



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 02:43 PM UTC

PDB ID : 5HL1 / pdb_00005hl1
Title : Crystal structure of glutaminase C in complex with inhibitor CB-839
Authors : Huang, Q.; Cerione, R.A.
Deposited on : 2016-01-14
Resolution : 2.40 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

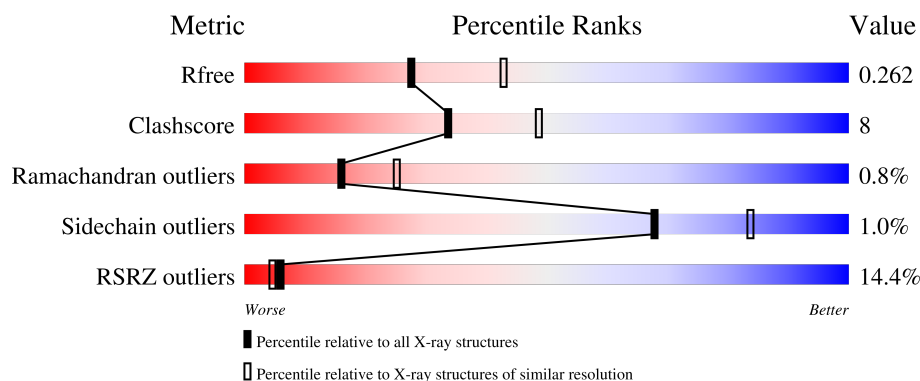
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 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	4912 (2.40-2.40)
Clashscore	190562	5391 (2.40-2.40)
Ramachandran outliers	187476	5320 (2.40-2.40)
Sidechain outliers	187428	5321 (2.40-2.40)
RSRZ outliers	180081	4916 (2.40-2.40)

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	539	11% 62% 12% 25%
1	B	539	12% 65% 10% 24%
1	C	539	10% 66% 8% 25%
1	D	539	11% 64% 9% 25%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 13120 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 Glutaminase kidney isoform, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	404	Total	C	N	O	S	1	0	0
			3148	2003	533	584	28			
1	B	410	Total	C	N	O	S	1	0	0
			3197	2037	540	592	28			
1	C	404	Total	C	N	O	S	1	0	0
			3145	2002	533	582	28			
1	D	402	Total	C	N	O	S	1	0	0
			3128	1988	530	582	28			

There are 48 discrepancies between the modelled and reference sequences:

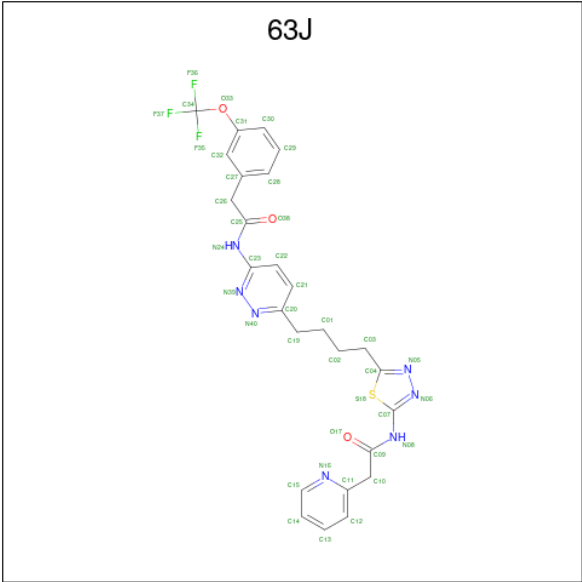
Chain	Residue	Modelled	Actual	Comment	Reference
A	60	MET	-	initiating methionine	UNP O94925
A	61	ARG	-	expression tag	UNP O94925
A	62	GLY	-	expression tag	UNP O94925
A	63	SER	-	expression tag	UNP O94925
A	64	HIS	-	expression tag	UNP O94925
A	65	HIS	-	expression tag	UNP O94925
A	66	HIS	-	expression tag	UNP O94925
A	67	HIS	-	expression tag	UNP O94925
A	68	HIS	-	expression tag	UNP O94925
A	69	HIS	-	expression tag	UNP O94925
A	70	GLY	-	expression tag	UNP O94925
A	71	SER	-	expression tag	UNP O94925
B	60	MET	-	initiating methionine	UNP O94925
B	61	ARG	-	expression tag	UNP O94925
B	62	GLY	-	expression tag	UNP O94925
B	63	SER	-	expression tag	UNP O94925
B	64	HIS	-	expression tag	UNP O94925
B	65	HIS	-	expression tag	UNP O94925
B	66	HIS	-	expression tag	UNP O94925
B	67	HIS	-	expression tag	UNP O94925
B	68	HIS	-	expression tag	UNP O94925

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Chain	Residue	Modelled	Actual	Comment	Reference
B	69	HIS	-	expression tag	UNP O94925
B	70	GLY	-	expression tag	UNP O94925
B	71	SER	-	expression tag	UNP O94925
C	60	MET	-	initiating methionine	UNP O94925
C	61	ARG	-	expression tag	UNP O94925
C	62	GLY	-	expression tag	UNP O94925
C	63	SER	-	expression tag	UNP O94925
C	64	HIS	-	expression tag	UNP O94925
C	65	HIS	-	expression tag	UNP O94925
C	66	HIS	-	expression tag	UNP O94925
C	67	HIS	-	expression tag	UNP O94925
C	68	HIS	-	expression tag	UNP O94925
C	69	HIS	-	expression tag	UNP O94925
C	70	GLY	-	expression tag	UNP O94925
C	71	SER	-	expression tag	UNP O94925
D	60	MET	-	initiating methionine	UNP O94925
D	61	ARG	-	expression tag	UNP O94925
D	62	GLY	-	expression tag	UNP O94925
D	63	SER	-	expression tag	UNP O94925
D	64	HIS	-	expression tag	UNP O94925
D	65	HIS	-	expression tag	UNP O94925
D	66	HIS	-	expression tag	UNP O94925
D	67	HIS	-	expression tag	UNP O94925
D	68	HIS	-	expression tag	UNP O94925
D	69	HIS	-	expression tag	UNP O94925
D	70	GLY	-	expression tag	UNP O94925
D	71	SER	-	expression tag	UNP O94925

- Molecule 2 is 2-(pyridin-2-yl)-N-(5-{4-[6-({3-(trifluoromethoxy)phenyl}acetyl)amino]pyridazin-3-yl}butyl)-1,3,4-thiadiazol-2-yl)acetamide (CCD ID: 63J) (formula: C₂₆H₂₄F₃N₇O₃S).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total 40	C 26	F 3	N 7	O 3	S 1	0	0
2	B	1	Total 40	C 26	F 3	N 7	O 3	S 1	0	0

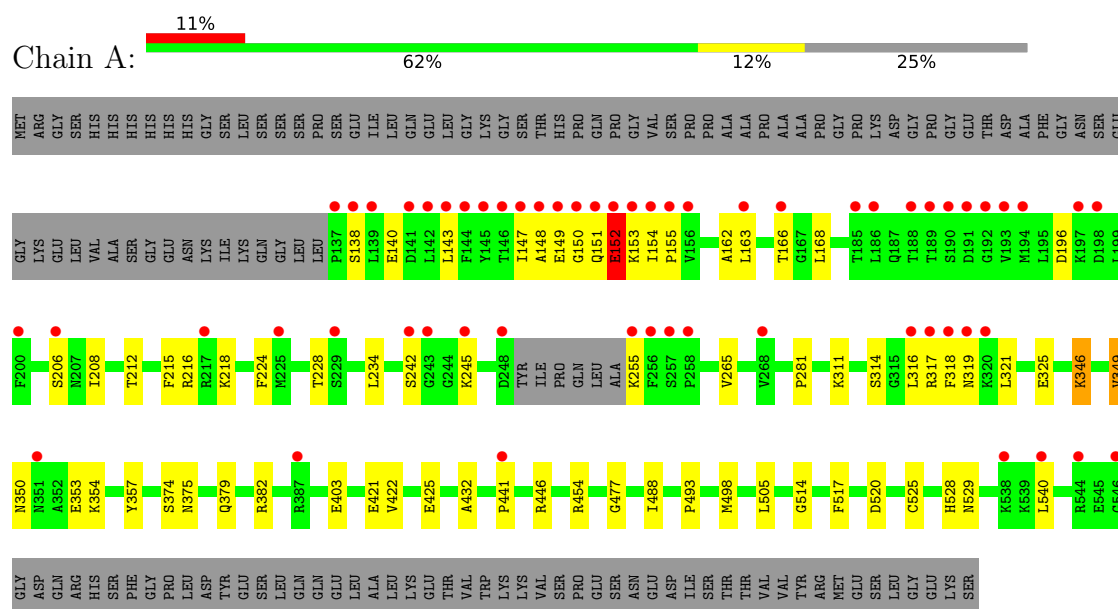
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	113	Total	O	0	0
			113	113		
3	B	91	Total	O	0	0
			91	91		
3	C	116	Total	O	0	0
			116	116		
3	D	102	Total	O	0	0
			102	102		

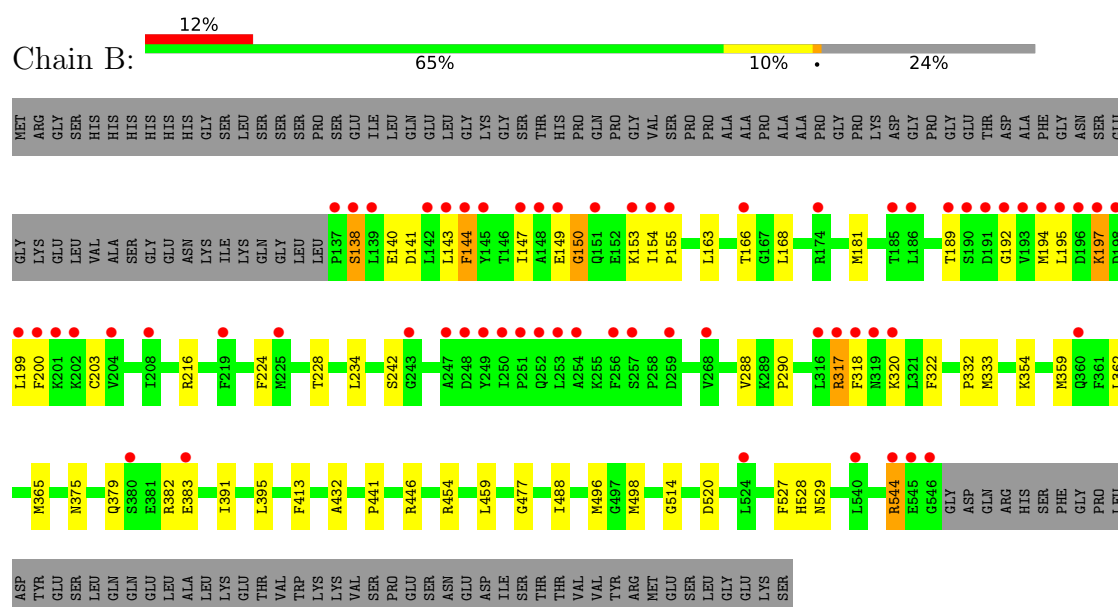
3 Residue-property plots

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: Glutaminase kidney isoform, mitochondrial



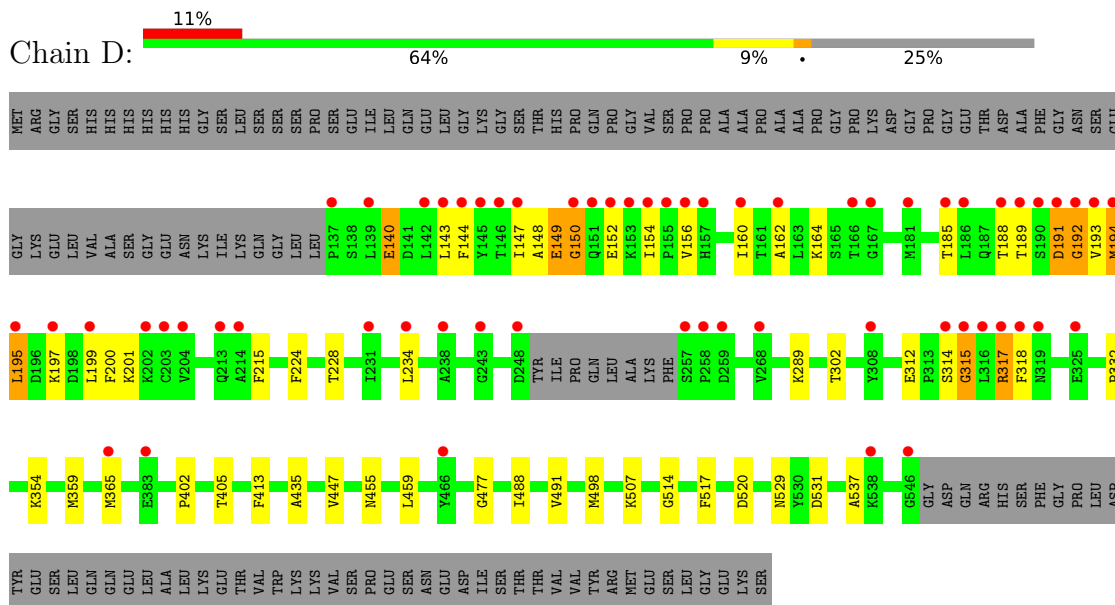
- Molecule 1: Glutaminase kidney isoform, mitochondrial



Chain C:



Chain D:



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	98.53Å 139.38Å 177.96Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.48 – 2.40 47.48 – 2.40	Depositor EDS
% Data completeness (in resolution range)	99.6 (47.48-2.40) 99.9 (47.48-2.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.26 (at 2.39Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.225 , 0.264 0.224 , 0.262	Depositor DCC
R_{free} test set	2000 reflections (2.08%)	wwPDB-VP
Wilson B-factor (Å ²)	38.6	Xtriage
Anisotropy	0.453	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 43.6	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	0.95	EDS
Total number of atoms	13120	wwPDB-VP
Average B, all atoms (Å ²)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 57.02 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.5157e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: 63J

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	0.43	0/3217	0.64	1/4338 (0.0%)
1	B	0.60	7/3269 (0.2%)	0.65	3/4412 (0.1%)
1	C	0.40	0/3214	0.60	0/4334
1	D	0.41	0/3196	0.64	3/4311 (0.1%)
All	All	0.47	7/12896 (0.1%)	0.63	7/17395 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1
1	D	0	1
All	All	0	2

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	317	ARG	CZ-NH2	-14.07	1.15	1.33
1	B	317	ARG	CG-CD	-12.41	1.15	1.52
1	B	197	LYS	CE-NZ	9.02	1.76	1.49
1	B	144	PHE	CB-CG	-7.06	1.34	1.50
1	B	317	ARG	CB-CG	-6.39	1.33	1.52
1	B	317	ARG	NE-CZ	-5.66	1.26	1.33
1	B	197	LYS	CD-CE	5.05	1.67	1.52

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	317	ARG	CG-CD-NE	-11.25	87.24	112.00
1	A	152	GLU	CA-CB-CG	8.96	132.03	114.10
1	D	317	ARG	NE-CZ-NH1	-7.23	114.27	121.50
1	D	191	ASP	CB-CA-C	-6.90	106.39	116.53
1	B	317	ARG	NE-CZ-NH2	6.83	125.35	119.20
1	D	191	ASP	CA-C-O	5.46	121.77	118.33
1	B	317	ARG	CA-CB-CG	-5.40	103.31	114.10

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	544	ARG	Peptide
1	D	150	GLY	Mainchain

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	3148	0	3116	66	0
1	B	3197	0	3169	56	0
1	C	3145	0	3118	48	0
1	D	3128	0	3095	49	0
2	A	40	0	0	5	0
2	B	40	0	0	3	0
3	A	113	0	0	5	0
3	B	91	0	0	7	0
3	C	116	0	0	4	0
3	D	102	0	0	2	0
All	All	13120	0	12498	194	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 (194) 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:197:LYS:CE	1:B:197:LYS:NZ	1.76	1.48
2:A:601:63J:C13	1:D:317:ARG:HH12	1.52	1.22
1:B:163:LEU:O	1:B:166:THR:HG22	1.64	0.97
2:A:601:63J:C13	1:D:317:ARG:NH1	2.28	0.96
1:A:163:LEU:O	1:A:166:THR:HG22	1.68	0.93
1:C:318:PHE:HE1	1:D:317:ARG:HB3	1.32	0.93
1:B:166:THR:HG23	1:B:168:LEU:H	1.33	0.91
1:A:166:THR:HG23	1:A:168:LEU:H	1.38	0.88
1:D:156:VAL:HG12	1:D:195:LEU:HD22	1.60	0.84
1:C:152:GLU:C	1:C:153:LYS:HE2	2.02	0.83
1:B:446:ARG:NH1	3:B:701:HOH:O	2.14	0.79
1:C:318:PHE:CE1	1:D:317:ARG:HB3	2.18	0.79
1:A:403:GLU:H	1:A:403:GLU:CD	1.94	0.76
1:A:216:ARG:O	1:A:218:LYS:NZ	2.21	0.73
1:D:140:GLU:HG3	1:D:201:LYS:HG3	1.68	0.73
1:A:446:ARG:NH2	3:A:702:HOH:O	2.16	0.72
1:A:317:ARG:HB2	1:B:318:PHE:CZ	2.23	0.72
1:C:403:GLU:OE1	3:C:601:HOH:O	2.06	0.72
1:A:234:LEU:HD22	1:A:520:ASP:HB3	1.72	0.71
1:C:318:PHE:CZ	1:D:317:ARG:HG2	2.27	0.69
1:C:234:LEU:HD22	1:C:520:ASP:HB3	1.74	0.69
1:C:151:GLN:N	1:C:151:GLN:OE1	2.25	0.69
1:C:308:TYR:OH	3:C:601:HOH:O	2.11	0.69
1:B:144:PHE:CZ	1:B:200:PHE:HB3	2.28	0.69
1:D:531:ASP:O	3:D:601:HOH:O	2.11	0.69
1:A:152:GLU:HG2	1:A:153:LYS:HG2	1.74	0.68
2:A:601:63J:N08	2:A:601:63J:N16	2.40	0.68
1:A:425:GLU:OE2	3:A:701:HOH:O	2.13	0.67
1:B:144:PHE:CE1	1:B:197:LYS:HA	2.29	0.67
2:B:601:63J:C30	1:D:317:ARG:HE	2.08	0.67
1:A:325:GLU:HG3	1:B:317:ARG:NH1	2.10	0.66
1:B:144:PHE:CE1	1:B:200:PHE:HB3	2.31	0.66
1:A:529:ASN:ND2	1:B:529:ASN:OD1	2.29	0.66
1:A:321:LEU:CD1	2:A:601:63J:C15	2.76	0.64
1:C:150:GLY:N	1:C:151:GLN:OE1	2.31	0.64
1:D:488:ILE:HD12	1:D:514:GLY:HA3	1.80	0.64
1:C:245:LYS:HD2	1:C:245:LYS:C	2.22	0.63
1:A:529:ASN:HD21	1:B:529:ASN:CG	2.05	0.63
1:D:332:PRO:HD2	1:D:459:LEU:HD13	1.80	0.63
1:D:365:MET:HG3	1:D:447:VAL:HG11	1.80	0.63
1:A:255:LYS:N	3:A:706:HOH:O	2.31	0.62
1:B:544:ARG:NH1	3:B:706:HOH:O	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:321:LEU:HD13	2:A:601:63J:C15	2.28	0.62
1:C:153:LYS:HD3	1:C:196:ASP:HA	1.81	0.62
1:D:189:THR:OG1	1:D:191:ASP:OD2	2.10	0.62
1:A:153:LYS:HD2	1:A:196:ASP:HB3	1.82	0.62
1:B:153:LYS:HD2	1:B:194:MET:SD	2.40	0.62
1:A:316:LEU:O	1:A:319:ASN:ND2	2.33	0.61
1:A:317:ARG:HB2	1:B:318:PHE:CE2	2.35	0.61
1:C:317:ARG:HG3	1:D:318:PHE:CZ	2.36	0.61
1:C:245:LYS:HD2	1:C:245:LYS:O	2.01	0.60
1:C:143:LEU:O	1:C:147:ILE:HG12	2.02	0.60
1:C:152:GLU:HG2	1:C:153:LYS:HG2	1.83	0.59
1:B:197:LYS:NZ	1:B:197:LYS:CD	2.65	0.59
1:C:356:ASP:OD1	3:C:602:HOH:O	2.16	0.59
1:C:152:GLU:O	1:C:153:LYS:HE2	2.02	0.59
1:B:320:LYS:NZ	2:B:601:63J:F36	2.17	0.59
1:A:148:ALA:O	1:A:150:GLY:N	2.36	0.59
1:A:520:ASP:OD2	3:A:703:HOH:O	2.17	0.58
1:A:153:LYS:CD	1:A:196:ASP:HA	2.33	0.58
1:A:208:ILE:O	1:A:212:THR:HG23	2.03	0.58
1:A:140:GLU:N	1:A:140:GLU:OE1	2.37	0.58
1:D:234:LEU:HD22	1:D:520:ASP:HB3	1.86	0.57
1:B:143:LEU:O	1:B:147:ILE:HD12	2.05	0.57
1:A:153:LYS:HD2	1:A:196:ASP:HA	1.85	0.57
1:D:289:LYS:NZ	3:D:609:HOH:O	2.37	0.57
1:B:322:PHE:O	3:B:702:HOH:O	2.17	0.56
1:C:403:GLU:CD	1:C:403:GLU:H	2.14	0.56
1:A:153:LYS:HD2	1:A:196:ASP:CB	2.35	0.56
1:D:152:GLU:O	1:D:197:LYS:HE3	2.06	0.56
1:A:317:ARG:HB2	1:B:318:PHE:HZ	1.69	0.56
1:D:192:GLY:HA3	1:D:194:MET:H	1.68	0.56
1:B:234:LEU:HD22	1:B:520:ASP:HB3	1.88	0.56
1:A:148:ALA:HB2	1:A:154:ILE:HG12	1.87	0.55
1:B:362:LEU:HD23	1:B:365:MET:CE	2.36	0.55
1:A:350:ASN:ND2	1:A:353:GLU:OE1	2.38	0.54
1:B:362:LEU:HD23	1:B:365:MET:HE3	1.89	0.54
1:C:139:LEU:HD12	1:C:139:LEU:H	1.72	0.54
1:A:477:GLY:O	1:A:529:ASN:HB2	2.08	0.54
1:B:379:GLN:O	1:B:383:GLU:HG3	2.07	0.54
1:D:195:LEU:HA	1:D:199:LEU:HD23	1.89	0.54
1:B:195:LEU:HA	1:B:199:LEU:HD23	1.90	0.53
1:C:153:LYS:CD	1:C:196:ASP:HA	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:152:GLU:CD	1:C:153:LYS:H	2.17	0.53
1:D:144:PHE:CE2	1:D:197:LYS:HD2	2.44	0.52
1:B:332:PRO:HD2	1:B:459:LEU:HD13	1.91	0.52
1:A:529:ASN:HD21	1:B:529:ASN:ND2	2.08	0.52
1:D:148:ALA:O	1:D:150:GLY:N	2.41	0.52
1:A:153:LYS:HD2	1:A:196:ASP:CA	2.39	0.52
1:C:149:GLU:HB2	1:C:151:GLN:OE1	2.10	0.51
1:A:311:LYS:HE2	3:B:773:HOH:O	2.10	0.51
1:B:496:MET:HE3	1:B:498:MET:SD	2.51	0.51
1:C:317:ARG:HB3	1:D:318:PHE:CE2	2.46	0.51
1:B:477:GLY:O	1:B:529:ASN:HB2	2.09	0.51
1:D:154:ILE:O	1:D:195:LEU:HB3	2.11	0.51
1:A:318:PHE:CZ	1:B:318:PHE:CE1	3.00	0.50
1:A:529:ASN:ND2	1:B:529:ASN:HD21	2.10	0.50
1:D:477:GLY:O	1:D:529:ASN:HB2	2.12	0.50
1:C:529:ASN:ND2	1:D:529:ASN:OD1	2.45	0.49
1:B:153:LYS:HD2	1:B:194:MET:CG	2.42	0.49
1:D:185:THR:HA	1:D:188:THR:HB	1.95	0.49
1:A:525:CYS:HA	1:A:540:LEU:O	2.13	0.49
1:C:196:ASP:OD1	1:C:199:LEU:HB2	2.13	0.49
1:A:143:LEU:O	1:A:147:ILE:HG13	2.13	0.49
1:D:162:ALA:HB1	1:D:215:PHE:HE1	1.77	0.48
1:B:189:THR:O	1:B:189:THR:OG1	2.28	0.48
1:C:158:LYS:HA	1:C:158:LYS:HD2	1.61	0.48
1:A:245:LYS:HE3	1:A:505:LEU:HB2	1.95	0.48
1:A:318:PHE:CE2	1:B:317:ARG:HG3	2.49	0.48
1:A:403:GLU:CD	1:A:403:GLU:N	2.65	0.48
1:D:224:PHE:O	1:D:228:THR:HG23	2.14	0.48
1:C:224:PHE:O	1:C:228:THR:HG23	2.14	0.47
1:C:450:PRO:HG2	1:D:537:ALA:HB2	1.96	0.47
1:A:143:LEU:HD13	1:A:212:THR:HG22	1.95	0.47
1:B:379:GLN:O	1:B:382:ARG:HG2	2.13	0.47
1:A:325:GLU:HG3	1:B:317:ARG:CZ	2.45	0.47
1:A:379:GLN:O	1:A:382:ARG:HG2	2.14	0.47
1:A:493:PRO:HB3	3:B:787:HOH:O	2.14	0.46
1:A:432:ALA:HB1	1:A:441:PRO:HG3	1.97	0.46
1:B:527:PHE:O	3:B:703:HOH:O	2.21	0.46
1:A:245:LYS:HD2	1:A:245:LYS:C	2.41	0.46
1:D:148:ALA:O	1:D:149:GLU:HG2	2.15	0.46
1:C:379:GLN:O	1:C:382:ARG:HG2	2.16	0.46
1:B:318:PHE:CD1	1:B:318:PHE:N	2.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:375:ASN:O	1:A:379:GLN:HG2	2.16	0.46
1:C:162:ALA:HB1	1:C:215:PHE:HE1	1.80	0.46
1:C:334:VAL:HG23	1:C:337:GLY:H	1.81	0.45
1:C:185:THR:O	1:C:188:THR:HG22	2.16	0.45
1:A:162:ALA:HB1	1:A:215:PHE:HE1	1.82	0.45
1:A:528:HIS:CD2	1:B:454:ARG:HD2	2.52	0.45
1:A:498:MET:HE1	1:A:517:PHE:CE1	2.51	0.45
1:B:354:LYS:HB3	1:B:413:PHE:CZ	2.51	0.45
1:D:144:PHE:HD1	1:D:200:PHE:CG	2.35	0.45
1:D:359:MET:HE3	1:D:359:MET:HB3	1.79	0.45
1:C:202:LYS:NZ	3:C:616:HOH:O	2.50	0.45
1:C:318:PHE:HZ	1:D:317:ARG:HG2	1.77	0.45
1:B:138:SER:O	1:B:141:ASP:HB2	2.17	0.45
1:C:318:PHE:CZ	1:D:318:PHE:CZ	3.04	0.45
1:B:149:GLU:HG3	1:B:150:GLY:N	2.32	0.44
1:C:498:MET:HE1	1:C:517:PHE:CE1	2.52	0.44
1:A:281:PRO:HA	1:A:422:VAL:O	2.17	0.44
1:A:265:VAL:HG22	1:A:498:MET:HG2	2.00	0.44
1:B:144:PHE:HE1	1:B:197:LYS:O	1.99	0.44
1:C:152:GLU:N	1:C:152:GLU:OE2	2.51	0.44
1:C:149:GLU:HB2	1:C:151:GLN:NE2	2.32	0.44
1:C:488:ILE:HD12	1:C:514:GLY:HA3	1.98	0.44
1:A:154:ILE:HG22	1:A:155:PRO:O	2.17	0.44
1:C:317:ARG:HD2	1:C:317:ARG:O	2.18	0.44
1:A:349:VAL:O	1:A:354:LYS:HE3	2.17	0.43
1:B:154:ILE:HG22	1:B:155:PRO:O	2.18	0.43
1:B:181:MET:HG2	1:B:203:CYS:HA	2.01	0.43
1:D:354:LYS:HB3	1:D:413:PHE:CZ	2.53	0.43
1:B:224:PHE:O	1:B:228:THR:HG23	2.19	0.43
1:B:290:PRO:HB3	1:B:333:MET:HE1	1.99	0.43
1:D:302:THR:OG1	1:D:455:ASN:ND2	2.47	0.43
1:B:359:MET:HE3	1:B:359:MET:HB3	1.76	0.43
1:B:432:ALA:HB1	1:B:441:PRO:HG3	2.00	0.42
1:B:140:GLU:O	1:B:144:PHE:HB2	2.19	0.42
1:B:216:ARG:HA	1:B:216:ARG:HE	1.83	0.42
1:C:318:PHE:CE1	1:D:317:ARG:CB	2.96	0.42
1:D:192:GLY:HA3	1:D:194:MET:N	2.33	0.42
1:A:454:ARG:HD2	1:B:528:HIS:CG	2.54	0.42
1:D:498:MET:HE1	1:D:517:PHE:CE1	2.54	0.42
1:A:346:LYS:HG3	1:A:357:TYR:CD2	2.54	0.42
1:A:143:LEU:HD12	1:A:143:LEU:HA	1.91	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:488:ILE:HD12	1:A:514:GLY:HA3	2.01	0.42
1:B:375:ASN:OD1	3:B:704:HOH:O	2.21	0.42
1:C:149:GLU:HB2	1:C:151:GLN:HE22	1.84	0.42
1:D:197:LYS:N	1:D:197:LYS:HD3	2.35	0.42
1:C:318:PHE:CE1	1:D:317:ARG:HG2	2.54	0.41
1:A:153:LYS:HD3	1:A:196:ASP:HA	2.03	0.41
1:C:195:LEU:HA	1:C:199:LEU:HD23	2.02	0.41
1:D:192:GLY:HA3	1:D:193:VAL:HA	1.75	0.41
1:D:507:LYS:HA	1:D:507:LYS:HE2	2.01	0.41
1:C:150:GLY:C	1:C:151:GLN:OE1	2.63	0.41
1:A:498:MET:HE1	1:A:517:PHE:CZ	2.55	0.41
1:C:278:THR:HA	1:C:424:CYS:HB2	2.02	0.41
1:D:160:ILE:HG22	1:D:164:LYS:HD2	2.02	0.41
1:B:488:ILE:HD12	1:B:514:GLY:HA3	2.02	0.41
1:A:314:SER:HB2	1:A:318:PHE:HB2	2.02	0.41
2:B:601:63J:N39	1:C:321:LEU:HB3	2.35	0.41
1:C:149:GLU:HB2	1:C:151:GLN:CD	2.46	0.41
1:D:315:GLY:C	1:D:317:ARG:H	2.29	0.41
1:A:224:PHE:O	1:A:228:THR:HG23	2.21	0.41
1:A:529:ASN:ND2	1:B:529:ASN:ND2	2.68	0.41
1:D:143:LEU:HD11	1:D:147:ILE:HD11	2.03	0.40
1:D:402:PRO:O	1:D:405:THR:OG1	2.34	0.40
1:A:403:GLU:CD	3:A:707:HOH:O	2.64	0.40
1:D:189:THR:O	1:D:189:THR:HG23	2.21	0.40
1:D:435:ALA:HB2	1:D:491:VAL:HG13	2.03	0.40
1:A:151:GLN:OE1	1:A:152:GLU:N	2.54	0.40
1:A:318:PHE:CZ	1:B:318:PHE:CZ	3.09	0.40
1:B:391:ILE:O	1:B:395:LEU:HG	2.21	0.40
1:A:374:SER:HB2	1:A:421:GLU:OE2	2.22	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	400/539 (74%)	387 (97%)	10 (2%)	3 (1%)	16	25
1	B	408/539 (76%)	394 (97%)	11 (3%)	3 (1%)	18	28
1	C	400/539 (74%)	384 (96%)	15 (4%)	1 (0%)	36	50
1	D	398/539 (74%)	375 (94%)	17 (4%)	6 (2%)	8	12
All	All	1606/2156 (74%)	1540 (96%)	53 (3%)	13 (1%)	16	25

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	138	SER
1	A	149	GLU
1	B	150	GLY
1	B	192	GLY
1	D	149	GLU
1	D	192	GLY
1	D	194	MET
1	D	315	GLY
1	C	190	SER
1	D	314	SER
1	D	195	LEU
1	A	152	GLU
1	B	138	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	349/462 (76%)	345 (99%)	4 (1%)	65	82
1	B	354/462 (77%)	352 (99%)	2 (1%)	78	89
1	C	348/462 (75%)	342 (98%)	6 (2%)	53	74
1	D	347/462 (75%)	345 (99%)	2 (1%)	78	89
All	All	1398/1848 (76%)	1384 (99%)	14 (1%)	68	84

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	206	SER
1	A	242	SER
1	A	346	LYS
1	A	349	VAL
1	B	242	SER
1	B	288	VAL
1	C	206	SER
1	C	259	ASP
1	C	260	LEU
1	C	274	SER
1	C	303	GLU
1	C	529	ASN
1	D	140	GLU
1	D	312	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	205	GLN
1	A	330	HIS
1	A	436	ASN
1	A	455	ASN
1	A	529	ASN
1	B	157	HIS
1	B	335	ASN
1	B	368	ASN
1	B	375	ASN
1	B	379	GLN
1	B	516	HIS
1	B	529	ASN
1	C	241	GLN
1	C	368	ASN
1	D	347	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 [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

2 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	63J	A	601	-	43,43,43	1.81	9 (20%)	54,58,58	5.05	21 (38%)
2	63J	B	601	-	43,43,43	1.33	7 (16%)	54,58,58	2.63	16 (29%)

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	63J	A	601	-	-	12/28/28/28	0/4/4/4
2	63J	B	601	-	-	10/28/28/28	0/4/4/4

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	601	63J	C11-N16	5.85	1.46	1.34
2	A	601	63J	C04-N05	4.70	1.35	1.29
2	B	601	63J	C04-N05	3.78	1.34	1.29
2	B	601	63J	C25-N24	3.59	1.43	1.35
2	A	601	63J	C10-C11	3.56	1.54	1.51
2	B	601	63J	C09-N08	3.29	1.43	1.37
2	B	601	63J	C07-N08	3.23	1.43	1.38
2	A	601	63J	C14-C13	3.22	1.45	1.38
2	A	601	63J	C25-N24	3.18	1.42	1.35
2	A	601	63J	C07-N08	3.04	1.42	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	601	63J	C13-C12	2.90	1.43	1.38
2	B	601	63J	C07-N06	2.47	1.34	1.31
2	A	601	63J	O33-C34	2.33	1.43	1.31
2	B	601	63J	N06-N05	-2.20	1.35	1.39
2	B	601	63J	C20-N40	2.08	1.34	1.33
2	A	601	63J	C10-C09	-2.07	1.47	1.52

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	601	63J	C07-S18-C04	13.83	98.65	87.07
2	A	601	63J	S18-C07-N06	-12.36	100.72	114.52
2	A	601	63J	S18-C04-N05	-12.23	103.91	113.98
2	A	601	63J	C13-C12-C11	-12.16	103.71	118.93
2	A	601	63J	C14-C15-N16	-11.71	104.89	123.42
2	A	601	63J	C10-C11-N16	-10.63	102.57	116.44
2	A	601	63J	N08-C07-N06	9.15	128.99	120.81
2	A	601	63J	C15-N16-C11	9.11	130.19	117.41
2	B	601	63J	S18-C04-N05	-8.56	106.94	113.98
2	B	601	63J	C07-S18-C04	8.20	93.94	87.07
2	A	601	63J	C07-N06-N05	7.65	121.75	112.02
2	B	601	63J	S18-C07-N06	-7.42	106.23	114.52
2	A	601	63J	C10-C11-C12	6.85	131.15	121.54
2	A	601	63J	C10-C09-N08	5.71	121.36	114.40
2	A	601	63J	C14-C13-C12	5.45	126.97	120.24
2	B	601	63J	S18-C07-N08	5.17	130.65	123.72
2	A	601	63J	S18-C07-N08	4.90	130.29	123.72
2	B	601	63J	C23-N39-N40	4.06	122.23	119.35
2	A	601	63J	C03-C04-N05	3.99	129.35	123.57
2	A	601	63J	C13-C14-C15	3.94	125.86	118.62
2	A	601	63J	C09-N08-C07	-3.89	117.04	123.69
2	B	601	63J	C07-N06-N05	3.84	116.91	112.02
2	B	601	63J	C26-C25-N24	3.75	121.74	114.73
2	B	601	63J	C03-C04-S18	3.75	127.35	120.63
2	A	601	63J	C01-C19-C20	-3.44	102.89	113.09
2	A	601	63J	C03-C04-S18	3.41	126.74	120.63
2	A	601	63J	O17-C09-N08	-3.34	116.11	122.44
2	B	601	63J	C04-N05-N06	2.84	115.98	113.03
2	A	601	63J	C12-C11-N16	2.74	126.14	122.22
2	B	601	63J	N08-C07-N06	2.57	123.11	120.81
2	B	601	63J	C10-C11-N16	2.52	119.73	116.44
2	B	601	63J	C29-C30-C31	2.51	122.77	118.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	601	63J	C15-N16-C11	2.34	120.69	117.41
2	B	601	63J	O38-C25-C26	-2.32	116.96	121.99
2	B	601	63J	C30-C31-C32	-2.29	117.43	120.50
2	B	601	63J	C01-C19-C20	-2.27	106.37	113.09
2	A	601	63J	C31-C32-C27	2.22	122.18	119.76

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	63J	N06-C07-N08-C09
2	A	601	63J	S18-C07-N08-C09
2	A	601	63J	F36-C34-O33-C31
2	A	601	63J	F37-C34-O33-C31
2	B	601	63J	C02-C01-C19-C20
2	A	601	63J	F35-C34-O33-C31
2	B	601	63J	O38-C25-C26-C27
2	B	601	63J	N39-C23-N24-C25
2	B	601	63J	N24-C25-C26-C27
2	A	601	63J	C02-C03-C04-S18
2	B	601	63J	C02-C03-C04-S18
2	B	601	63J	C22-C23-N24-C25
2	B	601	63J	C19-C01-C02-C03
2	A	601	63J	C01-C02-C03-C04
2	A	601	63J	C19-C01-C02-C03
2	A	601	63J	C02-C03-C04-N05
2	A	601	63J	N08-C09-C10-C11
2	B	601	63J	C02-C03-C04-N05
2	B	601	63J	C30-C31-O33-C34
2	B	601	63J	C32-C31-O33-C34
2	A	601	63J	C32-C31-O33-C34
2	A	601	63J	C30-C31-O33-C34

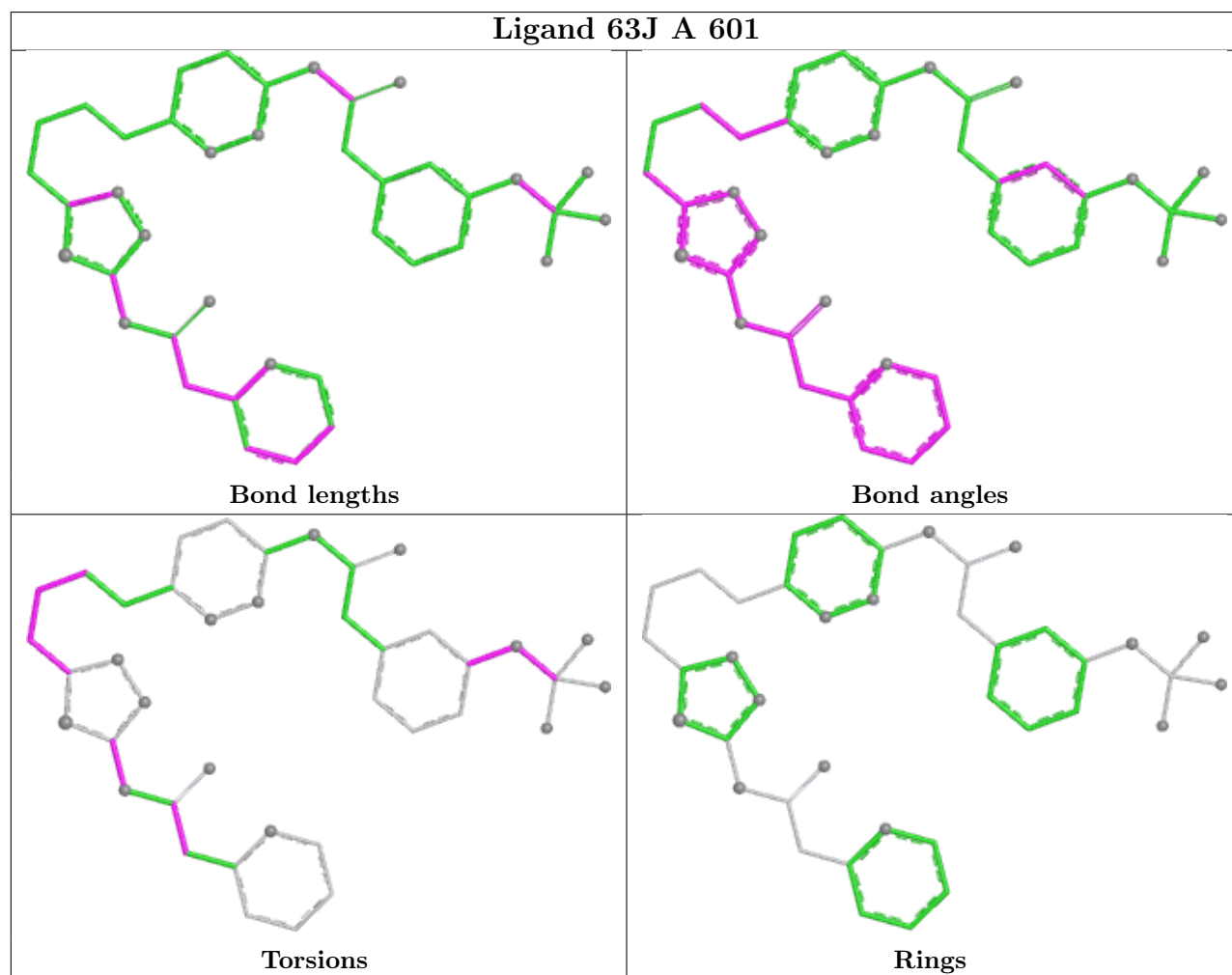
There are no ring outliers.

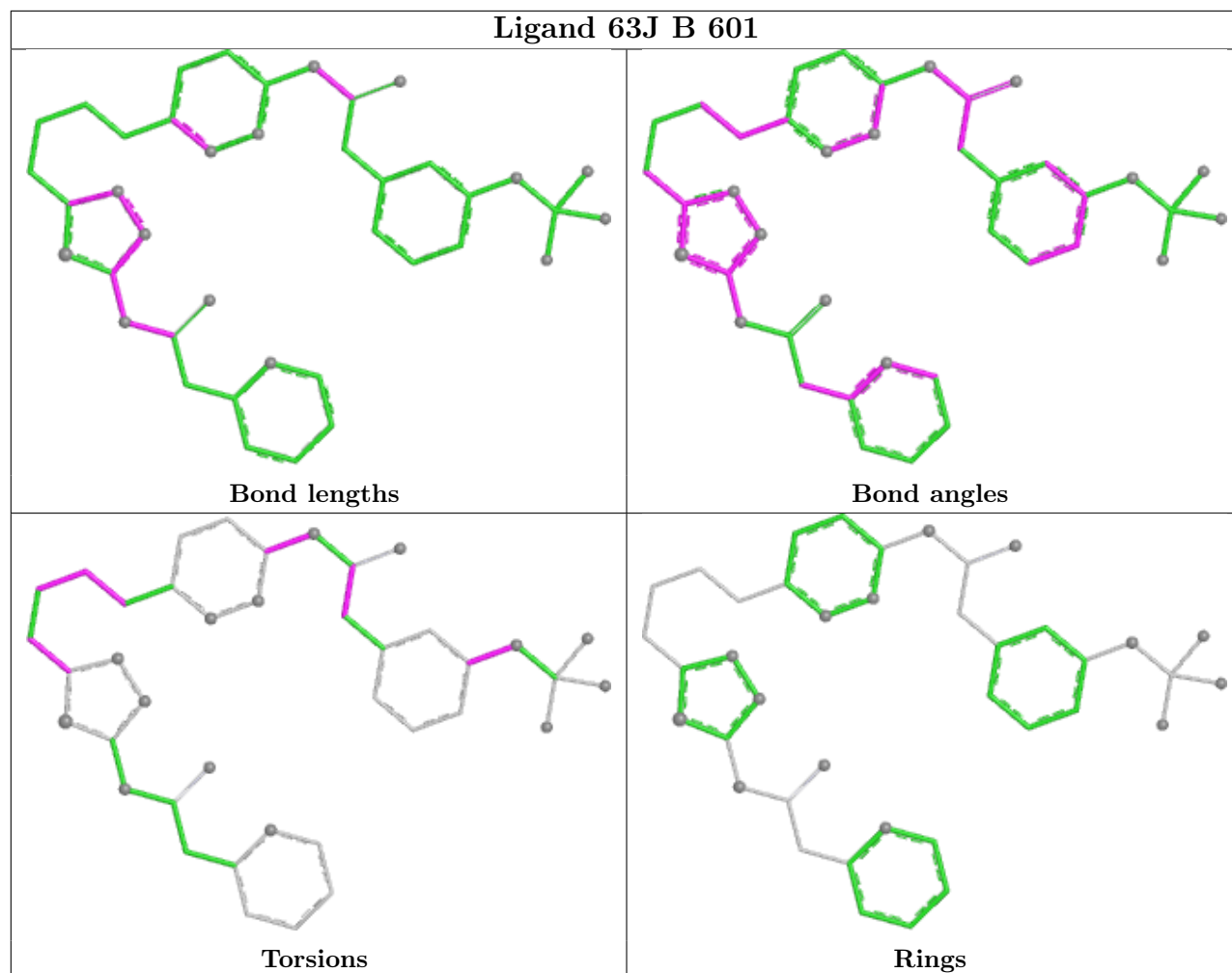
2 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	601	63J	5	0
2	B	601	63J	3	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	404/539 (74%)	1.00	58 (14%)	6 4	25, 39, 85, 128	0
1	B	410/539 (76%)	1.02	62 (15%)	5 4	27, 39, 90, 124	0
1	C	404/539 (74%)	0.99	53 (13%)	7 5	26, 39, 84, 126	0
1	D	402/539 (74%)	1.02	60 (14%)	5 4	27, 39, 85, 112	0
All	All	1620/2156 (75%)	1.01	233 (14%)	6 4	25, 39, 87, 128	0

All (233) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	318	PHE	7.8
1	C	193	VAL	7.1
1	C	137	PRO	6.9
1	B	318	PHE	6.8
1	B	194	MET	6.5
1	C	139	LEU	5.9
1	D	318	PHE	5.7
1	C	318	PHE	5.6
1	D	193	VAL	5.6
1	B	253	LEU	5.5
1	A	139	LEU	5.5
1	A	137	PRO	5.4
1	B	137	PRO	5.4
1	B	317	ARG	5.2
1	B	193	VAL	5.1
1	B	189	THR	5.0
1	D	137	PRO	5.0
1	D	316	LEU	5.0
1	A	317	ARG	4.8
1	C	317	ARG	4.8
1	A	256	PHE	4.8

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Mol	Chain	Res	Type	RSRZ
1	D	195	LEU	4.7
1	D	194	MET	4.7
1	D	317	ARG	4.7
1	B	144	PHE	4.6
1	B	153	LYS	4.5
1	B	191	ASP	4.5
1	B	197	LYS	4.4
1	B	319	ASN	4.4
1	A	146	THR	4.4
1	A	193	VAL	4.3
1	B	145	TYR	4.3
1	B	254	ALA	4.3
1	B	316	LEU	4.3
1	D	153	LYS	4.2
1	C	145	TYR	4.2
1	A	145	TYR	4.1
1	A	258	PRO	4.1
1	A	188	THR	4.1
1	C	188	THR	4.0
1	D	258	PRO	4.0
1	C	254	ALA	4.0
1	A	151	GLN	4.0
1	D	145	TYR	3.9
1	B	142	LEU	3.9
1	A	225	MET	3.8
1	D	546	GLY	3.8
1	C	191	ASP	3.8
1	C	187	GLN	3.8
1	B	251	PRO	3.8
1	A	257	SER	3.8
1	A	189	THR	3.7
1	C	256	PHE	3.6
1	C	184	LEU	3.6
1	B	200	PHE	3.6
1	A	147	ILE	3.6
1	A	441	PRO	3.6
1	C	242	SER	3.6
1	D	315	GLY	3.6
1	D	248	ASP	3.5
1	C	316	LEU	3.5
1	C	546	GLY	3.5
1	D	156	VAL	3.5

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Mol	Chain	Res	Type	RSRZ
1	B	143	LEU	3.4
1	C	245	LYS	3.4
1	A	141	ASP	3.4
1	C	141	ASP	3.4
1	D	143	LEU	3.4
1	D	257	SER	3.4
1	D	314	SER	3.4
1	B	149	GLU	3.4
1	B	249	TYR	3.4
1	B	198	ASP	3.4
1	A	255	LYS	3.4
1	A	138	SER	3.4
1	B	546	GLY	3.3
1	B	250	ILE	3.3
1	C	189	THR	3.3
1	C	400	CYS	3.3
1	B	139	LEU	3.3
1	B	320	LYS	3.3
1	B	190	SER	3.2
1	C	441	PRO	3.2
1	B	257	SER	3.2
1	D	144	PHE	3.2
1	C	258	PRO	3.2
1	A	152	GLU	3.2
1	C	194	MET	3.2
1	A	316	LEU	3.2
1	D	188	THR	3.2
1	D	197	LYS	3.1
1	A	268	VAL	3.1
1	D	151	GLN	3.1
1	C	320	LYS	3.1
1	C	138	SER	3.1
1	A	143	LEU	3.1
1	B	268	VAL	3.1
1	B	154	ILE	3.1
1	C	190	SER	3.1
1	D	152	GLU	3.1
1	D	167	GLY	3.1
1	A	150	GLY	3.0
1	A	192	GLY	3.0
1	D	189	THR	3.0
1	C	156	VAL	3.0

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Mol	Chain	Res	Type	RSRZ
1	A	200	PHE	3.0
1	D	190	SER	3.0
1	B	192	GLY	3.0
1	A	153	LYS	2.9
1	C	154	ILE	2.9
1	B	195	LEU	2.9
1	B	248	ASP	2.9
1	C	303	GLU	2.8
1	C	544	ARG	2.8
1	D	191	ASP	2.8
1	D	319	ASN	2.8
1	B	199	LEU	2.8
1	D	538	LYS	2.8
1	A	243	GLY	2.8
1	D	160	ILE	2.8
1	A	148	ALA	2.8
1	A	351	ASN	2.7
1	A	156	VAL	2.7
1	B	256	PHE	2.7
1	B	138	SER	2.7
1	C	246	VAL	2.7
1	C	257	SER	2.7
1	D	185	THR	2.7
1	C	147	ILE	2.7
1	A	242	SER	2.7
1	C	243	GLY	2.6
1	B	208	ILE	2.6
1	A	190	SER	2.6
1	C	192	GLY	2.6
1	B	247	ALA	2.6
1	B	147	ILE	2.6
1	C	151	GLN	2.6
1	A	166	THR	2.6
1	A	155	PRO	2.6
1	B	544	ARG	2.5
1	B	196	ASP	2.5
1	D	147	ILE	2.5
1	A	144	PHE	2.5
1	D	157	HIS	2.5
1	A	217	ARG	2.5
1	D	466	TYR	2.5
1	D	325	GLU	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	148	ALA	2.5
1	A	194	MET	2.5
1	A	154	ILE	2.5
1	D	139	LEU	2.5
1	A	538	LYS	2.5
1	B	155	PRO	2.5
1	A	248	ASP	2.5
1	C	158	LYS	2.5
1	B	151	GLN	2.5
1	C	146	THR	2.5
1	B	383	GLU	2.4
1	D	243	GLY	2.4
1	D	154	ILE	2.4
1	B	545	GLU	2.4
1	C	152	GLU	2.4
1	D	203	CYS	2.4
1	C	259	ASP	2.4
1	A	142	LEU	2.4
1	D	142	LEU	2.4
1	A	544	ARG	2.4
1	C	268	VAL	2.4
1	D	268	VAL	2.4
1	D	150	GLY	2.4
1	A	163	LEU	2.4
1	A	540	LEU	2.4
1	B	186	LEU	2.4
1	A	149	GLU	2.4
1	A	320	LYS	2.4
1	D	155	PRO	2.3
1	D	166	THR	2.3
1	B	174	ARG	2.3
1	D	199	LEU	2.3
1	D	259	ASP	2.3
1	C	255	LYS	2.3
1	C	155	PRO	2.3
1	C	183	ARG	2.3
1	D	192	GLY	2.3
1	A	198	ASP	2.3
1	B	259	ASP	2.3
1	D	308	TYR	2.3
1	A	319	ASN	2.3
1	A	546	GLY	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	524	LEU	2.3
1	C	142	LEU	2.3
1	D	238	ALA	2.2
1	A	197	LYS	2.2
1	A	191	ASP	2.2
1	B	204	VAL	2.2
1	C	247	ALA	2.2
1	B	360	GLN	2.2
1	D	146	THR	2.2
1	D	213	GLN	2.2
1	A	245	LYS	2.2
1	B	243	GLY	2.2
1	D	202	LYS	2.2
1	D	234	LEU	2.2
1	C	197	LYS	2.2
1	D	186	LEU	2.2
1	C	308	TYR	2.2
1	C	231	ILE	2.2
1	B	202	LYS	2.2
1	A	186	LEU	2.1
1	B	185	THR	2.1
1	C	348	GLY	2.1
1	C	545	GLU	2.1
1	A	229	SER	2.1
1	B	219	PHE	2.1
1	D	181	MET	2.1
1	B	252	GLN	2.1
1	D	214	ALA	2.1
1	A	206	SER	2.1
1	D	365	MET	2.1
1	A	185	THR	2.1
1	B	166	THR	2.1
1	D	383	GLU	2.1
1	B	380	SER	2.1
1	C	181	MET	2.1
1	A	387	ARG	2.0
1	B	540	LEU	2.0
1	D	204	VAL	2.0
1	D	162	ALA	2.0
1	B	201	LYS	2.0
1	C	351	ASN	2.0
1	D	231	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
1	B	225	MET	2.0
1	C	504	PRO	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](#)

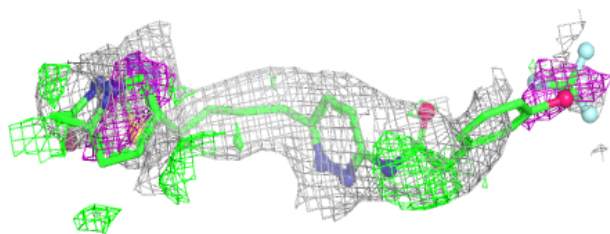
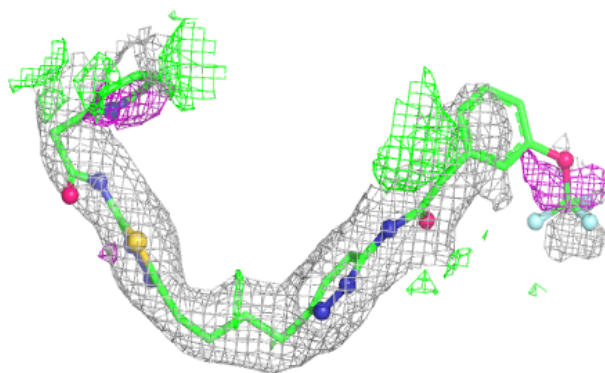
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q < 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	63J	A	601	40/40	0.77	0.24	38,72,112,115	0
2	63J	B	601	40/40	0.80	0.20	39,60,140,146	0

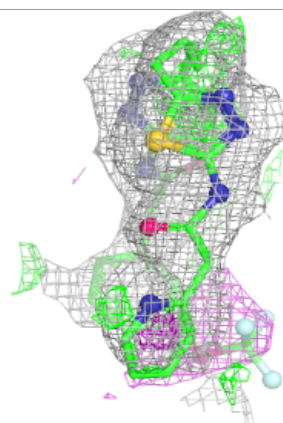
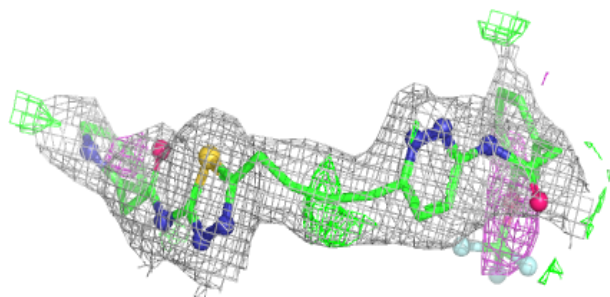
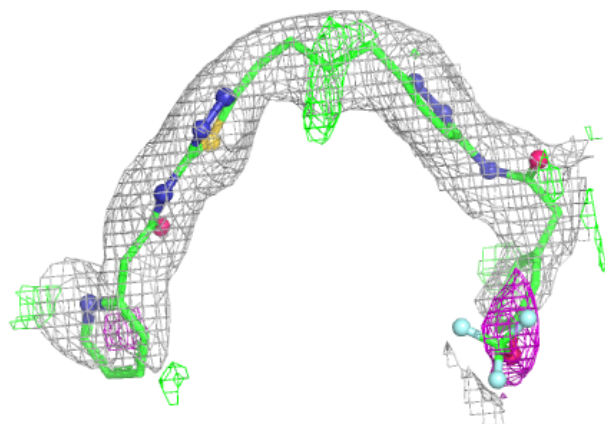
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around 63J A 601:

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

**Electron density around 63J B 601:**

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



6.5 Other polymers ⓘ

There are no such residues in this entry.