



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 16, 2023 – 07:05 PM EST

PDB ID : 2O8A
Title : rat PP1cgamma complexed with mouse inhibitor-2
Authors : Hurley, T.D.
Deposited on : 2006-12-12
Resolution : 2.61 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 : 4.02b-467
Xtrriage (Phenix) : 1.13
EDS : **FAILED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

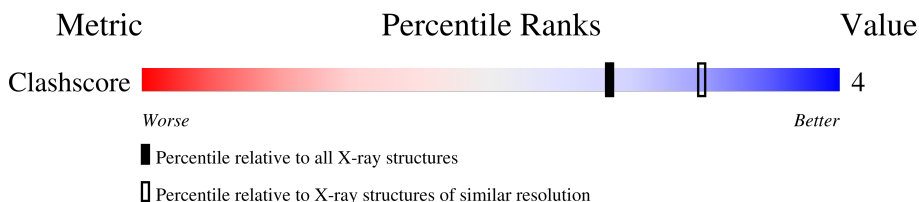
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.61 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))
Clashscore	141614	4168 (2.64-2.60)

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 $\leq 5\%$

Note EDS failed to run properly.

Mol	Chain	Length	Quality of chain
1	A	329	 80% 9% • 10%
1	B	329	 79% 11% 10%
2	I	206	 24% 5% 71%
2	J	206	 24% • 72%

2 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 5842 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 Serine/threonine-protein phosphatase PP1-gamma catalytic subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	295	2380	1527	399	436	18	0	0	0
1	B	295	2380	1527	399	436	18	0	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-5	MET	-	initiating methionine	UNP P63088
A	-4	HIS	-	expression tag	UNP P63088
A	-3	HIS	-	expression tag	UNP P63088
A	-2	HIS	-	expression tag	UNP P63088
A	-1	HIS	-	expression tag	UNP P63088
A	0	HIS	-	expression tag	UNP P63088
A	1	HIS	-	expression tag	UNP P63088
B	-5	MET	-	initiating methionine	UNP P63088
B	-4	HIS	-	expression tag	UNP P63088
B	-3	HIS	-	expression tag	UNP P63088
B	-2	HIS	-	expression tag	UNP P63088
B	-1	HIS	-	expression tag	UNP P63088
B	0	HIS	-	expression tag	UNP P63088
B	1	HIS	-	expression tag	UNP P63088

- Molecule 2 is a protein called Protein phosphatase inhibitor 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	I	59	495	309	93	91	2	0	0	0
2	J	58	487	305	92	88	2	0	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	47	Total O 47 47	0	0
3	I	5	Total O 5 5	0	0
3	B	38	Total O 38 38	0	0
3	J	10	Total O 10 10	0	0

4 Data and refinement statistics

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	95.46Å 103.81Å 151.38Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	41.70 – 2.61	Depositor
% Data completeness (in resolution range)	95.4 (41.70-2.61)	Depositor
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.00 (at 2.61Å)	Xtrriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.216 , 0.254	Depositor
Wilson B-factor (Å ²)	45.7	Xtrriage
Anisotropy	0.387	Xtrriage
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	5842	wwPDB-VP
Average B, all atoms (Å ²)	47.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.36% 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](#)

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	0.47	0/2434	0.76	8/3286 (0.2%)
1	B	0.47	0/2434	0.77	9/3286 (0.3%)
2	I	0.51	0/499	0.71	1/658 (0.2%)
2	J	0.51	0/491	0.75	2/647 (0.3%)
All	All	0.48	0/5858	0.76	20/7877 (0.3%)

There are no bond length outliers.

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	286	ASP	CB-CG-OD2	7.43	124.99	118.30
1	B	208	ASP	CB-CG-OD2	6.32	123.99	118.30
1	B	138	ASP	CB-CG-OD2	6.28	123.96	118.30
1	B	240	ASP	CB-CG-OD2	6.16	123.84	118.30
1	A	138	ASP	CB-CG-OD2	6.03	123.72	118.30
2	J	165	ASP	CB-CG-OD2	6.00	123.70	118.30
1	A	92	ASP	CB-CG-OD2	5.97	123.67	118.30
1	A	208	ASP	CB-CG-OD2	5.95	123.66	118.30
1	B	179	ASP	CB-CG-OD2	5.93	123.64	118.30
1	A	240	ASP	CB-CG-OD2	5.89	123.60	118.30
1	B	203	ASP	CB-CG-OD2	5.86	123.58	118.30
1	B	253	ASP	CB-CG-OD2	5.77	123.50	118.30
1	B	286	ASP	CB-CG-OD2	5.75	123.47	118.30
1	B	10	ASP	CB-CG-OD2	5.41	123.17	118.30
1	B	166	ASP	CB-CG-OD2	5.29	123.06	118.30
2	I	165	ASP	CB-CG-OD2	5.28	123.06	118.30
1	A	197	ASP	CB-CG-OD2	5.25	123.02	118.30
1	A	203	ASP	CB-CG-OD2	5.23	123.01	118.30
1	A	212	ASP	CB-CG-OD2	5.22	123.00	118.30
2	J	168	ASP	CB-CG-OD2	5.14	122.92	118.30

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	2380	0	2351	17	0
1	B	2380	0	2351	16	0
2	I	495	0	507	8	0
2	J	487	0	503	7	0
3	A	47	0	0	1	0
3	B	38	0	0	0	0
3	I	5	0	0	0	0
3	J	10	0	0	2	0
All	All	5842	0	5712	45	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 4.

All (45) 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)
2:J:131:SER:HB3	2:J:134:GLU:HB2	1.73	0.69
1:B:286:ASP:OD1	1:B:290:MET:HB3	1.97	0.65
1:A:284:SER:HB2	1:A:294:GLN:HE22	1.61	0.64
2:I:131:SER:HB2	2:I:134:GLU:HB2	1.78	0.64
2:I:52:ASN:O	2:I:56:THR:HG23	1.99	0.61
2:I:131:SER:HB3	2:I:134:GLU:H	1.65	0.61
2:I:131:SER:O	2:I:135:ARG:HB2	2.05	0.56
1:B:236:LEU:HD21	1:B:244:ILE:HG13	1.88	0.55
1:A:131:ASN:HB3	1:A:149:TRP:HE1	1.73	0.54
1:B:15:ARG:NH2	1:B:34:GLU:OE2	2.42	0.53
2:I:136:GLU:OE1	2:I:139:ARG:NH1	2.37	0.53
2:I:131:SER:CB	2:I:134:GLU:HB2	2.39	0.52
2:J:47:LYS:HD3	3:J:216:HOH:O	2.09	0.52
1:B:15:ARG:HH22	1:B:34:GLU:CD	2.13	0.51
2:J:131:SER:HB3	2:J:134:GLU:H	1.75	0.51
1:B:131:ASN:HB3	1:B:149:TRP:HE1	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:131:SER:CB	2:J:134:GLU:HB2	2.41	0.49
1:A:132:ARG:NH2	1:A:137:TYR:CE2	2.82	0.48
1:A:286:ASP:OD1	1:A:290:MET:HB3	2.13	0.48
1:B:113:LYS:HG2	1:B:114:TYR:CE1	2.49	0.47
1:B:94:VAL:O	1:B:95:ASP:HB2	2.14	0.47
1:B:57:ALA:HB1	1:B:58:PRO:HA	1.97	0.46
1:A:65:ILE:HD13	1:A:72:LEU:HD13	1.99	0.45
1:A:94:VAL:O	1:A:95:ASP:HB2	2.15	0.45
1:A:54:GLU:HG3	2:I:17:ASN:ND2	2.31	0.45
1:A:36:ARG:O	1:A:40:LEU:HG	2.17	0.45
1:A:239:HIS:HE1	3:A:326:HOH:O	2.00	0.45
1:B:188:ARG:HA	1:B:188:ARG:HD3	1.74	0.45
1:A:177:SER:HB2	1:A:203:ASP:HB2	2.00	0.44
1:B:255:TYR:HA	1:B:265:THR:O	2.16	0.44
1:A:284:SER:HB2	1:A:294:GLN:NE2	2.29	0.44
1:B:54:GLU:HG3	2:J:17:ASN:ND2	2.34	0.43
1:B:216:TRP:CZ3	1:B:227:PHE:HB3	2.54	0.43
1:A:255:TYR:HA	1:A:265:THR:O	2.19	0.43
1:A:246:ARG:HD2	1:A:263:LEU:HD21	2.00	0.43
1:A:132:ARG:NH1	2:I:161:LEU:HD13	2.35	0.42
1:A:78:TYR:CE2	1:A:294:GLN:HG2	2.54	0.42
1:A:236:LEU:CD1	1:A:262:GLN:HB3	2.50	0.42
1:B:165:VAL:HB	1:B:169:ILE:HB	2.03	0.41
2:J:144:LYS:HD2	3:J:208:HOH:O	2.19	0.41
1:A:51:ILE:HD11	1:A:161:ILE:CD1	2.51	0.41
2:J:131:SER:O	2:J:135:ARG:HB2	2.21	0.41
1:B:52:LEU:HD11	1:B:164:ILE:HG13	2.03	0.41
1:B:284:SER:O	1:B:291:CYS:HA	2.20	0.41
1:B:7:LEU:HD13	1:B:37:GLY:HA3	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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

EDS failed to run properly - this section is therefore empty.

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

EDS failed to run properly - this section is therefore empty.

6.3 Carbohydrates

EDS failed to run properly - this section is therefore empty.

6.4 Ligands

EDS failed to run properly - this section is therefore empty.

6.5 Other polymers

EDS failed to run properly - this section is therefore empty.