



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 7, 2026 – 12:07 AM UTC

PDB ID : 6D26 / pdb_00006d26
Title : Crystal structure of the prostaglandin D2 receptor CRTH2 with fevipiprant
Authors : Wang, L.; Yao, D.; Deepak, K.; Liu, H.; Gong, W.; Fan, H.; Wei, Z.; Zhang, C.
Deposited on : 2018-04-13
Resolution : 2.80 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

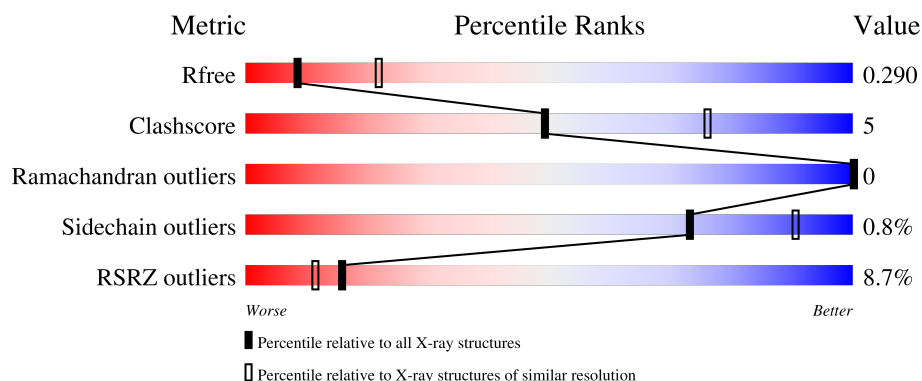
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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	470	

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 3650 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.

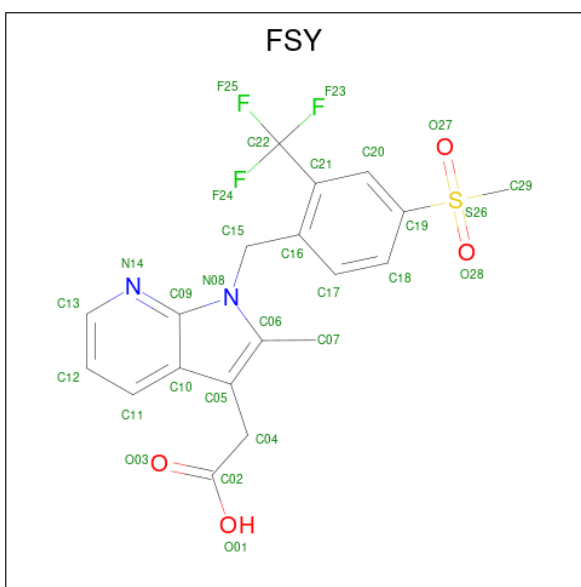
- Molecule 1 is a protein called Prostaglandin D2 receptor 2, Endolysin chimera.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	447	Total	C	N	O	S	0	1	0
			3498	2254	634	592	18			

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	expression tag	UNP Q9Y5Y4
A	25	ALA	ASN	engineered mutation	UNP Q9Y5Y4
A	204	ALA	VAL	variant	UNP Q9Y5Y4
A	1238	ALA	-	insertion	UNP Q9Y5Y4
A	1239	ASP	-	insertion	UNP Q9Y5Y4
A	1240	LEU	-	insertion	UNP Q9Y5Y4
A	1241	GLY	-	insertion	UNP Q9Y5Y4
A	1242	LEU	-	insertion	UNP Q9Y5Y4
A	1243	GLN	-	insertion	UNP Q9Y5Y4
A	1244	HIS	-	insertion	UNP Q9Y5Y4
A	1245	ARG	-	insertion	UNP Q9Y5Y4
A	1257	GLY	-	insertion	UNP D9IEF7
A	1258	GLY	-	insertion	UNP D9IEF7
A	1259	SER	-	insertion	UNP D9IEF7
A	1260	GLY	-	insertion	UNP D9IEF7
A	1261	GLY	-	insertion	UNP D9IEF7
A	1298	ALA	CYS	engineered mutation	UNP D9IEF7
A	2340	LEU	-	expression tag	UNP Q9Y5Y4
A	2341	GLU	-	expression tag	UNP Q9Y5Y4
A	2342	VAL	-	expression tag	UNP Q9Y5Y4
A	2343	LEU	-	expression tag	UNP Q9Y5Y4
A	2344	PHE	-	expression tag	UNP Q9Y5Y4
A	2345	GLN	-	expression tag	UNP Q9Y5Y4

- Molecule 2 is fevipiprant (CCD ID: FSY) (formula: C₁₉H₁₇F₃N₂O₄S).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	F	N	O	S	0	0
			29	19	3	2	4	1		

- Molecule 3 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



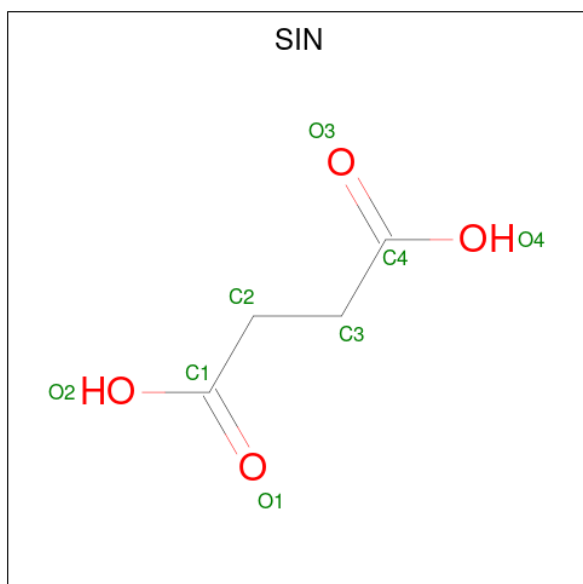
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		

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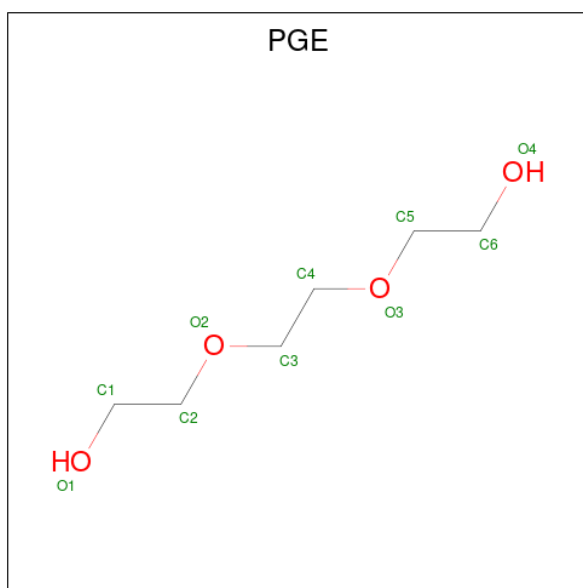
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		

- Molecule 4 is SUCCINIC ACID (CCD ID: SIN) (formula: C₄H₆O₄).



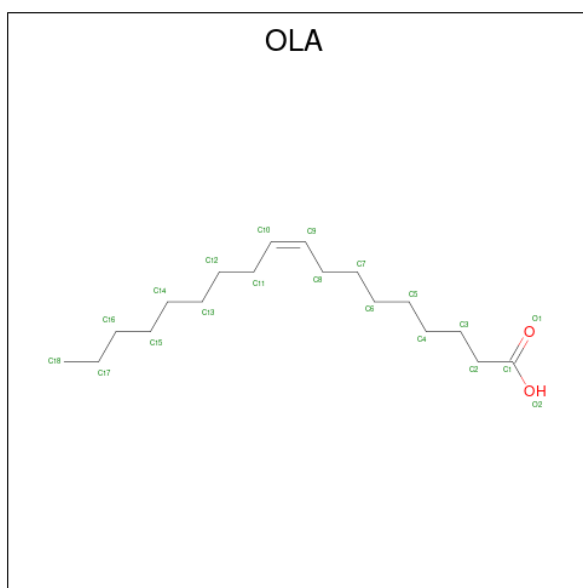
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			8	4	4		
4	A	1	Total	C	O	0	0
			8	4	4		
4	A	1	Total	C	O	0	0
			8	4	4		
4	A	1	Total	C	O	0	0
			8	4	4		
4	A	1	Total	C	O	0	0
			8	4	4		

- Molecule 5 is TRIETHYLENE GLYCOL (CCD ID: PGE) (formula: $C_6H_{14}O_4$).



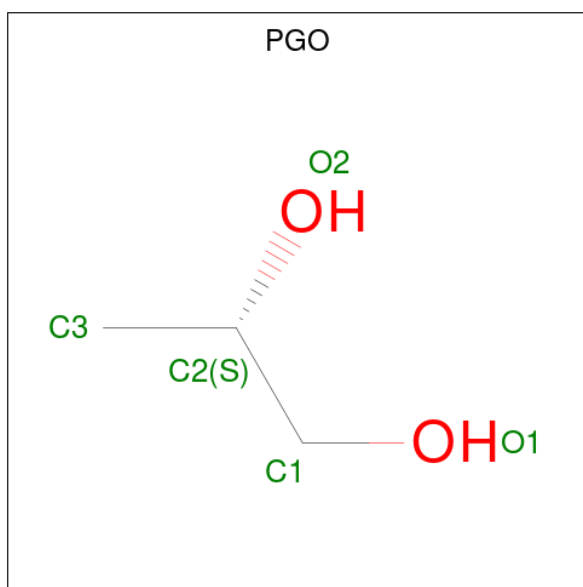
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			10	6	4		

- Molecule 6 is OLEIC ACID (CCD ID: OLA) (formula: $C_{18}H_{34}O_2$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	0
			20	18	2		

- Molecule 7 is S-1,2-PROPANEDIOL (CCD ID: PGO) (formula: $C_3H_8O_2$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			5	3	2		

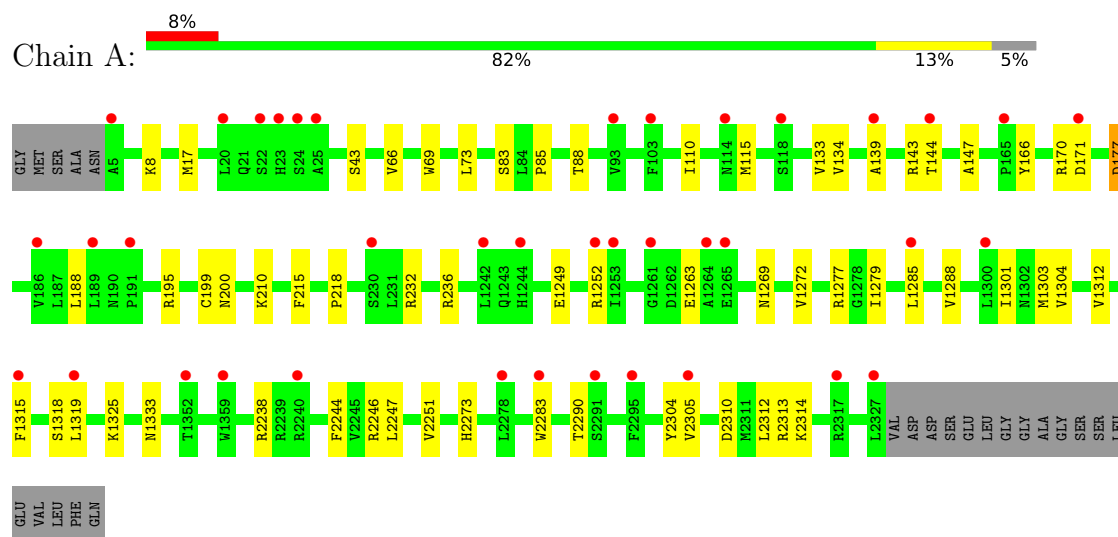
- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	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: Prostaglandin D2 receptor 2, Endolysin chimera



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	50.46Å 61.71Å 266.52Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.33 – 2.80 29.33 – 2.80	Depositor EDS
% Data completeness (in resolution range)	91.2 (29.33-2.80) 84.5 (29.33-2.80)	Depositor EDS
R_{merge}	0.18	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.35 (at 2.80Å)	Xtriage
Refinement program	PHENIX 1.9_1692	Depositor
R, R_{free}	0.250 , 0.280 0.257 , 0.290	Depositor DCC
R_{free} test set	979 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	61.4	Xtriage
Anisotropy	0.763	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 41.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	3650	wwPDB-VP
Average B, all atoms (Å ²)	84.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.87% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, PGE, FSY, SIN, OLA, PGO, YCM

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	0.28	0/3570	0.70	0/4853

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 [i](#)

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	3498	0	3565	39	0
2	A	29	0	0	2	0
3	A	45	0	0	3	0
4	A	40	0	20	1	0
5	A	10	0	14	0	0
6	A	20	0	33	0	0
7	A	5	0	8	0	0
8	A	3	0	0	1	0
All	All	3650	0	3640	39	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 5.

All (39) 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:2246:ARG:HH22	4:A:2412:SIN:H31	1.61	0.65
1:A:170:ARG:NH2	2:A:2401:FSY:O03	2.29	0.64
1:A:1318:SER:OG	1:A:1333:ASN:ND2	2.32	0.62
1:A:2305:VAL:HG13	1:A:2312:LEU:HB2	1.83	0.60
1:A:1315:PHE:HB3	1:A:1318:SER:HB2	1.87	0.55
1:A:2247:LEU:HD11	1:A:2304:TYR:HD1	1.70	0.55
1:A:1252:ARG:HB2	1:A:2238:ARG:NH1	2.25	0.52
1:A:133:VAL:O	1:A:236:ARG:NH2	2.43	0.52
1:A:1263:GLU:O	1:A:1269:ASN:ND2	2.43	0.50
1:A:2247:LEU:HD11	1:A:2304:TYR:CD1	2.45	0.50
1:A:43:SER:HB3	1:A:85:PRO:HG3	1.94	0.49
1:A:1279:ILE:HG23	1:A:1285:LEU:HB3	1.95	0.48
1:A:139:ALA:O	1:A:143:ARG:HB2	2.13	0.48
1:A:66:VAL:HA	1:A:69:TRP:HD1	1.79	0.48
1:A:1288:VAL:HG21	1:A:1319:LEU:HB3	1.95	0.47
1:A:1333:ASN:ND2	3:A:2403:SO4:O4	2.47	0.47
1:A:1303:MET:HE2	1:A:1312:VAL:HG12	1.97	0.47
1:A:1272:VAL:HG13	1:A:1301:ILE:HG21	1.97	0.46
1:A:73:LEU:HD21	1:A:2251:VAL:HG11	1.98	0.46
1:A:195:ARG:O	1:A:199:CYS:HB2	2.16	0.46
1:A:134:VAL:O	1:A:232:ARG:NH1	2.49	0.45
1:A:177:ASP:N	1:A:177:ASP:OD1	2.48	0.45
1:A:1304:VAL:HG12	1:A:1312:VAL:HG21	1.97	0.45
1:A:171:ASP:HB2	1:A:188:LEU:HD22	1.99	0.45
1:A:2244:PHE:N	3:A:2404:SO4:O2	2.41	0.45
1:A:85:PRO:O	1:A:88:THR:OG1	2.27	0.44
1:A:83:SER:HB3	1:A:110:ILE:HD12	2.00	0.44
1:A:2290:THR:HG21	2:A:2401:FSY:C06	2.48	0.43
1:A:8:LYS:NZ	1:A:171:ASP:OD2	2.40	0.43
1:A:144:THR:HG23	1:A:147:ALA:H	1.82	0.43
1:A:1325:LYS:NZ	8:A:2501:HOH:O	2.51	0.42
1:A:1277:ARG:NH1	3:A:2409:SO4:O1	2.52	0.42
1:A:2310:ASP:OD1	1:A:2313:ARG:NH2	2.45	0.41
1:A:215:PHE:C	1:A:218:PRO:HD2	2.45	0.41
1:A:200:ASN:HB2	1:A:2273:HIS:CD2	2.56	0.41
1:A:17:MET:HE2	1:A:2283:TRP:HE1	1.86	0.40
1:A:115:MET:HE2	1:A:115:MET:HB3	1.95	0.40
1:A:143:ARG:HE	1:A:143:ARG:HB3	1.73	0.40
1:A:166:TYR:OH	1:A:210:LYS:HB2	2.22	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	445/470 (95%)	429 (96%)	16 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	366/389 (94%)	363 (99%)	3 (1%)	73	90

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	177	ASP
1	A	1249	GLU
1	A	2314	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	33	HIS
1	A	114	ASN
1	A	142	HIS
1	A	1270	GLN
1	A	2273	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	$\# Z > 2$
1	YCM	A	2308	1	7,9,10	1.09	0	5,10,12	0.47	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
1	YCM	A	2308	1	-	0/6/8/10	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

18 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	SO4	A	2402	-	4,4,4	0.23	0	6,6,6	0.09	0
2	FSY	A	2401	-	31,31,31	2.40	11 (35%)	44,48,48	1.87	10 (22%)
3	SO4	A	2407	-	4,4,4	0.24	0	6,6,6	0.14	0
4	SIN	A	2415	-	7,7,7	1.05	0	8,8,8	1.61	2 (25%)
5	PGE	A	2416	-	9,9,9	0.32	0	8,8,8	0.31	0
3	SO4	A	2404	-	4,4,4	0.23	0	6,6,6	0.12	0
3	SO4	A	2408	-	4,4,4	0.23	0	6,6,6	0.06	0
6	OLA	A	2417	-	19,19,19	0.80	1 (5%)	19,19,19	0.95	1 (5%)
4	SIN	A	2413	-	7,7,7	1.06	0	8,8,8	1.59	1 (12%)
3	SO4	A	2405	-	4,4,4	0.23	0	6,6,6	0.06	0
4	SIN	A	2411	-	7,7,7	1.05	0	8,8,8	1.63	2 (25%)
4	SIN	A	2412	-	7,7,7	1.05	0	8,8,8	1.62	2 (25%)
3	SO4	A	2406	-	4,4,4	0.23	0	6,6,6	0.09	0
7	PGO	A	2418	-	4,4,4	0.66	0	4,4,4	0.77	0
3	SO4	A	2409	-	4,4,4	0.23	0	6,6,6	0.07	0
4	SIN	A	2414	-	7,7,7	1.04	0	8,8,8	1.60	2 (25%)
3	SO4	A	2410	-	4,4,4	0.23	0	6,6,6	0.09	0
3	SO4	A	2403	-	4,4,4	0.24	0	6,6,6	0.09	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
2	FSY	A	2401	-	-	6/20/20/20	0/3/3/3
5	PGE	A	2416	-	-	4/7/7/7	-
4	SIN	A	2415	-	-	0/5/5/5	-
6	OLA	A	2417	-	-	13/17/17/17	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	SIN	A	2413	-	-	4/5/5/5	-
4	SIN	A	2411	-	-	2/5/5/5	-
4	SIN	A	2412	-	-	3/5/5/5	-
7	PGO	A	2418	-	-	0/2/2/2	-
4	SIN	A	2414	-	-	4/5/5/5	-

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	2401	FSY	C06-N08	-5.50	1.30	1.38
2	A	2401	FSY	O27-S26	4.94	1.56	1.44
2	A	2401	FSY	C19-S26	4.70	1.81	1.77
2	A	2401	FSY	C15-C16	4.12	1.58	1.51
2	A	2401	FSY	C07-C06	3.52	1.54	1.49
2	A	2401	FSY	C04-C05	3.45	1.58	1.50
2	A	2401	FSY	C15-N08	-2.93	1.42	1.46
2	A	2401	FSY	F25-C22	2.90	1.43	1.33
2	A	2401	FSY	C06-C05	2.81	1.41	1.36
2	A	2401	FSY	O28-S26	2.81	1.51	1.44
6	A	2417	OLA	C10-C9	2.76	1.47	1.31
2	A	2401	FSY	C10-C09	-2.35	1.38	1.41

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2401	FSY	O28-S26-O27	-4.73	109.97	117.99
2	A	2401	FSY	C07-C06-N08	4.46	125.03	120.29
2	A	2401	FSY	C29-S26-C19	4.24	109.22	104.55
2	A	2401	FSY	C10-C09-N14	-3.77	122.55	127.01
2	A	2401	FSY	C10-C05-C06	-3.49	105.08	108.13
2	A	2401	FSY	C22-C21-C16	3.40	124.31	121.06
2	A	2401	FSY	C13-N14-C09	2.75	121.26	115.05
2	A	2401	FSY	F24-C22-C21	-2.33	108.51	112.65
4	A	2412	SIN	O4-C4-C3	2.19	120.91	114.00
4	A	2411	SIN	O4-C4-C3	2.18	120.89	114.00
2	A	2401	FSY	F23-C22-C21	-2.16	108.82	112.65
2	A	2401	FSY	N14-C09-N08	2.10	128.52	125.09
6	A	2417	OLA	O2-C1-C2	2.09	120.60	114.00
4	A	2415	SIN	O4-C4-C3	2.06	120.52	114.00
4	A	2414	SIN	O2-C1-C2	2.06	120.50	114.00
4	A	2414	SIN	O4-C4-C3	2.05	120.49	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	2412	SIN	O2-C1-C2	2.05	120.47	114.00
4	A	2411	SIN	O2-C1-C2	2.04	120.45	114.00
4	A	2413	SIN	O2-C1-C2	2.02	120.39	114.00
4	A	2415	SIN	O2-C1-C2	2.01	120.35	114.00

There are no chirality outliers.

All (36) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	2417	OLA	C1-C2-C3-C4
4	A	2412	SIN	C1-C2-C3-C4
6	A	2417	OLA	C3-C4-C5-C6
2	A	2401	FSY	C02-C04-C05-C06
5	A	2416	PGE	O2-C3-C4-O3
2	A	2401	FSY	C16-C21-C22-F23
2	A	2401	FSY	C16-C21-C22-F24
6	A	2417	OLA	C11-C10-C9-C8
2	A	2401	FSY	C02-C04-C05-C10
2	A	2401	FSY	C16-C21-C22-F25
6	A	2417	OLA	C12-C13-C14-C15
6	A	2417	OLA	C11-C12-C13-C14
5	A	2416	PGE	C4-C3-O2-C2
6	A	2417	OLA	C4-C5-C6-C7
5	A	2416	PGE	O1-C1-C2-O2
6	A	2417	OLA	C10-C11-C12-C13
6	A	2417	OLA	C14-C15-C16-C17
4	A	2414	SIN	O2-C1-C2-C3
6	A	2417	OLA	C7-C8-C9-C10
4	A	2414	SIN	C2-C3-C4-O3
4	A	2414	SIN	C2-C3-C4-O4
4	A	2413	SIN	O2-C1-C2-C3
4	A	2413	SIN	O1-C1-C2-C3
4	A	2414	SIN	O1-C1-C2-C3
6	A	2417	OLA	C5-C6-C7-C8
6	A	2417	OLA	O2-C1-C2-C3
4	A	2412	SIN	C2-C3-C4-O4
4	A	2413	SIN	C2-C3-C4-O4
5	A	2416	PGE	C3-C4-O3-C5
6	A	2417	OLA	O1-C1-C2-C3
4	A	2412	SIN	C2-C3-C4-O3
4	A	2413	SIN	C2-C3-C4-O3
6	A	2417	OLA	C9-C10-C11-C12

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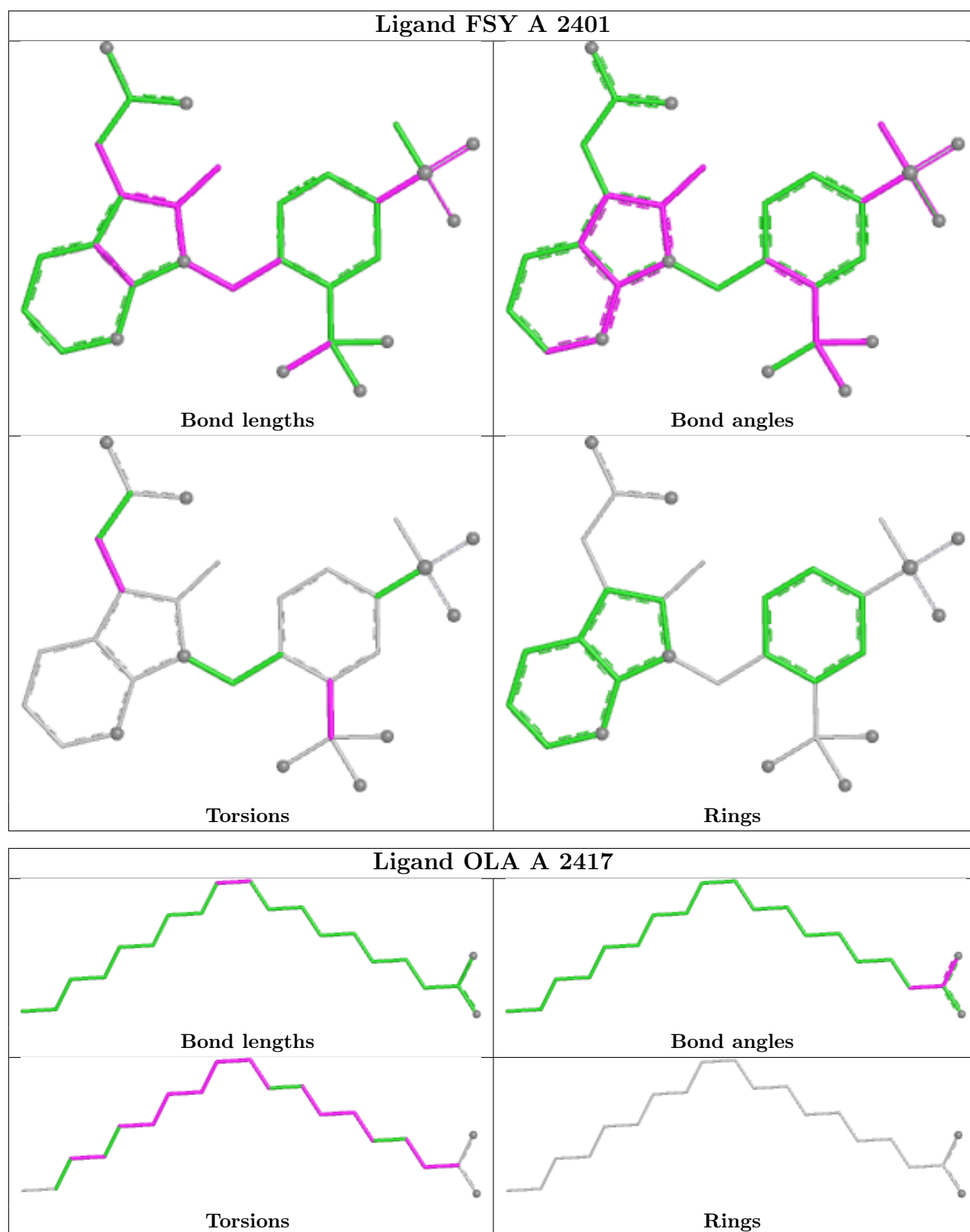
Mol	Chain	Res	Type	Atoms
4	A	2411	SIN	O2-C1-C2-C3
2	A	2401	FSY	C20-C21-C22-F23
4	A	2411	SIN	O1-C1-C2-C3

There are no ring outliers.

5 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	2401	FSY	2	0
3	A	2404	SO4	1	0
4	A	2412	SIN	1	0
3	A	2409	SO4	1	0
3	A	2403	SO4	1	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	446/470 (94%)	0.73	39 (8%) 16 11	50, 78, 135, 175	1 (0%)

All (39) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	20	LEU	5.3
1	A	2291	SER	4.6
1	A	103[A]	PHE	4.4
1	A	2295	PHE	4.2
1	A	1261	GLY	4.1
1	A	2305	VAL	4.0
1	A	189	LEU	3.9
1	A	25	ALA	3.8
1	A	1242	LEU	3.4
1	A	5	ALA	3.0
1	A	1252	ARG	3.0
1	A	2317	ARG	2.9
1	A	139	ALA	2.9
1	A	144	THR	2.9
1	A	23	HIS	2.8
1	A	24	SER	2.8
1	A	2327	LEU	2.8
1	A	2240	ARG	2.8
1	A	1285	LEU	2.8
1	A	1319	LEU	2.7
1	A	1244	HIS	2.7
1	A	230	SER	2.7
1	A	1352	THR	2.6
1	A	1300	LEU	2.5
1	A	93	VAL	2.5
1	A	118	SER	2.5
1	A	1253	ILE	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	186	VAL	2.4
1	A	2278	LEU	2.4
1	A	22	SER	2.3
1	A	2283	TRP	2.3
1	A	171	ASP	2.3
1	A	1315	PHE	2.3
1	A	1265	GLU	2.1
1	A	1264	ALA	2.1
1	A	165	PRO	2.1
1	A	1359	TRP	2.0
1	A	191	PRO	2.0
1	A	114	ASN	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [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
1	YCM	A	2308	10/11	0.93	0.13	61,66,94,98	0

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.

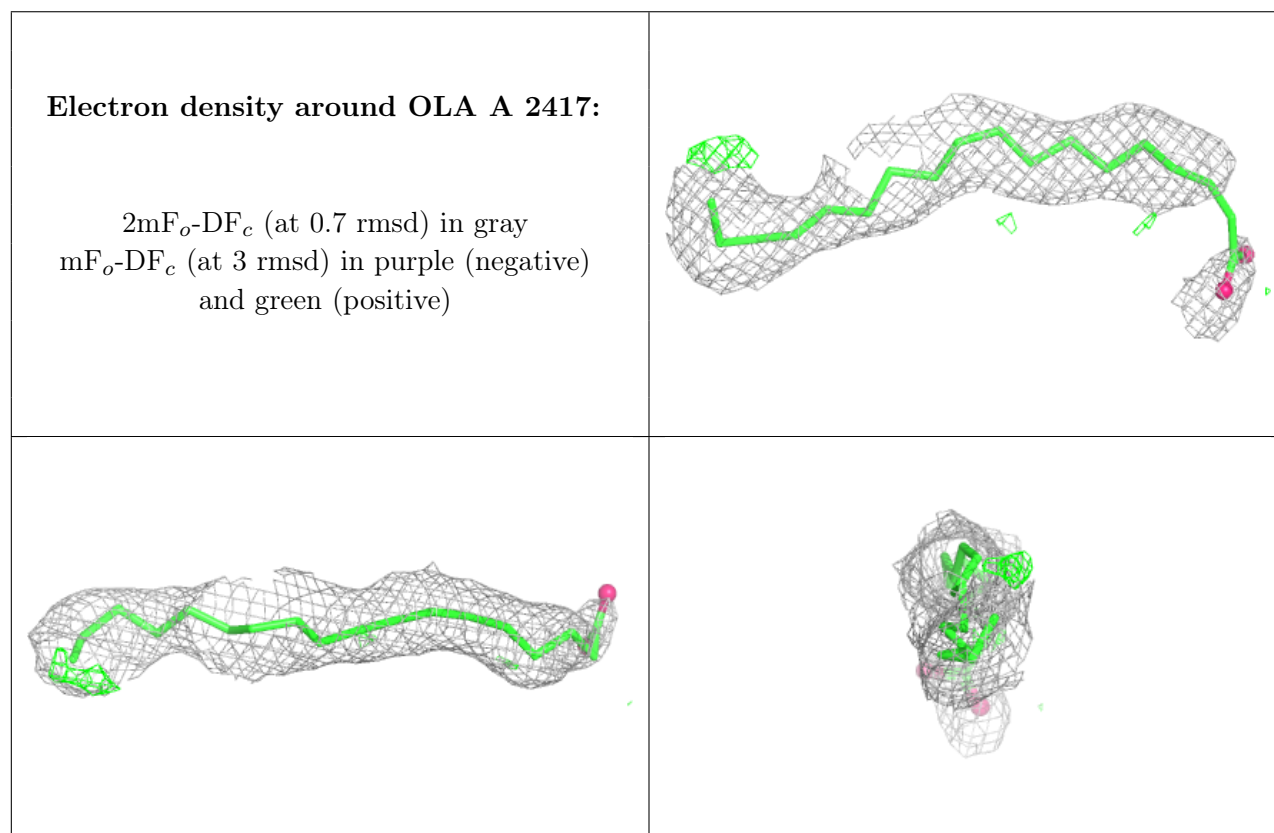
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	SO4	A	2408	5/5	0.29	0.14	164,166,167,168	0
4	SIN	A	2414	8/8	0.64	0.16	100,105,106,106	0
4	SIN	A	2413	8/8	0.67	0.18	112,115,120,123	0
3	SO4	A	2409	5/5	0.67	0.10	160,160,160,161	0
4	SIN	A	2415	8/8	0.72	0.15	103,109,111,112	0

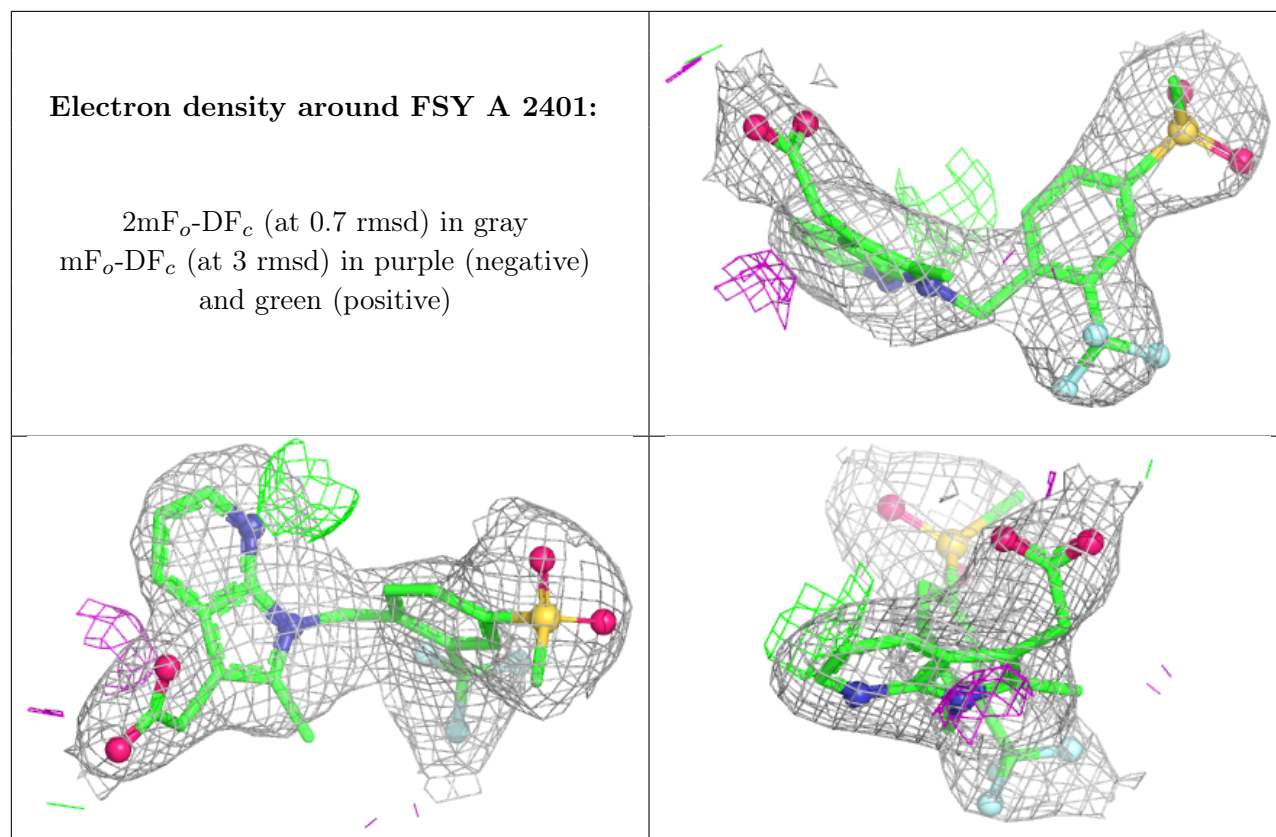
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	SO4	A	2410	5/5	0.76	0.10	66,68,74,74	5
6	OLA	A	2417	20/20	0.76	0.15	80,86,102,102	0
4	SIN	A	2412	8/8	0.83	0.10	71,78,81,82	0
3	SO4	A	2403	5/5	0.87	0.16	90,91,93,100	0
4	SIN	A	2411	8/8	0.88	0.13	91,93,101,104	0
5	PGE	A	2416	10/10	0.88	0.16	107,108,113,113	0
3	SO4	A	2405	5/5	0.88	0.16	69,71,72,72	5
3	SO4	A	2407	5/5	0.91	0.12	84,90,92,94	0
3	SO4	A	2406	5/5	0.93	0.14	87,88,92,97	0
2	FSY	A	2401	29/29	0.95	0.10	43,64,95,96	0
3	SO4	A	2402	5/5	0.95	0.09	67,67,69,70	0
7	PGO	A	2418	5/5	0.95	0.14	83,84,84,86	0
3	SO4	A	2404	5/5	0.96	0.06	63,65,72,72	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 [i](#)

There are no such residues in this entry.