



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 01:43 PM UTC

PDB ID : 5HZC / pdb_00005hzc
Title : Crystal structure of the complex PPARgamma/AL26-29
Authors : Pochetti, G.; Montanari, R.; Capelli, D.; Loiodice, F.; Laghezza, A.; Lavecchia, A.
Deposited on : 2016-02-02
Resolution : 2.00 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

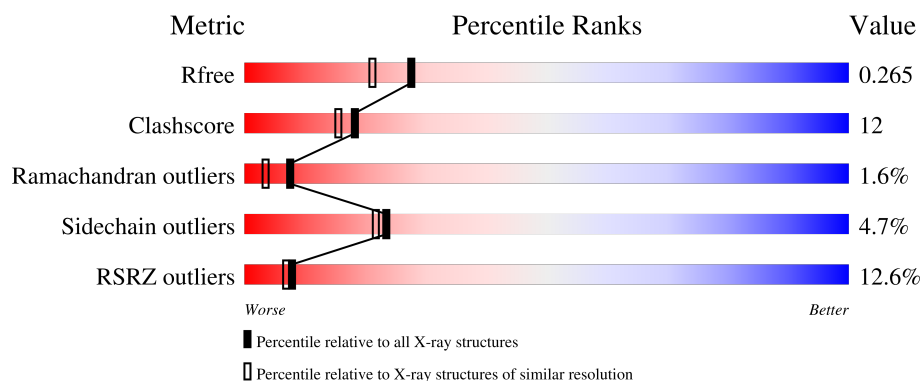
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 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	10052 (2.00-2.00)
Clashscore	190562	11152 (2.00-2.00)
Ramachandran outliers	187476	11031 (2.00-2.00)
Sidechain outliers	187428	11029 (2.00-2.00)
RSRZ outliers	180081	10067 (2.00-2.00)

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	287	8% 62% 23% • 13%
1	B	287	14% 66% 18% • • 13%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 4229 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.

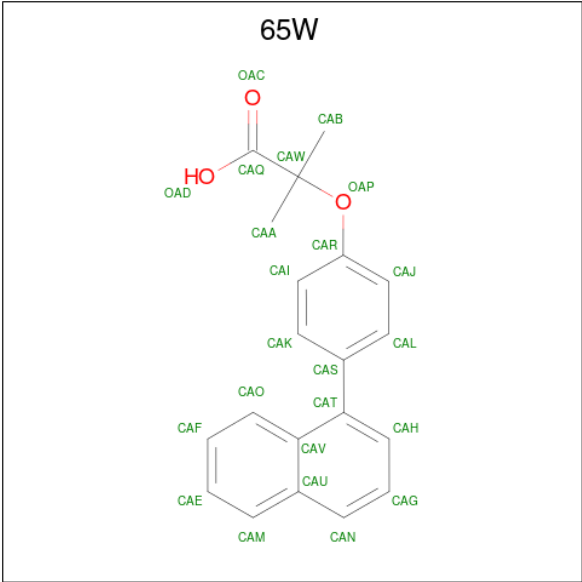
- Molecule 1 is a protein called Peroxisome proliferator-activated receptor gamma.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	251	Total	C	N	O	S	0	0	0
			2004	1294	327	373	10			
1	B	250	Total	C	N	O	S	0	0	0
			1993	1288	323	372	10			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	191	GLY	-	expression tag	UNP P37231
A	192	SER	-	expression tag	UNP P37231
A	193	HIS	-	expression tag	UNP P37231
A	194	MET	-	expression tag	UNP P37231
B	191	GLY	-	expression tag	UNP P37231
B	192	SER	-	expression tag	UNP P37231
B	193	HIS	-	expression tag	UNP P37231
B	194	MET	-	expression tag	UNP P37231

- Molecule 2 is 2-methyl-2-[4-(naphthalen-1-yl)phenoxy]propanoic acid (CCD ID: 65W) (formula: C₂₀H₁₈O₃).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			23	20	3		
2	B	1	Total	C	O	0	0
			23	20	3		

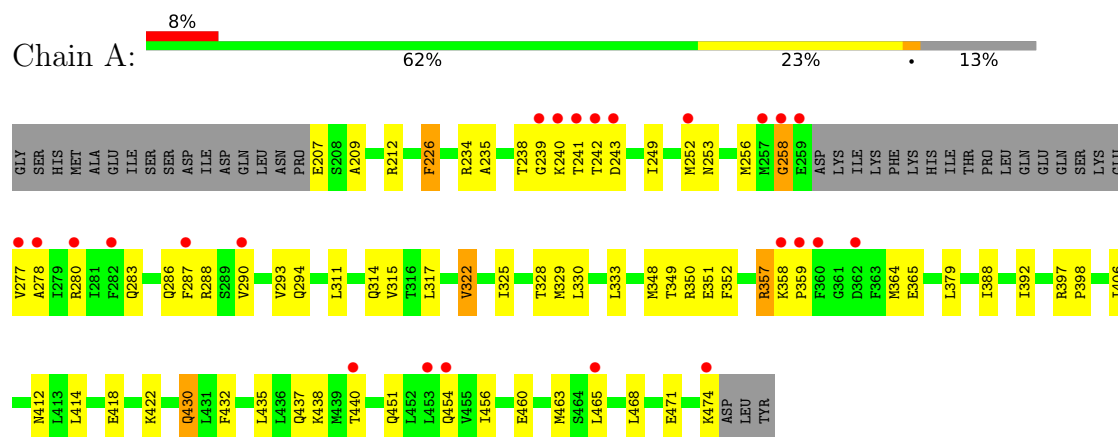
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	83	Total	O	0	0
			83	83		
3	B	103	Total	O	0	0
			103	103		

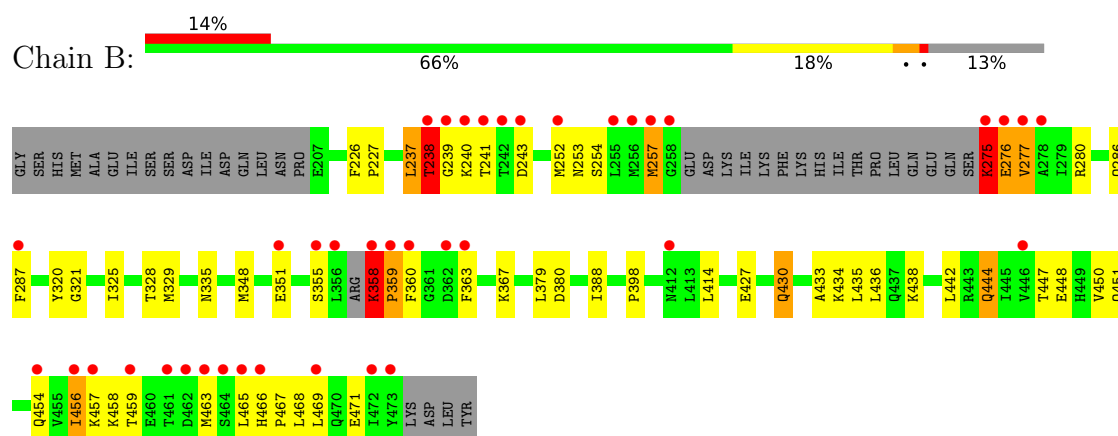
3 Residue-property plots [i](#)

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: Peroxisome proliferator-activated receptor gamma



- Molecule 1: Peroxisome proliferator-activated receptor gamma



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	93.40Å 60.79Å 119.03Å 90.00° 103.37° 90.00°	Depositor
Resolution (Å)	40.75 – 2.00 40.75 – 2.00	Depositor EDS
% Data completeness (in resolution range)	97.7 (40.75-2.00) 95.7 (40.75-2.00)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.09 (at 2.00Å)	Xtriage
Refinement program	PHENIX 1.8.4_1496	Depositor
R, R_{free}	0.224 , 0.270 0.226 , 0.265	Depositor DCC
R_{free} test set	2000 reflections (4.54%)	wwPDB-VP
Wilson B-factor (Å ²)	32.5	Xtriage
Anisotropy	0.262	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 46.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	4229	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 6.20% 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: 65W

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	0.66	1/2037 (0.0%)	0.92	5/2745 (0.2%)
1	B	0.71	1/2026 (0.0%)	0.94	4/2731 (0.1%)
All	All	0.69	2/4063 (0.0%)	0.93	9/5476 (0.2%)

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	2
1	B	0	1
All	All	0	3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	275	LYS	C-N	20.03	1.61	1.33
1	A	258	GLY	C-N	-16.81	1.09	1.33

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	275	LYS	CA-C-N	-11.40	99.76	121.54
1	B	275	LYS	C-N-CA	-11.40	99.76	121.54
1	A	258	GLY	O-C-N	-11.16	108.19	122.70
1	A	258	GLY	CA-C-N	10.84	141.21	121.70
1	A	258	GLY	C-N-CA	10.84	141.21	121.70
1	B	358	LYS	CA-C-N	-8.56	109.13	119.84
1	B	358	LYS	C-N-CA	-8.56	109.13	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	226	PHE	CA-C-N	5.58	125.24	119.05
1	A	226	PHE	C-N-CA	5.58	125.24	119.05

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	258	GLY	Mainchain
1	A	357	ARG	Peptide
1	B	275	LYS	Mainchain

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	2004	0	2063	56	1
1	B	1993	0	2051	45	1
2	A	23	0	0	1	0
2	B	23	0	0	0	0
3	A	83	0	0	19	0
3	B	103	0	0	7	0
All	All	4229	0	4114	99	1

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 12.

All (99) 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:275:LYS:O	3:B:601:HOH:O	1.89	0.90
1:B:325:ILE:HD12	1:B:388:ILE:HG23	1.61	0.82
1:A:349:THR:HG21	3:A:671:HOH:O	1.86	0.76
1:B:253:ASN:O	1:B:257:MET:HG3	1.90	0.71
1:B:463:MET:HE2	1:B:465:LEU:HD12	1.72	0.71
1:A:277:VAL:HG23	1:A:278:ALA:H	1.54	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:207:GLU:HG3	1:A:209:ALA:H	1.56	0.70
1:A:311:LEU:O	3:A:601:HOH:O	2.11	0.69
1:B:226:PHE:CD1	1:B:329:MET:HE1	2.27	0.69
1:A:325:ILE:HG23	1:A:388:ILE:HD12	1.75	0.68
1:A:430:GLN:HE21	1:B:414:LEU:HB3	1.59	0.65
1:A:328:THR:HA	3:A:656:HOH:O	1.96	0.64
1:A:311:LEU:HD12	1:A:311:LEU:H	1.64	0.63
1:A:357:ARG:NH2	1:A:460:GLU:OE2	2.31	0.62
1:A:364:MET:SD	3:A:620:HOH:O	2.56	0.61
3:A:639:HOH:O	1:B:444:GLN:HG3	2.00	0.61
3:A:616:HOH:O	1:B:436:LEU:HB3	2.01	0.60
1:A:277:VAL:HG23	1:A:278:ALA:N	2.18	0.59
1:A:330:LEU:HD12	3:A:640:HOH:O	2.03	0.59
1:A:451:GLN:NE2	3:A:606:HOH:O	2.35	0.58
1:B:454:GLN:O	1:B:457:LYS:HG2	2.02	0.58
1:A:325:ILE:HD11	1:A:392:ILE:HG13	1.86	0.58
1:A:418:GLU:O	1:A:422:LYS:HG3	2.04	0.57
1:A:315:VAL:HG23	3:A:601:HOH:O	2.03	0.56
1:B:467:PRO:O	1:B:471:GLU:HG2	2.06	0.56
1:B:237:LEU:O	1:B:239:GLY:N	2.39	0.56
1:A:238:THR:O	1:A:240:LYS:N	2.34	0.56
1:A:358:LYS:N	1:A:358:LYS:HD3	2.19	0.56
1:B:456:ILE:HG13	3:B:699:HOH:O	2.07	0.54
1:A:293:VAL:HG22	1:A:322:VAL:HG11	1.89	0.54
1:A:454:GLN:OE1	3:A:602:HOH:O	2.18	0.54
1:B:430:GLN:HG3	1:B:433:ALA:HB3	1.90	0.54
1:A:333:LEU:HB2	3:A:640:HOH:O	2.08	0.54
1:A:314:GLN:HB2	3:A:601:HOH:O	2.08	0.54
1:B:238:THR:HG22	1:B:335:ASN:HD22	1.72	0.53
1:A:287:PHE:O	1:A:290:VAL:HG12	2.09	0.53
1:A:349:THR:HG22	1:A:352:PHE:H	1.74	0.51
1:A:290:VAL:HB	3:A:610:HOH:O	2.10	0.51
1:B:286:GLN:HG3	3:B:696:HOH:O	2.10	0.51
1:A:329:MET:HG2	3:A:634:HOH:O	2.10	0.51
1:B:447:THR:O	1:B:450:VAL:HG22	2.12	0.50
1:B:243:ASP:N	1:B:243:ASP:OD1	2.44	0.50
1:B:448:GLU:O	1:B:451:GLN:HG2	2.11	0.50
1:A:288:ARG:NH2	2:A:501:65W:OAD	2.44	0.50
1:B:321:GLY:O	1:B:325:ILE:HG12	2.12	0.50
1:B:358:LYS:HB2	1:B:359:PRO:HD3	1.93	0.50
1:A:437:GLN:O	1:A:440:THR:HG22	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:287:PHE:HB2	3:B:607:HOH:O	2.11	0.50
1:A:238:THR:C	1:A:240:LYS:H	2.20	0.49
1:A:226:PHE:CG	1:A:329:MET:HE1	2.47	0.49
1:B:276:GLU:O	1:B:280:ARG:N	2.30	0.48
1:A:235:ALA:O	1:A:241:THR:OG1	2.32	0.48
1:B:328:THR:OG1	1:B:442:LEU:HD11	2.14	0.48
1:B:451:GLN:O	1:B:454:GLN:HG2	2.14	0.48
1:A:286:GLN:OE1	1:A:465:LEU:HD12	2.13	0.48
1:A:234:ARG:HA	1:A:234:ARG:HD3	1.71	0.47
1:A:243:ASP:OD1	3:A:603:HOH:O	2.20	0.47
1:B:237:LEU:O	1:B:238:THR:C	2.57	0.47
1:B:252:MET:SD	1:B:277:VAL:HG11	2.54	0.47
1:B:351:GLU:OE1	3:B:602:HOH:O	2.20	0.47
1:A:293:VAL:HG11	1:A:468:LEU:HD11	1.97	0.47
1:B:360:PHE:O	1:B:363:PHE:HD2	1.98	0.46
1:B:238:THR:OG1	1:B:239:GLY:N	2.48	0.46
1:B:434:LYS:O	1:B:438:LYS:HD3	2.16	0.46
1:A:283:GLN:HE21	1:A:463:MET:HG2	1.81	0.46
1:B:355:SER:O	1:B:355:SER:OG	2.31	0.46
1:A:243:ASP:HB3	3:A:668:HOH:O	2.15	0.45
1:A:359:PRO:HB2	1:A:456:ILE:HD11	1.97	0.45
1:A:430:GLN:HG3	3:A:643:HOH:O	2.15	0.45
1:A:317:LEU:HD21	1:A:406:ILE:HD13	1.97	0.45
1:A:364:MET:HA	3:A:620:HOH:O	2.15	0.45
1:A:474:LYS:HA	1:A:474:LYS:HD3	1.84	0.45
1:A:253:ASN:HA	1:A:256:MET:HG2	1.98	0.45
1:A:325:ILE:HD13	1:A:388:ILE:HG23	1.99	0.44
1:A:414:LEU:HB3	1:B:430:GLN:HG2	2.00	0.44
1:A:438:LYS:HD3	1:A:438:LYS:HA	1.81	0.44
1:B:456:ILE:HD13	1:B:456:ILE:HA	1.74	0.44
1:A:277:VAL:CG2	1:A:278:ALA:H	2.23	0.43
1:B:456:ILE:C	1:B:458:LYS:H	2.26	0.43
1:B:275:LYS:O	1:B:276:GLU:HB2	2.19	0.43
1:A:397:ARG:HA	1:A:398:PRO:HD3	1.88	0.43
1:A:349:THR:HG22	1:A:351:GLU:N	2.33	0.43
1:B:363:PHE:O	1:B:367:LYS:HE2	2.19	0.43
1:B:380:ASP:HB2	3:B:611:HOH:O	2.18	0.43
1:A:283:GLN:HE21	1:A:463:MET:CG	2.32	0.42
1:B:358:LYS:HD2	1:B:359:PRO:HD3	1.99	0.42
1:B:348:MET:HE3	1:B:348:MET:HB2	1.79	0.42
1:B:253:ASN:HB2	3:B:669:HOH:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:253:ASN:C	1:B:257:MET:HG3	2.44	0.42
1:B:320:TYR:CZ	1:B:398:PRO:HG2	2.55	0.42
1:A:379:LEU:HD11	1:A:435:LEU:HD13	2.02	0.41
1:A:212:ARG:HD2	1:A:212:ARG:HA	1.83	0.41
1:A:350:ARG:NH2	1:A:365:GLU:OE2	2.38	0.41
1:B:456:ILE:C	1:B:458:LYS:N	2.78	0.41
1:A:348:MET:HE3	1:A:348:MET:HB2	1.99	0.41
1:A:252:MET:HE2	1:A:252:MET:HB2	2.00	0.40
1:B:276:GLU:H	1:B:280:ARG:HG3	1.87	0.40
1:A:432:PHE:HB3	3:A:643:HOH:O	2.21	0.40
1:B:379:LEU:HD11	1:B:435:LEU:HD13	2.04	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:294:GLN:NE2	1:B:471:GLU:OE1[3_455]	2.16	0.04

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	247/287 (86%)	241 (98%)	5 (2%)	1 (0%)	30	27
1	B	246/287 (86%)	228 (93%)	11 (4%)	7 (3%)	4	1
All	All	493/574 (86%)	469 (95%)	16 (3%)	8 (2%)	7	3

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	238	THR
1	B	240	LYS

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Mol	Chain	Res	Type
1	B	277	VAL
1	A	239	GLY
1	B	237	LEU
1	B	358	LYS
1	B	227	PRO
1	B	359	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	224/258 (87%)	217 (97%)	7 (3%)	35	37
1	B	223/258 (86%)	209 (94%)	14 (6%)	16	13
All	All	447/516 (87%)	426 (95%)	21 (5%)	23	22

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	242	THR
1	A	249	ILE
1	A	280	ARG
1	A	322	VAL
1	A	412	ASN
1	A	430	GLN
1	A	471	GLU
1	B	238	THR
1	B	241	THR
1	B	254	SER
1	B	257	MET
1	B	276	GLU
1	B	358	LYS
1	B	427	GLU
1	B	430	GLN
1	B	444	GLN
1	B	456	ILE

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Mol	Chain	Res	Type
1	B	459	THR
1	B	466	HIS
1	B	468	LEU
1	B	469	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	283	GLN
1	A	294	GLN
1	A	444	GLN
1	B	308	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](#)

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	$\# Z > 2$
2	65W	B	501	-	25,25,25	1.10	2 (8%)	36,36,36	1.24	3 (8%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	65W	A	501	-	25,25,25	1.05	1 (4%)	36,36,36	0.93	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	65W	B	501	-	-	8/15/15/15	0/3/3/3
2	65W	A	501	-	-	6/15/15/15	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501	65W	CAV-CAU	-2.72	1.37	1.43
2	B	501	65W	CAV-CAU	-2.50	1.38	1.43
2	B	501	65W	OAP-CAW	-2.42	1.41	1.45

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	501	65W	CAK-CAS-CAT	-3.57	114.95	120.87
2	B	501	65W	CAL-CAS-CAT	3.15	126.11	120.87
2	B	501	65W	OAP-CAW-CAQ	2.03	112.56	109.93

There are no chirality outliers.

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	65W	OAC-CAQ-CAW-OAP
2	B	501	65W	OAC-CAQ-CAW-OAP
2	A	501	65W	OAC-CAQ-CAW-CAA
2	B	501	65W	OAC-CAQ-CAW-CAA
2	A	501	65W	CAI-CAR-OAP-CAW
2	A	501	65W	OAD-CAQ-CAW-CAA
2	B	501	65W	OAD-CAQ-CAW-CAA
2	A	501	65W	CAJ-CAR-OAP-CAW
2	A	501	65W	OAD-CAQ-CAW-OAP
2	B	501	65W	OAD-CAQ-CAW-OAP
2	B	501	65W	CAK-CAS-CAT-CAH

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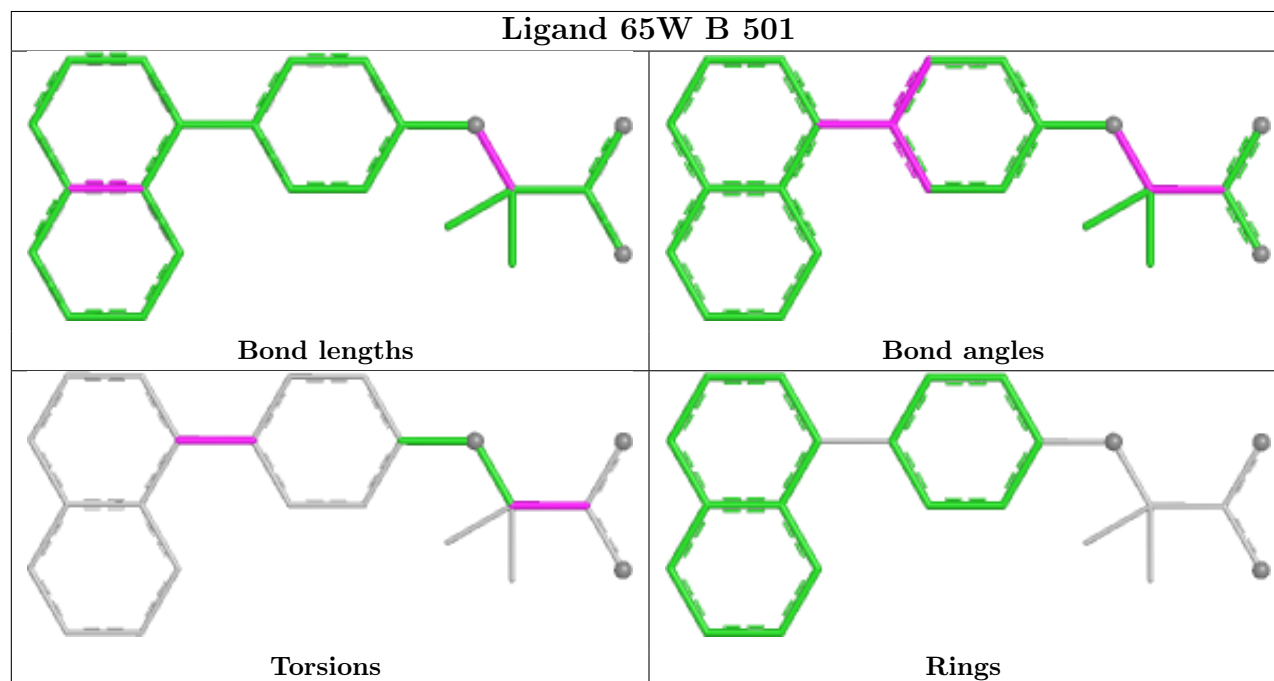
Mol	Chain	Res	Type	Atoms
2	B	501	65W	CAK-CAS-CAT-CAV
2	B	501	65W	CAL-CAS-CAT-CAV
2	B	501	65W	CAL-CAS-CAT-CAH

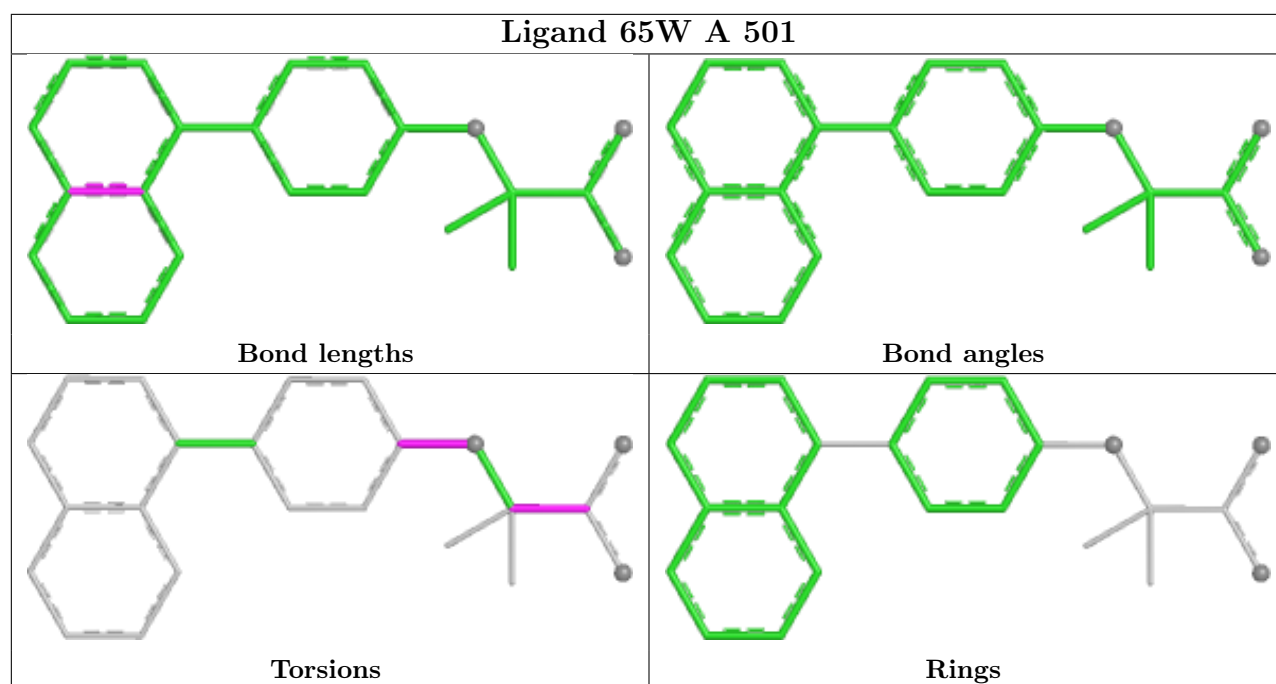
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	65W	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 [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	B	1
1	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	275:LYS	C	276:GLU	N	1.61
1	A	258:GLY	C	259:GLU	N	1.09

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	251/287 (87%)	0.63	24 (9%) 13 12	24, 40, 61, 81	0
1	B	250/287 (87%)	0.88	39 (15%) 5 4	24, 40, 79, 101	0
All	All	501/574 (87%)	0.76	63 (12%) 8 7	24, 40, 71, 101	0

All (63) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	465	LEU	7.8
1	B	473	TYR	6.2
1	B	463	MET	5.8
1	B	238	THR	5.6
1	A	282	PHE	5.4
1	B	258	GLY	5.2
1	A	239	GLY	5.2
1	A	241	THR	5.2
1	B	462	ASP	5.1
1	B	239	GLY	5.1
1	A	277	VAL	4.7
1	B	456	ILE	4.5
1	B	466	HIS	4.2
1	B	243	ASP	3.9
1	B	241	THR	3.9
1	B	257	MET	3.8
1	B	359	PRO	3.8
1	B	461	THR	3.7
1	B	464	SER	3.6
1	A	240	LYS	3.5
1	A	280	ARG	3.4
1	B	276	GLU	3.4
1	B	360	PHE	3.4
1	B	277	VAL	3.3

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Mol	Chain	Res	Type	RSRZ
1	B	287	PHE	3.3
1	B	362	ASP	3.1
1	B	242	THR	3.1
1	B	252	MET	3.1
1	A	287	PHE	3.1
1	A	258	GLY	3.0
1	A	243	ASP	3.0
1	B	240	LYS	3.0
1	A	465	LEU	3.0
1	A	474	LYS	3.0
1	B	275	LYS	3.0
1	A	362	ASP	2.7
1	A	242	THR	2.6
1	B	363	PHE	2.6
1	A	278	ALA	2.5
1	A	358	LYS	2.5
1	B	454	GLN	2.4
1	B	412	ASN	2.4
1	B	278	ALA	2.4
1	B	355	SER	2.4
1	B	256	MET	2.3
1	B	459	THR	2.3
1	B	356	LEU	2.2
1	A	360	PHE	2.2
1	A	257	MET	2.2
1	B	358	LYS	2.2
1	A	440	THR	2.2
1	B	469	LEU	2.1
1	A	252	MET	2.1
1	B	472	ILE	2.1
1	A	290	VAL	2.1
1	A	453	LEU	2.1
1	B	351	GLU	2.1
1	A	259	GLU	2.0
1	B	255	LEU	2.0
1	A	454	GLN	2.0
1	B	446	VAL	2.0
1	B	457	LYS	2.0
1	A	359	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 ⓘ

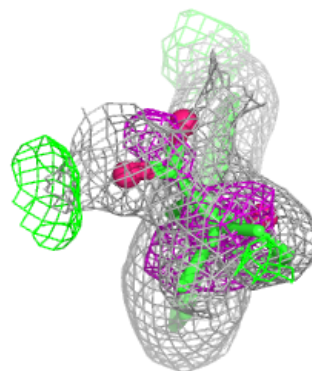
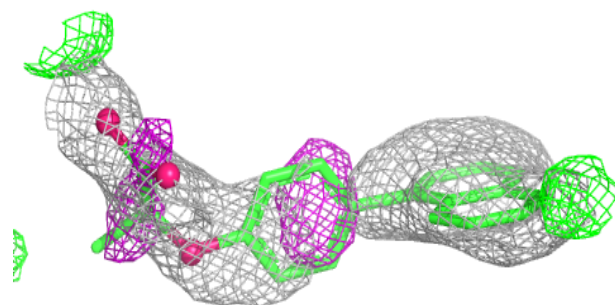
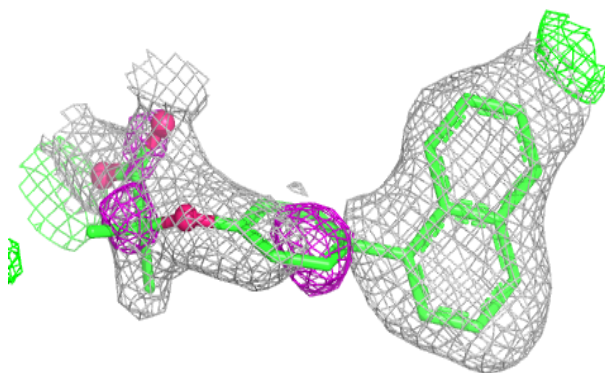
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	65W	A	501	23/23	0.70	0.20	42,55,59,60	0
2	65W	B	501	23/23	0.93	0.09	31,37,42,44	0

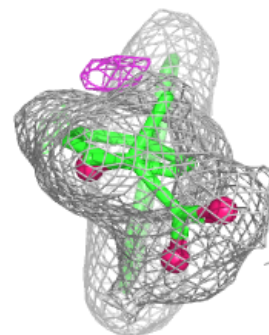
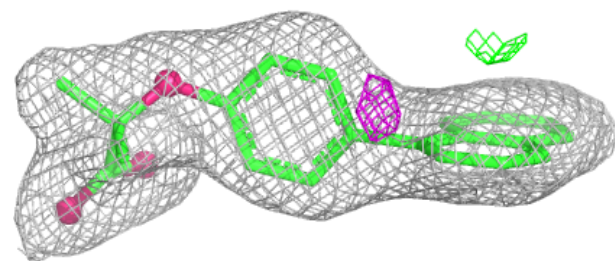
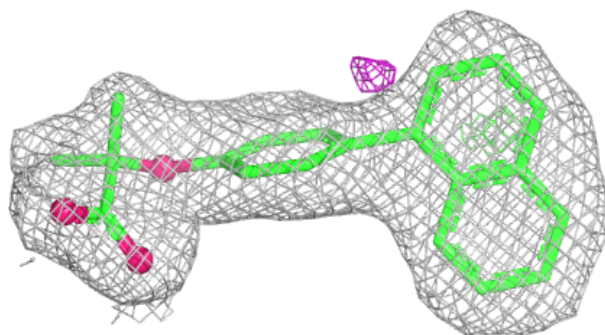
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around 65W A 501:

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

**Electron density around 65W B 501:**

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



6.5 Other polymers [i](#)

There are no such residues in this entry.