



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 06:43 PM UTC

PDB ID : 1WXY / pdb_00001wxy
Title : Crystal structure of adenosine deaminase ligated with a potent inhibitor
Authors : Kinoshita, T.
Deposited on : 2005-02-02
Resolution : 2.50 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

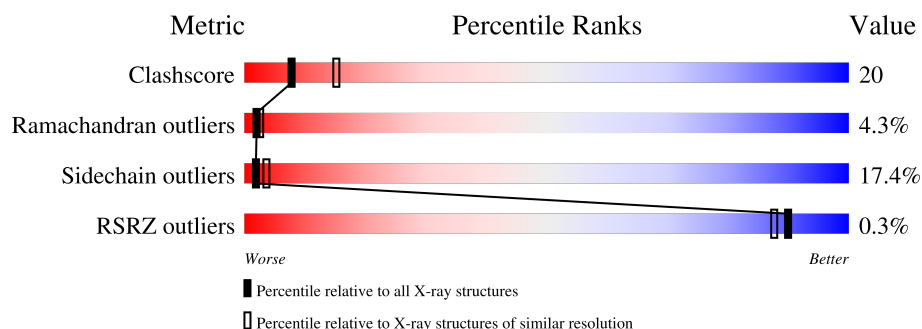
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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))
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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	356	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 3068 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 Adenosine deaminase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	349	Total	C	N	O	S	0	0	0
			2789	1772	471	534	12			

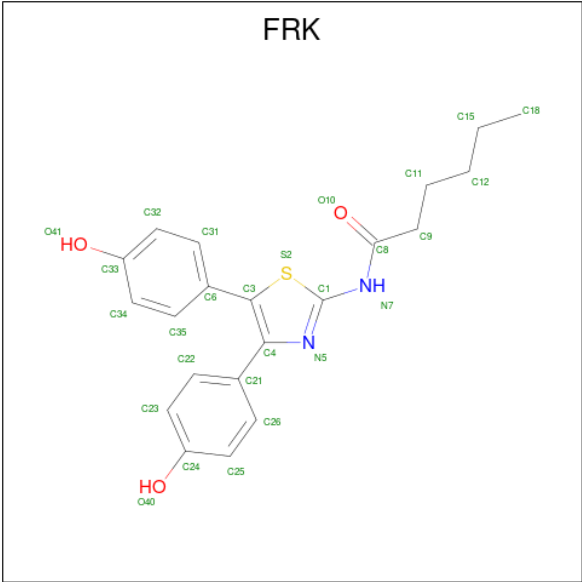
There are 15 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	8	ASP	ASN	SEE REMARK 999	UNP P56658
A	32	LYS	ARG	SEE REMARK 999	UNP P56658
A	33	ARG	LYS	SEE REMARK 999	UNP P56658
A	57	THR	SER	SEE REMARK 999	UNP P56658
A	60	ASP	GLU	SEE REMARK 999	UNP P56658
A	77	ASP	GLU	SEE REMARK 999	UNP P56658
A	79	ILE	VAL	SEE REMARK 999	UNP P56658
A	199	GLN	LYS	SEE REMARK 999	UNP P56658
A	246	THR	ALA	SEE REMARK 999	UNP P56658
A	261	ILE	VAL	SEE REMARK 999	UNP P56658
A	279	ALA	PRO	SEE REMARK 999	UNP P56658
A	281	ILE	VAL	SEE REMARK 999	UNP P56658
A	313	LYS	ASN	SEE REMARK 999	UNP P56658
A	314	ASP	GLU	SEE REMARK 999	UNP P56658
A	352	ARG	GLY	SEE REMARK 999	UNP P56658

- Molecule 2 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Zn	0	0
			1	1		

- Molecule 3 is N-[4,5-BIS(4-HYDROXYPHENYL)-1,3-THIAZOL-2-YL]HEXANAMIDE (CCD ID: FRK) (formula: C₂₁H₂₂N₂O₃S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	S	0	0
			27	21	2	3	1		

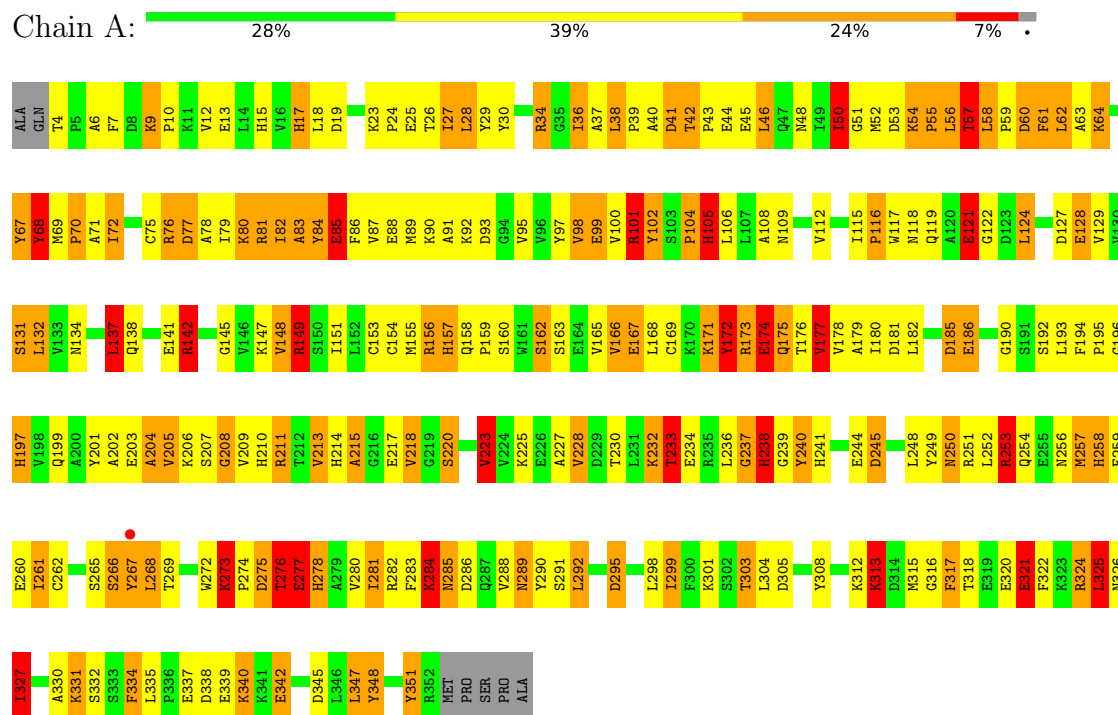
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	251	Total	O	0	0
			251	251		

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: Adenosine deaminase



4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α , β , γ	76.87Å 76.87Å 134.13Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.15 – 2.50 29.15 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.3 (29.15-2.50) 99.2 (29.15-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.78 (at 2.36Å)	Xtriage
Refinement program	CNX 2002	Depositor
R, R_{free}	0.264 , 0.280 0.217 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	38.7	Xtriage
Anisotropy	0.370	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 94.5	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	3068	wwPDB-VP
Average B, all atoms (Å ²)	37.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.52% 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: ZN, FRK

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	1.71	37/2853 (1.3%)	2.68	270/3867 (7.0%)

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	A	0	18

All (37) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	213	VAL	CA-CB	8.64	1.67	1.54
1	A	101	ARG	NE-CZ	8.39	1.42	1.33
1	A	173	ARG	NE-CZ	8.35	1.42	1.33
1	A	15	HIS	CG-ND1	-8.01	1.29	1.38
1	A	217	GLU	CA-C	-7.20	1.46	1.53
1	A	295	ASP	C-N	-7.14	1.28	1.33
1	A	324	ARG	NE-CZ	6.92	1.40	1.33
1	A	100	VAL	CA-C	6.69	1.60	1.52
1	A	241	HIS	CG-CD2	6.64	1.43	1.35
1	A	149	ARG	NE-CZ	6.55	1.40	1.33
1	A	278	HIS	ND1-CE1	6.52	1.39	1.32
1	A	241	HIS	CE1-NE2	6.51	1.39	1.32
1	A	215	ALA	CA-C	-6.51	1.44	1.52
1	A	106	LEU	CA-C	6.35	1.62	1.52
1	A	260	GLU	CA-C	-6.16	1.46	1.53
1	A	174	GLU	N-CA	6.09	1.54	1.46
1	A	17	HIS	ND1-CE1	6.08	1.38	1.32
1	A	238	HIS	C-N	6.04	1.41	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	182	LEU	CA-C	-5.98	1.45	1.52
1	A	218	VAL	CA-C	5.95	1.61	1.52
1	A	197	HIS	ND1-CE1	5.89	1.38	1.32
1	A	105	HIS	CE1-NE2	5.85	1.38	1.32
1	A	245	ASP	CA-C	-5.59	1.46	1.53
1	A	142	ARG	NE-CZ	5.54	1.39	1.33
1	A	258	HIS	CD2-NE2	-5.52	1.31	1.37
1	A	248	LEU	CA-C	5.46	1.59	1.52
1	A	321	GLU	CA-C	-5.38	1.46	1.52
1	A	162	SER	CA-C	-5.35	1.45	1.52
1	A	211	ARG	NE-CZ	-5.25	1.27	1.33
1	A	15	HIS	CG-CD2	5.20	1.41	1.35
1	A	81	ARG	CA-C	-5.09	1.46	1.52
1	A	234	GLU	CA-C	-5.08	1.46	1.52
1	A	76	ARG	CA-C	5.07	1.59	1.52
1	A	303	THR	CA-CB	5.06	1.63	1.54
1	A	331	LYS	CA-C	5.05	1.59	1.52
1	A	185	ASP	N-CA	5.03	1.52	1.46
1	A	86	PHE	CA-CB	5.01	1.61	1.53

All (270) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	192	SER	N-CA-C	12.39	125.96	111.71
1	A	197	HIS	N-CA-C	11.55	123.62	111.14
1	A	326	ASN	CA-CB-CG	-11.12	101.48	112.60
1	A	121	GLU	CA-C-N	-10.38	106.92	120.72
1	A	121	GLU	C-N-CA	-10.38	106.92	120.72
1	A	15	HIS	CE1-NE2-CD2	-10.21	98.78	109.00
1	A	215	ALA	CA-C-N	-10.10	106.04	122.40
1	A	215	ALA	C-N-CA	-10.10	106.04	122.40
1	A	218	VAL	N-CA-CB	-10.04	101.16	112.21
1	A	145	GLY	CA-C-N	-9.89	110.34	123.10
1	A	145	GLY	C-N-CA	-9.89	110.34	123.10
1	A	258	HIS	CA-CB-CG	-9.76	104.05	113.80
1	A	41	ASP	CA-CB-CG	-9.65	102.95	112.60
1	A	48	ASN	CA-CB-CG	-9.55	103.05	112.60
1	A	148	VAL	CA-C-N	-9.29	106.57	122.92
1	A	148	VAL	C-N-CA	-9.29	106.57	122.92
1	A	181	ASP	CA-CB-CG	9.07	121.67	112.60
1	A	88	GLU	N-CA-C	9.05	121.15	111.28
1	A	37	ALA	N-CA-C	8.91	122.89	108.63

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	194	PHE	CA-CB-CG	8.86	122.66	113.80
1	A	50	ILE	CA-CB-CG1	8.73	125.24	110.40
1	A	256	ASN	CA-CB-CG	-8.68	103.92	112.60
1	A	245	ASP	CA-CB-CG	8.65	121.25	112.60
1	A	266	SER	N-CA-C	8.55	121.84	111.40
1	A	254	GLN	CA-C-O	8.52	129.58	120.55
1	A	163	SER	N-CA-C	8.45	121.42	111.71
1	A	105	HIS	CA-CB-CG	-8.39	105.41	113.80
1	A	60	ASP	CA-CB-CG	8.28	120.88	112.60
1	A	177	VAL	N-CA-C	8.21	119.68	108.84
1	A	122	GLY	N-CA-C	8.12	121.87	110.74
1	A	17	HIS	CA-CB-CG	8.05	121.85	113.80
1	A	157	HIS	CA-CB-CG	-8.04	105.76	113.80
1	A	34	ARG	N-CA-C	7.91	124.49	112.54
1	A	89	MET	CA-CB-CG	7.91	129.91	114.10
1	A	44	GLU	N-CA-C	7.89	120.88	111.33
1	A	276	THR	N-CA-C	7.77	121.04	110.55
1	A	166	VAL	CB-CA-C	-7.73	97.03	111.79
1	A	90	LYS	N-CA-C	7.72	119.78	111.36
1	A	325	LEU	N-CA-C	7.71	121.95	112.23
1	A	57	THR	CA-CB-CG2	7.70	123.58	110.50
1	A	76	ARG	N-CA-CB	-7.64	97.57	110.49
1	A	208	GLY	CA-C-N	-7.62	113.33	122.93
1	A	208	GLY	C-N-CA	-7.62	113.33	122.93
1	A	84	TYR	CA-C-O	7.61	128.49	120.42
1	A	214	HIS	CA-C-N	-7.61	109.29	122.37
1	A	214	HIS	C-N-CA	-7.61	109.29	122.37
1	A	225	LYS	N-CA-C	7.57	121.44	111.75
1	A	281	ILE	CA-C-O	7.57	128.87	120.85
1	A	154	CYS	CA-C-N	-7.53	112.60	123.00
1	A	154	CYS	C-N-CA	-7.53	112.60	123.00
1	A	327	ILE	N-CA-C	7.53	117.64	110.42
1	A	316	GLY	N-CA-C	7.46	125.25	115.40
1	A	233	THR	CB-CA-C	-7.45	96.28	109.62
1	A	342	GLU	N-CA-C	7.44	119.03	111.07
1	A	251	ARG	CD-NE-CZ	-7.37	114.08	124.40
1	A	61	PHE	N-CA-C	7.35	119.99	111.02
1	A	148	VAL	N-CA-C	7.35	118.97	107.28
1	A	75	CYS	N-CA-C	7.33	121.74	108.17
1	A	160	SER	N-CA-C	7.28	121.42	112.54
1	A	204	ALA	CA-C-N	-7.27	111.22	120.60
1	A	204	ALA	C-N-CA	-7.27	111.22	120.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	70	PRO	CA-C-N	-7.26	110.56	120.28
1	A	70	PRO	C-N-CA	-7.26	110.56	120.28
1	A	87	VAL	CA-C-N	-7.25	110.57	120.28
1	A	87	VAL	C-N-CA	-7.25	110.57	120.28
1	A	332	SER	N-CA-C	7.17	121.88	113.20
1	A	9	LYS	CA-C-N	-7.15	112.41	119.78
1	A	9	LYS	C-N-CA	-7.15	112.41	119.78
1	A	321	GLU	N-CA-C	7.09	118.80	111.14
1	A	81	ARG	NE-CZ-NH1	-6.96	114.54	121.50
1	A	268	LEU	CA-C-N	-6.95	111.77	122.60
1	A	268	LEU	C-N-CA	-6.95	111.77	122.60
1	A	137	LEU	CA-C-N	-6.89	110.00	121.92
1	A	137	LEU	C-N-CA	-6.89	110.00	121.92
1	A	48	ASN	N-CA-C	6.86	120.13	111.69
1	A	141	GLU	N-CA-C	6.82	118.36	111.07
1	A	228	VAL	N-CA-C	6.79	116.92	110.53
1	A	15	HIS	ND1-CE1-NE2	6.76	115.16	108.40
1	A	238	HIS	CA-CB-CG	6.75	120.55	113.80
1	A	85	GLU	N-CA-CB	-6.74	100.22	110.12
1	A	82	ILE	CA-C-N	-6.72	111.28	120.28
1	A	82	ILE	C-N-CA	-6.72	111.28	120.28
1	A	348	TYR	CA-C-N	-6.72	110.10	120.31
1	A	348	TYR	C-N-CA	-6.72	110.10	120.31
1	A	185	ASP	CA-CB-CG	6.70	119.30	112.60
1	A	192	SER	CB-CA-C	-6.70	98.23	110.63
1	A	156	ARG	N-CA-C	6.70	119.44	111.33
1	A	205	VAL	O-C-N	6.70	128.63	121.94
1	A	204	ALA	N-CA-C	6.66	119.10	111.11
1	A	101	ARG	NE-CZ-NH2	6.61	125.14	119.20
1	A	172	TYR	N-CA-C	6.58	121.95	111.81
1	A	178	VAL	N-CA-C	6.57	121.10	113.42
1	A	182	LEU	CA-C-N	-6.54	111.89	122.36
1	A	182	LEU	C-N-CA	-6.54	111.89	122.36
1	A	284	LYS	N-CA-C	6.54	118.96	111.11
1	A	281	ILE	CB-CA-C	6.49	121.18	112.22
1	A	206	LYS	CA-C-N	-6.49	113.51	123.17
1	A	206	LYS	C-N-CA	-6.49	113.51	123.17
1	A	313	LYS	CA-C-N	-6.48	109.50	120.58
1	A	313	LYS	C-N-CA	-6.48	109.50	120.58
1	A	347	LEU	N-CA-C	6.46	118.32	111.28
1	A	275	ASP	N-CA-C	6.45	118.31	111.28
1	A	240	TYR	CA-C-O	6.43	127.23	120.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	282	ARG	CA-C-N	-6.36	111.76	120.28
1	A	282	ARG	C-N-CA	-6.36	111.76	120.28
1	A	102	TYR	CA-C-O	6.34	128.07	121.28
1	A	259	PHE	CA-CB-CG	6.32	120.12	113.80
1	A	348	TYR	N-CA-C	6.29	118.22	111.36
1	A	117	TRP	N-CA-C	6.29	120.73	113.38
1	A	254	GLN	N-CA-C	6.25	118.09	111.28
1	A	29	TYR	N-CA-C	6.21	117.85	111.14
1	A	92	LYS	N-CA-C	6.21	118.85	111.71
1	A	95	VAL	CA-CB-CG1	6.21	120.95	110.40
1	A	77	ASP	N-CA-C	6.20	120.57	112.89
1	A	286	ASP	CA-CB-CG	6.20	118.80	112.60
1	A	68	TYR	CA-C-N	-6.19	112.41	120.58
1	A	68	TYR	C-N-CA	-6.19	112.41	120.58
1	A	233	THR	N-CA-C	6.17	118.73	110.35
1	A	6	ALA	N-CA-C	6.13	118.75	111.71
1	A	244	GLU	CA-CB-CG	-6.09	101.91	114.10
1	A	89	MET	CB-CA-C	6.09	120.90	110.79
1	A	71	ALA	N-CA-C	6.08	117.91	111.28
1	A	173	ARG	N-CA-C	6.08	119.42	109.76
1	A	199	GLN	N-CA-C	6.08	120.86	112.90
1	A	327	ILE	CA-CB-CG2	6.08	120.83	110.50
1	A	299	ILE	CA-C-N	-6.04	112.18	122.56
1	A	299	ILE	C-N-CA	-6.04	112.18	122.56
1	A	36	ILE	N-CA-C	6.03	116.05	106.88
1	A	330	ALA	N-CA-C	6.02	117.52	111.07
1	A	142	ARG	N-CA-C	6.00	118.61	111.71
1	A	28	LEU	CA-C-N	-5.99	112.29	120.44
1	A	28	LEU	C-N-CA	-5.99	112.29	120.44
1	A	281	ILE	CA-CB-CG1	5.97	120.56	110.40
1	A	38	LEU	N-CA-C	5.95	118.63	110.01
1	A	281	ILE	CA-C-N	-5.94	112.72	120.44
1	A	281	ILE	C-N-CA	-5.94	112.72	120.44
1	A	175	GLN	N-CA-C	5.93	120.35	111.81
1	A	252	LEU	CA-C-O	5.91	126.77	119.79
1	A	174	GLU	N-CA-C	5.91	123.38	110.80
1	A	15	HIS	CG-CD2-NE2	5.90	113.10	107.20
1	A	108	ALA	CA-C-N	-5.90	112.78	121.99
1	A	108	ALA	C-N-CA	-5.90	112.78	121.99
1	A	17	HIS	O-C-N	-5.90	116.50	123.22
1	A	41	ASP	N-CA-C	5.89	123.19	113.89
1	A	91	ALA	CA-C-N	-5.85	111.85	120.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	91	ALA	C-N-CA	-5.85	111.85	120.28
1	A	267	TYR	CA-C-N	-5.85	107.83	121.52
1	A	267	TYR	C-N-CA	-5.85	107.83	121.52
1	A	230	THR	CA-C-N	-5.85	110.18	121.58
1	A	230	THR	C-N-CA	-5.85	110.18	121.58
1	A	218	VAL	CA-C-O	5.83	124.50	118.96
1	A	278	HIS	N-CA-C	5.83	118.93	110.42
1	A	317	PHE	N-CA-C	5.83	118.78	110.10
1	A	116	PRO	CA-C-N	-5.82	114.25	123.91
1	A	116	PRO	C-N-CA	-5.82	114.25	123.91
1	A	196	GLY	CA-C-N	-5.74	112.63	120.44
1	A	196	GLY	C-N-CA	-5.74	112.63	120.44
1	A	122	GLY	CA-C-O	5.73	126.76	120.97
1	A	244	GLU	N-CA-C	5.72	120.00	113.19
1	A	36	ILE	CA-C-N	-5.71	112.36	122.07
1	A	36	ILE	C-N-CA	-5.71	112.36	122.07
1	A	331	LYS	CB-CA-C	-5.71	100.98	110.68
1	A	76	ARG	N-CA-C	5.70	122.95	110.80
1	A	86	PHE	N-CA-C	5.70	117.95	111.11
1	A	186	GLU	CA-CB-CG	-5.69	102.71	114.10
1	A	162	SER	N-CA-C	5.68	117.47	111.28
1	A	142	ARG	CB-CG-CD	5.67	124.33	111.30
1	A	55	PRO	CA-C-N	-5.65	109.45	121.32
1	A	55	PRO	C-N-CA	-5.65	109.45	121.32
1	A	318	THR	N-CA-C	5.64	117.80	110.53
1	A	121	GLU	N-CA-C	5.63	122.79	110.80
1	A	281	ILE	CB-CG1-CD1	-5.63	101.98	113.80
1	A	295	ASP	CB-CA-C	5.62	121.61	110.42
1	A	325	LEU	CA-C-N	-5.61	111.14	120.68
1	A	325	LEU	C-N-CA	-5.61	111.14	120.68
1	A	99	GLU	CB-CA-C	5.61	119.42	109.72
1	A	337	GLU	CB-CG-CD	5.60	122.13	112.60
1	A	292	LEU	CA-C-N	-5.59	111.96	121.85
1	A	292	LEU	C-N-CA	-5.59	111.96	121.85
1	A	76	ARG	CB-CA-C	5.58	121.53	110.42
1	A	46	LEU	N-CA-C	5.57	117.82	111.02
1	A	338	ASP	N-CA-C	5.57	117.79	111.11
1	A	201	TYR	CA-C-N	-5.55	111.87	120.31
1	A	201	TYR	C-N-CA	-5.55	111.87	120.31
1	A	88	GLU	CB-CG-CD	-5.55	103.16	112.60
1	A	210	HIS	CA-C-N	-5.54	112.83	122.37
1	A	210	HIS	C-N-CA	-5.54	112.83	122.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	225	LYS	N-CA-CB	5.54	118.90	110.14
1	A	214	HIS	N-CA-C	5.53	117.11	109.15
1	A	351	TYR	CA-C-N	-5.53	111.75	121.70
1	A	351	TYR	C-N-CA	-5.53	111.75	121.70
1	A	68	TYR	N-CA-C	5.52	117.38	111.36
1	A	203	GLU	N-CA-C	5.52	117.73	111.11
1	A	19	ASP	N-CA-C	5.52	119.49	112.87
1	A	273	LYS	O-C-N	5.47	125.66	121.23
1	A	291	SER	CA-C-N	-5.47	115.00	122.93
1	A	291	SER	C-N-CA	-5.47	115.00	122.93
1	A	299	ILE	CA-C-O	5.46	126.73	121.05
1	A	211	ARG	NE-CZ-NH1	-5.46	116.04	121.50
1	A	295	ASP	CA-CB-CG	5.45	118.05	112.60
1	A	220	SER	N-CA-C	5.45	117.72	110.53
1	A	27	ILE	N-CA-CB	-5.44	104.69	110.62
1	A	83	ALA	N-CA-C	5.44	117.21	111.28
1	A	51	GLY	CA-C-N	-5.42	112.25	121.85
1	A	51	GLY	C-N-CA	-5.42	112.25	121.85
1	A	190	GLY	N-CA-C	5.42	122.57	115.47
1	A	337	GLU	CA-CB-CG	5.41	124.92	114.10
1	A	80	LYS	CA-C-N	-5.40	111.35	120.58
1	A	80	LYS	C-N-CA	-5.40	111.35	120.58
1	A	211	ARG	CD-NE-CZ	-5.40	116.84	124.40
1	A	295	ASP	N-CA-C	5.40	122.30	110.80
1	A	93	ASP	N-CA-C	5.38	119.47	113.01
1	A	249	TYR	N-CA-C	5.38	117.58	111.02
1	A	93	ASP	CA-C-N	-5.38	112.39	121.85
1	A	93	ASP	C-N-CA	-5.38	112.39	121.85
1	A	277	GLU	CA-CB-CG	5.37	124.84	114.10
1	A	305	ASP	N-CA-C	5.37	117.82	111.33
1	A	289	ASN	N-CA-CB	-5.36	102.55	110.49
1	A	28	LEU	CA-C-O	5.36	125.94	119.61
1	A	301	LYS	CG-CD-CE	5.36	123.61	111.30
1	A	241	HIS	CA-CB-CG	-5.35	108.45	113.80
1	A	227	ALA	N-CA-C	5.35	120.14	111.37
1	A	285	ASN	CA-CB-CG	-5.34	107.26	112.60
1	A	202	ALA	N-CA-C	5.34	118.02	111.82
1	A	63	ALA	N-CA-C	5.34	118.58	111.75
1	A	312	LYS	CA-C-N	-5.32	113.20	122.36
1	A	312	LYS	C-N-CA	-5.32	113.20	122.36
1	A	27	ILE	CA-CB-CG2	5.31	119.53	110.50
1	A	10	PRO	CB-CA-C	5.30	118.02	111.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	340	LYS	CB-CA-C	5.29	119.84	110.85
1	A	53	ASP	CA-C-O	5.28	124.30	118.65
1	A	58	LEU	N-CA-C	5.27	120.11	113.25
1	A	131	SER	O-C-N	5.27	127.70	122.12
1	A	137	LEU	CA-C-O	5.26	126.01	119.97
1	A	275	ASP	CA-CB-CG	5.25	117.86	112.60
1	A	295	ASP	N-CA-CB	-5.25	101.62	110.49
1	A	205	VAL	N-CA-C	5.24	115.86	110.36
1	A	223	VAL	N-CA-C	5.22	115.84	110.36
1	A	175	GLN	CA-C-N	5.22	131.10	121.70
1	A	175	GLN	C-N-CA	5.22	131.10	121.70
1	A	127	ASP	CA-C-O	5.21	125.97	119.97
1	A	261	ILE	N-CA-C	5.21	116.31	109.58
1	A	277	GLU	CB-CG-CD	5.21	121.46	112.60
1	A	284	LYS	CA-C-N	-5.20	112.03	120.72
1	A	284	LYS	C-N-CA	-5.20	112.03	120.72
1	A	116	PRO	CB-CA-C	5.17	117.85	111.23
1	A	327	ILE	CB-CG1-CD1	-5.16	102.96	113.80
1	A	89	MET	N-CA-CB	-5.15	102.55	110.12
1	A	132	LEU	CA-C-N	-5.15	113.41	120.46
1	A	132	LEU	C-N-CA	-5.15	113.41	120.46
1	A	315	MET	CA-C-N	-5.13	113.42	122.09
1	A	315	MET	C-N-CA	-5.13	113.42	122.09
1	A	239	GLY	CA-C-N	-5.12	113.02	120.29
1	A	239	GLY	C-N-CA	-5.12	113.02	120.29
1	A	156	ARG	CD-NE-CZ	5.11	131.55	124.40
1	A	163	SER	CB-CA-C	-5.10	101.19	110.63
1	A	232	LYS	N-CA-C	5.10	118.63	111.74
1	A	250	ASN	N-CA-C	5.10	117.23	111.11
1	A	53	ASP	N-CA-C	5.10	121.92	113.50
1	A	253	ARG	CB-CA-C	5.08	119.23	110.79
1	A	285	ASN	CA-C-N	-5.08	114.51	122.65
1	A	285	ASN	C-N-CA	-5.08	114.51	122.65
1	A	203	GLU	CA-C-N	-5.07	113.70	120.54
1	A	203	GLU	C-N-CA	-5.07	113.70	120.54
1	A	26	THR	N-CA-C	5.06	116.87	111.36
1	A	259	PHE	CA-C-O	5.02	125.90	120.43
1	A	249	TYR	CA-C-N	-5.01	113.77	120.54
1	A	249	TYR	C-N-CA	-5.01	113.77	120.54
1	A	112	VAL	CA-C-O	5.01	124.68	120.22
1	A	42	THR	N-CA-C	5.01	117.70	110.14

There are no chirality outliers.

All (18) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	101	ARG	Sidechain
1	A	142	ARG	Sidechain
1	A	167	GLU	Peptide
1	A	172	TYR	Sidechain
1	A	173	ARG	Peptide
1	A	211	ARG	Sidechain
1	A	236	LEU	Peptide
1	A	253	ARG	Sidechain
1	A	266	SER	Peptide
1	A	276	THR	Peptide
1	A	334	PHE	Sidechain
1	A	348	TYR	Sidechain
1	A	351	TYR	Sidechain
1	A	56	LEU	Peptide
1	A	67	TYR	Sidechain
1	A	68	TYR	Sidechain
1	A	81	ARG	Sidechain
1	A	84	TYR	Sidechain

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	2789	0	2743	111	0
2	A	1	0	0	0	0
3	A	27	0	22	2	0
4	A	251	0	0	11	0
All	All	3068	0	2765	111	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 20.

All (111) 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:278:HIS:HD2	1:A:280:VAL:H	1.22	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129:VAL:HA	4:A:555:HOH:O	1.81	0.81
1:A:174:GLU:O	1:A:176:THR:HA	1.81	0.78
1:A:278:HIS:CD2	1:A:280:VAL:H	2.03	0.77
1:A:115:ILE:HD11	1:A:121:GLU:HG3	1.73	0.71
1:A:57:THR:HG23	1:A:59:PRO:HD2	1.72	0.70
1:A:174:GLU:C	1:A:176:THR:HA	2.21	0.65
1:A:322:PHE:HA	1:A:325:LEU:HD13	1.78	0.64
1:A:245:ASP:HB2	4:A:628:HOH:O	1.98	0.62
1:A:253:ARG:HG2	4:A:402:HOH:O	1.99	0.62
1:A:137:LEU:HG	1:A:148:VAL:HG11	1.84	0.60
1:A:23:LYS:HD2	1:A:85:GLU:HG2	1.84	0.60
1:A:174:GLU:HB2	4:A:497:HOH:O	2.01	0.60
1:A:97:TYR:HD1	1:A:147:LYS:HB3	1.66	0.59
1:A:72:ILE:HD12	1:A:79:ILE:HD13	1.84	0.59
1:A:109:ASN:HB3	1:A:119:GLN:OE1	2.03	0.58
1:A:213:VAL:HG23	1:A:233:THR:HG23	1.85	0.58
1:A:269:THR:HB	3:A:401:FRK:H152	1.85	0.58
1:A:13:GLU:O	1:A:98:VAL:HA	2.04	0.57
1:A:79:ILE:HG21	4:A:555:HOH:O	2.05	0.57
1:A:162:SER:OG	1:A:197:HIS:HD2	1.87	0.57
1:A:28:LEU:HD22	1:A:46:LEU:HD22	1.87	0.56
1:A:215:ALA:HB1	1:A:223:VAL:HG13	1.86	0.56
1:A:273:LYS:HE2	1:A:276:THR:HG23	1.86	0.56
1:A:220:SER:O	1:A:223:VAL:HG12	2.06	0.55
1:A:151:ILE:HG12	1:A:179:ALA:HB3	1.87	0.55
1:A:278:HIS:CD2	1:A:280:VAL:HG12	2.42	0.55
1:A:267:TYR:HD1	1:A:268:LEU:HD23	1.72	0.54
1:A:28:LEU:HB2	1:A:46:LEU:HD22	1.89	0.54
1:A:267:TYR:CD1	1:A:268:LEU:HD23	2.43	0.54
1:A:83:ALA:HB1	1:A:137:LEU:HD13	1.90	0.53
1:A:283:PHE:HB3	1:A:288:VAL:HB	1.90	0.53
1:A:167:GLU:HB2	4:A:553:HOH:O	2.07	0.53
1:A:28:LEU:HD13	1:A:38:LEU:HD12	1.90	0.53
1:A:320:GLU:HG2	4:A:622:HOH:O	2.08	0.53
1:A:67:TYR:O	1:A:70:PRO:HD2	2.09	0.52
1:A:237:GLY:O	1:A:238:HIS:HB2	2.09	0.52
1:A:78:ALA:O	1:A:82:ILE:HG23	2.10	0.51
1:A:64:LYS:HA	1:A:67:TYR:HD1	1.76	0.51
1:A:273:LYS:HE2	1:A:276:THR:CG2	2.40	0.50
1:A:267:TYR:CD1	1:A:267:TYR:C	2.90	0.49
1:A:134:ASN:O	1:A:138:GLN:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:99:GLU:HA	1:A:149:ARG:O	2.13	0.49
1:A:257:MET:O	1:A:289:ASN:HB3	2.13	0.48
1:A:101:ARG:HG3	1:A:153:CYS:SG	2.53	0.48
1:A:261:ILE:HD11	1:A:283:PHE:CD2	2.48	0.48
1:A:195:PRO:HD2	4:A:466:HOH:O	2.13	0.48
1:A:18:LEU:HB3	1:A:102:TYR:HB3	1.95	0.48
1:A:132:LEU:HD12	4:A:555:HOH:O	2.14	0.48
1:A:250:ASN:O	1:A:253:ARG:HD2	2.14	0.48
1:A:104:PRO:O	1:A:105:HIS:C	2.57	0.47
1:A:157:HIS:CD2	1:A:158:GLN:HG2	2.49	0.47
1:A:339:GLU:HA	1:A:342:GLU:OE1	2.14	0.47
1:A:240:TYR:HE1	1:A:261:ILE:HG23	1.78	0.47
1:A:324:ARG:O	1:A:327:ILE:HG22	2.14	0.47
1:A:57:THR:HG22	1:A:60:ASP:H	1.80	0.46
1:A:284:LYS:HE2	1:A:285:ASN:OD1	2.14	0.46
1:A:261:ILE:HG12	1:A:290:TYR:HB2	1.97	0.46
1:A:156:ARG:CD	1:A:186:GLU:HA	2.44	0.46
1:A:278:HIS:HD2	1:A:280:VAL:N	2.03	0.46
1:A:69:MET:HE3	1:A:69:MET:HB3	1.84	0.46
1:A:308:TYR:CD2	1:A:322:PHE:CE2	3.04	0.46
1:A:258:HIS:HA	1:A:289:ASN:O	2.16	0.45
1:A:267:TYR:CD2	1:A:274:PRO:HG3	2.51	0.45
1:A:171:LYS:HD2	1:A:172:TYR:CE2	2.52	0.45
1:A:186:GLU:OE1	1:A:223:VAL:HG11	2.17	0.45
1:A:261:ILE:HD11	1:A:283:PHE:CE2	2.53	0.44
1:A:52:MET:HE3	1:A:56:LEU:HG	1.99	0.44
1:A:124:LEU:HD23	1:A:128:GLU:HG2	1.99	0.44
1:A:204:ALA:O	1:A:205:VAL:C	2.59	0.44
1:A:57:THR:HG22	1:A:60:ASP:CG	2.43	0.44
1:A:262:CYS:SG	1:A:295:ASP:HB2	2.57	0.44
1:A:159:PRO:HA	1:A:197:HIS:CD2	2.51	0.44
1:A:52:MET:HE1	1:A:268:LEU:O	2.18	0.44
1:A:273:LYS:HA	1:A:274:PRO:HD3	1.86	0.44
1:A:280:VAL:HG22	1:A:317:PHE:HZ	1.83	0.43
1:A:57:THR:HG23	1:A:59:PRO:CD	2.46	0.43
1:A:68:TYR:O	1:A:69:MET:C	2.61	0.43
1:A:303:THR:O	1:A:304:LEU:C	2.61	0.43
1:A:272:TRP:O	1:A:274:PRO:HD3	2.17	0.43
1:A:42:THR:HA	1:A:43:PRO:HD3	1.88	0.43
1:A:28:LEU:HB2	1:A:46:LEU:CD2	2.48	0.43
1:A:308:TYR:CD2	1:A:322:PHE:CD2	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:179:ALA:HB2	1:A:334:PHE:CD2	2.54	0.42
1:A:262:CYS:O	1:A:265:SER:HB3	2.20	0.42
1:A:23:LYS:O	1:A:24:PRO:C	2.60	0.42
1:A:284:LYS:HB2	1:A:321:GLU:OE2	2.18	0.42
1:A:46:LEU:HA	1:A:46:LEU:HD12	1.85	0.42
1:A:7:PHE:CE1	1:A:9:LYS:HG3	2.55	0.42
1:A:46:LEU:HG	1:A:50:ILE:HD13	2.01	0.42
1:A:228:VAL:O	1:A:232:LYS:HA	2.19	0.42
1:A:313:LYS:HB2	4:A:548:HOH:O	2.19	0.42
1:A:27:ILE:HG21	1:A:27:ILE:HD13	1.83	0.42
1:A:25:GLU:H	1:A:25:GLU:CD	2.28	0.42
1:A:61:PHE:O	1:A:64:LYS:HG3	2.19	0.42
1:A:102:TYR:HA	4:A:576:HOH:O	2.19	0.42
1:A:115:ILE:HA	1:A:116:PRO:HD3	1.62	0.41
1:A:299:ILE:HD13	1:A:299:ILE:HG21	1.65	0.41
1:A:151:ILE:HG21	1:A:151:ILE:HD13	1.85	0.41
1:A:39:PRO:HG3	1:A:67:TYR:CD2	2.55	0.41
1:A:156:ARG:HD2	1:A:186:GLU:HA	2.03	0.41
1:A:64:LYS:HA	1:A:67:TYR:CD1	2.55	0.41
1:A:62:LEU:HD22	3:A:401:FRK:C31	2.50	0.41
1:A:58:LEU:HB3	1:A:59:PRO:HD3	2.02	0.41
1:A:180:ILE:HD13	1:A:180:ILE:HG21	1.77	0.41
1:A:54:LYS:HE2	1:A:54:LYS:HB2	1.88	0.40
1:A:124:LEU:HD22	1:A:129:VAL:HG23	2.03	0.40
1:A:17:HIS:HA	1:A:101:ARG:O	2.20	0.40
1:A:30:TYR:O	1:A:34:ARG:HG2	2.21	0.40
1:A:169:CYS:HA	1:A:177:VAL:HG21	2.02	0.40
1:A:142:ARG:H	1:A:142:ARG:HG2	1.70	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	347/356 (98%)	305 (88%)	27 (8%)	15 (4%)	2 2

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	121	GLU
1	A	174	GLU
1	A	277	GLU
1	A	40	ALA
1	A	50	ILE
1	A	185	ASP
1	A	237	GLY
1	A	238	HIS
1	A	55	PRO
1	A	105	HIS
1	A	76	ARG
1	A	298	LEU
1	A	104	PRO
1	A	165	VAL
1	A	208	GLY

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	304/309 (98%)	251 (83%)	53 (17%)	2 3

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

Mol	Chain	Res	Type
1	A	4	THR
1	A	12	VAL
1	A	36	ILE
1	A	41	ASP
1	A	45	GLU
1	A	50	ILE

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Mol	Chain	Res	Type
1	A	54	LYS
1	A	57	THR
1	A	62	LEU
1	A	64	LYS
1	A	72	ILE
1	A	77	ASP
1	A	80	LYS
1	A	85	GLU
1	A	98	VAL
1	A	101	ARG
1	A	118	ASN
1	A	124	LEU
1	A	128	GLU
1	A	131	SER
1	A	137	LEU
1	A	142	ARG
1	A	149	ARG
1	A	155	MET
1	A	166	VAL
1	A	168	LEU
1	A	171	LYS
1	A	174	GLU
1	A	175	GLN
1	A	177	VAL
1	A	193	LEU
1	A	207	SER
1	A	209	VAL
1	A	218	VAL
1	A	223	VAL
1	A	233	THR
1	A	253	ARG
1	A	257	MET
1	A	273	LYS
1	A	275	ASP
1	A	277	GLU
1	A	281	ILE
1	A	284	LYS
1	A	292	LEU
1	A	313	LYS
1	A	321	GLU
1	A	325	LEU
1	A	327	ILE

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Mol	Chain	Res	Type
1	A	331	LYS
1	A	335	LEU
1	A	340	LYS
1	A	345	ASP
1	A	347	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	47	GLN
1	A	48	ASN
1	A	118	ASN
1	A	134	ASN
1	A	197	HIS
1	A	199	GLN
1	A	210	HIS
1	A	250	ASN
1	A	278	HIS
1	A	309	GLN

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](#)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The

Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	FRK	A	401	-	29,29,29	1.82	5 (17%)	39,39,39	1.56	6 (15%)

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
3	FRK	A	401	-	-	7/17/17/17	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	401	FRK	C4-N5	5.71	1.47	1.38
3	A	401	FRK	C1-N7	-4.98	1.30	1.38
3	A	401	FRK	C4-C3	-3.42	1.34	1.37
3	A	401	FRK	C8-N7	-2.34	1.32	1.37
3	A	401	FRK	C1-S2	2.17	1.77	1.73

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	401	FRK	C3-C4-N5	-5.37	112.22	115.43
3	A	401	FRK	S2-C1-N5	-3.36	112.77	115.78
3	A	401	FRK	C6-C3-C4	-2.74	125.10	131.51
3	A	401	FRK	S2-C1-N7	2.45	127.00	123.72
3	A	401	FRK	C4-C3-S2	2.35	112.77	109.72
3	A	401	FRK	C1-S2-C3	2.17	89.70	88.35

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	401	FRK	C11-C12-C15-C18
3	A	401	FRK	C12-C11-C9-C8
3	A	401	FRK	C4-C3-C6-C31

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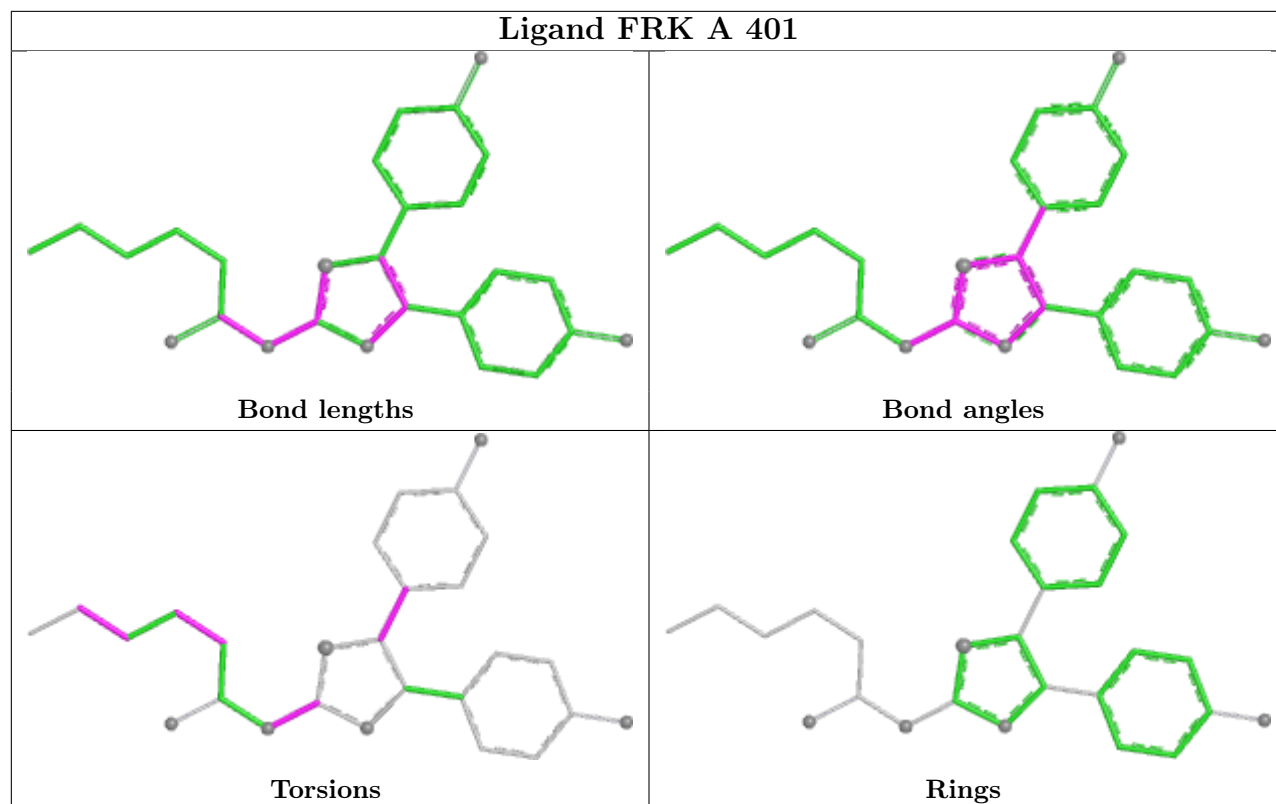
Mol	Chain	Res	Type	Atoms
3	A	401	FRK	C4-C3-C6-C35
3	A	401	FRK	S2-C3-C6-C31
3	A	401	FRK	S2-C3-C6-C35
3	A	401	FRK	S2-C1-N7-C8

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	401	FRK	2	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	349/356 (98%)	-0.01	1 (0%) 90 87	16, 34, 60, 74	0

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	267	TYR	2.2

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](#)

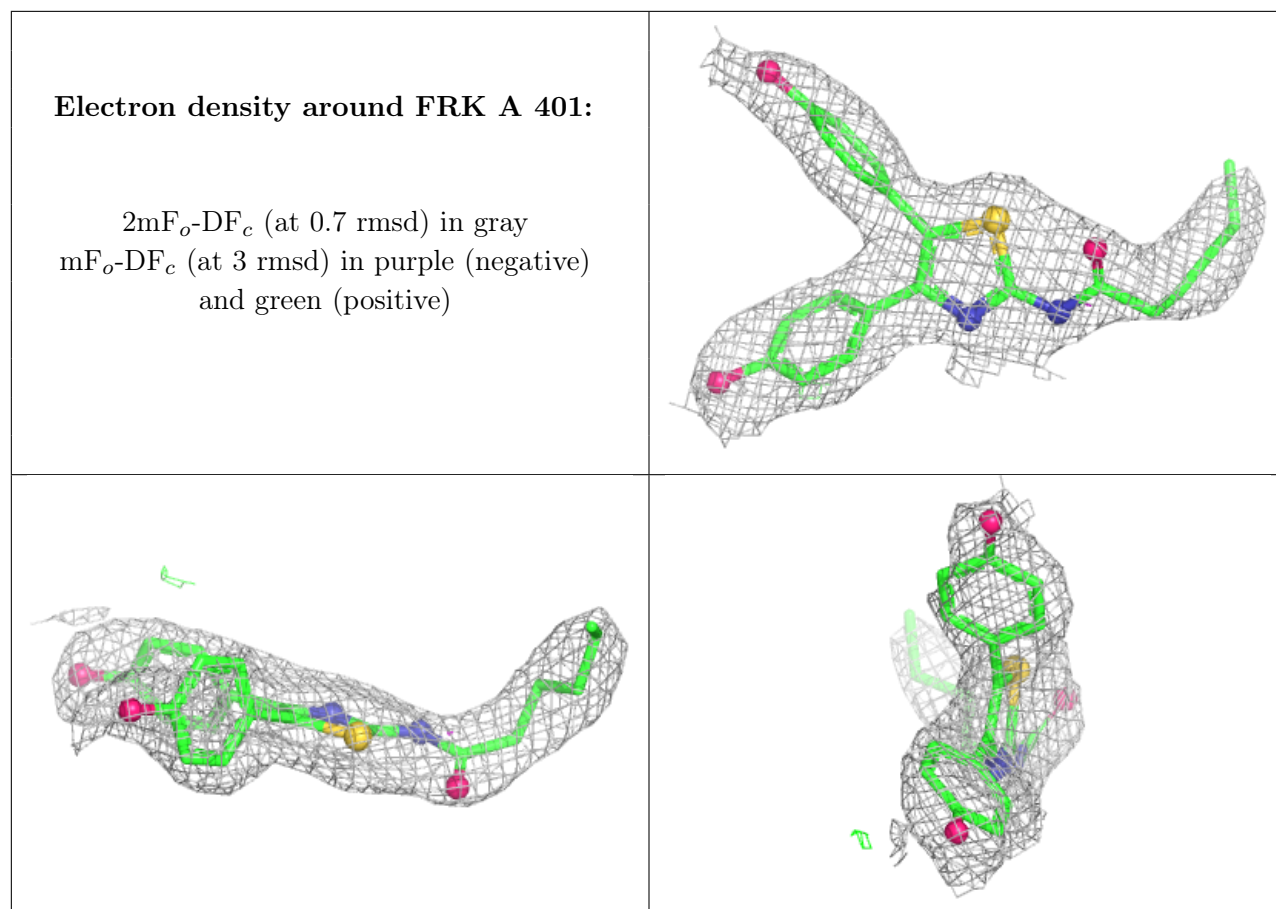
There are no oligosaccharides in this entry.

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	FRK	A	401	27/27	0.90	0.11	29,43,59,63	0
2	ZN	A	400	1/1	0.99	0.05	33,33,33,33	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.



6.5 Other polymers ⓘ

There are no such residues in this entry.