Full wwPDB X-ray Structure Validation Report ⓘ

Jun 17, 2024 – 10:49 PM EDT

PDB ID	:	5YC1
Title	:	TRAF4_GPIb complex
Authors	:	Park, H.H.; Kim, C.M.
Deposited on	:	2017-09-06
Resolution	:	2.51 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:

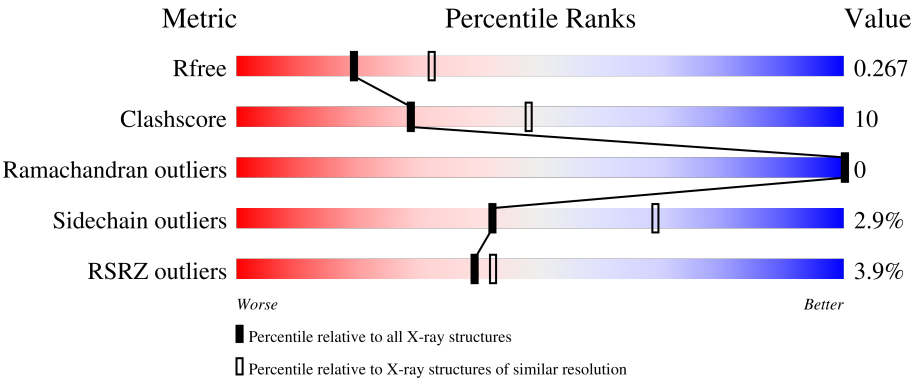
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.51 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}	130704	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (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 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 <=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	181	2% 78% 8% • 13%
1	B	181	6% 60% 21% •• 18%
1	C	181	4% 72% 15% •• 11%
1	D	181	2% 70% 17% • 11%
1	E	181	3% 71% 14% • 14%

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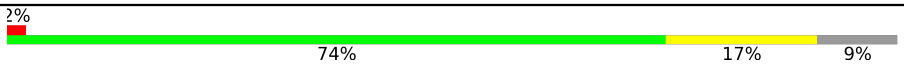
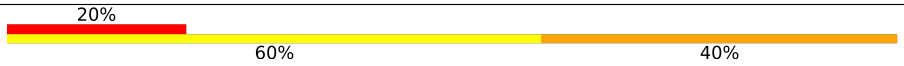
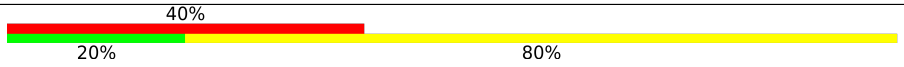
Mol	Chain	Length	Quality of chain
1	F	181	
2	G	5	
2	I	5	
2	K	5	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 7834 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 TNF receptor-associated factor 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	158	Total	C	N	O	S	0	0	0
			1282	827	227	227	1			
1	B	149	Total	C	N	O	S	0	0	0
			1199	775	209	214	1			
1	C	161	Total	C	N	O	S	0	0	0
			1301	840	227	233	1			
1	D	161	Total	C	N	O	S	0	0	0
			1304	842	230	231	1			
1	E	156	Total	C	N	O	S	0	0	0
			1262	818	219	224	1			
1	F	164	Total	C	N	O	S	0	0	0
			1319	851	231	236	1			

- Molecule 2 is a protein called GPIb peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	G	5	Total	C	N	O	0	0	0
			46	27	14	5			
2	I	5	Total	C	N	O	0	0	0
			46	27	14	5			
2	K	5	Total	C	N	O	0	0	0
			46	27	14	5			

- Molecule 3 is water.

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

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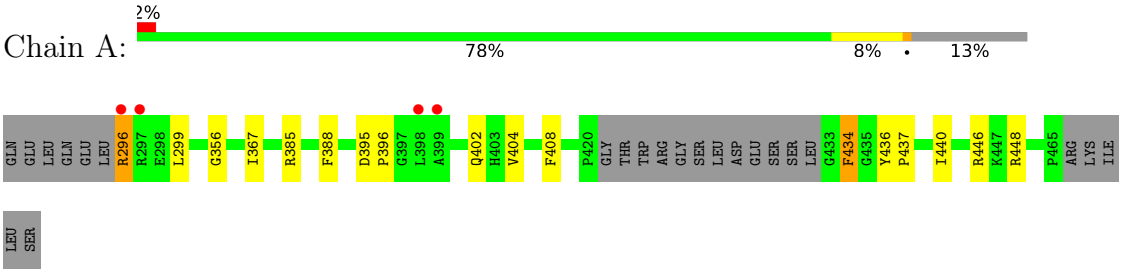
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	D	10	Total O 10 10	0	0
3	E	3	Total O 3 3	0	0
3	F	5	Total O 5 5	0	0
3	G	1	Total O 1 1	0	0

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.

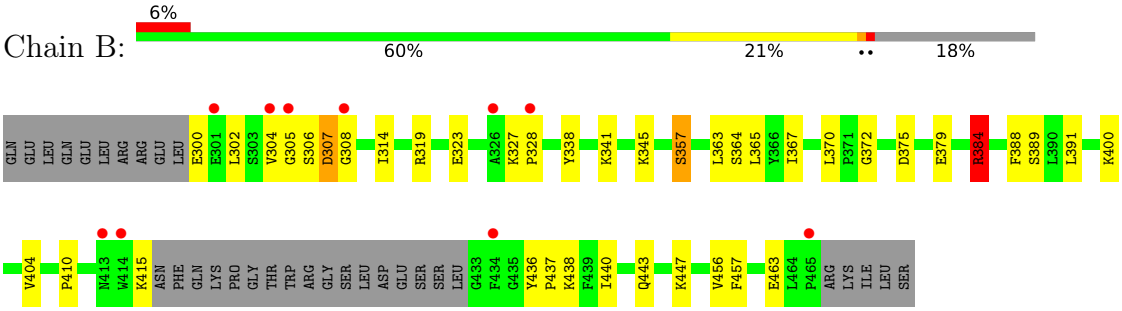
• Molecule 1: TNF receptor-associated factor 4

Chain A:



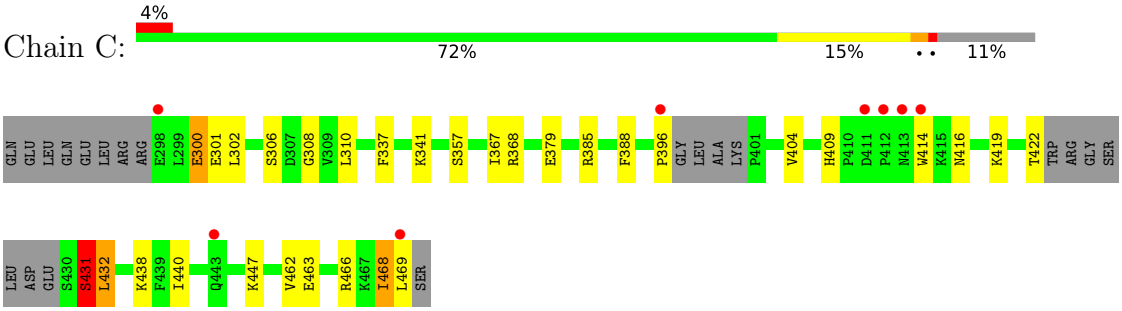
• Molecule 1: TNF receptor-associated factor 4

Chain B:



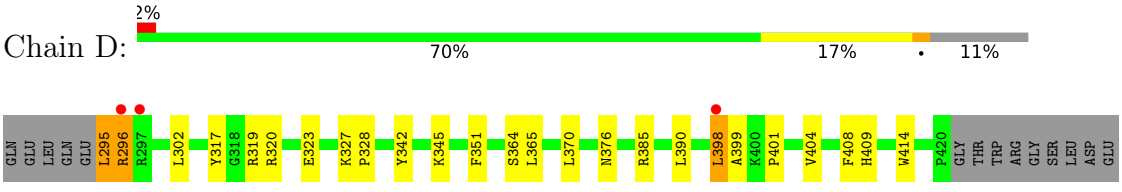
• Molecule 1: TNF receptor-associated factor 4

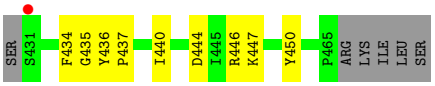
Chain C:



• Molecule 1: TNF receptor-associated factor 4

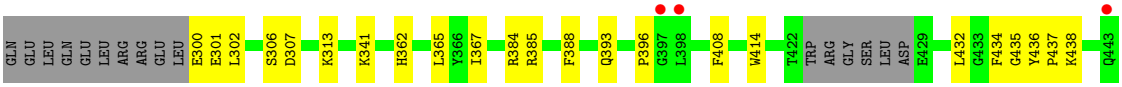
Chain D:

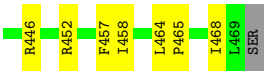




• Molecule 1: TNF receptor-associated factor 4

• Molecule 1: TNF receptor-associated factor 4





• Molecule 2: GPIb peptide

• Molecule 2: GPIb peptide

• Molecule 2: GPIb peptide

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	56.72Å 88.59Å 120.76Å 90.00° 93.62° 90.00°	Depositor
Resolution (Å)	33.78 – 2.51 33.78 – 2.51	Depositor EDS
% Data completeness (in resolution range)	94.2 (33.78-2.51) 94.2 (33.78-2.51)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.88 (at 2.51Å)	Xtriage
Refinement program	PHENIX 1.9_1692	Depositor
R, R_{free}	0.211 , 0.265 0.215 , 0.267	Depositor DCC
R_{free} test set	1994 reflections (5.14%)	wwPDB-VP
Wilson B-factor (Å^2)	53.9	Xtriage
Anisotropy	0.017	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 46.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	7834	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 28.14 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.9408e-03.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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

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	0.51	0/1320	0.66	0/1786
1	B	0.48	0/1235	0.69	2/1673 (0.1%)
1	C	0.48	0/1338	0.66	1/1809 (0.1%)
1	D	0.47	0/1342	0.62	0/1816
1	E	0.46	0/1299	0.64	0/1758
1	F	0.47	0/1357	0.68	0/1836
2	G	1.16	0/45	1.72	1/57 (1.8%)
2	I	0.63	0/45	1.29	0/57
2	K	0.49	0/45	0.93	0/57
All	All	0.49	0/8026	0.67	4/10849 (0.0%)

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	C	0	1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	G	298	LEU	CA-CB-CG	-8.54	95.66	115.30
1	B	384	ARG	NE-CZ-NH2	5.37	122.98	120.30
1	B	384	ARG	CG-CD-NE	5.27	122.86	111.80
1	C	432	LEU	CA-CB-CG	5.19	127.25	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	431	SER	Peptide

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	1282	0	1253	13	0
1	B	1199	0	1167	33	0
1	C	1301	0	1274	18	0
1	D	1304	0	1280	36	0
1	E	1262	0	1232	22	0
1	F	1319	0	1295	28	0
2	G	46	0	54	13	0
2	I	46	0	54	6	0
2	K	46	0	54	14	0
3	A	8	0	0	0	0
3	B	1	0	0	1	0
3	C	1	0	0	0	0
3	D	10	0	0	1	0
3	E	3	0	0	2	0
3	F	5	0	0	0	0
3	G	1	0	0	0	0
All	All	7834	0	7663	150	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 10.

All (150) 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:D:398:LEU:C	1:D:398:LEU:HD23	1.58	1.19
1:D:398:LEU:HD23	1:D:398:LEU:O	1.48	1.10
1:D:398:LEU:CD2	1:D:399:ALA:HB2	1.88	1.03
1:B:307:ASP:N	1:B:308:GLY:HA2	1.72	1.00
1:D:398:LEU:C	1:D:398:LEU:CD2	2.30	1.00
1:F:435:GLY:HA2	2:K:298:LEU:HD11	1.58	0.85
1:C:463:GLU:OE2	1:C:466:ARG:NH2	2.10	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:398:LEU:HD22	1:D:399:ALA:CB	2.08	0.84
2:G:297:ARG:HG2	2:G:297:ARG:HH11	1.43	0.83
1:D:398:LEU:CD2	1:D:399:ALA:CB	2.59	0.80
1:D:408:PHE:CG	2:G:298:LEU:HD22	2.16	0.80
1:B:357:SER:HB2	1:B:438:LYS:HE3	1.67	0.75
1:B:379:GLU:HG2	1:C:396:PRO:HG2	1.68	0.72
1:F:384:ARG:HH22	1:F:465:PRO:HA	1.54	0.72
1:C:431:SER:HB3	1:C:432:LEU:HD23	1.72	0.71
1:D:399:ALA:O	1:D:401:PRO:HD3	1.91	0.71
1:D:398:LEU:HD22	1:D:399:ALA:HB2	1.68	0.70
1:E:349:SER:HB3	1:E:368:ARG:HH12	1.58	0.69
1:C:300:GLU:OE1	1:C:301:GLU:N	2.25	0.69
1:D:437:PRO:HG3	2:G:299:ARG:HD2	1.76	0.66
1:B:307:ASP:N	1:B:307:ASP:OD1	2.29	0.65
1:D:434:PHE:CE2	2:G:298:LEU:HD23	2.31	0.65
1:B:341:LYS:HG2	1:C:306:SER:HB3	1.76	0.65
1:A:396:PRO:HG2	1:C:379:GLU:HG2	1.78	0.64
1:D:404:VAL:HG21	1:D:440:ILE:HD12	1.78	0.64
1:B:306:SER:OG	1:B:307:ASP:OD1	2.17	0.62
1:F:408:PHE:CG	2:K:298:LEU:HD22	2.34	0.62
1:B:410:PRO:HB3	1:B:415:LYS:HE2	1.82	0.62
1:D:408:PHE:CD2	2:G:298:LEU:HD22	2.35	0.62
1:A:402:GLN:OE1	1:A:448:ARG:NH1	2.32	0.61
2:G:297:ARG:HH11	2:G:297:ARG:CG	2.13	0.61
1:E:298:GLU:N	3:E:501:HOH:O	2.33	0.60
1:D:436:TYR:CZ	2:G:298:LEU:HD13	2.36	0.60
1:F:414:TRP:CH2	2:K:300:ALA:HB1	2.37	0.60
1:B:363:LEU:HD21	1:B:365:LEU:HD13	1.84	0.59
1:C:357:SER:OG	1:C:438:LYS:HE3	2.03	0.59
1:B:305:GLY:HA2	1:B:338:TYR:HB2	1.84	0.58
2:I:298:LEU:HD13	2:I:299:ARG:N	2.18	0.58
1:B:307:ASP:H	1:B:308:GLY:HA2	1.66	0.57
1:F:435:GLY:CA	2:K:298:LEU:HD11	2.30	0.56
1:C:466:ARG:HH11	1:C:466:ARG:HG3	1.69	0.56
1:F:307:ASP:HB3	1:F:464:LEU:HD11	1.87	0.56
1:F:367:ILE:HB	1:F:388:PHE:HZ	1.69	0.56
1:C:300:GLU:HB2	1:C:302:LEU:H	1.70	0.56
1:B:306:SER:OG	1:B:307:ASP:N	2.38	0.56
1:E:379:GLU:HG2	1:F:396:PRO:HG2	1.86	0.55
1:E:385:ARG:HH21	1:E:407:THR:HG21	1.71	0.55
1:D:345:LYS:HD2	1:D:370:LEU:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:319:ARG:NH1	1:D:323:GLU:OE2	2.40	0.55
1:F:432:LEU:HD23	2:K:301:ARG:HD2	1.88	0.54
1:D:398:LEU:CD2	1:D:399:ALA:N	2.70	0.54
1:A:436:TYR:CZ	2:I:298:LEU:HD23	2.43	0.54
1:C:414:TRP:NE1	1:C:416:ASN:HB3	2.23	0.54
1:D:398:LEU:HD23	1:D:399:ALA:N	2.21	0.54
1:B:319:ARG:NH1	1:B:323:GLU:OE2	2.42	0.53
2:G:298:LEU:HG	2:G:299:ARG:N	2.23	0.53
1:F:362:HIS:CE1	1:F:438:LYS:HE3	2.43	0.52
1:B:300:GLU:N	3:B:501:HOH:O	2.43	0.52
1:D:398:LEU:HD21	1:D:399:ALA:HB2	1.87	0.52
1:D:320:ARG:NH2	3:D:501:HOH:O	2.42	0.51
1:D:327:LYS:HD2	1:D:328:PRO:HD2	1.92	0.51
1:D:398:LEU:HD23	1:D:399:ALA:HB2	1.87	0.51
1:A:404:VAL:HG21	1:A:440:ILE:HD12	1.92	0.51
1:D:302:LEU:HD11	1:E:302:LEU:HD21	1.92	0.51
1:D:351:PHE:HB2	1:D:364:SER:HB2	1.92	0.50
1:D:398:LEU:HD22	1:D:399:ALA:HB3	1.90	0.50
1:E:357:SER:OG	1:E:438:LYS:HE3	2.11	0.50
1:B:384:ARG:HD3	1:B:463:GLU:O	2.12	0.49
1:B:384:ARG:HG2	1:B:384:ARG:HH21	1.77	0.49
1:E:300:GLU:O	1:E:302:LEU:HD23	2.13	0.49
1:B:307:ASP:N	1:B:308:GLY:CA	2.58	0.49
1:E:367:ILE:HB	1:E:388:PHE:HZ	1.77	0.49
1:F:436:TYR:CZ	2:K:298:LEU:HD13	2.48	0.48
1:F:434:PHE:CE2	2:K:298:LEU:HD23	2.49	0.48
1:E:376:ASN:HB3	1:F:393:GLN:HB3	1.94	0.48
2:K:300:ALA:O	2:K:301:ARG:HB2	2.13	0.48
1:F:434:PHE:HE2	2:K:298:LEU:HD23	1.78	0.48
1:C:414:TRP:HE1	1:C:416:ASN:HB3	1.79	0.48
1:D:385:ARG:NH2	1:D:409:HIS:ND1	2.61	0.48
1:B:319:ARG:O	1:B:323:GLU:HG3	2.14	0.47
1:F:437:PRO:HG2	2:K:299:ARG:HD2	1.96	0.47
1:A:434:PHE:CD1	2:I:298:LEU:CD1	2.97	0.47
1:B:389:SER:HA	1:B:404:VAL:O	2.15	0.47
1:B:404:VAL:HG21	1:B:440:ILE:HD12	1.97	0.47
1:E:345:LYS:HD3	1:E:370:LEU:HB2	1.97	0.46
1:D:342:TYR:CG	1:E:311:ILE:HD12	2.50	0.46
1:D:414:TRP:CH2	2:G:300:ALA:HB1	2.50	0.46
1:E:464:LEU:HD11	3:E:503:HOH:O	2.15	0.46
1:F:393:GLN:O	1:F:452:ARG:NH1	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:295:LEU:HD12	1:D:296:ARG:H	1.80	0.46
1:F:306:SER:HA	1:F:307:ASP:HA	1.66	0.46
1:F:437:PRO:CG	2:K:299:ARG:HD2	2.46	0.46
1:B:443:GLN:HG2	1:B:447:LYS:NZ	2.31	0.46
1:E:300:GLU:O	1:E:300:GLU:HG3	2.15	0.45
1:A:434:PHE:CE2	2:I:300:ALA:HB2	2.51	0.45
1:A:408:PHE:CG	2:I:298:LEU:HG	2.52	0.45
1:B:384:ARG:HH21	1:B:384:ARG:CG	2.30	0.45
1:F:432:LEU:HD23	2:K:301:ARG:HA	1.99	0.45
2:G:300:ALA:O	2:G:301:ARG:HB2	2.17	0.45
1:A:367:ILE:HB	1:A:388:PHE:HZ	1.81	0.45
1:F:367:ILE:HB	1:F:388:PHE:CZ	2.51	0.44
1:B:327:LYS:HA	1:B:328:PRO:HD2	1.77	0.44
1:D:317:TYR:HE2	1:D:446:ARG:NH1	2.16	0.44
1:E:313:LYS:HE3	1:E:457:PHE:CZ	2.53	0.44
1:F:300:GLU:N	1:F:301:GLU:HB2	2.33	0.44
1:A:296:ARG:O	1:A:299:LEU:HB2	2.18	0.44
1:C:367:ILE:HB	1:C:388:PHE:HZ	1.82	0.44
2:G:298:LEU:HG	2:G:299:ARG:H	1.83	0.44
1:C:404:VAL:HG21	1:C:440:ILE:HD12	1.99	0.43
1:E:390:LEU:HD22	1:E:440:ILE:HG21	1.99	0.43
1:F:313:LYS:HE3	1:F:457:PHE:CZ	2.53	0.43
2:G:298:LEU:HA	2:G:298:LEU:HD12	1.22	0.43
1:C:468:ILE:O	1:C:469:LEU:HD23	2.17	0.43
2:K:298:LEU:HD12	2:K:298:LEU:HA	1.71	0.43
1:D:376:ASN:HB3	1:E:393:GLN:HB3	2.00	0.43
1:E:367:ILE:HB	1:E:388:PHE:CZ	2.53	0.43
1:B:314:ILE:HB	1:B:456:VAL:HG22	2.00	0.43
1:E:351:PHE:HB2	1:E:364:SER:HB2	1.99	0.43
1:C:310:LEU:HD22	1:C:337:PHE:CD2	2.54	0.43
1:C:419:LYS:O	1:C:422:THR:HG23	2.19	0.43
1:D:435:GLY:HA2	2:G:298:LEU:HD11	2.00	0.43
1:D:444:ASP:OD1	1:D:447:LYS:NZ	2.50	0.43
1:B:306:SER:HG	1:B:307:ASP:H	1.64	0.42
1:B:345:LYS:HD3	1:B:370:LEU:HB2	2.00	0.42
1:D:295:LEU:HD12	1:D:296:ARG:N	2.33	0.42
1:E:385:ARG:HB3	1:E:463:GLU:HB3	2.01	0.42
1:C:308:GLY:O	1:C:462:VAL:N	2.40	0.42
1:F:300:GLU:HA	1:F:302:LEU:H	1.83	0.42
1:D:390:LEU:HD21	1:D:450:TYR:HB3	2.00	0.42
1:A:356:GLY:HA2	2:I:301:ARG:NH1	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:410:PRO:HB3	1:B:415:LYS:CE	2.50	0.42
1:B:436:TYR:HA	1:B:437:PRO:HD2	1.85	0.42
1:C:385:ARG:NH2	1:C:409:HIS:HB2	2.35	0.42
1:A:446:ARG:HA	1:A:446:ARG:HD3	1.88	0.42
1:E:302:LEU:HG	1:E:304:VAL:HG23	2.02	0.42
1:F:446:ARG:HD3	1:F:446:ARG:HA	1.81	0.41
1:D:342:TYR:CE1	1:E:311:ILE:HB	2.54	0.41
1:F:384:ARG:NH2	1:F:465:PRO:HA	2.28	0.41
1:B:304:VAL:O	1:B:304:VAL:HG12	2.20	0.41
1:B:364:SER:OG	1:B:437:PRO:O	2.33	0.41
1:B:300:GLU:O	1:B:300:GLU:HG2	2.21	0.41
1:B:367:ILE:HB	1:B:388:PHE:HZ	1.86	0.41
1:F:434:PHE:CE2	2:K:298:LEU:CD2	3.04	0.41
1:A:395:ASP:HA	1:A:396:PRO:HD2	1.88	0.41
1:B:372:GLY:H	1:B:375:ASP:CG	2.25	0.40
1:B:391:LEU:HB2	1:B:457:PHE:HB2	2.03	0.40
1:E:306:SER:O	1:E:340:HIS:HA	2.21	0.40
1:F:302:LEU:HD23	1:F:302:LEU:HA	1.83	0.40
1:A:436:TYR:HA	1:A:437:PRO:HD2	1.92	0.40
1:F:365:LEU:HD21	1:F:458:ILE:HD12	2.02	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	154/181 (85%)	148 (96%)	6 (4%)	0	100	100
1	B	145/181 (80%)	137 (94%)	8 (6%)	0	100	100
1	C	155/181 (86%)	149 (96%)	6 (4%)	0	100	100
1	D	157/181 (87%)	153 (98%)	4 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	E	150/181 (83%)	145 (97%)	5 (3%)	0	100	100
1	F	160/181 (88%)	153 (96%)	7 (4%)	0	100	100
2	G	3/5 (60%)	3 (100%)	0	0	100	100
2	I	3/5 (60%)	3 (100%)	0	0	100	100
2	K	3/5 (60%)	3 (100%)	0	0	100	100
All	All	930/1101 (84%)	894 (96%)	36 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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	135/156 (86%)	132 (98%)	3 (2%)	52	77
1	B	126/156 (81%)	121 (96%)	5 (4%)	31	56
1	C	139/156 (89%)	133 (96%)	6 (4%)	29	53
1	D	138/156 (88%)	134 (97%)	4 (3%)	42	69
1	E	133/156 (85%)	131 (98%)	2 (2%)	65	85
1	F	140/156 (90%)	137 (98%)	3 (2%)	53	78
2	G	4/4 (100%)	3 (75%)	1 (25%)	0	1
2	I	4/4 (100%)	4 (100%)	0	100	100
2	K	4/4 (100%)	4 (100%)	0	100	100
All	All	823/948 (87%)	799 (97%)	24 (3%)	42	69

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	296	ARG
1	A	385	ARG
1	A	434	PHE
1	B	302	LEU

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Mol	Chain	Res	Type
1	B	307	ASP
1	B	357	SER
1	B	384	ARG
1	B	400	LYS
1	C	300	GLU
1	C	341	LYS
1	C	368	ARG
1	C	431	SER
1	C	447	LYS
1	C	468	ILE
1	D	295	LEU
1	D	296	ARG
1	D	365	LEU
1	D	398	LEU
1	E	300	GLU
1	E	302	LEU
1	F	341	LYS
1	F	385	ARG
1	F	468	ILE
2	G	297	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	443	GLN

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

There are no ligands in this entry.

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, 95^{th} 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	158/181 (87%)	-0.18	4 (2%) 57 61	36, 46, 71, 92	0
1	B	149/181 (82%)	0.32	10 (6%) 17 18	38, 59, 83, 102	0
1	C	161/181 (88%)	0.07	8 (4%) 28 30	25, 52, 77, 99	0
1	D	161/181 (88%)	-0.00	4 (2%) 57 61	36, 49, 79, 99	0
1	E	156/181 (86%)	0.10	6 (3%) 40 43	40, 53, 78, 95	0
1	F	164/181 (90%)	0.04	3 (1%) 68 71	37, 53, 78, 96	0
2	G	5/5 (100%)	0.92	1 (20%) 1 0	24, 60, 75, 75	0
2	I	5/5 (100%)	0.57	0 100 100	54, 57, 59, 71	0
2	K	5/5 (100%)	2.46	2 (40%) 0 0	79, 80, 89, 91	0
All	All	964/1101 (87%)	0.08	38 (3%) 39 42	24, 52, 79, 102	0

All (38) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	398	LEU	7.1
1	C	469	LEU	5.1
1	E	414	TRP	5.0
1	B	413	ASN	5.0
2	K	298	LEU	4.7
1	D	296	ARG	4.3
1	B	434	PHE	4.3
1	F	397	GLY	4.3
1	A	297	ARG	4.2
1	D	398	LEU	4.2
1	B	414	TRP	4.0
1	D	297	ARG	3.8
1	B	305	GLY	3.7
1	E	416	ASN	3.7
1	D	431	SER	3.5

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Mol	Chain	Res	Type	RSRZ
1	B	326	ALA	3.3
1	C	413	ASN	3.2
1	A	296	ARG	3.2
1	B	328	PRO	2.8
2	K	299	ARG	2.7
1	E	415	LYS	2.5
1	C	298	GLU	2.5
1	B	465	PRO	2.5
1	E	298	GLU	2.5
1	C	411	ASP	2.3
1	C	396	PRO	2.3
1	C	443	GLN	2.3
1	B	308	GLY	2.3
1	E	443	GLN	2.2
1	E	329	ASN	2.2
1	B	301	GLU	2.2
1	A	398	LEU	2.2
2	G	298	LEU	2.1
1	C	412	PRO	2.1
1	A	399	ALA	2.1
1	F	443	GLN	2.1
1	B	304	VAL	2.0
1	C	414	TRP	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (i)

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.