



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 7, 2026 – 03:08 AM UTC

PDB ID : 2CVD / pdb_00002cvd
Title : Crystal structure analysis of human hematopoietic prostaglandin D synthase complexed with HQL-79
Authors : Aritake, K.; Kado, Y.; Inoue, T.; Miyano, M.; Urade, Y.
Deposited on : 2005-06-02
Resolution : 1.45 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

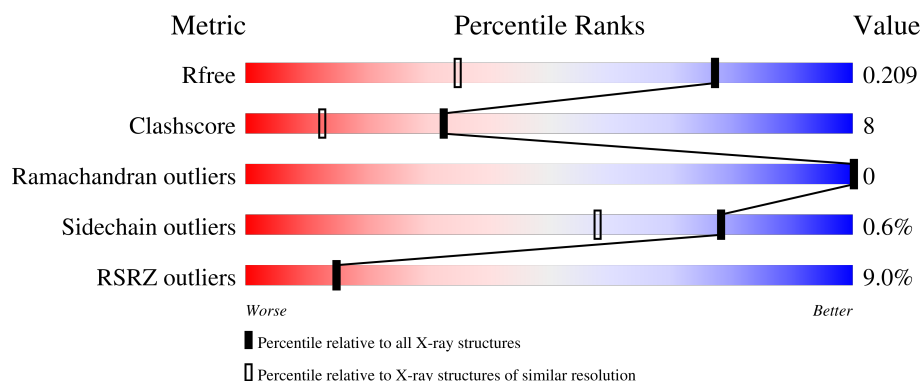
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.45 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	1756 (1.46-1.46)
Clashscore	190562	1795 (1.46-1.46)
Ramachandran outliers	187476	1776 (1.46-1.46)
Sidechain outliers	187428	1776 (1.46-1.46)
RSRZ outliers	180081	1756 (1.46-1.46)

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	198	11% 82% 18%
1	B	198	15% 84% 15%
1	C	198	6% 84% 16%
1	D	198	5% 87% 12%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 8172 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 Glutathione-requiring prostaglandin D synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	198	Total	C	N	O	S	0	0	0
			1638	1058	273	298	9			
1	B	198	Total	C	N	O	S	0	0	0
			1638	1058	273	298	9			
1	C	198	Total	C	N	O	S	0	0	0
			1638	1058	273	298	9			
1	D	198	Total	C	N	O	S	0	0	0
			1638	1058	273	298	9			

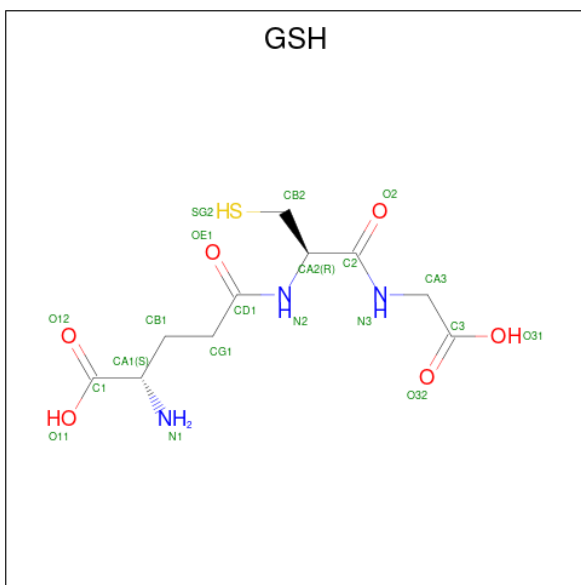
There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	144	MET	ASN	conflict	UNP O60760
B	144	MET	ASN	conflict	UNP O60760
C	144	MET	ASN	conflict	UNP O60760
D	144	MET	ASN	conflict	UNP O60760

- Molecule 2 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

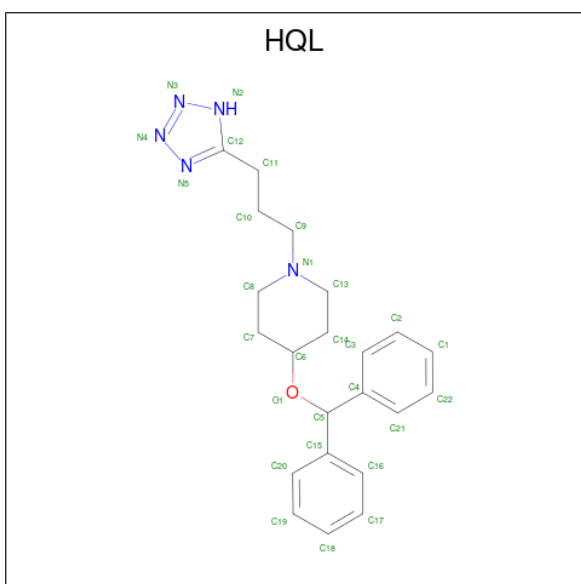
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Mg	0	0
			1	1		
2	B	1	Total	Mg	0	0
			1	1		

- Molecule 3 is GLUTATHIONE (CCD ID: GSH) (formula: C₁₀H₁₇N₃O₆S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total 20	C 10	N 3	O 6	S 1	0	0
3	B	1	Total 20	C 10	N 3	O 6	S 1	0	0
3	C	1	Total 20	C 10	N 3	O 6	S 1	0	0
3	D	1	Total 20	C 10	N 3	O 6	S 1	0	0

- Molecule 4 is 4-(BENZHYDRYLOXY)-1-[3-(1H-TETRAAZOL-5-YL)PROPYL]PIPERIDINE (CCD ID: HQL) (formula: $C_{22}H_{27}N_5O$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	0
			28	22	5	1		
4	B	1	Total	C	N	O	0	0
			28	22	5	1		
4	C	1	Total	C	N	O	0	0
			28	22	5	1		
4	D	1	Total	C	N	O	0	0
			28	22	5	1		

- Molecule 5 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	C	1	Total	C	O	0	0
			6	3	3		
5	C	1	Total	C	O	0	0
			6	3	3		
5	C	1	Total	C	O	0	0
			6	3	3		
5	C	1	Total	C	O	0	0
			6	3	3		

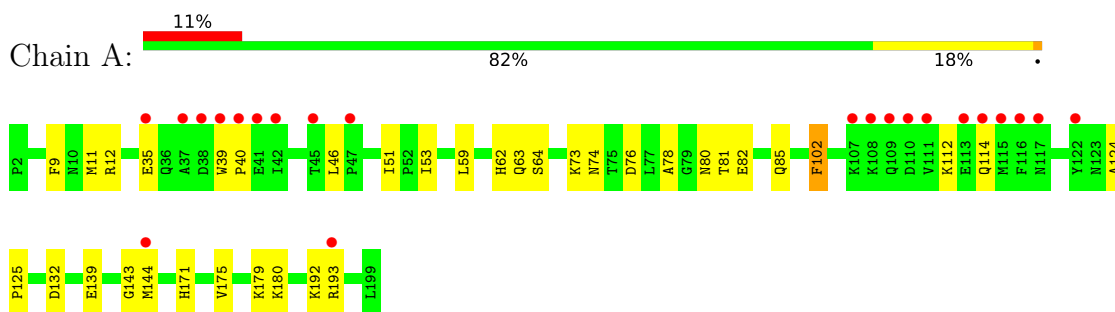
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	344	Total 344	O 344	0	0
6	B	282	Total 282	O 282	0	0
6	C	390	Total 390	O 390	0	0
6	D	368	Total 368	O 368	0	0

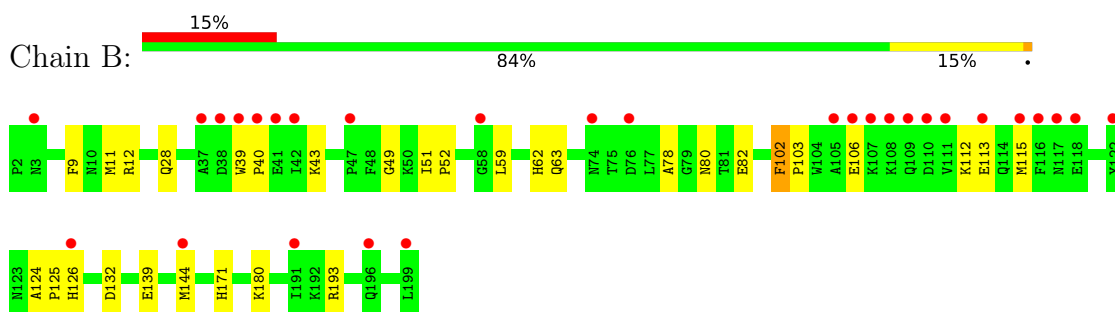
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and 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.

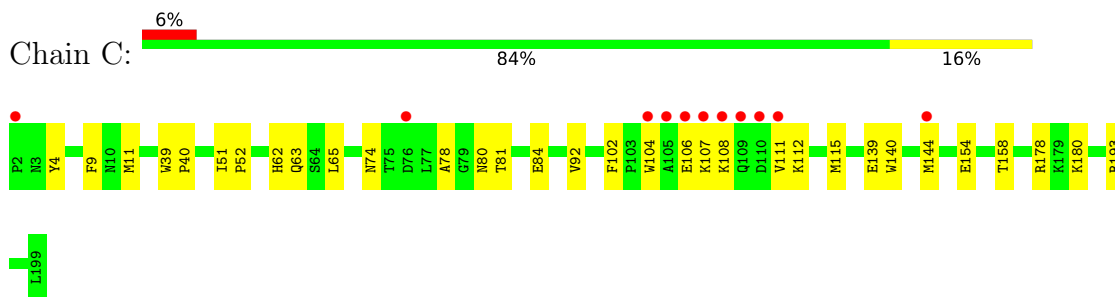
- Molecule 1: Glutathione-requiring prostaglandin D synthase



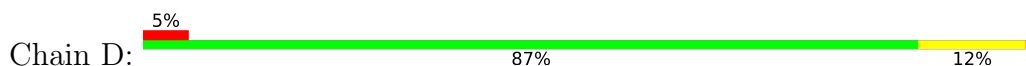
- Molecule 1: Glutathione-requiring prostaglandin D synthase

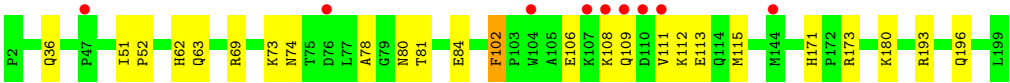


- Molecule 1: Glutathione-requiring prostaglandin D synthase



- Molecule 1: Glutathione-requiring prostaglandin D synthase





4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	46.94Å 49.09Å 93.14Å 85.83° 88.71° 89.98°	Depositor
Resolution (Å)	34.98 – 1.45 34.98 – 1.45	Depositor EDS
% Data completeness (in resolution range)	87.0 (34.98-1.45) 87.1 (34.98-1.45)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.02 (at 1.45Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.192 , 0.209 0.192 , 0.209	Depositor DCC
R_{free} test set	6427 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å ²)	6.5	Xtriage
Anisotropy	0.291	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 46.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	0.109 for h,-k,-l	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	8172	wwPDB-VP
Average B, all atoms (Å ²)	14.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.49% 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: HQL, MG, GSH, GOL

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	0.34	0/1681	0.82	6/2283 (0.3%)
1	B	0.33	0/1681	0.81	5/2283 (0.2%)
1	C	0.36	0/1681	0.79	2/2283 (0.1%)
1	D	0.36	0/1681	0.80	4/2283 (0.2%)
All	All	0.35	0/6724	0.81	17/9132 (0.2%)

There are no bond length outliers.

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	78	ALA	N-CA-C	7.75	121.22	111.69
1	A	12	ARG	N-CA-C	-7.22	103.01	111.03
1	B	12	ARG	N-CA-C	-6.53	102.81	111.24
1	B	78	ALA	N-CA-C	6.52	120.44	112.23
1	C	78	ALA	N-CA-C	6.15	118.96	111.82
1	D	78	ALA	N-CA-C	5.81	118.56	111.82
1	C	80	ASN	N-CA-C	5.79	120.19	113.18
1	B	80	ASN	N-CA-C	5.78	120.17	113.18
1	D	102	PHE	CA-C-N	5.75	127.03	119.84
1	D	102	PHE	C-N-CA	5.75	127.03	119.84
1	A	80	ASN	N-CA-C	5.51	119.85	113.18
1	D	80	ASN	N-CA-C	5.49	119.83	113.18
1	B	102	PHE	CA-C-N	5.35	126.53	119.84
1	B	102	PHE	C-N-CA	5.35	126.53	119.84
1	A	64	SER	N-CA-C	5.24	117.40	111.11
1	A	102	PHE	CA-C-N	5.07	126.17	119.84
1	A	102	PHE	C-N-CA	5.07	126.17	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	1638	0	1622	32	0
1	B	1638	0	1622	22	0
1	C	1638	0	1622	33	0
1	D	1638	0	1622	27	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	20	0	15	0	0
3	B	20	0	15	0	0
3	C	20	0	15	0	0
3	D	20	0	15	0	0
4	A	28	0	27	2	0
4	B	28	0	27	1	0
4	C	28	0	27	2	0
4	D	28	0	27	1	0
5	A	6	0	8	1	0
5	B	12	0	16	2	0
5	C	24	0	32	0	0
6	A	344	0	0	8	0
6	B	282	0	0	6	0
6	C	390	0	0	5	0
6	D	368	0	0	4	0
All	All	8172	0	6712	106	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 (106) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:85:GLN:HE21	1:D:73:LYS:NZ	1.78	0.80
1:A:143:GLY:H	5:A:3006:GOL:H12	1.48	0.78
1:B:115:MET:HG3	6:B:4247:HOH:O	1.83	0.78
1:D:111:VAL:HG12	1:D:115:MET:HE2	1.67	0.75
1:B:139:GLU:HG2	1:B:180:LYS:HE2	1.68	0.75
1:A:85:GLN:NE2	1:D:73:LYS:HZ3	1.85	0.74

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4:TYR:H	1:D:196:GLN:HE22	1.33	0.74
1:B:28:GLN:HG3	6:B:4221:HOH:O	1.88	0.73
1:C:154:GLU:O	1:C:158:THR:HG23	1.90	0.72
1:D:108:LYS:HZ2	1:D:108:LYS:HB3	1.55	0.71
1:C:180:LYS:HD2	6:C:3285:HOH:O	1.90	0.71
1:D:112:LYS:HA	1:D:115:MET:HE3	1.74	0.70
1:A:85:GLN:HE21	1:D:73:LYS:HZ3	1.36	0.70
1:C:139:GLU:HG3	1:C:180:LYS:HE2	1.74	0.69
1:A:76:ASP:HB3	6:A:4291:HOH:O	1.92	0.69
1:B:39:TRP:HB3	1:B:40:PRO:HD3	1.75	0.68
1:D:180:LYS:HD2	6:D:2894:HOH:O	1.92	0.68
1:B:124:ALA:HB3	1:B:125:PRO:HD3	1.76	0.68
1:C:158:THR:CG2	1:C:178:ARG:HH12	2.08	0.67
1:B:9:PHE:HB2	1:B:11:MET:HE2	1.77	0.67
1:C:193:ARG:HG3	1:C:193:ARG:HH11	1.60	0.65
1:A:193:ARG:HG2	1:A:193:ARG:HH11	1.60	0.65
1:A:85:GLN:NE2	1:D:73:LYS:NZ	2.44	0.65
1:C:108:LYS:HB3	1:C:108:LYS:NZ	2.13	0.63
1:C:158:THR:HG23	1:C:178:ARG:HH12	1.62	0.63
1:A:114:GLN:HG3	6:A:4301:HOH:O	1.98	0.63
1:A:124:ALA:HB3	1:A:125:PRO:HD3	1.80	0.62
1:B:193:ARG:HH22	5:B:3005:GOL:H11	1.64	0.62
1:A:35:GLU:HG2	6:A:4230:HOH:O	2.00	0.61
1:C:112:LYS:HA	1:C:115:MET:HE3	1.83	0.60
1:D:108:LYS:HB3	1:D:108:LYS:NZ	2.18	0.59
1:C:4:TYR:H	1:D:196:GLN:NE2	2.02	0.58
1:A:39:TRP:HB3	1:A:40:PRO:HD3	1.86	0.56
1:B:193:ARG:HH22	5:B:3005:GOL:C1	2.19	0.55
1:C:108:LYS:HB3	1:C:108:LYS:HZ2	1.70	0.55
1:C:111:VAL:HG12	1:C:115:MET:HE2	1.89	0.55
1:A:171:HIS:HE1	6:A:4162:HOH:O	1.89	0.54
1:A:82:GLU:OE1	1:D:74:ASN:ND2	2.41	0.54
1:A:139:GLU:HG2	1:A:180:LYS:HE2	1.91	0.53
1:B:113:GLU:HG3	6:B:4245:HOH:O	2.08	0.53
1:A:114:GLN:NE2	6:A:4299:HOH:O	2.42	0.52
1:B:171:HIS:HE1	6:B:4046:HOH:O	1.92	0.52
1:C:139:GLU:HB2	6:C:3314:HOH:O	2.10	0.51
1:A:193:ARG:HG2	1:A:193:ARG:NH1	2.25	0.51
1:B:103:PRO:HG3	1:B:115:MET:SD	2.51	0.51
1:C:107:LYS:HE2	6:C:3350:HOH:O	2.10	0.51
1:A:192:LYS:HE3	1:A:193:ARG:NH1	2.26	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:109:GLN:HG2	6:D:3167:HOH:O	2.12	0.50
1:C:112:LYS:HA	1:C:115:MET:CE	2.40	0.49
1:B:106:GLU:HB3	1:B:112:LYS:HB2	1.94	0.49
1:C:106:GLU:HG2	1:C:115:MET:CE	2.43	0.49
1:C:158:THR:HG21	6:C:3028:HOH:O	2.13	0.49
1:D:109:GLN:O	1:D:113:GLU:HG3	2.13	0.49
1:A:73:LYS:O	1:A:74:ASN:HB2	2.12	0.49
1:A:9:PHE:CE1	1:A:51:ILE:HD11	2.48	0.48
1:C:81:THR:OG1	1:C:84:GLU:HG3	2.14	0.47
1:D:106:GLU:HG2	1:D:115:MET:CE	2.43	0.47
1:A:112:LYS:HE2	6:A:4326:HOH:O	2.14	0.47
1:C:139:GLU:HG2	1:C:140:TRP:NE1	2.29	0.47
1:B:43:LYS:NZ	1:B:49:GLY:O	2.45	0.46
1:B:59:LEU:HD12	6:B:4165:HOH:O	2.15	0.46
1:A:11:MET:SD	4:A:2201:HQL:H132	2.55	0.46
1:B:180:LYS:HD2	6:B:4144:HOH:O	2.16	0.46
1:C:193:ARG:HG3	1:C:193:ARG:NH1	2.28	0.46
1:A:102:PHE:CD1	4:A:2201:HQL:H2	2.51	0.46
1:B:132:ASP:OD1	1:B:171:HIS:HD2	1.99	0.45
1:C:11:MET:SD	4:C:2601:HQL:H132	2.56	0.45
1:A:175:VAL:HG12	1:A:179:LYS:HE2	1.99	0.45
1:D:69:ARG:O	1:D:73:LYS:HG3	2.15	0.45
1:C:139:GLU:HG2	1:C:140:TRP:CD1	2.52	0.45
1:A:132:ASP:OD1	1:A:171:HIS:HD2	2.00	0.44
1:D:108:LYS:HZ2	1:D:111:VAL:HG23	1.82	0.44
1:C:65:LEU:HD13	1:C:92:VAL:HG12	1.98	0.44
1:D:102:PHE:CD1	4:D:2801:HQL:H2	2.53	0.44
1:C:9:PHE:CB	1:C:11:MET:HE3	2.48	0.44
1:B:126:HIS:HD2	6:C:3266:HOH:O	2.01	0.43
1:D:193:ARG:HH11	1:D:193:ARG:HG3	1.83	0.43
1:B:51:ILE:HB	1:B:52:PRO:HA	2.00	0.43
1:B:102:PHE:CD1	4:B:2401:HQL:H2	2.53	0.43
1:A:59:LEU:HD12	6:A:4202:HOH:O	2.18	0.43
1:A:192:LYS:HE3	1:A:193:ARG:HH12	1.83	0.43
1:C:104:TRP:HA	1:C:112:LYS:HE3	2.01	0.43
1:D:81:THR:OG1	1:D:84:GLU:HG3	2.19	0.43
1:B:62:HIS:O	1:B:63:GLN:HB2	2.19	0.42
1:B:82:GLU:OE1	1:C:74:ASN:ND2	2.53	0.42
1:C:102:PHE:CD1	4:C:2601:HQL:H2	2.55	0.42
1:A:46:LEU:CD2	1:A:53:ILE:HD13	2.49	0.42
1:B:139:GLU:CG	1:B:180:LYS:HE2	2.44	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:39:TRP:HB3	1:C:40:PRO:HD3	2.01	0.42
1:D:173:ARG:NE	6:D:3139:HOH:O	2.52	0.42
1:D:62:HIS:O	1:D:63:GLN:HB2	2.19	0.41
1:D:106:GLU:HG2	1:D:115:MET:HE1	2.02	0.41
1:A:9:PHE:CZ	1:A:51:ILE:HD11	2.56	0.41
1:C:62:HIS:O	1:C:63:GLN:HB2	2.19	0.41
1:C:139:GLU:CG	1:C:180:LYS:HE2	2.49	0.41
1:A:62:HIS:O	1:A:63:GLN:HB2	2.21	0.41
1:A:81:THR:O	1:A:85:GLN:HG3	2.21	0.41
1:A:114:GLN:NE2	6:A:4300:HOH:O	2.46	0.41
1:C:51:ILE:HB	1:C:52:PRO:HA	2.03	0.41
1:D:106:GLU:CG	1:D:115:MET:HE1	2.51	0.41
1:D:112:LYS:HA	1:D:115:MET:CE	2.49	0.41
1:A:46:LEU:HD21	1:A:53:ILE:HD13	2.03	0.41
1:D:171:HIS:HE1	6:D:2891:HOH:O	2.04	0.40
1:C:106:GLU:HG2	1:C:115:MET:HE1	2.03	0.40
1:C:111:VAL:O	1:C:115:MET:HG3	2.21	0.40
1:D:51:ILE:HB	1:D:52:PRO:HA	2.04	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 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	196/198 (99%)	191 (97%)	5 (3%)	0	100	100
1	B	196/198 (99%)	190 (97%)	6 (3%)	0	100	100
1	C	196/198 (99%)	191 (97%)	5 (3%)	0	100	100
1	D	196/198 (99%)	192 (98%)	4 (2%)	0	100	100
All	All	784/792 (99%)	764 (97%)	20 (3%)	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 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	178/178 (100%)	177 (99%)	1 (1%)	78	58
1	B	178/178 (100%)	177 (99%)	1 (1%)	78	58
1	C	178/178 (100%)	177 (99%)	1 (1%)	78	58
1	D	178/178 (100%)	177 (99%)	1 (1%)	78	58
All	All	712/712 (100%)	708 (99%)	4 (1%)	78	58

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	144	MET
1	B	144	MET
1	C	144	MET
1	D	36	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (34) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	28	GLN
1	A	32	HIS
1	A	80	ASN
1	A	85	GLN
1	A	129	GLN
1	A	170	ASN
1	A	171	HIS
1	A	182	GLN
1	A	189	ASN
1	B	28	GLN
1	B	36	GLN
1	B	80	ASN
1	B	117	ASN
1	B	126	HIS
1	B	170	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	171	HIS
1	B	182	GLN
1	B	196	GLN
1	C	28	GLN
1	C	32	HIS
1	C	36	GLN
1	C	114	GLN
1	C	129	GLN
1	C	170	ASN
1	C	171	HIS
1	C	182	GLN
1	D	3	ASN
1	D	36	GLN
1	D	114	GLN
1	D	170	ASN
1	D	171	HIS
1	D	182	GLN
1	D	189	ASN
1	D	196	GLN

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 ⓘ

Of 17 ligands modelled in this entry, 2 are monoatomic - leaving 15 for Mogul analysis.

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	$\# Z > 2$
5	GOL	B	3005	-	5,5,5	0.80	0	5,5,5	0.59	0
5	GOL	C	3002	-	5,5,5	0.96	0	5,5,5	0.47	0
3	GSH	A	2001	-	18,19,19	1.39	2 (11%)	21,24,24	1.04	2 (9%)
5	GOL	A	3006	-	5,5,5	0.93	0	5,5,5	0.37	0
5	GOL	B	3007	-	5,5,5	0.94	0	5,5,5	0.47	0
4	HQL	B	2401	-	31,31,31	4.91	20 (64%)	40,40,40	2.19	8 (20%)
3	GSH	D	2004	-	18,19,19	1.39	3 (16%)	21,24,24	1.09	2 (9%)
4	HQL	D	2801	-	31,31,31	4.82	20 (64%)	40,40,40	2.59	10 (25%)
3	GSH	B	2002	-	18,19,19	1.43	3 (16%)	21,24,24	1.05	2 (9%)
5	GOL	C	3004	-	5,5,5	0.94	0	5,5,5	0.50	0
5	GOL	C	3001	-	5,5,5	0.89	0	5,5,5	0.43	0
5	GOL	C	3003	-	5,5,5	0.99	0	5,5,5	0.39	0
3	GSH	C	2003	-	18,19,19	1.39	3 (16%)	21,24,24	1.05	2 (9%)
4	HQL	C	2601	-	31,31,31	4.62	17 (54%)	40,40,40	2.34	10 (25%)
4	HQL	A	2201	-	31,31,31	4.74	23 (74%)	40,40,40	2.26	10 (25%)

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
5	GOL	B	3005	-	-	2/4/4/4	-
5	GOL	C	3002	-	-	0/4/4/4	-
3	GSH	A	2001	-	-	1/24/24/24	-
5	GOL	A	3006	-	-	0/4/4/4	-
5	GOL	B	3007	-	-	2/4/4/4	-
4	HQL	B	2401	-	-	2/18/28/28	0/4/4/4
3	GSH	D	2004	-	-	1/24/24/24	-
4	HQL	D	2801	-	-	3/18/28/28	0/4/4/4
3	GSH	B	2002	-	-	1/24/24/24	-
5	GOL	C	3004	-	-	3/4/4/4	-
5	GOL	C	3001	-	-	2/4/4/4	-
5	GOL	C	3003	-	-	0/4/4/4	-
3	GSH	C	2003	-	-	1/24/24/24	-
4	HQL	C	2601	-	-	2/18/28/28	0/4/4/4

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	HQL	A	2201	-	-	2/18/28/28	0/4/4/4

All (91) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	2801	HQL	C21-C4	9.67	1.54	1.39
4	A	2201	HQL	C21-C4	9.54	1.54	1.39
4	B	2401	HQL	C21-C4	9.15	1.53	1.39
4	C	2601	HQL	C21-C4	9.03	1.53	1.39
4	B	2401	HQL	C20-C15	8.60	1.52	1.39
4	C	2601	HQL	C16-C15	8.25	1.52	1.39
4	B	2401	HQL	C16-C15	8.19	1.52	1.39
4	D	2801	HQL	C20-C15	8.16	1.52	1.39
4	D	2801	HQL	C16-C15	7.99	1.51	1.39
4	A	2201	HQL	C20-C15	7.90	1.51	1.39
4	B	2401	HQL	C22-C21	7.85	1.52	1.38
4	D	2801	HQL	C9-N1	7.84	1.65	1.47
4	A	2201	HQL	C16-C15	7.75	1.51	1.39
4	A	2201	HQL	C22-C21	7.65	1.52	1.38
4	C	2601	HQL	C20-C15	7.47	1.50	1.39
4	B	2401	HQL	C8-N1	7.40	1.66	1.46
4	C	2601	HQL	C9-N1	7.35	1.64	1.47
4	C	2601	HQL	C22-C21	7.22	1.51	1.38
4	B	2401	HQL	C3-C4	7.16	1.50	1.39
4	A	2201	HQL	C17-C16	7.00	1.50	1.38
4	D	2801	HQL	C22-C21	6.74	1.50	1.38
4	B	2401	HQL	C9-N1	6.71	1.62	1.47
4	A	2201	HQL	C3-C4	6.69	1.49	1.39
4	D	2801	HQL	C19-C20	6.62	1.50	1.38
4	C	2601	HQL	C7-C6	6.61	1.68	1.51
4	B	2401	HQL	C19-C20	6.57	1.50	1.38
4	D	2801	HQL	C17-C16	6.51	1.50	1.38
4	B	2401	HQL	C17-C16	6.48	1.50	1.38
4	A	2201	HQL	C19-C20	6.39	1.49	1.38
4	C	2601	HQL	C3-C4	6.34	1.49	1.39
4	D	2801	HQL	C7-C6	6.33	1.67	1.51
4	A	2201	HQL	C18-C17	6.14	1.51	1.38
4	B	2401	HQL	C7-C6	6.13	1.67	1.51
4	D	2801	HQL	C19-C18	6.02	1.51	1.38
4	D	2801	HQL	C2-C1	6.01	1.51	1.38
4	A	2201	HQL	C2-C1	5.99	1.51	1.38
4	C	2601	HQL	C18-C17	5.97	1.51	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	2601	HQL	C19-C20	5.96	1.49	1.38
4	B	2401	HQL	C18-C17	5.89	1.51	1.38
4	D	2801	HQL	C18-C17	5.82	1.51	1.38
4	B	2401	HQL	C2-C1	5.81	1.51	1.38
4	C	2601	HQL	C2-C1	5.69	1.50	1.38
4	B	2401	HQL	C22-C1	5.67	1.50	1.38
4	C	2601	HQL	C17-C16	5.63	1.48	1.38
4	C	2601	HQL	C19-C18	5.62	1.50	1.38
4	D	2801	HQL	C22-C1	5.60	1.50	1.38
4	D	2801	HQL	C8-N1	5.59	1.62	1.46
4	C	2601	HQL	C8-N1	5.55	1.61	1.46
4	B	2401	HQL	C19-C18	5.55	1.50	1.38
4	D	2801	HQL	C3-C4	5.49	1.47	1.39
4	A	2201	HQL	C7-C6	5.48	1.65	1.51
4	A	2201	HQL	C22-C1	5.22	1.49	1.38
4	A	2201	HQL	C8-N1	5.03	1.60	1.46
4	A	2201	HQL	C19-C18	4.82	1.48	1.38
4	C	2601	HQL	C22-C1	4.58	1.48	1.38
4	A	2201	HQL	N2-N3	-4.42	1.29	1.35
4	D	2801	HQL	C2-C3	4.20	1.46	1.38
4	B	2401	HQL	C2-C3	4.18	1.46	1.38
4	A	2201	HQL	C2-C3	4.16	1.46	1.38
4	A	2201	HQL	C13-N1	3.79	1.57	1.46
3	B	2002	GSH	O12-C1	3.71	1.33	1.22
3	A	2001	GSH	O12-C1	3.69	1.33	1.22
3	D	2004	GSH	O12-C1	3.64	1.32	1.22
4	C	2601	HQL	C2-C3	3.60	1.45	1.38
3	C	2003	GSH	O12-C1	3.60	1.32	1.22
4	C	2601	HQL	N2-N3	-3.54	1.30	1.35
4	A	2201	HQL	N5-N4	-3.39	1.30	1.36
4	D	2801	HQL	N2-N3	-3.22	1.31	1.35
4	D	2801	HQL	C14-C6	3.06	1.59	1.51
4	B	2401	HQL	C14-C6	2.94	1.58	1.51
4	A	2201	HQL	C12-N5	2.83	1.39	1.32
4	D	2801	HQL	N5-N4	-2.80	1.31	1.36
3	C	2003	GSH	CG1-CD1	2.76	1.56	1.51
4	A	2201	HQL	C7-C8	2.66	1.59	1.52
4	B	2401	HQL	C7-C8	2.61	1.59	1.52
4	A	2201	HQL	C11-C12	-2.60	1.45	1.49
4	A	2201	HQL	C14-C6	2.60	1.58	1.51
3	D	2004	GSH	CG1-CD1	2.56	1.56	1.51
4	C	2601	HQL	N5-N4	-2.53	1.32	1.36

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	2002	GSH	CG1-CD1	2.49	1.56	1.51
4	D	2801	HQL	C15-C5	2.41	1.55	1.52
3	A	2001	GSH	CG1-CD1	2.36	1.56	1.51
4	A	2201	HQL	C15-C5	2.18	1.55	1.52
3	D	2004	GSH	O11-C1	-2.10	1.23	1.30
4	B	2401	HQL	N2-N3	-2.09	1.32	1.35
3	B	2002	GSH	O11-C1	-2.08	1.24	1.30
4	B	2401	HQL	C15-C5	2.08	1.54	1.52
4	B	2401	HQL	C12-N5	2.06	1.37	1.32
4	D	2801	HQL	C14-C13	2.06	1.58	1.52
3	C	2003	GSH	O11-C1	-2.03	1.24	1.30
4	A	2201	HQL	C12-N2	-2.03	1.29	1.33

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	2801	HQL	C9-N1-C8	-7.34	91.68	111.24
4	D	2801	HQL	C8-C7-C6	7.27	118.19	110.32
4	D	2801	HQL	C13-N1-C8	6.92	123.75	108.84
4	C	2601	HQL	C9-N1-C8	-6.90	92.86	111.24
4	B	2401	HQL	C9-N1-C8	-6.83	93.05	111.24
4	B	2401	HQL	C13-N1-C8	6.74	123.36	108.84
4	A	2201	HQL	C13-N1-C8	6.55	122.94	108.84
4	C	2601	HQL	C13-N1-C8	6.16	122.11	108.84
4	A	2201	HQL	C9-N1-C8	-5.95	95.38	111.24
4	C	2601	HQL	C8-C7-C6	5.15	115.90	110.32
4	A	2201	HQL	C7-C8-N1	-5.07	102.86	111.08
4	B	2401	HQL	C8-C7-C6	4.65	115.36	110.32
4	A	2201	HQL	C9-C10-C11	-4.36	100.93	111.97
4	D	2801	HQL	C14-C6-C7	4.33	120.50	111.67
4	C	2601	HQL	O1-C6-C14	-4.16	97.98	109.30
4	D	2801	HQL	C9-N1-C13	4.09	122.14	111.24
4	C	2601	HQL	C14-C6-C7	4.08	119.99	111.67
4	A	2201	HQL	C9-N1-C13	4.00	121.89	111.24
4	B	2401	HQL	C9-N1-C13	3.95	121.76	111.24
4	D	2801	HQL	O1-C6-C14	-3.91	98.68	109.30
4	D	2801	HQL	C13-C14-C6	3.89	114.53	110.32
4	C	2601	HQL	C13-C14-C6	3.64	114.26	110.32
4	A	2201	HQL	C13-C14-C6	3.34	113.94	110.32
4	C	2601	HQL	C9-N1-C13	3.06	119.40	111.24
3	B	2002	GSH	CB1-CG1-CD1	-3.03	106.30	113.06
4	B	2401	HQL	O1-C6-C14	-3.00	101.14	109.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	2401	HQL	C14-C6-C7	2.99	117.77	111.67
3	A	2001	GSH	CB1-CG1-CD1	-2.89	106.62	113.06
3	D	2004	GSH	CB2-CA2-C2	-2.80	103.40	109.50
4	D	2801	HQL	C16-C15-C5	-2.79	115.73	120.61
3	C	2003	GSH	CB1-CG1-CD1	-2.68	107.08	113.06
3	D	2004	GSH	CB1-CG1-CD1	-2.64	107.17	113.06
3	C	2003	GSH	CB2-CA2-C2	-2.46	104.16	109.50
4	C	2601	HQL	C16-C15-C5	-2.42	116.38	120.61
4	C	2601	HQL	C20-C15-C16	2.38	121.25	118.30
4	B	2401	HQL	C10-C11-C12	-2.36	106.27	114.15
4	B	2401	HQL	C16-C15-C5	-2.28	116.63	120.61
4	A	2201	HQL	C11-C12-N5	2.28	129.37	126.78
4	A	2201	HQL	O1-C6-C14	-2.26	103.14	109.30
4	D	2801	HQL	C10-C11-C12	-2.26	106.59	114.15
4	A	2201	HQL	C11-C12-N2	-2.19	122.56	125.28
4	D	2801	HQL	C3-C4-C5	-2.13	116.89	120.61
3	B	2002	GSH	CB2-CA2-C2	-2.11	104.90	109.50
3	A	2001	GSH	CB2-CA2-C2	-2.10	104.93	109.50
4	C	2601	HQL	O1-C6-C7	2.06	114.90	109.30
4	A	2201	HQL	C8-C7-C6	-2.03	108.12	110.32

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	3007	GOL	O1-C1-C2-O2
5	B	3007	GOL	O1-C1-C2-C3
5	C	3001	GOL	C1-C2-C3-O3
4	B	2401	HQL	C10-C9-N1-C13
4	C	2601	HQL	C10-C9-N1-C13
4	D	2801	HQL	C10-C9-N1-C13
3	B	2002	GSH	O2-C2-N3-CA3
5	C	3001	GOL	O2-C2-C3-O3
5	C	3004	GOL	O1-C1-C2-O2
4	D	2801	HQL	C11-C10-C9-N1
4	C	2601	HQL	C11-C10-C9-N1
5	B	3005	GOL	C1-C2-C3-O3
5	C	3004	GOL	O1-C1-C2-C3
3	D	2004	GSH	O2-C2-N3-CA3
4	A	2201	HQL	C10-C9-N1-C13
3	A	2001	GSH	O2-C2-N3-CA3
4	B	2401	HQL	C11-C10-C9-N1

Continued on next page...

Continued from previous page...

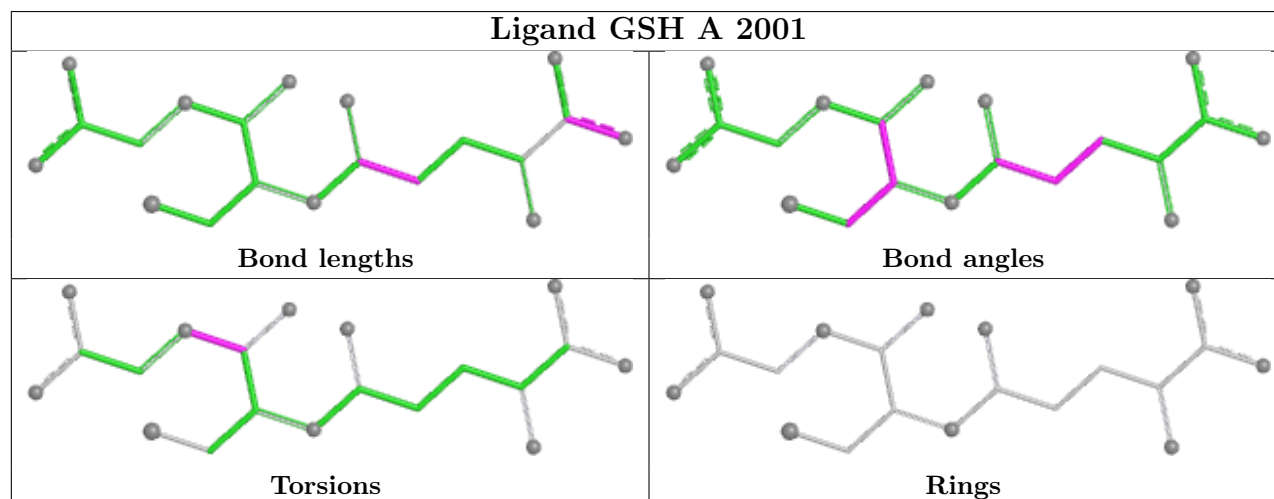
Mol	Chain	Res	Type	Atoms
5	B	3005	GOL	O2-C2-C3-O3
5	C	3004	GOL	O2-C2-C3-O3
3	C	2003	GSH	O2-C2-N3-CA3
4	A	2201	HQL	C11-C10-C9-N1
4	D	2801	HQL	C15-C5-O1-C6

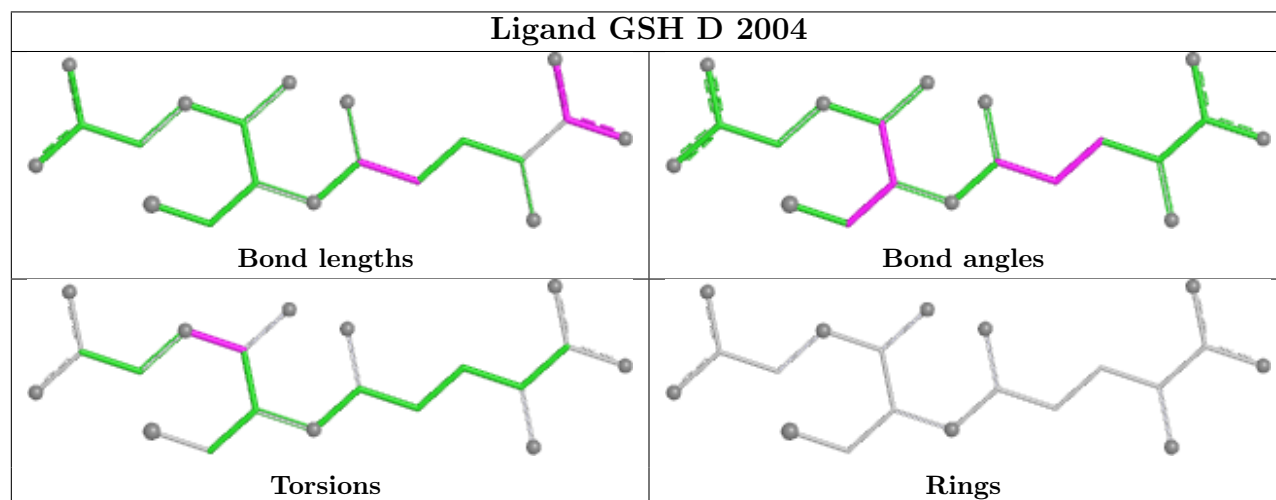
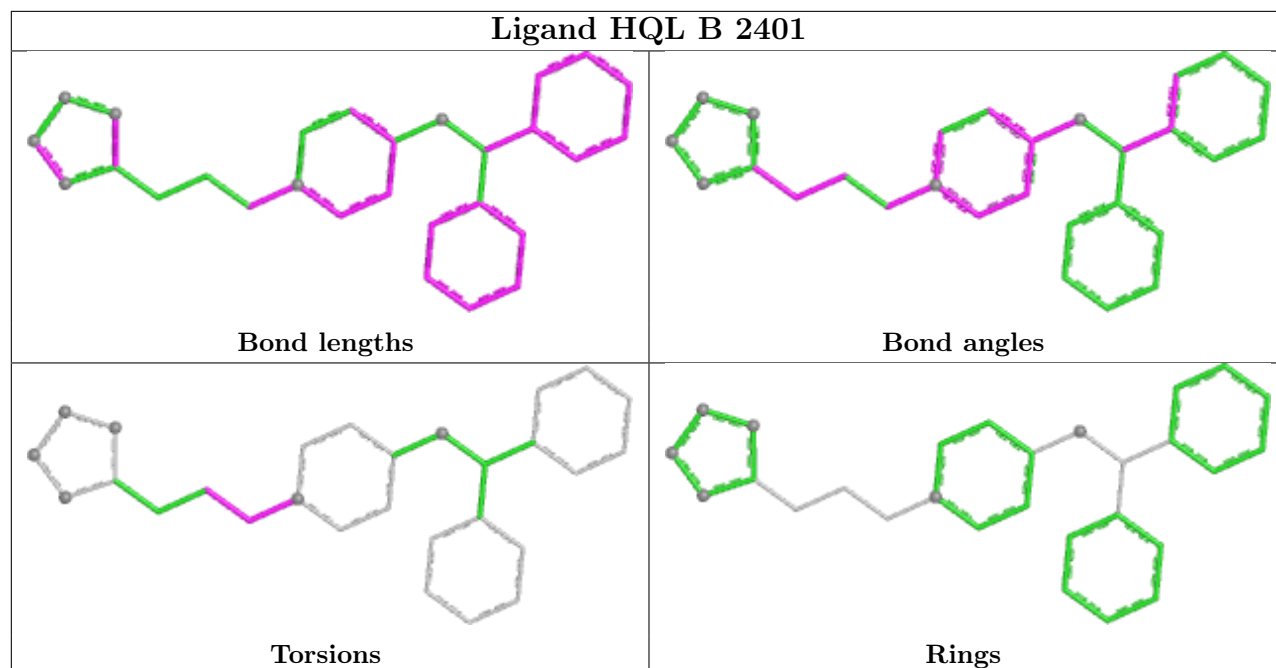
There are no ring outliers.

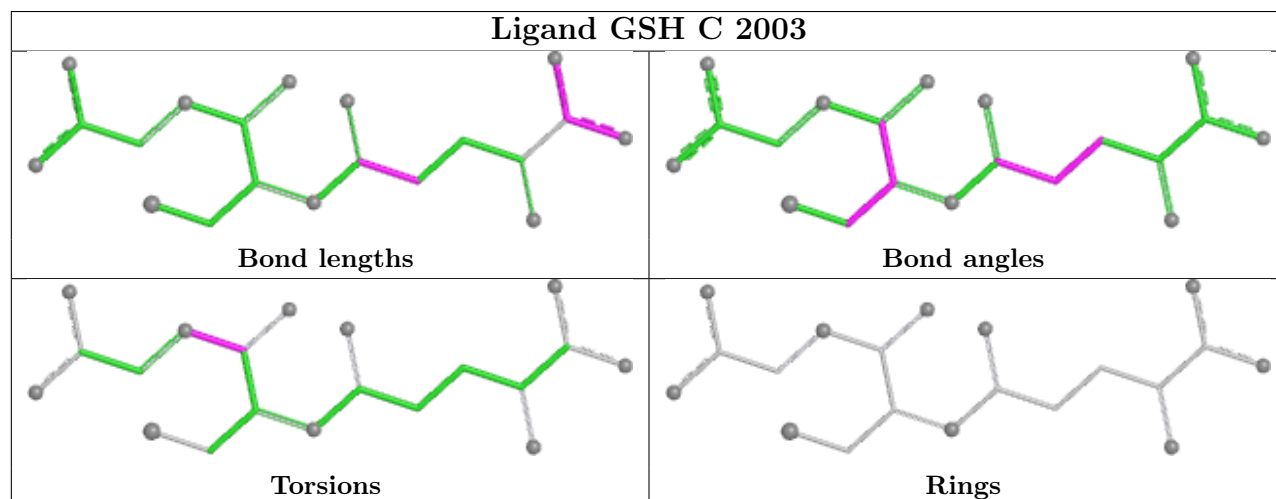
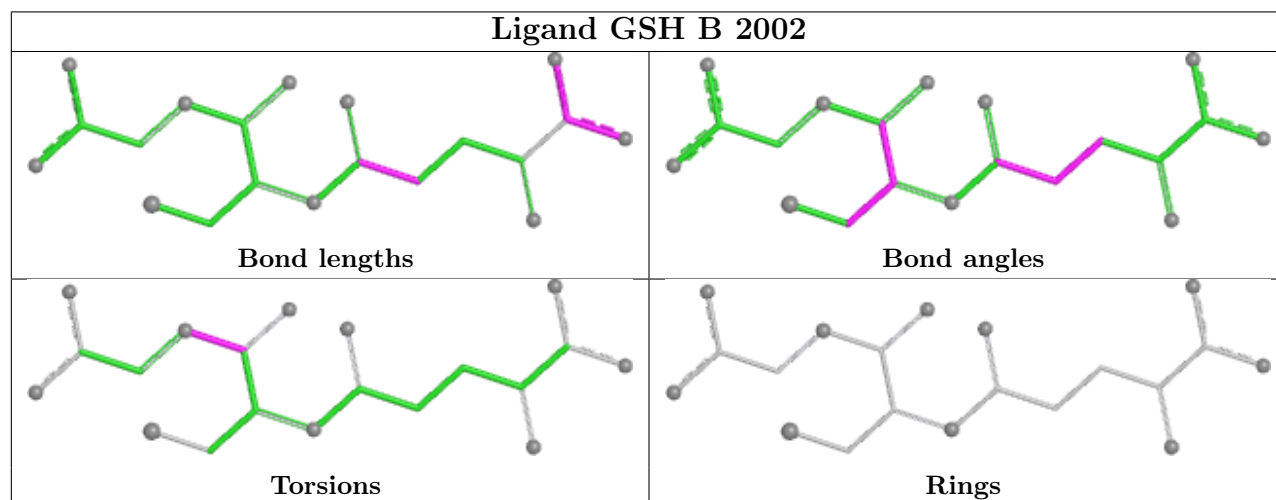
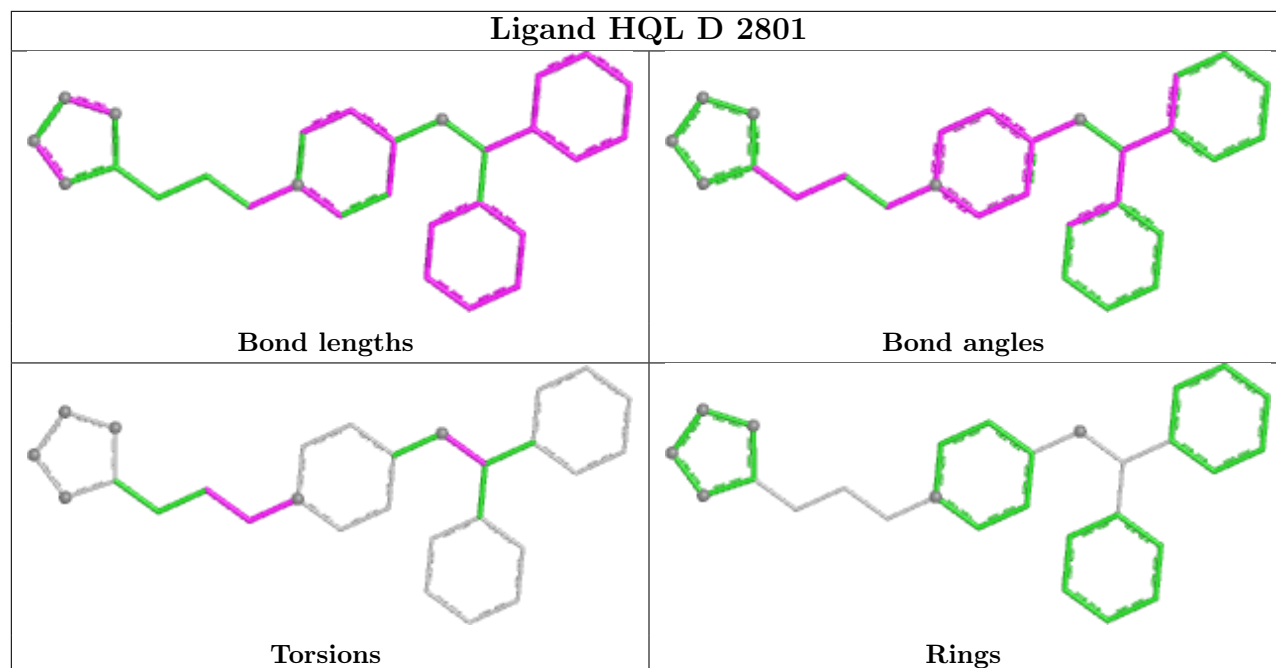
6 monomers are involved in 9 short contacts:

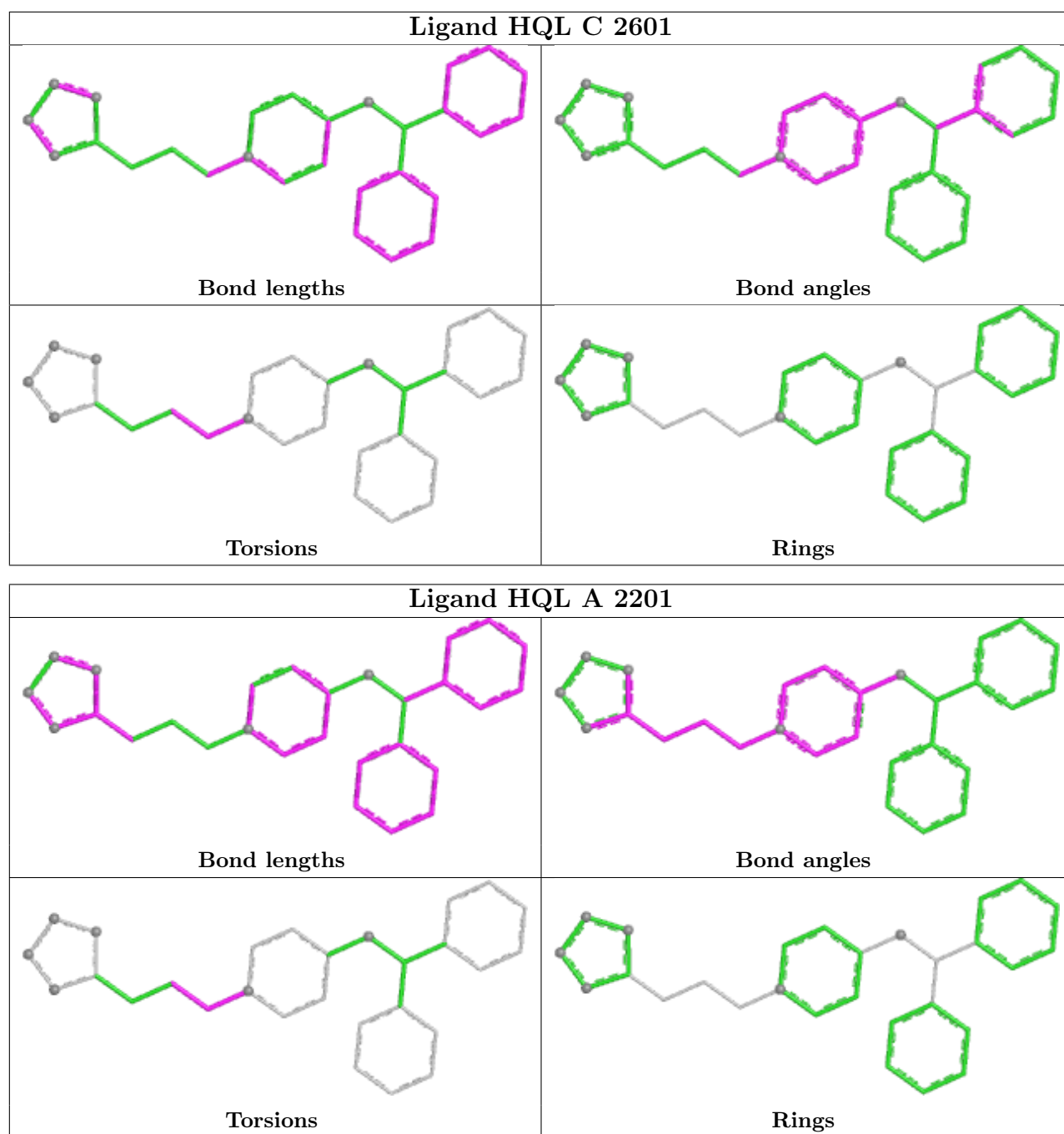
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	3005	GOL	2	0
5	A	3006	GOL	1	0
4	B	2401	HQL	1	0
4	D	2801	HQL	1	0
4	C	2601	HQL	2	0
4	A	2201	HQL	2	0

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









5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 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	198/198 (100%)	0.63	22 (11%)	10 10	3, 13, 27, 30	0
1	B	198/198 (100%)	0.70	29 (14%)	6 6	3, 13, 27, 33	0
1	C	198/198 (100%)	0.15	11 (5%)	30 30	1, 8, 18, 30	0
1	D	198/198 (100%)	0.14	9 (4%)	38 41	2, 8, 18, 30	0
All	All	792/792 (100%)	0.41	71 (8%)	15 15	1, 10, 26, 33	0

All (71) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	110	ASP	5.8
1	B	110	ASP	5.7
1	D	110	ASP	4.8
1	C	110	ASP	4.6
1	B	122	TYR	4.3
1	B	117	ASN	4.2
1	A	117	ASN	4.1
1	D	108	LYS	3.9
1	B	115	MET	3.8
1	A	122	TYR	3.7
1	B	108	LYS	3.6
1	A	111	VAL	3.6
1	A	107	LYS	3.4
1	C	108	LYS	3.4
1	C	105	ALA	3.4
1	D	107	LYS	3.3
1	B	116	PHE	3.3
1	A	41	GLU	3.2
1	C	144	MET	3.1
1	B	41	GLU	3.1
1	B	111	VAL	3.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	35	GLU	3.0
1	B	113	GLU	3.0
1	B	76	ASP	2.9
1	A	39	TRP	2.9
1	C	76	ASP	2.9
1	A	42	ILE	2.9
1	A	114	GLN	2.9
1	C	107	LYS	2.8
1	C	111	VAL	2.8
1	B	42	ILE	2.8
1	B	107	LYS	2.8
1	A	109	GLN	2.7
1	D	111	VAL	2.7
1	D	144	MET	2.6
1	B	196	GLN	2.6
1	B	40	PRO	2.6
1	B	109	GLN	2.6
1	D	76	ASP	2.6
1	A	37	ALA	2.5
1	B	199	LEU	2.5
1	B	3	ASN	2.5
1	C	104	TRP	2.5
1	A	115	MET	2.4
1	A	38	ASP	2.4
1	A	113	GLU	2.4
1	A	45	THR	2.4
1	D	109	GLN	2.4
1	B	74	ASN	2.4
1	C	109	GLN	2.3
1	A	47	PRO	2.3
1	C	2	PRO	2.2
1	B	38	ASP	2.2
1	A	193	ARG	2.2
1	A	144	MET	2.2
1	C	106	GLU	2.2
1	B	144	MET	2.2
1	B	37	ALA	2.2
1	B	105	ALA	2.2
1	A	108	LYS	2.2
1	B	47	PRO	2.1
1	B	58	GLY	2.1
1	B	39	TRP	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	40	PRO	2.1
1	B	118	GLU	2.1
1	B	191	ILE	2.1
1	A	116	PHE	2.1
1	D	47	PRO	2.1
1	B	126	HIS	2.0
1	B	106	GLU	2.0
1	D	104	TRP	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 oligosaccharides 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.

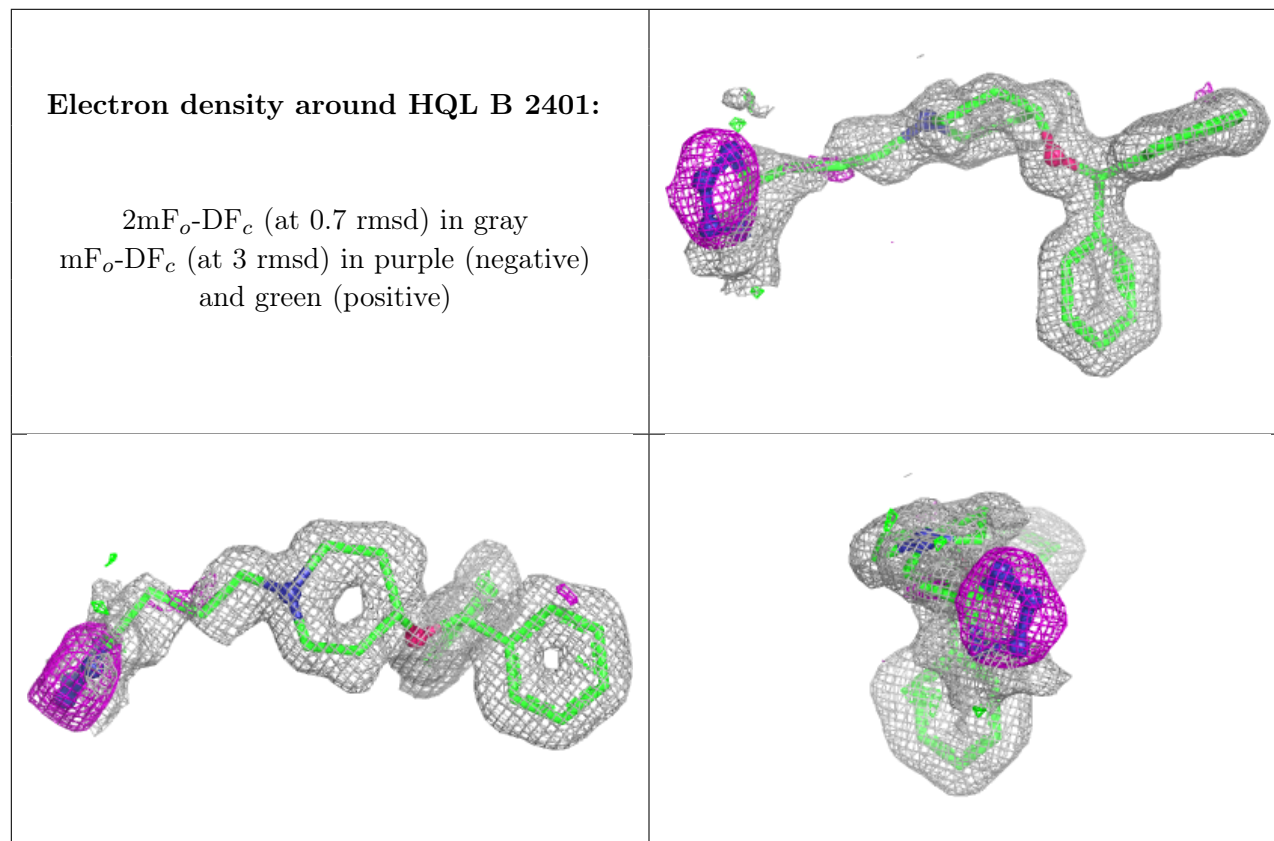
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	GOL	B	3005	6/6	0.56	0.23	38,38,39,39	0
5	GOL	A	3006	6/6	0.66	0.20	38,38,39,39	0
5	GOL	B	3007	6/6	0.68	0.17	40,40,40,40	0
4	HQL	B	2401	28/28	0.79	0.15	16,18,26,27	0
4	HQL	A	2201	28/28	0.79	0.15	16,18,27,27	0
5	GOL	C	3002	6/6	0.80	0.15	21,22,22,22	0
5	GOL	C	3004	6/6	0.81	0.13	19,20,20,21	0
4	HQL	D	2801	28/28	0.83	0.14	12,14,23,24	0
4	HQL	C	2601	28/28	0.84	0.14	11,13,22,23	0
5	GOL	C	3001	6/6	0.88	0.12	24,24,24,24	0
5	GOL	C	3003	6/6	0.90	0.10	18,19,19,19	0
3	GSH	B	2002	20/20	0.92	0.10	8,12,18,18	0
3	GSH	A	2001	20/20	0.93	0.10	8,12,19,19	0
3	GSH	D	2004	20/20	0.94	0.09	5,9,15,15	0
3	GSH	C	2003	20/20	0.95	0.08	6,9,13,13	0

Continued on next page...

Continued from previous page...

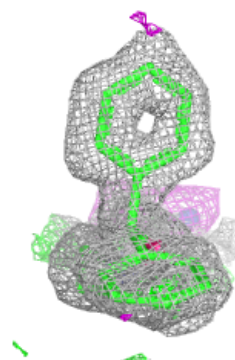
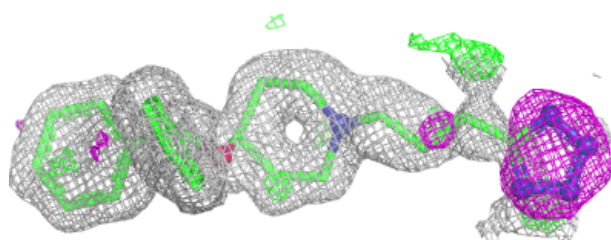
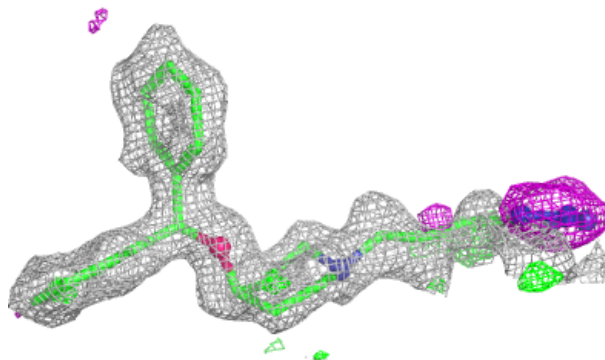
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	MG	B	4002	1/1	1.00	0.03	6,6,6,6	0
2	MG	A	4001	1/1	1.00	0.05	6,6,6,6	0

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.

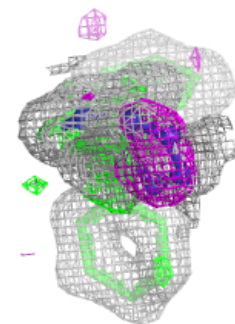
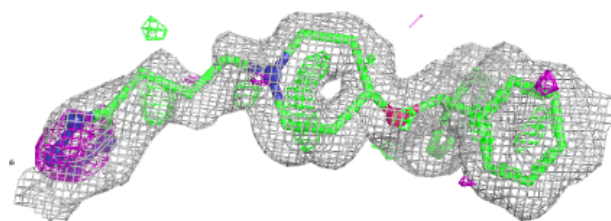
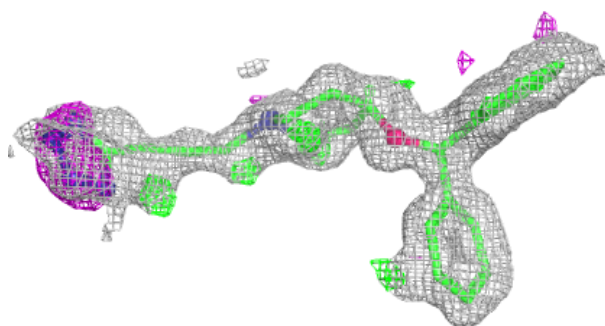


Electron density around HQL A 2201:

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

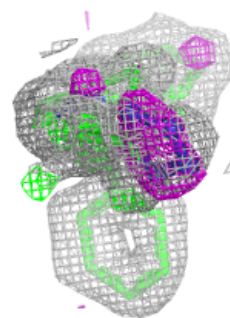
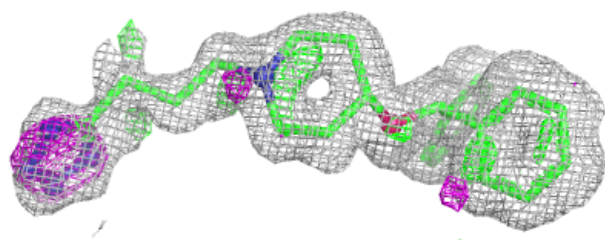
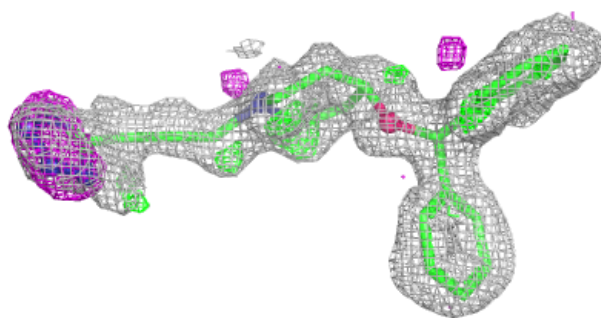
**Electron density around HQL D 2801:**

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

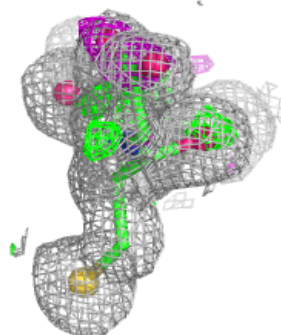
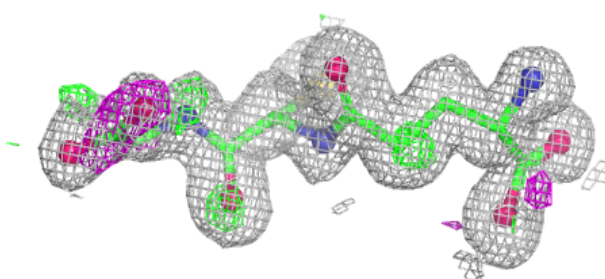
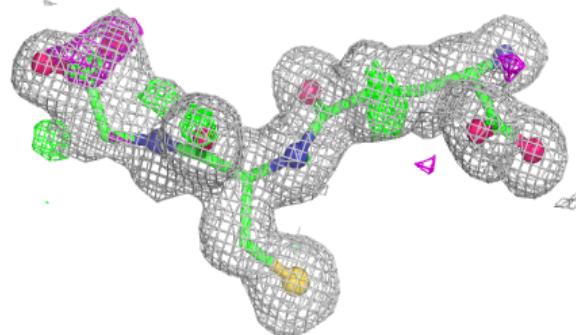


Electron density around HQL C 2601:

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

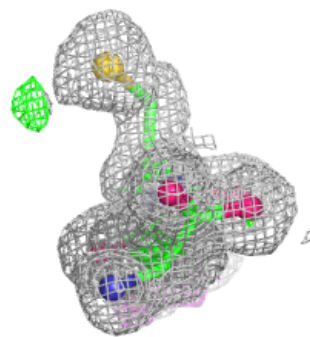
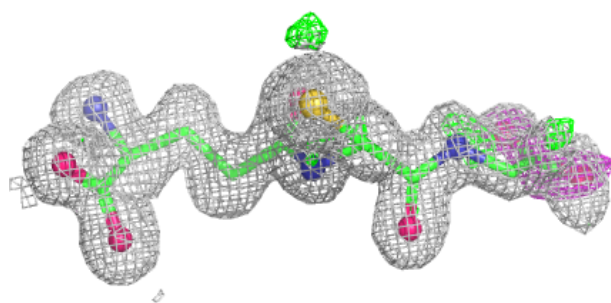
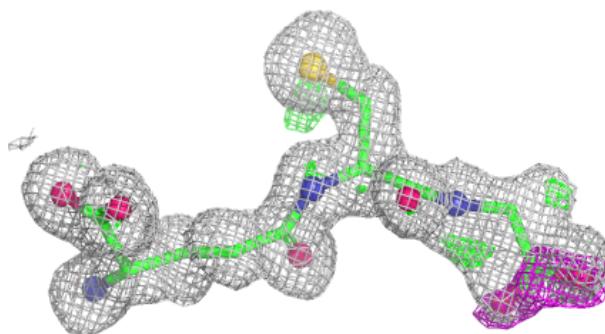
**Electron density around GSH B 2002:**

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

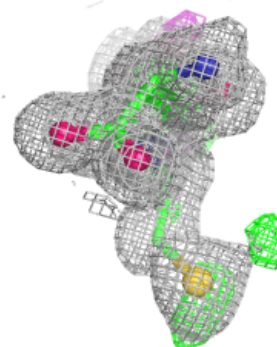
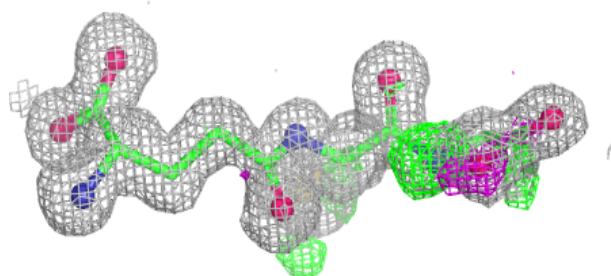
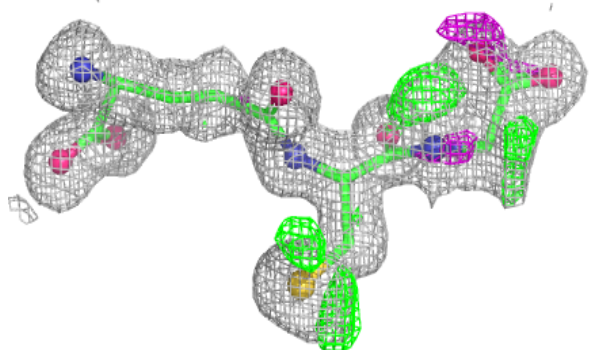


Electron density around GSH A 2001:

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

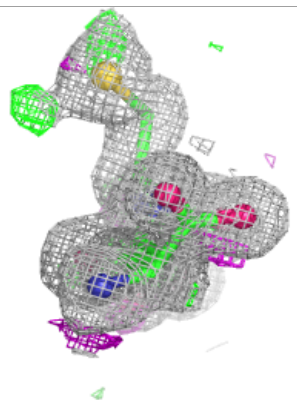
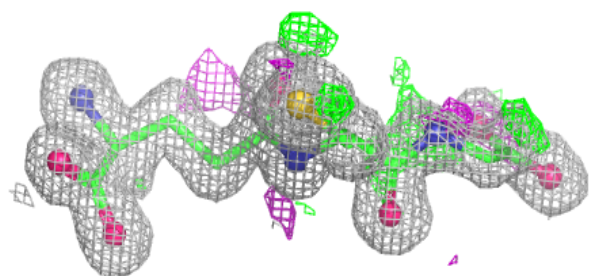
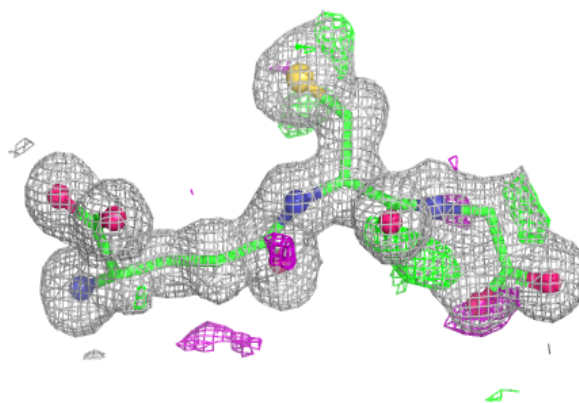
**Electron density around GSH D 2004:**

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



Electron density around GSH C 2003:

$2mF_o-DF_c$ (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.