Full wwPDB X-ray Structure Validation Report ⓘ

Dec 12, 2023 – 12:17 pm GMT

PDB ID	:	2XHE
Title	:	Crystal structure of the Unc18-syntaxin 1 complex from Monosiga brevicollis
Authors	:	Burkhardt, P.; Stegmann, C.M.; Wahl, M.C.; Fasshauer, D.
Deposited on	:	2010-06-14
Resolution	:	2.80 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:

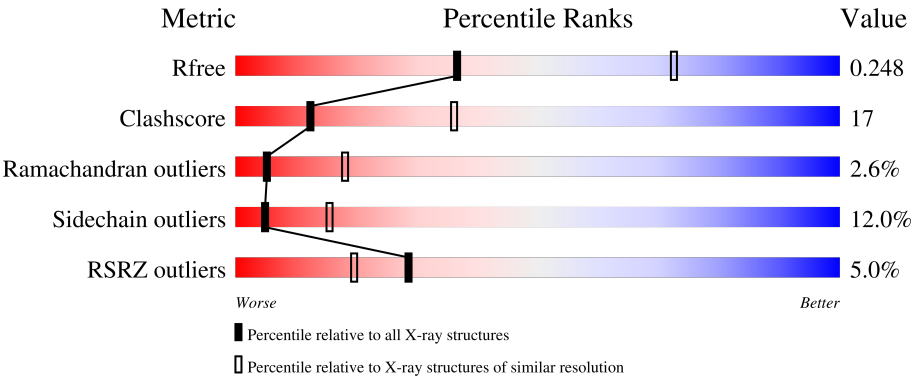
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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

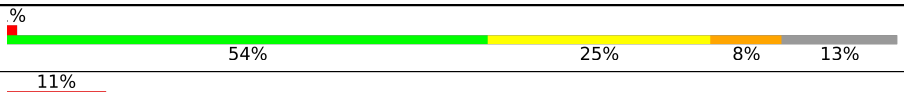
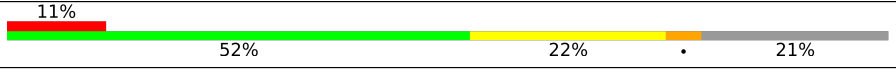
The reported resolution of this entry is 2.80 Å.

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	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

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	650	
2	B	279	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 6315 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 UNC18.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	567	Total	C	N	O	S	0	0	1
			4466	2805	780	856	25			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	HIS	-	expression tag	UNP A9V0L3

- Molecule 2 is a protein called SYNTAXIN1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	220	Total	C	N	O	S	0	0	0
			1801	1095	342	356	8			

- Molecule 3 is water.

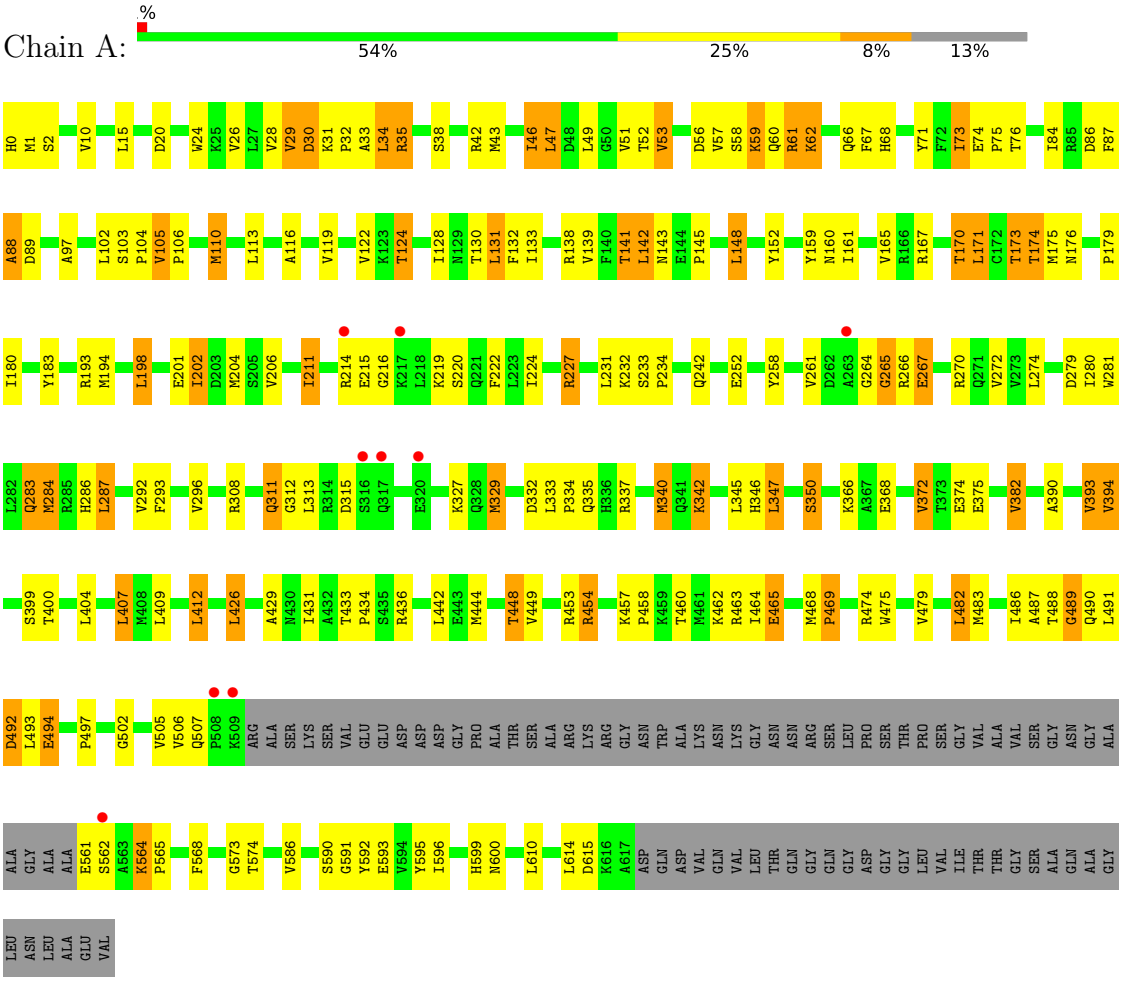
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	46	Total	O	0	0
			46	46		
3	B	2	Total	O	0	0
			2	2		

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.

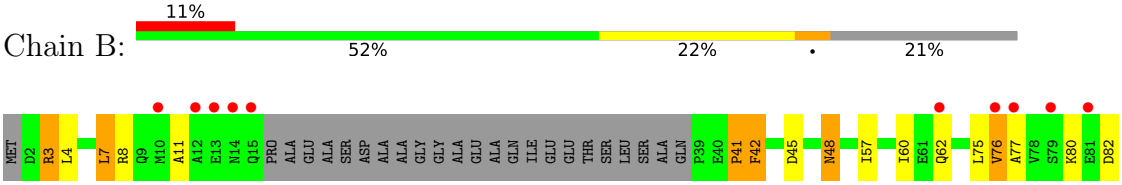
• Molecule 1: UNC18

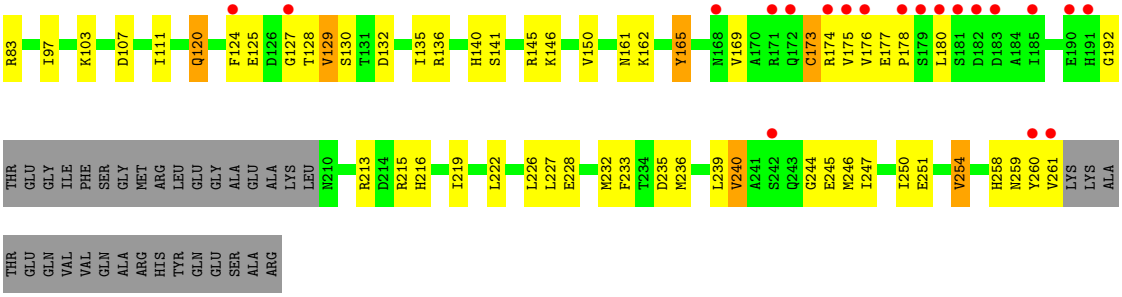
Chain A:



• Molecule 2: SYNTAXIN1

Chain B:




R83 I97 K103 D107 I111 Q120 F124 E125 D126 G127 T128 V129 S130 T131 D132 I135 R136 H140 S141 R145 K146 V150 N161 K162 Y165 N168 V169 A170 R171 Q172 C173 R174 V175 V176 E177 P178 S179 L180 S181 D182 D183 A184 I185 E190 H191 G192
THR GLU GLY ILE PHE SER GLY MET ARG LEU GLU GLY ALA GLU ALA LYS LEU M210 R213 D214 R215 H216 I219 L222 L226 L227 E228 M232 F233 T234 D235 M236 L239 V240 A241 S242 Q243 G244 E245 M246 I247 I250 E251 V254 H258 N259 Y260 V261 LYS LYS ALA
THR GLU GLN VAL VAL GLN ALA ARG HIS TYR GLN GLU SER ALA ARG

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 65 2 2	Depositor
Cell constants a, b, c, α, β, γ	146.20Å 146.20Å 214.86Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	34.60 – 2.80 34.60 – 2.80	Depositor EDS
% Data completeness (in resolution range)	100.0 (34.60-2.80) 100.0 (34.60-2.80)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.33 (at 2.81Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.188 , 0.250 0.186 , 0.248	Depositor DCC
R_{free} test set	1726 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	75.3	Xtriage
Anisotropy	0.222	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 67.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	6315	wwPDB-VP
Average B, all atoms (Å^2)	104.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.07% of the height of the origin peak. No significant pseudotranslation is detected.*

[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	0.41	0/4541	0.58	0/6140
2	B	0.32	0/1817	0.46	0/2430
All	All	0.39	0/6358	0.55	0/8570

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	590	SER	Peptide

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	4466	0	4493	167	0
2	B	1801	0	1779	54	0
3	A	46	0	0	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	2	0	0	0	0
All	All	6315	0	6272	212	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 17.

All (212) 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:561:GLU:HG2	1:A:562:SER:H	1.31	0.95
1:A:337:ARG:CZ	2:B:240:VAL:HG11	2.02	0.89
1:A:296:VAL:HG12	1:A:347:LEU:HD13	1.63	0.80
1:A:167:ARG:O	1:A:170:THR:HB	1.85	0.77
1:A:145:PRO:HA	1:A:600:ASN:HD22	1.49	0.76
2:B:75:LEU:HD23	2:B:76:VAL:HG12	1.67	0.76
2:B:76:VAL:HG13	2:B:77:ALA:H	1.50	0.75
1:A:57:VAL:HG21	1:A:73:ILE:HD11	1.68	0.75
1:A:346:HIS:O	1:A:350:SER:HB2	1.87	0.74
1:A:444:MET:CE	1:A:615:ASP:HB3	2.18	0.73
1:A:286:HIS:HE1	3:A:2005:HOH:O	1.71	0.73
1:A:284:MET:HG3	1:A:292:VAL:HG22	1.69	0.72
1:A:227:ARG:O	1:A:227:ARG:HD3	1.90	0.72
1:A:131:LEU:H	1:A:170:THR:HG21	1.53	0.71
1:A:444:MET:HE1	1:A:615:ASP:HB3	1.72	0.70
2:B:235:ASP:O	2:B:239:LEU:HB2	1.92	0.70
1:A:132:PHE:HD2	1:A:170:THR:HG22	1.57	0.69
1:A:179:PRO:HD2	1:A:202:ILE:HD12	1.73	0.69
1:A:564:LYS:HD2	1:A:591:GLY:O	1.94	0.68
2:B:124:PHE:HB2	2:B:258:HIS:HE2	1.59	0.67
2:B:192:GLY:HA2	2:B:216:HIS:ND1	2.10	0.67
1:A:202:ILE:O	1:A:206:VAL:HG23	1.94	0.66
1:A:561:GLU:HG2	1:A:562:SER:N	2.07	0.66
1:A:130:THR:HG22	1:A:174:THR:CG2	2.26	0.65
1:A:342:LYS:HE3	3:A:2029:HOH:O	1.95	0.65
2:B:239:LEU:HD13	2:B:239:LEU:O	1.97	0.65
2:B:161:ASN:O	2:B:165:TYR:HB2	1.96	0.65
1:A:261:VAL:HG12	1:A:266:ARG:HA	1.80	0.64
1:A:53:VAL:HG13	2:B:135:ILE:HG13	1.79	0.64
1:A:198:LEU:O	1:A:202:ILE:HG23	1.98	0.63
1:A:266:ARG:H	1:A:266:ARG:HD2	1.62	0.63
2:B:57:ILE:HG23	2:B:150:VAL:HG21	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:130:THR:HA	1:A:170:THR:HG23	1.81	0.61
1:A:35:ARG:HE	1:A:35:ARG:HA	1.65	0.60
1:A:488:THR:HG22	1:A:488:THR:O	2.02	0.60
1:A:284:MET:HE3	1:A:284:MET:HA	1.81	0.60
2:B:76:VAL:HG13	2:B:77:ALA:N	2.17	0.60
1:A:372:VAL:HG13	1:A:475:TRP:CE3	2.37	0.59
2:B:169:VAL:HG11	2:B:215:ARG:HH11	1.67	0.59
1:A:206:VAL:HG22	1:A:211:ILE:HG13	1.83	0.59
1:A:58:SER:O	1:A:59:LYS:HB2	2.03	0.58
1:A:10:VAL:HG11	1:A:128:ILE:HG23	1.84	0.58
1:A:31:LYS:HB2	1:A:32:PRO:HD3	1.85	0.58
2:B:107:ASP:O	2:B:111:ILE:HG13	2.03	0.57
1:A:266:ARG:HD2	1:A:266:ARG:N	2.18	0.57
1:A:242:GLN:HG3	1:A:281:TRP:CZ2	2.40	0.57
1:A:52:THR:HG23	1:A:53:VAL:HG22	1.86	0.57
1:A:132:PHE:HD2	1:A:170:THR:CG2	2.18	0.56
1:A:426:LEU:HD23	1:A:436:ARG:HD3	1.87	0.56
1:A:284:MET:HE3	1:A:284:MET:CA	2.34	0.56
1:A:374:GLU:C	1:A:382:VAL:HG13	2.25	0.56
1:A:161:ILE:HD12	1:A:194:MET:HB2	1.88	0.56
1:A:180:ILE:HD13	1:A:219:LYS:HD3	1.86	0.56
1:A:74:GLU:HG3	1:A:102:LEU:HD12	1.86	0.56
1:A:390:ALA:O	1:A:394:VAL:HG22	2.05	0.56
1:A:145:PRO:CA	1:A:600:ASN:HD22	2.19	0.56
2:B:165:TYR:O	2:B:219:ILE:HD11	2.05	0.56
1:A:46:ILE:HG23	1:A:51:VAL:CG2	2.36	0.55
1:A:148:LEU:HD13	1:A:614:LEU:HD21	1.88	0.55
2:B:41:PRO:O	2:B:42:PHE:HB3	2.05	0.55
2:B:125:GLU:C	2:B:127:GLY:H	2.08	0.55
2:B:244:GLY:HA2	2:B:247:ILE:HG22	1.89	0.55
1:A:179:PRO:CD	1:A:202:ILE:HD12	2.38	0.54
1:A:170:THR:O	1:A:174:THR:CG2	2.55	0.54
2:B:3:ARG:H	2:B:3:ARG:HD2	1.72	0.54
1:A:165:VAL:HG12	1:A:201:GLU:HG3	1.90	0.54
1:A:0:HIS:O	1:A:1:MET:HB2	2.07	0.53
1:A:20:ASP:HB2	1:A:68:HIS:CD2	2.43	0.53
1:A:493:LEU:HD21	1:A:502:GLY:O	2.08	0.53
1:A:568:PHE:HD1	1:A:595:TYR:HB2	1.72	0.53
2:B:129:VAL:HG12	2:B:130:SER:N	2.24	0.53
1:A:30:ASP:O	1:A:34:LEU:HB2	2.07	0.53
1:A:412:LEU:HD13	1:A:442:LEU:HD13	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:169:VAL:HG11	2:B:215:ARG:NH1	2.23	0.53
1:A:60:GLN:HG2	1:A:86:ASP:OD2	2.09	0.52
1:A:561:GLU:CG	1:A:562:SER:H	2.12	0.52
1:A:170:THR:O	1:A:174:THR:HG23	2.09	0.52
2:B:174:ARG:C	2:B:176:VAL:H	2.12	0.52
1:A:103:SER:HB2	1:A:104:PRO:HD2	1.91	0.52
2:B:141:SER:HB3	2:B:145:ARG:HH12	1.75	0.52
1:A:173:THR:HA	1:A:211:ILE:CG2	2.39	0.52
1:A:312:GLY:C	1:A:313:LEU:HG	2.31	0.52
1:A:407:LEU:HD23	1:A:431:ILE:CD1	2.40	0.52
1:A:463:ARG:O	1:A:464:ILE:HB	2.10	0.51
1:A:492:ASP:HB3	1:A:494:GLU:HG2	1.92	0.51
1:A:53:VAL:HG13	2:B:135:ILE:CG1	2.40	0.51
1:A:180:ILE:CD1	1:A:219:LYS:HD3	2.41	0.51
1:A:453:ARG:O	1:A:454:ARG:HB3	2.10	0.51
1:A:29:VAL:HG22	1:A:33:ALA:HB3	1.93	0.50
1:A:171:LEU:O	1:A:175:MET:HB2	2.11	0.50
1:A:232:LYS:HD3	1:A:372:VAL:HG22	1.92	0.50
1:A:272:VAL:HG11	1:A:345:LEU:HD22	1.92	0.50
2:B:80:LYS:HA	2:B:83:ARG:HB2	1.92	0.50
1:A:75:PRO:HG3	1:A:103:SER:O	2.10	0.50
1:A:375:GLU:O	1:A:474:ARG:NH2	2.45	0.50
1:A:214:ARG:O	1:A:215:GLU:HB2	2.11	0.50
1:A:444:MET:HE3	1:A:615:ASP:HB3	1.92	0.50
2:B:232:MET:SD	2:B:236:MET:HG3	2.51	0.50
1:A:131:LEU:CD1	1:A:167:ARG:HA	2.41	0.50
1:A:215:GLU:OE1	1:A:219:LYS:HE2	2.11	0.49
1:A:280:ILE:O	1:A:284:MET:HB2	2.12	0.49
1:A:296:VAL:CG1	1:A:347:LEU:HD13	2.37	0.49
1:A:58:SER:O	1:A:59:LYS:CB	2.60	0.49
1:A:308:ARG:NH1	1:A:313:LEU:HB3	2.27	0.49
1:A:491:LEU:HB3	3:A:2043:HOH:O	2.12	0.49
2:B:124:PHE:HD1	2:B:258:HIS:CD2	2.31	0.49
1:A:161:ILE:HD11	1:A:193:ARG:HD2	1.93	0.49
1:A:311:GLN:HB3	1:A:312:GLY:H	1.51	0.48
1:A:87:PHE:O	1:A:89:ASP:N	2.47	0.48
1:A:487:ALA:HA	1:A:592:TYR:CE1	2.49	0.48
1:A:148:LEU:HD22	1:A:152:TYR:HD2	1.77	0.48
1:A:308:ARG:NH2	1:A:332:ASP:OD2	2.47	0.48
1:A:464:ILE:O	1:A:465:GLU:HB2	2.13	0.48
1:A:84:ILE:O	1:A:88:ALA:HB2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:329:MET:HG2	1:A:340:MET:HE2	1.95	0.47
1:A:198:LEU:HD12	1:A:224:ILE:HD11	1.95	0.47
1:A:258:TYR:OH	1:A:270:ARG:HD3	2.13	0.47
2:B:244:GLY:O	2:B:245:GLU:HG2	2.14	0.47
2:B:124:PHE:CD1	2:B:258:HIS:CD2	3.03	0.47
1:A:132:PHE:CD2	1:A:170:THR:HG22	2.45	0.47
1:A:141:THR:HG23	1:A:143:ASN:H	1.79	0.47
1:A:142:LEU:HB2	1:A:599:HIS:HA	1.97	0.47
1:A:487:ALA:HA	1:A:592:TYR:CD1	2.50	0.46
2:B:129:VAL:HG12	2:B:130:SER:H	1.81	0.46
1:A:35:ARG:HA	1:A:35:ARG:NE	2.31	0.46
1:A:426:LEU:HB3	1:A:436:ARG:CZ	2.46	0.46
2:B:80:LYS:O	2:B:80:LYS:HG2	2.15	0.46
1:A:87:PHE:O	1:A:88:ALA:C	2.53	0.46
1:A:283:GLN:HG3	1:A:284:MET:CE	2.44	0.46
1:A:284:MET:HA	1:A:287:LEU:HD22	1.98	0.46
2:B:125:GLU:C	2:B:127:GLY:N	2.69	0.46
2:B:244:GLY:C	2:B:246:MET:H	2.19	0.46
1:A:35:ARG:HB3	1:A:133:ILE:HD12	1.97	0.45
1:A:47:LEU:HD12	1:A:47:LEU:HA	1.74	0.45
1:A:62:LYS:HA	1:A:62:LYS:HD2	1.69	0.45
1:A:165:VAL:CG1	1:A:201:GLU:HG3	2.45	0.45
2:B:244:GLY:CA	2:B:247:ILE:HG22	2.45	0.45
1:A:75:PRO:HB3	1:A:105:VAL:HA	1.98	0.45
1:A:159:TYR:O	1:A:160:ASN:HB3	2.16	0.45
1:A:183:TYR:O	1:A:497:PRO:HD2	2.17	0.45
1:A:433:THR:OG1	1:A:434:PRO:HD3	2.16	0.45
2:B:60:ILE:HG23	2:B:97:ILE:HG23	1.97	0.45
1:A:29:VAL:HG22	1:A:33:ALA:CB	2.46	0.45
1:A:66:GLN:H	1:A:66:GLN:CD	2.18	0.45
1:A:176:ASN:HA	1:A:211:ILE:HG22	1.98	0.45
1:A:74:GLU:HB3	1:A:76:THR:HG23	1.98	0.45
1:A:264:GLY:O	1:A:265:GLY:C	2.55	0.45
1:A:75:PRO:CG	1:A:103:SER:O	2.65	0.44
1:A:334:PRO:HB2	2:B:233:PHE:HB3	1.99	0.44
1:A:10:VAL:CG1	1:A:128:ILE:HG23	2.47	0.44
1:A:489:GLY:O	1:A:507:GLN:HB3	2.17	0.44
1:A:489:GLY:HA2	1:A:505:VAL:HG12	1.98	0.44
1:A:483:MET:HB3	1:A:586:VAL:HG11	1.99	0.44
1:A:179:PRO:HA	1:A:220:SER:O	2.17	0.44
1:A:493:LEU:HD12	1:A:493:LEU:N	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:407:LEU:CD2	1:A:431:ILE:CD1	2.95	0.44
1:A:87:PHE:CZ	1:A:97:ALA:HB2	2.53	0.43
1:A:292:VAL:HG12	1:A:350:SER:OG	2.18	0.43
2:B:45:ASP:O	2:B:48:ASN:HB2	2.18	0.43
1:A:368:GLU:O	1:A:372:VAL:HB	2.18	0.43
1:A:38:SER:OG	2:B:251:GLU:HG3	2.18	0.43
1:A:227:ARG:O	1:A:227:ARG:CD	2.64	0.43
2:B:215:ARG:O	2:B:219:ILE:HD13	2.19	0.43
1:A:130:THR:HG22	1:A:174:THR:HG21	2.01	0.43
1:A:131:LEU:HD13	1:A:167:ARG:HG2	2.00	0.43
1:A:116:ALA:O	1:A:119:VAL:HG12	2.18	0.43
2:B:4:LEU:HD11	2:B:8:ARG:NH1	2.34	0.43
2:B:177:GLU:HA	2:B:178:PRO:HD3	1.86	0.43
1:A:24:TRP:HB2	1:A:67:PHE:CE1	2.54	0.43
1:A:119:VAL:HG21	2:B:11:ALA:CB	2.48	0.43
1:A:148:LEU:HD23	1:A:573:GLY:HA3	2.00	0.43
1:A:468:MET:HA	1:A:469:PRO:HD2	1.79	0.43
1:A:366:LYS:HE2	1:A:366:LYS:HB3	1.70	0.42
2:B:260:TYR:O	2:B:261:VAL:HB	2.19	0.42
1:A:138:ARG:NH2	1:A:593:GLU:OE2	2.51	0.42
1:A:139:VAL:HA	1:A:596:ILE:O	2.19	0.42
1:A:486:ILE:C	1:A:488:THR:H	2.22	0.42
2:B:162:LYS:O	2:B:162:LYS:HG2	2.19	0.42
1:A:28:VAL:HG11	1:A:71:TYR:CE2	2.53	0.42
1:A:26:VAL:HG22	1:A:53:VAL:HG23	2.01	0.42
1:A:233:SER:HB2	1:A:234:PRO:HD3	2.00	0.42
2:B:125:GLU:O	2:B:127:GLY:N	2.53	0.42
1:A:283:GLN:HG3	1:A:284:MET:HE3	2.01	0.42
1:A:312:GLY:O	1:A:313:LEU:HG	2.19	0.42
1:A:74:GLU:HA	1:A:75:PRO:HD3	1.92	0.42
2:B:254:VAL:O	2:B:254:VAL:CG2	2.68	0.42
1:A:38:SER:HA	2:B:250:ILE:HD12	2.02	0.41
1:A:110:MET:HG3	2:B:7:LEU:HD23	2.02	0.41
1:A:426:LEU:HD12	1:A:426:LEU:HA	1.90	0.41
2:B:132:ASP:O	2:B:136:ARG:HG3	2.20	0.41
1:A:292:VAL:O	1:A:293:PHE:C	2.59	0.41
1:A:56:ASP:O	1:A:58:SER:O	2.39	0.41
1:A:286:HIS:CE1	3:A:2005:HOH:O	2.58	0.41
1:A:61:ARG:HB3	2:B:259:ASN:HA	2.02	0.41
1:A:329:MET:CG	1:A:340:MET:HE2	2.51	0.41
1:A:490:GLN:OE1	1:A:507:GLN:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:87:PHE:CE2	1:A:97:ALA:HB2	2.55	0.41
1:A:105:VAL:HA	1:A:106:PRO:HD3	1.91	0.41
1:A:393:VAL:HG13	1:A:429:ALA:HA	2.02	0.41
2:B:222:LEU:O	2:B:226:LEU:HG	2.21	0.41
1:A:10:VAL:HG11	1:A:128:ILE:CG2	2.48	0.41
1:A:148:LEU:HD22	1:A:152:TYR:CD2	2.56	0.41
1:A:404:LEU:HD23	1:A:404:LEU:HA	1.89	0.41
1:A:564:LYS:HA	1:A:565:PRO:HD3	1.81	0.41
1:A:49:LEU:HD12	1:A:49:LEU:HA	1.92	0.41
1:A:266:ARG:O	1:A:267:GLU:C	2.59	0.41
1:A:482:LEU:HA	1:A:482:LEU:HD12	1.77	0.41
1:A:457:LYS:HA	1:A:458:PRO:HD3	1.84	0.40
2:B:213:ARG:HB2	2:B:213:ARG:CZ	2.50	0.40
2:B:120:GLN:H	2:B:120:GLN:CD	2.25	0.40
2:B:169:VAL:O	2:B:173:CYS:HB2	2.21	0.40
2:B:128:THR:OG1	2:B:258:HIS:CD2	2.75	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	563/650 (87%)	504 (90%)	45 (8%)	14 (2%)	5 19
2	B	214/279 (77%)	180 (84%)	28 (13%)	6 (3%)	5 17
All	All	777/929 (84%)	684 (88%)	73 (9%)	20 (3%)	5 18

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	88	ALA
2	B	180	LEU

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Mol	Chain	Res	Type
1	A	59	LYS
1	A	62	LYS
1	A	124	THR
1	A	265	GLY
1	A	267	GLU
1	A	448	THR
1	A	465	GLU
1	A	492	ASP
2	B	42	PHE
2	B	76	VAL
2	B	129	VAL
1	A	454	ARG
1	A	489	GLY
1	A	469	PRO
1	A	564	LYS
2	B	41	PRO
2	B	175	VAL
1	A	216	GLY

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	499/557 (90%)	430 (86%)	69 (14%)	3 11
2	B	200/242 (83%)	185 (92%)	15 (8%)	13 37
All	All	699/799 (88%)	615 (88%)	84 (12%)	5 15

All (84) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	SER
1	A	15	LEU
1	A	29	VAL
1	A	30	ASP
1	A	34	LEU

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Mol	Chain	Res	Type
1	A	35	ARG
1	A	42	ARG
1	A	43	MET
1	A	46	ILE
1	A	47	LEU
1	A	53	VAL
1	A	61	ARG
1	A	73	ILE
1	A	105	VAL
1	A	110	MET
1	A	113	LEU
1	A	122	VAL
1	A	124	THR
1	A	131	LEU
1	A	141	THR
1	A	142	LEU
1	A	148	LEU
1	A	170	THR
1	A	171	LEU
1	A	173	THR
1	A	174	THR
1	A	198	LEU
1	A	202	ILE
1	A	204	MET
1	A	211	ILE
1	A	222	PHE
1	A	227	ARG
1	A	231	LEU
1	A	252	GLU
1	A	274	LEU
1	A	279	ASP
1	A	283	GLN
1	A	284	MET
1	A	287	LEU
1	A	311	GLN
1	A	315	ASP
1	A	327	LYS
1	A	329	MET
1	A	333	LEU
1	A	335	GLN
1	A	340	MET
1	A	342	LYS

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Mol	Chain	Res	Type
1	A	347	LEU
1	A	350	SER
1	A	372	VAL
1	A	382	VAL
1	A	393	VAL
1	A	394	VAL
1	A	399	SER
1	A	400	THR
1	A	407	LEU
1	A	409	LEU
1	A	412	LEU
1	A	426	LEU
1	A	448	THR
1	A	449	VAL
1	A	460	THR
1	A	462	LYS
1	A	479	VAL
1	A	482	LEU
1	A	494	GLU
1	A	506	VAL
1	A	574	THR
1	A	610	LEU
2	B	3	ARG
2	B	7	LEU
2	B	48	ASN
2	B	62	GLN
2	B	82	ASP
2	B	103	LYS
2	B	120	GLN
2	B	140	HIS
2	B	146	LYS
2	B	165	TYR
2	B	173	CYS
2	B	227	LEU
2	B	228	GLU
2	B	240	VAL
2	B	254	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	335	GLN

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Mol	Chain	Res	Type
1	A	588	GLN
1	A	600	ASN

5.3.3 RNA

There are no RNA molecules 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 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	567/650 (87%)	-0.25	9 (1%) 72 66	44, 87, 153, 237	0
2	B	220/279 (78%)	0.30	30 (13%) 3 1	69, 125, 210, 247	0
All	All	787/929 (84%)	-0.10	39 (4%) 28 19	44, 95, 186, 247	0

All (39) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	320	GLU	9.6
2	B	180	LEU	5.5
2	B	260	TYR	5.0
1	A	214	ARG	4.7
2	B	178	PRO	4.6
2	B	181	SER	4.5
2	B	183	ASP	4.4
2	B	261	VAL	4.4
2	B	242	SER	4.4
2	B	182	ASP	4.2
2	B	191	HIS	4.2
1	A	263	ALA	3.7
1	A	508	PRO	3.4
1	A	562	SER	3.4
2	B	15	GLN	3.4
2	B	175	VAL	3.4
2	B	79	SER	3.2
2	B	124	PHE	3.2
1	A	509	LYS	3.0
2	B	168	ASN	2.9
2	B	179	SER	2.9
2	B	77	ALA	2.9
2	B	190	GLU	2.8
2	B	12	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
2	B	14	ASN	2.6
1	A	317	GLN	2.4
2	B	62	GLN	2.4
2	B	127	GLY	2.4
2	B	171	ARG	2.4
2	B	10	MET	2.4
1	A	316	SER	2.4
2	B	76	VAL	2.3
1	A	217	LYS	2.3
2	B	176	VAL	2.3
2	B	185	ILE	2.2
2	B	174	ARG	2.2
2	B	13	GLU	2.2
2	B	81	GLU	2.1
2	B	172	GLN	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.