Full wwPDB X-ray Structure Validation Report ⓘ

Mar 3, 2025 – 03:53 PM JST

PDB ID	:	9IJU
Title	:	Sertraline enhances the deubiquitinase activity of USP7 by binding to its switching loop region
Authors	:	Shi, L.; Xu, Z.; Chen, X.; Xiong, B.; Zhang, N.
Deposited on	:	2024-06-25
Resolution	:	2.46 Å(reported)

The following versions of software and data (see references ⓘ) were used in the production of this report:

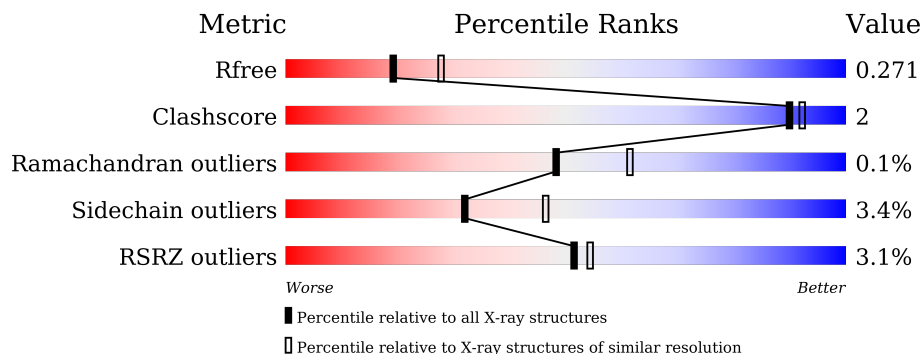|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41.2

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 2.46 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.
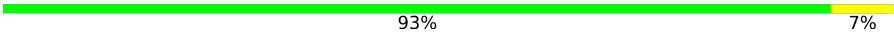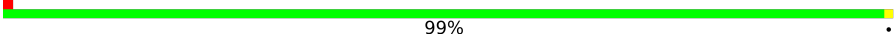
Metric	Percentile Ranks	Value
Rfree		0.271
Clashscore		2
Ramachandran outliers		0.1%
Sidechain outliers		3.4%
RSRZ outliers		3.1%

Worse ⟷ *Better*

■ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	164625	1096 (2.46-2.46)
Clashscore	180529	1178 (2.46-2.46)
Ramachandran outliers	177936	1170 (2.46-2.46)
Sidechain outliers	177891	1170 (2.46-2.46)
RSRZ outliers	164620	1096 (2.46-2.46)

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 <=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	353	3% — 86% / 7% / 8%
1	C	353	3% — 85% / 7% · 8%
1	E	353	2% — 86% / 5% · 8%
1	G	353	6% — 80% / 5% / 16%
2	B	75	% — 92% / 7% ·
2	D	75	99% ·

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Mol	Chain	Length	Quality of chain
2	F	75	93% 7%
2	H	75	% 99% .

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 11957 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 Ubiquitin carboxyl-terminal hydrolase 7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	326	Total	C	N	O	S	0	0	0
			2511	1596	414	485	16			
1	C	325	Total	C	N	O	S	0	0	0
			2454	1553	410	476	15			
1	E	323	Total	C	N	O	S	0	0	0
			2427	1534	403	474	16			
1	G	298	Total	C	N	O	S	0	0	0
			2118	1325	359	421	13			

- Molecule 2 is a protein called Ubiquitin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	75	Total	C	N	O	S	0	0	0
			587	370	100	116	1			
2	D	75	Total	C	N	O	S	0	0	0
			584	368	99	116	1			
2	F	75	Total	C	N	O	S	0	0	0
			590	371	102	116	1			
2	H	75	Total	C	N	O	S	0	0	0
			581	365	100	115	1			

- Molecule 3 is (1S,4S)-4-(3,4-dichlorophenyl)-N-methyl-1,2,3,4-tetrahydronaphthalen-1-amine (three-letter code: SRE) (formula: $C_{17}H_{17}Cl_2N$) (labeled as "Ligand of Interest" by depositor).

SRE
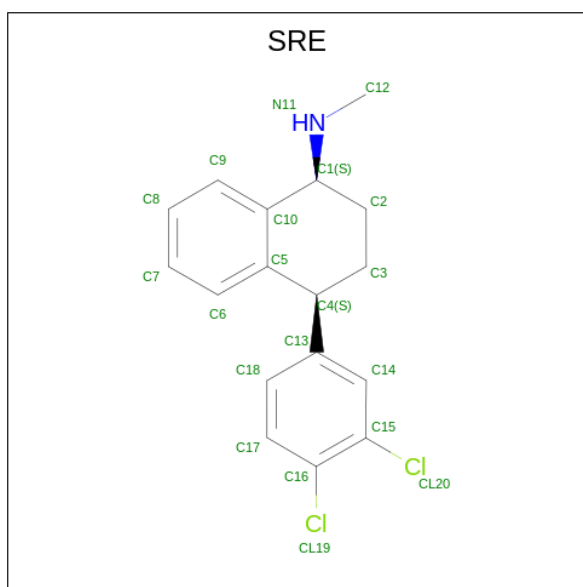
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	C	1	Total 20	C 17	Cl 2	N 1	0	0
3	G	1	Total 20	C 17	Cl 2	N 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	12	Total 12	O 12	0	0
4	B	9	Total 9	O 9	0	0
4	C	12	Total 12	O 12	0	0
4	D	2	Total 2	O 2	0	0
4	E	10	Total 10	O 10	0	0
4	F	5	Total 5	O 5	0	0
4	G	8	Total 8	O 8	0	0
4	H	7	Total 7	O 7	0	0

3 Residue-property plots ⓘ

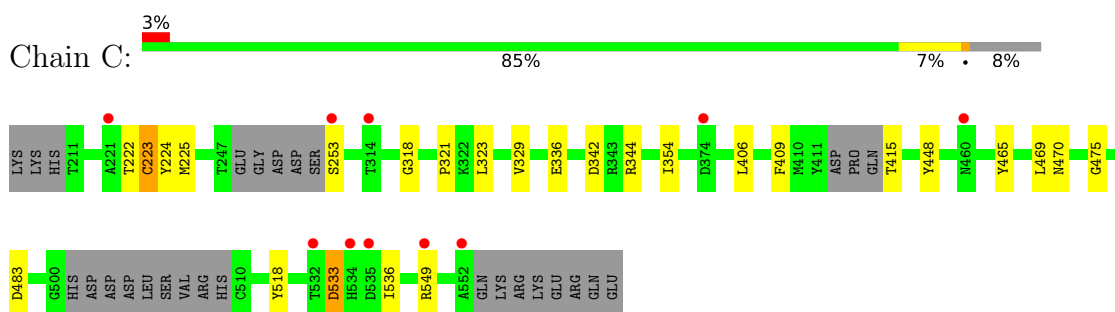These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

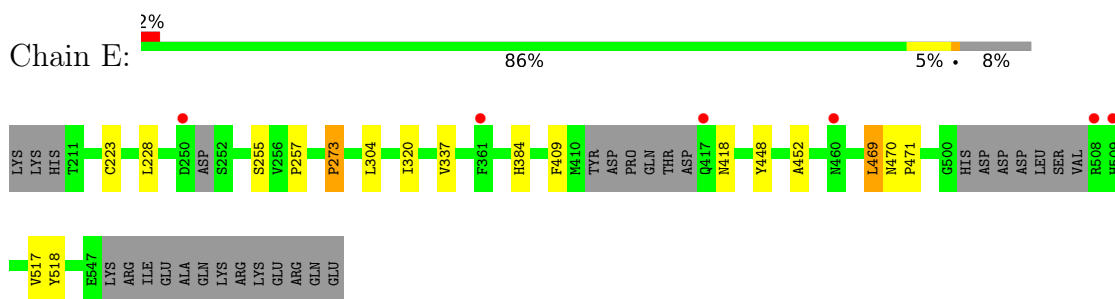• Molecule 1: Ubiquitin carboxyl-terminal hydrolase 7
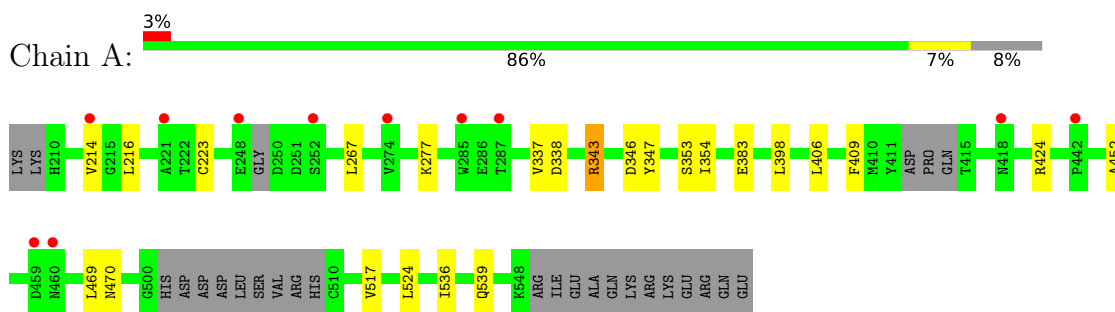
Chain A:

• Molecule 1: Ubiquitin carboxyl-terminal hydrolase 7

Chain C:

• Molecule 1: Ubiquitin carboxyl-terminal hydrolase 7

Chain E:

• Molecule 1: Ubiquitin carboxyl-terminal hydrolase 7

Chain G:

LYS LYS HIS THR GLY TYR V214 N218 Q219 G220 A221 E248 GLY ASP ASP SER S253 Q268 HIS SER D271 W285 D289 V302 C315 S341 D342 F409 M410 Y411 D412 P413 GLN THR ASP N418 I449 A452 V453 L454 D459 N460 G475 K476 W477 C478

K479 F480 R487 C488 T489 A493 Y498 GLY GLY HIS ASP ASP LEU SER VAL R508 H509 C510 M515 L516 V517 A530 VAL THR ASP HIS ASP ILE PRO GLN GLN LEU VAL GLU ARG LEU GLN GLU GLU LYS ARG ILE GLU ALA GLN LYS ARG LYS GLU ARG GLN GLU

- Molecule 2: Ubiquitin

%

Chain B:

92%   7% •

M1 V26 A46 L56 S57 Q62 L73 R74 G75

- Molecule 2: Ubiquitin

Chain D:

99%   •

M1 S57 G75

- Molecule 2: Ubiquitin

Chain F:

93%   7%

M1 K6 T12 K33 I36 L73 R74 G75

- Molecule 2: Ubiquitin

%

Chain H:

99%   •

M1 T9 L71 G75
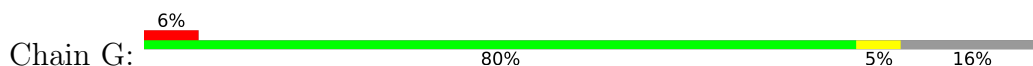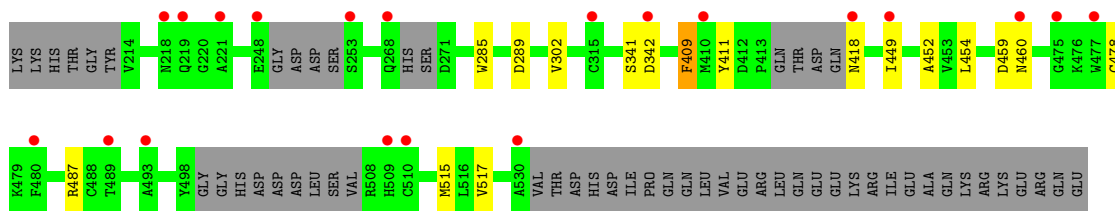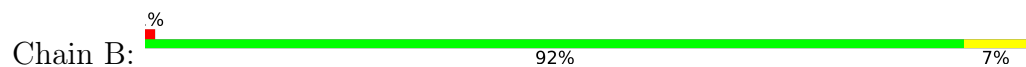
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	100.64Å 84.86Å 106.78Å 90.00° 90.21° 90.00°	Depositor
Resolution (Å)	20.58 – 2.46 20.58 – 2.46	Depositor EDS
% Data completeness (in resolution range)	99.7 (20.58-2.46) 99.6 (20.58-2.46)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.40 (at 2.47Å)	Xtriage
Refinement program	PHENIX (1.16_3549: ???)	Depositor
R, R_{free}	0.218 , 0.270 0.232 , 0.271	Depositor DCC
R_{free} test set	3263 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å²)	58.2	Xtriage
Anisotropy	0.008	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.34 , 45.9	EDS
L-test for twinning[2]	$< \lvert L \rvert > = 0.50, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.013 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	11957	wwPDB-VP
Average B, all atoms (Å²)	62.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.69% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< \lvert L \rvert >$, $< L^2 >$ 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: SRE

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	0.49	0/2564	0.68	0/3476
1	C	0.49	0/2504	0.67	0/3391
1	E	0.49	0/2477	0.68	0/3360
1	G	0.49	0/2157	0.64	0/2921
2	B	0.49	0/593	0.66	0/800
2	D	0.48	0/590	0.68	0/797
2	F	0.50	0/596	0.69	0/804
2	H	0.50	0/587	0.66	0/793
All	All	0.49	0/12068	0.67	0/16342

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	2511	0	2310	8	0
1	C	2454	0	2249	10	0
1	E	2427	0	2194	7	0
1	G	2118	0	1855	9	0
2	B	587	0	604	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	584	0	592	0	0
2	F	590	0	606	2	0
2	H	581	0	588	1	0
3	C	20	0	17	3	0
3	G	20	0	17	3	0
4	A	12	0	0	0	0
4	B	9	0	0	0	0
4	C	12	0	0	0	0
4	D	2	0	0	0	0
4	E	10	0	0	1	0
4	F	5	0	0	0	0
4	G	8	0	0	0	0
4	H	7	0	0	0	0
All	All	11957	0	11032	38	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 2.

All (38) 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:G:452:ALA:HB3	1:G:517:VAL:HB	1.75	0.69
1:C:533:ASP:HA	1:C:536:ILE:HD12	1.79	0.65
1:A:354:ILE:HD11	1:A:406:LEU:HB3	1.83	0.60
1:A:452:ALA:HB3	1:A:517:VAL:HB	1.85	0.57
2:F:6:LYS:HG2	2:F:12:THR:HG22	1.86	0.57
1:G:285:TRP:CZ2	3:G:601:SRE:H14	2.40	0.57
1:G:302:VAL:HG11	3:G:601:SRE:H18	1.85	0.56
1:C:342:ASP:HB3	1:C:344:ARG:HH22	1.72	0.55
1:A:216:LEU:HG	1:A:267:LEU:HD21	1.91	0.53
1:G:411:TYR:HA	1:G:418:ASN:HA	1.92	0.52
1:G:409:PHE:HB2	2:H:71:LEU:HD12	1.92	0.52
1:C:223:CYS:HB2	1:C:465:TYR:HB2	1.91	0.51
1:C:448:TYR:HB3	1:C:518:TYR:HB3	1.93	0.51
1:C:224:TYR:CE2	3:C:601:SRE:CL20	3.02	0.50
1:E:418:ASN:N	4:E:601:HOH:O	2.30	0.49
1:E:448:TYR:HB3	1:E:518:TYR:HB3	1.96	0.48
1:E:337:VAL:HG21	1:E:384:HIS:ND1	2.29	0.47
1:A:343:ARG:HD3	1:A:343:ARG:HA	1.73	0.46
1:C:222:THR:HB	1:C:225:MET:HE2	1.98	0.45
3:C:601:SRE:H12A	3:C:601:SRE:H3A	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:285:TRP:HB3	1:G:289:ASP:HB2	1.99	0.45
1:C:224:TYR:HE2	3:C:601:SRE:CL20	2.36	0.44
1:A:346:ASP:O	2:B:46:ALA:HA	2.17	0.44
1:C:470:ASN:HD22	1:C:475:GLY:H	1.66	0.44
2:F:73:LEU:HD23	2:F:73:LEU:HA	1.80	0.44
1:A:214:VAL:HG23	1:A:267:LEU:HD23	1.99	0.44
1:A:347:TYR:OH	1:A:398:LEU:HD23	2.18	0.43
1:A:343:ARG:HH22	2:B:62:GLN:HG3	1.84	0.43
1:G:302:VAL:HG21	3:G:601:SRE:H17	2.02	0.41
1:G:454:LEU:HB2	1:G:515:MET:HB3	2.03	0.41
1:E:452:ALA:HB3	1:E:517:VAL:HB	2.02	0.41
1:E:469:LEU:O	1:E:471:PRO:HD3	2.21	0.41
1:G:478:CYS:HA	1:G:487:ARG:HA	2.03	0.41
1:E:255:SER:HB2	1:E:257:PRO:HD2	2.01	0.41
1:C:354:ILE:HD11	1:C:406:LEU:HB3	2.03	0.41
2:B:26:VAL:HG21	2:B:56:LEU:HD21	2.03	0.40
1:C:318:GLY:HA2	1:C:321:PRO:HG2	2.03	0.40
1:E:304:LEU:HD22	1:E:320:ILE:HD13	2.02	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	318/353 (90%)	302 (95%)	16 (5%)	0	100	100
1	C	317/353 (90%)	305 (96%)	11 (4%)	1 (0%)	37	45
1	E	315/353 (89%)	302 (96%)	12 (4%)	1 (0%)	37	45
1	G	288/353 (82%)	268 (93%)	20 (7%)	0	100	100
2	B	73/75 (97%)	70 (96%)	3 (4%)	0	100	100
2	D	73/75 (97%)	69 (94%)	4 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	F	73/75 (97%)	70 (96%)	3 (4%)	0	100	100
2	H	73/75 (97%)	69 (94%)	4 (6%)	0	100	100
All	All	1530/1712 (89%)	1455 (95%)	73 (5%)	2 (0%)	48	61

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	549	ARG
1	E	273	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	258/320 (81%)	244 (95%)	14 (5%)	18	26
1	C	250/320 (78%)	240 (96%)	10 (4%)	27	39
1	E	246/320 (77%)	240 (98%)	6 (2%)	44	60
1	G	206/320 (64%)	200 (97%)	6 (3%)	37	52
2	B	66/68 (97%)	63 (96%)	3 (4%)	23	34
2	D	64/68 (94%)	63 (98%)	1 (2%)	58	72
2	F	66/68 (97%)	64 (97%)	2 (3%)	36	51
2	H	64/68 (94%)	64 (100%)	0	100	100
All	All	1220/1552 (79%)	1178 (97%)	42 (3%)	32	46

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	223	CYS
1	A	277	LYS
1	A	337	VAL
1	A	338	ASP
1	A	343	ARG

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Mol	Chain	Res	Type
1	A	353	SER
1	A	383	GLU
1	A	409	PHE
1	A	424	ARG
1	A	469	LEU
1	A	470	ASN
1	A	524	LEU
1	A	536	ILE
1	A	539	GLN
2	B	57	SER
2	B	62	GLN
2	B	73	LEU
1	C	223	CYS
1	C	253	SER
1	C	323	LEU
1	C	329	VAL
1	C	336	GLU
1	C	409	PHE
1	C	415	THR
1	C	469	LEU
1	C	483	ASP
1	C	533	ASP
2	D	57	SER
1	E	223	CYS
1	E	228	LEU
1	E	273	PRO
1	E	409	PHE
1	E	469	LEU
1	E	470	ASN
2	F	33	LYS
2	F	36	ILE
1	G	341	SER
1	G	342	ASP
1	G	409	PHE
1	G	449	ILE
1	G	459	ASP
1	G	460	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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	#$|Z| > 2$
3	SRE	G	601	-	22,22,22	0.27	0	31,31,31	0.80	0
3	SRE	C	601	-	22,22,22	0.33	0	31,31,31	0.75	0

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	SRE	G	601	-	-	1/5/19/19	0/3/3/3
3	SRE	C	601	-	-	0/5/19/19	0/3/3/3

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

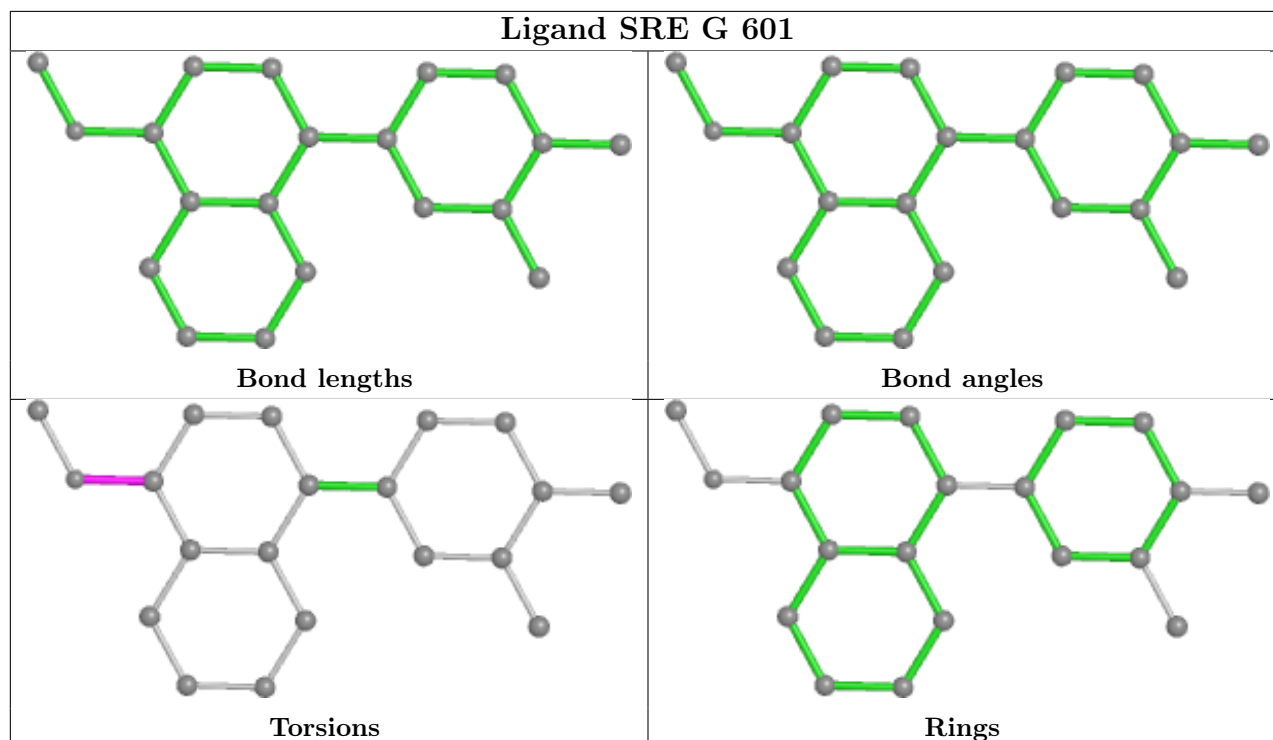All (1) torsion outliers are listed below:

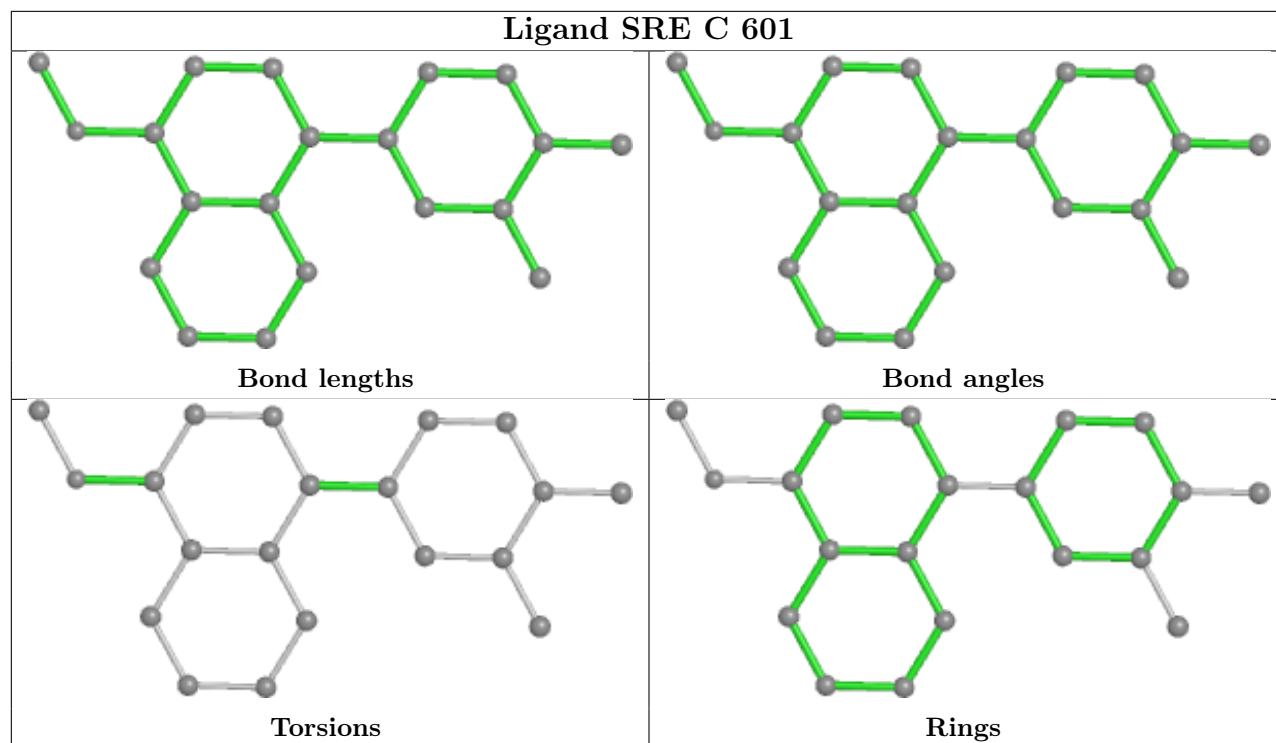| Mol	Chain	Res	Type	Atoms
3	G	601	SRE	C2-C1-N11-C12

There are no ring outliers.

2 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	G	601	SRE	3	0
3	C	601	SRE	3	0

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

Ligand SRE G 601

Bond lengths   Bond angles

Torsions   Rings

Ligand SRE C 601

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	326/353 (92%)	0.23	11 (3%)	48	50	30, 58, 81, 99	0
1	C	325/353 (92%)	0.24	10 (3%)	51	54	44, 62, 81, 92	0
1	E	323/353 (91%)	0.20	6 (1%)	66	68	47, 63, 87, 100	0
1	G	298/353 (84%)	0.66	20 (6%)	25	26	30, 72, 90, 106	0
2	B	75/75 (100%)	-0.18	1 (1%)	74	76	43, 51, 62, 70	0
2	D	75/75 (100%)	-0.01	0	100	100	45, 57, 68, 72	0
2	F	75/75 (100%)	-0.07	0	100	100	47, 55, 65, 69	0
2	H	75/75 (100%)	-0.09	1 (1%)	74	76	48, 56, 67, 70	0
All	All	1572/1712 (91%)	0.25	49 (3%)	51	54	30, 62, 85, 106	0

All (49) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	460	ASN	4.3
1	C	552	ALA	4.1
1	G	342	ASP	3.7
1	A	418	ASN	3.2
1	G	315	CYS	3.2
1	G	248	GLU	3.1
1	E	250	ASP	3.0
1	C	460	ASN	3.0
1	E	509	HIS	2.9
1	C	535	ASP	2.7
1	G	418	ASN	2.7
1	G	489	THR	2.7
1	A	274	VAL	2.7
1	C	549	ARG	2.6
1	E	460	ASN	2.6
1	G	221	ALA	2.6

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Mol	Chain	Res	Type	RSRZ
1	G	218	ASN	2.6
1	G	219	GLN	2.6
1	E	508	ARG	2.6
1	A	442	PRO	2.5
1	A	214	VAL	2.5
1	G	530	ALA	2.5
1	A	459	ASP	2.5
1	E	417	GLN	2.4
1	G	268	GLN	2.4
1	G	475	GLY	2.4
1	A	287	THR	2.4
1	C	374	ASP	2.3
1	G	509	HIS	2.3
1	G	449	ILE	2.3
1	A	252	SER	2.3
1	C	253	SER	2.2
1	A	285	TRP	2.2
1	A	221	ALA	2.2
2	B	75	GLY	2.2
1	E	361	PHE	2.2
1	G	480	PHE	2.2
1	C	221	ALA	2.1
1	G	253	SER	2.1
1	A	248	GLU	2.1
1	C	534	HIS	2.1
1	G	477	TRP	2.1
1	G	510	CYS	2.1
1	G	493	ALA	2.1
2	H	9	THR	2.1
1	C	532	THR	2.0
1	G	410	MET	2.0
1	C	314	THR	2.0
1	A	460	ASN	2.0

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

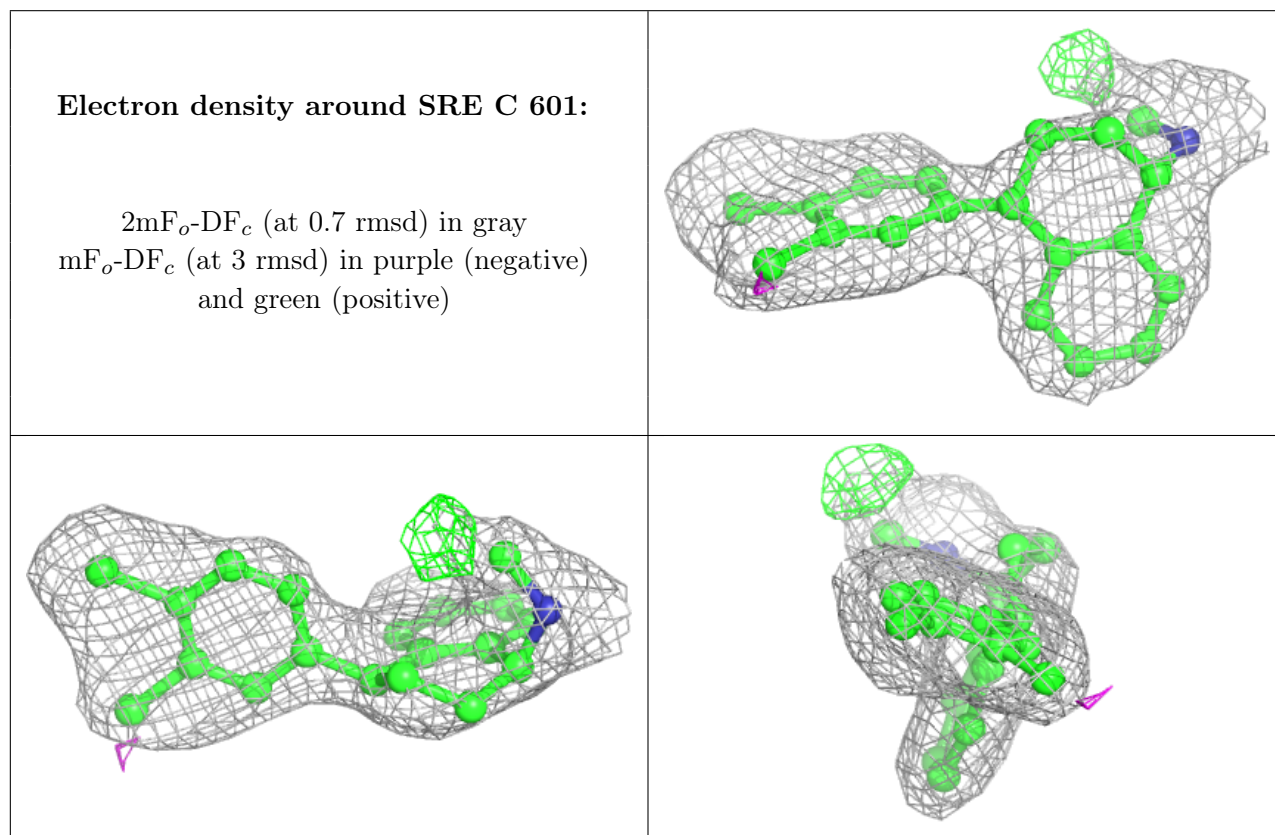There are no non-standard protein/DNA/RNA residues in this entry.

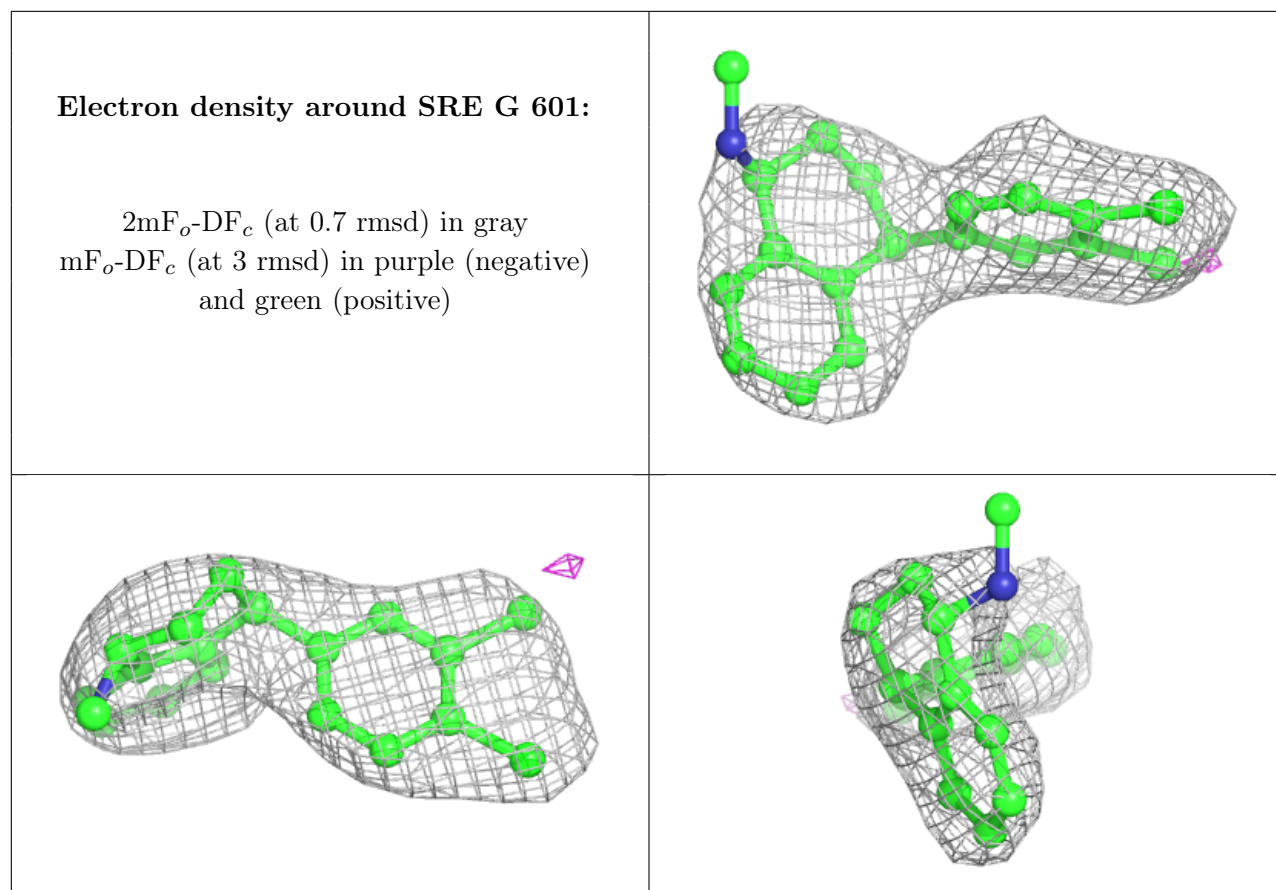## 6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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	SRE	C	601	20/20	0.87	0.12	59,64,70,71	0
3	SRE	G	601	20/20	0.87	0.12	59,71,85,90	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 SRE C 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 SRE G 601:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.