



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 06:03 AM GMT

PDB ID : 2VSQ  
Title : STRUCTURE OF SURFACTIN A SYNTHETASE C (SRFA-C), A NONRIBOSOMAL PEPTIDE SYNTHETASE TERMINATION MODULE  
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Deposited on : 2008-04-29  
Resolution : 2.60 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](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

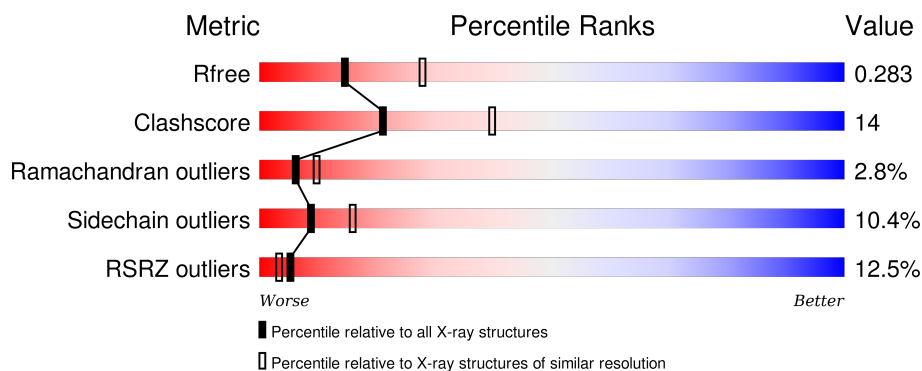
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.60 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))
$R_{free}$	91344	2328 (2.60-2.60)
Clashscore	102246	2679 (2.60-2.60)
Ramachandran outliers	100387	2635 (2.60-2.60)
Sidechain outliers	100360	2635 (2.60-2.60)
RSRZ outliers	91569	2334 (2.60-2.60)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	1304	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	LEU	A	2291	-	-	-	X

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 10109 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.

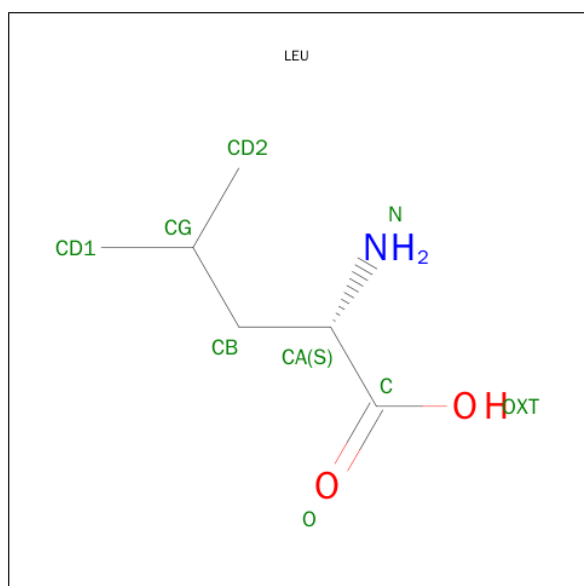
- Molecule 1 is a protein called SURFACTIN SYNTHETASE SUBUNIT 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1273	Total	C	N	O	S	0	0	0
			10056	6409	1685	1924	38			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	26	ALA	PRO	CONFLICT SEE REMARK 9	UNP Q08787
A	33	SER	THR	CONFLICT SEE REMARK 9	UNP Q08787
A	235	PRO	LEU	CONFLICT SEE REMARK 9	UNP Q08787
A	1003	ALA	SER	ENGINEERED MUTATION	UNP Q08787
A	1223	ILE	MET	CONFLICT	UNP Q08787
A	1240	MET	ASN	CONFLICT	UNP Q08787

- Molecule 2 is LEUCINE (three-letter code: LEU) (formula: C<sub>6</sub>H<sub>13</sub>NO<sub>2</sub>).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			9	6	1	2		

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).

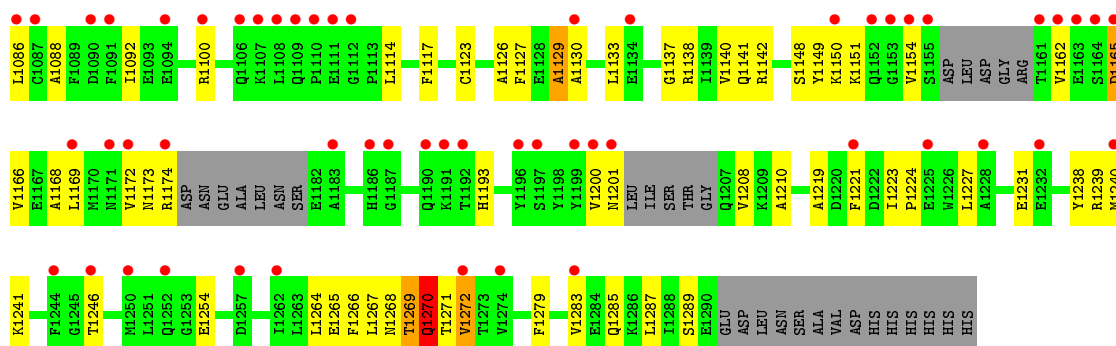


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	O	S	0	0
			5	4	1		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	39	Total	O	0	0
			39	39		





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	83.11Å 106.56Å 92.40Å 90.00° 97.35° 90.00°	Depositor
Resolution (Å)	82.50 – 2.60 37.06 – 2.60	Depositor EDS
% Data completeness (in resolution range)	93.1 (82.50-2.60) 92.5 (37.06-2.60)	Depositor EDS
$R_{merge}$	0.04	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.90 (at 2.61Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, $R_{free}$	0.213 , 0.272 0.219 , 0.283	Depositor DCC
$R_{free}$ test set	1040 reflections (2.34%)	DCC
Wilson B-factor (Å <sup>2</sup> )	69.8	Xtriage
Anisotropy	0.013	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 76.7	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.33$	Xtriage
Outliers	0 of 45518 reflections	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	10109	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	70.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.19% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: SO4

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	0.53	4/10270 (0.0%)	0.64	3/13922 (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	A	0	3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	596	GLN	CD-NE2	12.98	1.65	1.32
1	A	596	GLN	CD-OE1	8.68	1.43	1.24
1	A	143	TRP	CB-CG	-5.59	1.40	1.50
1	A	154	CYS	CB-SG	-5.17	1.73	1.81

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	596	GLN	CG-CD-OE1	-13.48	94.65	121.60
1	A	596	GLN	CG-CD-NE2	6.68	132.73	116.70
1	A	742	ARG	NE-CZ-NH1	5.48	123.04	120.30

There are no chirality outliers.

All (3) planarity outliers are listed below:



Mol	Chain	Res	Type	Group
1	A	462	GLU	Peptide
1	A	567	THR	Peptide
1	A	587	ILE	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	10056	0	9872	285	0
2	A	9	0	10	0	0
3	A	5	0	0	0	0
4	A	39	0	0	0	0
All	All	10109	0	9882	285	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 14.

All (285) 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:876:ILE:HD11	1:A:891:VAL:CG2	1.60	1.31
1:A:876:ILE:CD1	1:A:891:VAL:HG21	1.61	1.29
1:A:587:ILE:HD13	1:A:587:ILE:O	1.53	1.09
1:A:60:MET:HE2	1:A:125:ILE:HD13	1.38	1.05
1:A:1021:LEU:HD22	1:A:1022:PRO:HD2	1.43	1.00
1:A:39:ILE:HD11	1:A:378:VAL:HG13	1.49	0.94
1:A:483:LEU:HD13	1:A:525:LEU:HD12	1.51	0.91
1:A:463:THR:HG23	1:A:606:PRO:HG2	1.52	0.90
1:A:725:ILE:CG2	1:A:749:LEU:HD13	2.04	0.87
1:A:943:LEU:O	1:A:944:THR:HG22	1.76	0.85
1:A:644:PHE:HB2	1:A:671:ASN:HD22	1.40	0.84
1:A:783:ILE:HD12	1:A:785:ASN:H	1.46	0.79
1:A:611:TYR:CZ	1:A:662:THR:HG21	2.17	0.79
1:A:967:ILE:O	1:A:992:ILE:HD13	1.86	0.76
1:A:883:TYR:CE1	1:A:913:LEU:HD13	2.21	0.76
1:A:618:THR:HG23	1:A:621:LYS:O	1.87	0.75
1:A:241:LYS:O	1:A:244:THR:HG22	1.87	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:264:VAL:HG22	1:A:436:VAL:HG11	1.68	0.74
1:A:611:TYR:OH	1:A:662:THR:HG21	1.88	0.73
1:A:1092:ILE:HG21	1:A:1100:ARG:HD2	1.70	0.73
1:A:973:MET:O	1:A:977:ILE:HG23	1.89	0.73
1:A:725:ILE:CG2	1:A:749:LEU:CD1	2.67	0.72
1:A:628:THR:HG22	1:A:631:ASN:H	1.55	0.72
1:A:740:ALA:HB1	1:A:744:MET:CE	2.20	0.72
1:A:952:ARG:HD3	1:A:953:LEU:HD23	1.72	0.71
1:A:1166:VAL:HG21	1:A:1193:HIS:HA	1.72	0.71
1:A:39:ILE:CD1	1:A:378:VAL:HG13	2.20	0.71
1:A:463:THR:CG2	1:A:606:PRO:HG2	2.21	0.71
1:A:1019:ILE:HD13	1:A:1019:ILE:O	1.91	0.70
1:A:365:ASN:N	1:A:365:ASN:HD22	1.89	0.70
1:A:74:LYS:O	1:A:75:VAL:HG13	1.92	0.69
1:A:583:THR:CG2	1:A:585:LEU:HD11	2.22	0.69
1:A:1264:LEU:O	1:A:1268:ASN:N	2.25	0.69
1:A:278:GLY:HA3	1:A:352:ILE:HG22	1.72	0.69
1:A:888:ASP:HB2	1:A:908:VAL:HG22	1.74	0.68
1:A:587:ILE:O	1:A:587:ILE:CD1	2.39	0.68
1:A:1031:THR:HG22	1:A:1034:GLY:H	1.58	0.68
1:A:754:GLY:HA3	1:A:761:PHE:HA	1.76	0.68
1:A:1268:ASN:O	1:A:1270:GLN:N	2.27	0.68
1:A:60:MET:HE1	1:A:125:ILE:CG2	2.24	0.67
1:A:641:TYR:O	1:A:642:MET:O	2.11	0.67
1:A:528:VAL:HG13	1:A:665:PHE:HE1	1.60	0.67
1:A:520:TYR:O	1:A:567:THR:HG23	1.95	0.66
1:A:725:ILE:HG23	1:A:749:LEU:CD1	2.25	0.66
1:A:642:MET:C	1:A:642:MET:SD	2.74	0.66
1:A:573:GLU:HG2	1:A:576:ALA:HB2	1.77	0.66
1:A:1039:LEU:HD23	1:A:1043:GLY:HA2	1.77	0.66
1:A:977:ILE:HD11	1:A:1032:ILE:HG23	1.76	0.65
1:A:725:ILE:HG23	1:A:749:LEU:HD13	1.78	0.65
1:A:463:THR:HG23	1:A:606:PRO:CG	2.26	0.65
1:A:864:VAL:HG11	1:A:893:ALA:CB	2.26	0.64
1:A:738:ARG:NH2	1:A:770:LEU:HD12	2.13	0.64
1:A:99:THR:HG22	1:A:100:GLY:N	2.11	0.63
1:A:583:THR:HG22	1:A:585:LEU:CD1	2.28	0.63
1:A:1013:ILE:O	1:A:1019:ILE:N	2.32	0.63
1:A:1023:VAL:HG23	1:A:1024:LYS:H	1.64	0.63
1:A:60:MET:CE	1:A:125:ILE:HG21	2.29	0.63
1:A:1149:TYR:HB2	1:A:1227:LEU:HD22	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:876:ILE:HD12	1:A:876:ILE:C	2.20	0.63
1:A:774:ILE:HG22	1:A:774:ILE:O	1.99	0.62
1:A:934:THR:HG22	1:A:961:GLN:HB3	1.81	0.62
1:A:864:VAL:HG23	1:A:871:ILE:HB	1.80	0.62
1:A:215:PHE:H	1:A:270:GLN:HE22	1.45	0.62
1:A:41:MET:CE	1:A:375:MET:SD	2.88	0.62
1:A:1039:LEU:HD23	1:A:1043:GLY:CA	2.30	0.62
1:A:1014:LYS:O	1:A:1015:LYS:CB	2.49	0.61
1:A:1219:ALA:HB2	1:A:1246:THR:HG22	1.83	0.61
1:A:340:GLN:NE2	1:A:346:PRO:O	2.34	0.61
1:A:992:ILE:O	1:A:1031:THR:HG23	2.00	0.61
1:A:895:ARG:HD2	1:A:901:ALA:HB2	1.82	0.61
1:A:1013:ILE:HD12	1:A:1013:ILE:C	2.21	0.60
1:A:995:ASP:HB3	1:A:998:ALA:HB3	1.84	0.60
1:A:502:ILE:HD11	1:A:587:ILE:CG1	2.31	0.60
1:A:35:TYR:OH	1:A:1024:LYS:NZ	2.34	0.60
1:A:1060:ILE:HG21	1:A:1062:PHE:CZ	2.36	0.60
1:A:60:MET:HE1	1:A:125:ILE:HG21	1.83	0.59
1:A:880:LEU:O	1:A:886:VAL:HG11	2.02	0.59
1:A:63:TYR:CE2	1:A:180:VAL:HG21	2.38	0.59
1:A:944:THR:HG23	1:A:944:THR:O	2.01	0.59
1:A:883:TYR:HE1	1:A:913:LEU:HD13	1.68	0.59
1:A:93:ILE:HD13	1:A:132:PHE:CE2	2.38	0.58
1:A:530:GLY:O	1:A:534:VAL:HG23	2.04	0.58
1:A:1092:ILE:HD13	1:A:1100:ARG:CD	2.33	0.58
1:A:1051:THR:HB	1:A:1088:ALA:HB3	1.83	0.58
1:A:41:MET:HE3	1:A:375:MET:SD	2.44	0.58
1:A:738:ARG:NH2	1:A:770:LEU:CD1	2.68	0.57
1:A:495:LEU:HD11	1:A:532:LEU:HD12	1.86	0.57
1:A:485:TYR:HB3	1:A:525:LEU:HD22	1.86	0.57
1:A:502:ILE:HG22	1:A:533:GLY:HA3	1.87	0.57
1:A:744:MET:CE	1:A:749:LEU:HD11	2.35	0.57
1:A:641:TYR:CD2	1:A:642:MET:HE3	2.40	0.57
1:A:1032:ILE:HA	1:A:1035:ILE:HG23	1.87	0.56
1:A:583:THR:HG22	1:A:585:LEU:HD11	1.84	0.56
1:A:1172:VAL:C	1:A:1173:ASN:HD22	2.08	0.56
1:A:719:MET:HA	1:A:722:LEU:HD22	1.88	0.56
1:A:485:TYR:HB3	1:A:525:LEU:CD2	2.34	0.56
1:A:567:THR:HG22	1:A:568:HIS:N	2.21	0.56
1:A:573:GLU:O	1:A:576:ALA:HB2	2.06	0.56
1:A:1021:LEU:HD13	1:A:1022:PRO:N	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1014:LYS:HA	1:A:1020:ASP:HA	1.87	0.55
1:A:63:TYR:HE2	1:A:180:VAL:HG21	1.70	0.55
1:A:576:ALA:HB3	1:A:578:LEU:HD12	1.89	0.55
1:A:65:VAL:HB	1:A:149:ILE:HB	1.89	0.55
1:A:1231:GLU:HA	1:A:1238:TYR:CD2	2.42	0.54
1:A:528:VAL:HG13	1:A:665:PHE:CE1	2.41	0.54
1:A:41:MET:HE2	1:A:375:MET:SD	2.48	0.54
1:A:744:MET:HE1	1:A:749:LEU:HD11	1.90	0.54
1:A:254:LEU:HD12	1:A:254:LEU:H	1.73	0.54
1:A:343:ALA:O	1:A:344:ASP:HB2	2.08	0.54
1:A:502:ILE:HD11	1:A:587:ILE:HG12	1.90	0.54
1:A:1224:PRO:HG2	1:A:1227:LEU:HD12	1.91	0.53
1:A:942:PRO:O	1:A:950:ASN:HB3	2.09	0.53
1:A:439:ILE:HG22	1:A:441:LEU:HD13	1.91	0.53
1:A:941:LEU:HD12	1:A:941:LEU:N	2.24	0.53
1:A:641:TYR:C	1:A:642:MET:HE3	2.28	0.53
1:A:845:LEU:HD13	1:A:860:ILE:HG13	1.91	0.53
1:A:60:MET:CE	1:A:125:ILE:CG2	2.86	0.53
1:A:744:MET:HE3	1:A:749:LEU:CD2	2.39	0.52
1:A:576:ALA:HB3	1:A:578:LEU:CD1	2.39	0.52
1:A:701:MET:O	1:A:725:ILE:HD12	2.10	0.52
1:A:1053:MET:HE2	1:A:1075:GLN:HA	1.91	0.52
1:A:676:ILE:N	1:A:676:ILE:HD12	2.25	0.52
1:A:262:TRP:CD1	1:A:353:ILE:HD11	2.44	0.52
1:A:502:ILE:HD11	1:A:587:ILE:HG13	1.91	0.52
1:A:725:ILE:HG21	1:A:749:LEU:CD1	2.38	0.51
1:A:1092:ILE:HD13	1:A:1100:ARG:HD2	1.91	0.51
1:A:1172:VAL:HG23	1:A:1173:ASN:ND2	2.25	0.51
1:A:7:ASP:C	1:A:7:ASP:OD2	2.49	0.51
1:A:744:MET:HE3	1:A:749:LEU:HD21	1.93	0.51
1:A:99:THR:CG2	1:A:100:GLY:N	2.74	0.50
1:A:231:LEU:HD12	1:A:414:ILE:HG22	1.93	0.50
1:A:642:MET:N	1:A:642:MET:HE3	2.27	0.50
1:A:725:ILE:HG21	1:A:749:LEU:HD13	1.91	0.50
1:A:73:GLU:O	1:A:74:LYS:HD3	2.12	0.50
1:A:568:HIS:O	1:A:569:GLN:CB	2.60	0.50
1:A:439:ILE:HG22	1:A:441:LEU:CD1	2.41	0.50
1:A:659:ASP:O	1:A:760:VAL:HG22	2.12	0.50
1:A:738:ARG:CZ	1:A:770:LEU:HD12	2.42	0.50
1:A:224:ASP:OD1	1:A:224:ASP:N	2.38	0.49
1:A:187:ILE:HD12	1:A:187:ILE:N	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:944:THR:O	1:A:944:THR:CG2	2.60	0.49
1:A:909:ASN:O	1:A:910:ARG:CB	2.60	0.49
1:A:1015:LYS:O	1:A:1017:LEU:N	2.46	0.49
1:A:12:MET:SD	1:A:12:MET:N	2.86	0.49
1:A:150:LEU:HD22	1:A:154:CYS:CB	2.42	0.49
1:A:845:LEU:HB3	1:A:857:ALA:HB3	1.94	0.49
1:A:285:PRO:HD2	1:A:291:VAL:HG21	1.95	0.49
1:A:264:VAL:HG22	1:A:436:VAL:CG1	2.39	0.49
1:A:1023:VAL:HG23	1:A:1024:LYS:N	2.26	0.49
1:A:1114:LEU:O	1:A:1141:GLN:N	2.45	0.49
1:A:314:PHE:CD1	1:A:428:LEU:HD22	2.47	0.49
1:A:583:THR:HG22	1:A:585:LEU:HD12	1.95	0.48
1:A:845:LEU:HD13	1:A:860:ILE:CG1	2.43	0.48
1:A:642:MET:CE	1:A:642:MET:N	2.77	0.48
1:A:1162:VAL:HG12	1:A:1193:HIS:CE1	2.48	0.48
1:A:186:TYR:CE2	1:A:190:LEU:HD22	2.49	0.48
1:A:97:HIS:CE1	1:A:98:LEU:HD21	2.49	0.48
1:A:731:ARG:HH12	1:A:872:GLU:CD	2.17	0.48
1:A:873:LEU:HD23	1:A:877:GLU:OE1	2.14	0.48
1:A:1142:ARG:NH2	1:A:1267:LEU:HD23	2.29	0.48
1:A:1005:LYS:HA	1:A:1008:THR:HB	1.94	0.48
1:A:1126:ALA:O	1:A:1129:ALA:HB3	2.13	0.48
1:A:350:ASP:HB3	1:A:351:HIS:HD1	1.79	0.48
1:A:1172:VAL:HG23	1:A:1173:ASN:HD22	1.78	0.47
1:A:288:ILE:HB	1:A:291:VAL:HB	1.95	0.47
1:A:560:SER:O	1:A:561:ALA:HB3	2.15	0.47
1:A:922:LEU:HD22	1:A:926:LEU:HD12	1.96	0.47
1:A:553:ILE:HG22	1:A:557:LEU:HD22	1.95	0.47
1:A:1021:LEU:HD22	1:A:1022:PRO:CD	2.29	0.47
1:A:1063:ALA:HA	1:A:1117:PHE:HB3	1.97	0.47
1:A:1266:PHE:O	1:A:1269:THR:HG23	2.15	0.47
1:A:873:LEU:HD21	1:A:891:VAL:O	2.14	0.47
1:A:346:PRO:O	1:A:348:LEU:N	2.48	0.47
1:A:881:GLN:O	1:A:886:VAL:HG21	2.14	0.47
1:A:150:LEU:HD22	1:A:154:CYS:HB3	1.97	0.47
1:A:545:ASP:HB3	1:A:548:LEU:HD13	1.95	0.47
1:A:565:LEU:O	1:A:584:THR:HA	2.14	0.47
1:A:606:PRO:O	1:A:628:THR:HG23	2.15	0.47
1:A:261:VAL:HG21	1:A:425:ILE:CD1	2.45	0.46
1:A:488:GLN:N	1:A:488:GLN:OE1	2.48	0.46
1:A:1123:CYS:SG	1:A:1148:SER:HB3	2.55	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:995:ASP:HB3	1:A:998:ALA:CB	2.45	0.46
1:A:1151:LYS:NZ	1:A:1201:ASN:O	2.48	0.46
1:A:1238:TYR:CE2	1:A:1240:MET:HE1	2.50	0.46
1:A:1078:SER:HA	1:A:1086:LEU:HD11	1.97	0.46
1:A:60:MET:HE1	1:A:125:ILE:HG23	1.97	0.46
1:A:261:VAL:HG21	1:A:425:ILE:HD13	1.97	0.46
1:A:469:TRP:HE1	1:A:633:GLN:HE21	1.63	0.46
1:A:360:LEU:N	1:A:360:LEU:HD22	2.30	0.45
1:A:1133:LEU:O	1:A:1137:GLY:N	2.49	0.45
1:A:183:TYR:HA	1:A:294:MET:HE3	1.98	0.45
1:A:740:ALA:HB1	1:A:744:MET:HE2	1.95	0.45
1:A:1031:THR:CG2	1:A:1033:ALA:HB3	2.46	0.45
1:A:906:TYR:C	1:A:907:LEU:HD12	2.37	0.45
1:A:628:THR:O	1:A:631:ASN:HB2	2.16	0.45
1:A:573:GLU:O	1:A:573:GLU:HG2	2.17	0.45
1:A:618:THR:O	1:A:619:THR:C	2.55	0.45
1:A:806:LEU:C	1:A:806:LEU:HD23	2.37	0.45
1:A:495:LEU:HD11	1:A:532:LEU:CD1	2.46	0.45
1:A:1169:LEU:O	1:A:1172:VAL:HG22	2.17	0.45
1:A:234:SER:CB	1:A:398:MET:O	2.65	0.45
1:A:641:TYR:O	1:A:641:TYR:CG	2.69	0.45
1:A:1130:ALA:HA	1:A:1133:LEU:HD12	1.98	0.45
1:A:725:ILE:HG23	1:A:749:LEU:HD12	1.96	0.45
1:A:649:THR:HG23	1:A:676:ILE:HD11	1.98	0.45
1:A:542:LEU:C	1:A:542:LEU:HD23	2.36	0.45
1:A:1221:PHE:HE2	1:A:1223:ILE:HD12	1.82	0.45
1:A:942:PRO:O	1:A:950:ASN:CB	2.66	0.44
1:A:365:ASN:N	1:A:365:ASN:ND2	2.59	0.44
1:A:183:TYR:HA	1:A:294:MET:CE	2.47	0.44
1:A:702:PHE:C	1:A:702:PHE:CD2	2.90	0.44
1:A:52:LEU:HD21	1:A:141:TRP:CH2	2.52	0.44
1:A:39:ILE:CD1	1:A:378:VAL:CG1	2.92	0.44
1:A:744:MET:HE3	1:A:749:LEU:CD1	2.48	0.44
1:A:435:PRO:O	1:A:438:THR:HB	2.17	0.44
1:A:985:LEU:HD21	1:A:996:PHE:CZ	2.52	0.44
1:A:1127:PHE:CE1	1:A:1208:VAL:HG13	2.53	0.44
1:A:1133:LEU:HD13	1:A:1140:VAL:HG22	1.99	0.44
1:A:542:LEU:C	1:A:542:LEU:CD2	2.86	0.44
1:A:226:TYR:CE2	1:A:384:SER:HB2	2.52	0.44
1:A:642:MET:HE1	1:A:750:ILE:CD1	2.48	0.44
1:A:806:LEU:HD23	1:A:807:CYS:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:634:GLY:HA2	1:A:785:ASN:HD22	1.82	0.43
1:A:351:HIS:HB2	1:A:388:LEU:O	2.19	0.43
1:A:141:TRP:CE2	1:A:143:TRP:NE1	2.85	0.43
1:A:60:MET:HE2	1:A:125:ILE:HG21	1.99	0.43
1:A:1114:LEU:HD11	1:A:1138:ARG:CZ	2.49	0.43
1:A:1045:ASP:HA	1:A:1049:ASP:HB3	2.00	0.43
1:A:267:SER:OG	1:A:308:LEU:HD12	2.18	0.43
1:A:725:ILE:HD12	1:A:726:LEU:N	2.34	0.43
1:A:829:ILE:HA	1:A:829:ILE:HD13	1.78	0.43
1:A:744:MET:HE3	1:A:749:LEU:HD11	2.01	0.43
1:A:573:GLU:O	1:A:573:GLU:CG	2.67	0.43
1:A:1154:VAL:HG13	1:A:1200:VAL:O	2.19	0.43
1:A:1162:VAL:CG1	1:A:1193:HIS:CE1	3.02	0.42
1:A:67:ARG:HD2	1:A:83:LEU:O	2.19	0.42
1:A:507:GLN:HE22	1:A:602:THR:HG22	1.84	0.42
1:A:1021:LEU:HD21	1:A:1038:TYR:CD2	2.55	0.42
1:A:980:ILE:HD11	1:A:1013:ILE:CG2	2.48	0.42
1:A:1080:ARG:O	1:A:1081:LEU:HD23	2.19	0.42
1:A:518:ALA:O	1:A:565:LEU:HD12	2.19	0.42
1:A:535:LEU:HD11	1:A:666:TYR:OH	2.19	0.42
1:A:954:LEU:HB3	1:A:955:PRO:HD2	2.00	0.42
1:A:942:PRO:O	1:A:943:LEU:HD13	2.18	0.42
1:A:1140:VAL:HB	1:A:1210:ALA:HB2	2.01	0.42
1:A:190:LEU:HD11	1:A:333:TYR:CB	2.50	0.42
1:A:742:ARG:HH11	1:A:742:ARG:HG2	1.83	0.42
1:A:980:ILE:HG22	1:A:1012:ARG:CZ	2.49	0.42
1:A:414:ILE:N	1:A:414:ILE:CD1	2.82	0.42
1:A:500:ASN:HB3	1:A:598:SER:O	2.20	0.42
1:A:1264:LEU:O	1:A:1265:GLU:C	2.57	0.42
1:A:1165:ASP:HA	1:A:1168:ALA:HB3	2.00	0.42
1:A:83:LEU:HD12	1:A:86:ARG:HD2	2.01	0.42
1:A:33:SER:HB3	1:A:115:LYS:O	2.20	0.42
1:A:628:THR:HG22	1:A:630:ALA:N	2.35	0.41
1:A:497:GLU:HB3	1:A:597:ALA:HB1	2.02	0.41
1:A:336:LEU:HD21	1:A:349:ILE:HD11	2.01	0.41
1:A:908:VAL:HG11	1:A:941:LEU:HD12	2.02	0.41
1:A:360:LEU:HD22	1:A:360:LEU:H	1.85	0.41
1:A:908:VAL:HG11	1:A:940:GLU:HA	2.01	0.41
1:A:520:TYR:HB2	1:A:565:LEU:HD11	2.03	0.41
1:A:740:ALA:HB1	1:A:744:MET:HE1	2.00	0.41
1:A:93:ILE:CD1	1:A:132:PHE:CE2	3.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:355:PHE:CE2	1:A:394:PRO:HD3	2.55	0.41
1:A:203:ARG:HH21	1:A:342:GLN:HE22	1.69	0.41
1:A:1025:LEU:HD12	1:A:1028:GLU:HB2	2.03	0.41
1:A:985:LEU:HD21	1:A:996:PHE:CE1	2.55	0.41
1:A:974:GLU:O	1:A:978:ALA:N	2.50	0.41
1:A:3:GLN:HE22	1:A:123:ARG:CZ	2.34	0.41
1:A:276:ALA:HA	1:A:304:ARG:O	2.21	0.41
1:A:498:GLU:O	1:A:502:ILE:HD13	2.21	0.41
1:A:149:ILE:O	1:A:296:GLY:HA2	2.20	0.41
1:A:1114:LEU:HB2	1:A:1140:VAL:HA	2.02	0.41
1:A:793:GLU:H	1:A:793:GLU:CD	2.24	0.41
1:A:1271:THR:O	1:A:1272:VAL:C	2.59	0.40
1:A:28:LEU:HD22	1:A:1011:SER:HB2	2.02	0.40
1:A:611:TYR:CE1	1:A:632:ILE:HD11	2.55	0.40
1:A:828:PHE:O	1:A:829:ILE:HD13	2.20	0.40
1:A:106:LYS:O	1:A:109:GLU:HB3	2.21	0.40
1:A:611:TYR:CE1	1:A:662:THR:HG21	2.56	0.40
1:A:1279:PHE:O	1:A:1283:VAL:HG23	2.20	0.40
1:A:950:ASN:OD1	1:A:950:ASN:N	2.54	0.40
1:A:1150:LYS:O	1:A:1227:LEU:HD23	2.22	0.40
1:A:3:GLN:HE22	1:A:123:ARG:NH1	2.19	0.40
1:A:354:VAL:O	1:A:391:MET:HA	2.21	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	1265/1304 (97%)	1121 (89%)	109 (9%)	35 (3%)	<b>6</b> <b>10</b>

All (35) Ramachandran outliers are listed below:



Mol	Chain	Res	Type
1	A	569	GLN
1	A	642	MET
1	A	910	ARG
1	A	1015	LYS
1	A	1016	GLU
1	A	1045	ASP
1	A	1269	THR
1	A	75	VAL
1	A	222	GLN
1	A	223	LYS
1	A	346	PRO
1	A	461	HIS
1	A	618	THR
1	A	1058	GLU
1	A	1129	ALA
1	A	1272	VAL
1	A	1289	SER
1	A	951	LYS
1	A	1270	GLN
1	A	343	ALA
1	A	344	ASP
1	A	347	LYS
1	A	463	THR
1	A	775	SER
1	A	898	SER
1	A	953	LEU
1	A	1019	ILE
1	A	562	ALA
1	A	617	GLY
1	A	897	GLU
1	A	923	LYS
1	A	1022	PRO
1	A	1020	ASP
1	A	969	PRO
1	A	760	VAL

### 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	1077/1124 (96%)	966 (90%)	111 (10%)	9 16

All (111) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	7	ASP
1	A	25	HIS
1	A	29	ASN
1	A	37	GLU
1	A	39	ILE
1	A	50	LYS
1	A	59	ILE
1	A	73	GLU
1	A	74	LYS
1	A	75	VAL
1	A	77	ARG
1	A	113	GLN
1	A	123	ARG
1	A	180	VAL
1	A	190	LEU
1	A	195	LYS
1	A	222	GLN
1	A	224	ASP
1	A	229	LYS
1	A	231	LEU
1	A	248	LYS
1	A	250	GLN
1	A	265	LEU
1	A	267	SER
1	A	271	GLN
1	A	280	VAL
1	A	287	GLU
1	A	292	GLU
1	A	306	VAL
1	A	309	SER
1	A	323	GLU
1	A	324	GLN
1	A	360	LEU
1	A	365	ASN
1	A	367	GLU
1	A	374	ASP
1	A	380	VAL
1	A	382	GLU

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Mol	Chain	Res	Type
1	A	384	SER
1	A	385	ASN
1	A	390	LEU
1	A	391	MET
1	A	399	LEU
1	A	406	GLU
1	A	414	ILE
1	A	421	LEU
1	A	430	GLN
1	A	448	GLU
1	A	454	LEU
1	A	461	HIS
1	A	483	LEU
1	A	547	LYS
1	A	551	ASP
1	A	557	LEU
1	A	573	GLU
1	A	581	THR
1	A	584	THR
1	A	587	ILE
1	A	588	ASP
1	A	590	GLN
1	A	615	THR
1	A	619	THR
1	A	635	LEU
1	A	642	MET
1	A	656	TYR
1	A	694	LEU
1	A	697	ASN
1	A	720	LYS
1	A	722	LEU
1	A	726	LEU
1	A	742	ARG
1	A	770	LEU
1	A	774	ILE
1	A	787	SER
1	A	794	GLN
1	A	823	LEU
1	A	826	GLU
1	A	829	ILE
1	A	845	LEU
1	A	859	ARG

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Mol	Chain	Res	Type
1	A	864	VAL
1	A	876	ILE
1	A	886	VAL
1	A	887	LYS
1	A	895	ARG
1	A	903	ILE
1	A	917	ASP
1	A	924	LYS
1	A	939	ASP
1	A	940	GLU
1	A	950	ASN
1	A	952	ARG
1	A	977	ILE
1	A	979	GLN
1	A	992	ILE
1	A	1011	SER
1	A	1019	ILE
1	A	1025	LEU
1	A	1031	THR
1	A	1035	ILE
1	A	1044	SER
1	A	1048	GLN
1	A	1051	THR
1	A	1165	ASP
1	A	1174	ARG
1	A	1239	ARG
1	A	1241	LYS
1	A	1254	GLU
1	A	1270	GLN
1	A	1285	GLN
1	A	1287	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	32	GLN
1	A	113	GLN
1	A	218	GLN
1	A	250	GLN
1	A	270	GLN
1	A	324	GLN
1	A	340	GLN

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Mol	Chain	Res	Type
1	A	342	GLN
1	A	345	GLN
1	A	365	ASN
1	A	426	GLN
1	A	434	GLN
1	A	459	GLN
1	A	475	ASN
1	A	507	GLN
1	A	569	GLN
1	A	607	ASN
1	A	633	GLN
1	A	671	ASN
1	A	751	ASN
1	A	785	ASN
1	A	1109	GLN
1	A	1136	GLN
1	A	1152	GLN
1	A	1171	ASN
1	A	1173	ASN
1	A	1207	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 carbohydrates 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	LEU	A	2291	-	5,8,8	0.36	0	5,10,10	1.78	1 (20%)
3	SO4	A	2292	-	4,4,4	0.14	0	6,6,6	0.08	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	LEU	A	2291	-	-	0/4/8/8	0/0/0/0
3	SO4	A	2292	-	-	0/0/0/0	0/0/0/0

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2291	LEU	CG-CB-CA	3.90	123.12	114.80

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 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

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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	1273/1304 (97%)	0.68	159 (12%) <b>5</b> <b>3</b>	57, 70, 79, 110	0

All (159) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1043	GLY	12.5
1	A	888	ASP	8.4
1	A	939	ASP	6.6
1	A	1021	LEU	6.6
1	A	1017	LEU	6.6
1	A	1174	ARG	6.5
1	A	1161	THR	6.3
1	A	1038	TYR	5.8
1	A	1196	TYR	5.8
1	A	942	PRO	5.3
1	A	1020	ASP	5.3
1	A	1155	SER	5.3
1	A	1057	GLN	5.3
1	A	1153	GLY	5.3
1	A	1190	GLN	5.2
1	A	1171	ASN	5.1
1	A	1152	GLN	5.0
1	A	943	LEU	4.9
1	A	1107	LYS	4.9
1	A	940	GLU	4.9
1	A	1100	ARG	4.8
1	A	913	LEU	4.7
1	A	1244	PHE	4.7
1	A	1199	TYR	4.7
1	A	1047	LEU	4.7
1	A	1016	GLU	4.6
1	A	947	GLY	4.6

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Mol	Chain	Res	Type	RSRZ
1	A	1056	ASP	4.6
1	A	1150	LYS	4.5
1	A	1165	ASP	4.3
1	A	1055	GLN	4.3
1	A	907	LEU	4.3
1	A	909	ASN	4.2
1	A	977	ILE	4.1
1	A	1091	PHE	4.1
1	A	911	THR	4.1
1	A	1169	LEU	3.9
1	A	577	GLU	3.9
1	A	1111	GLU	3.7
1	A	1112	GLY	3.6
1	A	1221	PHE	3.6
1	A	1187	GLY	3.6
1	A	654	SER	3.6
1	A	1164	SER	3.6
1	A	948	LYS	3.5
1	A	1026	LEU	3.5
1	A	882	GLU	3.5
1	A	887	LYS	3.5
1	A	618	THR	3.5
1	A	1060	ILE	3.5
1	A	1163	GLU	3.4
1	A	897	GLU	3.4
1	A	1059	GLN	3.4
1	A	889	ALA	3.3
1	A	908	VAL	3.3
1	A	1134	GLU	3.3
1	A	952	ARG	3.3
1	A	973	MET	3.2
1	A	1058	GLU	3.2
1	A	1109	GLN	3.2
1	A	585	LEU	3.2
1	A	1162	VAL	3.2
1	A	652	SER	3.2
1	A	1262	ILE	3.2
1	A	880	LEU	3.2
1	A	581	THR	3.2
1	A	1087	CYS	3.1
1	A	588	ASP	3.1
1	A	1252	GLN	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	1090	ASP	3.1
1	A	941	LEU	3.0
1	A	949	VAL	3.0
1	A	938	LEU	3.0
1	A	886	VAL	3.0
1	A	361	GLN	3.0
1	A	910	ARG	2.9
1	A	1172	VAL	2.9
1	A	493	ARG	2.9
1	A	661	PHE	2.9
1	A	946	ASN	2.9
1	A	1246	THR	2.9
1	A	1023	VAL	2.9
1	A	980	ILE	2.9
1	A	881	GLN	2.8
1	A	576	ALA	2.8
1	A	662	THR	2.8
1	A	578	LEU	2.8
1	A	1272	VAL	2.8
1	A	1041	ASN	2.8
1	A	1108	LEU	2.7
1	A	665	PHE	2.7
1	A	1039	LEU	2.7
1	A	955	PRO	2.7
1	A	656	TYR	2.7
1	A	660	ALA	2.7
1	A	1076	ASN	2.7
1	A	1018	GLY	2.7
1	A	1046	GLY	2.7
1	A	1192	THR	2.7
1	A	954	LEU	2.7
1	A	1154	VAL	2.6
1	A	1009	ALA	2.6
1	A	1228	ALA	2.6
1	A	1086	LEU	2.6
1	A	937	PHE	2.6
1	A	976	THR	2.6
1	A	1072	LEU	2.6
1	A	769	ASP	2.6
1	A	1191	LYS	2.6
1	A	920	ALA	2.6
1	A	557	LEU	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	919	LYS	2.6
1	A	950	ASN	2.6
1	A	1045	ASP	2.5
1	A	883	TYR	2.5
1	A	1283	VAL	2.5
1	A	1240	MET	2.5
1	A	1197	SER	2.4
1	A	1186	HIS	2.4
1	A	921	HIS	2.4
1	A	912	GLN	2.4
1	A	653	VAL	2.4
1	A	944	THR	2.4
1	A	1075	GLN	2.4
1	A	531	ILE	2.4
1	A	1201	ASN	2.4
1	A	1110	PRO	2.3
1	A	357	ASN	2.3
1	A	702	PHE	2.3
1	A	1013	ILE	2.3
1	A	1019	ILE	2.3
1	A	1094	GLU	2.3
1	A	925	GLN	2.3
1	A	896	HIS	2.3
1	A	1070	TYR	2.3
1	A	1225	GLU	2.2
1	A	229	LYS	2.2
1	A	703	ALA	2.2
1	A	601	ALA	2.2
1	A	669	MET	2.2
1	A	1130	ALA	2.2
1	A	1250	MET	2.2
1	A	701	MET	2.2
1	A	1044	SER	2.2
1	A	1232	GLU	2.2
1	A	597	ALA	2.1
1	A	223	LYS	2.1
1	A	657	ALA	2.1
1	A	1183	ALA	2.1
1	A	1257	ASP	2.1
1	A	569	GLN	2.1
1	A	1274	VAL	2.1
1	A	953	LEU	2.0

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Mol	Chain	Res	Type	RSRZ
1	A	590	GLN	2.0
1	A	1106	GLN	2.0
1	A	1200	VAL	2.0
1	A	1010	ALA	2.0
1	A	666	TYR	2.0
1	A	664	ASP	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 carbohydrates in this entry.

## 6.4 Ligands [i](#)

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, 95<sup>th</sup> 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	LLDF	B-factors( $\text{\AA}^2$ )	Q<0.9
2	LEU	A	2291	9/9	0.65	0.53	5.81	77,78,79,79	0
3	SO4	A	2292	5/5	0.90	0.19	0.62	122,122,122,123	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.