



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 19, 2026 – 12:09 PM JST

PDB ID : 23KX / pdb_000023kx
Title : Regnase-1 PIN bound to suramin
Authors : Millius, A.; Standley, D.M.; Yu, J.; Kurisu, G.
Deposited on : 2026-02-10
Resolution : 2.62 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 Phenix2.2
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 2.2
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 : 9.0.015 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.51

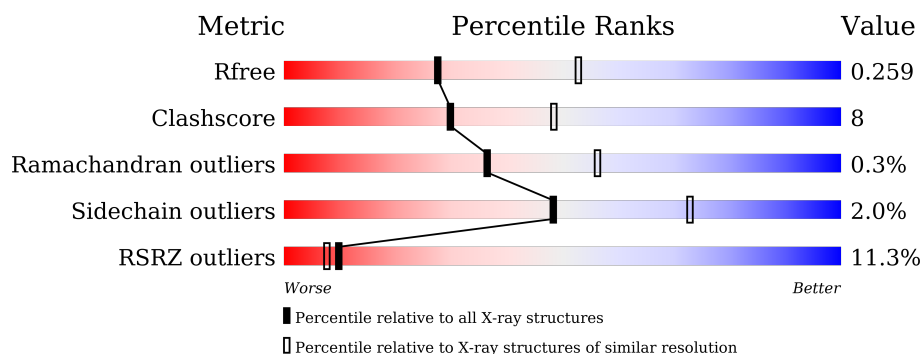
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.62 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	4951 (2.64-2.60)
Clashscore	190562	5303 (2.64-2.60)
Ramachandran outliers	187476	5217 (2.64-2.60)
Sidechain outliers	187428	5217 (2.64-2.60)
RSRZ outliers	180081	4950 (2.64-2.60)

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	175	11% 78% 16% • 5%
1	B	175	10% 76% 16% 8%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 2883 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.

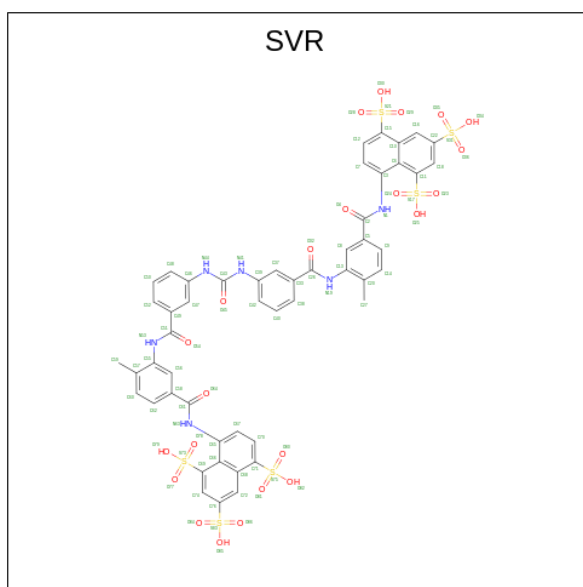
- Molecule 1 is a protein called Endoribonuclease ZC3H12A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	167	Total	C	N	O	S	0	0	0
			1374	877	251	240	6			
1	B	161	Total	C	N	O	S	0	0	0
			1325	844	242	234	5			

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	131	PRO	-	expression tag	UNP Q5D1E7
A	132	HIS	-	expression tag	UNP Q5D1E7
A	133	MET	-	expression tag	UNP Q5D1E7
A	226	ASN	ASP	engineered mutation	UNP Q5D1E7
A	244	ASN	ASP	engineered mutation	UNP Q5D1E7
B	131	PRO	-	expression tag	UNP Q5D1E7
B	132	HIS	-	expression tag	UNP Q5D1E7
B	133	MET	-	expression tag	UNP Q5D1E7
B	226	ASN	ASP	engineered mutation	UNP Q5D1E7
B	244	ASN	ASP	engineered mutation	UNP Q5D1E7

- Molecule 2 is 8,8'-[CARBONYLBIS[IMINO-3,1-PHENYLENECARBONYLIMINO(4-METHYL-3,1-PHENYLENE)CARBONYLIMINO]]BIS-1,3,5-NAPHTHALENETRISULFONIC ACID (CCD ID: SVR) (formula: C₅₁H₄₀N₆O₂₃S₆) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	S	0	0
			86	51	6	23	6		
2	B	1	Total	C	N	O	S	0	0
			86	51	6	23	6		

- Molecule 3 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

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

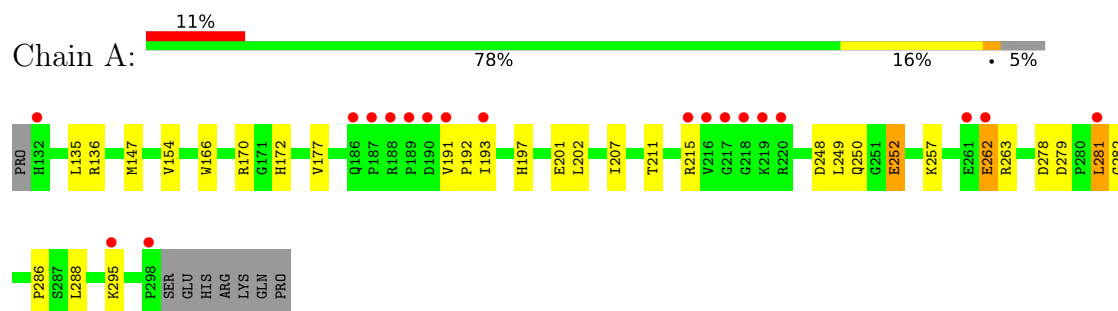
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	7	Total	O	0	0
			7	7		
4	B	3	Total	O	0	0
			3	3		

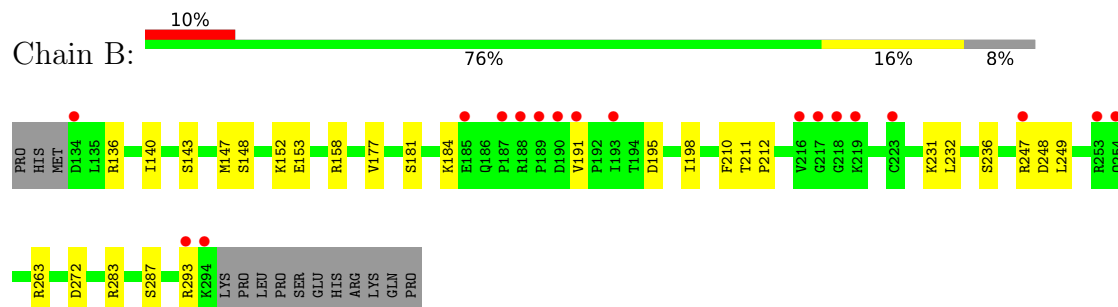
3 Residue-property plots [i](#)

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: Endoribonuclease ZC3H12A



• Molecule 1: Endoribonuclease ZC3H12A



4 Data and refinement statistics

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	114.72Å 114.72Å 103.56Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	45.92 – 2.62 45.92 – 2.62	Depositor EDS
% Data completeness (in resolution range)	99.6 (45.92-2.62) 99.9 (45.92-2.62)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.78 (at 2.61Å)	Xtriage
Refinement program	PHENIX 1.21.1	Depositor
R, R_{free}	0.222 , 0.266 0.225 , 0.259	Depositor DCC
R_{free} test set	1211 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å ²)	65.6	Xtriage
Anisotropy	0.549	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 52.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.028 for -h,-k,l	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	2883	wwPDB-VP
Average B, all atoms (Å ²)	75.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.83% 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: MG, SVR

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	0.38	0/1409	0.54	0/1904
1	B	0.36	0/1357	0.51	0/1833
All	All	0.37	0/2766	0.53	0/3737

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1374	0	1381	29	0
1	B	1325	0	1327	22	0
2	A	86	0	35	5	0
2	B	86	0	36	3	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	7	0	0	0	0
4	B	3	0	0	0	0
All	All	2883	0	2779	48	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 (48) 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:215:ARG:HH21	1:B:247:ARG:NE	1.76	0.82
1:B:191:VAL:HG12	2:B:401:SVR:H52	1.64	0.78
1:A:250:GLN:HE21	1:A:257:LYS:HG3	1.51	0.74
1:A:191:VAL:HG12	2:A:401:SVR:H52	1.75	0.67
1:B:248:ASP:OD1	1:B:249:LEU:N	2.28	0.67
1:A:250:GLN:HG2	1:A:257:LYS:HA	1.78	0.65
1:B:136:ARG:HH21	1:B:263:ARG:NH2	1.95	0.65
1:A:215:ARG:HH21	1:B:247:ARG:CZ	2.16	0.58
1:B:136:ARG:NH1	1:B:293:ARG:O	2.37	0.57
1:A:166:TRP:O	1:A:170:ARG:HG2	2.06	0.56
1:A:177:VAL:HG23	1:A:207:ILE:HG22	1.86	0.56
1:A:136:ARG:HH22	1:A:295:LYS:HE2	1.70	0.56
1:A:147:MET:HE2	2:A:401:SVR:H591	1.87	0.55
1:A:248:ASP:OD1	1:A:248:ASP:N	2.40	0.54
1:A:281:LEU:HB2	1:A:286:PRO:HD2	1.89	0.54
1:A:215:ARG:HE	1:B:247:ARG:NH2	2.05	0.53
1:A:249:LEU:HA	1:A:252:GLU:HG3	1.90	0.53
1:A:197:HIS:O	1:A:201:GLU:HG3	2.10	0.52
1:B:140:ILE:HB	1:B:177:VAL:HG22	1.94	0.50
1:A:215:ARG:N	1:A:215:ARG:HD3	2.27	0.50
1:A:262:GLU:HB3	1:A:263:ARG:HG2	1.94	0.49
1:B:153:GLU:HG2	2:B:401:SVR:C43	2.42	0.49
1:A:215:ARG:HD3	1:A:215:ARG:H	1.77	0.48
1:A:262:GLU:O	1:A:281:LEU:HD21	2.14	0.48
1:B:158:ARG:NH2	1:B:272:ASP:OD2	2.27	0.47
1:B:181:SER:HA	1:B:210:PHE:CD1	2.49	0.47
1:B:148:SER:O	1:B:152:LYS:HE2	2.15	0.46
1:A:215:ARG:NH2	1:B:247:ARG:CZ	2.78	0.46
1:B:143:SER:O	1:B:147:MET:HG2	2.16	0.46
1:A:278:ASP:HA	1:A:288:LEU:HB2	1.98	0.45
1:B:181:SER:O	1:B:184:LYS:HG2	2.16	0.45
1:A:279:ASP:HB2	1:A:282:GLY:O	2.16	0.45
1:A:135:LEU:HD23	1:A:172:HIS:CG	2.51	0.45
1:B:181:SER:HA	1:B:210:PHE:HD1	1.81	0.45
2:A:401:SVR:H9	2:A:401:SVR:O64	2.18	0.44
1:A:250:GLN:HG2	1:A:257:LYS:HG3	1.99	0.43
1:B:232:LEU:O	1:B:236:SER:OG	2.29	0.43
1:A:202:LEU:HD23	1:A:202:LEU:HA	1.87	0.43
1:A:215:ARG:NH2	1:B:247:ARG:NE	2.54	0.43
1:B:147:MET:HE3	2:B:401:SVR:C47	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:GLU:C	1:A:262:GLU:OE2	2.62	0.43
1:A:279:ASP:N	1:A:279:ASP:OD1	2.52	0.42
1:B:195:ASP:HB3	1:B:198:ILE:HG13	2.01	0.42
2:A:401:SVR:C72	1:B:283:ARG:HD3	2.50	0.41
1:A:281:LEU:HA	1:A:281:LEU:HD13	1.88	0.41
2:A:401:SVR:H56	2:A:401:SVR:C9	2.51	0.41
1:A:154:VAL:HG22	1:A:192:PRO:HB2	2.03	0.41
1:B:211:THR:HA	1:B:212:PRO:HD3	1.94	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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	165/175 (94%)	155 (94%)	9 (6%)	1 (1%)	21	39
1	B	159/175 (91%)	151 (95%)	8 (5%)	0	100	100
All	All	324/350 (93%)	306 (94%)	17 (5%)	1 (0%)	36	56

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	252	GLU

5.3.2 Protein sidechains [i](#)

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	154/162 (95%)	150 (97%)	4 (3%)	40	66
1	B	148/162 (91%)	146 (99%)	2 (1%)	59	80
All	All	302/324 (93%)	296 (98%)	6 (2%)	48	73

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	193	ILE
1	A	211	THR
1	A	262	GLU
1	A	281	LEU
1	B	231	LYS
1	B	287	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	250	GLN
1	B	197	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 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	$\# Z > 2$
2	SVR	B	401	3	89,93,93	0.71	1 (1%)	129,145,145	1.48	15 (11%)
2	SVR	A	401	3	89,93,93	0.79	2 (2%)	129,145,145	2.15	31 (24%)

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	SVR	B	401	3	-	15/76/76/76	0/8/8/8
2	SVR	A	401	3	-	21/76/76/76	0/8/8/8

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	401	SVR	C76-S83	2.19	1.81	1.77
2	A	401	SVR	C3-C6	2.18	1.46	1.42
2	B	401	SVR	C3-C6	2.08	1.45	1.42

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	401	SVR	C46-N44-C43	9.48	146.01	126.61
2	B	401	SVR	C3-N1-C2	7.53	150.98	128.64
2	A	401	SVR	C3-N1-C2	7.52	150.94	128.64
2	A	401	SVR	C5-C2-N1	6.58	130.39	115.92
2	A	401	SVR	N44-C43-N41	6.45	123.76	112.49
2	A	401	SVR	C6-C3-N1	5.48	128.74	120.58
2	B	401	SVR	C5-C2-N1	-5.40	104.04	115.92
2	B	401	SVR	C6-C3-N1	4.91	127.89	120.58
2	A	401	SVR	O4-C2-C5	-4.44	113.01	120.94
2	A	401	SVR	C37-C33-C26	-4.37	105.98	120.44
2	B	401	SVR	C7-C3-N1	-4.05	112.11	123.29
2	A	401	SVR	C38-C33-C26	4.03	133.67	120.62
2	A	401	SVR	C7-C3-N1	-3.89	112.53	123.29
2	A	401	SVR	C39-N41-C43	3.67	134.12	126.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	401	SVR	C20-C13-N19	3.65	124.49	118.81
2	B	401	SVR	C20-C13-N19	-3.47	113.40	118.81
2	A	401	SVR	O45-C43-N41	-3.46	117.78	123.62
2	A	401	SVR	C33-C26-N19	-3.42	108.40	115.92
2	A	401	SVR	C9-C5-C2	3.27	131.22	120.62
2	A	401	SVR	O4-C2-N1	-3.16	116.49	123.71
2	A	401	SVR	O45-C43-N44	-3.08	118.42	123.62
2	B	401	SVR	O4-C2-C5	3.05	126.38	120.94
2	A	401	SVR	C49-C47-C46	2.90	124.36	120.44
2	A	401	SVR	C67-C65-N63	-2.82	115.51	123.29
2	A	401	SVR	C8-C5-C2	-2.79	111.19	120.44
2	A	401	SVR	C8-C13-N19	-2.76	114.61	121.90
2	A	401	SVR	C66-C65-N63	2.73	124.64	120.58
2	A	401	SVR	O32-C26-C33	2.69	125.72	120.94
2	A	401	SVR	C48-C46-N44	2.68	129.41	120.40
2	B	401	SVR	C67-C65-N63	-2.66	115.93	123.29
2	A	401	SVR	C12-C7-C3	2.66	123.93	120.36
2	B	401	SVR	C12-C7-C3	2.58	123.83	120.36
2	B	401	SVR	O4-C2-N1	2.56	129.55	123.71
2	A	401	SVR	C48-C46-C47	-2.35	116.86	119.65
2	B	401	SVR	C72-C76-C74	-2.23	118.56	120.97
2	A	401	SVR	C15-C10-C6	2.22	121.57	118.01
2	A	401	SVR	C40-C38-C33	-2.22	117.72	120.34
2	B	401	SVR	C66-C65-N63	2.21	123.87	120.58
2	B	401	SVR	C39-N41-C43	2.20	131.11	126.61
2	B	401	SVR	C15-C10-C6	2.19	121.52	118.01
2	A	401	SVR	C12-C15-C10	-2.17	118.82	121.00
2	B	401	SVR	C22-C18-C11	2.16	122.70	120.31
2	A	401	SVR	C22-C18-C11	2.12	122.66	120.31
2	B	401	SVR	C14-C9-C5	2.09	123.21	120.78
2	A	401	SVR	C7-C3-C6	-2.09	118.08	120.27
2	A	401	SVR	C47-C46-N44	-2.01	113.61	120.18

There are no chirality outliers.

All (36) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	401	SVR	C33-C26-N19-C13
2	A	401	SVR	O4-C2-N1-C3
2	B	401	SVR	O32-C26-N19-C13
2	A	401	SVR	C5-C2-N1-C3
2	B	401	SVR	N41-C43-N44-C46

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Mol	Chain	Res	Type	Atoms
2	B	401	SVR	C47-C46-N44-C43
2	B	401	SVR	O45-C43-N44-C46
2	B	401	SVR	C48-C46-N44-C43
2	A	401	SVR	O45-C43-N44-C46
2	A	401	SVR	N41-C43-N44-C46
2	A	401	SVR	O45-C43-N41-C39
2	B	401	SVR	N19-C26-C33-C38
2	A	401	SVR	N44-C43-N41-C39
2	B	401	SVR	O32-C26-C33-C38
2	B	401	SVR	N19-C26-C33-C37
2	B	401	SVR	O32-C26-C33-C37
2	B	401	SVR	C7-C3-N1-C2
2	A	401	SVR	C6-C11-S17-O24
2	A	401	SVR	C7-C3-N1-C2
2	A	401	SVR	C8-C13-N19-C26
2	B	401	SVR	C56-C55-N53-C51
2	A	401	SVR	C18-C11-S17-O24
2	A	401	SVR	C37-C39-N41-C43
2	B	401	SVR	C57-C55-N53-C51
2	A	401	SVR	C42-C39-N41-C43
2	A	401	SVR	C20-C13-N19-C26
2	A	401	SVR	C56-C55-N53-C51
2	A	401	SVR	C18-C11-S17-O25
2	A	401	SVR	C6-C11-S17-O25
2	A	401	SVR	C67-C65-N63-C61
2	B	401	SVR	C20-C13-N19-C26
2	A	401	SVR	C57-C55-N53-C51
2	B	401	SVR	C8-C13-N19-C26
2	A	401	SVR	O32-C26-C33-C38
2	A	401	SVR	C6-C11-S17-O23
2	A	401	SVR	N1-C2-C5-C9

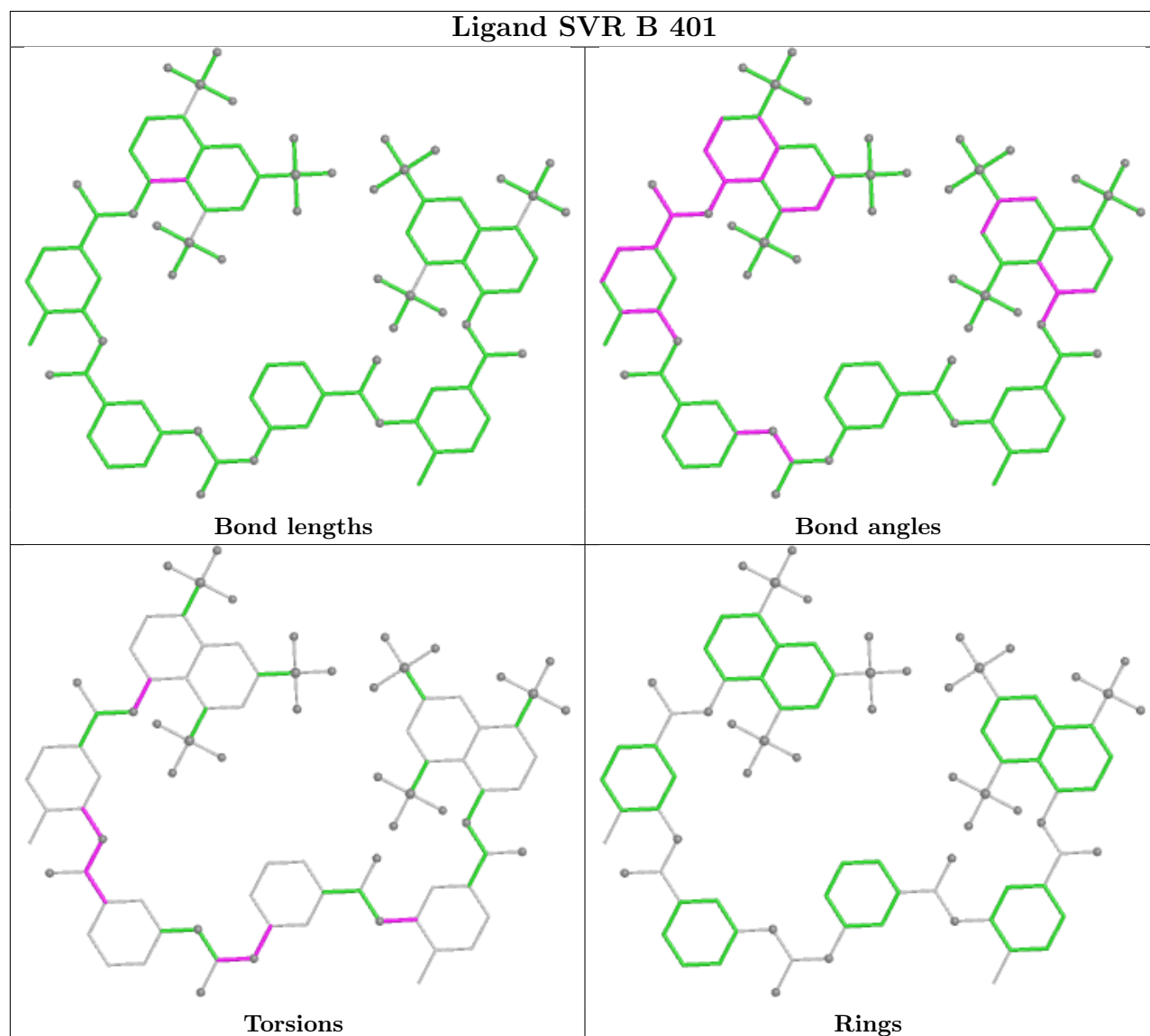
There are no ring outliers.

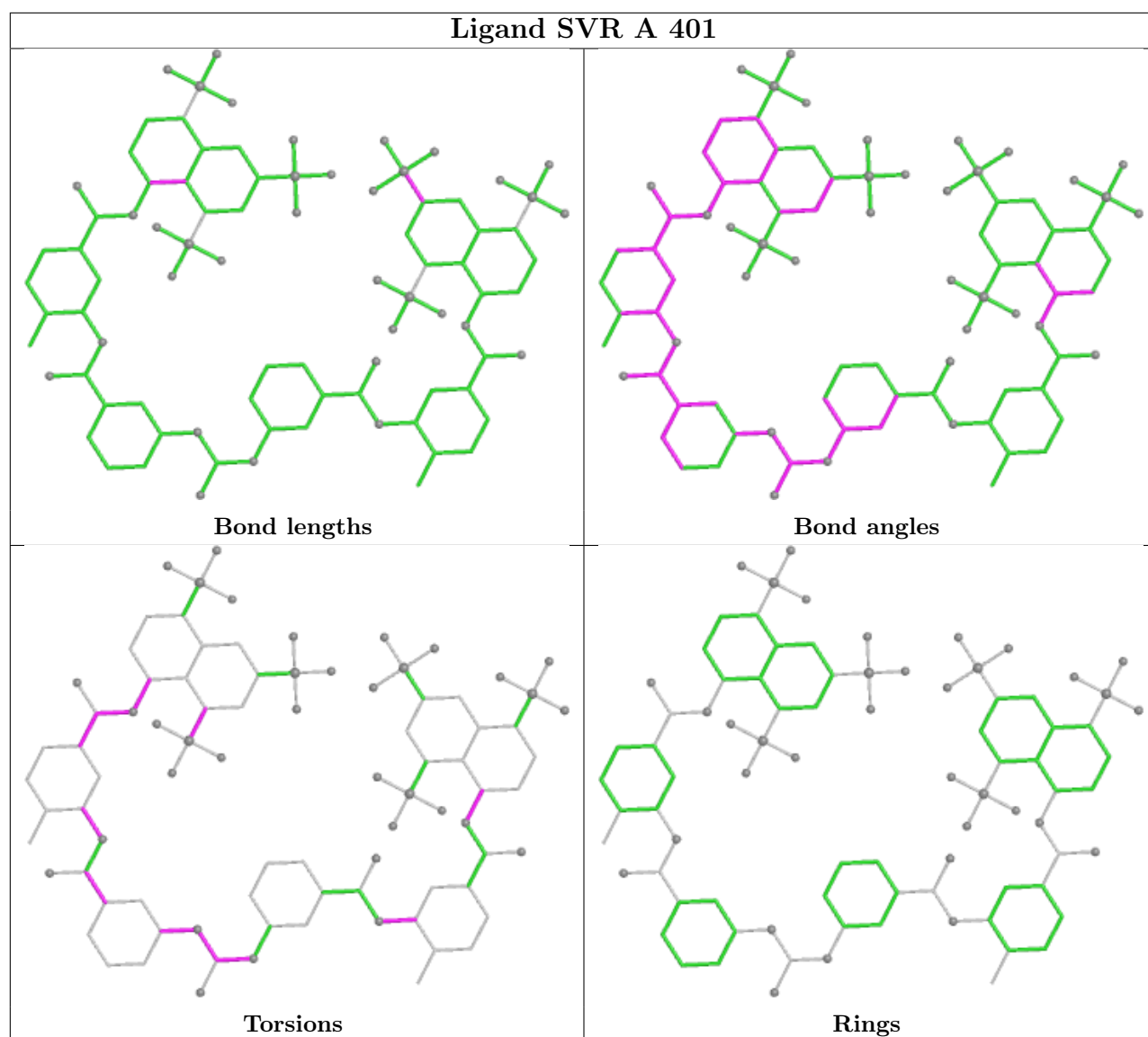
2 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	401	SVR	3	0
2	A	401	SVR	5	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	167/175 (95%)	0.82	19 (11%) 10 7	48, 67, 101, 126	0
1	B	161/175 (92%)	0.84	18 (11%) 10 8	56, 73, 99, 126	0
All	All	328/350 (93%)	0.83	37 (11%) 10 8	48, 70, 100, 126	0

All (37) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	298	PRO	5.5
1	B	189	PRO	5.1
1	A	262	GLU	4.2
1	A	190	ASP	4.0
1	A	215	ARG	3.7
1	A	218	GLY	3.4
1	A	132	HIS	3.3
1	A	189	PRO	3.3
1	B	294	LYS	3.3
1	B	191	VAL	3.3
1	A	281	LEU	3.2
1	A	219	LYS	3.2
1	A	191	VAL	3.1
1	A	187	PRO	3.1
1	B	190	ASP	3.0
1	B	193	ILE	2.9
1	B	217	GLY	2.9
1	B	219	LYS	2.9
1	A	217	GLY	2.8
1	A	193	ILE	2.7
1	B	134	ASP	2.6
1	A	188	ARG	2.4
1	A	220	ARG	2.4
1	B	185	GLU	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	295	LYS	2.4
1	B	187	PRO	2.3
1	B	247	ARG	2.3
1	B	188	ARG	2.2
1	B	253	ARG	2.2
1	B	293	ARG	2.2
1	B	254	GLN	2.2
1	A	261	GLU	2.1
1	A	186	GLN	2.1
1	B	223	CYS	2.1
1	B	218	GLY	2.0
1	A	216	VAL	2.0
1	B	216	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](#)

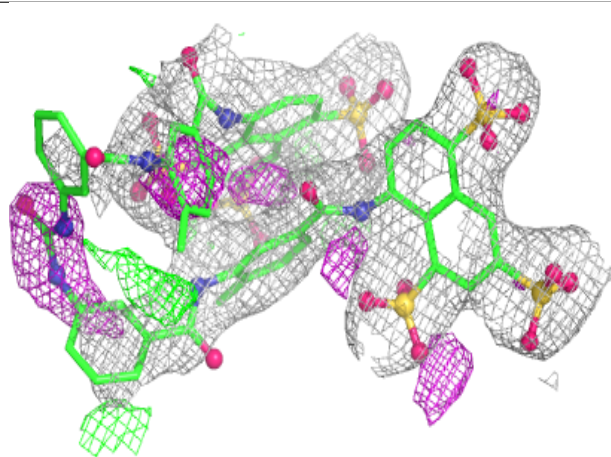
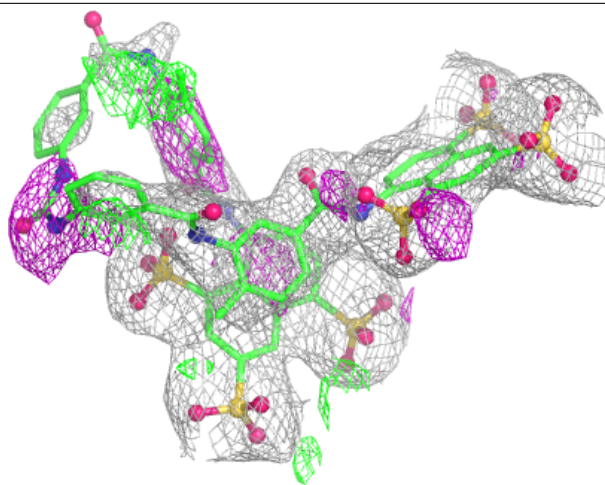
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

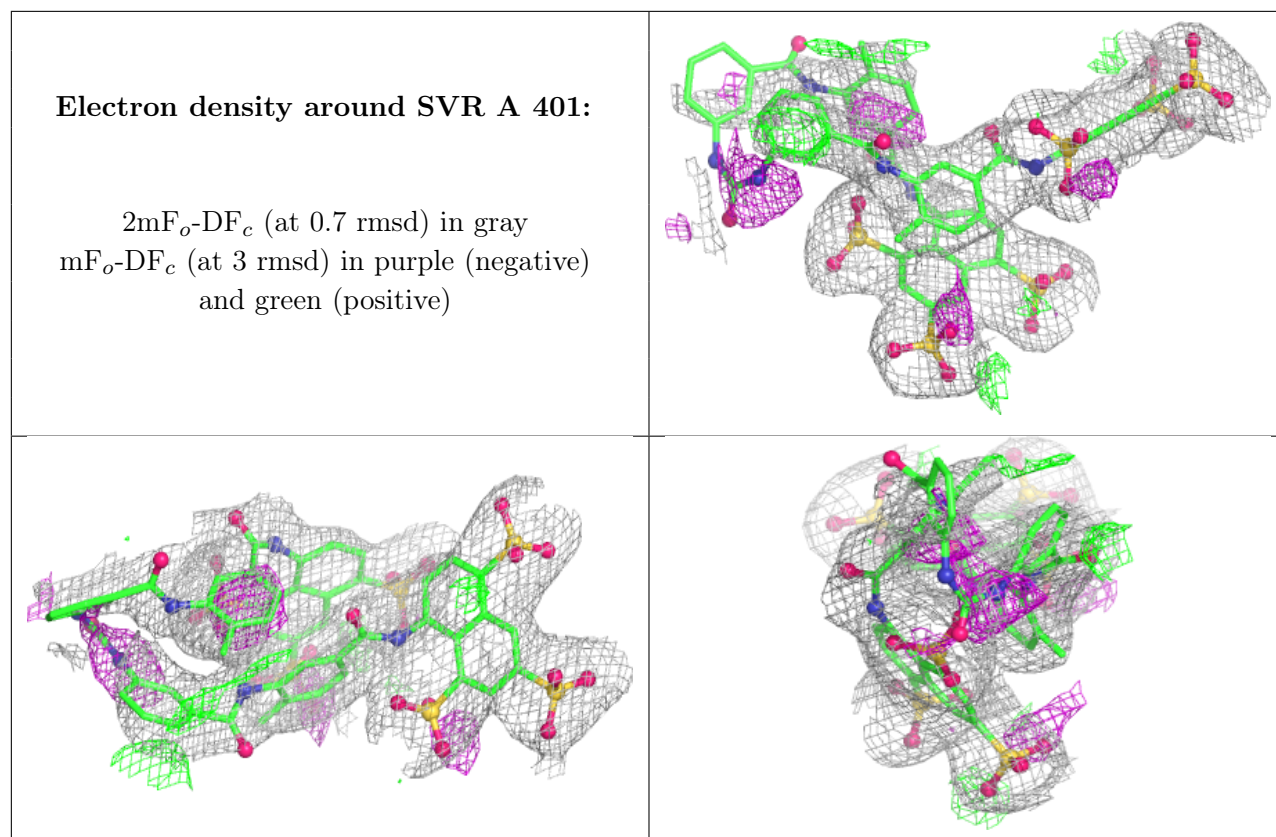
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	SVR	B	401	86/86	0.85	0.16	71,106,130,135	0
2	SVR	A	401	86/86	0.89	0.15	69,95,126,129	0
3	MG	A	402	1/1	0.93	0.12	57,57,57,57	0
3	MG	B	402	1/1	0.94	0.12	55,55,55,55	0

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 SVR B 401:

$2mF_o-DF_c$ (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.