



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 7, 2026 – 04:17 AM UTC

PDB ID : 4AXM / pdb_00004axm
Title : TRIAZINE CATHEPSIN INHIBITOR COMPLEX
Authors : Ehmke, V.; Diederich, F.; Banner, D.W.; Benz, J.
Deposited on : 2012-06-13
Resolution : 2.80 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 : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

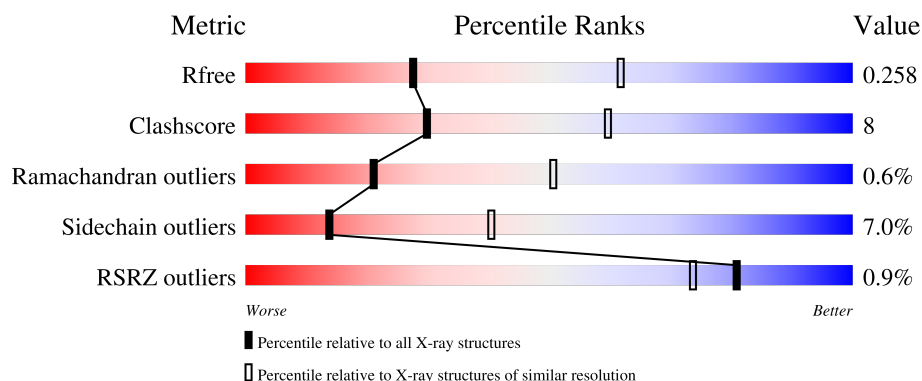
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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	220	 77% 21% ..
1	B	220	 79% 20% .
1	F	220	 80% 17% ..
1	I	220	 78% 17% ..
1	L	220	 81% 15% ..

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Mol	Chain	Length	Quality of chain
1	O	220	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	V65	O	1222	-	-	X	-

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 10834 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 CATHEPSIN L1.

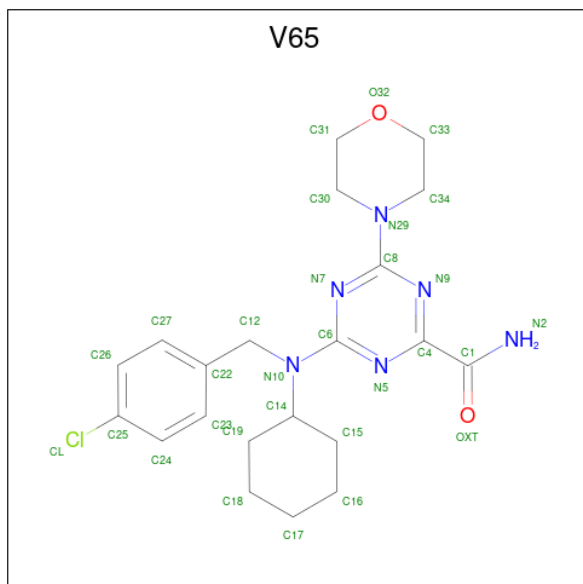
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	218	Total	C	N	O	S	0	7	0
			1742	1091	289	348	14			
1	B	219	Total	C	N	O	S	0	7	0
			1748	1095	290	349	14			
1	F	216	Total	C	N	O	S	0	7	0
			1728	1084	287	343	14			
1	I	217	Total	C	N	O	S	0	7	0
			1735	1088	288	345	14			
1	L	216	Total	C	N	O	S	0	7	0
			1728	1084	287	343	14			
1	O	216	Total	C	N	O	S	0	7	0
			1728	1084	287	343	14			

- Molecule 2 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			6	3	3		
2	B	1	Total	C	O	0	0
			6	3	3		
2	F	1	Total	C	O	0	0
			6	3	3		
2	I	1	Total	C	O	0	0
			6	3	3		
2	L	1	Total	C	O	0	0
			6	3	3		
2	O	1	Total	C	O	0	0
			6	3	3		

- Molecule 3 is 4-[(4-chlorobenzyl)(cyclohexyl)amino]-6-morpholin-4-yl-1,3,5-triazine-2-carboxamide (CCD ID: V65) (formula: C₂₁H₂₇ClN₆O₂).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	Cl	N	O	0
			29	21	1	6	1	0
3	B	1	Total	C	Cl	N	O	0
			29	21	1	6	1	0
3	F	1	Total	C	Cl	N	O	0
			29	21	1	6	1	0
3	I	1	Total	C	Cl	N	O	0
			29	21	1	6	1	0
3	L	1	Total	C	Cl	N	O	0
			29	21	1	6	1	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	O	1	Total	C	Cl	N	O	0	0
			29	21	1	6	1		

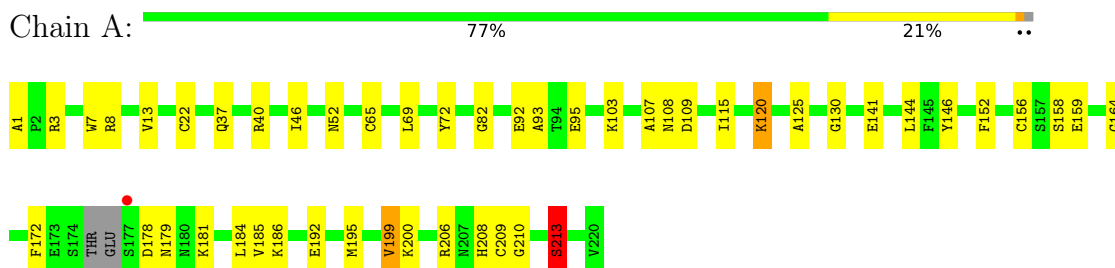
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	50	Total	O	0	0
			50	50		
4	B	40	Total	O	0	0
			40	40		
4	F	45	Total	O	0	0
			45	45		
4	I	37	Total	O	0	0
			37	37		
4	L	18	Total	O	0	0
			18	18		
4	O	25	Total	O	0	0
			25	25		

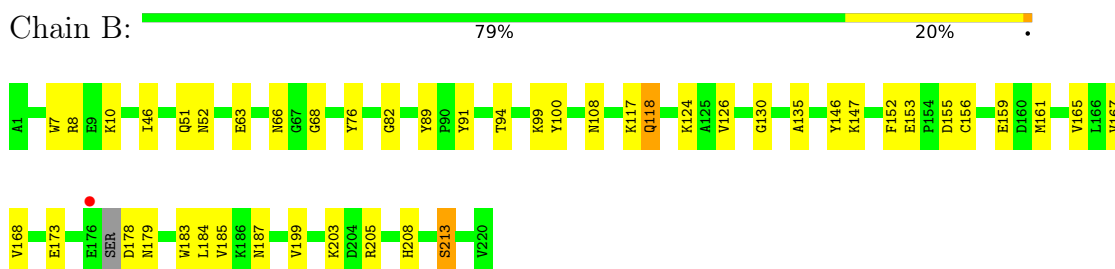
3 Residue-property plots

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 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.

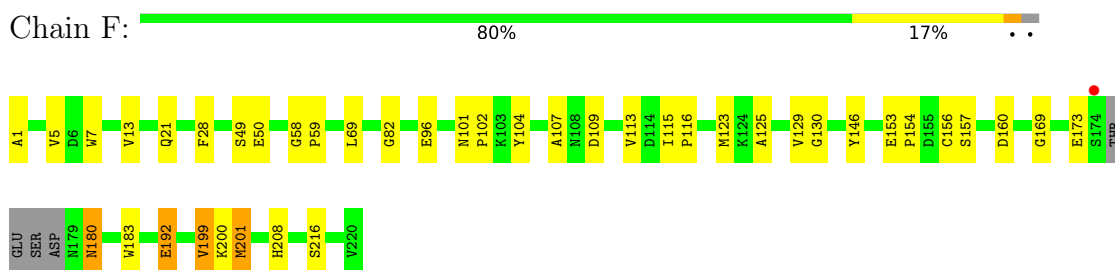
• Molecule 1: CATHEPSIN L1



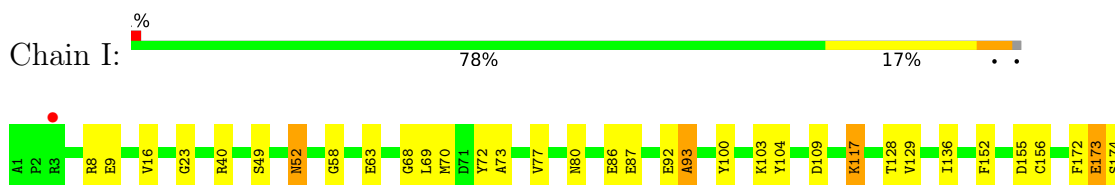
• Molecule 1: CATHEPSIN L1

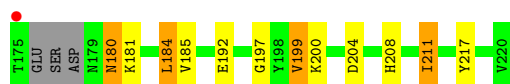


• Molecule 1: CATHEPSIN L1

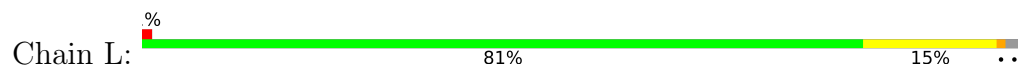


• Molecule 1: CATHEPSIN L1





• Molecule 1: CATHEPSIN L1



• Molecule 1: CATHEPSIN L1



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	85.84Å 134.78Å 140.92Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.97 – 2.80 46.97 – 2.80	Depositor EDS
% Data completeness (in resolution range)	95.8 (46.97-2.80) 95.8 (46.97-2.80)	Depositor EDS
R_{merge}	0.19	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.87 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.7.0025	Depositor
R, R_{free}	0.188 , 0.257 0.188 , 0.258	Depositor DCC
R_{free} test set	2030 reflections (4.55%)	wwPDB-VP
Wilson B-factor (Å ²)	51.6	Xtriage
Anisotropy	0.196	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 39.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	0.013 for -h,l,k	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	10834	wwPDB-VP
Average B, all atoms (Å ²)	57.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.21% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, V65

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	0.76	0/1784	0.97	1/2408 (0.0%)
1	B	0.72	0/1790	1.00	3/2417 (0.1%)
1	F	0.69	0/1770	0.99	2/2389 (0.1%)
1	I	0.71	0/1777	0.95	2/2399 (0.1%)
1	L	0.65	0/1770	0.93	2/2389 (0.1%)
1	O	0.68	0/1770	1.01	5/2389 (0.2%)
All	All	0.70	0/10661	0.98	15/14391 (0.1%)

There are no bond length outliers.

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	89	TYR	CA-C-N	7.31	127.29	119.76
1	B	89	TYR	C-N-CA	7.31	127.29	119.76
1	B	82	GLY	N-CA-C	7.20	120.66	111.09
1	O	153	GLU	CA-C-N	7.04	126.56	119.24
1	O	153	GLU	C-N-CA	7.04	126.56	119.24
1	O	13	VAL	N-CA-C	6.24	116.85	107.75
1	O	129	VAL	N-CA-C	6.03	116.22	110.74
1	L	89	TYR	CA-C-N	5.85	126.18	119.92
1	L	89	TYR	C-N-CA	5.85	126.18	119.92
1	A	213	SER	N-CA-C	5.81	120.44	113.23
1	F	49	SER	N-CA-C	5.49	117.18	108.67
1	O	82	GLY	N-CA-C	5.37	117.86	110.56
1	F	13	VAL	N-CA-C	5.34	116.22	107.24
1	I	58	GLY	CA-C-N	5.05	126.16	119.84
1	I	58	GLY	C-N-CA	5.05	126.16	119.84

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	1742	0	1613	29	0
1	B	1748	0	1617	23	0
1	F	1728	0	1604	25	0
1	I	1735	0	1611	29	0
1	L	1728	0	1604	14	0
1	O	1728	0	1604	46	0
2	A	6	0	8	0	0
2	B	6	0	8	0	0
2	F	6	0	8	0	0
2	I	6	0	8	0	0
2	L	6	0	8	0	0
2	O	6	0	8	0	0
3	A	29	0	27	6	0
3	B	29	0	27	5	0
3	F	29	0	27	3	0
3	I	29	0	27	3	0
3	L	29	0	27	2	0
3	O	29	0	27	12	0
4	A	50	0	0	3	0
4	B	40	0	0	1	0
4	F	45	0	0	0	0
4	I	37	0	0	1	0
4	L	18	0	0	0	0
4	O	25	0	0	2	0
All	All	10834	0	9863	174	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 8.

All (174) 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:O:69:LEU:CD2	3:O:1222:V65:H162	1.96	0.96
1:O:69:LEU:HD23	3:O:1222:V65:H162	1.55	0.88
3:A:1222:V65:N5	3:A:1222:V65:H192	1.88	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1222:V65:H151	3:A:1222:V65:H23	1.60	0.83
1:F:69:LEU:HD23	3:F:1222:V65:H172	1.59	0.83
3:B:1222:V65:H23	3:B:1222:V65:H191	1.62	0.82
1:O:135:ALA:HB2	3:O:1222:V65:H171	1.69	0.73
1:F:69:LEU:CD2	3:F:1222:V65:H172	2.19	0.73
1:I:8:ARG:NH2	1:I:184[A]:LEU:HD21	2.06	0.70
1:O:69:LEU:HD23	3:O:1222:V65:C16	2.20	0.70
3:I:1222:V65:H191	3:I:1222:V65:H23	1.73	0.69
1:O:163:HIS:N	3:O:1222:V65:H192	2.08	0.67
1:A:8:ARG:NH2	1:A:184[A]:LEU:HD21	2.11	0.66
1:F:58:GLY:N	1:F:59:PRO:CD	2.59	0.66
1:B:7:TRP:CE2	1:B:130:GLY:HA2	2.32	0.64
1:O:135:ALA:HB1	3:O:1222:V65:H182	1.79	0.63
1:B:146:TYR:CZ	1:B:199:VAL:HG23	2.34	0.62
1:O:19:GLN:HG2	1:O:188:SER:O	2.00	0.61
1:O:152:PHE:CE1	1:O:208[A]:HIS:CE1	2.89	0.60
1:A:195:MET:SD	1:A:200[A]:LYS:HE2	2.43	0.59
1:O:162:ASP:C	3:O:1222:V65:H192	2.28	0.59
1:O:3:ARG:HA	4:O:2001:HOH:O	2.03	0.58
1:B:187:ASN:HB3	4:B:2039:HOH:O	2.04	0.58
1:A:164:GLY:N	3:A:1222:V65:H182	2.19	0.57
1:O:52:ASN:C	1:O:52:ASN:HD22	2.11	0.57
1:A:40:ARG:CD	4:A:2015:HOH:O	2.52	0.57
3:A:1222:V65:H151	3:A:1222:V65:C23	2.33	0.57
1:I:68:GLY:O	3:I:1222:V65:H152	2.04	0.57
1:B:117:LYS:NZ	1:B:213:SER:O	2.38	0.56
3:B:1222:V65:N5	3:B:1222:V65:H151	2.20	0.56
1:I:152:PHE:HA	1:I:208[B]:HIS:CE1	2.39	0.56
1:L:117:LYS:HD2	1:L:213:SER:O	2.06	0.56
1:O:135:ALA:CB	3:O:1222:V65:H171	2.35	0.56
1:I:23:GLY:HA3	3:I:1222:V65:H301	1.87	0.56
1:O:193:TRP:HH2	1:O:199:VAL:CG1	2.18	0.56
1:O:141:GLU:HB2	4:O:2018:HOH:O	2.05	0.55
1:I:109:ASP:OD1	1:I:109:ASP:C	2.49	0.55
1:B:51:GLN:HB2	1:B:91:TYR:HA	1.89	0.55
1:L:192[A]:GLU:H	1:L:192[A]:GLU:CD	2.13	0.55
3:B:1222:V65:H23	3:B:1222:V65:C19	2.36	0.55
1:F:1:ALA:HB3	1:F:123:MET:HE3	1.89	0.54
1:A:185:VAL:HB	1:A:199:VAL:HG13	1.89	0.54
1:F:153:GLU:O	1:F:208[A]:HIS:CE1	2.60	0.54
1:B:63:GLU:O	1:B:66:ASN:HB2	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:50:GLU:H	1:O:50:GLU:CD	2.15	0.53
1:O:192[A]:GLU:CD	1:O:192[A]:GLU:H	2.14	0.53
1:I:185:VAL:HB	1:I:199:VAL:HG13	1.89	0.53
1:F:7:TRP:CE2	1:F:130:GLY:HA2	2.42	0.53
1:O:68:GLY:O	3:O:1222:V65:H151	2.08	0.53
3:L:1222:V65:H191	3:L:1222:V65:H23	1.91	0.52
1:A:37:GLN:HG2	4:A:2012:HOH:O	2.08	0.52
1:A:46:ILE:HD12	1:I:104:TYR:HE2	1.75	0.52
1:B:52:ASN:HD22	1:B:52:ASN:C	2.16	0.52
1:O:146:TYR:CZ	1:O:199:VAL:HG23	2.45	0.51
1:O:7:TRP:CE2	1:O:130:GLY:HA2	2.45	0.51
1:F:146:TYR:CZ	1:F:199:VAL:HG23	2.46	0.51
1:A:152:PHE:HA	1:A:208[B]:HIS:CE1	2.46	0.51
1:O:69:LEU:HB2	1:O:72:TYR:CD2	2.46	0.51
3:F:1222:V65:H23	3:F:1222:V65:H191	1.93	0.51
1:A:40:ARG:HD2	4:A:2015:HOH:O	2.11	0.50
1:B:152:PHE:CE1	1:B:208[A]:HIS:CE1	3.00	0.50
1:O:125:ALA:O	1:O:129:VAL:HB	2.10	0.50
3:A:1222:V65:H23	3:A:1222:V65:C15	2.35	0.50
1:L:63:GLU:O	1:L:66:ASN:HB2	2.12	0.50
1:L:108:ASN:O	1:L:220:VAL:HG12	2.12	0.50
3:A:1222:V65:N5	3:A:1222:V65:C19	2.59	0.50
1:O:193:TRP:CH2	1:O:199:VAL:HB	2.47	0.50
1:I:172:PHE:C	1:I:172:PHE:CD1	2.89	0.49
1:O:26:TRP:CZ3	1:O:62:ASN:ND2	2.80	0.49
1:I:181:LYS:HE2	1:I:204:ASP:OD2	2.11	0.49
1:I:173:GLU:OE2	1:I:200[A]:LYS:NZ	2.39	0.49
1:O:65:CYS:H	1:O:95[B]:GLU:CD	2.21	0.49
1:F:115:ILE:HG22	1:F:116:PRO:O	2.12	0.49
1:O:182:TYR:HA	1:O:201[A]:MET:O	2.13	0.48
1:A:1:ALA:N	1:F:96:GLU:OE2	2.42	0.48
1:A:7:TRP:CE2	1:A:130:GLY:HA2	2.48	0.48
1:B:168:VAL:HG23	1:B:184[A]:LEU:HD23	1.94	0.48
1:A:141:GLU:HA	1:A:141:GLU:OE1	2.13	0.48
1:I:73:ALA:O	1:I:77:VAL:HG23	2.14	0.48
1:L:201[A]:MET:HE3	1:L:201[A]:MET:HB3	1.76	0.48
1:O:183:TRP:CE2	1:O:203:LYS:HG3	2.48	0.48
1:B:68:GLY:O	3:B:1222:V65:H152	2.14	0.48
1:F:173:GLU:O	1:F:180:ASN:HB2	2.14	0.48
1:I:49:SER:OG	1:I:52:ASN:HB2	2.14	0.48
1:A:52:ASN:HD22	1:A:52:ASN:C	2.22	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:152:PHE:HA	1:B:208[B]:HIS:CE1	2.49	0.48
1:A:115:ILE:HD13	1:A:125:ALA:CB	2.44	0.48
1:B:165:VAL:HG21	1:B:185:VAL:HG11	1.96	0.47
1:F:5:VAL:O	1:F:169:GLY:HA3	2.14	0.47
1:O:195:MET:SD	1:O:200[A]:LYS:HE2	2.54	0.47
1:F:28:PHE:CE2	1:F:50:GLU:HG2	2.49	0.47
1:I:180:ASN:OD1	1:I:180:ASN:N	2.48	0.47
1:A:46:ILE:CD1	1:I:104:TYR:CE2	2.97	0.47
1:B:117:LYS:C	1:B:118:GLN:HG3	2.38	0.47
1:L:167:VAL:HG22	1:L:185:VAL:HG22	1.96	0.47
1:B:146:TYR:CE2	1:B:199:VAL:HG23	2.49	0.47
1:I:92:GLU:O	1:I:93:ALA:HB3	2.14	0.47
1:B:153:GLU:H	1:B:208[B]:HIS:CE1	2.32	0.47
1:B:179:ASN:HB3	1:B:205:ARG:HD2	1.97	0.47
1:O:131:PRO:HA	1:O:167:VAL:O	2.15	0.47
1:L:52:ASN:OD1	1:L:83:LEU:HD12	2.15	0.46
1:O:122:LEU:O	1:O:126:VAL:HG23	2.15	0.46
1:F:201[A]:MET:HE3	1:F:201[A]:MET:HB3	1.62	0.46
1:A:46:ILE:HG12	1:I:87:GLU:HG2	1.97	0.46
1:I:70:MET:SD	1:I:70:MET:N	2.88	0.45
1:L:5:VAL:HG11	1:L:126:VAL:HG12	1.99	0.45
1:F:192[A]:GLU:H	1:F:192[A]:GLU:CD	2.23	0.45
1:O:115:ILE:HG22	1:O:116:PRO:O	2.16	0.45
1:I:129:VAL:HG21	1:I:217:TYR:CZ	2.52	0.45
1:F:113:VAL:O	1:F:216:SER:HB2	2.17	0.45
1:L:1:ALA:HB1	1:L:123:MET:HE3	1.99	0.45
1:O:76:TYR:O	1:O:80:ASN:N	2.50	0.44
1:L:138:ALA:HB1	1:L:143:PHE:CD2	2.52	0.44
1:A:46:ILE:HD12	1:I:104:TYR:CE2	2.53	0.44
1:O:52:ASN:C	1:O:52:ASN:ND2	2.75	0.44
1:F:153:GLU:HA	1:F:154:PRO:HD3	1.82	0.44
1:O:8:ARG:CZ	1:O:184[A]:LEU:HD21	2.48	0.44
1:O:24:SER:O	1:O:26:TRP:N	2.51	0.44
1:B:126:VAL:HG21	1:B:167:VAL:HG11	2.00	0.43
1:B:135:ALA:HB1	1:B:161:MET:HB3	2.00	0.43
1:O:44:ARG:HG2	1:O:44:ARG:HH11	1.83	0.43
1:A:69:LEU:HD12	1:A:72:TYR:CZ	2.53	0.43
1:A:109:ASP:OD1	1:A:109:ASP:C	2.61	0.43
1:O:27:ALA:O	1:O:31:THR:HG23	2.18	0.43
1:O:83:LEU:O	1:O:105:SER:HA	2.18	0.43
1:I:52:ASN:HD22	1:I:52:ASN:C	2.26	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:172:PHE:HA	1:A:181:LYS:HA	2.00	0.43
1:F:146:TYR:CE2	1:F:199:VAL:HG23	2.53	0.43
1:I:16:VAL:HG21	1:I:197:GLY:HA3	2.00	0.43
1:O:51:GLN:HB2	1:O:91:TYR:HA	2.00	0.43
1:O:112:PHE:HA	1:O:218:PRO:HA	1.99	0.43
3:O:1222:V65:H152	3:O:1222:V65:C23	2.48	0.43
1:O:100:TYR:CG	1:O:101:ASN:N	2.87	0.43
1:B:46:ILE:HD13	1:F:104:TYR:CE1	2.53	0.43
1:F:82:GLY:HA2	1:F:107:ALA:O	2.19	0.43
1:I:117:LYS:NZ	4:I:2025:HOH:O	2.51	0.43
1:O:19:GLN:HE21	1:O:19:GLN:HB2	1.68	0.43
3:O:1222:V65:C15	3:O:1222:V65:C22	2.97	0.43
1:I:69:LEU:HD12	1:I:72:TYR:CE2	2.55	0.42
1:I:40:ARG:NH2	1:I:128:THR:O	2.53	0.42
3:L:1222:V65:H342	3:L:1222:V65:H27	2.00	0.42
1:F:101:ASN:HA	1:F:102:PRO:HD2	1.92	0.42
1:L:182:TYR:HE1	1:L:184[B]:LEU:HG	1.84	0.42
1:I:136:ILE:HG22	1:I:211:ILE:HA	2.01	0.42
1:O:17:LYS:HB3	1:O:28:PHE:CE2	2.54	0.42
1:B:76:TYR:CD1	1:B:76:TYR:C	2.97	0.42
1:B:8:ARG:CZ	1:B:184[A]:LEU:HD21	2.49	0.42
1:O:201[B]:MET:HE2	1:O:201[B]:MET:HB3	1.95	0.42
1:A:210:GLY:O	1:A:213:SER:HB2	2.20	0.42
1:A:192[A]:GLU:H	1:A:192[A]:GLU:CD	2.26	0.42
1:A:65:CYS:HB2	1:A:95[B]:GLU:OE2	2.20	0.41
1:A:46:ILE:CD1	1:I:104:TYR:HE2	2.33	0.41
1:I:9:GLU:H	1:I:9:GLU:HG3	1.62	0.41
1:L:38:MET:HG3	1:L:107:ALA:HB2	2.01	0.41
1:A:13:VAL:CG1	1:A:186:LYS:HE3	2.50	0.41
1:A:92:GLU:O	1:A:93:ALA:HB3	2.20	0.41
1:A:82:GLY:HA2	1:A:107:ALA:O	2.21	0.41
3:B:1222:V65:H122	3:B:1222:V65:H192	1.82	0.41
1:O:69:LEU:HD21	3:O:1222:V65:H162	1.90	0.41
1:F:153:GLU:OE2	1:F:154:PRO:HD2	2.20	0.41
1:F:183:TRP:O	1:F:200[B]:LYS:HA	2.21	0.41
1:L:195:MET:HE2	1:L:195:MET:HB3	1.90	0.41
1:A:146:TYR:CE2	1:A:199:VAL:HA	2.56	0.41
1:F:28:PHE:CZ	1:F:50:GLU:HG2	2.56	0.41
1:F:125:ALA:O	1:F:129:VAL:HB	2.20	0.41
1:B:99:LYS:O	1:B:100:TYR:C	2.63	0.41
1:A:120:LYS:HD3	1:A:120:LYS:HA	1.71	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:183:TRP:CE2	1:B:203:LYS:HG3	2.56	0.40
1:I:80:ASN:ND2	1:I:100:TYR:CZ	2.89	0.40
1:L:73:ALA:O	1:L:74:PHE:C	2.64	0.40
1:O:190:GLY:HA3	1:O:192[A]:GLU:OE2	2.21	0.40
1:I:69:LEU:HD12	1:I:72:TYR:CZ	2.55	0.40
1:O:85:SER:HB3	1:O:106:VAL:HG11	2.02	0.40
1:F:199:VAL:HG22	1:F:201[A]:MET:HG2	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	221/220 (100%)	203 (92%)	17 (8%)	1 (0%)	24	55
1	B	222/220 (101%)	207 (93%)	15 (7%)	0	100	100
1	F	219/220 (100%)	209 (95%)	10 (5%)	0	100	100
1	I	220/220 (100%)	196 (89%)	21 (10%)	3 (1%)	9	30
1	L	219/220 (100%)	198 (90%)	20 (9%)	1 (0%)	24	55
1	O	219/220 (100%)	197 (90%)	19 (9%)	3 (1%)	9	30
All	All	1320/1320 (100%)	1210 (92%)	102 (8%)	8 (1%)	21	51

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	O	156	CYS
1	A	209	CYS
1	L	119	GLU
1	O	25	CYS
1	O	202	ALA

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Mol	Chain	Res	Type
1	I	93	ALA
1	I	86	GLU
1	I	174	SER

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 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	184/179 (103%)	170 (92%)	14 (8%)	12	36
1	B	184/179 (103%)	172 (94%)	12 (6%)	15	43
1	F	182/179 (102%)	171 (94%)	11 (6%)	17	47
1	I	183/179 (102%)	169 (92%)	14 (8%)	12	36
1	L	182/179 (102%)	167 (92%)	15 (8%)	10	33
1	O	182/179 (102%)	166 (91%)	16 (9%)	9	29
All	All	1097/1074 (102%)	1015 (92%)	82 (8%)	14	37

All (82) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ARG
1	A	22	CYS
1	A	103	LYS
1	A	108	ASN
1	A	120	LYS
1	A	144	LEU
1	A	156	CYS
1	A	158	SER
1	A	159	GLU
1	A	178	ASP
1	A	179	ASN
1	A	199	VAL
1	A	206	ARG
1	A	213	SER
1	B	10	LYS

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Mol	Chain	Res	Type
1	B	94	THR
1	B	108	ASN
1	B	118	GLN
1	B	124	LYS
1	B	147	LYS
1	B	155	ASP
1	B	156	CYS
1	B	159	GLU
1	B	173	GLU
1	B	178	ASP
1	B	213	SER
1	F	21	GLN
1	F	109	ASP
1	F	156	CYS
1	F	157	SER
1	F	160	ASP
1	F	180	ASN
1	F	192[A]	GLU
1	F	192[B]	GLU
1	F	199	VAL
1	F	201[A]	MET
1	F	201[B]	MET
1	I	52	ASN
1	I	63	GLU
1	I	103	LYS
1	I	117	LYS
1	I	155	ASP
1	I	156	CYS
1	I	173	GLU
1	I	180	ASN
1	I	184[A]	LEU
1	I	184[B]	LEU
1	I	192[A]	GLU
1	I	192[B]	GLU
1	I	199	VAL
1	I	211	ILE
1	L	3	ARG
1	L	34[A]	LEU
1	L	34[B]	LEU
1	L	106	VAL
1	L	109	ASP
1	L	117	LYS

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Mol	Chain	Res	Type
1	L	147	LYS
1	L	155	ASP
1	L	161	MET
1	L	180	ASN
1	L	181	LYS
1	L	191	GLU
1	L	192[A]	GLU
1	L	192[B]	GLU
1	L	220	VAL
1	O	4	SER
1	O	19	GLN
1	O	22	CYS
1	O	41	LYS
1	O	52	ASN
1	O	99	LYS
1	O	109	ASP
1	O	124	LYS
1	O	144	LEU
1	O	147	LYS
1	O	165	VAL
1	O	192[A]	GLU
1	O	192[B]	GLU
1	O	208[A]	HIS
1	O	208[B]	HIS
1	O	220	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	179	ASN
1	B	66	ASN
1	F	140	HIS
1	I	66	ASN
1	I	118	GLN
1	L	18	ASN
1	L	60	GLN
1	O	19	GLN
1	O	52	ASN
1	O	108	ASN
1	O	118	GLN
1	O	179	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

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	$\# Z > 2$
2	GOL	I	1221	-	5,5,5	0.33	0	5,5,5	0.52	0
3	V65	I	1222	1	32,32,33	1.09	2 (6%)	36,43,45	1.63	7 (19%)
3	V65	O	1222	1	32,32,33	1.17	3 (9%)	36,43,45	1.64	7 (19%)
2	GOL	B	1221	-	5,5,5	0.46	0	5,5,5	0.53	0
3	V65	F	1222	1	32,32,33	1.03	1 (3%)	36,43,45	1.66	4 (11%)
3	V65	L	1222	1	32,32,33	0.81	0	36,43,45	1.77	7 (19%)
3	V65	A	1222	1	32,32,33	0.81	2 (6%)	36,43,45	2.15	8 (22%)
2	GOL	A	1221	-	5,5,5	0.30	0	5,5,5	0.42	0
2	GOL	O	1221	-	5,5,5	0.45	0	5,5,5	0.25	0
3	V65	B	1222	1	32,32,33	1.20	2 (6%)	36,43,45	2.02	11 (30%)
2	GOL	L	1221	-	5,5,5	0.52	0	5,5,5	0.35	0
2	GOL	F	1221	-	5,5,5	0.51	0	5,5,5	0.62	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	GOL	I	1221	-	-	3/4/4/4	-
3	V65	I	1222	1	-	2/16/34/36	0/4/4/4
3	V65	O	1222	1	-	1/16/34/36	0/4/4/4
2	GOL	B	1221	-	-	2/4/4/4	-
3	V65	F	1222	1	-	2/16/34/36	0/4/4/4
3	V65	L	1222	1	-	2/16/34/36	0/4/4/4
3	V65	A	1222	1	-	4/16/34/36	0/4/4/4
2	GOL	A	1221	-	-	3/4/4/4	-
2	GOL	O	1221	-	-	2/4/4/4	-
3	V65	B	1222	1	-	3/16/34/36	0/4/4/4
2	GOL	L	1221	-	-	2/4/4/4	-
2	GOL	F	1221	-	-	4/4/4/4	-

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1222	V65	C1-C4	-4.98	1.45	1.49
3	O	1222	V65	C1-C4	-4.28	1.46	1.49
3	I	1222	V65	C1-C4	-4.20	1.46	1.49
3	F	1222	V65	C1-C4	-3.26	1.47	1.49
3	A	1222	V65	C8-N29	2.25	1.40	1.35
3	O	1222	V65	C6-N10	2.13	1.40	1.36
3	O	1222	V65	C8-N29	2.12	1.40	1.35
3	A	1222	V65	C6-N10	2.11	1.40	1.36
3	B	1222	V65	C12-C22	-2.01	1.47	1.51
3	I	1222	V65	C8-N29	2.00	1.39	1.35

All (44) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1222	V65	C22-C12-N10	-7.35	103.58	114.48
3	F	1222	V65	C22-C12-N10	-6.69	104.55	114.48
3	B	1222	V65	C34-N29-C30	5.65	124.29	111.57
3	A	1222	V65	N7-C6-N10	5.15	122.71	116.96
3	L	1222	V65	N9-C8-N29	5.05	124.30	117.12
3	B	1222	V65	C22-C12-N10	-4.98	107.10	114.48
3	O	1222	V65	C34-N29-C30	4.55	121.79	111.57
3	I	1222	V65	C34-N29-C30	4.44	121.55	111.57
3	A	1222	V65	N9-C4-N5	-4.28	120.32	126.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	I	1222	V65	C22-C12-N10	-3.95	108.62	114.48
3	O	1222	V65	N7-C6-N10	3.95	121.37	116.96
3	L	1222	V65	N9-C4-N5	-3.93	120.78	126.09
3	L	1222	V65	C22-C12-N10	-3.74	108.94	114.48
3	F	1222	V65	N9-C4-N5	-3.41	121.49	126.09
3	A	1222	V65	C34-N29-C30	3.37	119.14	111.57
3	L	1222	V65	N7-C8-N29	-3.28	112.44	117.12
3	L	1222	V65	C34-N29-C30	3.20	118.76	111.57
3	B	1222	V65	C18-C19-C14	-3.07	104.96	110.81
3	F	1222	V65	C34-N29-C30	3.04	118.40	111.57
3	I	1222	V65	N9-C4-N5	-2.90	122.18	126.09
3	B	1222	V65	C27-C22-C23	2.85	122.46	118.23
3	A	1222	V65	C18-C19-C14	-2.78	105.51	110.81
3	O	1222	V65	N9-C4-N5	-2.74	122.40	126.09
3	O	1222	V65	N7-C8-N29	2.73	121.00	117.12
3	B	1222	V65	C12-C22-C23	-2.68	115.82	120.75
3	B	1222	V65	O32-C33-C34	-2.66	106.04	111.77
3	A	1222	V65	C19-C14-C15	-2.66	105.16	111.17
3	O	1222	V65	C33-C34-N29	2.62	114.89	109.93
3	I	1222	V65	N7-C6-N10	2.57	119.83	116.96
3	I	1222	V65	C15-C14-N10	2.52	116.17	112.80
3	L	1222	V65	C16-C15-C14	-2.49	106.08	110.81
3	B	1222	V65	N9-C4-N5	-2.40	122.86	126.09
3	B	1222	V65	C26-C27-C22	-2.37	117.88	121.00
3	B	1222	V65	C31-C30-N29	2.36	114.40	109.93
3	A	1222	V65	N7-C6-N5	-2.33	122.13	126.27
3	L	1222	V65	C34-N29-C8	-2.29	117.15	121.67
3	O	1222	V65	N7-C6-N5	-2.26	122.25	126.27
3	A	1222	V65	C12-N10-C6	2.25	123.14	119.69
3	I	1222	V65	C16-C15-C14	-2.20	106.62	110.81
3	I	1222	V65	C31-C30-N29	2.19	114.08	109.93
3	B	1222	V65	C34-N29-C8	-2.17	117.39	121.67
3	O	1222	V65	C8-N7-C6	2.13	117.09	113.63
3	B	1222	V65	C15-C14-N10	2.11	115.62	112.80
3	F	1222	V65	N7-C6-N10	2.02	119.21	116.96

There are no chirality outliers.

All (30) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1221	GOL	O1-C1-C2-C3
2	B	1221	GOL	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
2	F	1221	GOL	O1-C1-C2-C3
2	I	1221	GOL	O1-C1-C2-C3
2	O	1221	GOL	O1-C1-C2-O2
2	O	1221	GOL	O1-C1-C2-C3
3	A	1222	V65	C19-C14-N10-C6
3	A	1222	V65	C19-C14-N10-C12
3	B	1222	V65	C19-C14-N10-C6
3	B	1222	V65	C19-C14-N10-C12
2	F	1221	GOL	O2-C2-C3-O3
2	F	1221	GOL	C1-C2-C3-O3
2	L	1221	GOL	O1-C1-C2-C3
2	B	1221	GOL	O1-C1-C2-O2
2	F	1221	GOL	O1-C1-C2-O2
2	L	1221	GOL	O1-C1-C2-O2
3	A	1222	V65	C15-C14-N10-C12
3	F	1222	V65	C19-C14-N10-C12
3	I	1222	V65	C19-C14-N10-C12
3	L	1222	V65	C19-C14-N10-C12
3	O	1222	V65	C15-C14-N10-C12
2	A	1221	GOL	O1-C1-C2-O2
2	I	1221	GOL	O1-C1-C2-O2
2	A	1221	GOL	O2-C2-C3-O3
3	B	1222	V65	C15-C14-N10-C12
2	I	1221	GOL	O2-C2-C3-O3
3	F	1222	V65	C15-C14-N10-C12
3	I	1222	V65	C15-C14-N10-C12
3	L	1222	V65	C15-C14-N10-C12
3	A	1222	V65	C15-C14-N10-C6

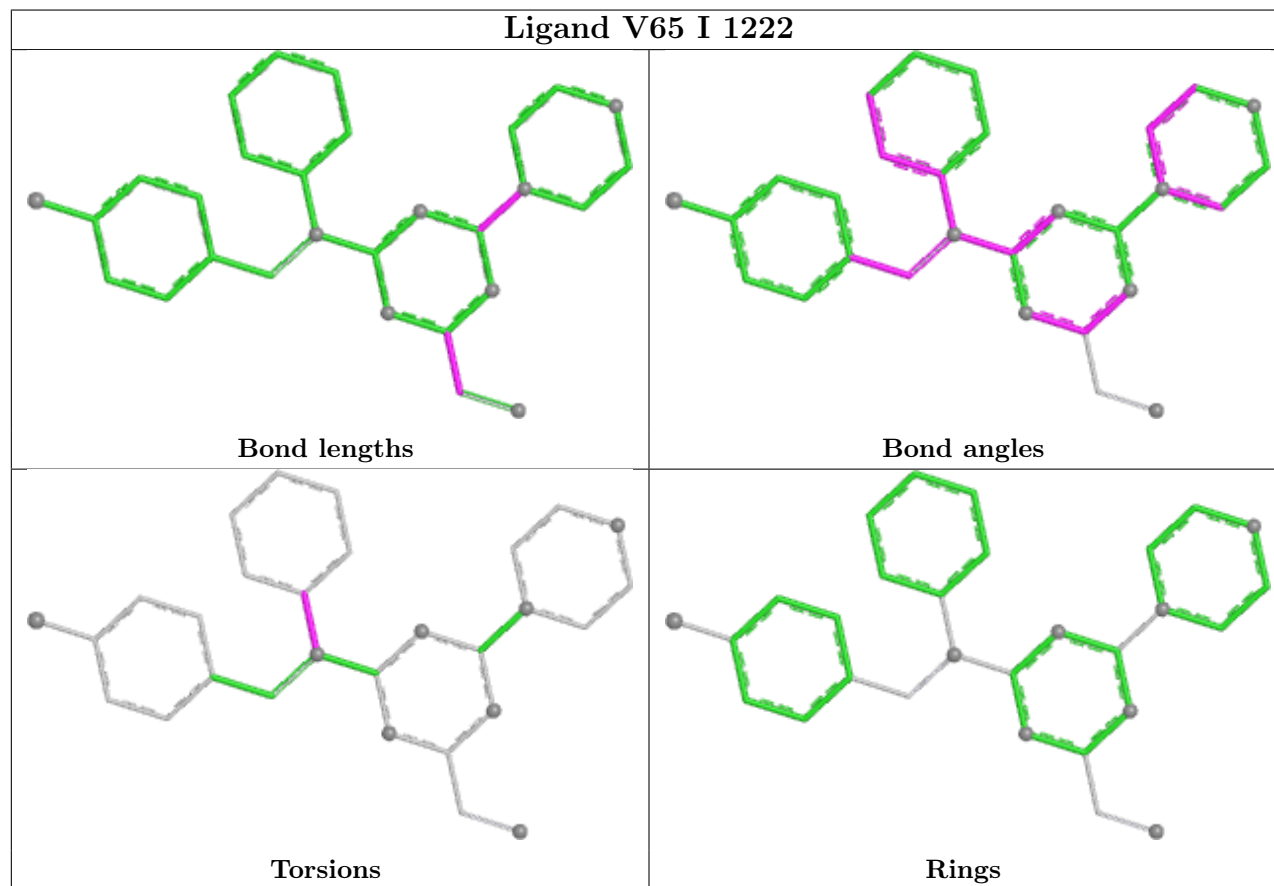
There are no ring outliers.

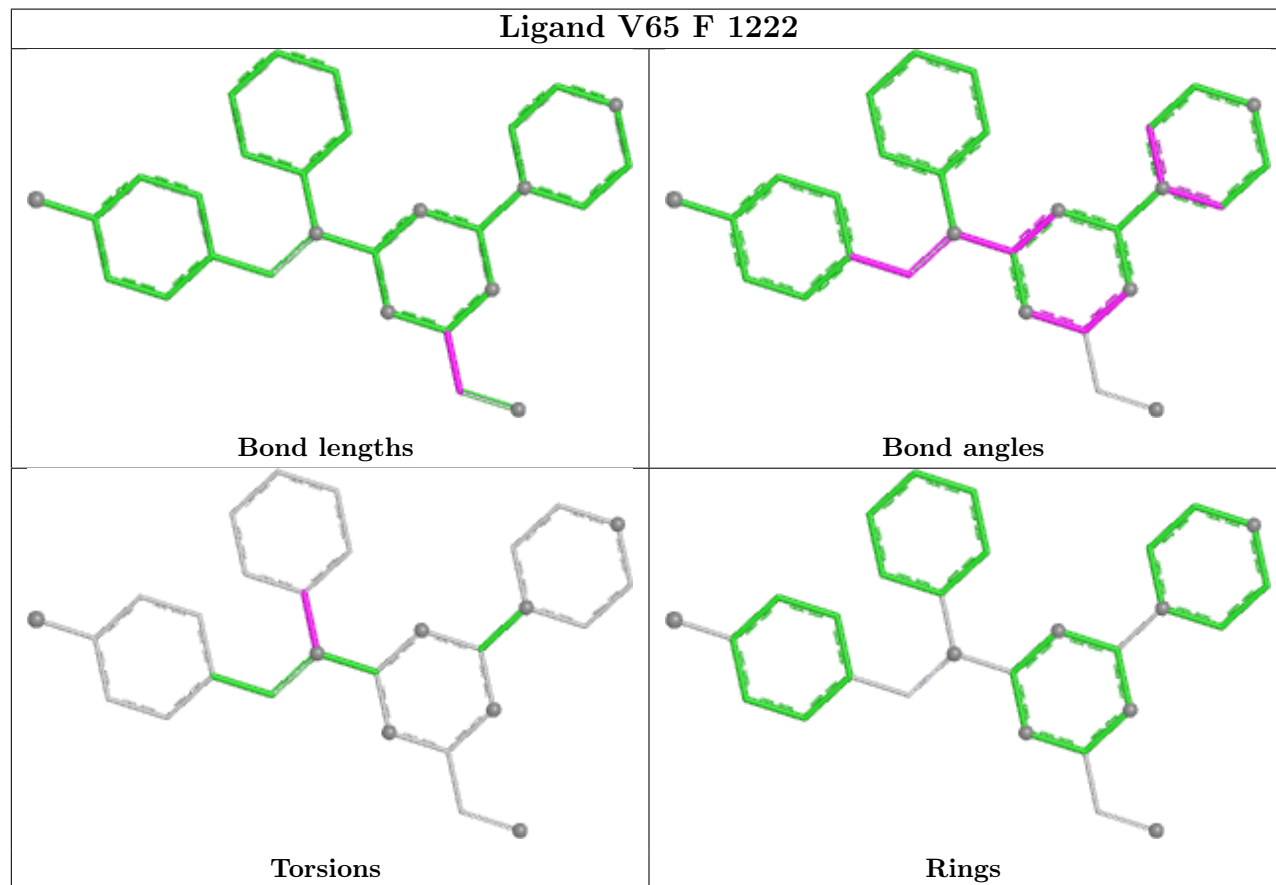
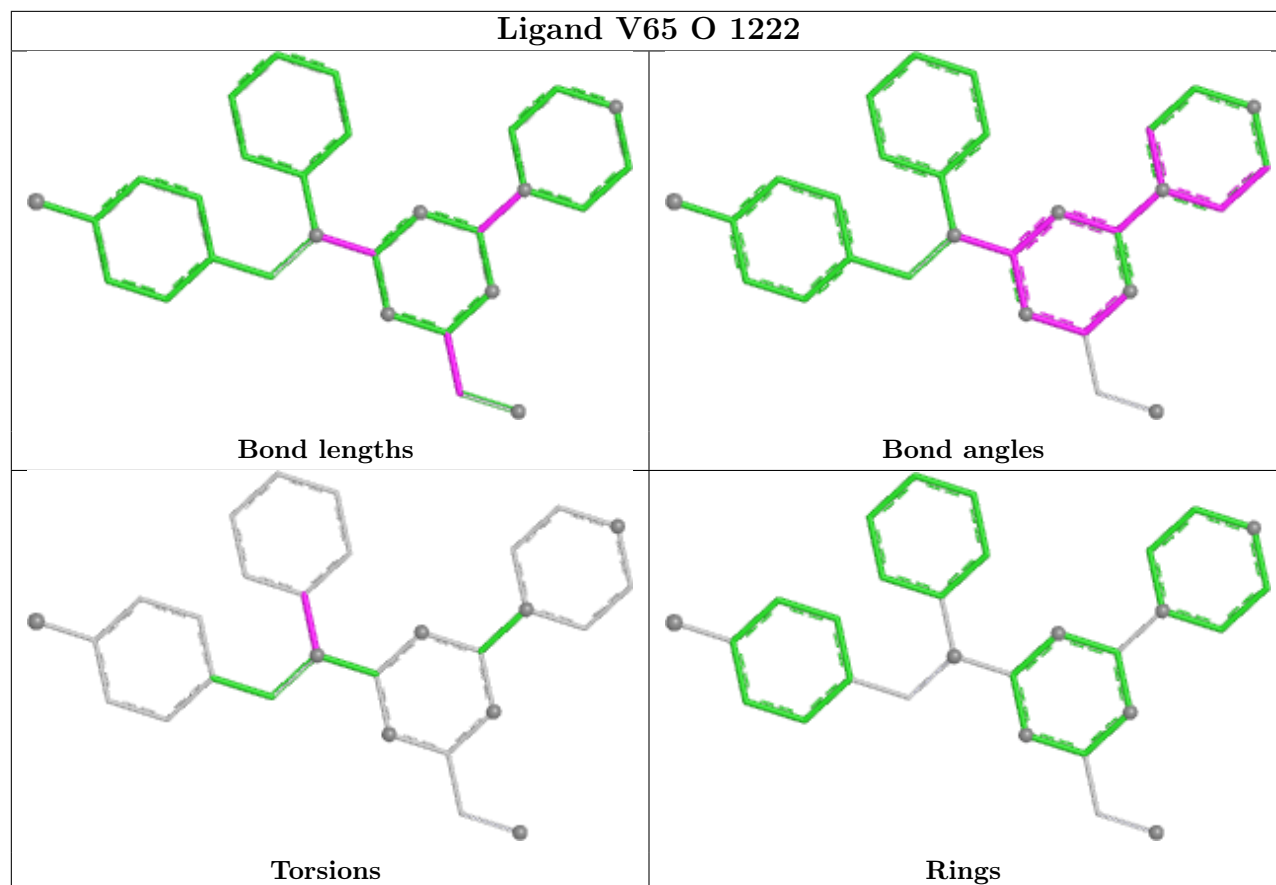
6 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	I	1222	V65	3	0
3	O	1222	V65	12	0
3	F	1222	V65	3	0
3	L	1222	V65	2	0
3	A	1222	V65	6	0
3	B	1222	V65	5	0

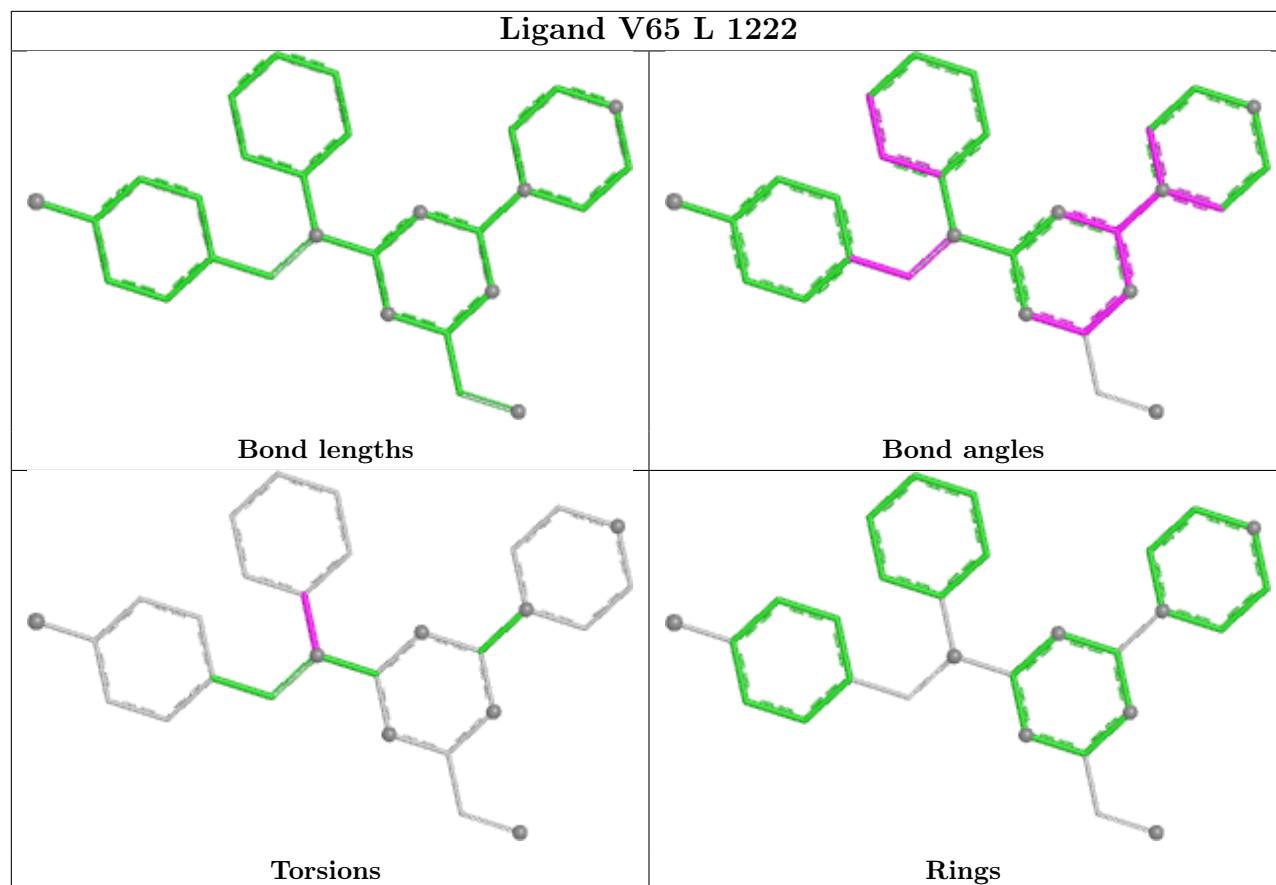
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

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.

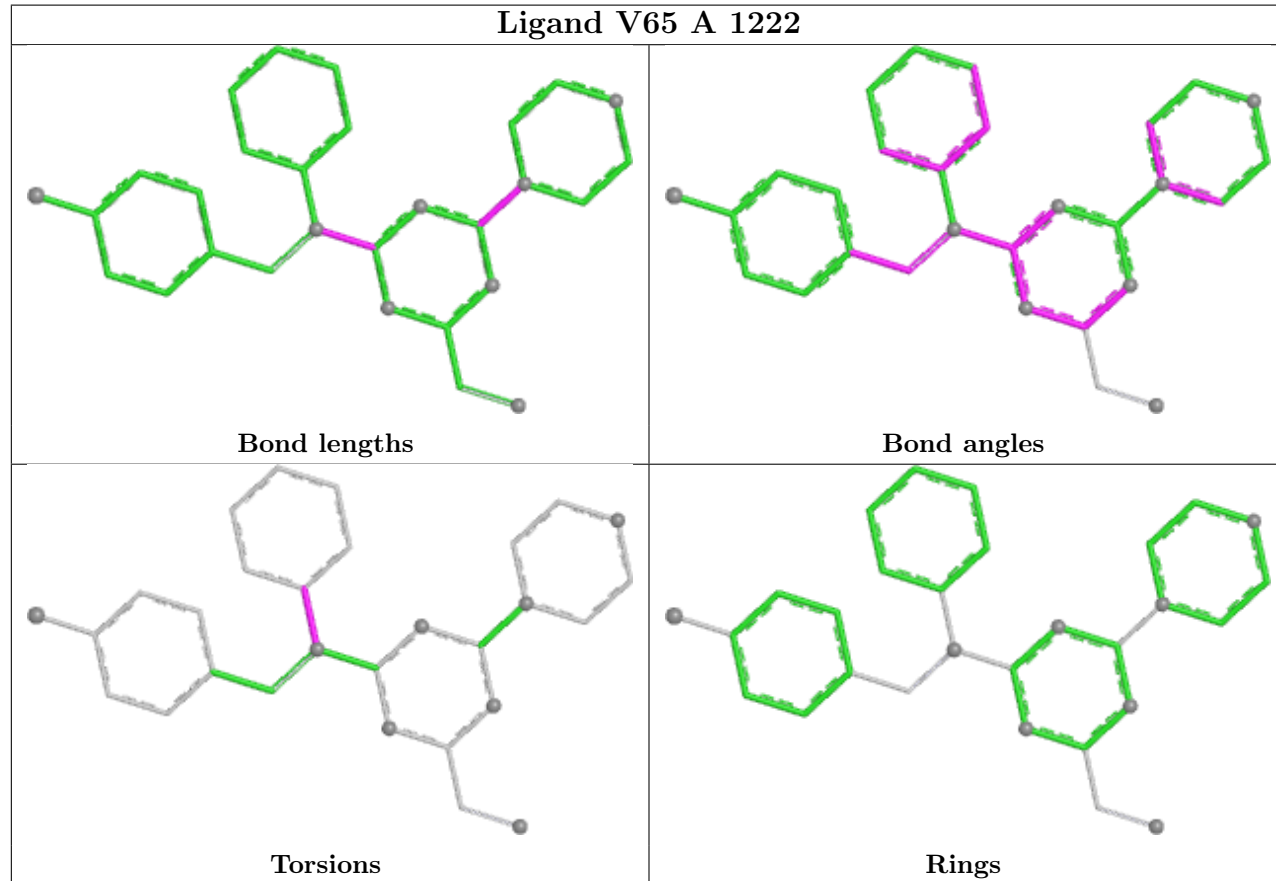


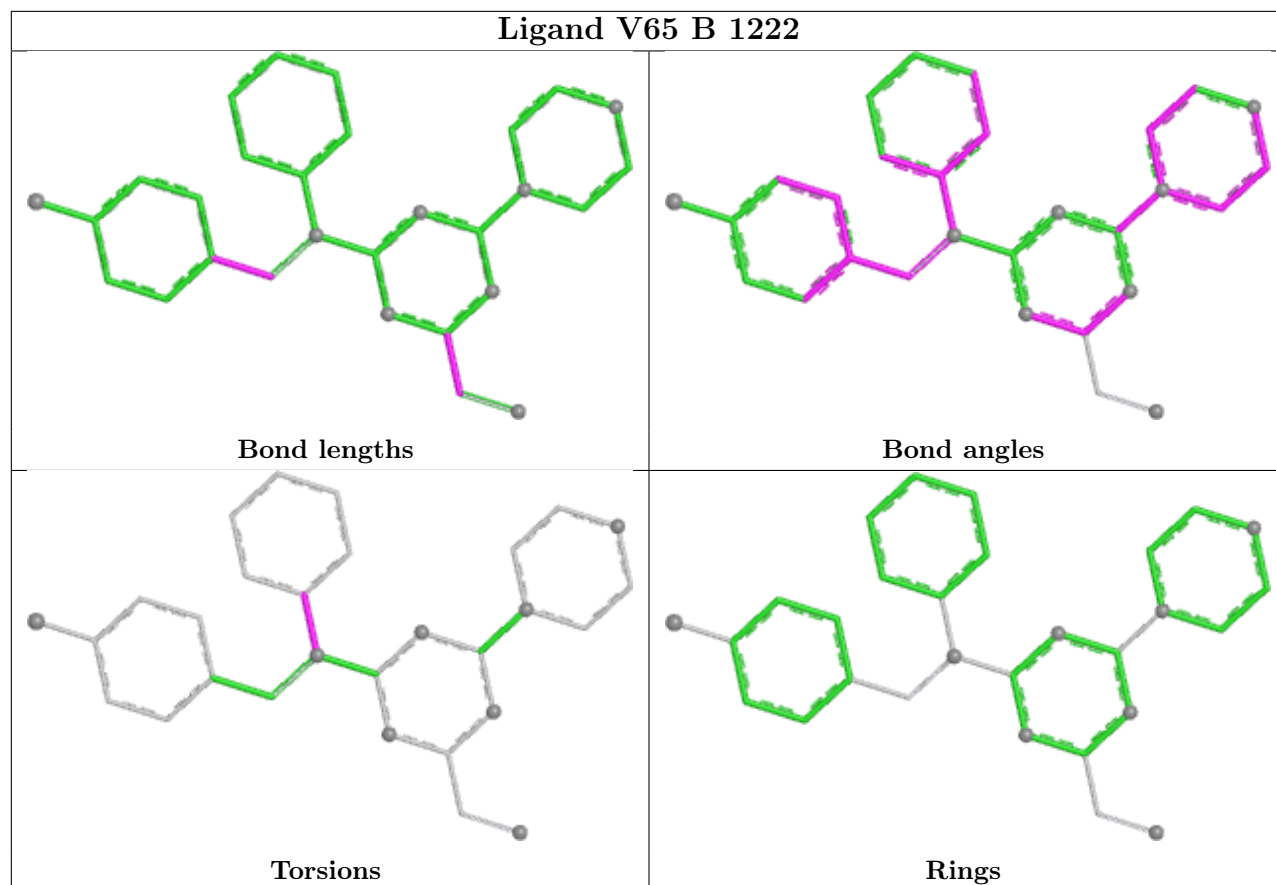


Ligand V65 L 1222



Ligand V65 A 1222





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 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	218/220 (99%)	-0.47	1 (0%) 87 82	17, 43, 71, 127	13 (5%)
1	B	219/220 (99%)	-0.45	1 (0%) 87 82	17, 46, 73, 111	11 (5%)
1	F	216/220 (98%)	-0.44	1 (0%) 87 82	18, 44, 68, 99	12 (5%)
1	I	217/220 (98%)	-0.40	2 (0%) 81 74	15, 47, 80, 113	12 (5%)
1	L	216/220 (98%)	0.06	2 (0%) 81 74	25, 67, 95, 109	12 (5%)
1	O	216/220 (98%)	0.34	5 (2%) 61 51	24, 75, 104, 119	12 (5%)
All	All	1302/1320 (98%)	-0.23	12 (0%) 81 74	15, 52, 89, 127	72 (5%)

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	O	3	ARG	4.2
1	L	3	ARG	3.2
1	B	176	GLU	3.2
1	O	144	LEU	2.9
1	O	168	VAL	2.9
1	F	174	SER	2.8
1	O	220	VAL	2.5
1	L	174	SER	2.5
1	O	179	ASN	2.3
1	I	175	THR	2.2
1	I	3	ARG	2.1
1	A	177	SER	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates

There are no oligosaccharides in this entry.

6.4 Ligands

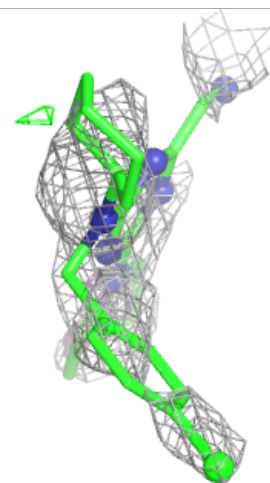
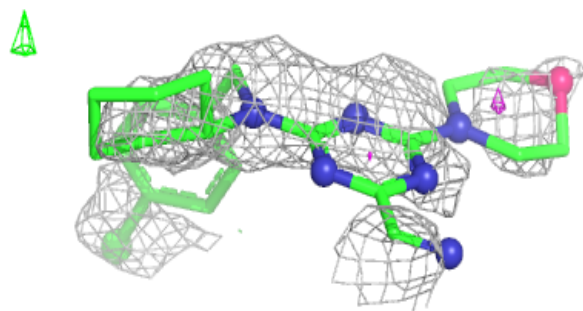
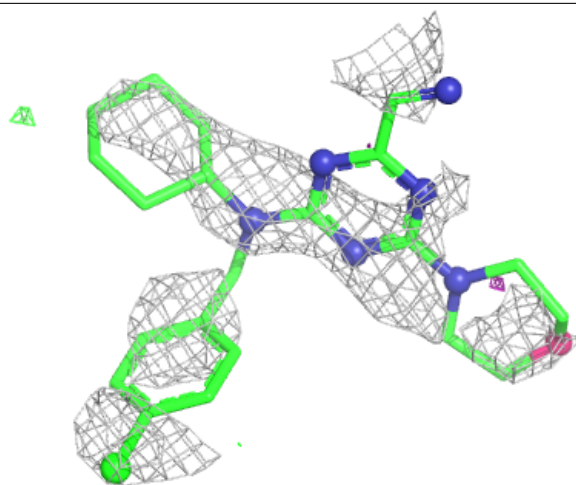
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	GOL	O	1221	6/6	0.62	0.20	109,120,123,126	0
2	GOL	B	1221	6/6	0.75	0.26	76,77,82,82	0
2	GOL	L	1221	6/6	0.80	0.15	72,82,86,91	0
2	GOL	F	1221	6/6	0.81	0.18	74,84,91,92	0
2	GOL	I	1221	6/6	0.81	0.18	70,78,83,85	0
3	V65	O	1222	29/30	0.82	0.20	104,124,137,142	0
3	V65	F	1222	29/30	0.89	0.16	73,83,119,130	0
3	V65	I	1222	29/30	0.89	0.14	67,96,117,126	0
3	V65	A	1222	29/30	0.89	0.16	62,75,101,107	0
3	V65	L	1222	29/30	0.91	0.14	63,89,102,105	0
2	GOL	A	1221	6/6	0.91	0.11	76,81,84,89	0
3	V65	B	1222	29/30	0.93	0.10	41,54,66,73	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.

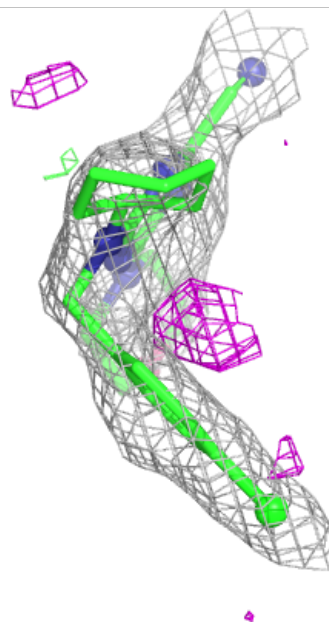
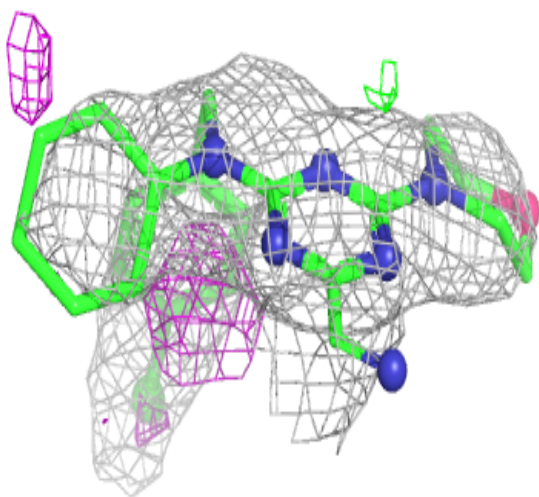
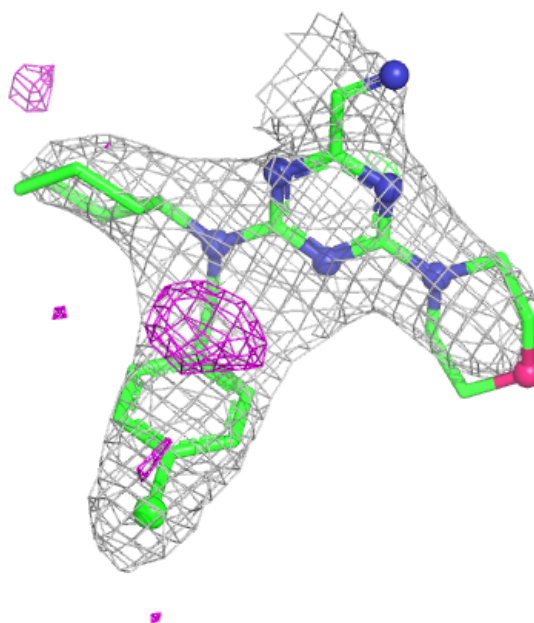
Electron density around V65 O 1222:

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



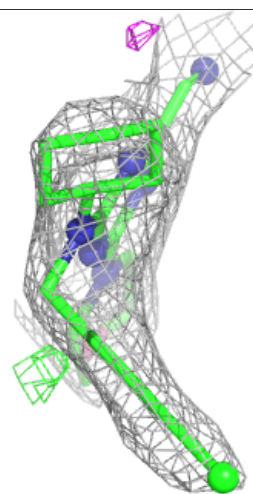
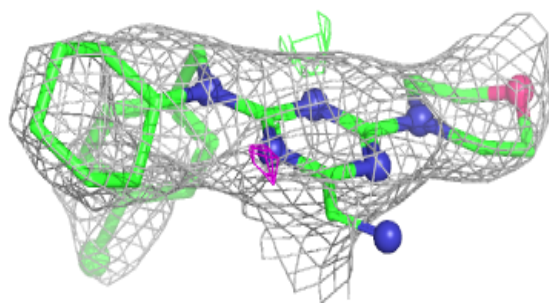
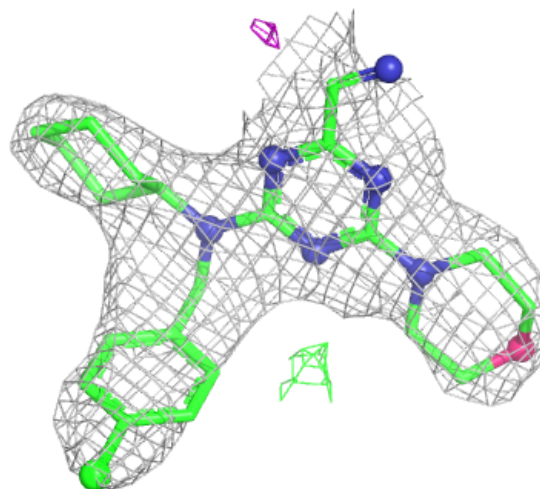
Electron density around V65 F 1222:

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



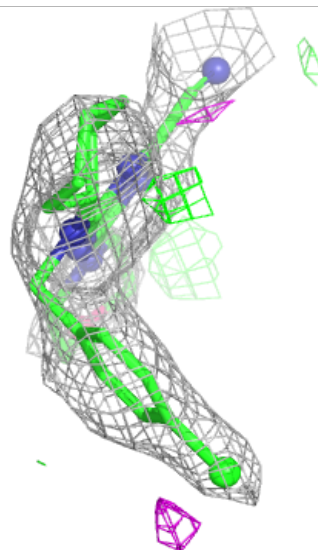
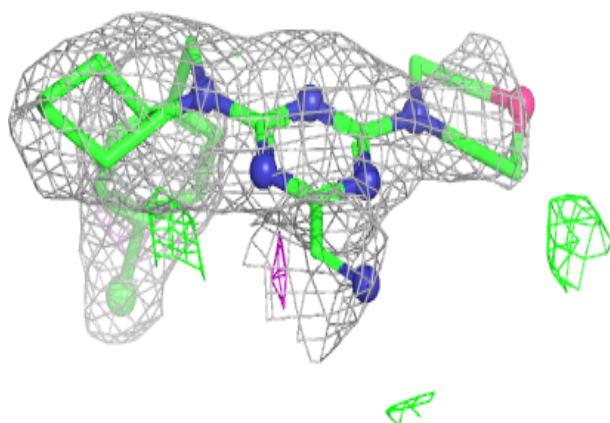
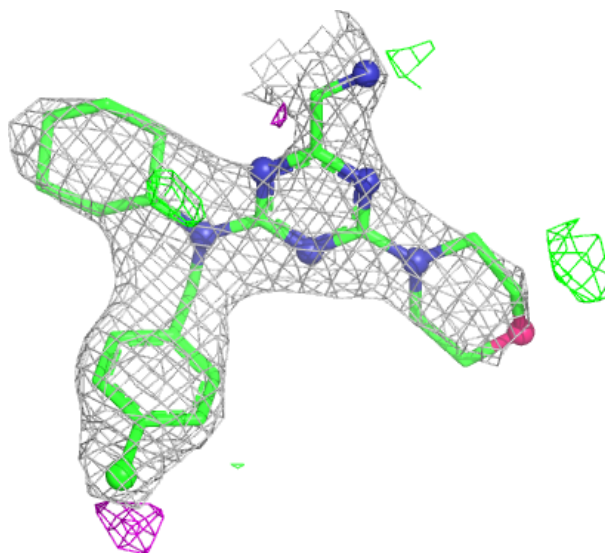
Electron density around V65 I 1222:

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



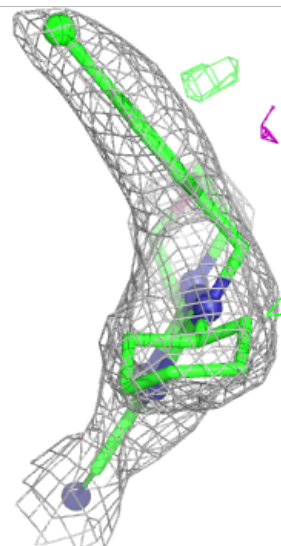
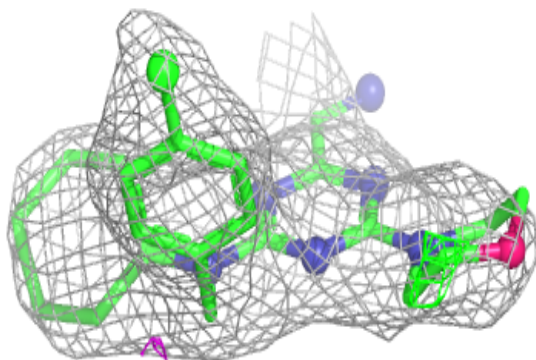
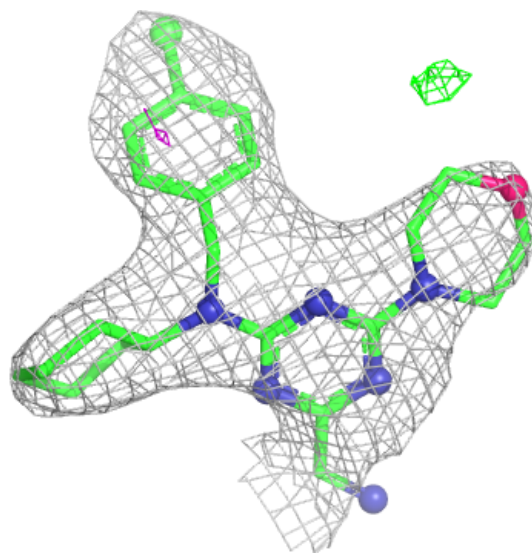
Electron density around V65 A 1222:

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



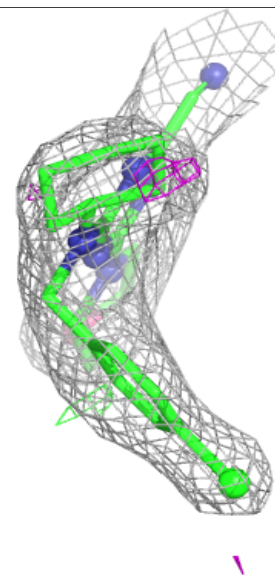
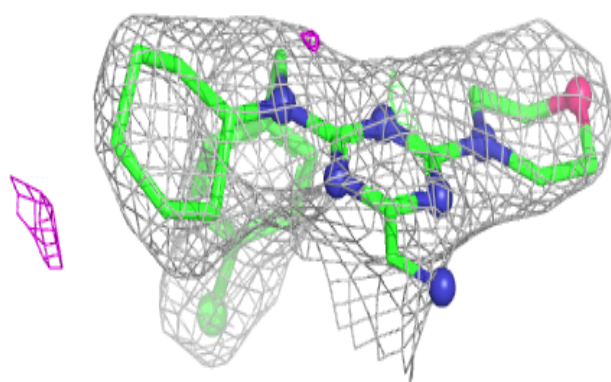
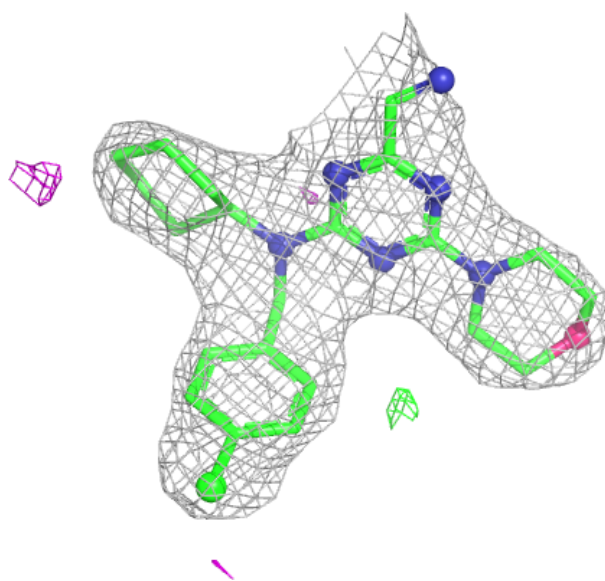
Electron density around V65 L 1222:

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



Electron density around V65 B 1222:

$2mF_o-DF_c$ (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.