



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 09:13 PM UTC

PDB ID : 7OZX / pdb_00007ozx
Title : Structure of human galactokinase 1 bound with azepan-1-yl(2,6-difluorophenyl)methanone
Authors : Mackinnon, S.R.; Bezerra, G.A.; Zhang, M.; Foster, W.; Krojer, T.; Brandao-Neto, J.; Arrowsmith, C.; Edwards, A.; Bountra, C.; Brennan, P.; Lai, K.; Yue, W.W.
Deposited on : 2021-06-29
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](#) ①) 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

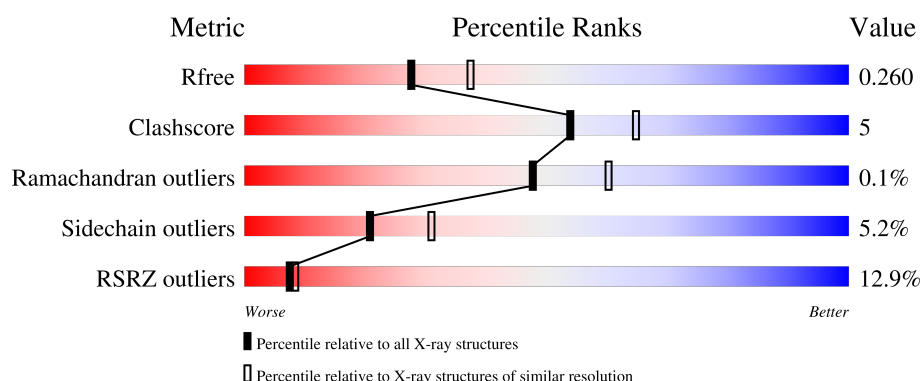
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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}	180053	6319 (2.30-2.30)
Clashscore	190562	6919 (2.30-2.30)
Ramachandran outliers	187476	6854 (2.30-2.30)
Sidechain outliers	187428	6854 (2.30-2.30)
RSRZ outliers	180081	6325 (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	399	2% 84% 13% ..
1	B	399	17% 83% 13% ..
1	C	399	9% 84% 13% ..
1	D	399	22% 78% 12% 9%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 11815 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 Galactokinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	390	Total	C	N	O	S	0	0	0
			2860	1793	510	541	16			
1	B	391	Total	C	N	O	S	0	0	0
			2817	1765	504	532	16			
1	C	391	Total	C	N	O	S	0	0	0
			2840	1783	499	542	16			
1	D	362	Total	C	N	O	S	0	1	0
			2529	1584	447	484	14			

There are 40 discrepancies between the modelled and reference sequences:

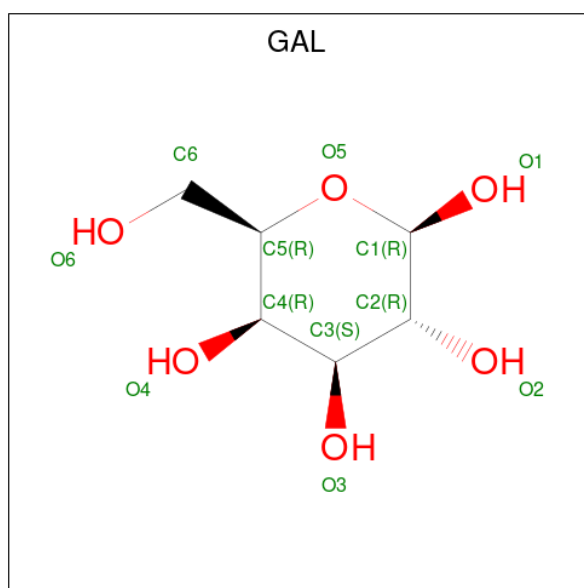
Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	MET	-	initiating methionine	UNP P51570
A	-5	ALA	-	expression tag	UNP P51570
A	-4	HIS	-	expression tag	UNP P51570
A	-3	HIS	-	expression tag	UNP P51570
A	-2	HIS	-	expression tag	UNP P51570
A	-1	HIS	-	expression tag	UNP P51570
A	0	HIS	-	expression tag	UNP P51570
A	1	HIS	-	expression tag	UNP P51570
A	252	ALA	LYS	engineered mutation	UNP P51570
A	253	ALA	GLU	engineered mutation	UNP P51570
B	-6	MET	-	initiating methionine	UNP P51570
B	-5	ALA	-	expression tag	UNP P51570
B	-4	HIS	-	expression tag	UNP P51570
B	-3	HIS	-	expression tag	UNP P51570
B	-2	HIS	-	expression tag	UNP P51570
B	-1	HIS	-	expression tag	UNP P51570
B	0	HIS	-	expression tag	UNP P51570
B	1	HIS	-	expression tag	UNP P51570
B	252	ALA	LYS	engineered mutation	UNP P51570
B	253	ALA	GLU	engineered mutation	UNP P51570
C	-6	MET	-	initiating methionine	UNP P51570

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-5	ALA	-	expression tag	UNP P51570
C	-4	HIS	-	expression tag	UNP P51570
C	-3	HIS	-	expression tag	UNP P51570
C	-2	HIS	-	expression tag	UNP P51570
C	-1	HIS	-	expression tag	UNP P51570
C	0	HIS	-	expression tag	UNP P51570
C	1	HIS	-	expression tag	UNP P51570
C	252	ALA	LYS	engineered mutation	UNP P51570
C	253	ALA	GLU	engineered mutation	UNP P51570
D	-6	MET	-	initiating methionine	UNP P51570
D	-5	ALA	-	expression tag	UNP P51570
D	-4	HIS	-	expression tag	UNP P51570
D	-3	HIS	-	expression tag	UNP P51570
D	-2	HIS	-	expression tag	UNP P51570
D	-1	HIS	-	expression tag	UNP P51570
D	0	HIS	-	expression tag	UNP P51570
D	1	HIS	-	expression tag	UNP P51570
D	252	ALA	LYS	engineered mutation	UNP P51570
D	253	ALA	GLU	engineered mutation	UNP P51570

- Molecule 2 is beta-D-galactopyranose (CCD ID: GAL) (formula: C₆H₁₂O₆).



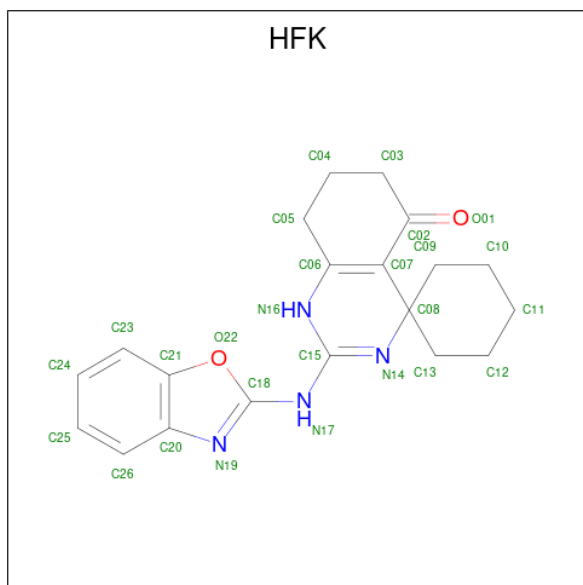
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			12	6	6		
2	B	1	Total	C	O	0	0
			12	6	6		

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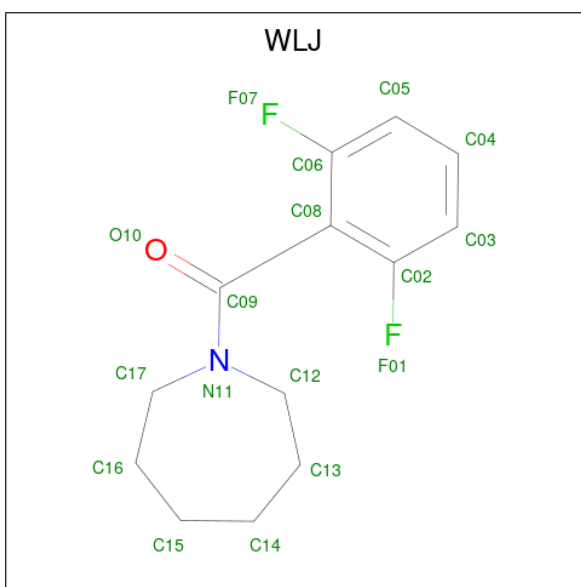
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	C	1	Total	C	O	0	0
			12	6	6		

- Molecule 3 is 2-(1,3-benzoxazol-2-ylamino)spiro[1,6,7,8-tetrahydroquinazoline-4,1'-cyclohexane]-5-one (CCD ID: HFK) (formula: $C_{20}H_{22}N_4O_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			26	20	4	2		
3	B	1	Total	C	N	O	0	0
			26	20	4	2		
3	C	1	Total	C	N	O	0	0
			26	20	4	2		

- Molecule 4 is (azepan-1-yl)(2,6-difluorophenyl)methanone (CCD ID: WLJ) (formula: $C_{13}H_{15}F_2NO$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	B	1	Total	C	F	N	O	0	0
			17	13	2	1	1		
4	C	1	Total	C	F	N	O	0	0
			17	13	2	1	1		

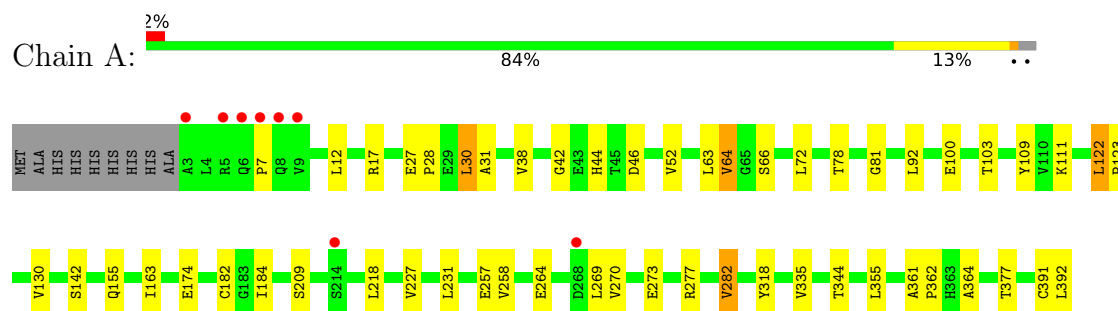
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	211	Total	O	0	0
			211	211		
5	B	162	Total	O	0	0
			162	162		
5	C	153	Total	O	0	0
			153	153		
5	D	95	Total	O	0	0
			95	95		

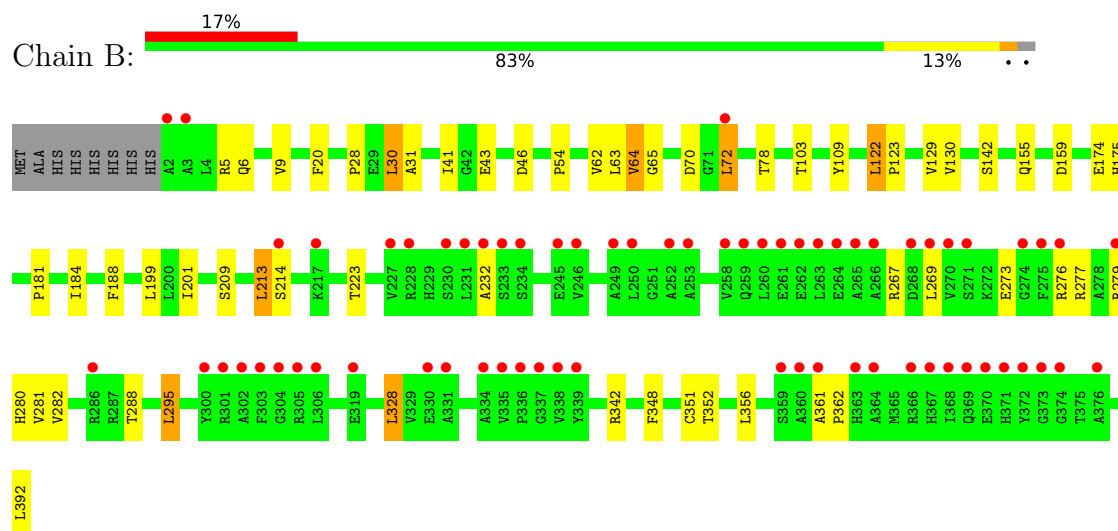
3 Residue-property plots [i](#)

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.

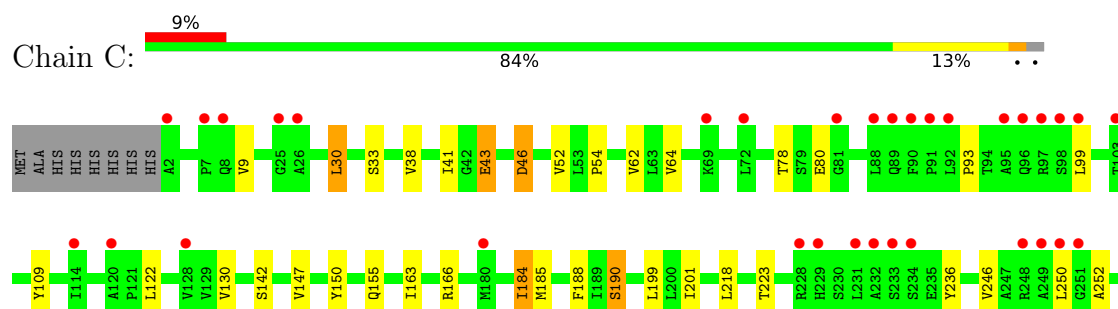
• Molecule 1: Galactokinase

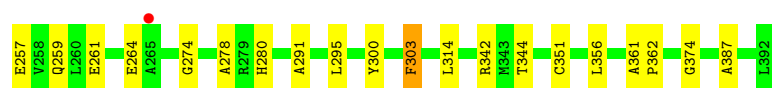


• Molecule 1: Galactokinase

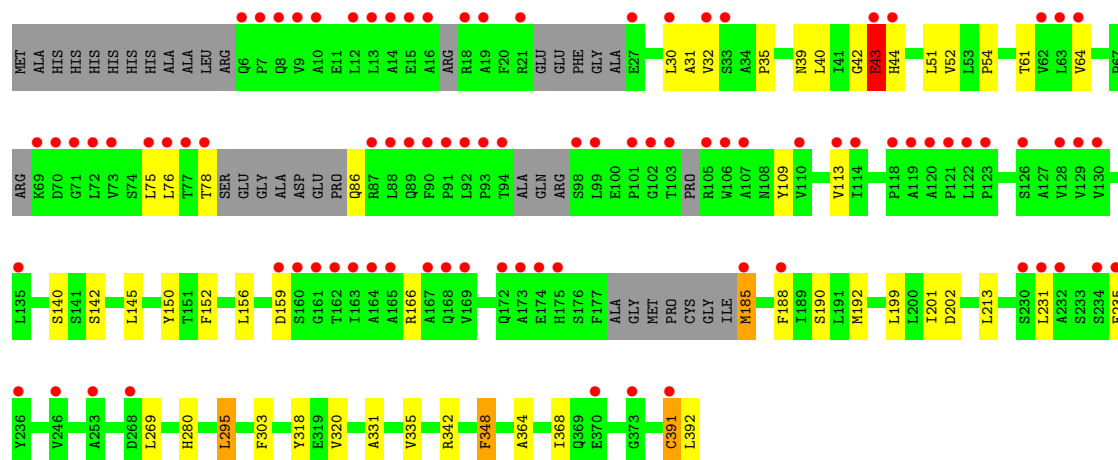
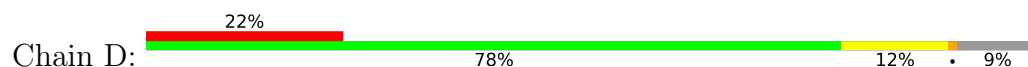


• Molecule 1: Galactokinase





● Molecule 1: Galactokinase



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	73.46Å 114.50Å 120.82Å 90.00° 100.57° 90.00°	Depositor
Resolution (Å)	82.57 – 2.30 82.57 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.7 (82.57-2.30) 99.7 (82.57-2.30)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.61 (at 2.10Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.208 , 0.258 0.216 , 0.260	Depositor DCC
R_{free} test set	5609 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å ²)	34.6	Xtriage
Anisotropy	0.645	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 44.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	11815	wwPDB-VP
Average B, all atoms (Å ²)	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.38% 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: WLJ, HFK, GAL

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	1.08	0/2914	1.44	2/3965 (0.1%)
1	B	1.14	5/2869 (0.2%)	1.43	8/3909 (0.2%)
1	C	1.11	1/2893 (0.0%)	1.49	4/3940 (0.1%)
1	D	1.08	0/2568	1.49	5/3496 (0.1%)
All	All	1.10	6/11244 (0.1%)	1.46	19/15310 (0.1%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	374	GLY	C-O	7.41	1.31	1.23
1	B	328	LEU	C-O	6.95	1.32	1.24
1	B	352	THR	C-O	6.69	1.32	1.23
1	B	282	VAL	C-O	6.62	1.31	1.24
1	B	295	LEU	C-O	6.42	1.31	1.24
1	B	279	ARG	C-O	6.00	1.31	1.24

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	280	HIS	CA-CB-CG	-7.06	106.74	113.80
1	A	81	GLY	N-CA-C	-6.82	106.57	114.69
1	C	46	ASP	CA-CB-CG	6.42	119.02	112.60
1	D	43	GLU	N-CA-C	6.26	117.76	111.07
1	B	46	ASP	CA-CB-CG	6.24	118.84	112.60
1	B	280	HIS	CA-CB-CG	-5.83	107.97	113.80
1	B	281	VAL	O-C-N	5.68	127.79	121.94
1	B	159	ASP	N-CA-C	-5.47	103.16	110.55
1	D	35	PRO	N-CA-CB	-5.40	97.58	103.25
1	B	70	ASP	CA-CB-CG	5.33	117.93	112.60
1	B	213	LEU	N-CA-C	-5.30	102.27	109.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	348	PHE	N-CA-C	-5.26	106.45	112.86
1	B	281	VAL	CA-C-N	5.23	127.35	120.60
1	B	281	VAL	C-N-CA	5.23	127.35	120.60
1	D	280	HIS	CA-CB-CG	-5.22	108.58	113.80
1	C	303	PHE	CA-C-N	5.19	125.70	119.94
1	C	303	PHE	C-N-CA	5.19	125.70	119.94
1	D	391	CYS	CB-CA-C	5.12	118.19	109.84
1	A	46	ASP	CA-CB-CG	5.11	117.71	112.60

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	2860	0	2798	25	1
1	B	2817	0	2718	27	0
1	C	2840	0	2753	32	0
1	D	2529	0	2354	25	1
2	A	12	0	12	0	0
2	B	12	0	12	0	0
2	C	12	0	12	1	0
3	A	26	0	0	0	0
3	B	26	0	0	0	0
3	C	26	0	0	0	0
4	B	17	0	0	0	0
4	C	17	0	0	0	0
5	A	211	0	0	2	0
5	B	162	0	0	0	0
5	C	153	0	0	1	0
5	D	95	0	0	0	0
All	All	11815	0	10659	108	1

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 5.

All (108) 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:B:63:LEU:HD11	1:B:129:VAL:HG22	1.47	0.97
1:A:17:ARG:HH21	1:A:27:GLU:HG3	1.47	0.79
1:B:273:GLU:HA	1:B:276:ARG:HD2	1.68	0.75
1:B:63:LEU:CD1	1:B:129:VAL:HG22	2.17	0.73
1:A:218:LEU:HD11	1:A:355:LEU:HG	1.71	0.72
1:D:39[A]:ASN:HD22	1:D:43:GLU:CD	2.00	0.69
1:D:235:GLU:HG2	1:D:348:PHE:CZ	2.29	0.68
1:A:72:LEU:HD22	1:B:72:LEU:HD21	1.76	0.67
1:B:54:PRO:HD2	1:B:199:LEU:O	1.94	0.67
1:C:80:GLU:HA	5:C:597:HOH:O	1.96	0.65
1:C:147:VAL:HG21	1:C:190:SER:HB3	1.79	0.64
1:A:257:GLU:HG3	5:A:645:HOH:O	1.97	0.64
1:B:31:ALA:HB2	1:B:392:LEU:HD11	1.80	0.63
1:A:30:LEU:HD21	1:A:155:GLN:HB3	1.82	0.59
1:B:78:THR:OG1	1:B:130:VAL:HG12	2.02	0.58
1:D:295:LEU:HD13	1:D:303:PHE:CD2	2.38	0.58
1:B:30:LEU:HD21	1:B:155:GLN:HG3	1.86	0.57
1:D:159:ASP:OD1	1:D:159:ASP:C	2.48	0.57
1:D:42:GLY:O	1:D:52:VAL:HG12	2.05	0.56
1:A:30:LEU:HD21	1:A:155:GLN:CB	2.35	0.56
1:B:356:LEU:HD11	1:B:361:ALA:HA	1.87	0.56
1:A:174:GLU:HG2	1:A:182:CYS:SG	2.46	0.55
1:B:223:THR:O	1:B:351:CYS:HA	2.06	0.55
1:B:213:LEU:HD13	1:B:295:LEU:HD11	1.88	0.55
1:A:17:ARG:NH2	1:A:27:GLU:HG3	2.20	0.54
1:A:72:LEU:C	1:A:72:LEU:HD12	2.31	0.54
1:D:54:PRO:HD2	1:D:199:LEU:O	2.07	0.54
1:C:54:PRO:HD2	1:C:199:LEU:O	2.06	0.54
1:A:273:GLU:O	1:A:277:ARG:HG2	2.10	0.52
1:A:361:ALA:HB3	1:A:362:PRO:HD3	1.91	0.52
1:C:150:TYR:CZ	1:C:166:ARG:HG2	2.45	0.52
1:C:218:LEU:HD13	1:C:300:TYR:CD2	2.45	0.51
1:D:43:GLU:HB3	1:D:44:HIS:CD2	2.46	0.51
1:C:246:VAL:HG11	1:C:278:ALA:HB2	1.93	0.51
1:A:109:TYR:CE1	1:A:142:SER:HB2	2.46	0.50
1:D:40:LEU:O	1:D:342:ARG:HD3	2.11	0.50
1:D:335:VAL:HG21	1:D:364:ALA:HA	1.94	0.50
1:D:31:ALA:HB2	1:D:392:LEU:HD11	1.94	0.50
1:C:356:LEU:HD11	1:C:361:ALA:HA	1.94	0.49
1:D:76:LEU:HG	1:D:86:GLN:O	2.12	0.49
1:C:218:LEU:HD22	1:C:300:TYR:CZ	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:295:LEU:HD13	1:C:303:PHE:CE2	2.48	0.49
1:C:252:ALA:HB1	1:C:257:GLU:HB2	1.95	0.49
1:C:109:TYR:CE1	1:C:142:SER:HB2	2.49	0.48
1:A:28:PRO:CB	1:A:64:VAL:HG13	2.43	0.48
1:D:61:THR:HG21	1:D:145:LEU:HA	1.95	0.48
1:C:361:ALA:N	1:C:362:PRO:CD	2.76	0.48
1:B:62:VAL:HB	1:B:130:VAL:HG23	1.96	0.47
1:B:184:ILE:C	1:B:184:ILE:HD12	2.39	0.47
1:C:93:PRO:HB3	1:C:99:LEU:HG	1.97	0.47
1:A:335:VAL:HG21	1:A:364:ALA:HA	1.97	0.47
1:B:43:GLU:HB2	1:B:342:ARG:NH2	2.30	0.46
1:D:32:VAL:HG21	1:D:152:PHE:HB2	1.96	0.46
1:D:109:TYR:O	1:D:113:VAL:HG23	2.15	0.46
1:D:51:LEU:HD23	1:D:202:ASP:HA	1.97	0.46
1:B:28:PRO:CB	1:B:64:VAL:HG13	2.46	0.46
1:C:246:VAL:HG21	1:C:274:GLY:O	2.16	0.46
1:B:232:ALA:HA	1:B:348:PHE:CD2	2.51	0.45
1:C:52:VAL:HG22	1:C:201:ILE:HB	1.99	0.45
1:C:218:LEU:HD22	1:C:300:TYR:CE1	2.51	0.45
1:C:62:VAL:HB	1:C:130:VAL:HG23	1.99	0.44
1:B:213:LEU:CD1	1:B:295:LEU:HD11	2.47	0.44
1:D:192:MET:HE3	1:D:192:MET:HB3	1.87	0.44
1:A:31:ALA:HB2	1:A:392:LEU:HD11	2.00	0.44
1:C:150:TYR:CE1	1:C:166:ARG:HG2	2.53	0.44
1:A:28:PRO:HG3	1:A:64:VAL:CG1	2.48	0.44
1:C:199:LEU:HD23	1:C:201:ILE:HD11	1.99	0.44
1:C:33:SER:O	1:C:387:ALA:HA	2.18	0.43
1:C:184:ILE:O	1:C:185:MET:C	2.61	0.43
1:A:218:LEU:HD11	1:A:355:LEU:CG	2.46	0.43
1:B:122:LEU:HD22	1:B:123:PRO:HD2	2.00	0.43
1:B:223:THR:HG21	1:B:328:LEU:HD22	2.01	0.43
1:D:76:LEU:HD23	1:D:76:LEU:C	2.45	0.42
1:D:152:PHE:CE2	1:D:156:LEU:HD11	2.53	0.42
1:B:361:ALA:N	1:B:362:PRO:CD	2.82	0.42
1:C:43:GLU:HB2	1:C:342:ARG:NH2	2.34	0.42
1:C:41:ILE:HG21	1:C:291:ALA:CB	2.50	0.42
1:D:188:PHE:O	1:D:192:MET:HB2	2.19	0.42
1:A:44:HIS:CG	1:A:318:TYR:CE2	3.07	0.42
1:A:78:THR:OG1	1:A:130:VAL:HG12	2.20	0.42
1:D:52:VAL:CG2	1:D:201:ILE:HB	2.49	0.42
1:C:43:GLU:HB3	1:C:314:LEU:HD21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:150:TYR:CE2	1:D:166:ARG:HG2	2.54	0.42
1:C:46:ASP:HB3	1:C:52:VAL:HG11	2.02	0.42
1:C:295:LEU:HD12	1:C:295:LEU:HA	1.90	0.42
1:C:30:LEU:HD21	1:C:155:GLN:HG3	2.02	0.41
1:B:41:ILE:HG23	1:B:288:THR:HG23	2.02	0.41
1:B:109:TYR:CE1	1:B:142:SER:HB2	2.54	0.41
1:B:199:LEU:HD23	1:B:201:ILE:HD11	2.03	0.41
1:D:152:PHE:HE2	1:D:156:LEU:HD11	1.85	0.41
1:A:38:VAL:HG23	1:A:344:THR:HG21	2.01	0.41
1:A:42:GLY:O	1:A:52:VAL:HG12	2.21	0.41
1:B:269:LEU:HD12	1:B:269:LEU:HA	1.89	0.41
1:C:38:VAL:HG23	1:C:344:THR:HG21	2.01	0.41
1:C:223:THR:O	1:C:351:CYS:HA	2.20	0.41
1:A:111:LYS:NZ	5:A:511:HOH:O	2.53	0.41
1:C:259:GLN:NE2	1:C:261:GLU:HB2	2.36	0.41
1:D:39[B]:ASN:OD1	1:D:185:MET:HE1	2.20	0.41
1:B:20:PHE:CE2	1:B:65:GLY:HA2	2.55	0.41
1:A:122:LEU:HD23	1:A:122:LEU:HA	1.82	0.41
1:A:258:VAL:O	1:A:282:VAL:HG22	2.20	0.41
1:B:175:HIS:CD2	1:B:181:PRO:HA	2.56	0.41
1:D:331:ALA:HB1	1:D:368:ILE:HA	2.02	0.41
1:C:78:THR:OG1	1:C:130:VAL:HG12	2.21	0.40
1:C:236:TYR:OH	2:C:401:GAL:O4	2.37	0.40
1:D:320:VAL:HA	1:D:348:PHE:CZ	2.57	0.40
1:A:92:LEU:HD11	1:A:123:PRO:C	2.46	0.40
1:B:273:GLU:O	1:B:277:ARG:HG2	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:391:CYS:SG	1:D:391:CYS:SG[1_455]	0.96	1.24

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	388/399 (97%)	378 (97%)	9 (2%)	1 (0%)	36	46
1	B	389/399 (98%)	374 (96%)	15 (4%)	0	100	100
1	C	389/399 (98%)	380 (98%)	9 (2%)	0	100	100
1	D	347/399 (87%)	337 (97%)	10 (3%)	0	100	100
All	All	1513/1596 (95%)	1469 (97%)	43 (3%)	1 (0%)	48	60

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	7	PRO

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	288/315 (91%)	270 (94%)	18 (6%)	16	23
1	B	274/315 (87%)	261 (95%)	13 (5%)	23	35
1	C	282/315 (90%)	271 (96%)	11 (4%)	28	43
1	D	235/315 (75%)	221 (94%)	14 (6%)	17	25
All	All	1079/1260 (86%)	1023 (95%)	56 (5%)	21	31

All (56) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	LEU
1	A	30	LEU
1	A	63	LEU
1	A	64	VAL
1	A	66	SER
1	A	100	GLU
1	A	103	THR

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Mol	Chain	Res	Type
1	A	122	LEU
1	A	163	ILE
1	A	184	ILE
1	A	209	SER
1	A	227	VAL
1	A	231	LEU
1	A	264	GLU
1	A	269	LEU
1	A	270	VAL
1	A	282	VAL
1	A	377	THR
1	B	5	ARG
1	B	6	GLN
1	B	9	VAL
1	B	30	LEU
1	B	64	VAL
1	B	72	LEU
1	B	103	THR
1	B	122	LEU
1	B	174	GLU
1	B	188	PHE
1	B	209	SER
1	B	214	SER
1	B	267	ARG
1	C	9	VAL
1	C	30	LEU
1	C	43	GLU
1	C	64	VAL
1	C	122	LEU
1	C	163	ILE
1	C	184	ILE
1	C	188	PHE
1	C	190	SER
1	C	250	LEU
1	C	264	GLU
1	D	30	LEU
1	D	43	GLU
1	D	64	VAL
1	D	75	LEU
1	D	78	THR
1	D	140	SER
1	D	142	SER

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Mol	Chain	Res	Type
1	D	185	MET
1	D	190	SER
1	D	213	LEU
1	D	231	LEU
1	D	269	LEU
1	D	295	LEU
1	D	318	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	226	ASN
1	B	226	ASN
1	B	369	GLN
1	C	172	GLN
1	D	44	HIS
1	D	226	ASN
1	D	363	HIS
1	D	367	HIS
1	D	371	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

8 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	GAL	C	401	-	12,12,12	0.61	0	17,17,17	1.97	4 (23%)
2	GAL	A	401	-	12,12,12	0.48	0	17,17,17	0.95	2 (11%)
3	HFK	B	402	-	29,30,30	2.81	10 (34%)	32,44,44	1.63	9 (28%)
2	GAL	B	401	-	12,12,12	0.74	0	17,17,17	1.84	3 (17%)
3	HFK	A	402	-	29,30,30	2.89	11 (37%)	32,44,44	2.03	10 (31%)
3	HFK	C	402	-	29,30,30	2.79	11 (37%)	32,44,44	1.83	9 (28%)
4	WLJ	C	403	-	18,18,18	0.24	0	24,24,24	0.61	1 (4%)
4	WLJ	B	403	-	18,18,18	0.21	0	24,24,24	0.59	1 (4%)

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 Torsions and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	GAL	C	401	-	-	2/2/22/22	0/1/1/1
2	GAL	A	401	-	-	1/2/22/22	0/1/1/1
3	HFK	B	402	-	-	2/4/43/43	0/5/5/5
2	GAL	B	401	-	-	2/2/22/22	0/1/1/1
3	HFK	A	402	-	-	2/4/43/43	0/5/5/5
3	HFK	C	402	-	-	2/4/43/43	0/5/5/5
4	WLJ	C	403	-	-	0/8/17/17	0/2/2/2
4	WLJ	B	403	-	-	2/8/17/17	0/2/2/2

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	402	HFK	C06-C07	10.51	1.50	1.37
3	A	402	HFK	C06-C07	10.30	1.50	1.37
3	C	402	HFK	C06-C07	9.69	1.49	1.37
3	A	402	HFK	C15-N14	6.26	1.46	1.30
3	B	402	HFK	C15-N14	6.15	1.46	1.30
3	C	402	HFK	C15-N14	6.03	1.46	1.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	402	HFK	C18-N17	4.43	1.45	1.36
3	A	402	HFK	C15-N16	3.99	1.43	1.36
3	B	402	HFK	C18-N17	3.72	1.43	1.36
3	C	402	HFK	C15-N17	3.67	1.45	1.37
3	C	402	HFK	C15-N16	3.49	1.42	1.36
3	A	402	HFK	C05-C06	3.34	1.55	1.49
3	B	402	HFK	C15-N17	3.24	1.44	1.37
3	A	402	HFK	C18-N17	3.14	1.42	1.36
3	C	402	HFK	C18-N19	3.13	1.35	1.30
3	A	402	HFK	C15-N17	3.13	1.44	1.37
3	C	402	HFK	C05-C06	3.04	1.54	1.49
3	B	402	HFK	C05-C06	2.90	1.54	1.49
3	B	402	HFK	C15-N16	2.80	1.41	1.36
3	A	402	HFK	C26-C20	2.77	1.44	1.40
3	B	402	HFK	C18-N19	2.68	1.35	1.30
3	B	402	HFK	C26-C20	2.63	1.44	1.40
3	B	402	HFK	C06-N16	2.60	1.41	1.37
3	A	402	HFK	C06-N16	2.59	1.41	1.37
3	C	402	HFK	C06-N16	2.55	1.41	1.37
3	C	402	HFK	C03-C02	2.44	1.54	1.50
3	C	402	HFK	C26-C20	2.43	1.43	1.40
3	A	402	HFK	C18-N19	2.39	1.34	1.30
3	A	402	HFK	C23-C21	2.38	1.44	1.39
3	A	402	HFK	C03-C02	2.19	1.53	1.50
3	B	402	HFK	C08-N14	2.10	1.48	1.46
3	C	402	HFK	C02-C07	2.09	1.52	1.46

All (39) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	401	GAL	C1-O5-C5	-5.00	103.98	113.65
2	B	401	GAL	C1-O5-C5	-4.72	104.53	113.65
3	A	402	HFK	C23-C21-C20	-4.45	118.22	123.62
3	C	402	HFK	O22-C18-N19	-4.21	108.00	115.57
3	A	402	HFK	C07-C06-N16	-4.04	118.85	122.11
2	C	401	GAL	C1-C2-C3	-3.91	102.37	110.36
3	A	402	HFK	C05-C06-N16	3.83	120.91	115.46
2	B	401	GAL	C1-C2-C3	-3.81	102.58	110.36
3	A	402	HFK	O22-C21-C23	3.78	134.43	126.49
3	B	402	HFK	O22-C18-N19	-3.50	109.29	115.57
3	C	402	HFK	C02-C07-C06	-3.30	116.25	119.18
3	A	402	HFK	O22-C18-N19	-3.24	109.74	115.57

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	402	HFK	O22-C21-C23	3.19	133.19	126.49
3	C	402	HFK	C05-C06-N16	3.12	119.90	115.46
3	B	402	HFK	O22-C21-C23	3.10	133.00	126.49
3	A	402	HFK	N17-C15-N14	2.97	123.50	117.96
3	A	402	HFK	C09-C10-C11	2.96	115.97	111.35
3	C	402	HFK	C07-C06-N16	-2.90	119.77	122.11
3	C	402	HFK	C05-C06-C07	-2.80	118.91	122.72
3	B	402	HFK	C05-C06-N16	2.69	119.29	115.46
3	B	402	HFK	C07-C06-N16	-2.68	119.95	122.11
3	B	402	HFK	C23-C21-C20	-2.60	120.46	123.62
3	C	402	HFK	C23-C21-C20	-2.54	120.54	123.62
3	B	402	HFK	N17-C15-N14	2.50	122.62	117.96
3	A	402	HFK	N17-C18-N19	-2.49	121.53	128.58
3	A	402	HFK	C20-N19-C18	2.45	108.98	104.13
3	B	402	HFK	C05-C06-C07	-2.38	119.47	122.72
2	A	401	GAL	O5-C1-C2	-2.28	106.30	110.30
3	C	402	HFK	O22-C21-C20	-2.24	106.27	107.80
3	A	402	HFK	N17-C15-N16	-2.23	114.22	117.96
2	C	401	GAL	O5-C1-C2	-2.23	106.38	110.30
3	C	402	HFK	C20-N19-C18	2.19	108.48	104.13
2	C	401	GAL	O2-C2-C3	2.18	115.52	110.38
4	C	403	WLJ	C02-C08-C09	2.14	124.78	121.54
3	B	402	HFK	C09-C10-C11	2.14	114.68	111.35
3	B	402	HFK	C02-C07-C06	-2.08	117.33	119.18
2	A	401	GAL	C1-O5-C5	-2.06	109.67	113.65
4	B	403	WLJ	C02-C08-C09	2.06	124.66	121.54
2	B	401	GAL	O6-C6-C5	-2.01	104.48	111.33

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	403	WLJ	C08-C09-N11-C12
2	C	401	GAL	O5-C5-C6-O6
2	B	401	GAL	O5-C5-C6-O6
2	B	401	GAL	C4-C5-C6-O6
2	C	401	GAL	C4-C5-C6-O6
2	A	401	GAL	O5-C5-C6-O6
4	B	403	WLJ	O10-C09-N11-C12
3	A	402	HFK	N14-C15-N17-C18
3	A	402	HFK	N16-C15-N17-C18
3	B	402	HFK	N14-C15-N17-C18

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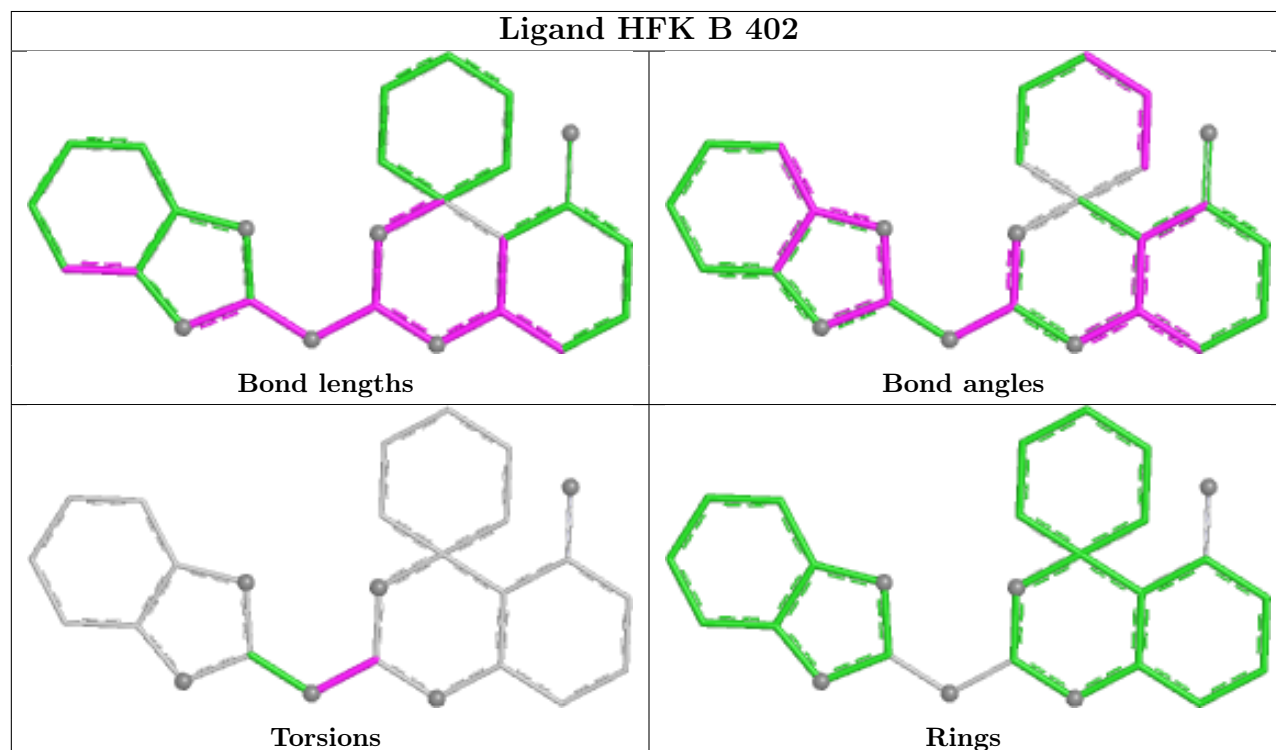
Mol	Chain	Res	Type	Atoms
3	B	402	HFK	N16-C15-N17-C18
3	C	402	HFK	N14-C15-N17-C18
3	C	402	HFK	N16-C15-N17-C18

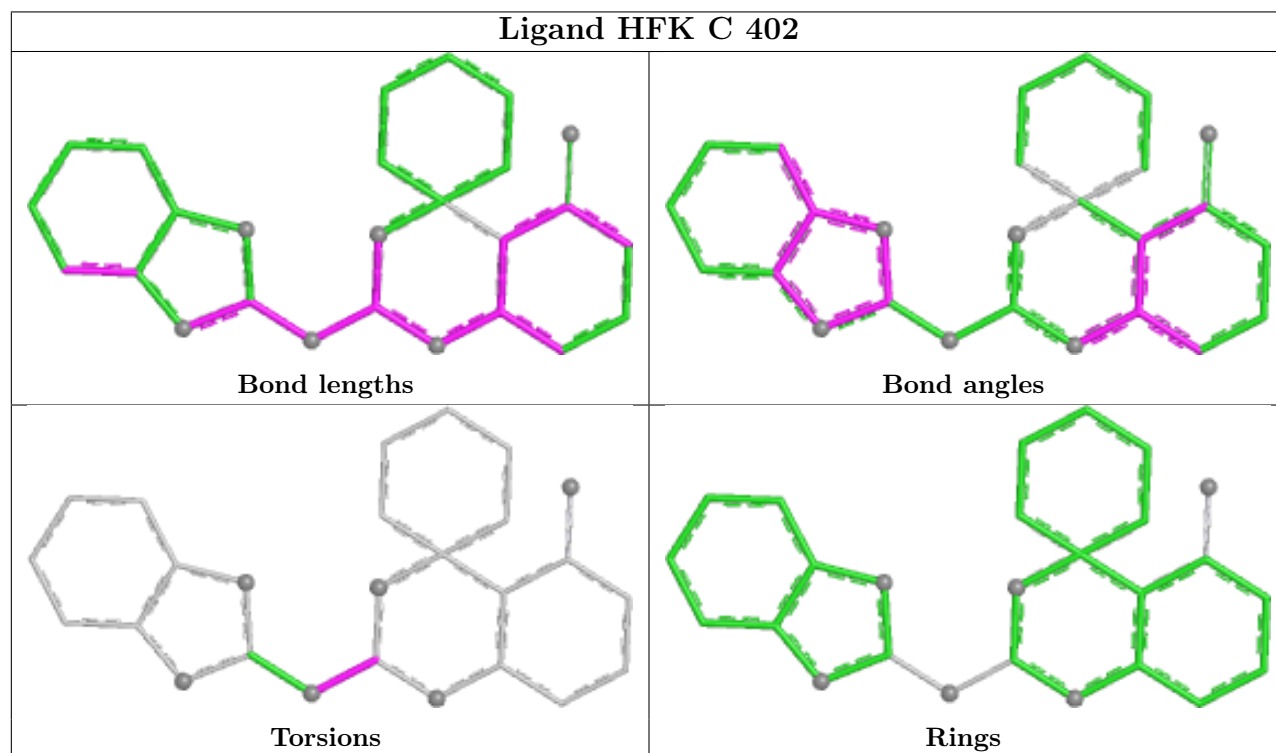
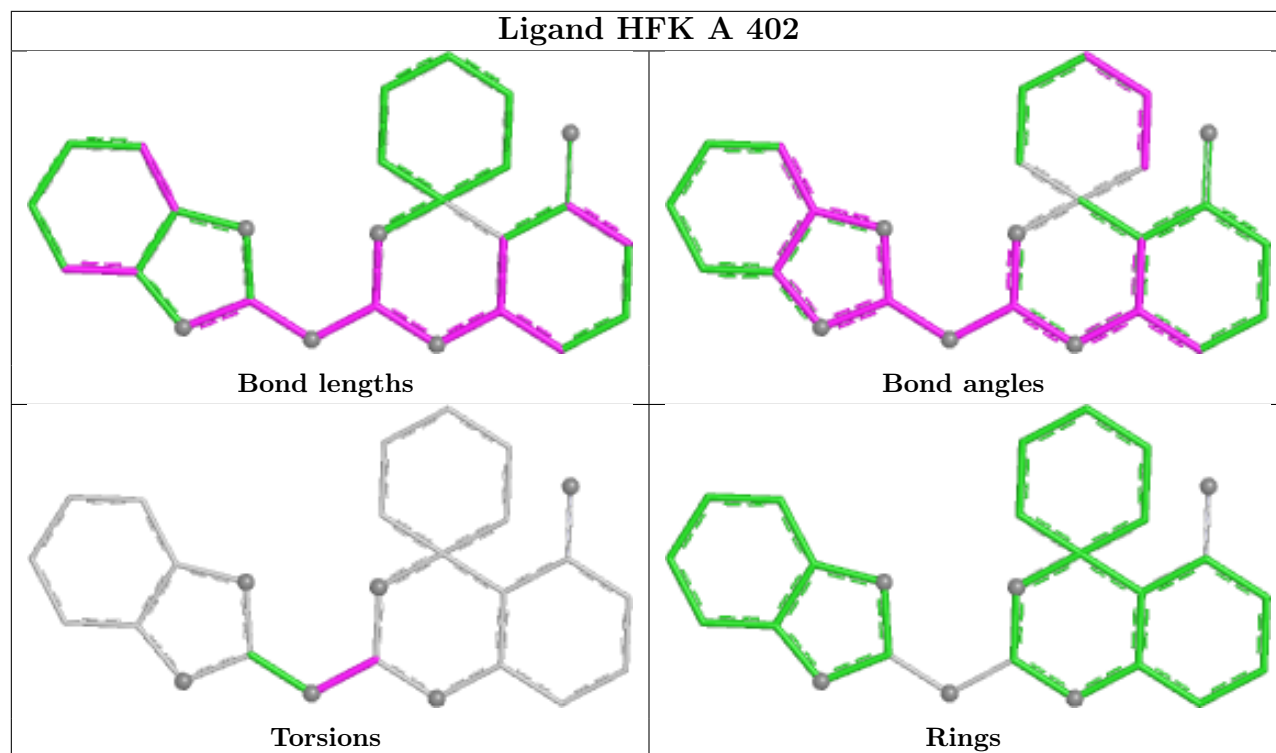
There are no ring outliers.

1 monomer is involved in 1 short contact:

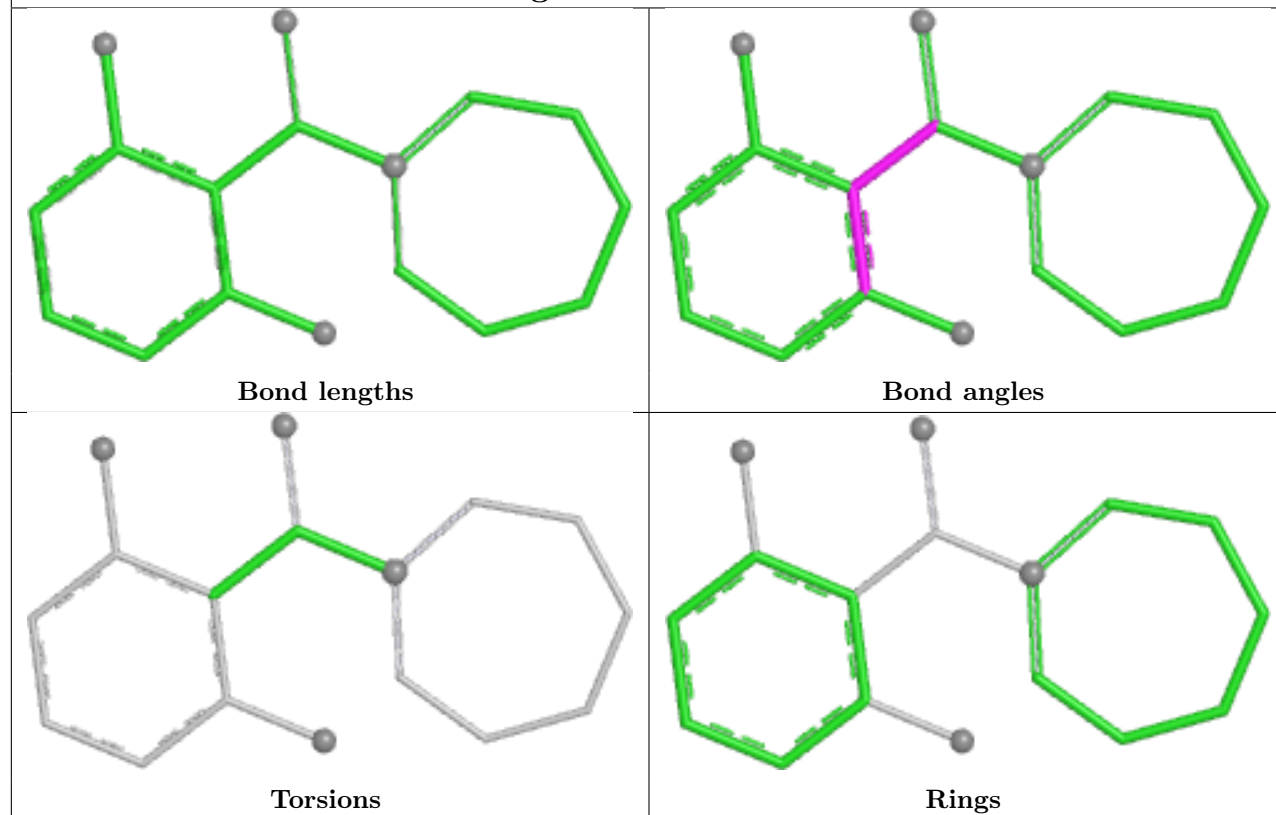
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	401	GAL	1	0

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.

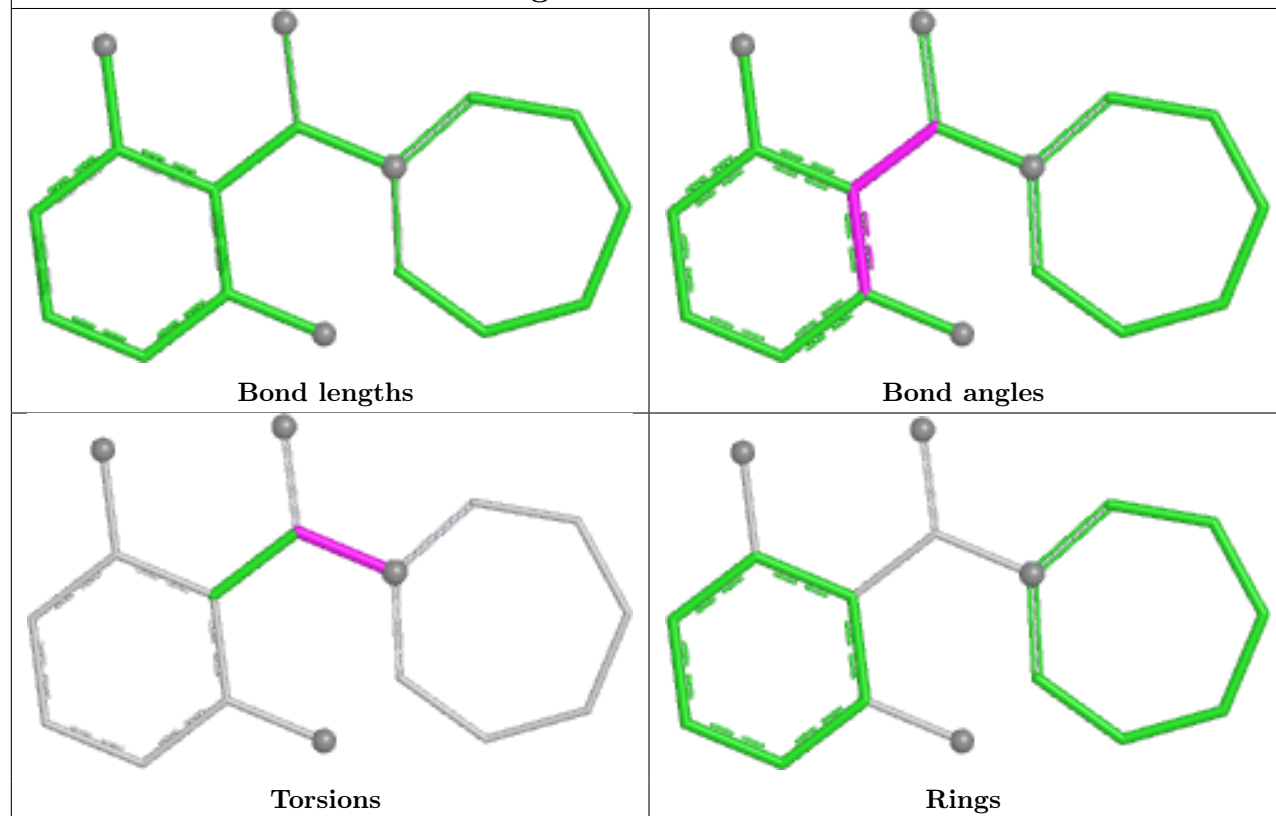




Ligand WLJ C 403



Ligand WLJ B 403



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	390/399 (97%)	0.05	8 (2%) 63 65	22, 40, 65, 80	0
1	B	391/399 (97%)	0.88	67 (17%) 4 5	25, 54, 104, 140	0
1	C	391/399 (97%)	0.62	34 (8%) 16 17	28, 51, 92, 126	0
1	D	362/399 (90%)	1.12	89 (24%) 2 2	19, 55, 116, 150	1 (0%)
All	All	1534/1596 (96%)	0.66	198 (12%) 7 8	19, 48, 102, 150	1 (0%)

All (198) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	21	ARG	7.5
1	B	368	ILE	5.9
1	D	106	TRP	5.9
1	C	233	SER	5.5
1	B	268	ASP	5.4
1	D	122	LEU	5.4
1	D	94	THR	5.2
1	B	233	SER	4.9
1	B	269	LEU	4.8
1	D	163	ILE	4.8
1	D	91	PRO	4.4
1	A	9	VAL	4.4
1	B	270	VAL	4.3
1	D	105	ARG	4.3
1	D	6	GLN	4.3
1	C	96	GLN	4.3
1	D	27	GLU	4.2
1	B	259	GLN	4.1
1	B	271	SER	4.1
1	D	185	MET	4.1
1	C	231	LEU	4.1

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Mol	Chain	Res	Type	RSRZ
1	D	9	VAL	4.1
1	C	120	ALA	3.9
1	D	175	HIS	3.9
1	D	93	PRO	3.8
1	A	8	GLN	3.8
1	D	43	GLU	3.8
1	B	2	ALA	3.7
1	C	232	ALA	3.7
1	B	265	ALA	3.7
1	A	3	ALA	3.7
1	B	249	ALA	3.7
1	B	260	LEU	3.7
1	B	374	GLY	3.6
1	B	302	ALA	3.6
1	B	263	LEU	3.6
1	D	103	THR	3.6
1	D	19	ALA	3.6
1	D	165	ALA	3.6
1	D	164	ALA	3.5
1	B	359	SER	3.5
1	B	330	GLU	3.5
1	A	7	PRO	3.5
1	D	188	PHE	3.5
1	D	69	LYS	3.5
1	D	99	LEU	3.5
1	D	119	ALA	3.4
1	B	337	GLY	3.4
1	D	90	PHE	3.4
1	B	232	ALA	3.4
1	B	231	LEU	3.4
1	D	78	THR	3.4
1	D	169	VAL	3.4
1	B	230	SER	3.4
1	D	126	SER	3.4
1	C	97	ARG	3.4
1	D	87	ARG	3.4
1	C	72	LEU	3.3
1	C	103	THR	3.3
1	B	264	GLU	3.3
1	C	25	GLY	3.3
1	C	250	LEU	3.3
1	D	7	PRO	3.3

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Mol	Chain	Res	Type	RSRZ
1	B	261	GLU	3.3
1	D	44	HIS	3.3
1	B	305	ARG	3.2
1	B	306	LEU	3.2
1	D	268	ASP	3.2
1	B	371	HIS	3.2
1	B	369	GLN	3.1
1	D	73	VAL	3.1
1	D	232	ALA	3.1
1	D	235	GLU	3.0
1	D	234	SER	3.0
1	B	366	ARG	3.0
1	D	18	ARG	3.0
1	D	159	ASP	3.0
1	C	69	LYS	2.9
1	D	167	ALA	2.9
1	D	10	ALA	2.9
1	D	62	VAL	2.9
1	B	214	SER	2.8
1	C	99	LEU	2.8
1	B	367	HIS	2.8
1	D	72	LEU	2.8
1	D	88	LEU	2.8
1	D	16	ALA	2.8
1	A	268	ASP	2.8
1	C	89	GLN	2.8
1	B	262	GLU	2.8
1	C	248	ARG	2.8
1	C	98	SER	2.7
1	D	33	SER	2.7
1	D	98	SER	2.7
1	D	121	PRO	2.7
1	C	2	ALA	2.7
1	D	129	VAL	2.7
1	D	89	GLN	2.7
1	D	161	GLY	2.7
1	B	276	ARG	2.7
1	D	107	ALA	2.7
1	B	274	GLY	2.7
1	B	336	PRO	2.7
1	B	250	LEU	2.7
1	B	300	TYR	2.7

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Mol	Chain	Res	Type	RSRZ
1	D	236	TYR	2.7
1	D	101	PRO	2.7
1	D	123	PRO	2.7
1	B	72	LEU	2.7
1	D	128	VAL	2.6
1	C	180	MET	2.6
1	D	76	LEU	2.6
1	D	391	CYS	2.6
1	D	162	THR	2.6
1	C	7	PRO	2.6
1	C	26	ALA	2.6
1	D	70	ASP	2.6
1	D	373	GLY	2.6
1	D	172	GLN	2.6
1	D	30	LEU	2.6
1	B	245	GLU	2.6
1	D	174	GLU	2.5
1	D	135	LEU	2.5
1	B	234	SER	2.5
1	B	301	ARG	2.5
1	C	88	LEU	2.5
1	B	253	ALA	2.5
1	B	334	ALA	2.5
1	B	361	ALA	2.5
1	C	228	ARG	2.4
1	D	230	SER	2.4
1	B	363	HIS	2.4
1	B	3	ALA	2.4
1	B	304	GLY	2.4
1	B	319	GLU	2.4
1	D	118	PRO	2.4
1	B	275	PHE	2.4
1	B	338	VAL	2.4
1	D	231	LEU	2.4
1	D	173	ALA	2.4
1	B	303	PHE	2.4
1	D	75	LEU	2.4
1	B	370	GLU	2.4
1	D	160	SER	2.4
1	B	252	ALA	2.3
1	C	234	SER	2.3
1	A	6	GLN	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	92	LEU	2.3
1	D	15	GLU	2.3
1	D	168	GLN	2.3
1	B	266	ALA	2.3
1	C	249	ALA	2.3
1	D	120	ALA	2.3
1	C	114	ILE	2.3
1	D	8	GLN	2.3
1	D	71	GLY	2.3
1	B	279	ARG	2.3
1	D	370	GLU	2.3
1	D	114	ILE	2.3
1	B	227	VAL	2.3
1	C	251	GLY	2.3
1	B	217	LYS	2.3
1	C	91	PRO	2.2
1	B	360	ALA	2.2
1	D	253	ALA	2.2
1	C	8	GLN	2.2
1	D	32	VAL	2.2
1	D	246	VAL	2.2
1	B	373	GLY	2.2
1	C	265	ALA	2.2
1	B	339	TYR	2.2
1	D	64	VAL	2.2
1	D	102	GLY	2.2
1	C	95	ALA	2.2
1	D	13	LEU	2.2
1	D	113	VAL	2.2
1	B	376	ALA	2.2
1	A	5	ARG	2.1
1	D	63	LEU	2.1
1	B	335	VAL	2.1
1	C	128	VAL	2.1
1	D	110	VAL	2.1
1	B	246	VAL	2.1
1	C	81	GLY	2.1
1	D	77	THR	2.1
1	D	14	ALA	2.1
1	C	229	HIS	2.1
1	B	258	VAL	2.1
1	B	286	ARG	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	331	ALA	2.1
1	D	12	LEU	2.1
1	D	92	LEU	2.1
1	B	372	TYR	2.1
1	C	90	PHE	2.1
1	B	228	ARG	2.1
1	B	364	ALA	2.0
1	D	130	VAL	2.0
1	A	214	SER	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](#)

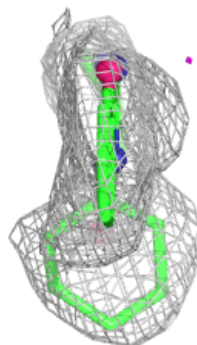
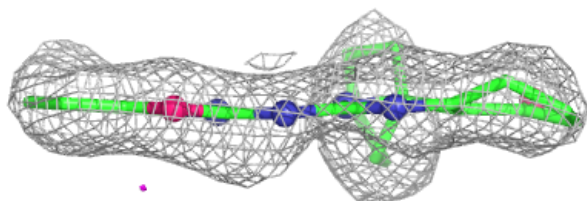
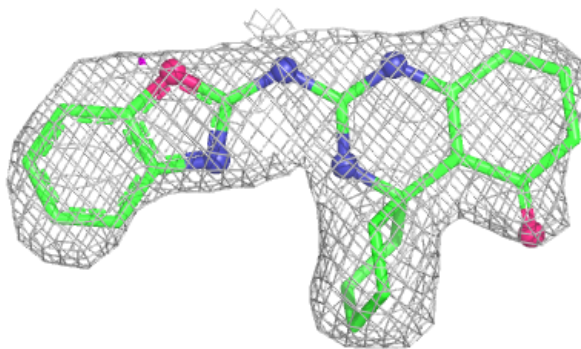
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	HFK	C	402	26/26	0.84	0.17	66,72,80,83	0
4	WLJ	B	403	17/17	0.85	0.21	69,83,97,97	0
2	GAL	A	401	12/12	0.86	0.11	22,24,26,27	0
4	WLJ	C	403	17/17	0.86	0.17	67,71,82,83	0
3	HFK	B	402	26/26	0.89	0.14	54,62,65,66	0
2	GAL	C	401	12/12	0.92	0.08	32,39,43,44	0
3	HFK	A	402	26/26	0.92	0.10	39,44,49,50	0
2	GAL	B	401	12/12	0.95	0.06	32,35,39,39	0

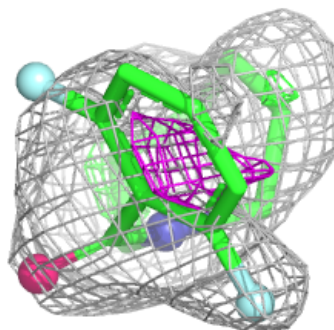
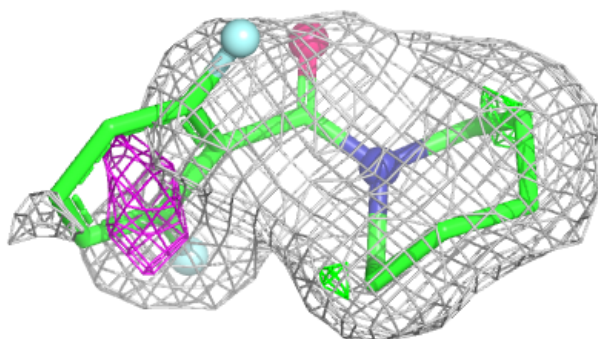
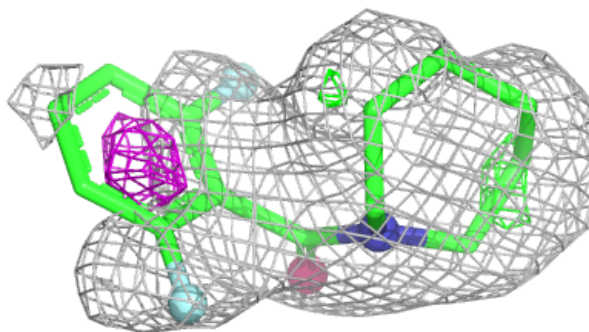
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around HFK C 402:

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

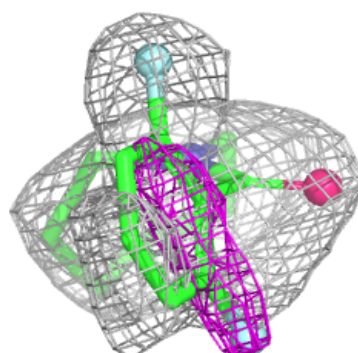
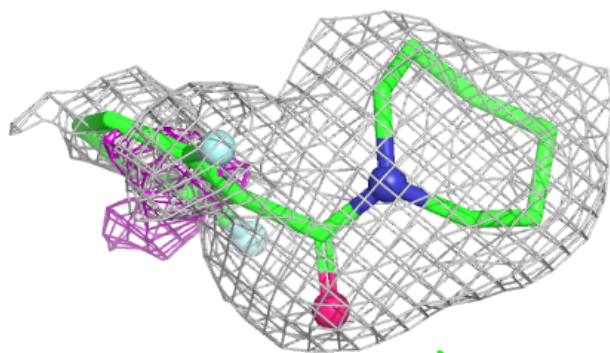
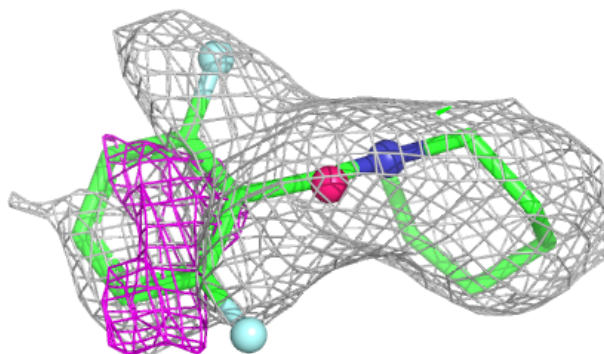
**Electron density around WLJ B 403:**

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

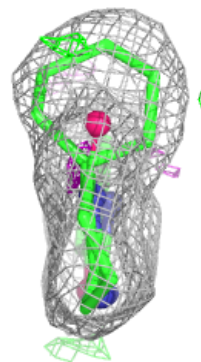
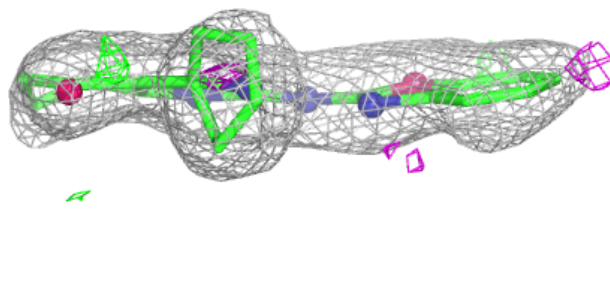
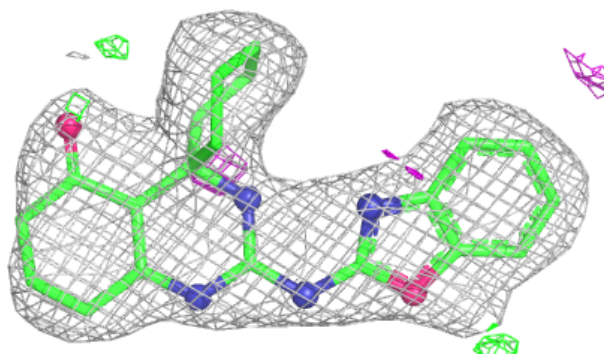


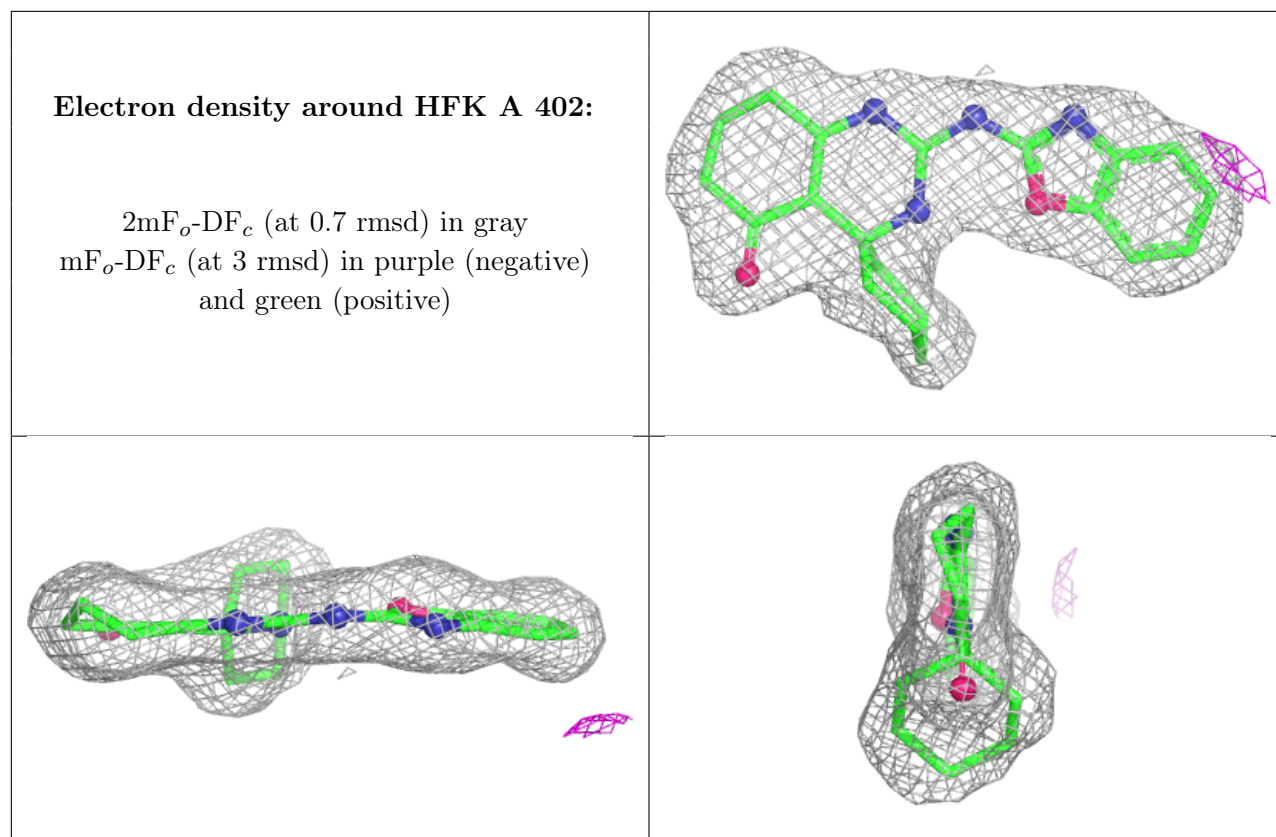
Electron density around WLJ C 403:

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

**Electron density around HFK B 402:**

$2mF_o-DF_c$ (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.