



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 15, 2026 – 10:06 AM UTC

PDB ID : 6QZH / pdb_00006qzh
Title : Structure of the human CC Chemokine Receptor 7 in complex with the intracellular allosteric antagonist Cmp2105 and the insertion protein Sialidase NanA
Authors : Jaeger, K.; Bruenle, S.; Weinert, T.; Guba, W.; Muehle, J.; Miyazaki, T.; Weber, M.; Furrer, A.; Haenggi, N.; Tetaz, T.; Huang, C.Y.; Mattle, D.; Vonach, J.M.; Gast, A.; Kuglstatter, A.; Rudolph, M.G.; Nogly, P.; Benz, J.; Dawson, R.J.P.; Standfuss, J.
Deposited on : 2019-03-11
Resolution : 2.10 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

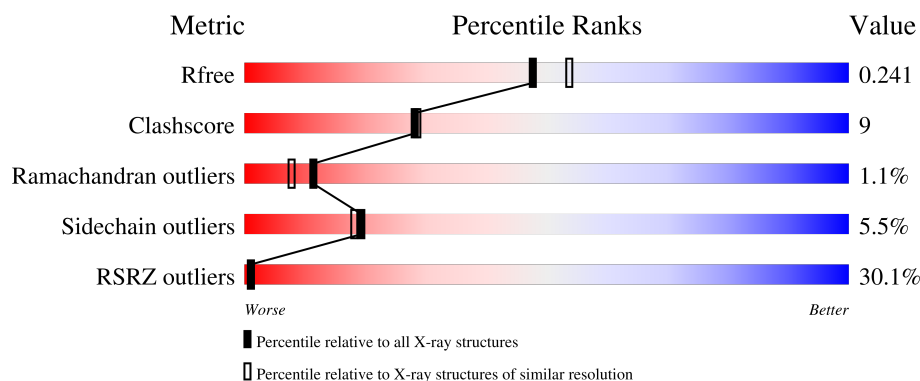
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.10 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	6658 (2.10-2.10)
Clashscore	190562	7164 (2.10-2.10)
Ramachandran outliers	187476	7099 (2.10-2.10)
Sidechain outliers	187428	7100 (2.10-2.10)
RSRZ outliers	180081	6662 (2.10-2.10)

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	785	29% 72% 20% • 5%

Ideal geometry (proteins) : Engh & Huber (2001)
 Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
 Validation Pipeline (wwPDB-VP) : 2.49

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 6116 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 C-C chemokine receptor type 7, Sialidase A, C-C chemokine receptor type 7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	744	Total	C	N	O	S	0	6	0
			5907	3794	1002	1082	29			

There are 27 discrepancies between the modelled and reference sequences:

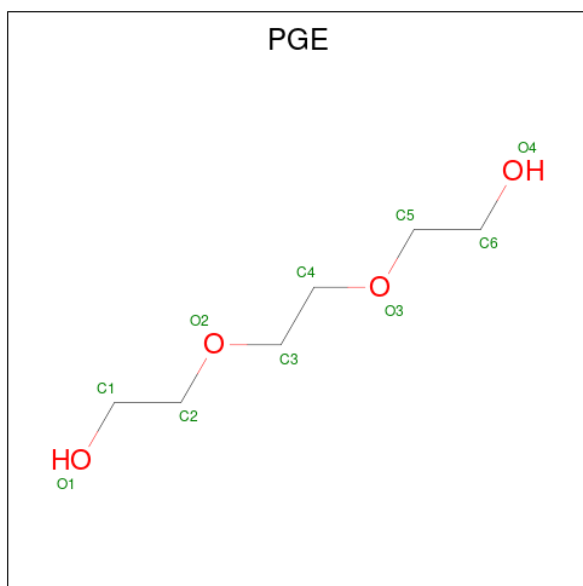
Chain	Residue	Modelled	Actual	Comment	Reference
A	42	GLY	-	expression tag	UNP P32248
A	43	PRO	-	expression tag	UNP P32248
A	44	GLY	-	expression tag	UNP P32248
A	45	SER	-	expression tag	UNP P32248
A	145	TRP	LEU	engineered mutation	UNP P32248
A	248	SER	-	linker	UNP P32248
A	249	LYS	-	linker	UNP P32248
A	250	LEU	-	linker	UNP P32248
A	251	HIS	-	linker	UNP P32248
A	1016	ASN	LYS	conflict	UNP P62575
A	1191	ASP	ASN	conflict	UNP P62575
A	1278	ASP	ASN	conflict	UNP P62575
A	1285	VAL	ILE	conflict	UNP P62575
A	1466	GLU	ASP	conflict	UNP P62575
A	1471	SER	-	linker	UNP P62575
A	1472	LYS	-	linker	UNP P62575
A	255	GLY	-	linker	UNP P62575
A	256	HIS	-	linker	UNP P62575
A	349	GLY	-	expression tag	UNP P32248
A	350	GLY	-	expression tag	UNP P32248
A	351	ARG	-	expression tag	UNP P32248
A	352	LEU	-	expression tag	UNP P32248
A	353	GLU	-	expression tag	UNP P32248
A	354	VAL	-	expression tag	UNP P32248
A	355	LEU	-	expression tag	UNP P32248
A	356	PHE	-	expression tag	UNP P32248

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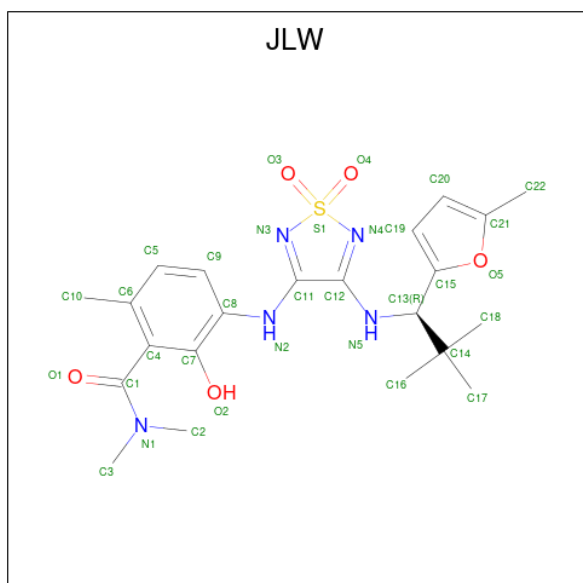
Chain	Residue	Modelled	Actual	Comment	Reference
A	357	GLN	-	expression tag	UNP P32248

- Molecule 2 is TRIETHYLENE GLYCOL (CCD ID: PGE) (formula: $C_6H_{14}O_4$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			6	4	2		

- Molecule 3 is 3-[[4-[[[(1 {R})-2,2-dimethyl-1-(5-methylfuran-2-yl)propyl]amino]-1,1-bis(oxalidene)-1,2,5-thiadiazol-3-yl]amino]- {N}, {N},6-trimethyl-2-oxidanyl-benzamide (CCD ID: JLW) (formula: $C_{22}H_{29}N_5O_5S$).

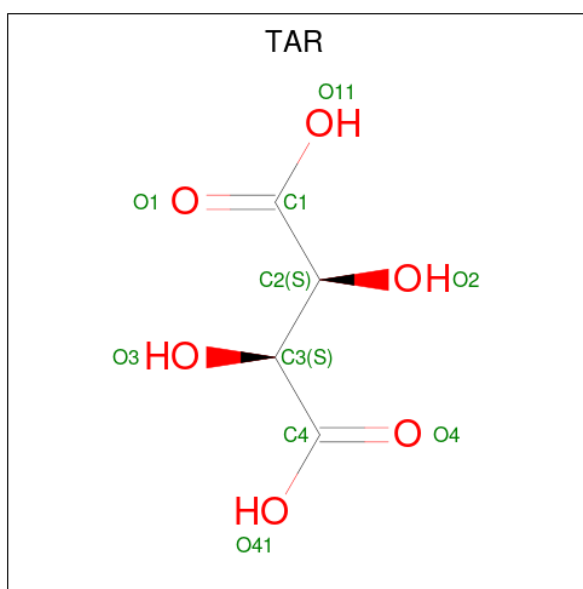


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	S	0	0
			33	22	5	5	1		

- Molecule 4 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Na	0	0
			1	1		

- Molecule 5 is D(-)-TARTARIC ACID (CCD ID: TAR) (formula: C₄H₆O₆).



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

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	149	Total	O	0	0
			149	149		

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	79.12Å 128.81Å 100.58Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	54.20 – 2.10 54.20 – 2.10	Depositor EDS
% Data completeness (in resolution range)	52.8 (54.20-2.10) 52.7 (54.20-2.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.34 (at 2.12Å)	Xtriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.188 , 0.242 0.189 , 0.241	Depositor DCC
R_{free} test set	1994 reflections (3.36%)	wwPDB-VP
Wilson B-factor (Å ²)	24.5	Xtriage
Anisotropy	0.129	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 42.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	6116	wwPDB-VP
Average B, all atoms (Å ²)	44.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.55% 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: NA, PGE, TAR, JLW

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	0.35	0/6057	0.56	0/8205

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	5907	0	5878	104	0
2	A	6	0	7	0	0
3	A	33	0	0	2	0
4	A	1	0	0	0	0
5	A	20	0	8	3	0
6	A	149	0	0	5	0
All	All	6116	0	5893	106	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 9.

All (106) 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:264:VAL:HG12	1:A:329:ILE:HG12	1.62	0.81
3:A:1502:JLW:O2	6:A:1601:HOH:O	2.07	0.73
1:A:148:LEU:HD23	1:A:239:MET:HG3	1.71	0.72
1:A:1409:ARG:NH2	1:A:1411:GLU:OE2	2.22	0.70
1:A:264:VAL:HG11	1:A:330:GLY:HA2	1.75	0.69
1:A:258:ARG:O	1:A:262:ILE:N	2.25	0.69
1:A:144:MET:HE3	1:A:235:PRO:HB2	1.76	0.68
1:A:271:VAL:HA	1:A:274:VAL:HG12	1.75	0.68
1:A:189:LEU:HD12	1:A:227:GLN:HA	1.75	0.67
1:A:1028:PRO:HB3	1:A:1458:LEU:HD13	1.78	0.65
1:A:1466[B]:GLU:OE1	1:A:258:ARG:NH1	2.30	0.65
1:A:1191:ASP:OD2	1:A:1191:ASP:N	2.29	0.62
1:A:262:ILE:HG13	1:A:264:VAL:HG13	1.80	0.62
1:A:1217:MET:HE1	1:A:1219:TYR:HD2	1.65	0.61
1:A:1305:ARG:HH11	1:A:1364:ILE:HD13	1.66	0.61
1:A:220:PHE:CE1	1:A:221:ILE:HG13	2.37	0.59
1:A:1404:MET:HE3	1:A:1406:HIS:CE1	2.38	0.59
1:A:1187:LEU:HD22	1:A:1205:SER:HB2	1.85	0.58
1:A:151:SER:HG	1:A:243:TYR:HE1	1.50	0.58
1:A:262:ILE:HG23	1:A:263:LYS:H	1.69	0.58
1:A:275:PHE:HD2	1:A:318:ARG:HB2	1.69	0.57
1:A:1124:MET:HE1	1:A:1243:LYS:O	2.03	0.57
1:A:1420:LYS:NZ	5:A:1505:TAR:H3	2.20	0.57
1:A:1307:VAL:HG11	1:A:1319:ASN:HD21	1.70	0.56
1:A:150:ILE:HG21	1:A:265:ILE:HD12	1.88	0.56
1:A:156:VAL:HA	1:A:159:VAL:HG12	1.88	0.55
1:A:96:TYR:CZ	1:A:149:CYS:HB3	2.42	0.55
1:A:62:PRO:O	1:A:66:SER:OG	2.17	0.54
1:A:332:LYS:NZ	1:A:336:ASP:OD1	2.40	0.54
1:A:80:VAL:O	1:A:84:ILE:HG12	2.07	0.54
1:A:117:SER:HB3	1:A:209:ARG:CZ	2.38	0.54
1:A:171:VAL:O	1:A:175:SER:HB3	2.07	0.53
1:A:1371:LYS:NZ	6:A:1603:HOH:O	2.25	0.53
1:A:117:SER:HB3	1:A:209:ARG:NH1	2.23	0.53
1:A:1358:VAL:HG12	1:A:1359:THR:HG23	1.91	0.53
1:A:1307:VAL:HG11	1:A:1319:ASN:ND2	2.24	0.53
1:A:1186:ASP:OD2	1:A:1196:ASN:ND2	2.35	0.52
1:A:250:LEU:HD13	1:A:259:ASN:HB3	1.92	0.51
1:A:1146:GLU:HB2	6:A:1622:HOH:O	2.09	0.51
1:A:147:LEU:HD13	1:A:269:VAL:HG22	1.92	0.51
1:A:1212:ASP:CG	1:A:1213:SER:H	2.20	0.50
1:A:320:CYS:O	1:A:323:PRO:HD2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:201:ARG:HG3	1:A:203:SER:H	1.77	0.50
1:A:107:PHE:HB2	1:A:139:SER:OG	2.12	0.49
1:A:1083:LYS:O	1:A:1202:ASN:ND2	2.35	0.49
1:A:1408:ALA:HB2	1:A:1418:TRP:CE3	2.46	0.49
1:A:1111:ILE:HG22	1:A:1247:VAL:HG11	1.95	0.49
1:A:1217:MET:O	1:A:1231[B]:GLN:HG2	2.13	0.48
1:A:1373:VAL:HG22	6:A:1676:HOH:O	2.13	0.48
1:A:1420:LYS:HZ3	5:A:1505:TAR:H3	1.78	0.48
1:A:274:VAL:HG13	1:A:275:PHE:CD1	2.48	0.48
1:A:196:TYR:CE2	1:A:220:PHE:HB2	2.50	0.47
1:A:96:TYR:HB2	1:A:150:ILE:HD11	1.96	0.47
1:A:1113:ASP:OD1	6:A:1602:HOH:O	2.20	0.47
1:A:155:TYR:HE1	1:A:245:VAL:HG21	1.79	0.47
1:A:1243:LYS:HD3	1:A:1276:HIS:ND1	2.30	0.46
1:A:255:GLY:O	1:A:257:GLU:N	2.49	0.46
1:A:326:TYR:O	1:A:330:GLY:HA3	2.16	0.46
1:A:251:HIS:CE1	1:A:1004:GLU:HG3	2.51	0.45
1:A:86:PHE:CE2	1:A:336:ASP:HB3	2.51	0.45
1:A:94:ASP:OD1	3:A:1502:JLW:N5	2.49	0.45
1:A:228:MET:HE3	1:A:228:MET:HB3	1.78	0.45
1:A:1103:PRO:HD3	1:A:1254:VAL:HG21	1.98	0.45
1:A:1455:ALA:HA	1:A:1456:TYR:HA	1.67	0.45
1:A:1305:ARG:HD2	1:A:1364:ILE:HD13	1.99	0.45
5:A:1504:TAR:O41	5:A:1504:TAR:O2	2.32	0.45
1:A:1009:PHE:HB3	1:A:1025:TYR:CG	2.52	0.45
1:A:1254:VAL:HG22	1:A:1264:ILE:HG12	1.99	0.44
1:A:1264:ILE:O	1:A:1287:TYR:HA	2.18	0.44
1:A:102:VAL:O	1:A:106:LEU:HG	2.17	0.44
1:A:92:MET:HE3	1:A:171:VAL:HG22	1.98	0.44
1:A:71:VAL:HG12	1:A:320:CYS:HB3	2.00	0.44
1:A:1273:ASN:O	1:A:1273:ASN:ND2	2.50	0.44
1:A:314:LEU:HA	1:A:317:VAL:HG12	2.00	0.44
1:A:114:TRP:CZ2	1:A:132:ILE:HD11	2.53	0.43
1:A:59:TRP:HA	1:A:62:PRO:HG2	2.01	0.43
1:A:287:THR:OG1	1:A:288:VAL:N	2.52	0.43
1:A:272:PHE:HA	1:A:318:ARG:CD	2.48	0.43
1:A:96:TYR:CE2	1:A:149:CYS:HB3	2.54	0.43
1:A:1381:HIS:HE1	1:A:1388:GLU:OE1	2.02	0.43
1:A:1098:VAL:HG11	1:A:1266:ILE:HG23	2.00	0.43
1:A:1404:MET:HE3	1:A:1406:HIS:HE1	1.83	0.43
1:A:1281:GLN:HB3	1:A:1325:THR:HG22	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:141:PHE:CD1	1:A:231:GLY:HA3	2.55	0.42
1:A:1222:ASP:OD1	1:A:1226:THR:OG1	2.36	0.42
1:A:1284:ARG:NH1	1:A:1298:GLY:O	2.52	0.42
1:A:272:PHE:HA	1:A:318:ARG:HD2	2.00	0.42
1:A:1143:LEU:HD23	1:A:1143:LEU:HA	1.84	0.42
1:A:1119:LYS:HB3	1:A:1122:PHE:HB2	2.01	0.42
1:A:1334:ASN:OD1	1:A:1334:ASN:C	2.62	0.42
1:A:145:TRP:HB3	1:A:182:ILE:HG12	2.02	0.42
1:A:192:PRO:HB2	1:A:227:GLN:NE2	2.34	0.42
1:A:153:ASP:OD2	1:A:154:ARG:NE	2.44	0.42
1:A:1270:THR:O	1:A:1281:GLN:HA	2.19	0.42
1:A:257:GLU:HB3	1:A:258:ARG:H	1.52	0.42
1:A:176:LYS:HA	1:A:176:LYS:HD2	1.80	0.41
1:A:1145:ARG:HD3	1:A:1148:GLU:OE2	2.20	0.41
1:A:148:LEU:HD22	1:A:148:LEU:O	2.21	0.41
1:A:1244:PHE:CZ	1:A:1246:GLY:HA3	2.56	0.41
1:A:264:VAL:HA	1:A:329:ILE:HD13	2.03	0.41
1:A:321:VAL:O	1:A:325:LEU:HD22	2.20	0.41
1:A:138:MET:HE3	1:A:138:MET:HB3	1.73	0.40
1:A:1413:ASN:OD1	1:A:1415:GLU:HB2	2.22	0.40
1:A:196:TYR:HD1	1:A:213:ILE:HD11	1.87	0.40
1:A:1203:LYS:HB3	1:A:1203:LYS:HE3	1.88	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	742/785 (94%)	682 (92%)	52 (7%)	8 (1%)	11 8

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	86	PHE
1	A	256	HIS
1	A	258	ARG
1	A	214	THR
1	A	1019	LYS
1	A	257	GLU
1	A	328	PHE
1	A	1096	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	639/679 (94%)	603 (94%)	36 (6%)	19 18

All (36) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	82	THR
1	A	89	LEU
1	A	120	LYS
1	A	135	ILE
1	A	148	LEU
1	A	151	SER
1	A	159	VAL
1	A	166	ARG
1	A	171	VAL
1	A	172	LEU
1	A	185	LEU
1	A	191	ILE
1	A	201	ARG
1	A	216	HIS
1	A	221	ILE
1	A	225	VAL
1	A	228	MET
1	A	244	LEU
1	A	245	VAL

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Mol	Chain	Res	Type
1	A	1095	ILE
1	A	1126	SER
1	A	1164	ASP
1	A	1169[A]	ASP
1	A	1169[B]	ASP
1	A	1191	ASP
1	A	1217	MET
1	A	1306	GLN
1	A	1324	ASN
1	A	1471	SER
1	A	263	LYS
1	A	264	VAL
1	A	297	THR
1	A	322	ASN
1	A	325	LEU
1	A	329	ILE
1	A	331	VAL

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

Mol	Chain	Res	Type
1	A	1094	ASN
1	A	1192	GLN
1	A	1273	ASN
1	A	1302	ASN
1	A	1306	GLN
1	A	1319	ASN
1	A	1381	HIS
1	A	1384	HIS
1	A	280	ASN
1	A	322	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 5 ligands modelled in this entry, 1 is monoatomic - leaving 4 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	JLW	A	1502	-	33,35,35	0.26	0	50,54,54	0.73	3 (6%)
5	TAR	A	1504	-	9,9,9	1.08	0	12,12,12	1.41	3 (25%)
5	TAR	A	1505	-	9,9,9	1.13	0	12,12,12	1.26	2 (16%)
2	PGE	A	1501	-	5,5,9	0.44	0	4,4,8	0.22	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	JLW	A	1502	-	-	0/26/40/40	0/3/3/3
5	TAR	A	1504	-	-	5/12/12/12	-
5	TAR	A	1505	-	-	2/12/12/12	-
2	PGE	A	1501	-	-	1/3/3/7	-

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1502	JLW	C12-C11-N3	2.73	116.63	110.25
5	A	1504	TAR	O11-C1-C2	2.68	120.75	113.31
5	A	1505	TAR	O11-C1-C2	2.56	120.43	113.31
3	A	1502	JLW	N5-C12-N4	-2.49	120.67	123.57
3	A	1502	JLW	C9-C8-C7	-2.33	118.25	119.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	1504	TAR	O41-C4-O4	-2.28	118.90	124.08
5	A	1505	TAR	O11-C1-O1	-2.20	119.08	124.08
5	A	1504	TAR	O41-C4-C3	2.12	119.21	113.31

There are no chirality outliers.

All (8) torsion outliers are listed below:

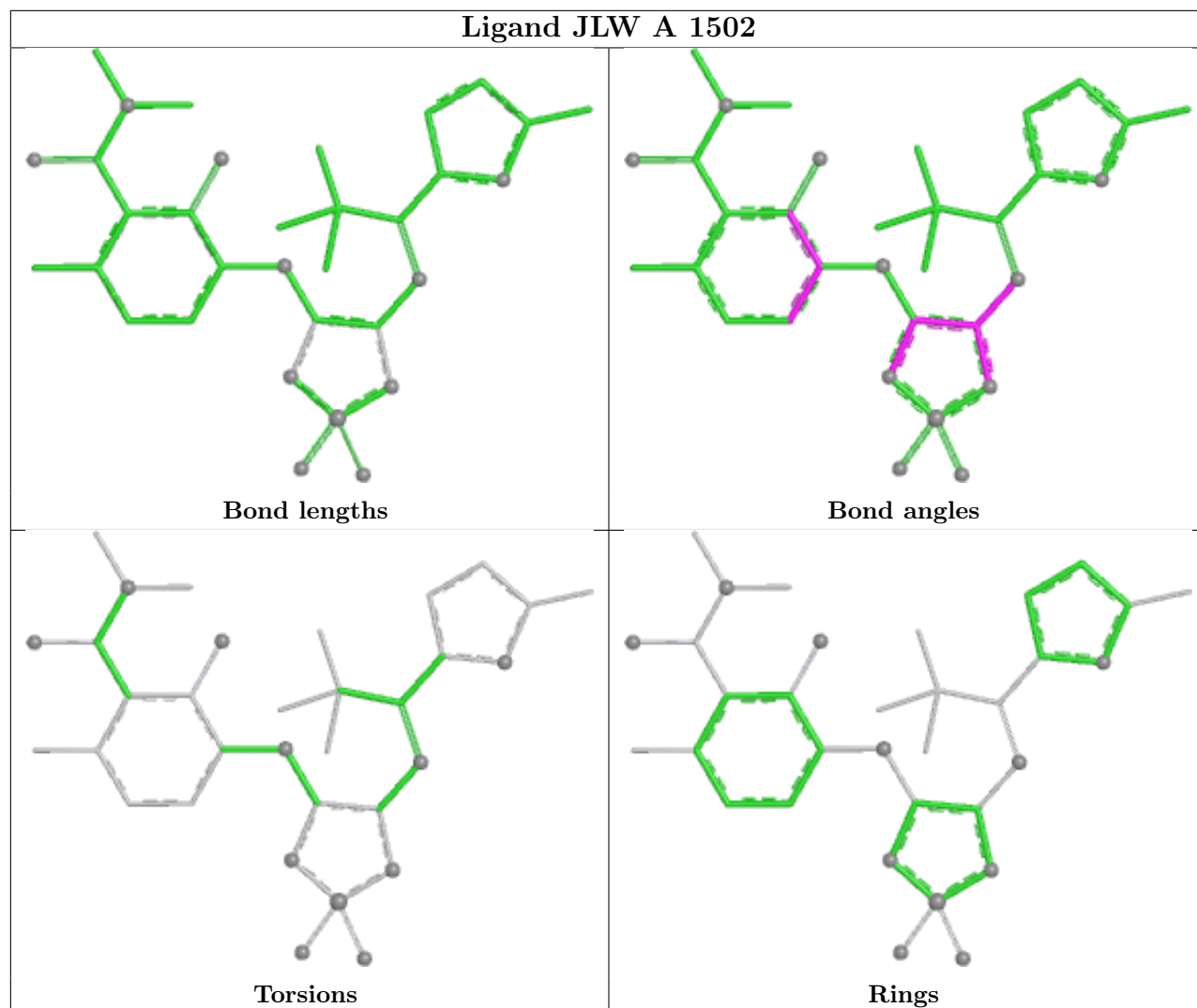
Mol	Chain	Res	Type	Atoms
5	A	1504	TAR	O1-C1-C2-O2
5	A	1504	TAR	O11-C1-C2-O2
5	A	1504	TAR	O3-C3-C4-O4
5	A	1504	TAR	O3-C3-C4-O41
5	A	1505	TAR	O3-C3-C4-O4
5	A	1505	TAR	O3-C3-C4-O41
2	A	1501	PGE	O1-C1-C2-O2
5	A	1504	TAR	O11-C1-C2-C3

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1502	JLW	2	0
5	A	1504	TAR	1	0
5	A	1505	TAR	2	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

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	744/785 (94%)	0.96	224 (30%) 1 1	8, 26, 101, 142	7 (0%)

All (224) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	338	PHE	6.9
1	A	262	ILE	6.0
1	A	298	CYS	5.7
1	A	169	ALA	5.7
1	A	341	PHE	5.6
1	A	189	LEU	5.6
1	A	324	PHE	5.6
1	A	70	PHE	5.5
1	A	202	SER	5.4
1	A	300	LEU	5.4
1	A	53	VAL	5.4
1	A	229	VAL	5.4
1	A	78	LEU	5.3
1	A	195	LEU	5.3
1	A	288	VAL	5.2
1	A	85	TYR	5.2
1	A	207	ALA	5.2
1	A	89	LEU	5.2
1	A	196	TYR	5.2
1	A	331	VAL	5.2
1	A	79	VAL	5.1
1	A	109	LEU	5.0
1	A	219	ALA	5.0
1	A	243	TYR	4.9
1	A	285	ALA	4.9
1	A	206	GLN	4.9
1	A	217	VAL	4.8

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Mol	Chain	Res	Type	RSRZ
1	A	214	THR	4.8
1	A	63	ILE	4.8
1	A	225	VAL	4.8
1	A	333	PHE	4.7
1	A	306	ILE	4.7
1	A	317	VAL	4.6
1	A	81	LEU	4.6
1	A	59	TRP	4.5
1	A	339	LYS	4.5
1	A	165	HIS	4.5
1	A	213	ILE	4.5
1	A	56	PHE	4.5
1	A	310	VAL	4.4
1	A	204	SER	4.4
1	A	264	VAL	4.4
1	A	311	THR	4.3
1	A	159	VAL	4.3
1	A	299	GLU	4.2
1	A	340	LEU	4.2
1	A	200	GLN	4.1
1	A	60	PHE	4.1
1	A	222	THR	4.1
1	A	218	GLU	4.1
1	A	326	TYR	4.1
1	A	297	THR	4.1
1	A	256	HIS	4.1
1	A	173	LEU	4.1
1	A	268	VAL	4.1
1	A	274	VAL	4.1
1	A	80	VAL	4.0
1	A	221	ILE	4.0
1	A	198	ASP	4.0
1	A	180	VAL	3.9
1	A	275	PHE	3.9
1	A	167	HIS	3.9
1	A	111	LEU	3.9
1	A	102	VAL	3.9
1	A	301	SER	3.9
1	A	67	ILE	3.9
1	A	139	SER	3.9
1	A	97	LEU	3.9
1	A	183	TRP	3.8

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Mol	Chain	Res	Type	RSRZ
1	A	113	PHE	3.8
1	A	286	GLN	3.8
1	A	182	ILE	3.8
1	A	65	TYR	3.8
1	A	58	ALA	3.8
1	A	185	LEU	3.8
1	A	282	VAL	3.8
1	A	150	ILE	3.7
1	A	116	TYR	3.7
1	A	315	ALA	3.7
1	A	191	ILE	3.7
1	A	52	ASP	3.7
1	A	330	GLY	3.7
1	A	171	VAL	3.7
1	A	336	ASP	3.7
1	A	232	PHE	3.7
1	A	329	ILE	3.7
1	A	54	ARG	3.7
1	A	186	ALA	3.7
1	A	287	THR	3.7
1	A	208	MET	3.6
1	A	209	ARG	3.6
1	A	323	PRO	3.6
1	A	328	PHE	3.6
1	A	302	LYS	3.6
1	A	194	LEU	3.5
1	A	304	LEU	3.5
1	A	1307	VAL	3.5
1	A	220	PHE	3.5
1	A	136	TYR	3.5
1	A	216	HIS	3.5
1	A	143	GLY	3.5
1	A	147	LEU	3.5
1	A	325	LEU	3.4
1	A	283	VAL	3.4
1	A	75	GLY	3.4
1	A	126	VAL	3.3
1	A	203	SER	3.3
1	A	146	LEU	3.3
1	A	57	LYS	3.3
1	A	107	PHE	3.3
1	A	316	CYS	3.3

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Mol	Chain	Res	Type	RSRZ
1	A	68	ILE	3.3
1	A	132	ILE	3.3
1	A	314	LEU	3.3
1	A	156	VAL	3.2
1	A	305	ASN	3.2
1	A	74	LEU	3.2
1	A	93	THR	3.2
1	A	192	PRO	3.2
1	A	327	ALA	3.2
1	A	244	LEU	3.2
1	A	321	VAL	3.1
1	A	272	PHE	3.1
1	A	145	TRP	3.1
1	A	277	LEU	3.1
1	A	77	GLY	3.1
1	A	76	ASN	3.1
1	A	234	VAL	3.1
1	A	73	LEU	3.1
1	A	100	LEU	3.1
1	A	108	LEU	3.1
1	A	212	LEU	3.1
1	A	1472	LYS	3.1
1	A	90	LYS	3.1
1	A	172	LEU	3.1
1	A	284	LEU	3.1
1	A	199	LEU	3.0
1	A	337	LEU	3.0
1	A	308	TYR	3.0
1	A	140	PHE	3.0
1	A	223	ILE	2.9
1	A	138	MET	2.9
1	A	88	ARG	2.9
1	A	263	LYS	2.9
1	A	84	ILE	2.9
1	A	276	GLN	2.9
1	A	193	GLU	2.9
1	A	71	VAL	2.8
1	A	269	VAL	2.8
1	A	105	ILE	2.8
1	A	273	ILE	2.8
1	A	154	ARG	2.8
1	A	86	PHE	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	174	ILE	2.8
1	A	1304	ASN	2.7
1	A	175	SER	2.7
1	A	151	SER	2.7
1	A	215	GLU	2.7
1	A	103	ALA	2.7
1	A	270	VAL	2.7
1	A	135	ILE	2.7
1	A	152	ILE	2.7
1	A	226	ALA	2.6
1	A	271	VAL	2.6
1	A	255	GLY	2.6
1	A	228	MET	2.6
1	A	55	ASN	2.6
1	A	176	LYS	2.6
1	A	258	ARG	2.6
1	A	166	ARG	2.6
1	A	266	ILE	2.6
1	A	141	PHE	2.5
1	A	320	CYS	2.5
1	A	335	ASN	2.5
1	A	201	ARG	2.5
1	A	148	LEU	2.5
1	A	259	ASN	2.5
1	A	190	SER	2.5
1	A	118	ALA	2.5
1	A	61	LEU	2.5
1	A	83	TYR	2.4
1	A	115	ALA	2.4
1	A	98	LEU	2.4
1	A	133	PHE	2.4
1	A	170	ARG	2.4
1	A	267	ALA	2.4
1	A	106	LEU	2.4
1	A	128	PHE	2.4
1	A	230	ILE	2.4
1	A	95	THR	2.4
1	A	134	ALA	2.3
1	A	1451	LYS	2.3
1	A	184	ILE	2.3
1	A	91	THR	2.3
1	A	205	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	278	PRO	2.3
1	A	307	ALA	2.3
1	A	322	ASN	2.3
1	A	87	LYS	2.3
1	A	197	SER	2.3
1	A	224	GLN	2.3
1	A	123	VAL	2.3
1	A	119	ALA	2.3
1	A	188	VAL	2.2
1	A	155	TYR	2.2
1	A	279	TYR	2.2
1	A	312	TYR	2.2
1	A	62	PRO	2.2
1	A	1240	ASP	2.2
1	A	96	TYR	2.2
1	A	110	THR	2.2
1	A	227	GLN	2.1
1	A	177	LEU	2.1
1	A	210	CYS	2.1
1	A	334	ARG	2.1
1	A	241	PHE	2.1
1	A	1471	SER	2.1
1	A	257	GLU	2.1
1	A	82	THR	2.1
1	A	137	LYS	2.1
1	A	265	ILE	2.1
1	A	179	CYS	2.0
1	A	238	ALA	2.0
1	A	69	CYS	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 ⓘ

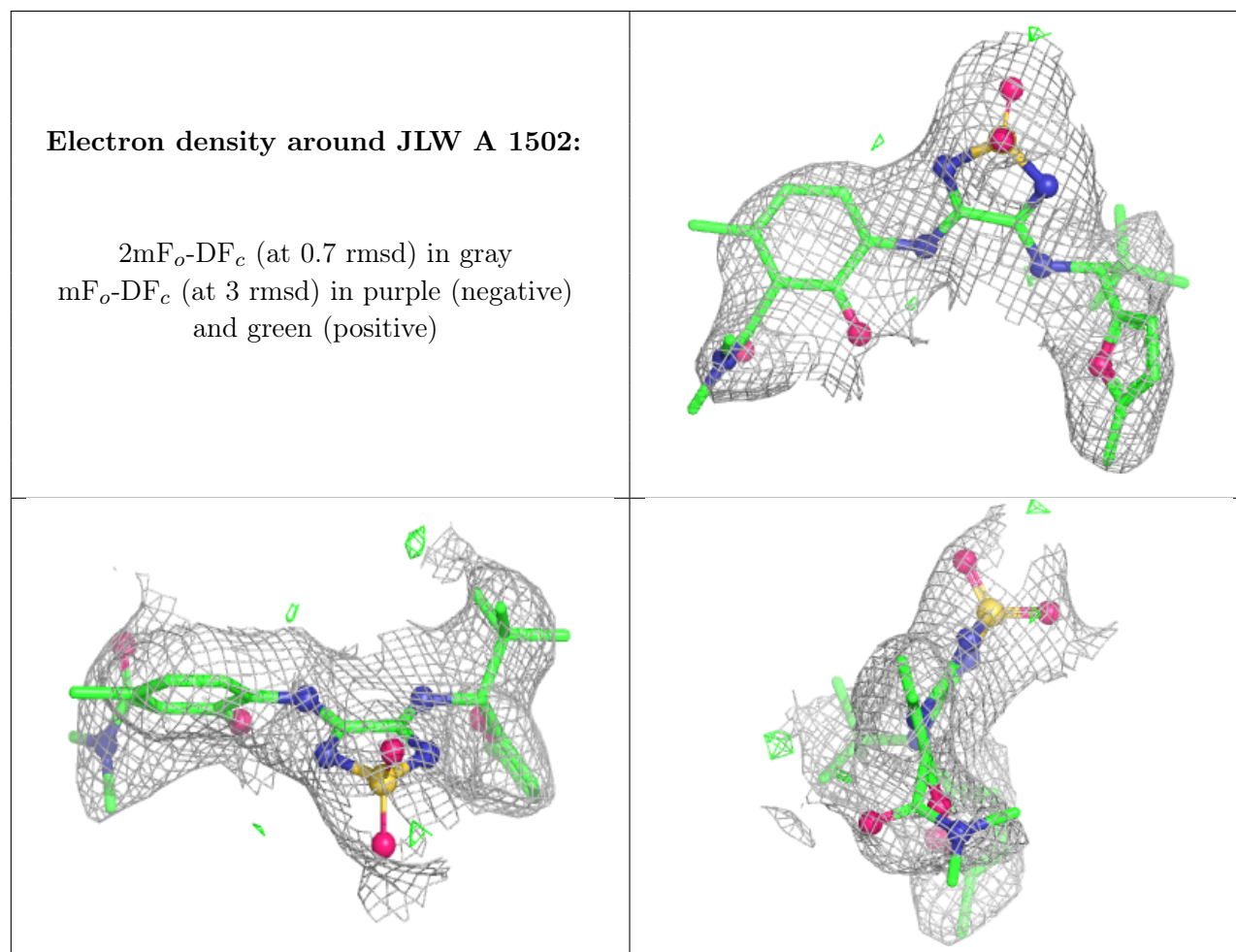
There are no oligosaccharides in this entry.

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($\text{\AA}^2$)	Q<0.9
4	NA	A	1503	1/1	0.71	0.23	80,80,80,80	0
3	JLW	A	1502	33/33	0.85	0.16	76,85,92,98	0
5	TAR	A	1505	10/10	0.88	0.11	31,50,65,70	0
5	TAR	A	1504	10/10	0.91	0.09	33,41,59,65	0
2	PGE	A	1501	6/10	0.91	0.09	20,23,30,38	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.