	C	703	EPE	C9-C10-S-O3S
2	C	704	EPE	S-C10-C9-N1
2	C	704	EPE	C9-C10-S-O1S
2	C	704	EPE	C9-C10-S-O3S

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Mol	Chain	Res	Type	Atoms
2	D	701	EPE	C8-C7-N4-C3
2	D	702	EPE	C10-C9-N1-C6
2	D	702	EPE	C9-C10-S-O1S
2	D	703	EPE	C10-C9-N1-C2
2	D	703	EPE	N4-C7-C8-O8
2	C	703	EPE	N4-C7-C8-O8
2	A	704	EPE	N4-C7-C8-O8
2	C	704	EPE	N4-C7-C8-O8
2	A	702	EPE	N4-C7-C8-O8
2	B	703	EPE	N4-C7-C8-O8
2	D	702	EPE	C9-C10-S-O3S
2	A	701	EPE	C8-C7-N4-C5
2	A	703	EPE	C9-C10-S-O3S
2	A	704	EPE	C9-C10-S-O3S
2	B	703	EPE	C9-C10-S-O3S
2	B	701	EPE	N4-C7-C8-O8
2	D	702	EPE	N4-C7-C8-O8
2	A	701	EPE	C10-C9-N1-C2
2	A	702	EPE	C10-C9-N1-C6
2	A	704	EPE	C10-C9-N1-C2
2	A	704	EPE	C10-C9-N1-C6
2	B	706	EPE	C10-C9-N1-C2
2	B	706	EPE	C10-C9-N1-C6
2	C	703	EPE	C10-C9-N1-C2
2	C	703	EPE	C10-C9-N1-C6
2	D	702	EPE	C10-C9-N1-C2
2	B	706	EPE	C9-C10-S-O3S
2	B	705	EPE	C8-C7-N4-C5
2	B	703	EPE	C8-C7-N4-C5
2	A	702	EPE	C9-C10-S-O2S
2	A	704	EPE	C9-C10-S-O1S
2	A	705	EPE	C9-C10-S-O2S
2	B	701	EPE	C9-C10-S-O1S
2	B	701	EPE	C9-C10-S-O2S
2	B	702	EPE	C9-C10-S-O2S
2	B	705	EPE	C9-C10-S-O2S
2	B	706	EPE	C9-C10-S-O1S
2	C	703	EPE	C9-C10-S-O2S
2	C	704	EPE	C9-C10-S-O2S
2	D	702	EPE	C9-C10-S-O2S
2	D	703	EPE	C9-C10-S-O1S
2	D	703	EPE	C9-C10-S-O2S

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Mol	Chain	Res	Type	Atoms
2	B	706	EPE	C8-C7-N4-C3
2	B	706	EPE	C8-C7-N4-C5
2	B	702	EPE	N4-C7-C8-O8
2	B	706	EPE	N4-C7-C8-O8
2	B	704	EPE	C10-C9-N1-C2
2	B	704	EPE	C10-C9-N1-C6
2	B	702	EPE	C8-C7-N4-C5
2	B	704	EPE	N4-C7-C8-O8
2	B	702	EPE	C8-C7-N4-C3
2	B	704	EPE	C8-C7-N4-C5
2	C	701	EPE	C8-C7-N4-C3
2	B	704	EPE	C8-C7-N4-C3
2	A	702	EPE	C9-C10-S-O3S
2	A	701	EPE	C9-C10-S-O1S
2	C	702	EPE	C9-C10-S-O1S
2	C	701	EPE	C8-C7-N4-C5
2	D	703	EPE	C10-C9-N1-C6

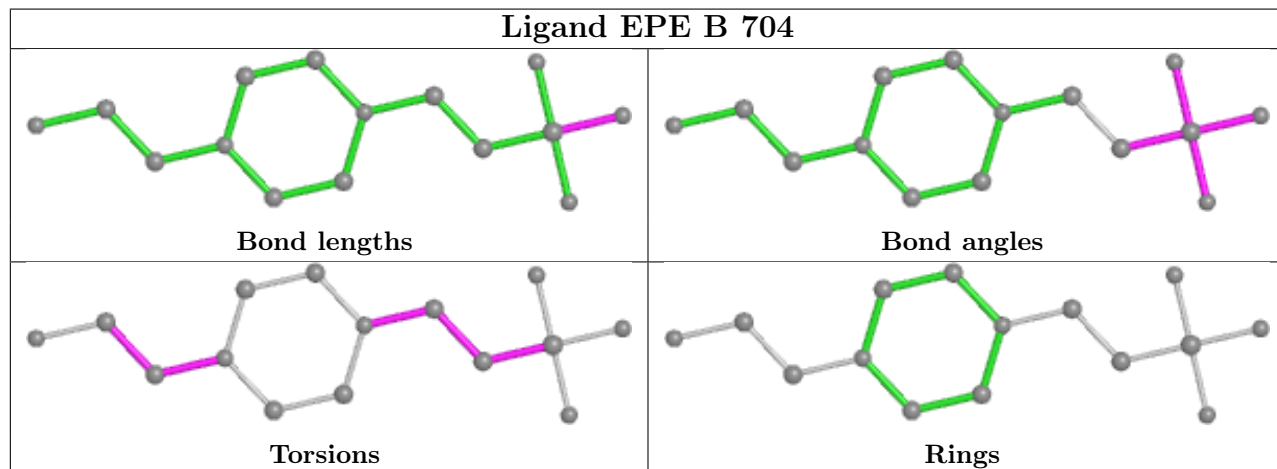
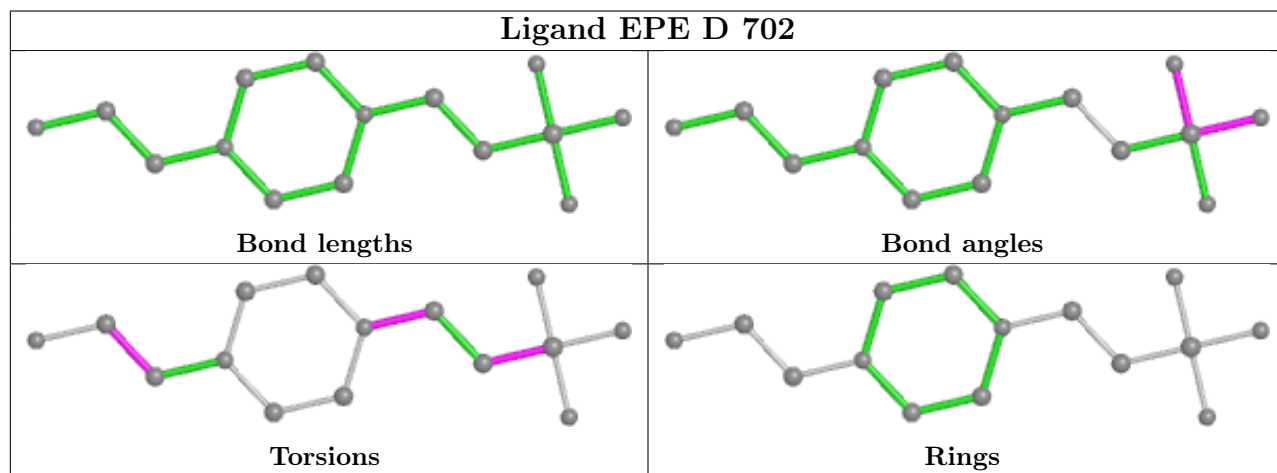
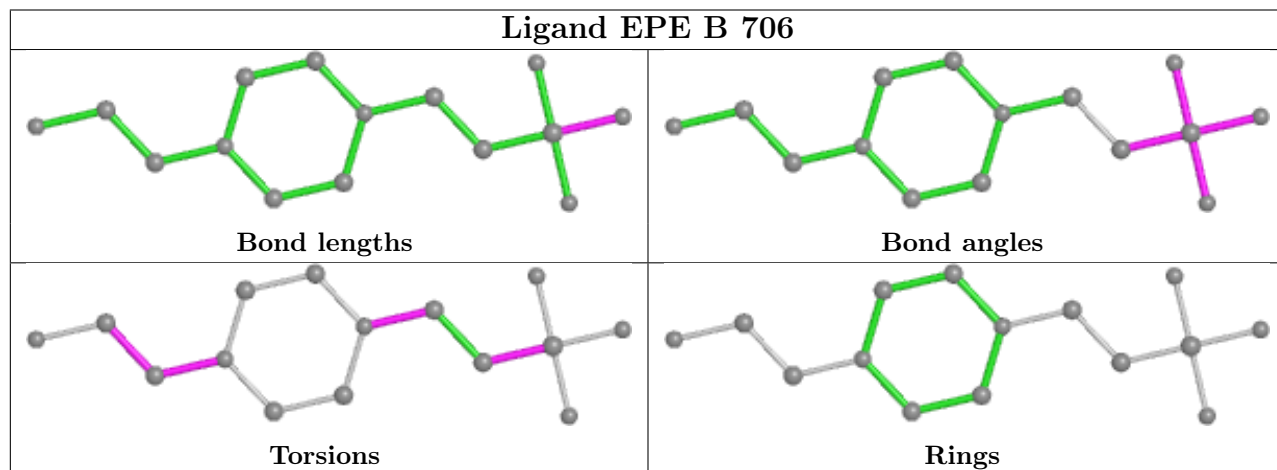
There are no ring outliers.

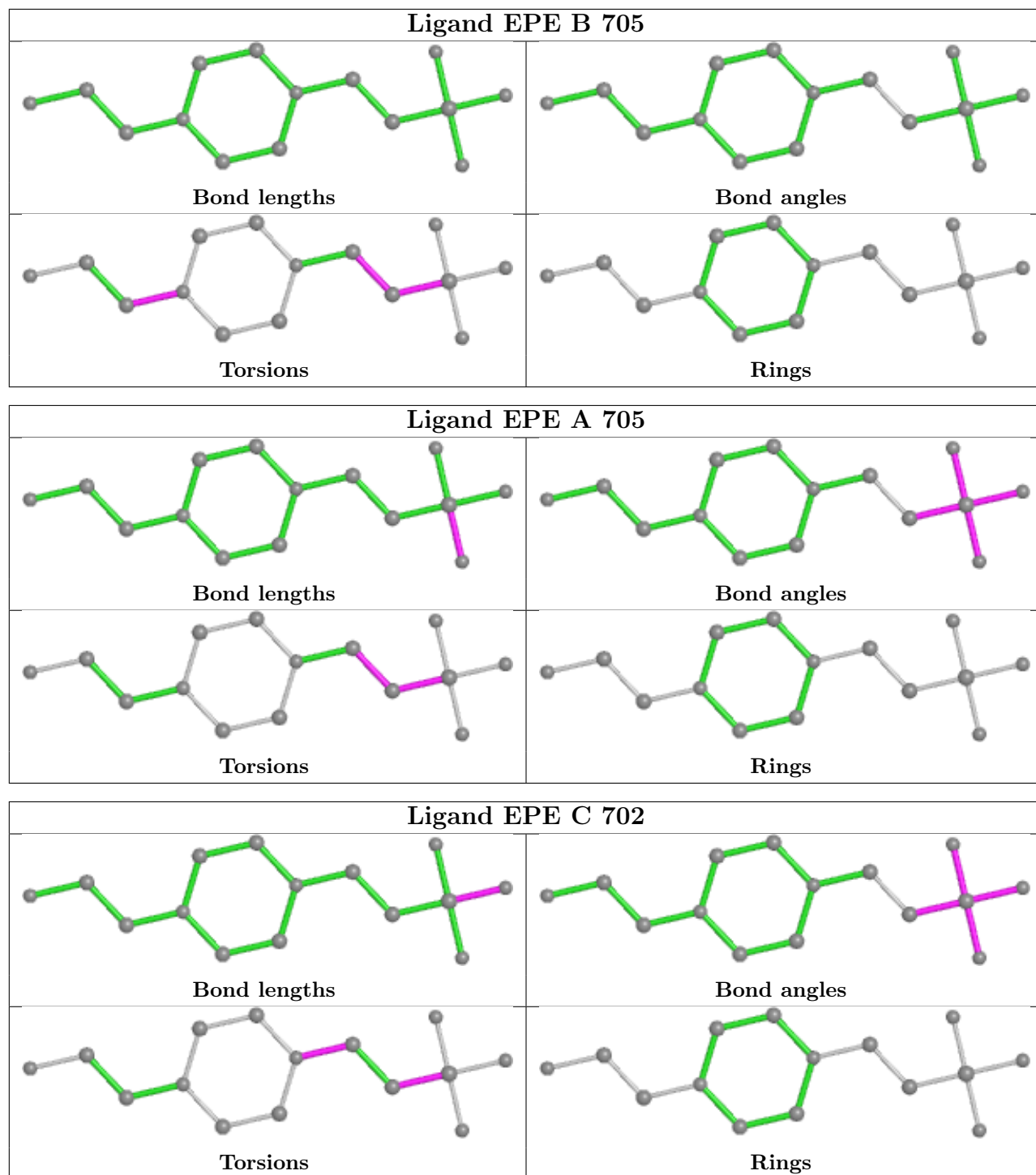
15 monomers are involved in 21 short contacts:

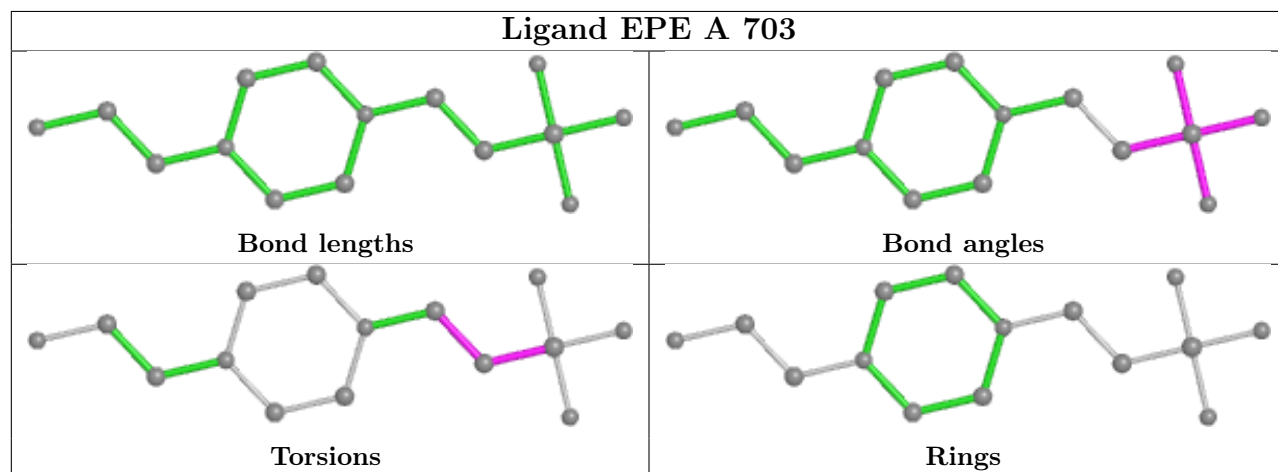
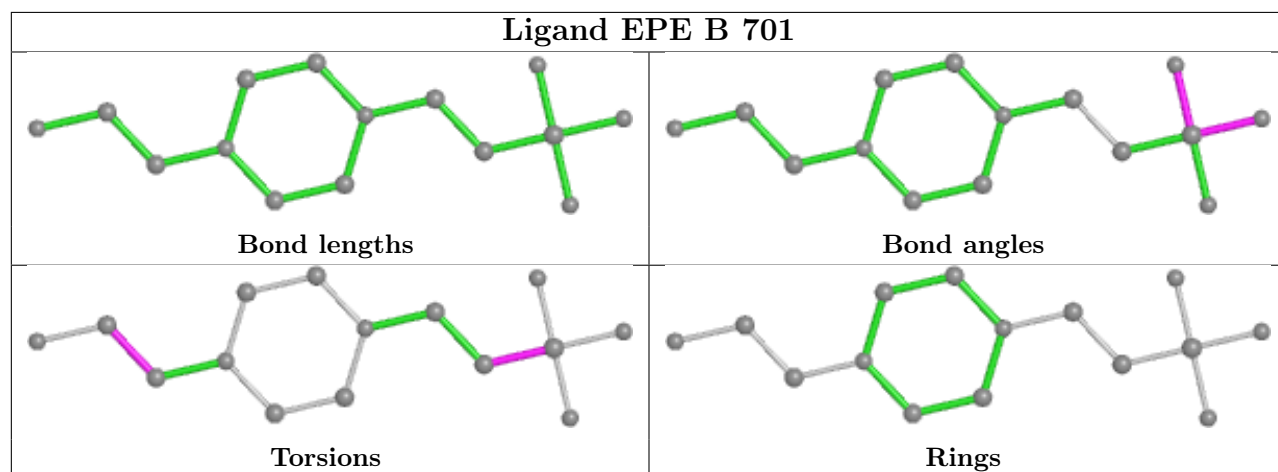
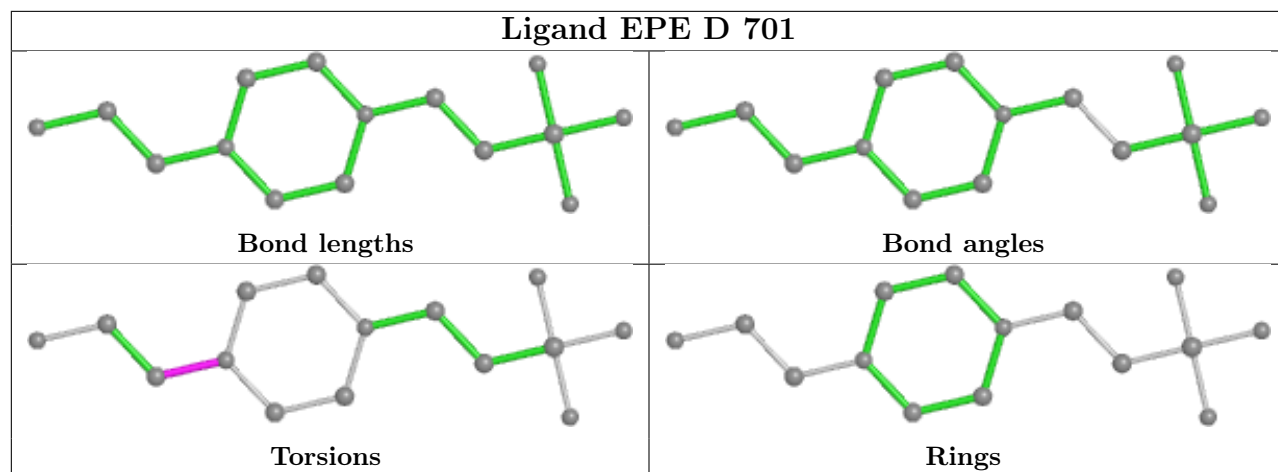
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	706	EPE	1	0
2	D	702	EPE	1	0
2	B	705	EPE	4	0
2	A	705	EPE	1	0
2	D	701	EPE	1	0
2	B	701	EPE	1	0
2	A	703	EPE	1	0
2	B	702	EPE	2	0
2	A	704	EPE	1	0
2	C	701	EPE	2	0
2	D	703	EPE	1	0
2	C	703	EPE	2	0
2	A	702	EPE	2	0
2	B	703	EPE	1	0
2	A	701	EPE	1	0

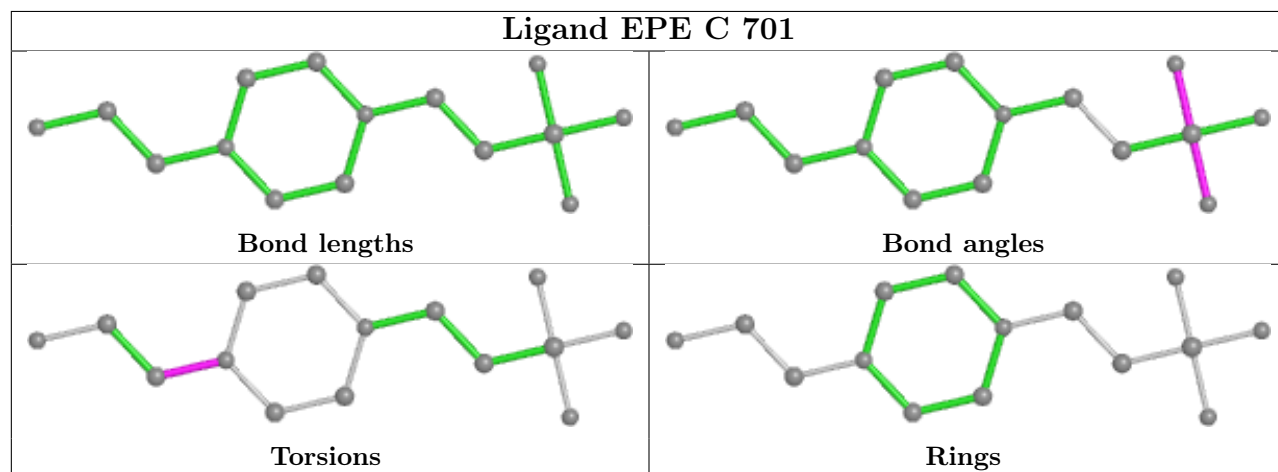
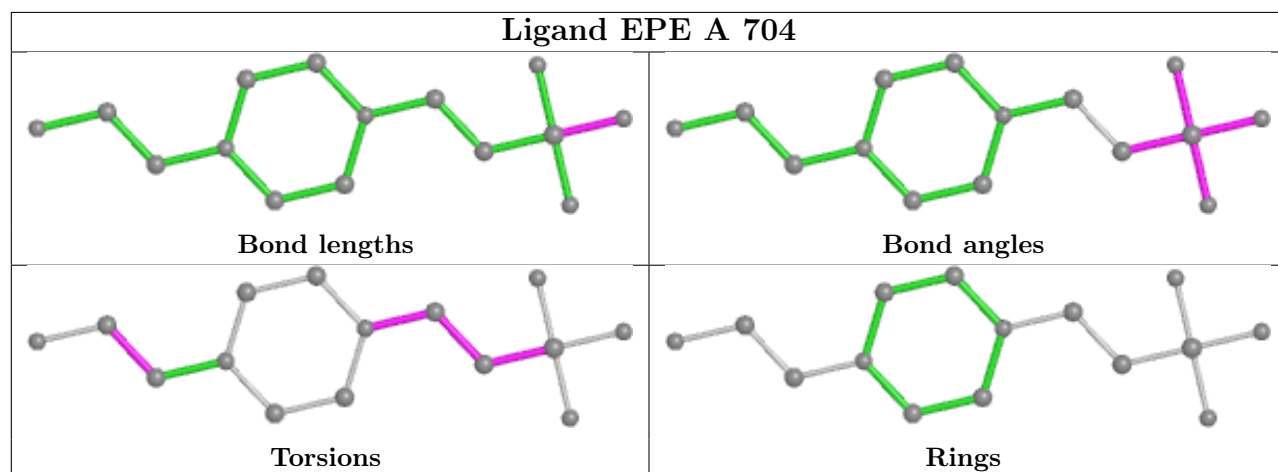
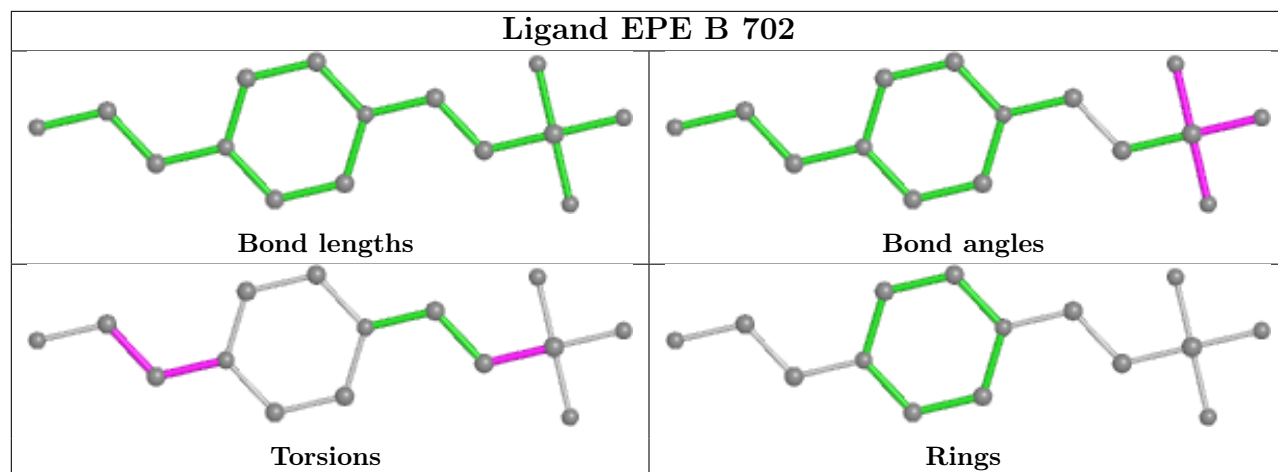
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is

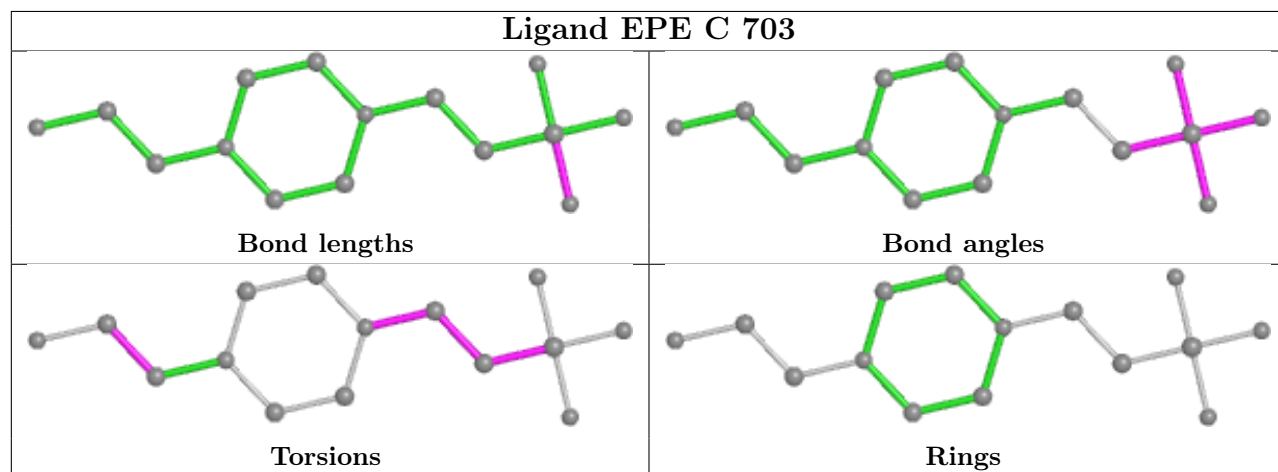
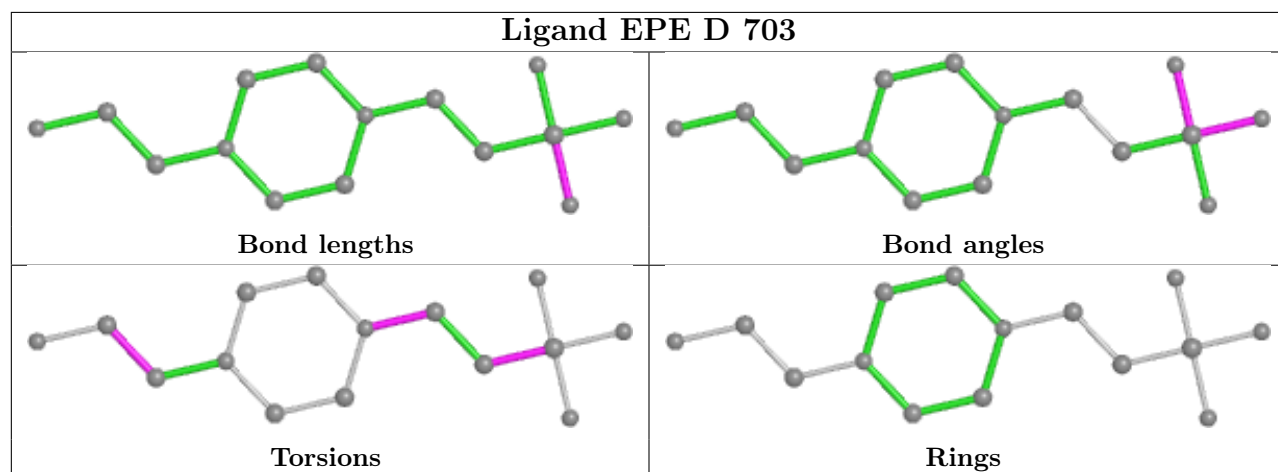
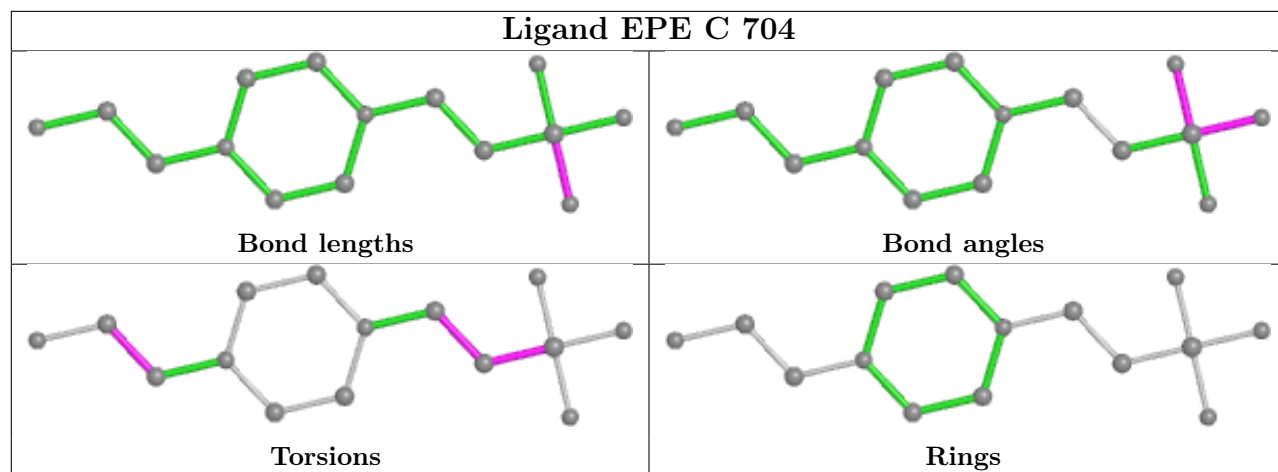
within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question 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.

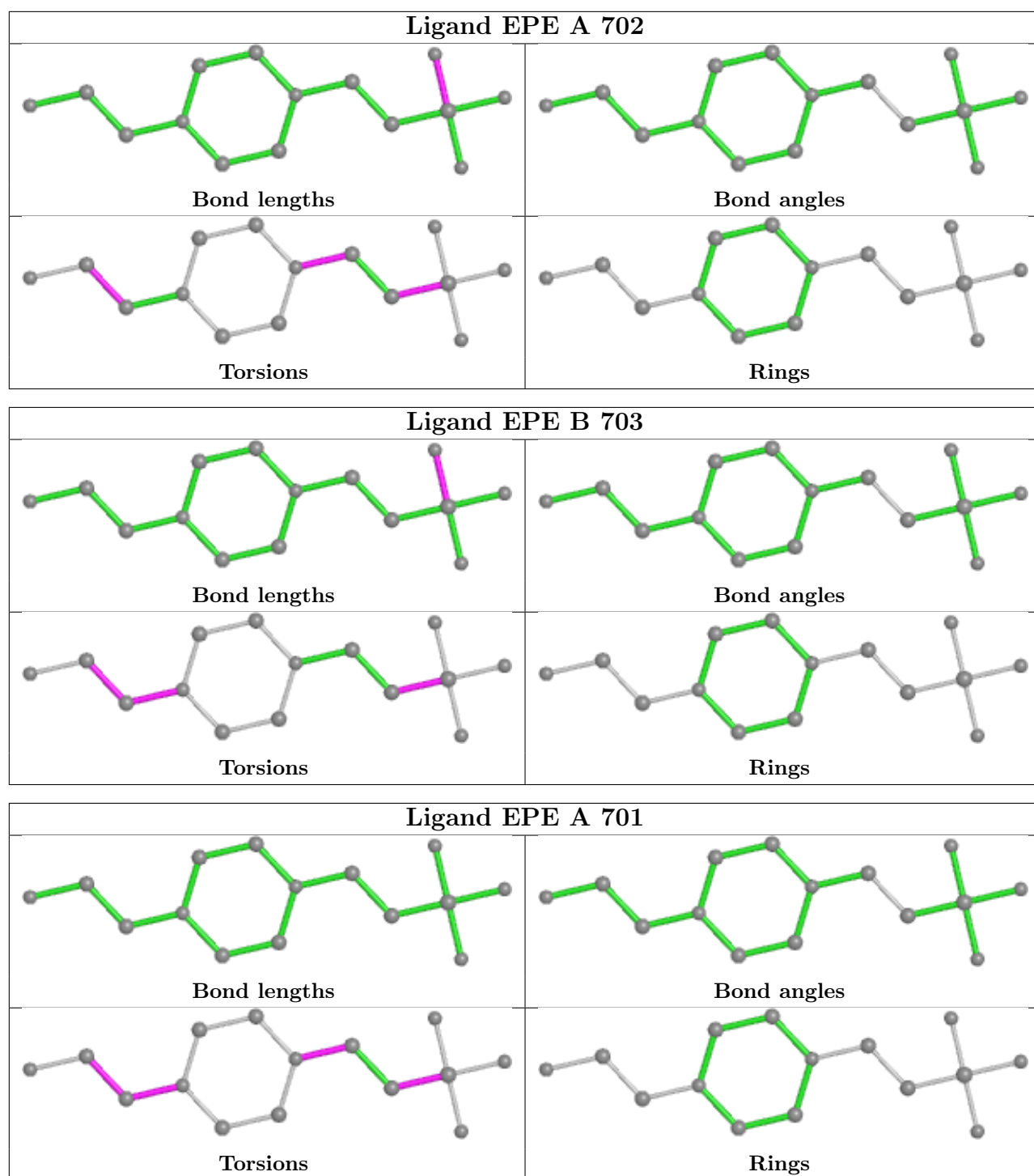












5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	603/624 (96%)	0.13	33 (5%) 25 31	34, 52, 106, 159	0
1	B	600/624 (96%)	0.03	15 (2%) 57 64	36, 52, 96, 179	0
1	C	608/624 (97%)	0.29	34 (5%) 24 30	36, 58, 119, 161	0
1	D	598/624 (95%)	0.23	36 (6%) 21 28	38, 54, 120, 180	0
All	All	2409/2496 (96%)	0.17	118 (4%) 29 36	34, 54, 110, 180	0

All (118) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	89	TRP	11.2
1	A	86	ASN	7.5
1	D	91	SER	7.4
1	D	32	LEU	7.3
1	B	572	ASP	7.2
1	B	570	ILE	7.1
1	C	88	GLY	6.8
1	D	65	THR	6.7
1	C	230	ASN	6.6
1	C	63	THR	6.5
1	D	192	ALA	6.4
1	C	89	TRP	6.3
1	D	56	PHE	6.0
1	D	35	LEU	6.0
1	C	236	ARG	6.0
1	D	28	TYR	6.0
1	B	190	ASP	5.9
1	D	64	ASP	5.4
1	D	66	TYR	5.3
1	D	86	ASN	5.2
1	B	191	GLY	5.2

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Mol	Chain	Res	Type	RSRZ
1	B	573	ALA	5.2
1	A	87	SER	5.1
1	C	86	ASN	5.1
1	D	29	ASN	4.9
1	C	231	SER	4.8
1	A	234	PHE	4.8
1	B	571	SER	4.6
1	A	602	GLY	4.6
1	D	84	ILE	4.6
1	C	623	LEU	4.5
1	C	64	ASP	4.4
1	C	235	GLY	4.4
1	A	600	LEU	4.4
1	C	68	ARG	4.2
1	D	68	ARG	4.1
1	D	30	THR	4.1
1	C	32	LEU	4.1
1	C	192	ALA	4.1
1	D	27	THR	3.9
1	C	232	SER	3.8
1	A	574	ASP	3.7
1	D	234	PHE	3.7
1	D	69	LEU	3.6
1	C	597	ASP	3.6
1	A	84	ILE	3.5
1	B	192	ALA	3.5
1	C	62	THR	3.5
1	D	193	ARG	3.5
1	C	69	LEU	3.5
1	D	33	GLU	3.4
1	C	87	SER	3.4
1	A	62	THR	3.4
1	C	234	PHE	3.4
1	D	31	GLU	3.3
1	D	235	GLY	3.3
1	C	229	ASN	3.2
1	D	190	ASP	3.2
1	C	31	GLU	3.1
1	D	72	PHE	3.1
1	A	65	THR	3.1
1	C	66	TYR	3.0
1	A	66	TYR	3.0

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Mol	Chain	Res	Type	RSRZ
1	C	65	THR	2.9
1	C	604	TYR	2.9
1	A	28	TYR	2.9
1	B	235	GLY	2.8
1	C	233	SER	2.8
1	A	381	ASP	2.8
1	A	88	GLY	2.8
1	D	36	LYS	2.8
1	A	605	HIS	2.8
1	A	572	ASP	2.7
1	D	90	GLY	2.7
1	C	16	LYS	2.6
1	B	539	LYS	2.6
1	D	71	GLU	2.6
1	A	16	LYS	2.6
1	B	189	ASP	2.5
1	A	623	LEU	2.5
1	A	596	GLY	2.5
1	C	543	LYS	2.5
1	D	58	ASP	2.5
1	A	31	GLU	2.5
1	D	34	GLY	2.5
1	C	601	SER	2.5
1	A	565	LEU	2.5
1	B	597	ASP	2.4
1	D	73	ALA	2.4
1	C	190	ASP	2.4
1	C	622	THR	2.4
1	C	571	SER	2.4
1	D	92	ARG	2.4
1	A	604	TYR	2.3
1	D	57	VAL	2.3
1	D	74	GLU	2.3
1	A	575	PRO	2.3
1	B	569	GLY	2.3
1	D	26	PRO	2.3
1	A	537	ILE	2.3
1	A	60	GLY	2.2
1	A	69	LEU	2.2
1	D	61	SER	2.2
1	B	587	ASN	2.2
1	A	533	GLU	2.2

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Mol	Chain	Res	Type	RSRZ
1	D	38	LEU	2.2
1	A	72	PHE	2.1
1	A	576	ILE	2.1
1	C	84	ILE	2.1
1	A	594	LEU	2.1
1	B	575	PRO	2.1
1	A	621	ILE	2.1
1	A	620	LYS	2.0
1	C	71	GLU	2.0
1	C	195	LEU	2.0
1	A	191	GLY	2.0
1	D	569	GLY	2.0
1	B	236	ARG	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

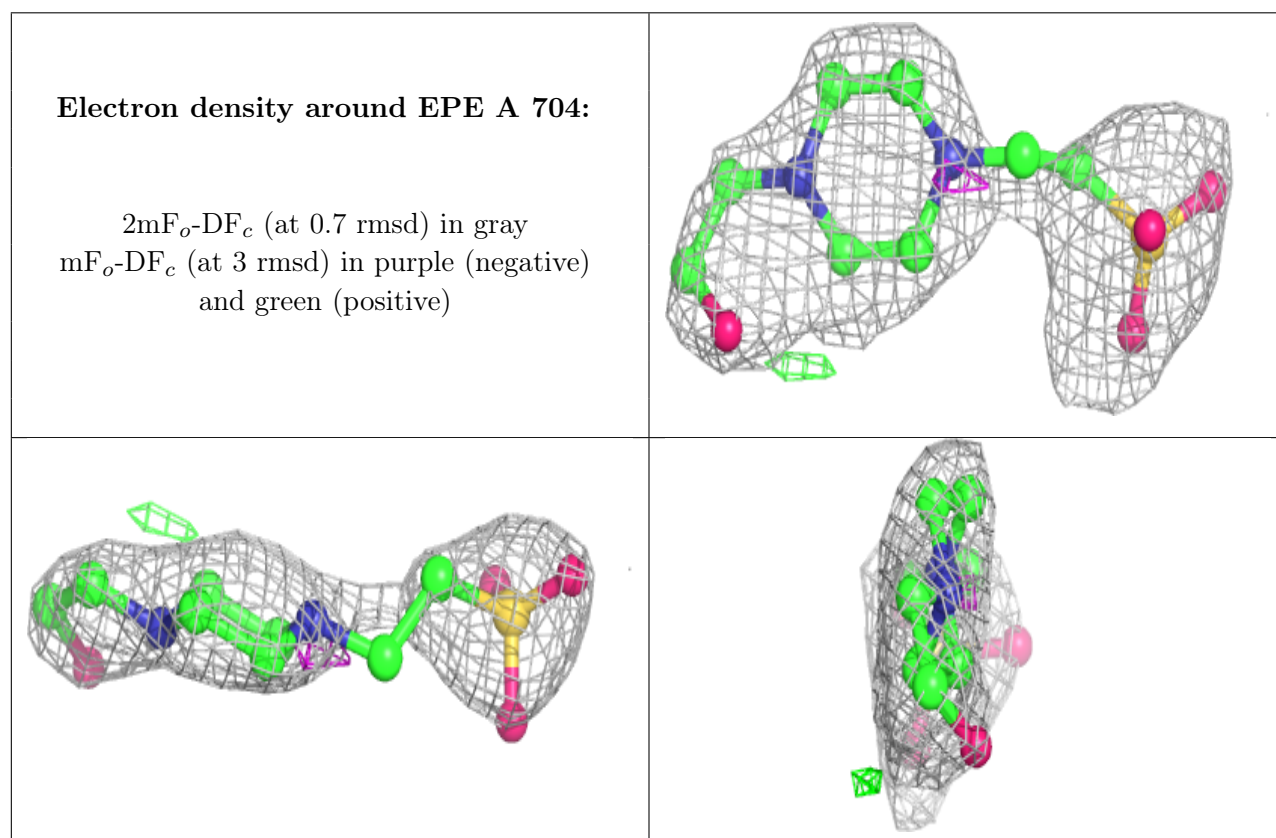
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	EPE	A	704	15/15	0.83	0.29	66,70,95,95	0
2	EPE	B	704	15/15	0.84	0.21	58,67,84,90	0
2	EPE	B	706	15/15	0.84	0.25	54,60,64,65	15
2	EPE	C	704	15/15	0.87	0.27	59,62,65,67	15
2	EPE	C	703	15/15	0.88	0.30	54,63,71,72	15
2	EPE	C	702	15/15	0.88	0.24	57,66,96,102	0
2	EPE	A	703	15/15	0.89	0.27	60,69,74,76	0
2	EPE	A	705	15/15	0.90	0.30	48,53,56,57	15
2	EPE	B	705	15/15	0.90	0.28	52,68,71,71	0
2	EPE	B	703	15/15	0.90	0.20	61,64,74,75	0

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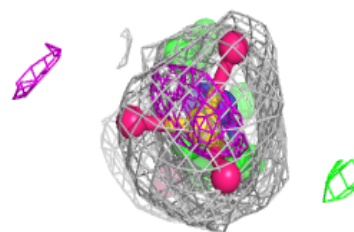
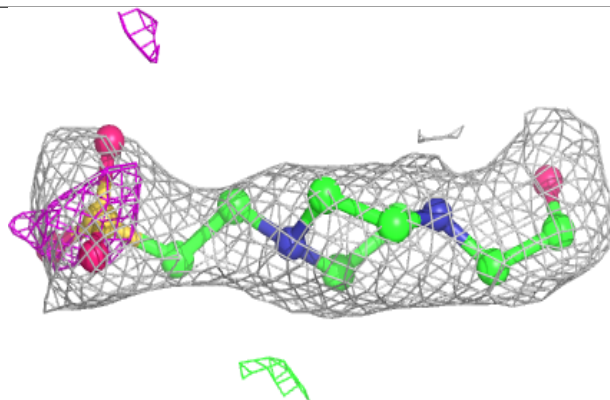
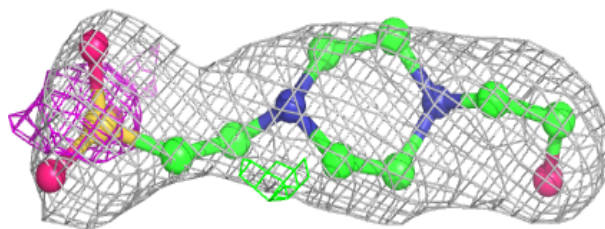
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	EPE	D	703	15/15	0.92	0.24	62,95,105,107	0
2	EPE	A	702	15/15	0.93	0.24	46,65,73,73	0
2	EPE	D	702	15/15	0.95	0.27	48,61,86,86	0
2	EPE	B	702	15/15	0.97	0.15	44,54,65,66	0
2	EPE	B	701	15/15	0.97	0.14	44,49,55,64	0
2	EPE	D	701	15/15	0.98	0.15	50,55,62,69	0
2	EPE	C	701	15/15	0.98	0.15	49,53,59,70	0
2	EPE	A	701	15/15	0.98	0.13	44,48,55,66	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

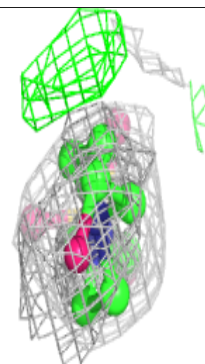
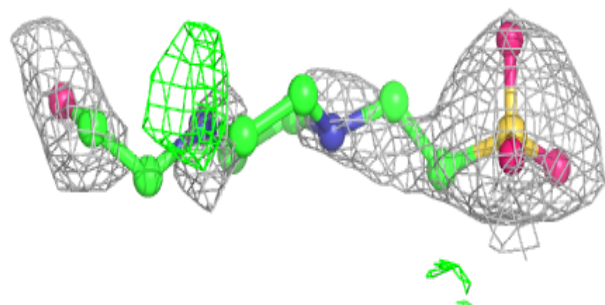
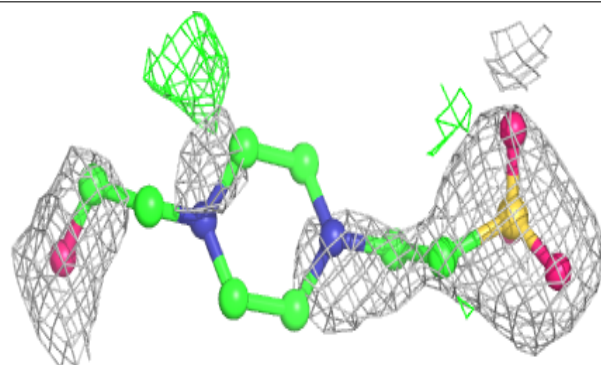


Electron density around EPE B 704:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

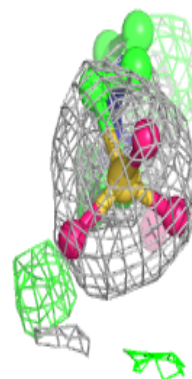
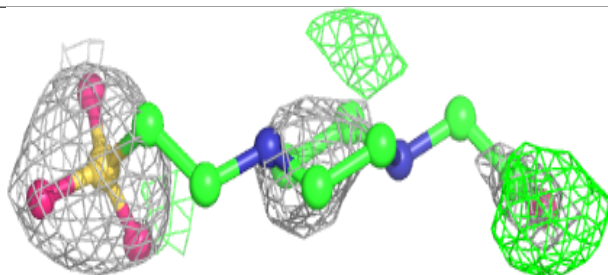
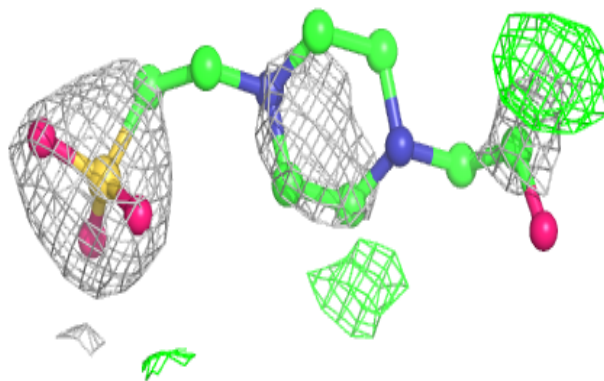
**Electron density around EPE B 706:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

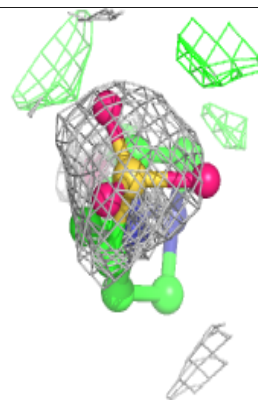
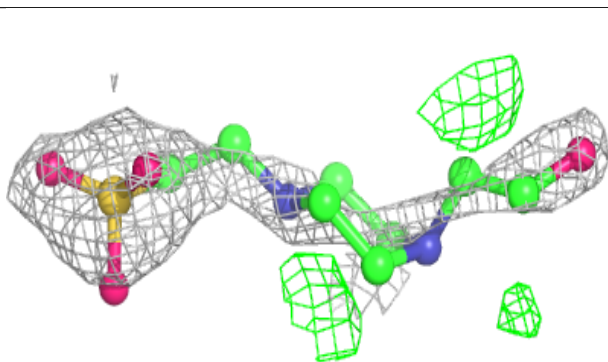
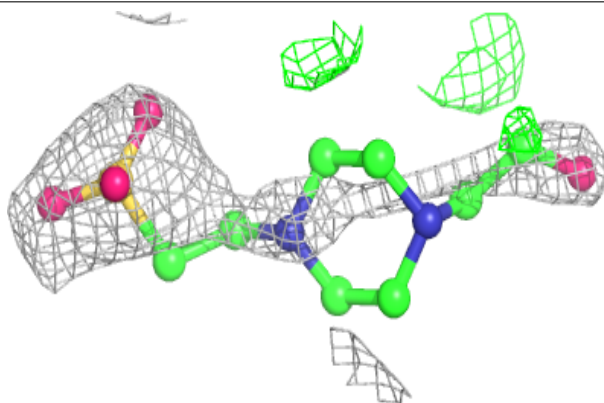


Electron density around EPE C 704:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

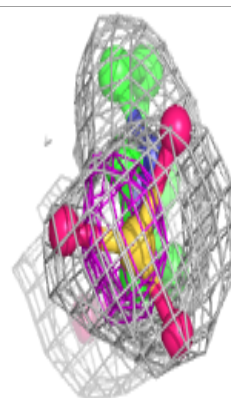
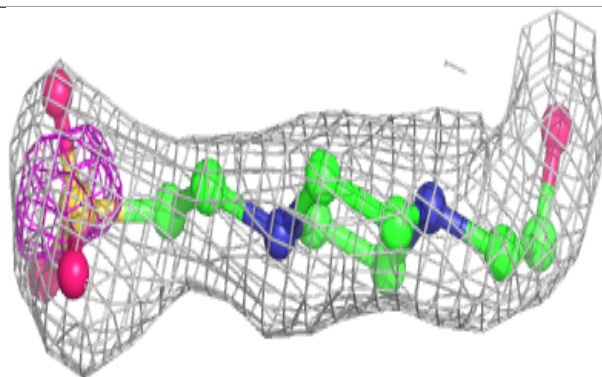
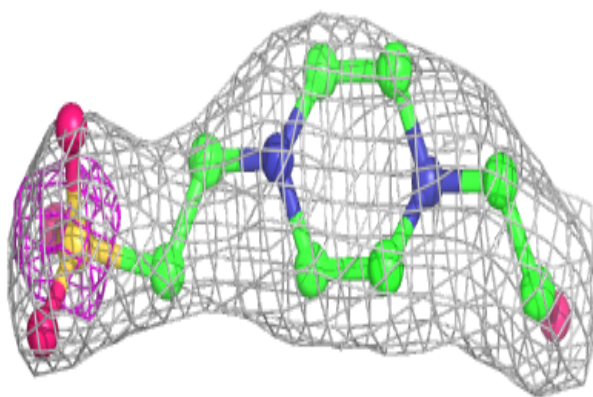
**Electron density around EPE C 703:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

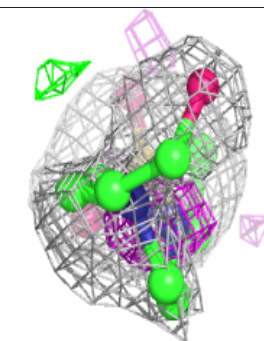
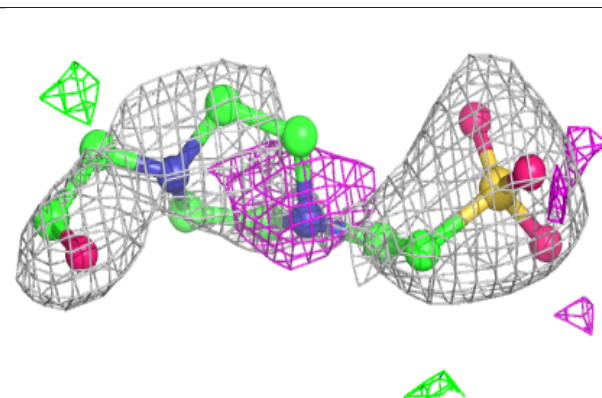
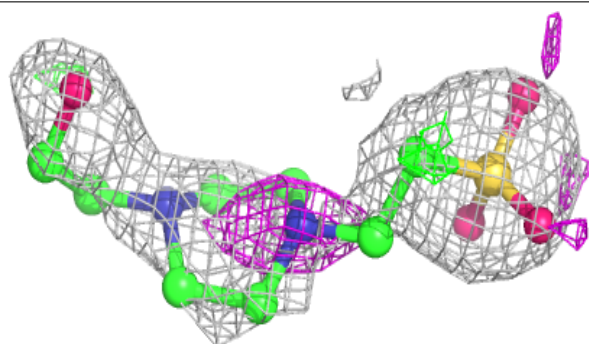


Electron density around EPE C 702:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

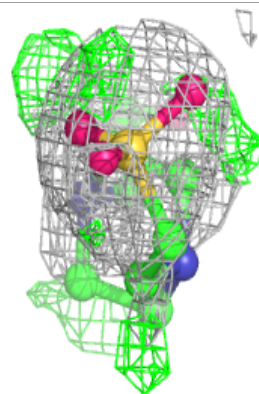
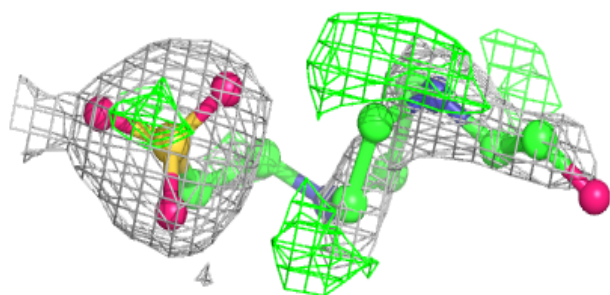
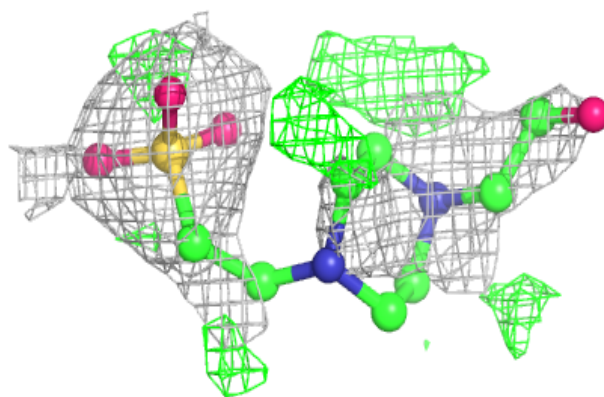
**Electron density around EPE A 703:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

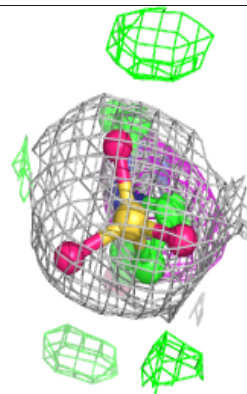
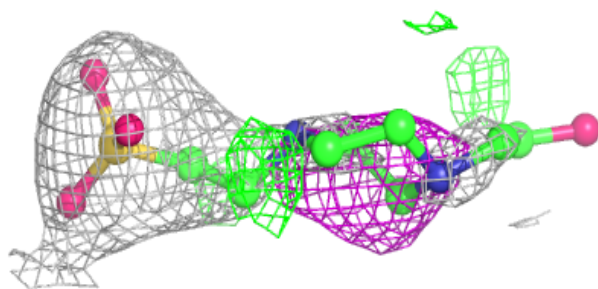
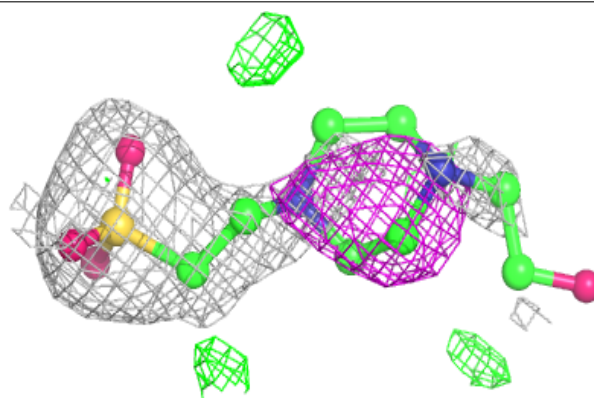


Electron density around EPE A 705:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

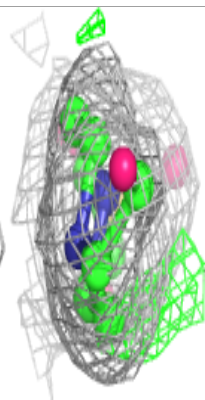
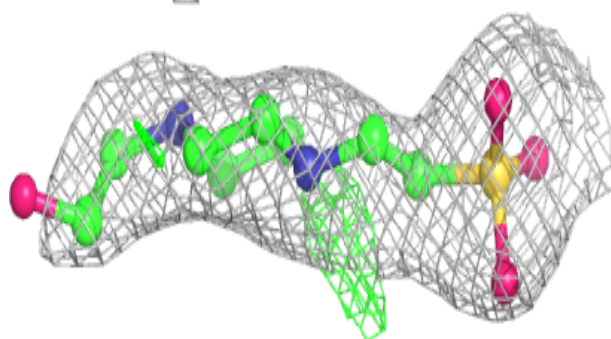
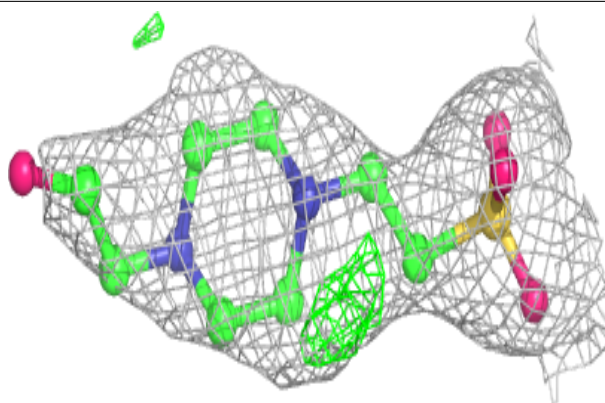
**Electron density around EPE B 705:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

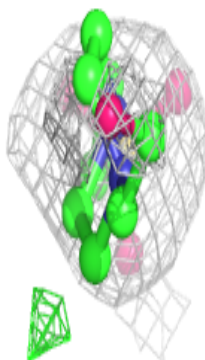
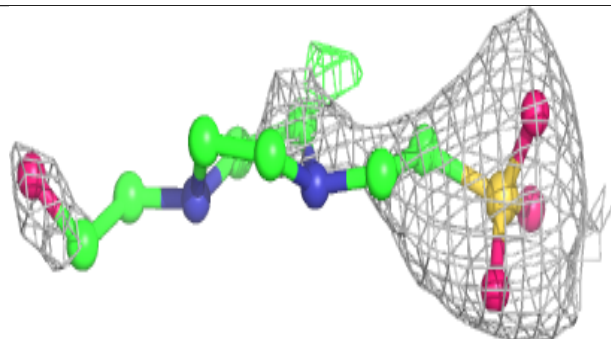
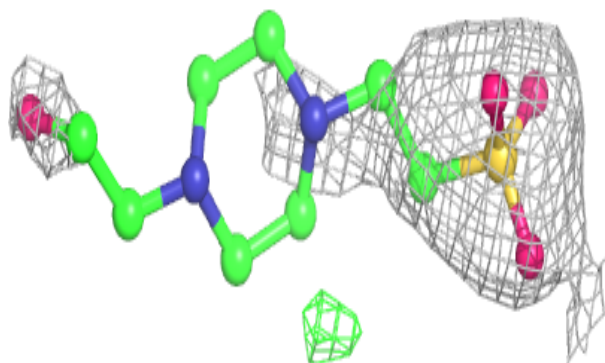


Electron density around EPE B 703:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

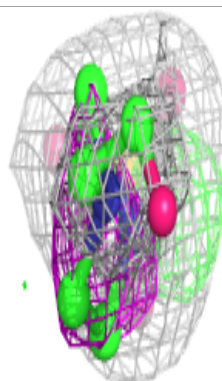
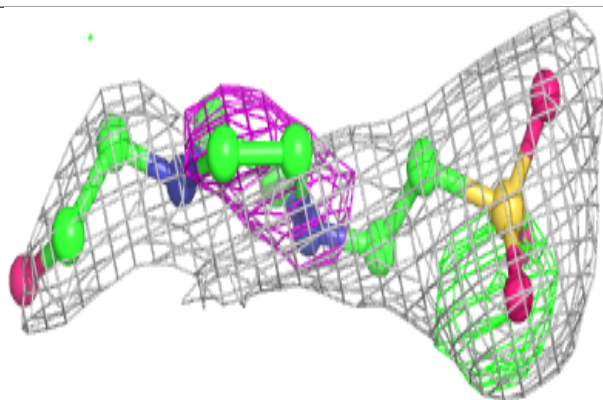
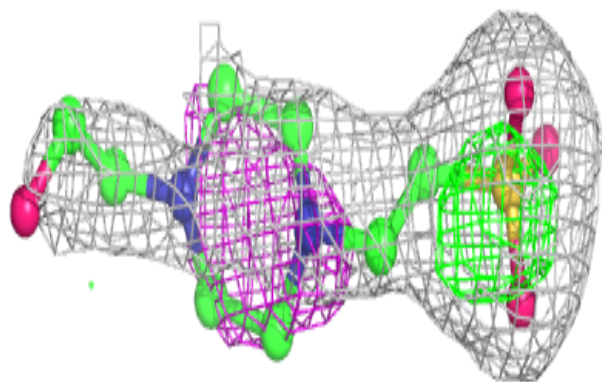
**Electron density around EPE D 703:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

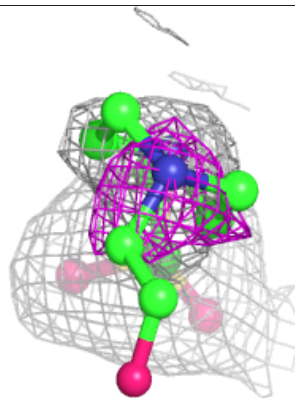
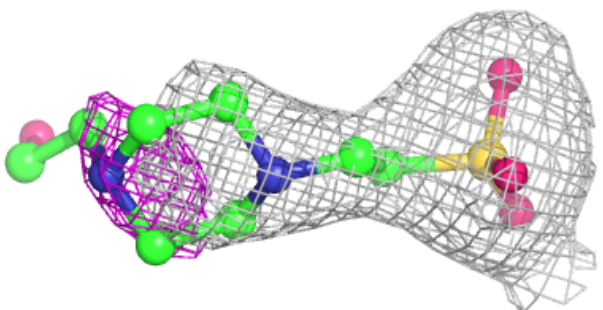
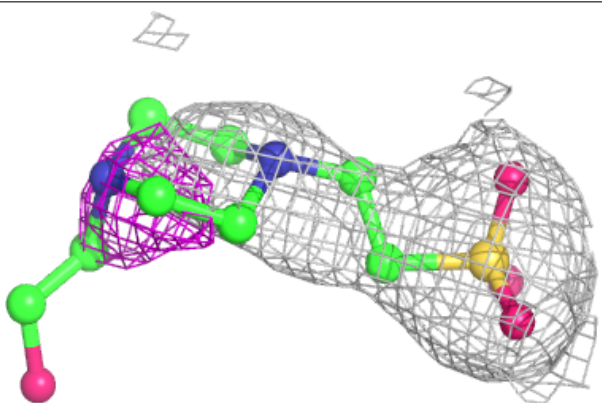


Electron density around EPE A 702:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

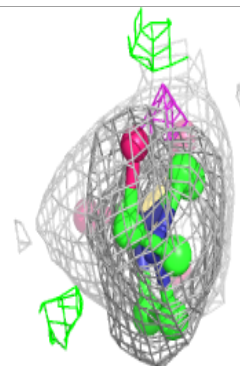
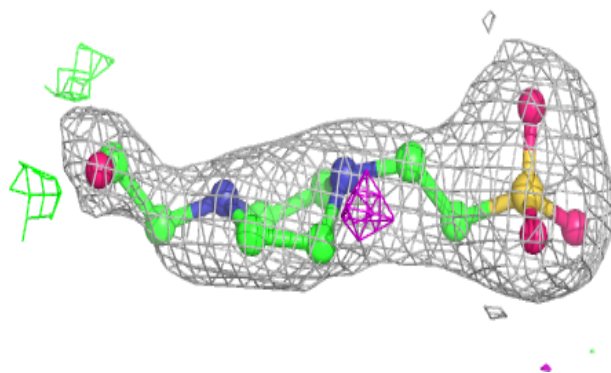
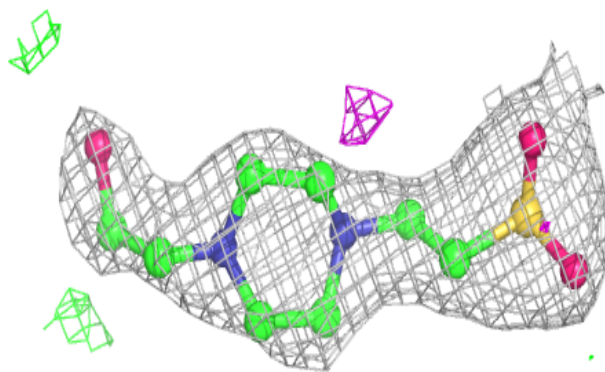
**Electron density around EPE D 702:**

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and green (positive)

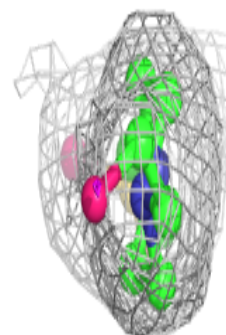
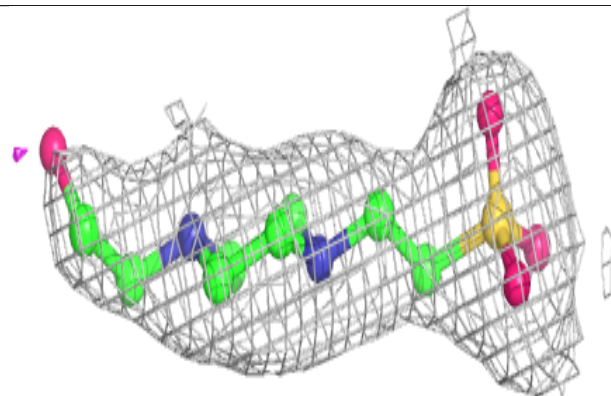
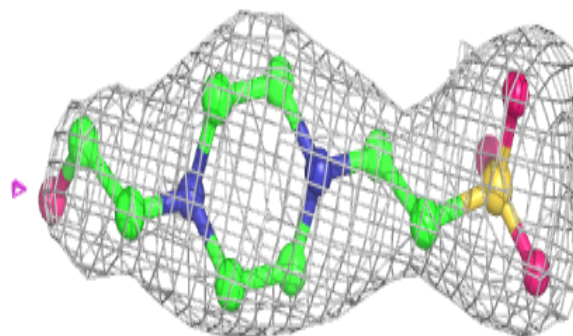


Electron density around EPE B 702:

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and green (positive)

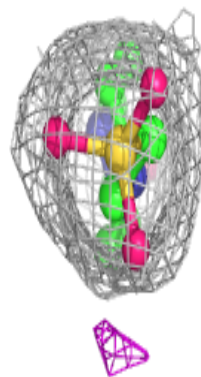
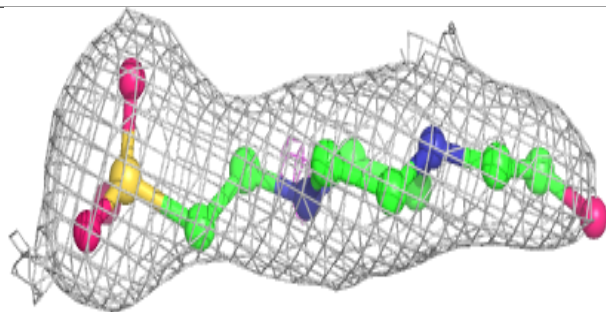
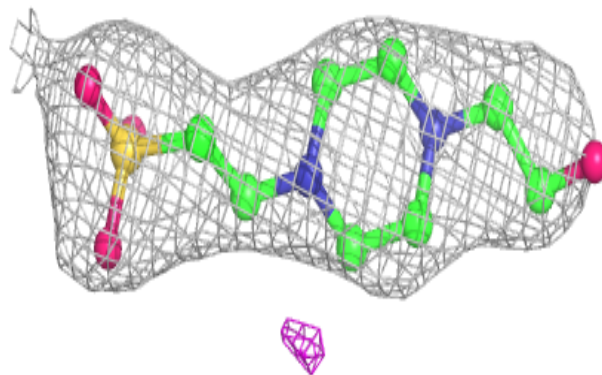
**Electron density around EPE B 701:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

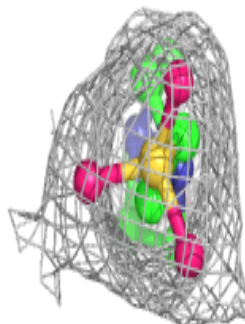
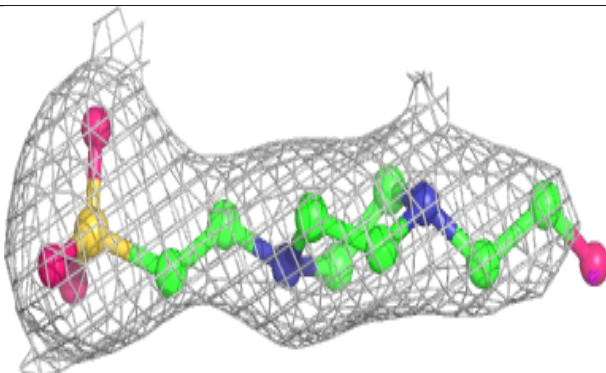
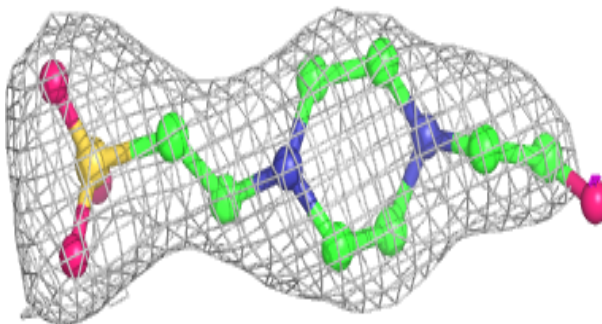


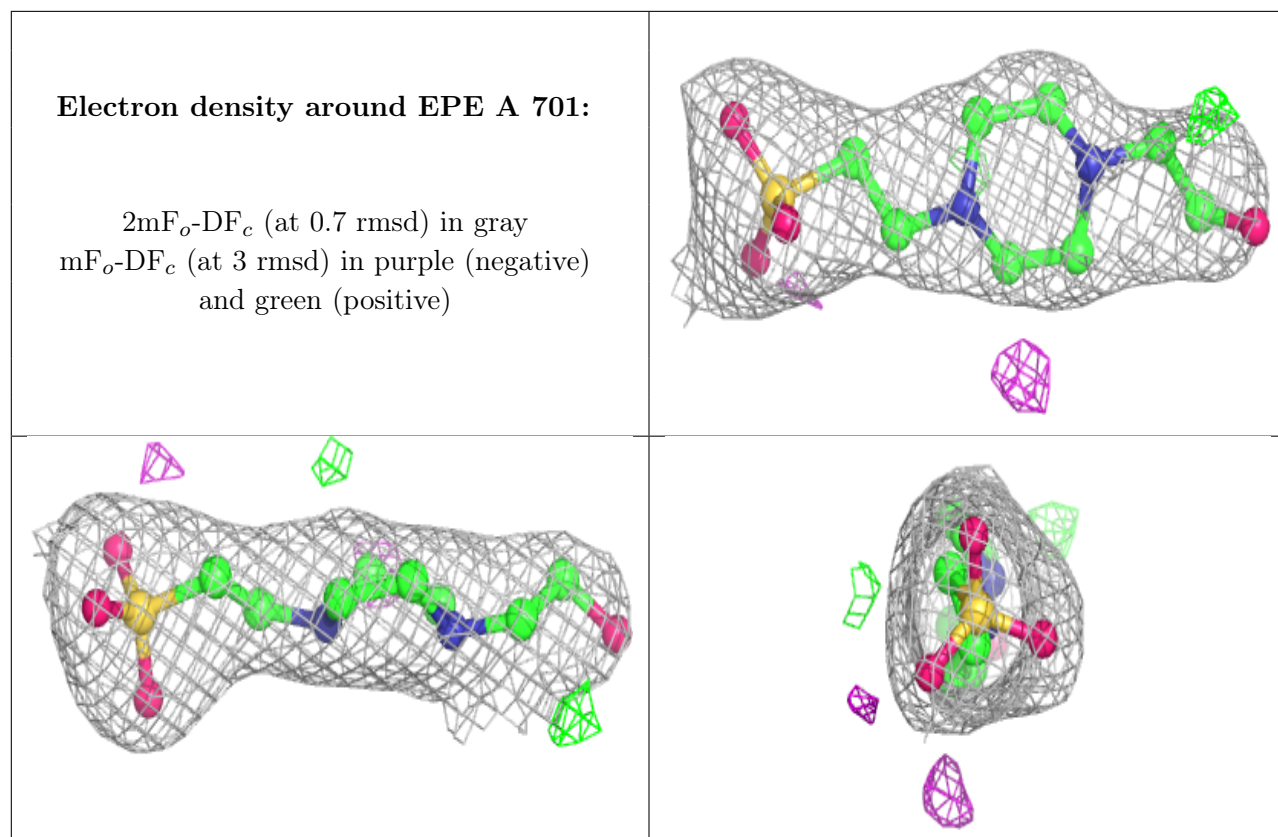
Electron density around EPE D 701:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around EPE C 701:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





6.5 Other polymers [i](#)

There are no such residues in this entry.