wwPDB X-ray Structure Validation Summary Report (i)

Sep 1, 2025 – 02:00 pm BST

PDB ID	:	9H66 / pdb_00009h66
Title	:	Steroidal Selective Modulators of FXR with Therapeutic Potential
Authors	:	Kydd-Sinclair, D.; Watson, K.A.
Deposited on	:	2024-10-23
Resolution	:	2.60 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 (i) 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 (i)) were used in the production of this report:

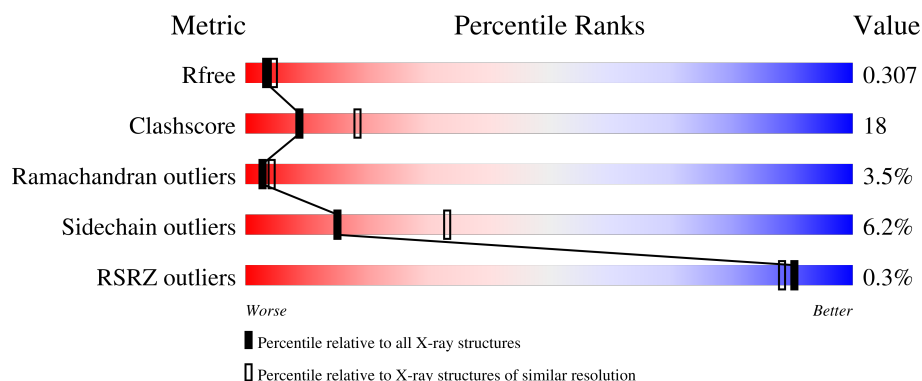|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.45.1

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 2.60 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.
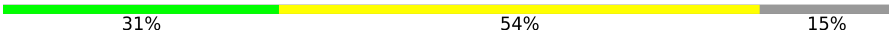
Metric	Percentile Ranks	Value
Rfree		0.307
Clashscore		18
Ramachandran outliers		3.5%
Sidechain outliers		6.2%
RSRZ outliers		0.3%

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	3775 (2.60-2.60)
Clashscore	180529	4181 (2.60-2.60)
Ramachandran outliers	177936	4129 (2.60-2.60)
Sidechain outliers	177891	4129 (2.60-2.60)
RSRZ outliers	164620	3775 (2.60-2.60)

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 <=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	233	55% 36% 7% ·
1	B	233	61% 33% · ·
1	C	233	62% 32% · ·
1	D	233	% 54% 41% · ·
2	E	13	77% 15% 8%

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Mol	Chain	Length	Quality of chain
2	F	13	46% 38% 15%
2	G	13	69% 31%
2	H	13	54% 31% 15%
2	I	13	31% 54% 15%
2	J	13	69% 23% 8%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 8038 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 Bile acid receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	228	Total	C	N	O	S	0	2	0
			1826	1165	308	342	11			
1	B	229	Total	C	N	O	S	0	1	0
			1835	1171	312	341	11			
1	C	227	Total	C	N	O	S	0	0	0
			1777	1137	298	331	11			
1	D	229	Total	C	N	O	S	0	1	0
			1790	1149	304	326	11			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	240	GLY	-	expression tag	UNP Q96RI1
A	241	SER	-	expression tag	UNP Q96RI1
A	242	HIS	-	expression tag	UNP Q96RI1
A	243	MET	-	expression tag	UNP Q96RI1
A	277	ALA	GLU	engineered mutation	UNP Q96RI1
A	350	ALA	GLU	engineered mutation	UNP Q96RI1
B	240	GLY	-	expression tag	UNP Q96RI1
B	241	SER	-	expression tag	UNP Q96RI1
B	242	HIS	-	expression tag	UNP Q96RI1
B	243	MET	-	expression tag	UNP Q96RI1
B	277	ALA	GLU	engineered mutation	UNP Q96RI1
B	350	ALA	GLU	engineered mutation	UNP Q96RI1
C	240	GLY	-	expression tag	UNP Q96RI1
C	241	SER	-	expression tag	UNP Q96RI1
C	242	HIS	-	expression tag	UNP Q96RI1
C	243	MET	-	expression tag	UNP Q96RI1
C	277	ALA	GLU	engineered mutation	UNP Q96RI1
C	350	ALA	GLU	engineered mutation	UNP Q96RI1
D	240	GLY	-	expression tag	UNP Q96RI1
D	241	SER	-	expression tag	UNP Q96RI1
D	242	HIS	-	expression tag	UNP Q96RI1

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Chain	Residue	Modelled	Actual	Comment	Reference
D	243	MET	-	expression tag	UNP Q96RI1
D	277	ALA	GLU	engineered mutation	UNP Q96RI1
D	350	ALA	GLU	engineered mutation	UNP Q96RI1

- Molecule 2 is a protein called Nuclear receptor coactivator 2.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	E	12	Total 98	C 63	N 17	O 18	0	0	0
2	F	11	Total 90	C 59	N 16	O 15	0	0	0
2	G	13	Total 107	C 68	N 18	O 21	0	0	0
2	H	11	Total 94	C 61	N 16	O 17	0	0	0
2	I	11	Total 77	C 52	N 11	O 14	0	0	0
2	J	12	Total 91	C 59	N 16	O 16	0	0	0

- Molecule 3 is (4 {R})-4-[(3 {R},4 {R},5 {S},6 {R},7 {R},8 {S},9 {S},10 {R},13 {R},14 {R},17 {R})-6-ethyl-4-fluoranyl-10,13-dimethyl-3,7-bis(oxidanyl)-2,3,4,5,6,7,8,9,11,12,14,15,16,17-tetradecahydro-1 {H}-cyclopenta[a]phenanthren-17-yl]- {N}-[4-(trifluoromethyloxy)phenyl]sulfonyl-pentanamide (CCD ID: R3U) (formula: $C_{33}H_{47}F_4NO_6S$) (labeled as "Ligand of Interest" by depositor).
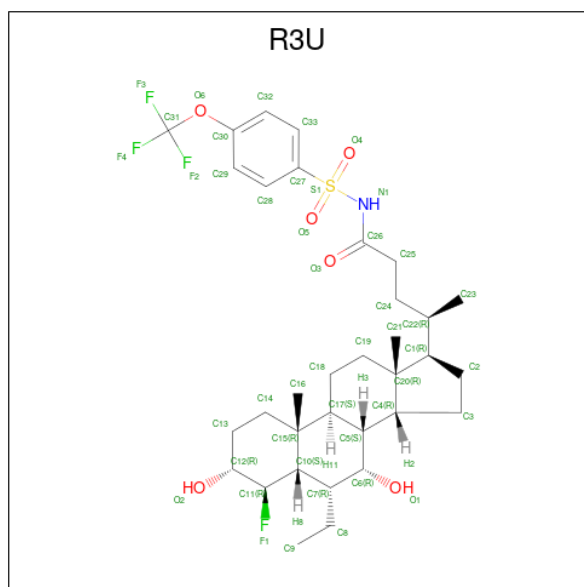
Mol	Chain	Residues	Atoms							ZeroOcc	AltConf
3	A	1	Total	C	F	N	O	S		0	0
			45	33	4	1	6	1			
3	B	1	Total	C	F	N	O	S		0	0
			45	33	4	1	6	1			
3	C	1	Total	C	F	N	O	S		0	0
			45	33	4	1	6	1			
3	D	1	Total	C	F	N	O	S		0	0
			45	33	4	1	6	1			

- Molecule 4 is water.

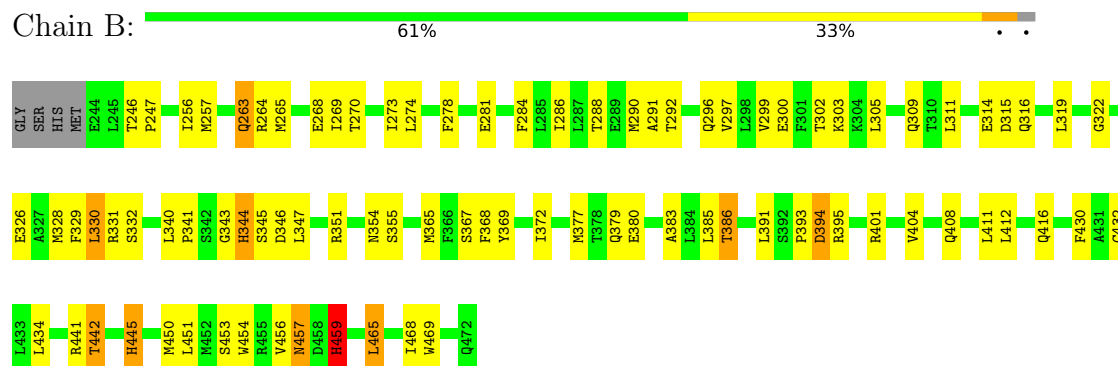| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	22	Total	O	0	0
			22	22		
4	B	22	Total	O	0	0
			22	22		
4	C	9	Total	O	0	0
			9	9		
4	D	11	Total	O	0	0
			11	11		
4	F	3	Total	O	0	0
			3	3		
4	G	4	Total	O	0	0
			4	4		
4	H	2	Total	O	0	0
			2	2		

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.
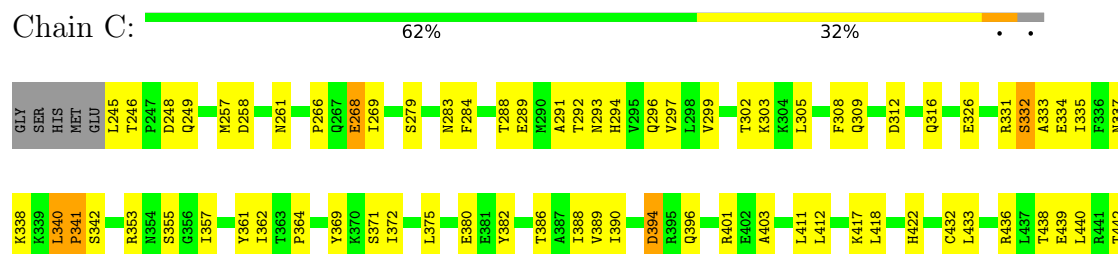
- Molecule 1: Bile acid receptor

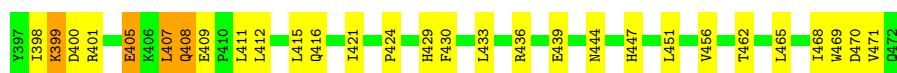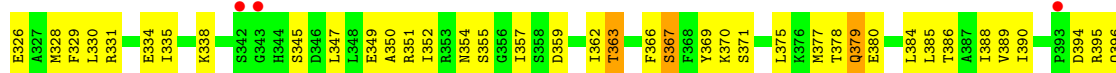Chain A: 55%   36%   7%

- Molecule 1: Bile acid receptor

Chain B: 61%   33%

- Molecule 1: Bile acid receptor

Chain C: 62%   32%

M450 W454 R455 V456 N457 D458 H459 T462 L465 I468 W469 D470 V471 GLN

• Molecule 1: Bile acid receptor

Chain D:

54%　　　41%

GLY SER HIS MET E244 L245 T246 P247 D248 Q249 M257 D258 S259 R264 M265 T270 I273 S279 A280 E281 E282 N283 I286 M290 A291 T292 N293 H294 V295 Q296 V297 L298 V299 E300 F301 T302 K303 K304 F308 Q309 T310 L311 D312 D315 Q316 I317 L320 K321 V325

E326 A327 M328 F329 L330 R331 E334 I335 K338 S342 G343 H344 S345 D346 L347 L348 E349 A350 R351 I352 R353 N354 S355 G356 I357 S358 D359 I362 T363 F366 S367 F368 Y369 K370 S371 L375 K376 M377 T378 Q379 E380 L384 L385 T386 A387 I388 V389 I390 P393 D394 R395 Q396

Y397 I398 K399 D400 R401 E405 K406 L407 Q408 E409 P410 L411 L412 L415 Q416 I421 P424 H429 F430 L433 R436 E439 N444 H447 L451 V456 T462 L465 I468 W469 D470 V471 Q472

• Molecule 2: Nuclear receptor coactivator 2

Chain E:

77%　　　15%　　8%

LYS E3001 Y3007 K3011 D3012

• Molecule 2: Nuclear receptor coactivator 2

Chain F:

46%　　　38%　　15%

LYS E4000 N4001 R4005 Y4006 L4007 K4010 ASP

• Molecule 2: Nuclear receptor coactivator 2

Chain G:

69%　　　31%

K3000 E3001 N3002 L3005 D3010 K3011 D3012

• Molecule 2: Nuclear receptor coactivator 2

Chain H:

54%　　　31%　　15%

LYS E3001 L3004 Y3007 L3008 K3011 ASP

• Molecule 2: Nuclear receptor coactivator 2

Chain I:

31%　　　54%　　15%

K3999 E4000 N4001 A4002 L4003 L4004 R4005 Y4006 L4007 L4008 D4009 LYS ASP

• Molecule 2: Nuclear receptor coactivator 2

Chain J:

69%   23%   8%

K3000 E3001 N3002 L3005 L3009 D3010 K3011 ASP

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	69.58Å 101.21Å 104.81Å 90.00° 90.11° 90.00°	Depositor
Resolution (Å)	57.92 – 2.60 57.92 – 2.60	Depositor EDS
% Data completeness (in resolution range)	99.9 (57.92-2.60) 99.5 (57.92-2.60)	Depositor EDS
R_{merge}	0.14	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.58 (at 2.58Å)	Xtriage
Refinement program	PHENIX 1.19.1_4122	Depositor
R, R_{free}	0.259 , 0.312 0.259 , 0.307	Depositor DCC
R_{free} test set	2223 reflections (4.94%)	wwPDB-VP
Wilson B-factor (Å^2)	66.5	Xtriage
Anisotropy	0.191	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 116.5	EDS
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.29$	Xtriage
Estimated twinning fraction	0.001 for -h,l,k 0.015 for -h,-l,-k 0.156 for h,-k,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	8038	wwPDB-VP
Average B, all atoms (Å^2)	81.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.20% 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 $< |L| >$, $< L^2 >$ 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: R3U

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	0.52	0/1867	0.75	0/2534
1	B	0.52	0/1876	0.73	1/2545 (0.0%)
1	C	0.33	0/1816	0.57	0/2467
1	D	0.34	0/1831	0.61	0/2487
2	E	0.21	0/98	0.38	0/131
2	F	0.29	0/90	0.71	0/120
2	G	0.29	0/107	0.45	0/143
2	H	0.19	0/94	0.38	0/125
2	I	0.26	0/77	0.49	0/105
2	J	0.24	0/91	0.43	0/123
All	All	0.43	0/7947	0.66	1/10780 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	432	CYS	CA-CB-SG	6.08	128.39	114.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	331	ARG	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	1826	0	1749	76	0
1	B	1835	0	1770	62	0
1	C	1777	0	1697	59	0
1	D	1790	0	1711	86	0
2	E	98	0	99	2	0
2	F	90	0	95	4	0
2	G	107	0	105	2	0
2	H	94	0	99	2	0
2	I	77	0	69	7	0
2	J	91	0	86	5	0
3	A	45	0	0	1	0
3	B	45	0	0	0	0
3	C	45	0	0	1	0
3	D	45	0	0	2	0
4	A	22	0	0	0	0
4	B	22	0	0	3	0
4	C	9	0	0	2	0
4	D	11	0	0	1	0
4	F	3	0	0	0	0
4	G	4	0	0	0	0
4	H	2	0	0	0	0
All	All	8038	0	7480	282	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 18.

The worst 5 of 282 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:264:ARG:NH2	4:B:3201:HOH:O	2.07	0.85
1:A:249:GLN:OE1	1:A:417:LYS:NZ	2.11	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:407:LEU:O	1:D:409:GLU:N	2.19	0.76
1:C:396:GLN:NE2	4:C:4201:HOH:O	2.19	0.74
1:B:256:ILE:HD11	1:B:411:LEU:HD11	1.74	0.70

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	228/233 (98%)	195 (86%)	27 (12%)	6 (3%)	4	7
1	B	228/233 (98%)	201 (88%)	19 (8%)	8 (4%)	3	4
1	C	225/233 (97%)	194 (86%)	21 (9%)	10 (4%)	2	2
1	D	228/233 (98%)	193 (85%)	28 (12%)	7 (3%)	3	5
2	E	10/13 (77%)	10 (100%)	0	0	100	100
2	F	9/13 (69%)	7 (78%)	0	2 (22%)	0	0
2	G	11/13 (85%)	9 (82%)	1 (9%)	1 (9%)	0	0
2	H	9/13 (69%)	9 (100%)	0	0	100	100
2	I	9/13 (69%)	7 (78%)	2 (22%)	0	100	100
2	J	10/13 (77%)	9 (90%)	1 (10%)	0	100	100
All	All	967/1010 (96%)	834 (86%)	99 (10%)	34 (4%)	3	4

5 of 34 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	314	GLU
1	C	340	LEU
1	C	341	PRO
1	C	454	TRP

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Mol	Chain	Res	Type
1	D	400	ASP

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	196/213 (92%)	176 (90%)	20 (10%)	6	12
1	B	198/213 (93%)	186 (94%)	12 (6%)	15	34
1	C	187/213 (88%)	179 (96%)	8 (4%)	25	49
1	D	186/213 (87%)	176 (95%)	10 (5%)	18	39
2	E	10/12 (83%)	10 (100%)	0	100	100
2	F	9/12 (75%)	9 (100%)	0	100	100
2	G	11/12 (92%)	11 (100%)	0	100	100
2	H	10/12 (83%)	8 (80%)	2 (20%)	1	2
2	I	6/12 (50%)	5 (83%)	1 (17%)	2	3
2	J	8/12 (67%)	8 (100%)	0	100	100
All	All	821/924 (89%)	768 (94%)	53 (6%)	15	31

5 of 53 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	445[B]	HIS
1	C	411	LEU
1	D	456	VAL
1	B	453	SER
1	C	248	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 17 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	429	HIS
2	J	3002	ASN

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Mol	Chain	Res	Type
1	B	444	ASN
1	C	249	GLN
1	C	267	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

4 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	R3U	A	4101	-	48,49,49	0.51	0	71,78,78	1.31	8 (11%)
3	R3U	B	3101	-	48,49,49	0.51	0	71,78,78	1.27	6 (8%)
3	R3U	C	4101	-	48,49,49	0.51	0	71,78,78	1.55	7 (9%)
3	R3U	D	3101	-	48,49,49	0.47	0	71,78,78	1.39	7 (9%)

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	R3U	A	4101	-	-	5/27/96/96	0/5/5/5
3	R3U	B	3101	-	-	4/27/96/96	0/5/5/5
3	R3U	C	4101	-	-	9/27/96/96	0/5/5/5
3	R3U	D	3101	-	-	14/27/96/96	0/5/5/5

There are no bond length outliers.

The worst 5 of 28 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	4101	R3U	C20-C4-C5	5.93	121.97	113.98
3	D	3101	R3U	C20-C4-C5	5.69	121.64	113.98
3	C	4101	R3U	C17-C5-C4	4.98	116.55	109.71
3	B	3101	R3U	C20-C4-C5	4.93	120.63	113.98
3	A	4101	R3U	C20-C4-C5	4.90	120.59	113.98

There are no chirality outliers.

5 of 32 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	C	4101	R3U	C25-C26-N1-S1
3	C	4101	R3U	O3-C26-N1-S1
3	C	4101	R3U	C26-N1-S1-C27
3	C	4101	R3U	C26-N1-S1-O4
3	C	4101	R3U	C26-N1-S1-O5

There are no ring outliers.
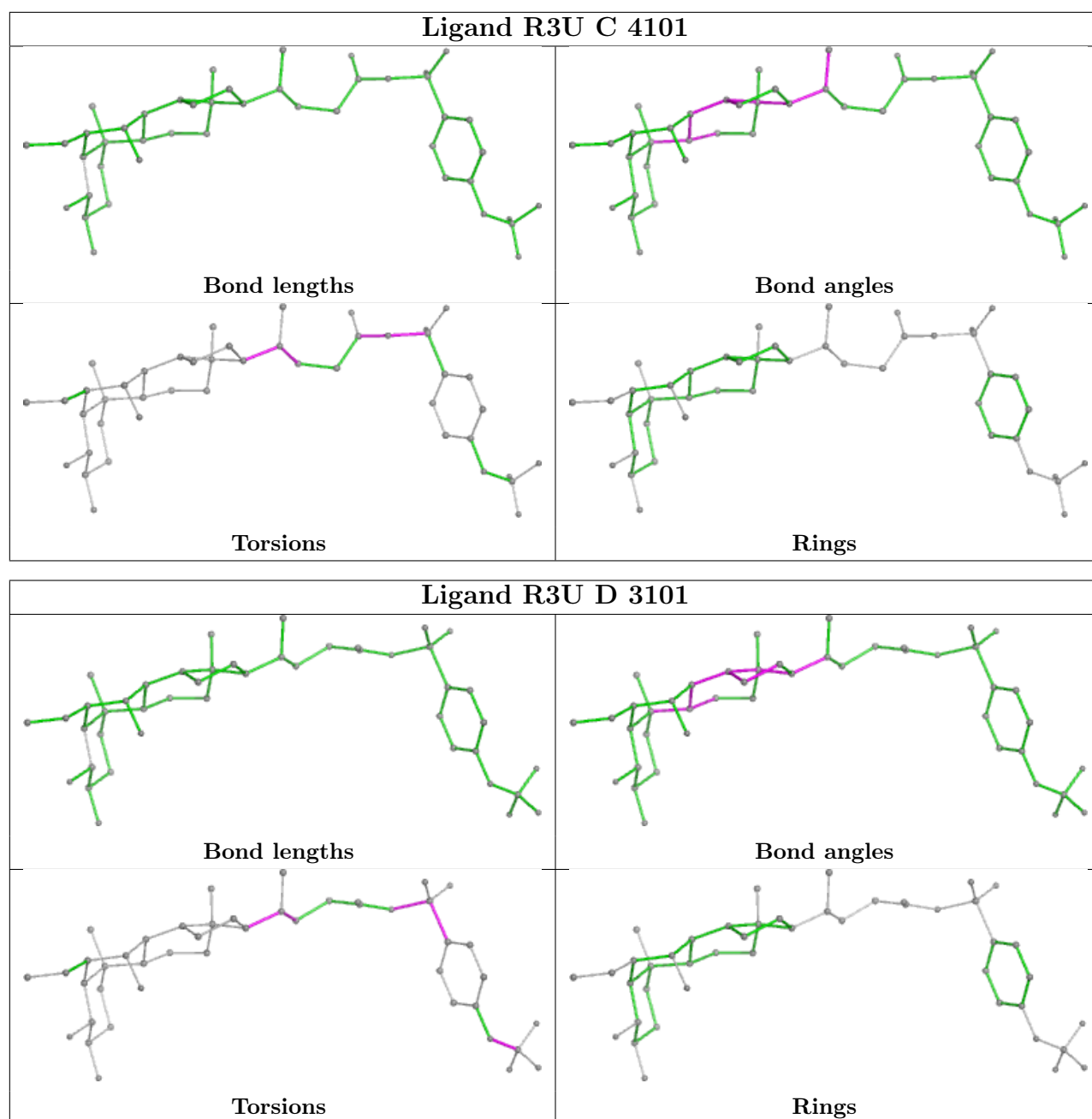
3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	4101	R3U	1	0
3	C	4101	R3U	1	0
3	D	3101	R3U	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 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 R3U A 4101

Bond lengths

Bond angles

Torsions

Rings

Ligand R3U B 3101

Bond lengths

Bond angles

Torsions

Rings

Ligand R3U C 4101

Bond lengths

Bond angles

Torsions

Rings

Ligand R3U D 3101

Bond lengths

Bond angles

Torsions

Rings
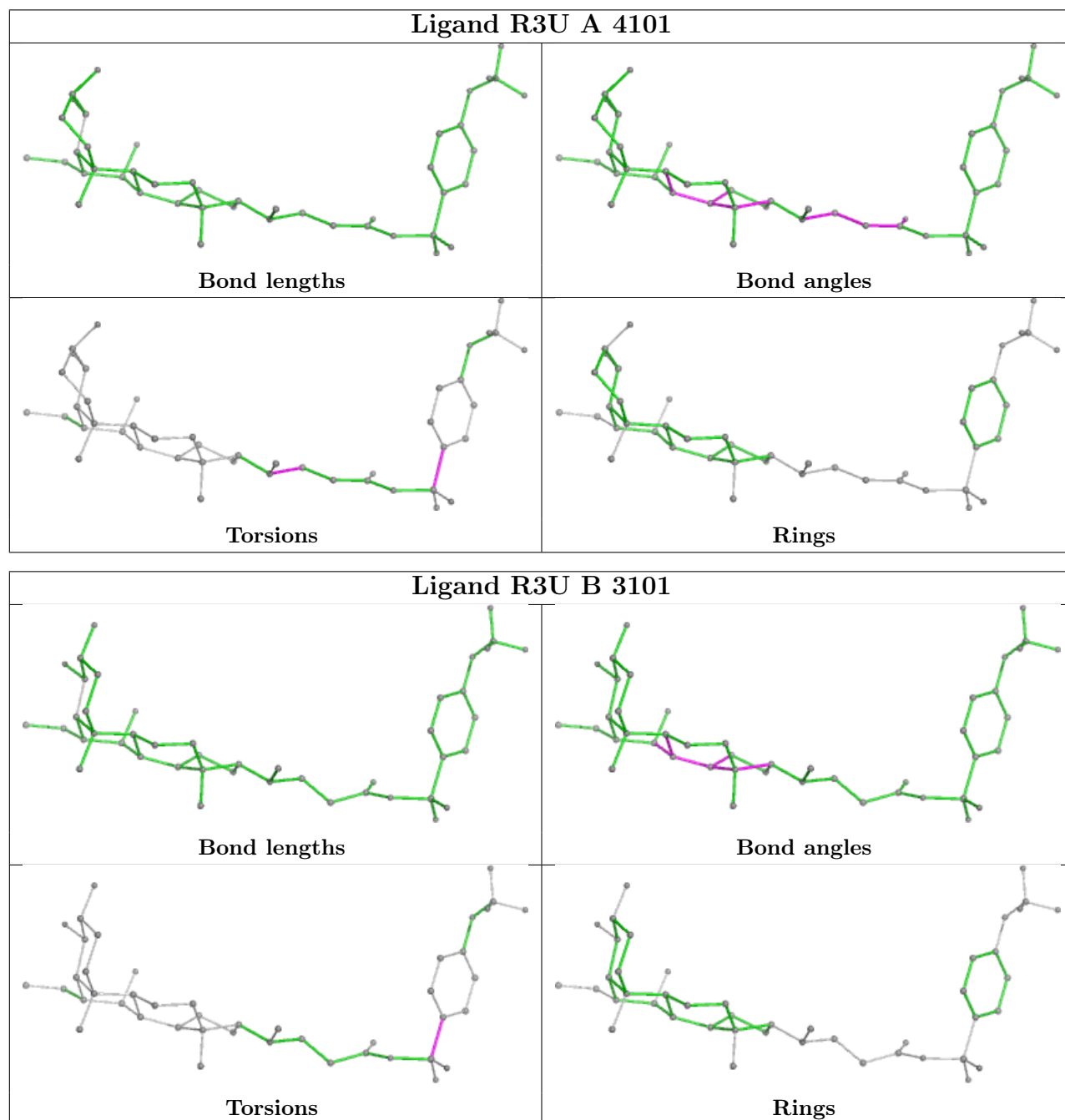
5.7 Other polymers ⓘ

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(Å²)	Q<0.9
1	A	228/233 (97%)	-0.98	0	100	100	31, 60, 95, 127	5 (2%)
1	B	229/233 (98%)	-0.93	0	100	100	29, 62, 104, 159	3 (1%)
1	C	227/233 (97%)	-0.82	0	100	100	51, 86, 129, 166	4 (1%)
1	D	229/233 (98%)	-0.69	3 (1%)	74	70	42, 94, 136, 158	5 (2%)
2	E	12/13 (92%)	-0.18	0	100	100	63, 73, 107, 135	8 (66%)
2	F	11/13 (84%)	-0.06	0	100	100	89, 114, 170, 174	4 (36%)
2	G	13/13 (100%)	-0.79	0	100	100	61, 79, 127, 127	7 (53%)
2	H	11/13 (84%)	-0.02	0	100	100	69, 76, 112, 115	7 (63%)
2	I	11/13 (84%)	-0.19	0	100	100	111, 131, 167, 171	2 (18%)
2	J	12/13 (92%)	-0.54	0	100	100	92, 107, 150, 161	4 (33%)
All	All	983/1010 (97%)	-0.82	3 (0%)	90	88	29, 76, 129, 174	49 (4%)

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	342	SER	6.0
1	D	343	GLY	2.7
1	D	393	PRO	2.0

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

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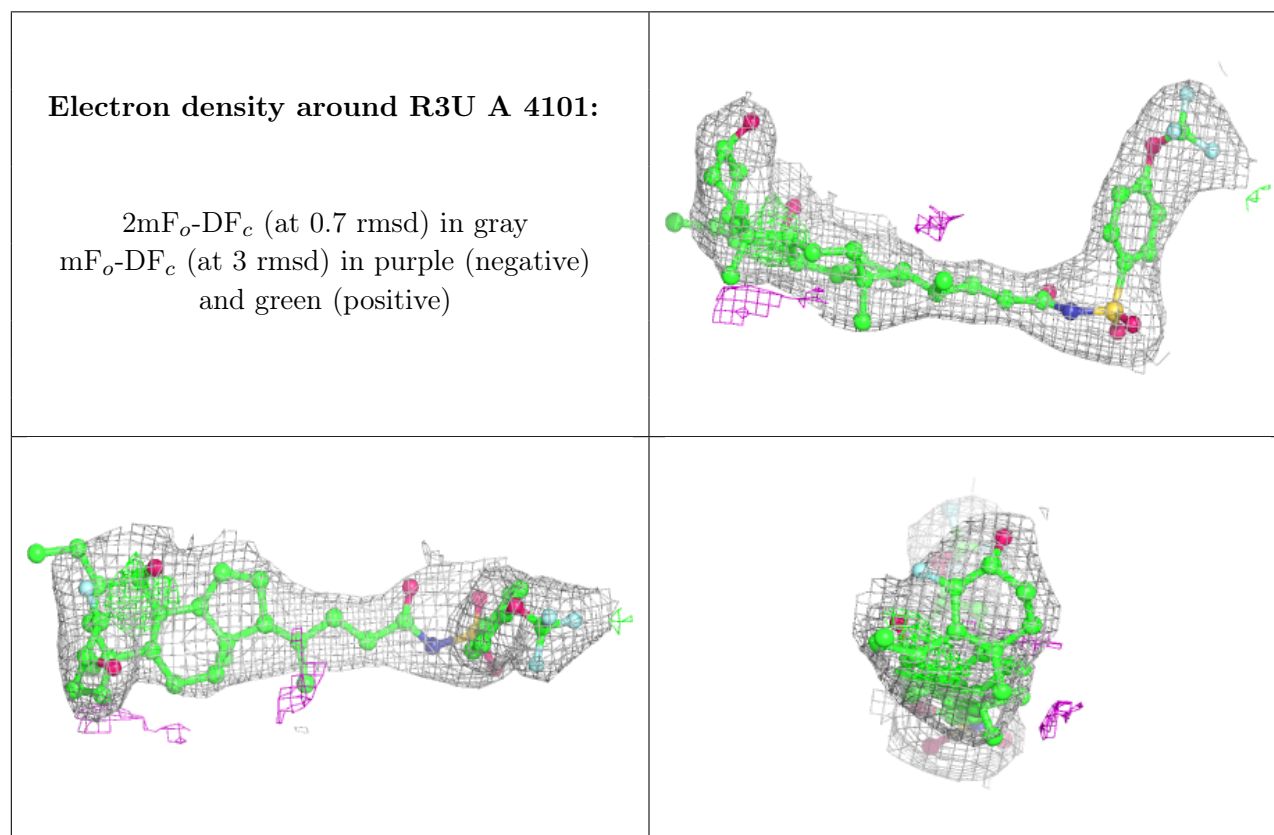
6.3 Carbohydrates ⓘ

There are no 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	R3U	A	4101	45/45	0.99	0.09	53,62,73,118	45
3	R3U	B	3101	45/45	0.99	0.08	49,62,82,118	45
3	R3U	C	4101	45/45	0.99	0.09	69,87,96,103	45
3	R3U	D	3101	45/45	0.99	0.08	72,87,106,120	45

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.
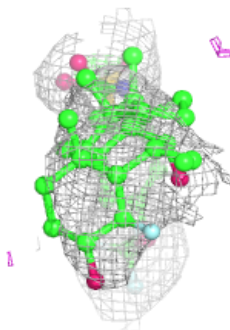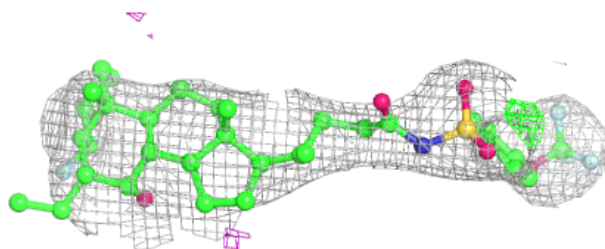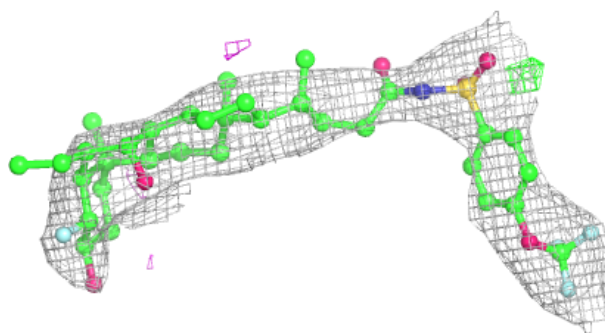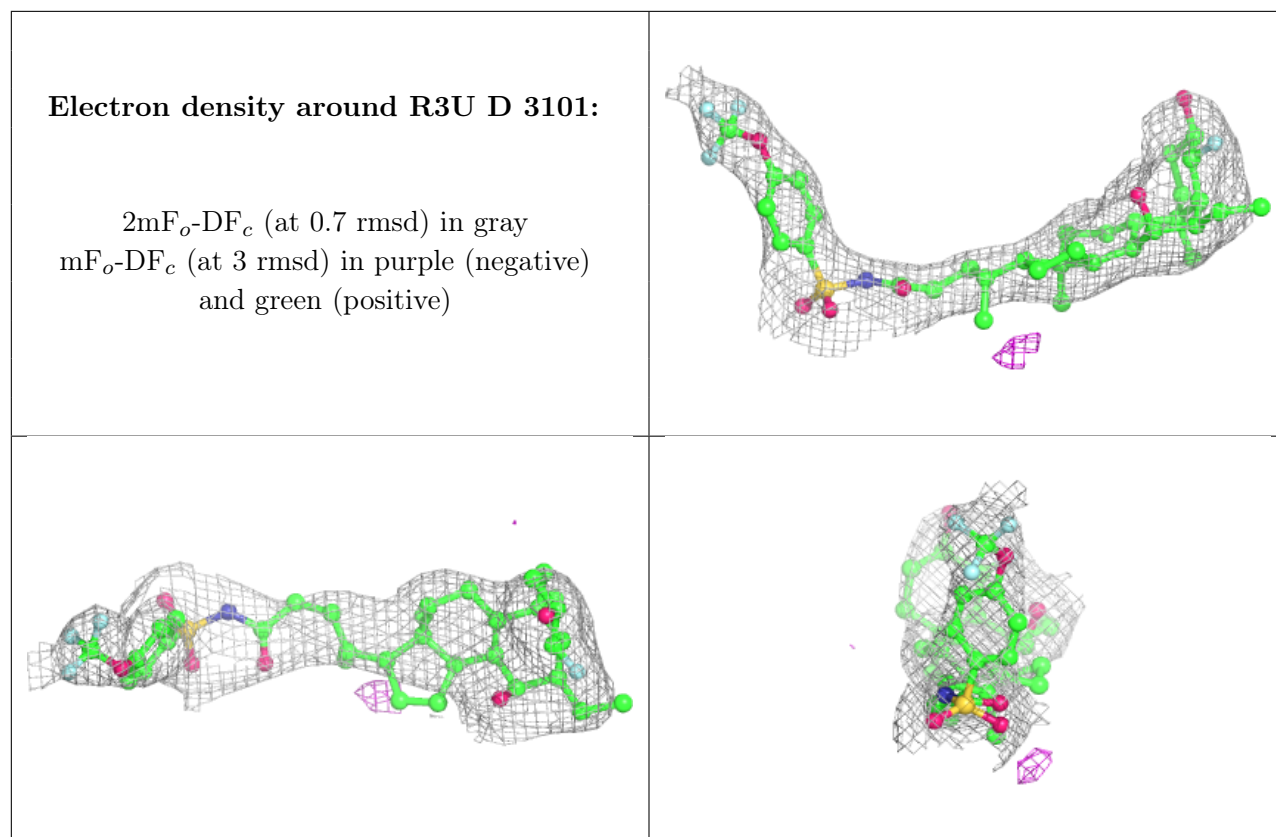
Electron density around R3U A 4101:

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

Electron density around R3U B 3101:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
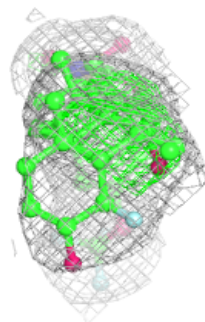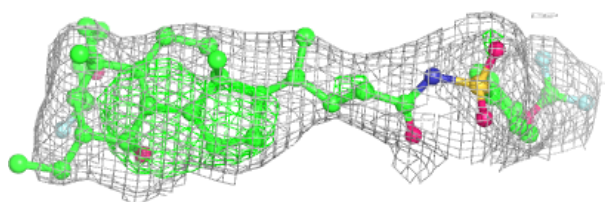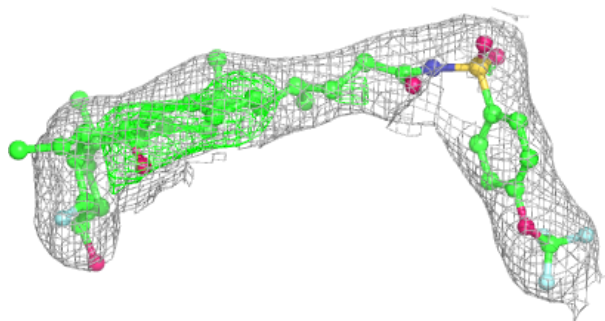
Electron density around R3U C 4101:

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

Electron density around R3U D 3101:

$2mF_o\text{-}DF_c$ (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.