



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 12, 2026 – 02:51 PM UTC

PDB ID : 5I94 / pdb_00005i94
Title : Crystal structure of human glutaminase C in complex with the inhibitor UPGL-00019
Authors : Huang, Q.; Cerione, R.
Deposited on : 2016-02-19
Resolution : 2.98 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

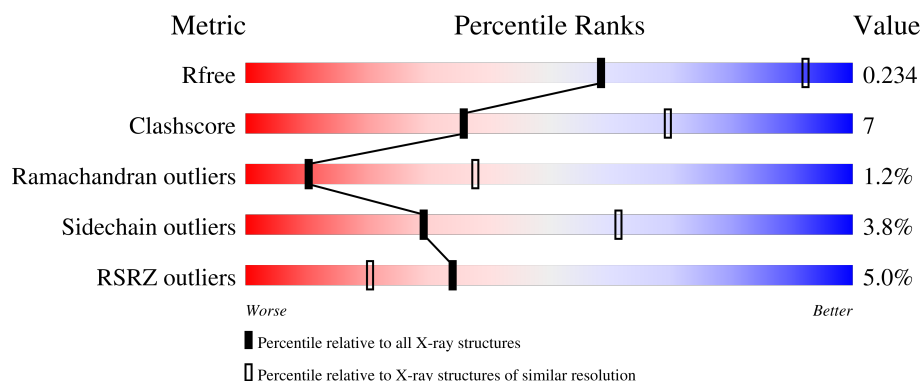
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

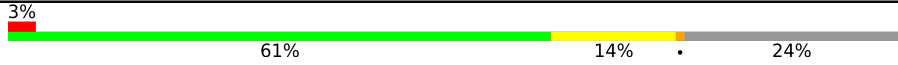
The reported resolution of this entry is 2.98 Å.

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	3580 (3.00-2.96)
Clashscore	190562	3904 (3.00-2.96)
Ramachandran outliers	187476	3761 (3.00-2.96)
Sidechain outliers	187428	3764 (3.00-2.96)
RSRZ outliers	180081	3579 (3.00-2.96)

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	
1	B	539	
1	C	539	
1	D	539	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 12850 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	410	Total	C	N	O	S	1	0	0
			3194	2036	540	590	28			
1	B	410	Total	C	N	O	S	1	0	0
			3194	2036	540	590	28			
1	C	410	Total	C	N	O	S	1	0	0
			3194	2036	540	590	28			
1	D	410	Total	C	N	O	S	1	0	0
			3194	2036	540	590	28			

There are 52 discrepancies between the modelled and reference sequences:

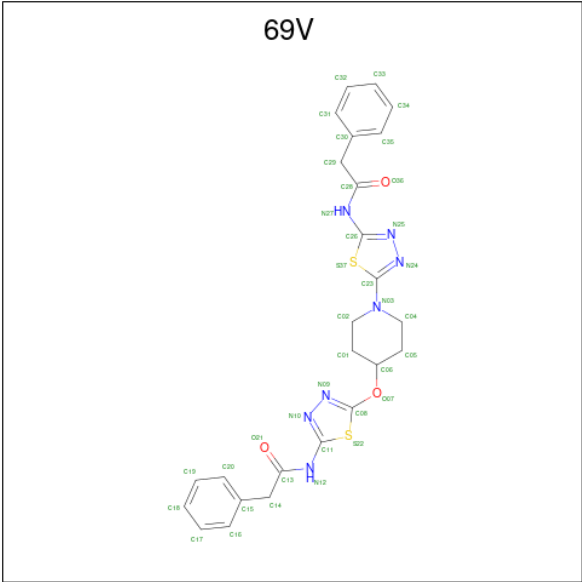
Chain	Residue	Modelled	Actual	Comment	Reference
A	59	MET	-	initiating methionine	UNP O94925
A	60	ARG	-	expression tag	UNP O94925
A	61	GLY	-	expression tag	UNP O94925
A	62	SER	-	expression tag	UNP O94925
A	63	HIS	-	expression tag	UNP O94925
A	64	HIS	-	expression tag	UNP O94925
A	65	HIS	-	expression tag	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	GLY	-	expression tag	UNP O94925
A	70	SER	-	expression tag	UNP O94925
A	267	ALA	VAL	conflict	UNP O94925
B	59	MET	-	initiating methionine	UNP O94925
B	60	ARG	-	expression tag	UNP O94925
B	61	GLY	-	expression tag	UNP O94925
B	62	SER	-	expression tag	UNP O94925
B	63	HIS	-	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

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Chain	Residue	Modelled	Actual	Comment	Reference
B	67	HIS	-	expression tag	UNP O94925
B	68	HIS	-	expression tag	UNP O94925
B	69	GLY	-	expression tag	UNP O94925
B	70	SER	-	expression tag	UNP O94925
B	267	ALA	VAL	conflict	UNP O94925
C	59	MET	-	initiating methionine	UNP O94925
C	60	ARG	-	expression tag	UNP O94925
C	61	GLY	-	expression tag	UNP O94925
C	62	SER	-	expression tag	UNP O94925
C	63	HIS	-	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	GLY	-	expression tag	UNP O94925
C	70	SER	-	expression tag	UNP O94925
C	267	ALA	VAL	conflict	UNP O94925
D	59	MET	-	initiating methionine	UNP O94925
D	60	ARG	-	expression tag	UNP O94925
D	61	GLY	-	expression tag	UNP O94925
D	62	SER	-	expression tag	UNP O94925
D	63	HIS	-	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	GLY	-	expression tag	UNP O94925
D	70	SER	-	expression tag	UNP O94925
D	267	ALA	VAL	conflict	UNP O94925

- Molecule 2 is 2-phenyl-N-{5-[4-({5-[(phenylacetyl)amino]-1,3,4-thiadiazol-2-yl}oxy)piperidin-1-yl]-1,3,4-thiadiazol-2-yl}acetamide (CCD ID: 69V) (formula: C₂₅H₂₅N₇O₃S₂).

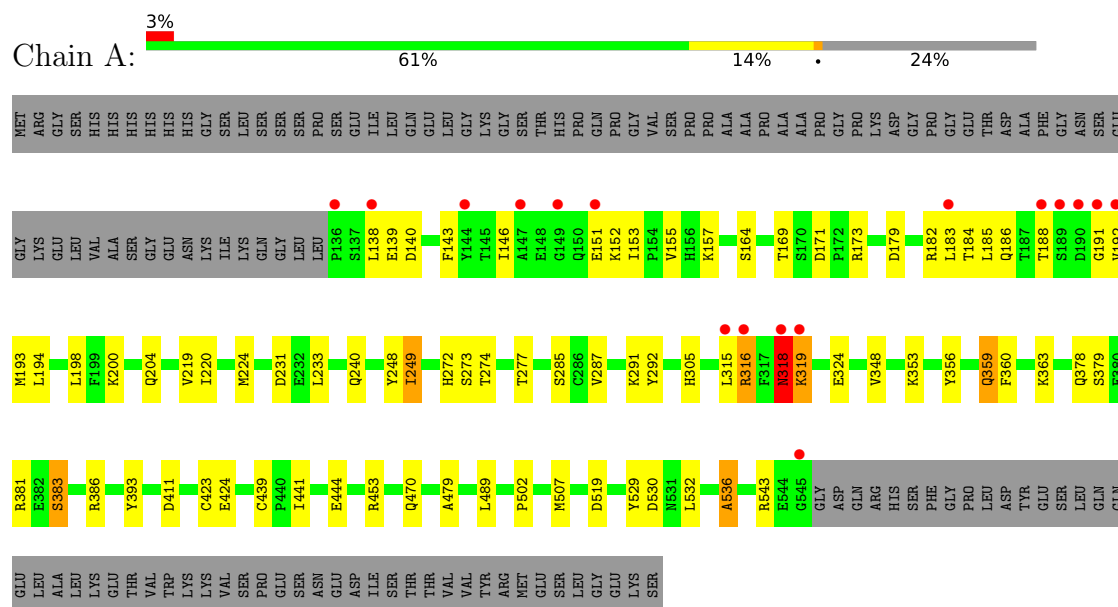


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	S	0	0
			37	25	7	3	2		
2	B	1	Total	C	N	O	S	0	0
			37	25	7	3	2		

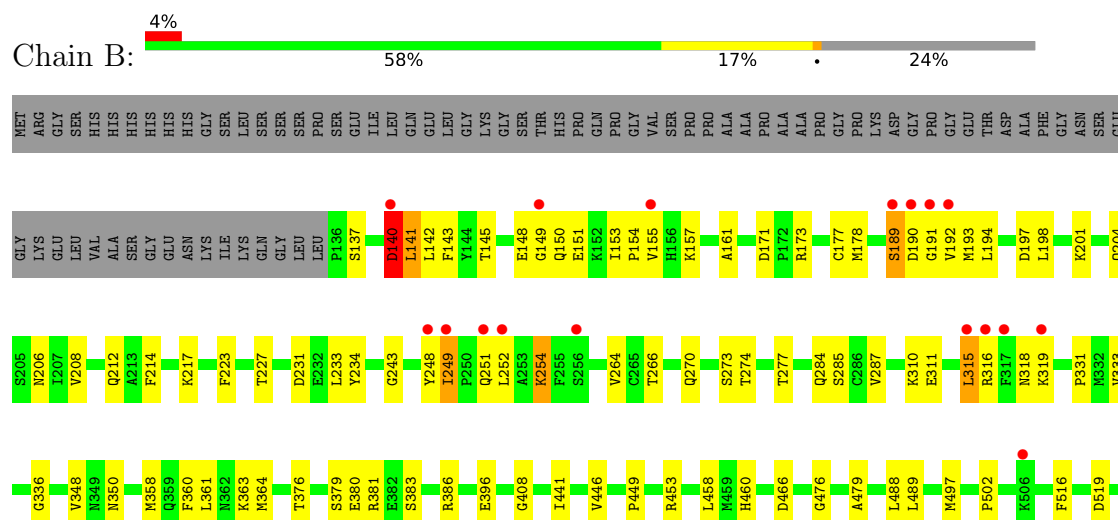
3 Residue-property plots

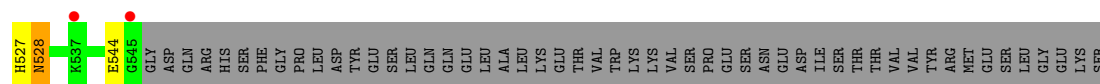
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

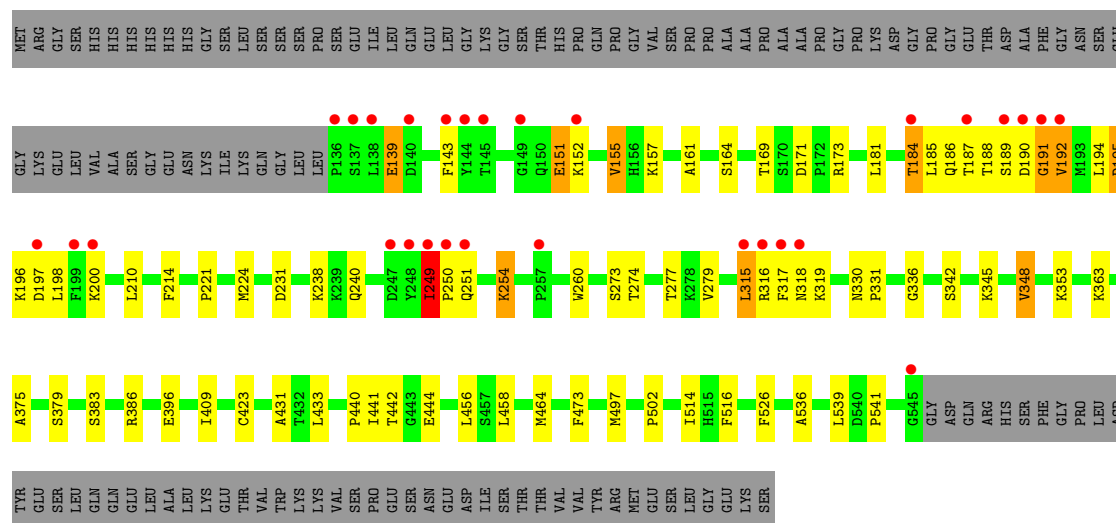


- Molecule 1: Glutaminase kidney isoform, mitochondrial

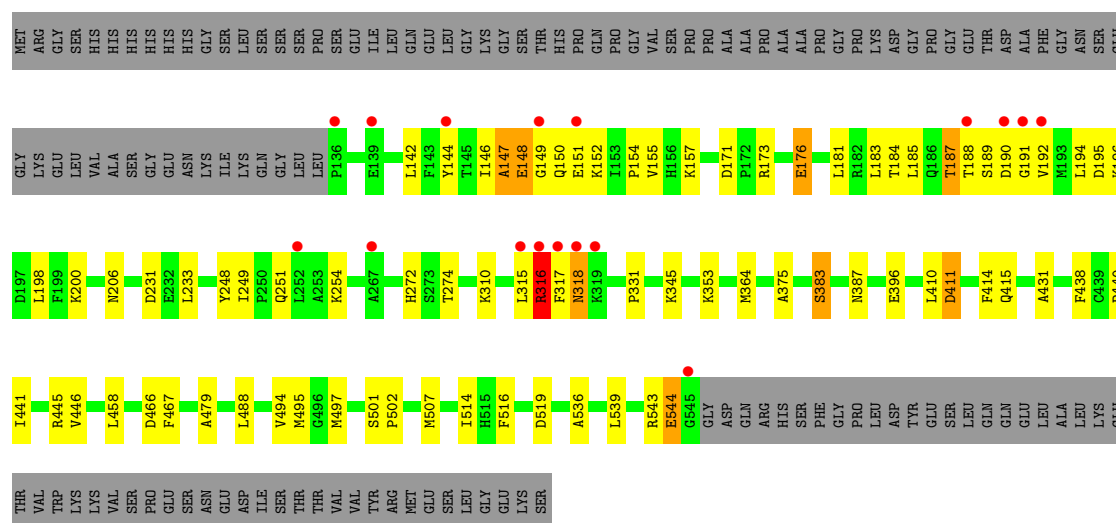




- Molecule 1: Glutaminase kidney isoform, mitochondrial



- Molecule 1: Glutaminase kidney isoform, mitochondrial



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	49.44Å 137.79Å 175.75Å 90.00° 94.68° 90.00°	Depositor
Resolution (Å)	46.40 – 2.98 46.40 – 2.98	Depositor EDS
% Data completeness (in resolution range)	98.8 (46.40-2.98) 98.8 (46.40-2.98)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.77 (at 3.01Å)	Xtriage
Refinement program	PHENIX 1.8.4_1496	Depositor
R, R_{free}	0.173 , 0.231 0.180 , 0.234	Depositor DCC
R_{free} test set	2013 reflections (4.26%)	wwPDB-VP
Wilson B-factor (Å ²)	40.2	Xtriage
Anisotropy	0.384	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 43.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	12850	wwPDB-VP
Average B, all atoms (Å ²)	36.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.30% 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: 69V

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	0.59	0/3266	0.91	5/4408 (0.1%)
1	B	0.57	0/3266	0.97	9/4408 (0.2%)
1	C	0.60	0/3266	0.96	7/4408 (0.2%)
1	D	0.59	0/3266	0.92	7/4408 (0.2%)
All	All	0.59	0/13064	0.94	28/17632 (0.2%)

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	2
1	C	0	2
1	D	0	1
All	All	0	5

There are no bond length outliers.

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	252	LEU	N-CA-C	-7.56	103.89	113.72
1	B	311	GLU	CA-C-N	-7.37	113.09	120.31
1	B	311	GLU	C-N-CA	-7.37	113.09	120.31
1	B	141	LEU	N-CA-C	-7.07	103.51	111.07
1	B	502	PRO	N-CA-C	6.54	118.67	110.70
1	D	502	PRO	N-CA-C	6.42	118.53	110.70
1	D	501	SER	CA-C-N	6.28	126.84	120.38
1	D	501	SER	C-N-CA	6.28	126.84	120.38
1	D	316	ARG	CB-CG-CD	6.23	125.63	111.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	318	ASN	N-CA-C	-6.20	97.60	110.80
1	D	316	ARG	CA-CB-CG	-6.07	101.96	114.10
1	C	317	PHE	N-CA-C	-6.07	105.19	112.59
1	B	243	GLY	N-CA-C	5.88	118.04	112.04
1	B	254	LYS	N-CA-C	-5.78	105.60	114.16
1	D	536	ALA	CB-CA-C	-5.76	109.91	116.54
1	C	249	ILE	CA-C-N	5.73	127.00	119.84
1	C	249	ILE	C-N-CA	5.73	127.00	119.84
1	A	536	ALA	CB-CA-C	-5.66	110.03	116.54
1	D	149	GLY	N-CA-C	-5.57	107.95	115.36
1	C	502	PRO	N-CA-C	5.56	117.49	110.70
1	A	439	CYS	CA-C-N	5.54	125.90	119.47
1	A	439	CYS	C-N-CA	5.54	125.90	119.47
1	B	189	SER	N-CA-C	-5.49	105.30	111.28
1	C	536	ALA	CB-CA-C	-5.42	109.35	115.79
1	B	193	MET	N-CA-C	5.38	118.17	109.40
1	A	502	PRO	N-CA-C	5.29	117.15	110.70
1	C	279	VAL	CA-C-N	-5.15	113.30	120.25
1	C	279	VAL	C-N-CA	-5.15	113.30	120.25

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	140	ASP	Peptide
1	B	189	SER	Peptide
1	C	187	THR	Peptide
1	C	315	LEU	Peptide
1	D	315	LEU	Peptide

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	3194	0	3170	44	0
1	B	3194	0	3170	57	0
1	C	3194	0	3170	49	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	3194	0	3170	45	0
2	A	37	0	0	1	0
2	B	37	0	0	1	0
All	All	12850	0	12680	185	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 7.

All (185) 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:231:ASP:OD1	1:A:274:THR:HG21	1.13	1.27
1:B:231:ASP:OD1	1:B:274:THR:HG21	1.40	1.19
1:C:231:ASP:OD1	1:C:274:THR:HG21	1.49	1.12
1:D:231:ASP:OD1	1:D:274:THR:HG21	1.47	1.12
1:A:231:ASP:OD1	1:A:274:THR:CG2	2.06	1.02
1:B:249:ILE:HD12	1:B:379:SER:HB3	1.56	0.88
1:D:148:GLU:HB3	1:D:150:GLN:HB2	1.62	0.80
1:D:233:LEU:HD22	1:D:519:ASP:HB3	1.65	0.77
1:B:231:ASP:OD1	1:B:274:THR:CG2	2.29	0.76
1:B:273:SER:HB3	1:B:277:THR:HG21	1.67	0.76
1:C:194:LEU:HA	1:C:198:LEU:HD23	1.70	0.74
1:C:251:GLN:HA	1:C:254:LYS:HE3	1.68	0.74
1:B:194:LEU:HA	1:B:198:LEU:HD23	1.70	0.72
1:A:249:ILE:HD12	1:A:379:SER:HB3	1.73	0.71
1:C:151:GLU:HG3	1:C:152:LYS:H	1.56	0.70
1:B:233:LEU:HD22	1:B:519:ASP:HB3	1.73	0.69
1:A:532:LEU:O	1:A:543:ARG:NH1	2.27	0.68
1:C:316:ARG:HD3	1:C:319:LYS:NZ	2.08	0.68
1:D:155:VAL:HG21	1:D:185:LEU:HD21	1.78	0.66
1:D:316:ARG:HG2	1:D:318:ASN:OD1	1.95	0.66
1:C:139:GLU:HG3	1:C:200:LYS:HG3	1.78	0.66
1:A:272:HIS:NE2	1:A:274:THR:HG23	2.10	0.65
1:B:140:ASP:HA	1:B:143:PHE:H	1.61	0.65
1:A:233:LEU:HD22	1:A:519:ASP:HB3	1.78	0.64
1:B:318:ASN:ND2	1:B:466:ASP:OD2	2.32	0.63
1:B:497:MET:HE1	1:B:516:PHE:HE2	1.65	0.62
1:D:231:ASP:OD1	1:D:274:THR:CG2	2.37	0.61
1:D:316:ARG:HD3	1:D:466:ASP:OD2	2.01	0.61
1:B:497:MET:HE1	1:B:516:PHE:CE2	2.36	0.61
1:D:467:PHE:HB2	1:D:507:MET:HG2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:272:HIS:NE2	1:A:274:THR:CG2	2.65	0.60
1:C:173:ARG:HD2	1:C:441:ILE:C	2.27	0.59
1:D:364:MET:HG2	1:D:446:VAL:HG11	1.84	0.59
1:C:164:SER:HA	1:C:224:MET:HE3	1.83	0.59
1:D:154:PRO:HD2	1:D:157:LYS:HD2	1.84	0.57
1:D:316:ARG:HA	1:D:318:ASN:OD1	2.04	0.57
1:A:316:ARG:NH1	1:A:319:LYS:HD3	2.20	0.56
1:D:438:PHE:CE2	1:D:445:ARG:HB2	2.40	0.56
1:B:361:LEU:HD23	1:B:364:MET:HE3	1.88	0.56
1:A:179:ASP:OD1	1:A:182:ARG:NH2	2.37	0.56
1:A:470:GLN:OE1	1:B:310:LYS:HE3	2.05	0.56
1:D:171:ASP:OD2	1:D:173:ARG:NH2	2.40	0.55
1:C:497:MET:HE1	1:C:516:PHE:CE1	2.41	0.55
1:C:155:VAL:HG21	1:C:185:LEU:HD11	1.88	0.55
1:C:189:SER:C	1:C:191:GLY:H	2.14	0.55
1:B:364:MET:HG3	1:B:446:VAL:HG11	1.89	0.54
1:D:147:ALA:O	1:D:148:GLU:HB2	2.07	0.54
1:B:248:TYR:CE2	1:B:249:ILE:HG12	2.42	0.54
1:B:386:ARG:HB2	1:C:396:GLU:HG3	1.90	0.54
1:B:331:PRO:HD2	1:B:458:LEU:HD13	1.89	0.53
1:A:287:VAL:HG13	1:A:291:LYS:HE2	1.89	0.53
1:A:356:TYR:O	1:A:359:GLN:HG2	2.10	0.52
1:D:144:TYR:HA	1:D:147:ALA:HB2	1.92	0.52
1:A:248:TYR:CE2	1:A:249:ILE:HG12	2.45	0.51
1:A:378:GLN:O	1:A:381:ARG:HG2	2.10	0.51
1:A:383:SER:O	1:A:383:SER:OG	2.19	0.51
1:A:164:SER:HA	1:A:224:MET:HE3	1.93	0.51
1:B:137:SER:O	1:B:141:LEU:HG	2.11	0.51
1:C:331:PRO:HD2	1:C:458:LEU:HD13	1.91	0.51
1:D:171:ASP:OD1	1:D:173:ARG:HD3	2.11	0.51
1:C:342:SER:HA	1:C:409:ILE:HD12	1.93	0.51
1:B:476:GLY:O	1:B:528:ASN:HB2	2.12	0.50
1:C:195:ASP:HB2	1:C:197:ASP:HB3	1.93	0.50
1:A:363:LYS:HD3	1:A:444:GLU:OE2	2.12	0.50
1:D:431:ALA:HB1	1:D:440:PRO:HG2	1.92	0.50
1:B:316:ARG:O	1:B:316:ARG:HG2	2.12	0.50
1:A:536:ALA:HB2	1:B:449:PRO:HG2	1.93	0.49
1:D:411:ASP:O	1:D:415:GLN:HG3	2.13	0.49
1:A:324:GLU:OE2	1:B:316:ARG:HB3	2.12	0.49
1:C:345:LYS:HB3	1:C:353:LYS:HG2	1.94	0.49
1:D:387:ASN:HD22	1:D:414:PHE:HE1	1.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:273:SER:O	1:B:274:THR:CG2	2.61	0.49
1:A:140:ASP:O	1:A:143:PHE:HB3	2.13	0.49
1:A:393:TYR:OH	2:A:601:69V:S22	2.64	0.49
1:D:233:LEU:CD2	1:D:519:ASP:HB3	2.41	0.48
1:D:194:LEU:HA	1:D:198:LEU:HD23	1.96	0.48
1:A:479:ALA:HB2	1:A:489:LEU:HD12	1.96	0.48
1:C:189:SER:C	1:C:191:GLY:N	2.72	0.48
1:D:142:LEU:HD11	1:D:146:ILE:HD11	1.96	0.48
1:B:154:PRO:HD2	1:B:157:LYS:HD2	1.95	0.48
1:C:363:LYS:HD3	1:C:444:GLU:OE2	2.14	0.48
1:D:248:TYR:CD1	1:D:249:ILE:HG23	2.49	0.47
1:D:345:LYS:HB3	1:D:353:LYS:HG2	1.94	0.47
1:B:173:ARG:HD2	1:B:441:ILE:C	2.40	0.47
1:D:497:MET:HE1	1:D:516:PHE:CE2	2.50	0.47
1:A:151:GLU:OE1	1:A:151:GLU:N	2.47	0.47
1:A:173:ARG:HD2	1:A:441:ILE:C	2.39	0.47
1:B:153:ILE:HG23	1:B:157:LYS:HD3	1.97	0.47
1:C:171:ASP:OD1	1:C:173:ARG:HD3	2.14	0.47
1:B:171:ASP:OD1	1:B:173:ARG:HD3	2.15	0.47
1:A:386:ARG:HB2	1:D:396:GLU:HG3	1.96	0.47
1:C:464:MET:HE2	1:C:514:ILE:HD11	1.96	0.46
1:C:316:ARG:HD3	1:C:319:LYS:HZ2	1.78	0.46
1:D:191:GLY:HA3	1:D:192:VAL:HA	1.54	0.46
1:A:273:SER:HB3	1:A:277:THR:HG21	1.96	0.46
1:A:200:LYS:O	1:A:204:GLN:HG3	2.15	0.46
1:A:277:THR:O	1:A:424:GLU:HG3	2.15	0.46
1:B:315:LEU:H	1:B:315:LEU:HD12	1.80	0.46
1:B:231:ASP:O	1:B:234:TYR:HB3	2.16	0.46
1:D:152:LYS:HG2	1:D:195:ASP:HB3	1.96	0.46
1:C:161:ALA:HB1	1:C:214:PHE:HE1	1.81	0.46
1:A:184:THR:C	1:A:186:GLN:H	2.23	0.46
1:A:529:TYR:HH	1:B:460:HIS:HD1	1.61	0.45
1:C:151:GLU:CG	1:C:152:LYS:H	2.26	0.45
1:A:194:LEU:HD23	1:A:198:LEU:HG	1.98	0.45
1:B:148:GLU:HB3	1:B:149:GLY:H	1.49	0.45
1:B:264:VAL:HG22	1:B:497:MET:HG2	1.98	0.45
1:D:544:GLU:OE1	1:D:544:GLU:N	2.48	0.45
1:A:146:ILE:HB	1:A:153:ILE:HD13	1.99	0.45
1:D:410:LEU:HD23	1:D:410:LEU:HA	1.74	0.45
1:D:494:VAL:HG12	1:D:495:MET:HG2	1.99	0.45
1:B:284:GLN:O	1:B:287:VAL:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:238:LYS:HG3	1:C:260:TRP:HD1	1.81	0.45
1:A:171:ASP:OD1	1:A:173:ARG:HD3	2.17	0.45
1:B:489:LEU:HD23	1:B:497:MET:HE2	1.99	0.45
1:C:441:ILE:HG13	1:C:442:THR:HG23	1.99	0.45
1:B:201:LYS:HA	1:B:204:GLN:NE2	2.32	0.44
1:A:152:LYS:HE3	1:A:193:MET:HB3	1.99	0.44
1:C:348:VAL:O	1:C:353:LYS:HE3	2.18	0.44
1:B:161:ALA:HB1	1:B:214:PHE:HE1	1.82	0.44
1:C:251:GLN:HE21	1:C:375:ALA:HB1	1.82	0.44
1:B:273:SER:C	1:B:274:THR:HG23	2.43	0.44
1:C:195:ASP:HB2	1:C:198:LEU:H	1.83	0.44
1:C:315:LEU:HD12	1:C:315:LEU:HA	1.51	0.44
1:B:319:LYS:HB3	2:B:601:69V:N10	2.33	0.44
1:C:497:MET:HE1	1:C:516:PHE:HE1	1.82	0.44
1:D:331:PRO:HD2	1:D:458:LEU:HD13	1.98	0.44
1:D:187:THR:O	1:D:189:SER:N	2.50	0.44
1:B:142:LEU:O	1:B:145:THR:HB	2.18	0.44
1:D:507:MET:HE2	1:D:507:MET:HB2	1.90	0.44
1:C:189:SER:O	1:C:191:GLY:N	2.50	0.44
1:C:473:PHE:CD2	1:D:310:LYS:HD2	2.53	0.44
1:B:191:GLY:HA3	1:B:192:VAL:HA	1.55	0.43
1:A:152:LYS:HB3	1:A:193:MET:HG3	2.00	0.43
1:D:173:ARG:HD2	1:D:441:ILE:C	2.43	0.43
1:A:530:ASP:OD1	1:B:453:ARG:HD3	2.18	0.43
1:A:348:VAL:O	1:A:353:LYS:HE3	2.18	0.43
1:B:350:ASN:ND2	1:B:408:GLY:O	2.45	0.43
1:B:396:GLU:HG3	1:C:386:ARG:HB2	1.99	0.43
1:D:272:HIS:NE2	1:D:274:THR:CG2	2.81	0.43
1:A:292:TYR:OH	1:A:305:HIS:NE2	2.34	0.43
1:B:363:LYS:HB3	1:B:446:VAL:HG22	2.01	0.43
1:B:479:ALA:HA	1:B:488:LEU:O	2.19	0.43
1:B:249:ILE:HG22	1:B:251:GLN:H	1.84	0.43
1:C:526:PHE:CZ	1:C:541:PRO:HG2	2.54	0.43
1:C:514:ILE:HD13	1:C:514:ILE:HA	1.89	0.42
1:C:191:GLY:HA3	1:C:192:VAL:HA	1.76	0.42
1:B:376:THR:O	1:B:380:GLU:HB2	2.19	0.42
1:C:157:LYS:HA	1:C:157:LYS:HD2	1.82	0.42
1:C:433:LEU:HB3	1:C:456:LEU:HD21	2.00	0.42
1:C:277:THR:HA	1:C:423:CYS:HB2	2.01	0.42
1:D:142:LEU:O	1:D:146:ILE:HG13	2.20	0.42
1:D:176:GLU:HG2	1:D:206:ASN:HD21	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:497:MET:HE1	1:D:516:PHE:HE2	1.85	0.42
1:A:219:VAL:HG13	1:A:220:ILE:HG13	2.01	0.42
1:B:208:VAL:O	1:B:212:GLN:HG3	2.19	0.42
1:B:381:ARG:C	1:B:383:SER:H	2.28	0.42
1:C:184:THR:HG22	1:C:185:LEU:HD23	2.02	0.42
1:A:191:GLY:HA3	1:A:192:VAL:HA	1.50	0.42
1:B:177:CYS:SG	1:B:178:MET:HE2	2.59	0.42
1:B:140:ASP:HB2	1:B:143:PHE:HB3	2.01	0.41
1:C:210:LEU:O	1:C:214:PHE:HD2	2.03	0.41
1:D:251:GLN:HE21	1:D:375:ALA:HB1	1.85	0.41
1:D:514:ILE:HD13	1:D:514:ILE:HA	1.80	0.41
1:B:266:THR:CG2	1:B:270:GLN:HB2	2.50	0.41
1:C:143:PHE:CE2	1:C:196:LYS:HB2	2.55	0.41
1:A:152:LYS:HB3	1:A:193:MET:CG	2.50	0.41
1:B:217:LYS:HD3	1:B:217:LYS:HA	1.85	0.41
1:C:273:SER:O	1:C:274:THR:CG2	2.67	0.41
1:B:333:VAL:HG23	1:B:336:GLY:H	1.85	0.41
1:C:184:THR:C	1:C:186:GLN:H	2.28	0.41
1:A:277:THR:HA	1:A:423:CYS:HB2	2.03	0.41
1:B:223:PHE:O	1:B:227:THR:HG23	2.20	0.41
1:B:358:MET:HE3	1:B:358:MET:HB3	1.92	0.41
1:C:181:LEU:O	1:C:185:LEU:HG	2.20	0.41
1:D:181:LEU:O	1:D:185:LEU:HG	2.21	0.41
1:B:273:SER:O	1:B:274:THR:HG23	2.22	0.40
1:D:479:ALA:HA	1:D:488:LEU:O	2.21	0.40
1:A:453:ARG:HD2	1:B:527:HIS:CG	2.56	0.40
1:D:183:LEU:HD12	1:D:183:LEU:HA	1.93	0.40
1:A:359:GLN:HG3	1:A:360:PHE:N	2.27	0.40
1:C:249:ILE:HA	1:C:250:PRO:HD2	1.87	0.40
1:C:249:ILE:HD13	1:C:379:SER:HB3	2.03	0.40
1:C:330:ASN:O	1:C:336:GLY:HA3	2.22	0.40
1:C:431:ALA:HB1	1:C:440:PRO:HG2	2.03	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	408/539 (76%)	385 (94%)	20 (5%)	3 (1%)	18	50
1	B	408/539 (76%)	369 (90%)	35 (9%)	4 (1%)	12	42
1	C	408/539 (76%)	373 (91%)	31 (8%)	4 (1%)	12	42
1	D	408/539 (76%)	379 (93%)	20 (5%)	9 (2%)	5	24
All	All	1632/2156 (76%)	1506 (92%)	106 (6%)	20 (1%)	10	38

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	315	LEU
1	B	190	ASP
1	B	544	GLU
1	C	190	ASP
1	D	147	ALA
1	D	148	GLU
1	D	187	THR
1	B	315	LEU
1	C	151	GLU
1	C	191	GLY
1	D	190	ASP
1	D	383	SER
1	D	196	LYS
1	D	316	ARG
1	D	544	GLU
1	A	185	LEU
1	A	318	ASN
1	B	150	GLN
1	D	188	THR
1	C	221	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	353/461 (77%)	336 (95%)	17 (5%)	23	55
1	B	353/461 (77%)	342 (97%)	11 (3%)	35	66
1	C	353/461 (77%)	339 (96%)	14 (4%)	28	60
1	D	353/461 (77%)	342 (97%)	11 (3%)	35	66
All	All	1412/1844 (77%)	1359 (96%)	53 (4%)	29	61

All (53) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	138	LEU
1	A	139	GLU
1	A	155	VAL
1	A	157	LYS
1	A	169	THR
1	A	183	LEU
1	A	188	THR
1	A	240	GLN
1	A	249	ILE
1	A	285	SER
1	A	316	ARG
1	A	318	ASN
1	A	319	LYS
1	A	359	GLN
1	A	383	SER
1	A	411	ASP
1	A	507	MET
1	B	140	ASP
1	B	151	GLU
1	B	155	VAL
1	B	197	ASP
1	B	206	ASN
1	B	249	ILE
1	B	254	LYS
1	B	285	SER
1	B	348	VAL
1	B	360	PHE
1	B	528	ASN
1	C	139	GLU
1	C	155	VAL
1	C	169	THR
1	C	184	THR
1	C	188	THR

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Mol	Chain	Res	Type
1	C	192	VAL
1	C	195	ASP
1	C	240	GLN
1	C	249	ILE
1	C	254	LYS
1	C	318	ASN
1	C	348	VAL
1	C	383	SER
1	C	539	LEU
1	D	151	GLU
1	D	176	GLU
1	D	184	THR
1	D	200	LYS
1	D	254	LYS
1	D	317	PHE
1	D	318	ASN
1	D	383	SER
1	D	411	ASP
1	D	539	LEU
1	D	543	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	329	HIS
1	A	334	ASN
1	A	367	ASN
1	A	387	ASN
1	B	186	GLN
1	B	435	ASN
1	B	470	GLN
1	C	346	GLN
1	D	156	HIS
1	D	334	ASN
1	D	346	GLN
1	D	387	ASN
1	D	415	GLN
1	D	509	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

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	69V	A	601	-	41,41,41	1.90	14 (34%)	53,55,55	4.30	26 (49%)
2	69V	B	601	-	41,41,41	1.89	14 (34%)	53,55,55	4.09	25 (47%)

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	69V	A	601	-	-	12/22/34/34	0/5/5/5
2	69V	B	601	-	-	9/22/34/34	0/5/5/5

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	601	69V	O07-C08	4.94	1.42	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	601	69V	O07-C08	4.60	1.41	1.35
2	A	601	69V	C08-N09	4.48	1.34	1.29
2	B	601	69V	C08-N09	4.00	1.33	1.29
2	A	601	69V	C23-N03	3.90	1.43	1.34
2	A	601	69V	C11-N12	3.78	1.43	1.38
2	B	601	69V	C13-N12	3.42	1.43	1.37
2	B	601	69V	C23-N03	3.37	1.42	1.34
2	B	601	69V	C11-N12	3.31	1.43	1.38
2	B	601	69V	C02-N03	-3.06	1.41	1.47
2	A	601	69V	C13-N12	3.06	1.42	1.37
2	B	601	69V	C28-N27	3.01	1.42	1.37
2	A	601	69V	C11-N10	2.86	1.35	1.31
2	A	601	69V	C04-N03	-2.83	1.42	1.47
2	B	601	69V	N10-N09	-2.83	1.33	1.39
2	B	601	69V	C04-N03	-2.83	1.42	1.47
2	B	601	69V	O07-C06	-2.81	1.40	1.46
2	A	601	69V	C02-N03	-2.76	1.42	1.47
2	A	601	69V	C28-N27	2.64	1.42	1.37
2	B	601	69V	C26-N25	2.63	1.35	1.31
2	B	601	69V	C26-N27	2.56	1.42	1.38
2	A	601	69V	C26-N25	2.46	1.34	1.31
2	A	601	69V	N10-N09	-2.32	1.34	1.39
2	A	601	69V	N25-N24	-2.22	1.34	1.39
2	A	601	69V	C26-N27	2.22	1.41	1.38
2	A	601	69V	O07-C06	-2.12	1.41	1.46
2	B	601	69V	C11-N10	2.08	1.34	1.31
2	B	601	69V	N25-N24	-2.01	1.35	1.39

All (51) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	601	69V	C06-O07-C08	-13.89	108.58	117.71
2	B	601	69V	C06-O07-C08	-11.77	109.97	117.71
2	A	601	69V	N12-C11-N10	10.38	130.08	120.81
2	B	601	69V	C08-N09-N10	8.80	115.98	105.84
2	A	601	69V	C08-N09-N10	8.62	115.77	105.84
2	A	601	69V	S22-C11-N10	-8.39	105.15	114.52
2	A	601	69V	S22-C08-N09	-8.23	106.40	117.59
2	B	601	69V	S22-C08-N09	-8.15	106.51	117.59
2	B	601	69V	S37-C26-N25	-8.08	105.50	114.52
2	B	601	69V	S22-C11-N10	-7.86	105.74	114.52
2	A	601	69V	S37-C26-N25	-7.84	105.77	114.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	601	69V	C04-N03-C02	7.25	127.48	112.68
2	B	601	69V	O07-C08-S22	7.11	131.48	116.13
2	B	601	69V	C14-C13-N12	7.08	123.03	114.40
2	B	601	69V	N27-C26-N25	6.86	126.94	120.81
2	A	601	69V	N27-C26-N25	6.80	126.89	120.81
2	A	601	69V	C04-N03-C02	6.42	125.78	112.68
2	B	601	69V	S22-C11-N12	6.03	131.79	123.72
2	B	601	69V	N03-C23-N24	5.48	127.51	116.91
2	A	601	69V	N03-C23-N24	5.48	127.50	116.91
2	A	601	69V	S37-C23-N24	-5.33	105.22	114.44
2	B	601	69V	S37-C23-N24	-5.25	105.36	114.44
2	B	601	69V	C23-N24-N25	5.21	117.37	107.08
2	A	601	69V	S37-C23-N03	5.20	127.26	120.31
2	A	601	69V	C29-C28-N27	5.13	120.65	114.40
2	A	601	69V	C23-N24-N25	5.12	117.17	107.08
2	B	601	69V	S37-C23-N03	5.10	127.13	120.31
2	A	601	69V	C14-C13-N12	4.85	120.32	114.40
2	A	601	69V	O07-C08-S22	4.72	126.33	116.13
2	B	601	69V	C11-N10-N09	4.63	117.92	112.02
2	A	601	69V	C11-S22-C08	4.28	95.48	86.65
2	B	601	69V	C13-N12-C11	-4.26	116.40	123.69
2	A	601	69V	C11-N10-N09	4.08	117.21	112.02
2	A	601	69V	C02-C01-C06	3.76	114.39	110.32
2	B	601	69V	C29-C28-N27	3.68	118.89	114.40
2	B	601	69V	C11-S22-C08	3.49	93.85	86.65
2	A	601	69V	C26-N25-N24	3.37	116.31	112.02
2	B	601	69V	C26-N25-N24	3.12	115.98	112.02
2	B	601	69V	S37-C26-N27	2.86	127.55	123.72
2	A	601	69V	S37-C26-N27	2.70	127.34	123.72
2	A	601	69V	C05-C06-C01	-2.69	106.18	111.67
2	A	601	69V	C02-N03-C23	-2.69	115.27	122.09
2	B	601	69V	O21-C13-C14	-2.61	116.33	121.99
2	A	601	69V	C04-C05-C06	2.59	113.13	110.32
2	B	601	69V	C04-C05-C06	2.52	113.05	110.32
2	B	601	69V	C04-N03-C23	-2.49	115.79	122.09
2	A	601	69V	O21-C13-N12	-2.48	117.74	122.44
2	A	601	69V	C15-C14-C13	2.47	119.70	112.33
2	B	601	69V	C02-N03-C23	-2.34	116.16	122.09
2	A	601	69V	C28-N27-C26	-2.08	120.14	123.69
2	B	601	69V	C05-C06-C01	-2.03	107.53	111.67

There are no chirality outliers.

All (21) torsion outliers are listed below:

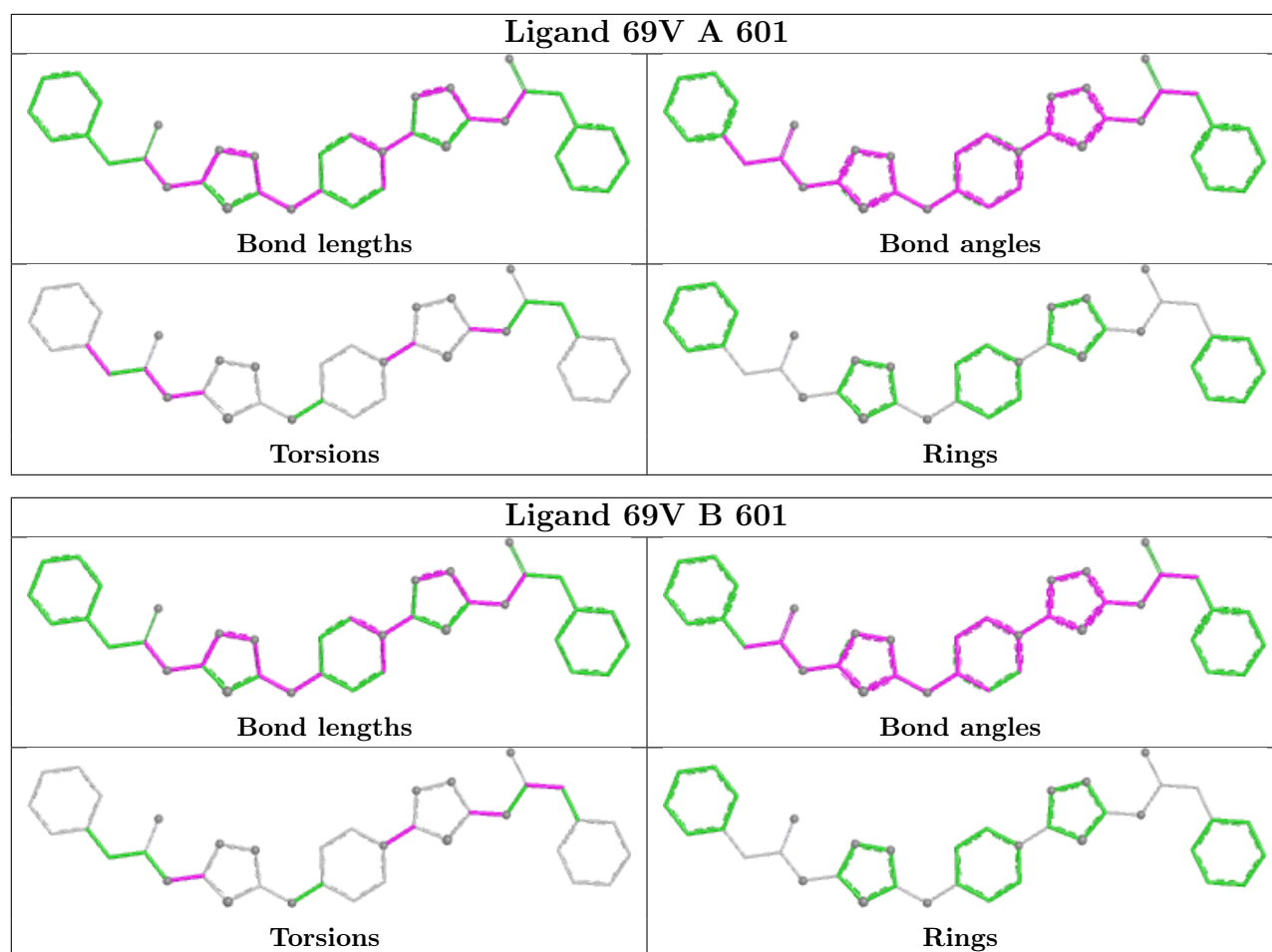
Mol	Chain	Res	Type	Atoms
2	A	601	69V	C14-C13-N12-C11
2	A	601	69V	O21-C13-N12-C11
2	A	601	69V	N10-C11-N12-C13
2	A	601	69V	S22-C11-N12-C13
2	A	601	69V	N25-C26-N27-C28
2	A	601	69V	S37-C26-N27-C28
2	A	601	69V	N24-C23-N03-C02
2	A	601	69V	S37-C23-N03-C02
2	A	601	69V	N24-C23-N03-C04
2	A	601	69V	S37-C23-N03-C04
2	B	601	69V	N10-C11-N12-C13
2	B	601	69V	S22-C11-N12-C13
2	B	601	69V	N25-C26-N27-C28
2	B	601	69V	S37-C26-N27-C28
2	B	601	69V	N24-C23-N03-C02
2	B	601	69V	S37-C23-N03-C02
2	B	601	69V	O36-C28-C29-C30
2	A	601	69V	C13-C14-C15-C16
2	A	601	69V	C13-C14-C15-C20
2	B	601	69V	N27-C28-C29-C30
2	B	601	69V	S37-C23-N03-C04

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	601	69V	1	0
2	B	601	69V	1	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [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	410/539 (76%)	-0.04	17 (4%) 41 25	19, 29, 78, 100	0
1	B	410/539 (76%)	0.00	19 (4%) 37 23	18, 31, 73, 92	0
1	C	410/539 (76%)	-0.02	29 (7%) 22 13	16, 28, 78, 97	0
1	D	410/539 (76%)	-0.06	17 (4%) 41 25	17, 30, 74, 95	0
All	All	1640/2156 (76%)	-0.03	82 (5%) 34 20	16, 30, 77, 100	0

All (82) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	315	LEU	6.0
1	A	315	LEU	5.9
1	B	192	VAL	5.3
1	B	315	LEU	4.7
1	D	317	PHE	4.4
1	C	144	TYR	4.3
1	A	545	GLY	4.2
1	D	190	ASP	4.2
1	C	317	PHE	4.1
1	C	315	LEU	4.1
1	A	138	LEU	4.0
1	D	136	PRO	3.9
1	C	136	PRO	3.6
1	D	316	ARG	3.6
1	B	252	LEU	3.5
1	A	144	TYR	3.5
1	D	545	GLY	3.5
1	A	188	THR	3.4
1	B	545	GLY	3.2
1	D	149	GLY	3.2
1	C	138	LEU	3.1

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Mol	Chain	Res	Type	RSRZ
1	C	192	VAL	3.0
1	C	149	GLY	3.0
1	A	316	ARG	3.0
1	B	140	ASP	2.9
1	B	251	GLN	2.9
1	C	249	ILE	2.9
1	D	151	GLU	2.9
1	D	144	TYR	2.8
1	B	190	ASP	2.8
1	D	252	LEU	2.8
1	D	139	GLU	2.8
1	B	316	ARG	2.8
1	D	318	ASN	2.8
1	A	151	GLU	2.7
1	C	143	PHE	2.7
1	D	188	THR	2.7
1	A	189	SER	2.7
1	D	191	GLY	2.6
1	C	197	ASP	2.6
1	C	184	THR	2.5
1	C	191	GLY	2.5
1	A	136	PRO	2.5
1	B	317	PHE	2.5
1	B	248	TYR	2.5
1	A	192	VAL	2.4
1	C	152	LYS	2.4
1	D	319	LYS	2.4
1	D	267	ALA	2.4
1	A	318	ASN	2.4
1	B	256	SER	2.4
1	B	319	LYS	2.3
1	C	190	ASP	2.3
1	A	147	ALA	2.3
1	C	248	TYR	2.3
1	A	191	GLY	2.3
1	C	545	GLY	2.3
1	C	318	ASN	2.3
1	C	251	GLN	2.3
1	A	190	ASP	2.2
1	B	191	GLY	2.2
1	A	183	LEU	2.2
1	B	249	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	199	PHE	2.2
1	B	506	LYS	2.2
1	D	192	VAL	2.2
1	C	145	THR	2.2
1	A	149	GLY	2.2
1	B	149	GLY	2.2
1	B	189	SER	2.1
1	C	257	PRO	2.1
1	C	137	SER	2.1
1	C	189	SER	2.1
1	A	319	LYS	2.1
1	C	200	LYS	2.1
1	C	250	PRO	2.1
1	C	140	ASP	2.1
1	C	187	THR	2.1
1	C	316	ARG	2.0
1	C	247	ASP	2.0
1	B	537	LYS	2.0
1	B	155	VAL	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.

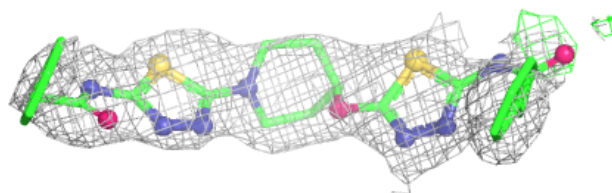
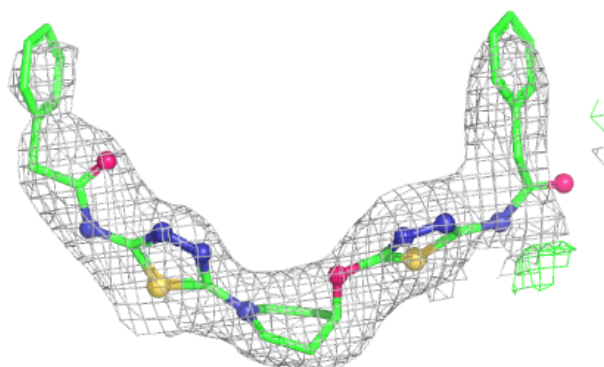
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	69V	A	601	37/37	0.87	0.15	45,65,81,85	0
2	69V	B	601	37/37	0.88	0.15	50,63,81,82	0

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.

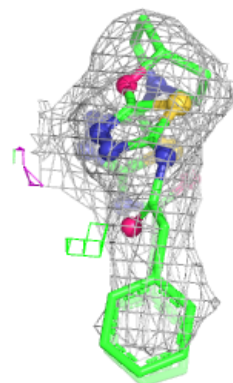
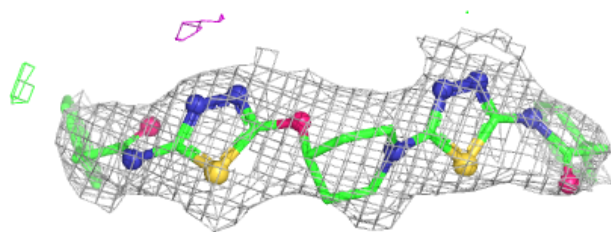
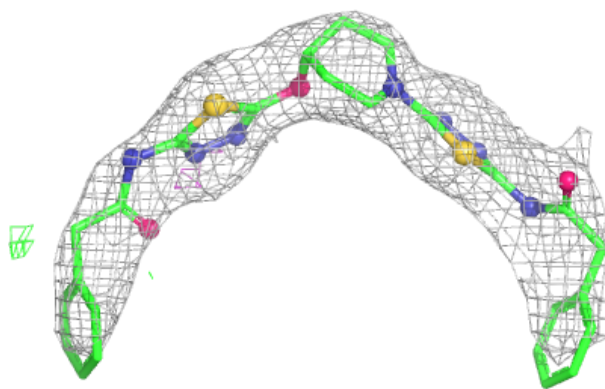
Electron density around 69V A 601:

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



Electron density around 69V 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 [i](#)

There are no such residues in this entry.