



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 28, 2014 – 03:54 AM GMT

PDB ID : 2V4L
Title : complex of human phosphoinositide 3-kinase catalytic subunit gamma (p110 gamma) with PIK-284
Authors : Apsel, B.; Gonzalez, B.; Blair, J.A.; Nazif, T.M.; Feldman, M.E.; Williams, R.L.; Shokat, K.M.; Knight, Z.A.
Deposited on : 2008-09-25
Resolution : 2.50 Å(reported)

This is a full wwPDB validation report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at <http://wwpdb.org/ValidationPDFNotes.html>

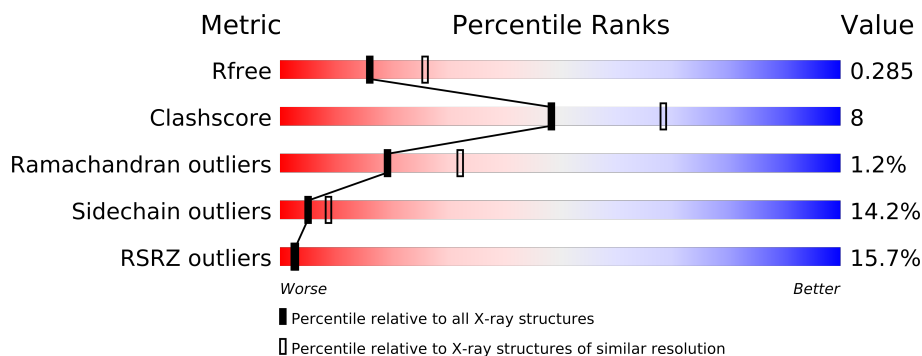
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.15 2013
Xtriage (Phenix) : dev-1323
EDS : stable22639
Percentile statistics : 21963
Refmac : 5.8.0049
CCP4 : 6.3.0 (Settle)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : stable22683

1 Overall quality at a glance

The reported resolution of this entry is 2.50 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}	66092	2784 (2.50-2.50)
Clashscore	79885	3562 (2.50-2.50)
Ramachandran outliers	78287	3480 (2.50-2.50)
Sidechain outliers	78261	3482 (2.50-2.50)
RSRZ outliers	66119	2785 (2.50-2.50)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Mol	Chain	Length	Quality of chain
1	A	966	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 6920 atoms, of which 0 are hydrogen and 0 are deuterium.

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.

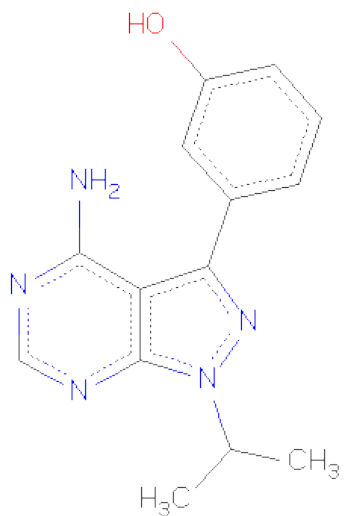
- Molecule 1 is a protein called PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE3-KINASE CATALYTIC SUBUNIT GAMMA ISOFORM.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	845	Total	C	N	O	S	0	0	1
			6850	4397	1173	1245	35			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	143	MET	-	EXPRESSION TAG	UNP P48736
A	1103	HIS	-	EXPRESSION TAG	UNP P48736
A	1104	HIS	-	EXPRESSION TAG	UNP P48736
A	1105	HIS	-	EXPRESSION TAG	UNP P48736
A	1106	HIS	-	EXPRESSION TAG	UNP P48736
A	1107	HIS	-	EXPRESSION TAG	UNP P48736
A	1108	HIS	-	EXPRESSION TAG	UNP P48736
A	459	ARG	GLN	CONFLICT	UNP P48736

- Molecule 2 is 3-[4-AMINO-1-(1-METHYLETHYL)-1H-PYRAZOLO[3,4-D]PYRIMIDIN-3-YL]PHENOL (three-letter code: ABJ) (formula: C₁₄H₁₅N₅O).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	A	1	20	14	5	1	0	0

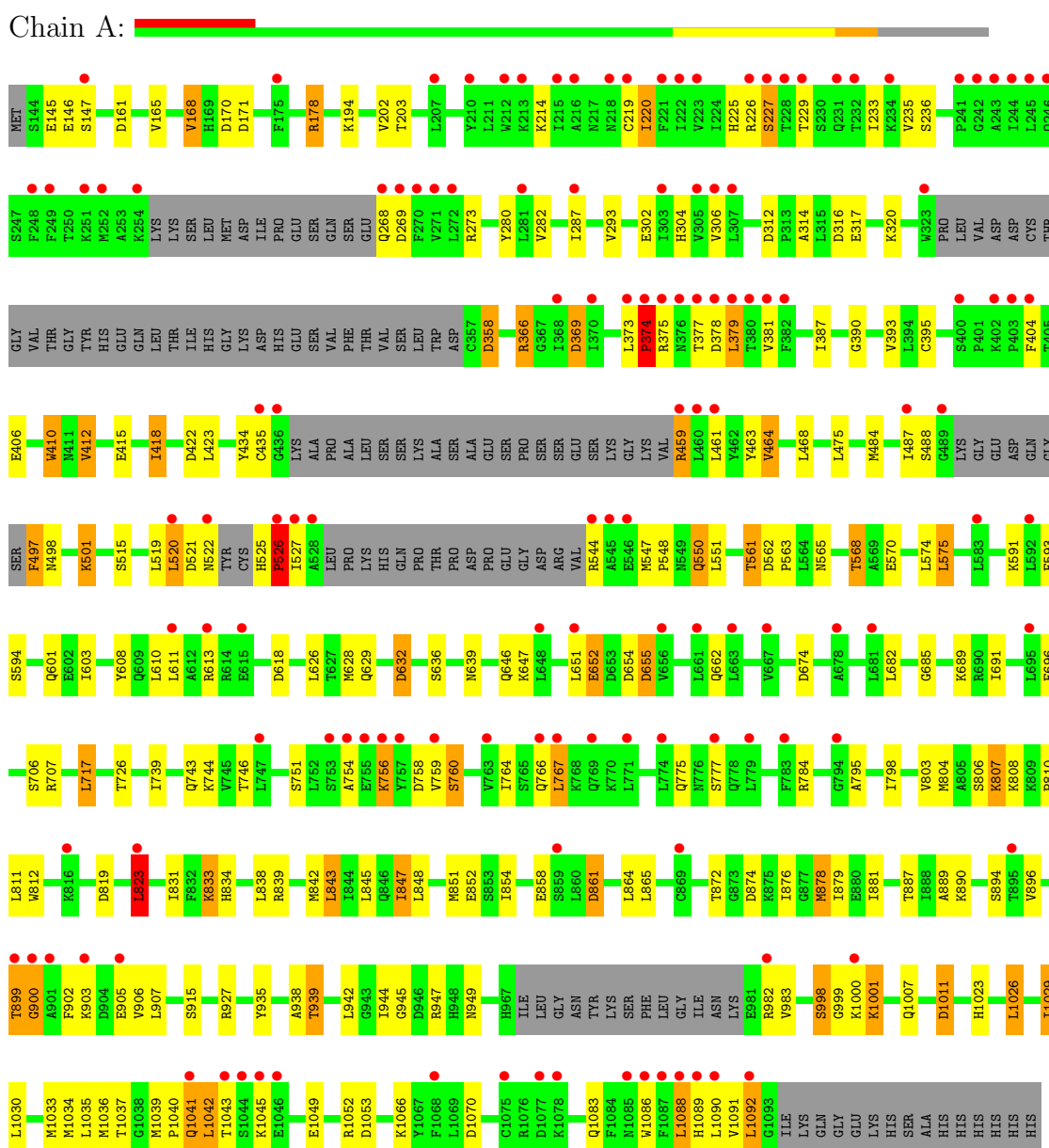
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	50	Total	O	0	0
			50	50		

3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE3-KINASE CATALYTIC SUBUNIT GAMMA ISOFORM



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	144.35Å 68.44Å 106.62Å 90.00° 95.33° 90.00°	Depositor
Resolution (Å)	54.39 – 2.50 54.36 – 2.50	Depositor EDS
% Data completeness (in resolution range)	97.2 (54.39-2.50) 97.2 (54.36-2.50)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.50 (at 2.51Å)	Xtriage
Refinement program	REFMAC 5.1.24	Depositor
R, R_{free}	0.248 , 0.296 0.235 , 0.285	Depositor DCC
R_{free} test set	1440 reflections (4.28%)	DCC
Wilson B-factor (Å ²)	50.3	Xtriage
Anisotropy	0.360	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 3.8	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Outliers	0 of 35113 reflections	Xtriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	6920	wwPDB-VP
Average B, all atoms (Å ²)	22.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.68% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ABJ

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	3/6998 (0.0%)	0.85	21/9466 (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	1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	900	GLY	C-O	6.99	1.34	1.23
1	A	760	SER	CB-OG	5.70	1.49	1.42
1	A	1092	LEU	C-N	-5.36	1.23	1.33

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1092	LEU	O-C-N	-12.00	102.81	123.20
1	A	861	ASP	CB-CG-OD2	7.39	124.95	118.30
1	A	632	ASP	CB-CG-OD1	7.37	124.94	118.30
1	A	1070	ASP	CB-CG-OD2	7.27	124.84	118.30
1	A	655	ASP	CB-CG-OD2	6.88	124.49	118.30
1	A	874	ASP	CB-CG-OD2	6.22	123.90	118.30
1	A	575	LEU	CA-CB-CG	5.67	128.35	115.30
1	A	758	ASP	CB-CG-OD2	5.63	123.37	118.30
1	A	171	ASP	CB-CG-OD2	5.60	123.34	118.30
1	A	520	LEU	CA-CB-CG	5.57	128.10	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	526	PRO	N-CA-C	5.51	126.44	112.10
1	A	674	ASP	CB-CG-OD1	5.46	123.22	118.30
1	A	819	ASP	CB-CG-OD2	5.46	123.22	118.30
1	A	1092	LEU	CA-C-N	5.46	127.12	116.20
1	A	521	ASP	CB-CG-OD2	5.43	123.19	118.30
1	A	823	LEU	CA-CB-CG	5.38	127.67	115.30
1	A	358	ASP	CB-CG-OD2	5.34	123.10	118.30
1	A	1053	ASP	CB-CG-OD2	5.32	123.09	118.30
1	A	161	ASP	CB-CG-OD2	5.24	123.02	118.30
1	A	422	ASP	CB-CG-OD2	5.04	122.83	118.30
1	A	618	ASP	CB-CG-OD2	5.02	122.82	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	526	PRO	Peptide

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6850	0	6890	106	1
2	A	20	0	14	1	0
3	A	50	0	0	2	0
All	All	6920	0	6904	107	1

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 8.

All (107) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:525:HIS:HB3	1:A:526:PRO:HD3	1.09	1.07
1:A:525:HIS:HB3	1:A:526:PRO:CD	1.91	0.98
1:A:381:VAL:HG22	1:A:435:CYS:SG	2.06	0.95

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:525:HIS:CB	1:A:526:PRO:HD3	2.02	0.88
1:A:1086:TRP:CH2	1:A:1090:LEU:HD11	2.12	0.83
1:A:652:GLU:OE1	1:A:654:ASP:HB3	1.80	0.81
1:A:935:TYR:O	1:A:939:THR:HB	1.87	0.75
1:A:395:CYS:HB3	1:A:418:ILE:HD11	1.70	0.74
1:A:1089:HIS:O	1:A:1092:LEU:N	2.21	0.73
1:A:662:GLN:HG2	3:A:2049:HOH:O	1.89	0.73
1:A:775:GLN:HE22	1:A:795:ALA:HB1	1.55	0.72
1:A:949:ASN:H	1:A:1083:GLN:HE22	1.35	0.71
1:A:316:ASP:OD1	1:A:689:LYS:NZ	2.22	0.69
1:A:381:VAL:CG2	1:A:435:CYS:SG	2.80	0.68
1:A:168:VAL:HG13	1:A:170:ASP:O	1.95	0.66
1:A:899:THR:CG2	1:A:899:THR:O	2.44	0.65
1:A:410:TRP:HB3	1:A:412:VAL:HG23	1.78	0.65
1:A:743:GLN:NE2	1:A:872:THR:OG1	2.30	0.65
1:A:851:MET:HE1	1:A:938:ALA:HB1	1.79	0.64
1:A:1042:LEU:HD13	1:A:1042:LEU:H	1.62	0.64
1:A:1089:HIS:HA	1:A:1092:LEU:HB2	1.80	0.64
1:A:464:VAL:HB	1:A:484:MET:HG2	1.80	0.62
1:A:629:GLN:HG2	1:A:1029:ILE:HG13	1.83	0.60
1:A:317:GLU:O	1:A:726:THR:HG23	2.02	0.59
1:A:899:THR:HG22	1:A:899:THR:O	2.03	0.59
1:A:561:THR:HG21	1:A:565:ASN:HD22	1.69	0.58
1:A:775:GLN:NE2	1:A:795:ALA:HB1	2.18	0.58
1:A:548:PRO:CG	1:A:551:LEU:HD12	2.35	0.57
1:A:497:PHE:O	1:A:1042:LEU:HD13	2.04	0.56
1:A:593:PHE:CZ	1:A:611:LEU:HD21	2.40	0.56
1:A:165:VAL:HG12	1:A:165:VAL:O	2.05	0.56
1:A:498:ASN:C	1:A:498:ASN:OD1	2.45	0.55
1:A:525:HIS:CB	1:A:526:PRO:CD	2.70	0.54
1:A:1041:GLN:HA	1:A:1041:GLN:NE2	2.21	0.54
1:A:373:LEU:O	1:A:374:PRO:O	2.26	0.54
1:A:226:ARG:O	1:A:227:SER:C	2.46	0.54
1:A:1088:LEU:O	1:A:1091:VAL:HG22	2.08	0.53
1:A:939:THR:HG23	1:A:945:GLY:HA2	1.91	0.53
1:A:395:CYS:CB	1:A:418:ILE:HD11	2.39	0.53
1:A:939:THR:HG23	1:A:945:GLY:CA	2.39	0.53
1:A:823:LEU:H	1:A:823:LEU:HD12	1.75	0.52
1:A:854:ILE:HG23	1:A:1023:HIS:CD2	2.45	0.52
1:A:812:TRP:CE2	1:A:881:ILE:HD13	2.45	0.51
1:A:497:PHE:HB3	1:A:1041:GLN:NE2	2.25	0.50
1:A:608:TYR:CZ	1:A:639:ASN:ND2	2.77	0.50

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:628:MET:HB2	1:A:1029:ILE:HG21	1.93	0.50
1:A:562:ASP:HB2	1:A:563:PRO:CD	2.41	0.50
1:A:807:LYS:H	1:A:807:LYS:HZ2	1.60	0.49
1:A:848:LEU:HA	1:A:851:MET:HE2	1.94	0.49
1:A:834:HIS:HB2	1:A:876:ILE:HD12	1.93	0.49
1:A:561:THR:HG22	1:A:591:LYS:NZ	2.28	0.49
1:A:685:GLY:HA2	1:A:691:ILE:HG22	1.96	0.48
1:A:1026:LEU:O	1:A:1030:LEU:HG	2.13	0.48
1:A:393:VAL:O	1:A:393:VAL:HG23	2.12	0.48
1:A:168:VAL:CG1	1:A:170:ASP:O	2.62	0.48
1:A:852:GLU:HG3	1:A:864:LEU:HD12	1.95	0.47
1:A:759:VAL:HG12	1:A:764:ILE:HD11	1.96	0.47
1:A:381:VAL:HG23	1:A:404:PHE:HB2	1.97	0.47
1:A:369:ASP:OD1	1:A:369:ASP:N	2.47	0.47
1:A:651:LEU:HD22	1:A:655:ASP:HB3	1.98	0.46
1:A:1033:MET:O	1:A:1037:THR:HG23	2.15	0.46
1:A:312:ASP:OD2	1:A:314:ALA:HB3	2.15	0.46
1:A:810:PRO:HB3	1:A:833:LYS:HB3	1.98	0.46
1:A:1042:LEU:CD1	1:A:1042:LEU:H	2.27	0.45
1:A:1036:MET:HA	1:A:1042:LEU:HD11	1.98	0.45
1:A:804:MET:HE2	1:A:831:ILE:HG12	1.99	0.45
1:A:390:GLY:N	1:A:636:SER:OG	2.49	0.45
1:A:463:TYR:CE1	1:A:501:LYS:HA	2.51	0.45
1:A:998:SER:O	1:A:1001:LYS:NZ	2.49	0.45
1:A:902:PHE:N	3:A:2034:HOH:O	2.49	0.45
1:A:1035:LEU:HB3	1:A:1042:LEU:HG	1.97	0.45
1:A:804:MET:HE1	1:A:810:PRO:HB2	1.98	0.44
1:A:220:ILE:N	1:A:235:VAL:O	2.48	0.44
1:A:165:VAL:O	1:A:165:VAL:CG1	2.65	0.44
1:A:287:ILE:HG23	1:A:293:VAL:HG21	1.98	0.44
1:A:746:THR:HG23	1:A:811:LEU:HD13	1.99	0.44
1:A:847:ILE:HG21	1:A:942:LEU:HD21	1.99	0.44
1:A:434:TYR:HA	1:A:459:ARG:O	2.16	0.44
1:A:1011:ASP:OD1	1:A:1011:ASP:C	2.56	0.44
1:A:839:ARG:HA	1:A:842:MET:CE	2.48	0.44
1:A:568:THR:HG22	1:A:570:GLU:N	2.33	0.43
1:A:839:ARG:HA	1:A:842:MET:HE2	2.00	0.43
1:A:548:PRO:HG3	1:A:551:LEU:HD12	2.01	0.43
1:A:887:THR:HG22	1:A:889:ALA:N	2.34	0.43
1:A:861:ASP:C	1:A:861:ASP:OD1	2.57	0.43
1:A:273:ARG:HB2	1:A:280:TYR:CE2	2.54	0.43
1:A:225:HIS:CE1	1:A:304:HIS:HD2	2.37	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:811:LEU:HD12	1:A:811:LEU:N	2.34	0.42
1:A:423:LEU:HD22	1:A:468:LEU:CD1	2.48	0.42
1:A:944:ILE:O	1:A:947:ARG:HD3	2.19	0.42
1:A:1091:VAL:O	1:A:1091:VAL:HG23	2.20	0.42
1:A:366:ARG:HH12	1:A:519:LEU:HD22	1.84	0.42
2:A:2093:ABJ:H12N	2:A:2093:ABJ:C27	2.32	0.42
1:A:878:MET:C	1:A:879:ILE:HG13	2.40	0.41
1:A:804:MET:HE1	1:A:831:ILE:HG23	2.02	0.41
1:A:767:LEU:HD12	1:A:803:VAL:HG23	2.01	0.41
1:A:233:ILE:HG22	1:A:235:VAL:HG23	2.03	0.41
1:A:178:ARG:NH1	1:A:178:ARG:HG3	2.35	0.41
1:A:435:CYS:SG	1:A:461:LEU:HD12	2.61	0.41
1:A:475:LEU:HD21	1:A:522:ASN:CB	2.51	0.41
1:A:843:LEU:HG	1:A:1034:MET:HG3	2.03	0.40
1:A:381:VAL:HG21	1:A:404:PHE:CG	2.56	0.40
1:A:804:MET:CE	1:A:810:PRO:HB2	2.49	0.40
1:A:903:LYS:HD3	1:A:906:VAL:CG2	2.52	0.40
1:A:900:GLY:O	1:A:902:PHE:CD1	2.74	0.40
1:A:302:GLU:OE1	1:A:304:HIS:HE1	2.05	0.40
1:A:696:PHE:CD1	1:A:717:LEU:HD21	2.57	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	Distance(Å)	Clash(Å)
1:A:550:GLN:NE2	1:A:570:GLU:OE1[2_555]	2.09	0.11

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	829/966 (86%)	770 (93%)	49 (6%)	10 (1%)	19 32

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	227	SER
1	A	374	PRO
1	A	527	ILE
1	A	999	GLY
1	A	378	ASP
1	A	379	LEU
1	A	1040	PRO
1	A	754	ALA
1	A	756	LYS
1	A	1000	LYS

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	758/864 (88%)	650 (86%)	108 (14%)	5 8

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	145	GLU
1	A	146	GLU
1	A	147	SER
1	A	168	VAL
1	A	178	ARG
1	A	194	LYS
1	A	202	VAL
1	A	203	THR
1	A	214	LYS
1	A	219	CYS
1	A	220	ILE
1	A	229	THR
1	A	236	SER
1	A	268	GLN
1	A	269	ASP
1	A	282	VAL
1	A	306	VAL
1	A	320	LYS

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Mol	Chain	Res	Type
1	A	358	ASP
1	A	366	ARG
1	A	369	ASP
1	A	374	PRO
1	A	375	ARG
1	A	377	THR
1	A	379	LEU
1	A	387	ILE
1	A	406	GLU
1	A	410	TRP
1	A	412	VAL
1	A	415	GLU
1	A	418	ILE
1	A	459	ARG
1	A	464	VAL
1	A	487	ILE
1	A	488	SER
1	A	497	PHE
1	A	501	LYS
1	A	515	SER
1	A	520	LEU
1	A	544	ARG
1	A	547	MET
1	A	550	GLN
1	A	561	THR
1	A	568	THR
1	A	574	LEU
1	A	575	LEU
1	A	594	SER
1	A	601	GLN
1	A	603	ILE
1	A	610	LEU
1	A	613	ARG
1	A	626	LEU
1	A	632	ASP
1	A	646	GLN
1	A	647	LYS
1	A	652	GLU
1	A	682	LEU
1	A	706	SER
1	A	707	ARG
1	A	717	LEU

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Mol	Chain	Res	Type
1	A	739	ILE
1	A	744	LYS
1	A	751	SER
1	A	756	LYS
1	A	760	SER
1	A	766	GLN
1	A	767	LEU
1	A	777	SER
1	A	784	ARG
1	A	798	ILE
1	A	806	SER
1	A	807	LYS
1	A	808	LYS
1	A	823	LEU
1	A	833	LYS
1	A	838	LEU
1	A	843	LEU
1	A	845	LEU
1	A	847	ILE
1	A	858	GLU
1	A	865	LEU
1	A	878	MET
1	A	890	LYS
1	A	894	SER
1	A	896	VAL
1	A	899	THR
1	A	905	GLU
1	A	907	LEU
1	A	915	SER
1	A	927	ARG
1	A	939	THR
1	A	982	ARG
1	A	983	VAL
1	A	998	SER
1	A	1001	LYS
1	A	1007	GLN
1	A	1011	ASP
1	A	1026	LEU
1	A	1029	ILE
1	A	1039	MET
1	A	1041	GLN
1	A	1042	LEU

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Mol	Chain	Res	Type
1	A	1043	THR
1	A	1045	LYS
1	A	1049	GLU
1	A	1052	ARG
1	A	1066	LYS
1	A	1088	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	231	GLN
1	A	268	GLN
1	A	304	HIS
1	A	389	HIS
1	A	486	GLN
1	A	554	GLN
1	A	565	ASN
1	A	705	GLN
1	A	743	GLN
1	A	766	GLN
1	A	778	GLN
1	A	834	HIS
1	A	898	ASN
1	A	959	ASN
1	A	1023	HIS
1	A	1041	GLN
1	A	1083	GLN

5.3.3 RNA ⓘ

There are no RNA chains 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 carbohydrates in this entry.

5.6 Ligand geometry ⓘ

1 ligand 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$
2	ABJ	A	2093	-	22,22,22	2.87	2 (9%)	28,32,32	2.76	7 (25%)

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	ABJ	A	2093	-	-	0/8/8/8	0/1/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	2093	ABJ	N15-N11	-11.17	1.23	1.37
2	A	2093	ABJ	C18-C13	-6.81	1.40	1.49

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2093	ABJ	N3-C6-N5	-9.21	121.01	128.71
2	A	2093	ABJ	C13-N15-N11	7.53	111.38	105.26
2	A	2093	ABJ	N3-C7-N11	4.53	134.21	127.68
2	A	2093	ABJ	C18-C13-N15	3.38	125.35	120.72
2	A	2093	ABJ	C4-C7-N3	-3.18	119.42	125.71
2	A	2093	ABJ	C6-N3-C7	2.42	120.91	114.01
2	A	2093	ABJ	C4-C13-N15	-2.40	106.61	109.03

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

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(Å ²)	Q<0.9
1	A	845/966 (87%)	1.10	133 (15%) 3 2	12, 21, 28, 55	0

All (133) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1092	LEU	8.7
1	A	757	TYR	7.5
1	A	1044	SER	6.9
1	A	436	GLY	6.5
1	A	307	LEU	6.2
1	A	248	PHE	5.5
1	A	754	ALA	5.3
1	A	522	ASN	5.3
1	A	381	VAL	5.1
1	A	270	PHE	4.8
1	A	234	LYS	4.8
1	A	376	ASN	4.8
1	A	245	LEU	4.8
1	A	526	PRO	4.7
1	A	232	THR	4.6
1	A	254	LYS	4.6
1	A	1089	HIS	4.6
1	A	379	LEU	4.6
1	A	244	ILE	4.4
1	A	377	THR	4.4
1	A	378	ASP	4.4
1	A	779	LEU	4.4
1	A	212	TRP	4.4
1	A	252	MET	4.3
1	A	216	ALA	4.3
1	A	222	ILE	4.2
1	A	229	THR	4.0

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Mol	Chain	Res	Type	RSRZ
1	A	404	PHE	4.0
1	A	243	ALA	3.9
1	A	774	LEU	3.9
1	A	221	PHE	3.8
1	A	287	ILE	3.8
1	A	545	ALA	3.8
1	A	895	THR	3.8
1	A	210	TYR	3.8
1	A	215	ILE	3.8
1	A	1043	THR	3.8
1	A	403	PRO	3.8
1	A	303	ILE	3.7
1	A	859	SER	3.7
1	A	461	LEU	3.7
1	A	747	LEU	3.7
1	A	373	LEU	3.6
1	A	1000	LYS	3.6
1	A	1045	LYS	3.6
1	A	227	SER	3.6
1	A	1086	TRP	3.5
1	A	380	THR	3.4
1	A	374	PRO	3.4
1	A	251	LYS	3.3
1	A	527	ILE	3.3
1	A	231	GLN	3.3
1	A	759	VAL	3.3
1	A	435	CYS	3.3
1	A	753	SER	3.2
1	A	226	ARG	3.1
1	A	281	LEU	3.0
1	A	246	GLN	3.0
1	A	323	TRP	3.0
1	A	899	THR	3.0
1	A	241	PRO	3.0
1	A	613	ARG	3.0
1	A	242	GLY	2.9
1	A	228	THR	2.9
1	A	175	PHE	2.9
1	A	269	ASP	2.9
1	A	306	VAL	2.9
1	A	651	LEU	2.8
1	A	1041	GLN	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	528	ALA	2.8
1	A	272	LEU	2.8
1	A	546	GLU	2.8
1	A	147	SER	2.8
1	A	783	PHE	2.8
1	A	489	GLY	2.7
1	A	656	VAL	2.7
1	A	1087	PHE	2.7
1	A	1046	GLU	2.7
1	A	271	VAL	2.7
1	A	769	GLN	2.7
1	A	903	LYS	2.6
1	A	1077	ASP	2.6
1	A	755	GLU	2.6
1	A	766	GLN	2.6
1	A	219	CYS	2.5
1	A	777	SER	2.5
1	A	520	LEU	2.5
1	A	305	VAL	2.5
1	A	400	SER	2.5
1	A	370	ILE	2.4
1	A	869	CYS	2.4
1	A	1090	LEU	2.4
1	A	1078	LYS	2.4
1	A	667	VAL	2.4
1	A	544	ARG	2.4
1	A	615	GLU	2.3
1	A	1075	CYS	2.3
1	A	663	LEU	2.3
1	A	767	LEU	2.3
1	A	1085	ASN	2.3
1	A	661	LEU	2.3
1	A	368	ILE	2.3
1	A	756	LYS	2.3
1	A	681	LEU	2.3
1	A	382	PHE	2.3
1	A	1068	PHE	2.2
1	A	611	LEU	2.2
1	A	459	ARG	2.2
1	A	249	PHE	2.2
1	A	771	LEU	2.2
1	A	218	ASN	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	648	LEU	2.1
1	A	223	VAL	2.1
1	A	763	VAL	2.1
1	A	678	ALA	2.1
1	A	823	LEU	2.1
1	A	460	LEU	2.1
1	A	901	ALA	2.1
1	A	592	LEU	2.1
1	A	794	GLY	2.1
1	A	207	LEU	2.1
1	A	695	LEU	2.1
1	A	213	LYS	2.1
1	A	905	GLU	2.1
1	A	487	ILE	2.1
1	A	375	ARG	2.0
1	A	402	LYS	2.0
1	A	816	LYS	2.0
1	A	583	LEU	2.0
1	A	982	ARG	2.0
1	A	268	GLN	2.0
1	A	900	GLY	2.0
1	A	1088	LEU	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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	RSR	LLDF	B-factors(\AA^2)	Q<0.9
2	ABJ	A	2093	20/20	0.23	0.20	44,46,47,48	0

6.5 Other polymers ⓘ

There are no such residues in this entry.