



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 07:43 AM EDT

PDB ID : 2I00  
Title : Crystal structure of acetyltransferase (GNAT family) from *Enterococcus faecalis*  
Authors : Zhang, R.; Zhou, M.; Moy, S.; Joachimiak, A.; Midwest Center for Structural Genomics (MCSG)  
Deposited on : 2006-08-09  
Resolution : 2.30 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

<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>.

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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  
Xtriage (Phenix) : 1.20.1  
EDS : 2.36.2  
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) : 2.36.2

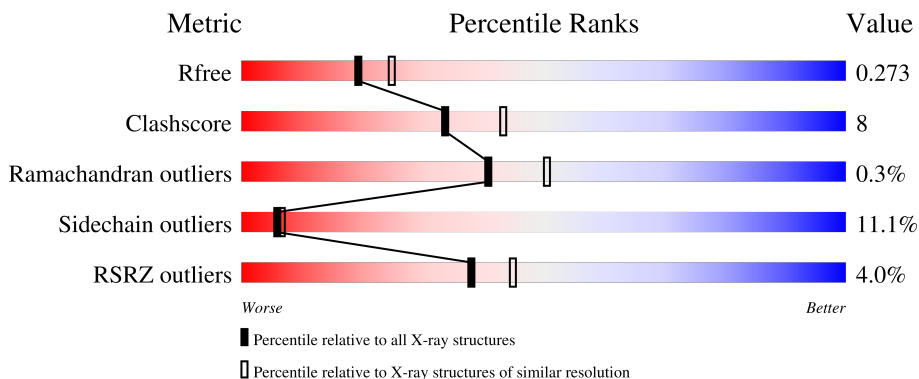
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.30 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	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . 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	406	
1	B	406	
1	C	406	
1	D	406	
1	E	406	

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Mol	Chain	Length	Quality of chain
1	F	406	 <p>A horizontal bar chart representing the quality of chain. The bar is divided into segments: a small red segment at the beginning labeled '7%', a large green segment labeled '76%', and a yellow/orange segment at the end labeled '18%'. There are two small black dots at the far right end of the bar.</p>

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 20278 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 Acetyltransferase, GNAT family.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	397	3318	2157	539	611	11	0	0	0
1	B	396	3310	2151	538	610	11	0	0	0
1	C	398	3327	2162	541	613	11	0	0	0
1	D	396	3310	2151	538	610	11	0	0	0
1	E	396	3310	2151	538	610	11	0	0	0
1	F	398	3327	2162	541	613	11	0	0	0

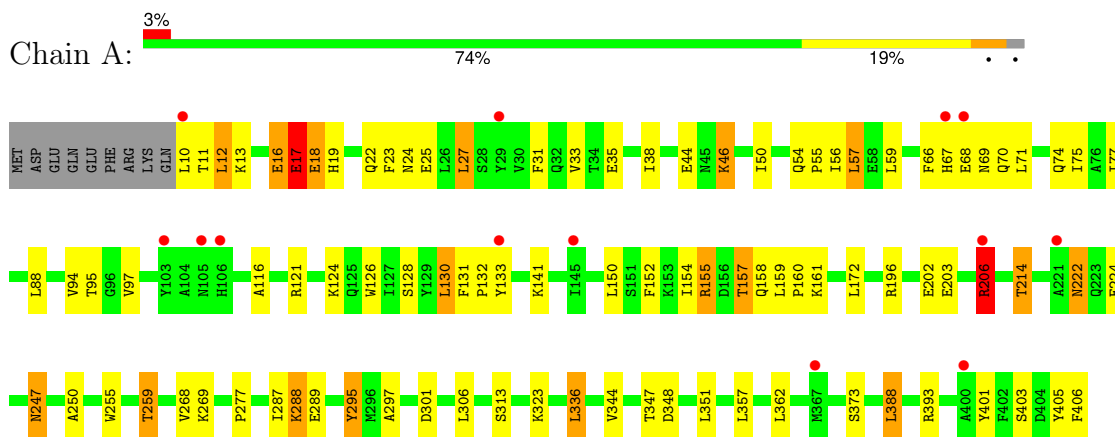
- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	90	Total	O	0	0
			90	90		
2	B	80	Total	O	0	0
			80	80		
2	C	48	Total	O	0	0
			48	48		
2	D	59	Total	O	0	0
			59	59		
2	E	57	Total	O	0	0
			57	57		
2	F	42	Total	O	0	0
			42	42		

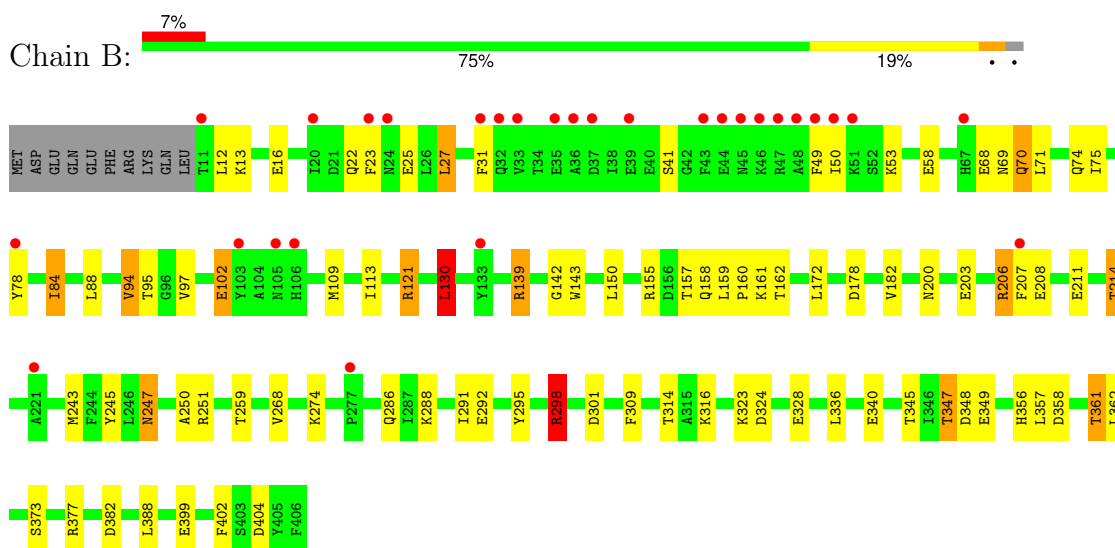
### 3 Residue-property plots

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.

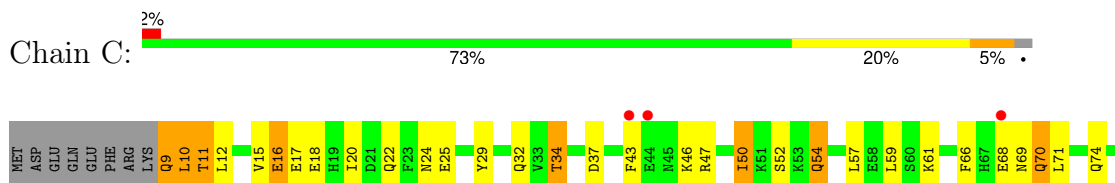
- Molecule 1: Acetyltransferase, GNAT family

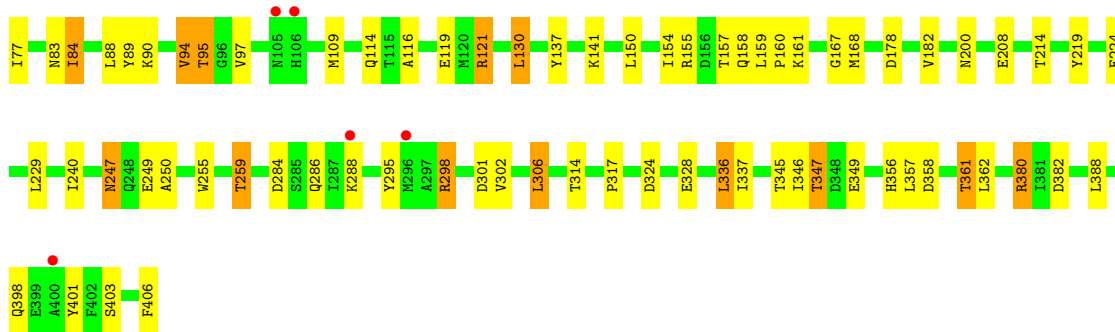


- Molecule 1: Acetyltransferase, GNAT family

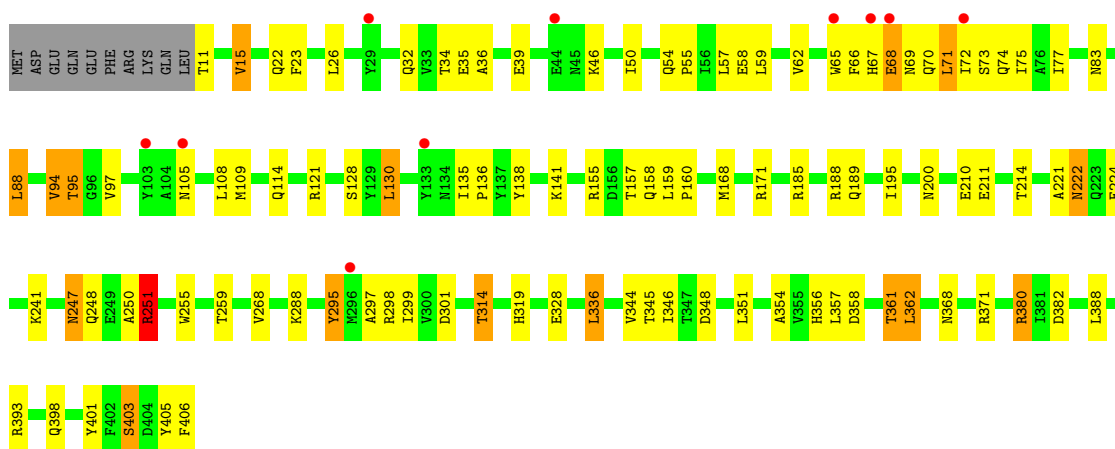
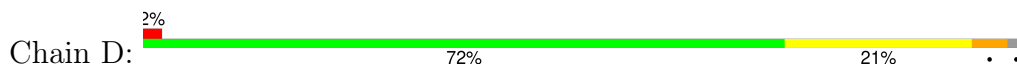


- Molecule 1: Acetyltransferase, GNAT family

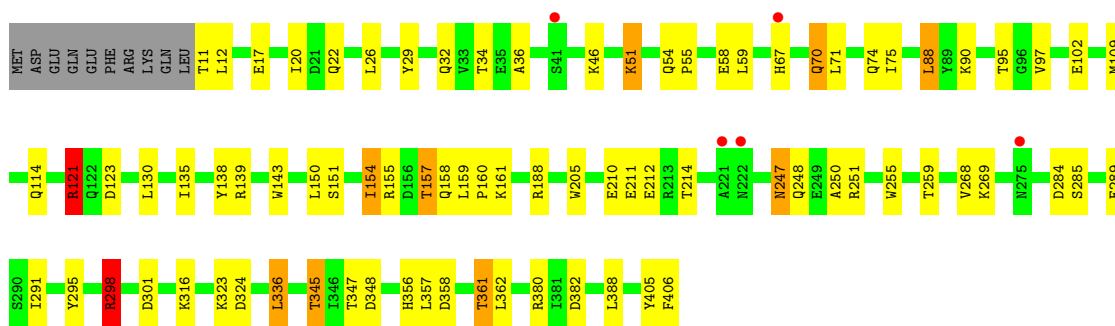
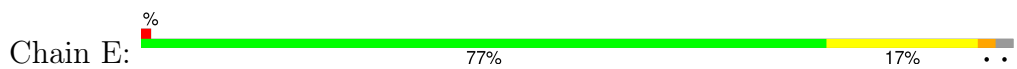




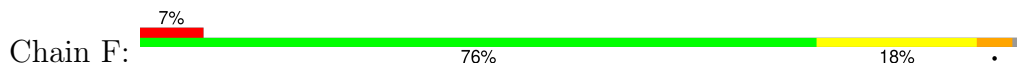
• Molecule 1: Acetyltransferase, GNAT family

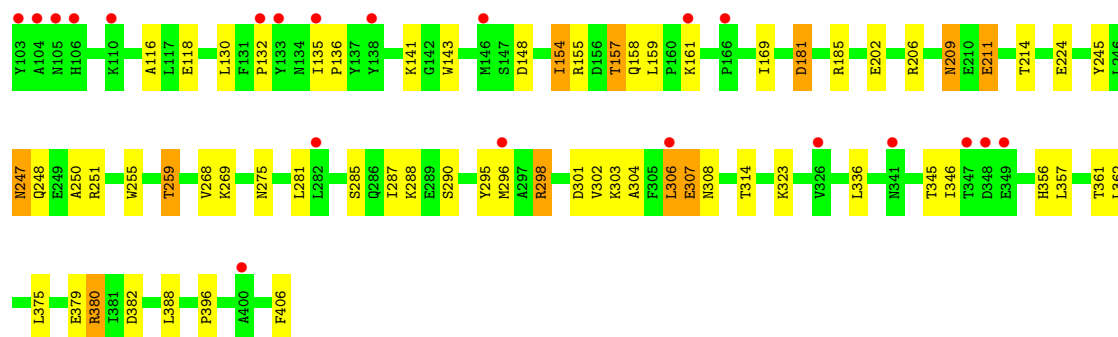


• Molecule 1: Acetyltransferase, GNAT family



• Molecule 1: Acetyltransferase, GNAT family





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	77.41Å 177.09Å 104.43Å 90.00° 94.89° 90.00°	Depositor
Resolution (Å)	41.92 – 2.30 41.93 – 2.17	Depositor EDS
% Data completeness (in resolution range)	98.8 (41.92-2.30) 92.3 (41.93-2.17)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.04 (at 2.18Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, $R_{free}$	0.213 , 0.270 0.218 , 0.273	Depositor DCC
$R_{free}$ test set	6834 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	44.2	Xtrriage
Anisotropy	0.056	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 45.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	20278	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	54.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.68% 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, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.



## 5 Model quality [i](#)

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.74	0/3417	0.76	2/4642 (0.0%)
1	B	0.69	0/3409	0.76	4/4631 (0.1%)
1	C	0.66	0/3426	0.73	2/4654 (0.0%)
1	D	0.68	0/3409	0.73	2/4631 (0.0%)
1	E	0.68	0/3409	0.77	4/4631 (0.1%)
1	F	0.62	0/3426	0.68	0/4654
All	All	0.68	0/20496	0.74	14/27843 (0.1%)

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
1	E	0	1
1	F	0	2
All	All	0	4

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	298	ARG	NE-CZ-NH2	-8.24	116.18	120.30
1	B	139	ARG	NE-CZ-NH1	-7.32	116.64	120.30
1	B	130	LEU	CA-CB-CG	7.16	131.76	115.30
1	E	298	ARG	NE-CZ-NH1	7.00	123.80	120.30
1	C	298	ARG	NE-CZ-NH1	6.84	123.72	120.30
1	D	298	ARG	NE-CZ-NH2	-5.59	117.51	120.30
1	E	121	ARG	NE-CZ-NH1	5.47	123.04	120.30
1	B	139	ARG	NE-CZ-NH2	5.39	123.00	120.30
1	B	298	ARG	NE-CZ-NH2	-5.30	117.65	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	336	LEU	CA-CB-CG	5.29	127.47	115.30
1	E	336	LEU	CA-CB-CG	5.18	127.22	115.30
1	C	336	LEU	CA-CB-CG	5.08	126.98	115.30
1	D	251	ARG	NE-CZ-NH2	5.08	122.84	120.30
1	A	206	ARG	NE-CZ-NH1	5.01	122.81	120.30

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	9	GLN	Peptide
1	E	67	HIS	Peptide
1	F	67	HIS	Peptide
1	F	68	GLU	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	3318	0	3181	65	0
1	B	3310	0	3170	44	0
1	C	3327	0	3189	60	0
1	D	3310	0	3170	58	0
1	E	3310	0	3170	50	0
1	F	3327	0	3189	64	0
2	A	90	0	0	6	0
2	B	80	0	0	2	0
2	C	48	0	0	4	0
2	D	59	0	0	8	0
2	E	57	0	0	4	0
2	F	42	0	0	7	0
All	All	20278	0	19069	330	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 8.

All (330) 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:18:GLU:HG2	2:A:487:HOH:O	1.41	1.18
1:F:13:LYS:NZ	1:F:68:GLU:OE1	1.85	1.09
1:F:11:THR:CG2	1:F:68:GLU:HG3	1.87	1.03
2:C:446:HOH:O	1:D:371:ARG:HG3	1.68	0.93
1:F:379:GLU:OE2	2:F:420:HOH:O	1.88	0.92
1:B:358:ASP:OD1	1:B:361:THR:HG23	1.68	0.92
1:F:11:THR:HG21	1:F:68:GLU:HG3	1.55	0.88
1:A:222:ASN:ND2	2:A:412:HOH:O	2.07	0.85
1:F:209:ASN:HD21	1:F:211:GLU:HG2	1.43	0.83
1:E:55:PRO:O	1:E:58:GLU:HG3	1.81	0.79
1:E:155:ARG:H	1:E:158:GLN:HE21	1.31	0.78
1:A:155:ARG:H	1:A:158:GLN:HE21	1.31	0.78
1:F:248:GLN:NE2	1:F:251:ARG:HH21	1.81	0.78
1:E:248:GLN:NE2	1:E:251:ARG:HH21	1.82	0.77
1:B:78:TYR:OH	1:B:200:ASN:ND2	2.18	0.77
1:E:97:VAL:HG21	1:E:138:TYR:OH	1.87	0.74
1:C:154:ILE:HD11	1:C:159:LEU:HD23	1.69	0.74
1:F:224:GLU:HG2	2:F:407:HOH:O	1.86	0.74
1:C:358:ASP:OD1	1:C:361:THR:HG23	1.88	0.73
1:A:405:TYR:O	1:A:406:PHE:C	2.22	0.73
1:F:209:ASN:ND2	1:F:211:GLU:HG2	2.03	0.73
1:E:358:ASP:OD1	1:E:361:THR:HG23	1.89	0.72
1:B:288:LYS:O	2:B:469:HOH:O	2.08	0.71
1:F:154:ILE:HD12	1:F:158:GLN:HB2	1.73	0.71
1:C:9:GLN:CA	1:C:10:LEU:HB2	2.21	0.71
1:B:358:ASP:OD1	1:B:361:THR:CG2	2.37	0.71
1:F:34:THR:HG22	1:F:37:ASP:H	1.56	0.70
1:D:67:HIS:O	1:D:68:GLU:C	2.30	0.70
1:D:155:ARG:H	1:D:158:GLN:HE21	1.40	0.69
1:F:157:THR:CG2	2:F:435:HOH:O	2.41	0.69
1:C:200:ASN:HA	2:C:441:HOH:O	1.91	0.69
1:B:27:LEU:O	1:B:31:PHE:HB2	1.92	0.69
1:D:160:PRO:O	1:D:259:THR:HG21	1.93	0.69
1:E:160:PRO:O	1:E:259:THR:HG21	1.93	0.69
1:A:214:THR:CG2	2:A:438:HOH:O	2.41	0.68
1:D:67:HIS:HB3	1:D:70:GLN:HB3	1.75	0.68
1:E:406:PHE:O	2:E:453:HOH:O	2.11	0.68
1:C:9:GLN:HA	1:C:10:LEU:HB2	1.76	0.67
1:A:206:ARG:HB3	1:A:206:ARG:NH1	2.10	0.67
1:F:255:TRP:O	1:F:259:THR:HG23	1.95	0.67
1:D:295:TYR:OH	1:D:405:TYR:O	2.10	0.67
1:B:159:LEU:HD21	1:B:268:VAL:HG21	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:88:LEU:HD13	1:D:188:ARG:NH2	2.09	0.67
1:D:159:LEU:HD21	1:D:268:VAL:HG21	1.77	0.66
1:D:314:THR:O	1:D:393:ARG:NH1	2.27	0.66
1:C:9:GLN:HB2	1:C:10:LEU:HB2	1.78	0.66
1:E:405:TYR:O	1:E:406:PHE:O	2.14	0.66
1:B:84:ILE:HD11	1:B:309:PHE:CE1	2.31	0.66
1:D:288:LYS:O	2:D:462:HOH:O	2.12	0.65
1:C:398:GLN:HB2	2:D:463:HOH:O	1.96	0.65
1:C:9:GLN:HA	1:C:10:LEU:HG	1.78	0.65
1:A:24:ASN:OD1	1:A:54:GLN:NE2	2.30	0.65
1:E:159:LEU:HD13	1:E:259:THR:HA	1.78	0.65
1:B:155:ARG:H	1:B:158:GLN:HE21	1.45	0.64
1:F:356:HIS:HB2	1:F:382:ASP:HB3	1.80	0.64
1:A:214:THR:HG22	2:A:438:HOH:O	1.97	0.64
1:C:9:GLN:CB	1:C:10:LEU:HB2	2.28	0.64
1:B:160:PRO:O	1:B:259:THR:HG21	1.98	0.63
1:C:141:LYS:O	1:C:298:ARG:NH1	2.32	0.63
1:B:94:VAL:HG22	1:B:130:LEU:HD23	1.81	0.62
1:F:302:VAL:CG1	1:F:306:LEU:HD22	2.29	0.62
1:F:45:ASN:N	1:F:45:ASN:HD22	1.96	0.62
1:B:150:LEU:HD11	1:B:291:ILE:HD12	1.81	0.62
1:A:295:TYR:OH	1:A:405:TYR:O	2.14	0.62
1:B:23:PHE:HA	1:B:74:GLN:HE22	1.65	0.62
1:A:31:PHE:HB3	1:A:46:LYS:NZ	2.14	0.62
1:B:214:THR:HG22	2:B:432:HOH:O	2.00	0.62
1:C:160:PRO:O	1:C:259:THR:HG21	2.00	0.61
1:A:222:ASN:N	1:A:222:ASN:OD1	2.33	0.61
1:C:255:TRP:O	1:C:259:THR:HG23	2.01	0.61
1:E:22:GLN:HE22	1:E:70:GLN:HA	1.65	0.61
1:B:102:GLU:OE1	1:D:171:ARG:NH2	2.34	0.61
1:A:31:PHE:HB3	1:A:46:LYS:HZ3	1.66	0.60
1:D:358:ASP:OD1	1:D:361:THR:HG23	2.01	0.60
1:C:94:VAL:HG13	1:C:130:LEU:HG	1.83	0.60
1:C:306:LEU:HB3	1:C:346:ILE:CD1	2.31	0.60
1:E:248:GLN:HE22	1:E:251:ARG:HH21	1.49	0.60
1:F:77:ILE:HD11	1:F:116:ALA:HB1	1.83	0.59
1:E:155:ARG:N	1:E:158:GLN:HE21	1.98	0.59
1:A:347:THR:HG22	1:A:348:ASP:H	1.68	0.59
1:B:159:LEU:HB3	1:B:259:THR:HG22	1.85	0.59
1:E:121:ARG:HD2	1:E:301:ASP:OD2	2.03	0.59
1:B:75:ILE:HD12	1:B:109:MET:HE1	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:287:ILE:HG23	2:F:434:HOH:O	2.02	0.59
1:C:9:GLN:HA	1:C:10:LEU:CB	2.32	0.58
1:F:11:THR:CG2	1:F:68:GLU:CG	2.72	0.58
1:A:33:VAL:HG13	1:A:38:ILE:HD11	1.85	0.58
1:B:203:GLU:OE1	1:B:206:ARG:NH2	2.36	0.58
1:B:347:THR:HG21	1:B:349:GLU:OE2	2.04	0.57
1:B:75:ILE:HD12	1:B:109:MET:CE	2.34	0.57
1:D:380:ARG:HG2	1:D:380:ARG:HH21	1.69	0.57
1:B:214:THR:HG21	1:E:29:TYR:HE2	1.70	0.57
1:E:157:THR:CG2	2:E:433:HOH:O	2.52	0.57
1:B:13:LYS:NZ	1:B:69:ASN:HD21	2.02	0.57
1:A:121:ARG:HD2	1:A:301:ASP:OD2	2.05	0.56
1:E:285:SER:HB2	1:F:135:ILE:HG21	1.88	0.56
1:F:155:ARG:H	1:F:158:GLN:HE21	1.53	0.56
1:D:380:ARG:HH21	1:D:380:ARG:CG	2.18	0.56
1:A:152:PHE:HB3	1:A:289:GLU:HG2	1.88	0.56
1:C:18:GLU:HB2	2:C:449:HOH:O	2.05	0.56
1:A:160:PRO:O	1:A:259:THR:HG21	2.05	0.56
1:C:306:LEU:HB3	1:C:346:ILE:HD12	1.87	0.55
1:D:380:ARG:HG2	1:D:380:ARG:NH2	2.21	0.55
1:A:222:ASN:CG	2:A:412:HOH:O	2.39	0.55
1:D:255:TRP:O	1:D:259:THR:HG23	2.07	0.55
1:F:302:VAL:HG13	1:F:306:LEU:HD22	1.89	0.55
1:A:23:PHE:HA	1:A:74:GLN:HE22	1.72	0.54
1:D:336:LEU:HD22	1:D:346:ILE:CD1	2.38	0.54
1:E:26:LEU:HD13	1:E:74:GLN:NE2	2.22	0.54
1:E:75:ILE:HD12	1:E:109:MET:HE3	1.89	0.54
1:E:135:ILE:HG21	1:F:285:SER:HB2	1.89	0.54
1:E:75:ILE:HD12	1:E:109:MET:CE	2.38	0.54
1:A:247:ASN:C	1:A:247:ASN:HD22	2.10	0.54
1:A:247:ASN:ND2	1:A:250:ALA:H	2.06	0.54
1:B:53:LYS:HG2	1:B:206:ARG:CZ	2.38	0.54
1:B:247:ASN:ND2	1:B:250:ALA:H	2.06	0.54
1:F:41:SER:HG	1:F:43:PHE:HD1	1.56	0.54
1:F:141:LYS:O	1:F:298:ARG:NH1	2.40	0.54
1:E:155:ARG:H	1:E:158:GLN:NE2	2.04	0.53
1:C:47:ARG:HA	1:C:50:ILE:HD13	1.89	0.53
1:D:247:ASN:ND2	1:D:250:ALA:H	2.07	0.53
1:A:23:PHE:CE2	1:A:57:LEU:HD11	2.43	0.53
1:D:319:HIS:HD2	1:D:351:LEU:O	1.91	0.53
1:E:154:ILE:HD11	1:E:159:LEU:HA	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:255:TRP:O	1:A:259:THR:HG23	2.09	0.53
1:F:306:LEU:HB3	1:F:346:ILE:HG12	1.89	0.53
1:E:159:LEU:HD21	1:E:268:VAL:HG21	1.91	0.53
1:F:181:ASP:O	1:F:185:ARG:HG3	2.08	0.53
1:F:247:ASN:ND2	1:F:250:ALA:H	2.06	0.53
1:A:46:LYS:O	1:A:50:ILE:HG12	2.09	0.53
1:A:77:ILE:HD11	1:A:116:ALA:HB1	1.91	0.53
1:E:255:TRP:O	1:E:259:THR:HG23	2.08	0.52
1:C:121:ARG:HD2	1:C:301:ASP:OD2	2.10	0.52
1:C:361:THR:HG21	1:C:380:ARG:HG3	1.91	0.52
1:E:298:ARG:NH2	1:E:324:ASP:OD2	2.41	0.52
1:F:303:LYS:O	1:F:307:GLU:HG2	2.08	0.52
1:A:351:LEU:HD12	1:A:351:LEU:O	2.09	0.52
1:A:157:THR:CG2	2:A:470:HOH:O	2.57	0.52
1:C:9:GLN:CA	1:C:10:LEU:CB	2.87	0.52
1:A:130:LEU:HD22	1:A:131:PHE:O	2.10	0.51
1:C:32:GLN:O	1:C:32:GLN:HG3	2.10	0.51
1:D:358:ASP:OD1	1:D:361:THR:CG2	2.58	0.51
1:B:247:ASN:C	1:B:247:ASN:HD22	2.12	0.51
1:C:9:GLN:HA	1:C:10:LEU:CG	2.39	0.51
1:C:155:ARG:H	1:C:158:GLN:HE21	1.57	0.51
1:B:102:GLU:OE2	1:D:171:ARG:NH1	2.44	0.51
1:D:200:ASN:HA	2:D:436:HOH:O	2.10	0.51
1:F:302:VAL:O	1:F:306:LEU:HB2	2.10	0.51
1:D:67:HIS:O	1:D:68:GLU:O	2.29	0.51
1:D:248:GLN:NE2	1:D:251:ARG:HH21	2.08	0.51
1:D:241:LYS:NZ	2:D:454:HOH:O	2.30	0.50
1:E:97:VAL:HG21	1:E:138:TYR:HH	1.73	0.50
1:F:281:LEU:HA	2:F:440:HOH:O	2.10	0.50
1:A:124:LYS:HA	1:A:126:TRP:CH2	2.47	0.50
1:C:34:THR:HG22	1:C:37:ASP:H	1.77	0.50
1:C:22:GLN:HE22	1:C:70:GLN:HA	1.76	0.50
1:C:356:HIS:HB2	1:C:382:ASP:HB3	1.93	0.50
1:C:95:THR:CG2	1:C:406:PHE:C	2.79	0.50
1:D:356:HIS:HB2	1:D:382:ASP:HB3	1.94	0.49
1:E:405:TYR:O	1:E:406:PHE:C	2.51	0.49
1:B:356:HIS:HB2	1:B:382:ASP:HB3	1.94	0.49
1:A:347:THR:HG22	1:A:348:ASP:N	2.28	0.49
1:E:22:GLN:NE2	1:E:70:GLN:HA	2.26	0.49
1:E:356:HIS:HB2	1:E:382:ASP:HB3	1.93	0.49
1:A:68:GLU:OE1	1:A:69:ASN:ND2	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:401:TYR:HH	1:D:403:SER:HG	1.54	0.49
1:D:361:THR:HG21	2:D:409:HOH:O	2.12	0.49
1:F:15:VAL:HG22	1:F:62:VAL:HB	1.95	0.49
1:A:206:ARG:HB3	1:A:206:ARG:HH11	1.78	0.48
1:D:159:LEU:HB3	1:D:259:THR:HG22	1.95	0.48
1:F:302:VAL:HG12	1:F:306:LEU:HD22	1.93	0.48
1:C:398:GLN:CB	2:D:463:HOH:O	2.59	0.48
1:C:77:ILE:HD11	1:C:116:ALA:HB1	1.95	0.48
1:D:171:ARG:NH1	2:D:413:HOH:O	2.46	0.48
1:F:302:VAL:CG1	1:F:306:LEU:CD2	2.91	0.48
1:C:84:ILE:O	1:C:84:ILE:HG13	2.13	0.48
1:E:247:ASN:C	1:E:247:ASN:HD22	2.16	0.48
1:B:298:ARG:NH2	1:B:324:ASP:OD2	2.46	0.48
1:D:97:VAL:HG21	1:D:138:TYR:OH	2.12	0.48
1:B:22:GLN:HE22	1:B:70:GLN:HA	1.78	0.48
1:D:68:GLU:HA	1:D:69:ASN:HA	1.53	0.48
1:E:247:ASN:ND2	1:E:250:ALA:H	2.11	0.48
1:C:298:ARG:NH2	1:C:324:ASP:OD2	2.47	0.48
1:B:68:GLU:HA	1:B:69:ASN:HA	1.71	0.47
1:D:22:GLN:HE22	1:D:71:LEU:H	1.62	0.47
1:B:121:ARG:HD2	1:B:301:ASP:OD2	2.13	0.47
1:D:23:PHE:HA	1:D:74:GLN:HE22	1.79	0.47
1:C:401:TYR:OH	1:C:403:SER:OG	2.33	0.47
1:F:83:ASN:OD1	1:F:83:ASN:C	2.53	0.47
1:F:302:VAL:HG12	1:F:306:LEU:CD2	2.44	0.47
1:A:13:LYS:NZ	1:A:69:ASN:HD21	2.13	0.47
1:A:159:LEU:HD21	1:A:268:VAL:HG21	1.96	0.47
1:A:288:LYS:NZ	1:B:292:GLU:OE1	2.46	0.47
1:F:148:ASP:OD2	1:F:275:ASN:ND2	2.47	0.47
1:F:155:ARG:H	1:F:158:GLN:NE2	2.11	0.47
1:D:128:SER:O	1:D:297:ALA:HA	2.15	0.47
1:F:375:LEU:O	1:F:380:ARG:HB3	2.15	0.47
1:D:83:ASN:C	1:D:83:ASN:OD1	2.52	0.47
1:C:95:THR:HG22	1:C:406:PHE:C	2.36	0.47
1:D:368:ASN:HD22	1:D:398:GLN:C	2.18	0.47
1:F:143:TRP:CD1	1:F:298:ARG:HB2	2.50	0.47
1:C:83:ASN:OD1	1:C:83:ASN:C	2.53	0.46
1:C:347:THR:HG21	1:C:349:GLU:OE2	2.15	0.46
1:A:66:PHE:HA	1:A:70:GLN:O	2.16	0.46
1:D:65:TRP:CD1	1:D:108:LEU:HB3	2.50	0.46
1:F:247:ASN:HD22	1:F:250:ALA:H	1.61	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:214:THR:HG21	1:C:29:TYR:HE2	1.80	0.46
1:C:288:LYS:HD2	1:C:288:LYS:N	2.31	0.46
1:F:245:TYR:CZ	1:F:251:ARG:HG3	2.50	0.46
1:A:401:TYR:OH	1:A:403:SER:OG	2.12	0.46
1:C:97:VAL:HG12	1:C:109:MET:HE1	1.97	0.46
1:C:398:GLN:CG	2:D:463:HOH:O	2.63	0.46
1:D:94:VAL:HG13	1:D:130:LEU:HD23	1.98	0.46
1:F:159:LEU:HD21	1:F:268:VAL:HG21	1.98	0.46
1:E:88:LEU:HD13	1:E:188:ARG:CZ	2.46	0.45
1:D:121:ARG:HD2	1:D:301:ASP:OD2	2.16	0.45
1:E:150:LEU:HD11	1:E:291:ILE:HG13	1.98	0.45
1:A:141:LYS:HD2	1:A:141:LYS:N	2.31	0.45
1:F:281:LEU:CA	2:F:440:HOH:O	2.65	0.45
1:A:56:ILE:HD11	1:A:203:GLU:HG3	1.98	0.45
1:F:132:PRO:HB3	1:F:296:MET:SD	2.57	0.45
1:C:43:PHE:CZ	1:C:52:SER:HB3	2.51	0.45
1:E:51:LYS:O	1:E:54:GLN:HB2	2.17	0.45
1:F:77:ILE:HD11	1:F:116:ALA:CB	2.47	0.45
1:D:70:GLN:O	1:D:72:ILE:HG23	2.17	0.44
1:D:185:ARG:O	1:D:189:GLN:HG2	2.17	0.44
1:A:75:ILE:HG13	1:A:97:VAL:HG12	1.99	0.44
1:B:109:MET:HE3	1:B:113:ILE:HG13	1.98	0.44
1:E:205:TRP:HB3	1:E:210:GLU:HG2	1.99	0.44
1:A:196:ARG:NH2	1:A:403:SER:HB2	2.31	0.44
1:C:61:LYS:NZ	1:C:119:GLU:OE2	2.40	0.44
1:D:11:THR:HG23	1:D:66:PHE:HB2	1.99	0.44
1:A:16:GLU:O	1:A:19:HIS:N	2.48	0.44
1:C:17:GLU:HA	1:C:20:ILE:HG12	1.99	0.44
1:E:154:ILE:HG13	1:E:158:GLN:HB2	2.00	0.44
1:E:157:THR:HG23	2:E:433:HOH:O	2.14	0.44
1:E:284:ASP:HA	1:F:136:PRO:HD3	2.00	0.44
1:E:347:THR:HG22	1:E:348:ASP:N	2.33	0.44
1:F:306:LEU:HD12	1:F:306:LEU:HA	1.79	0.44
1:A:155:ARG:H	1:A:158:GLN:NE2	2.08	0.43
1:F:15:VAL:HG23	1:F:15:VAL:O	2.18	0.43
1:F:375:LEU:O	1:F:380:ARG:CB	2.66	0.43
1:D:75:ILE:HD12	1:D:109:MET:CE	2.48	0.43
1:D:95:THR:HG23	1:D:406:PHE:O	2.19	0.43
1:D:336:LEU:HD22	1:D:346:ILE:HD12	2.00	0.43
1:E:17:GLU:HA	1:E:20:ILE:HG12	2.00	0.43
1:F:336:LEU:HD22	1:F:346:ILE:HG13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:24:ASN:HD21	1:C:54:GLN:HE21	1.66	0.43
1:E:102:GLU:OE1	1:E:102:GLU:N	2.42	0.43
1:A:16:GLU:H	1:A:19:HIS:HD2	1.66	0.43
1:B:178:ASP:O	1:B:182:VAL:HG23	2.19	0.43
1:A:313:SER:HB3	1:A:393:ARG:HG2	2.01	0.43
1:D:405:TYR:O	1:D:406:PHE:C	2.57	0.43
1:E:139:ARG:HA	1:E:143:TRP:O	2.18	0.43
1:F:155:ARG:N	1:F:158:GLN:HE21	2.16	0.43
1:B:13:LYS:HZ1	1:B:69:ASN:HD21	1.67	0.43
1:C:16:GLU:HB3	2:C:449:HOH:O	2.18	0.43
1:C:68:GLU:HA	1:C:69:ASN:HA	1.78	0.43
1:D:319:HIS:CE1	1:D:354:ALA:HB2	2.54	0.42
1:A:154:ILE:HG22	1:A:287:ILE:HG21	2.01	0.42
1:B:373:SER:O	1:B:377:ARG:HB2	2.20	0.42
1:C:284:ASP:HA	1:D:136:PRO:HD3	2.01	0.42
1:D:221:ALA:O	1:D:222:ASN:CB	2.67	0.42
1:D:299:ILE:CD1	1:D:362:LEU:HD13	2.50	0.42
1:F:304:ALA:O	1:F:308:ASN:OD1	2.38	0.42
1:E:26:LEU:HD23	1:E:26:LEU:O	2.19	0.42
1:A:306:LEU:HD23	1:A:306:LEU:HA	1.89	0.42
1:B:27:LEU:O	1:B:31:PHE:CB	2.66	0.42
1:B:84:ILE:HD11	1:B:309:PHE:HE1	1.82	0.42
1:C:95:THR:HG23	1:C:406:PHE:HD2	1.84	0.42
1:A:68:GLU:HA	1:A:69:ASN:HA	1.69	0.42
1:C:286:GLN:HG3	1:D:135:ILE:HD12	2.02	0.42
1:F:95:THR:CG2	1:F:406:PHE:C	2.87	0.42
1:F:9:GLN:HA	1:F:10:LEU:HA	1.85	0.42
1:A:27:LEU:HD22	1:A:31:PHE:HD2	1.84	0.42
1:A:401:TYR:CZ	1:A:403:SER:OG	2.70	0.42
1:B:139:ARG:HA	1:B:143:TRP:O	2.18	0.42
1:C:347:THR:HB	1:C:349:GLU:H	1.85	0.42
1:A:128:SER:O	1:A:297:ALA:HA	2.19	0.42
1:B:142:GLY:HA3	1:B:298:ARG:NH1	2.34	0.42
1:A:23:PHE:CZ	1:A:57:LEU:HD11	2.55	0.41
1:D:141:LYS:N	1:D:141:LYS:HD2	2.35	0.41
1:A:54:GLN:N	1:A:55:PRO:CD	2.83	0.41
1:C:137:TYR:O	1:C:141:LYS:HG2	2.20	0.41
1:E:34:THR:HG22	1:E:36:ALA:N	2.36	0.41
1:F:10:LEU:HA	2:F:444:HOH:O	2.19	0.41
1:B:211:GLU:OE2	1:B:211:GLU:HA	2.20	0.41
1:A:16:GLU:O	1:A:17:GLU:C	2.58	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:77:ILE:CD1	1:F:116:ALA:HB1	2.47	0.41
1:F:307:GLU:HG2	1:F:307:GLU:H	1.77	0.41
1:A:22:GLN:HE22	1:A:70:GLN:HA	1.84	0.41
1:A:133:TYR:CD2	1:A:133:TYR:C	2.92	0.41
1:D:36:ALA:O	1:D:39:GLU:HB3	2.21	0.41
1:F:15:VAL:O	1:F:15:VAL:CG2	2.69	0.41
1:A:12:LEU:HD12	1:A:12:LEU:C	2.40	0.41
1:A:74:GLN:HE21	1:A:74:GLN:HB3	1.67	0.41
1:C:11:THR:HG23	1:C:66:PHE:HB2	2.03	0.41
1:C:302:VAL:HG13	1:C:306:LEU:HD22	2.03	0.41
1:E:88:LEU:CD1	1:E:188:ARG:CZ	2.99	0.41
1:F:143:TRP:NE1	1:F:298:ARG:HB2	2.36	0.41
1:A:10:LEU:HD23	1:A:67:HIS:HA	2.01	0.41
1:A:132:PRO:HG2	1:B:286:GLN:HE22	1.86	0.41
1:A:150:LEU:HD23	1:A:277:PRO:HA	2.03	0.41
1:C:84:ILE:HG12	1:C:89:TYR:CE1	2.55	0.41
1:C:167:GLY:HA3	1:C:219:TYR:O	2.21	0.41
1:C:229:LEU:HD11	1:C:240:ILE:HG12	2.02	0.41
1:C:247:ASN:ND2	1:C:250:ALA:H	2.19	0.41
1:D:34:THR:HG22	1:D:36:ALA:H	1.84	0.41
1:E:248:GLN:HE22	1:E:251:ARG:HD3	1.86	0.41
1:F:301:ASP:HB3	1:F:304:ALA:HB3	2.03	0.41
1:A:206:ARG:HB3	1:A:206:ARG:CZ	2.51	0.41
1:B:243:MET:HE2	1:B:245:TYR:HE2	1.86	0.41
1:D:54:GLN:N	1:D:55:PRO:CD	2.84	0.41
1:C:178:ASP:O	1:C:182:VAL:HG23	2.21	0.40
1:C:317:PRO:HG3	1:C:337:ILE:HG13	2.03	0.40
1:D:15:VAL:HG22	1:D:62:VAL:HB	2.03	0.40
1:D:88:LEU:HD11	1:D:195:ILE:CD1	2.51	0.40
1:E:90:LYS:CE	1:E:123:ASP:O	2.69	0.40
1:F:202:GLU:O	1:F:206:ARG:HB3	2.21	0.40
1:F:248:GLN:NE2	1:F:251:ARG:NH2	2.58	0.40
1:B:402:PHE:CZ	1:B:404:ASP:HB2	2.56	0.40
1:E:151:SER:O	1:E:289:GLU:HA	2.21	0.40
1:B:41:SER:HB3	1:B:207:PHE:HA	2.02	0.40
1:E:345:THR:HG23	2:E:409:HOH:O	2.19	0.40
1:F:11:THR:HG22	1:F:68:GLU:HG3	1.92	0.40
1:A:27:LEU:O	1:A:31:PHE:HB2	2.21	0.40
1:A:373:SER:HA	1:A:388:LEU:HD11	2.03	0.40
1:C:247:ASN:HD22	1:C:249:GLU:H	1.68	0.40
1:E:247:ASN:HD22	1:E:250:ALA:H	1.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:54:GLN:O	1:F:58:GLU:HG3	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	395/406 (97%)	382 (97%)	12 (3%)	1 (0%)	41	50
1	B	394/406 (97%)	377 (96%)	17 (4%)	0	100	100
1	C	396/406 (98%)	382 (96%)	13 (3%)	1 (0%)	41	50
1	D	394/406 (97%)	378 (96%)	13 (3%)	3 (1%)	19	23
1	E	394/406 (97%)	379 (96%)	14 (4%)	1 (0%)	41	50
1	F	396/406 (98%)	369 (93%)	27 (7%)	0	100	100
All	All	2369/2436 (97%)	2267 (96%)	96 (4%)	6 (0%)	41	50

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	17	GLU
1	D	222	ASN
1	C	10	LEU
1	D	68	GLU
1	D	210	GLU
1	E	212	GLU

### 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	355/364 (98%)	318 (90%)	37 (10%)	7	8
1	B	354/364 (97%)	311 (88%)	43 (12%)	5	5
1	C	356/364 (98%)	313 (88%)	43 (12%)	5	5
1	D	354/364 (97%)	316 (89%)	38 (11%)	6	7
1	E	354/364 (97%)	323 (91%)	31 (9%)	10	12
1	F	356/364 (98%)	312 (88%)	44 (12%)	4	5
All	All	2129/2184 (98%)	1893 (89%)	236 (11%)	6	7

All (236) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	11	THR
1	A	12	LEU
1	A	16	GLU
1	A	17	GLU
1	A	18	GLU
1	A	25	GLU
1	A	27	LEU
1	A	35	GLU
1	A	44	GLU
1	A	46	LYS
1	A	57	LEU
1	A	59	LEU
1	A	71	LEU
1	A	88	LEU
1	A	94	VAL
1	A	95	THR
1	A	130	LEU
1	A	155	ARG
1	A	157	THR
1	A	161	LYS
1	A	172	LEU
1	A	202	GLU
1	A	206	ARG
1	A	214	THR
1	A	222	ASN
1	A	224	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	247	ASN
1	A	259	THR
1	A	269	LYS
1	A	288	LYS
1	A	295	TYR
1	A	323	LYS
1	A	336	LEU
1	A	344	VAL
1	A	357	LEU
1	A	362	LEU
1	A	388	LEU
1	B	12	LEU
1	B	16	GLU
1	B	25	GLU
1	B	27	LEU
1	B	49	PHE
1	B	50	ILE
1	B	58	GLU
1	B	70	GLN
1	B	71	LEU
1	B	84	ILE
1	B	88	LEU
1	B	94	VAL
1	B	95	THR
1	B	97	VAL
1	B	102	GLU
1	B	121	ARG
1	B	130	LEU
1	B	157	THR
1	B	161	LYS
1	B	162	THR
1	B	172	LEU
1	B	206	ARG
1	B	208	GLU
1	B	214	THR
1	B	247	ASN
1	B	251	ARG
1	B	274	LYS
1	B	295	TYR
1	B	298	ARG
1	B	314	THR
1	B	316	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	323	LYS
1	B	328	GLU
1	B	336	LEU
1	B	340	GLU
1	B	345	THR
1	B	347	THR
1	B	348	ASP
1	B	357	LEU
1	B	361	THR
1	B	362	LEU
1	B	388	LEU
1	B	399	GLU
1	C	11	THR
1	C	12	LEU
1	C	15	VAL
1	C	16	GLU
1	C	25	GLU
1	C	34	THR
1	C	46	LYS
1	C	50	ILE
1	C	54	GLN
1	C	57	LEU
1	C	59	LEU
1	C	70	GLN
1	C	71	LEU
1	C	74	GLN
1	C	84	ILE
1	C	88	LEU
1	C	90	LYS
1	C	94	VAL
1	C	95	THR
1	C	114	GLN
1	C	121	ARG
1	C	130	LEU
1	C	150	LEU
1	C	157	THR
1	C	161	LYS
1	C	168	MET
1	C	208	GLU
1	C	214	THR
1	C	224	GLU
1	C	247	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	259	THR
1	C	295	TYR
1	C	306	LEU
1	C	314	THR
1	C	328	GLU
1	C	336	LEU
1	C	345	THR
1	C	347	THR
1	C	357	LEU
1	C	361	THR
1	C	362	LEU
1	C	380	ARG
1	C	388	LEU
1	D	15	VAL
1	D	26	LEU
1	D	32	GLN
1	D	35	GLU
1	D	46	LYS
1	D	50	ILE
1	D	57	LEU
1	D	58	GLU
1	D	59	LEU
1	D	71	LEU
1	D	73	SER
1	D	77	ILE
1	D	88	LEU
1	D	94	VAL
1	D	95	THR
1	D	105	ASN
1	D	114	GLN
1	D	130	LEU
1	D	157	THR
1	D	168	MET
1	D	211	GLU
1	D	214	THR
1	D	224	GLU
1	D	247	ASN
1	D	251	ARG
1	D	295	TYR
1	D	314	THR
1	D	328	GLU
1	D	336	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	344	VAL
1	D	345	THR
1	D	348	ASP
1	D	357	LEU
1	D	361	THR
1	D	362	LEU
1	D	380	ARG
1	D	388	LEU
1	D	403	SER
1	E	11	THR
1	E	12	LEU
1	E	32	GLN
1	E	46	LYS
1	E	51	LYS
1	E	59	LEU
1	E	70	GLN
1	E	71	LEU
1	E	88	LEU
1	E	95	THR
1	E	114	GLN
1	E	121	ARG
1	E	130	LEU
1	E	154	ILE
1	E	157	THR
1	E	161	LYS
1	E	211	GLU
1	E	214	THR
1	E	247	ASN
1	E	269	LYS
1	E	295	TYR
1	E	298	ARG
1	E	316	LYS
1	E	323	LYS
1	E	336	LEU
1	E	345	THR
1	E	357	LEU
1	E	361	THR
1	E	362	LEU
1	E	380	ARG
1	E	388	LEU
1	F	9	GLN
1	F	10	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	F	11	THR
1	F	25	GLU
1	F	34	THR
1	F	45	ASN
1	F	46	LYS
1	F	50	ILE
1	F	57	LEU
1	F	68	GLU
1	F	70	GLN
1	F	71	LEU
1	F	83	ASN
1	F	90	LYS
1	F	94	VAL
1	F	95	THR
1	F	118	GLU
1	F	130	LEU
1	F	154	ILE
1	F	157	THR
1	F	161	LYS
1	F	169	ILE
1	F	181	ASP
1	F	209	ASN
1	F	211	GLU
1	F	214	THR
1	F	247	ASN
1	F	259	THR
1	F	269	LYS
1	F	288	LYS
1	F	290	SER
1	F	295	TYR
1	F	298	ARG
1	F	306	LEU
1	F	307	GLU
1	F	314	THR
1	F	323	LYS
1	F	345	THR
1	F	357	LEU
1	F	361	THR
1	F	362	LEU
1	F	380	ARG
1	F	388	LEU
1	F	396	PRO

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (59) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	19	HIS
1	A	22	GLN
1	A	24	ASN
1	A	54	GLN
1	A	69	ASN
1	A	70	GLN
1	A	74	GLN
1	A	158	GLN
1	A	247	ASN
1	A	319	HIS
1	B	22	GLN
1	B	69	ASN
1	B	70	GLN
1	B	74	GLN
1	B	158	GLN
1	B	247	ASN
1	B	286	GLN
1	B	319	HIS
1	B	398	GLN
1	C	9	GLN
1	C	19	HIS
1	C	22	GLN
1	C	24	ASN
1	C	54	GLN
1	C	69	ASN
1	C	70	GLN
1	C	74	GLN
1	C	158	GLN
1	C	247	ASN
1	C	248	GLN
1	C	286	GLN
1	C	319	HIS
1	D	22	GLN
1	D	32	GLN
1	D	70	GLN
1	D	74	GLN
1	D	158	GLN
1	D	247	ASN
1	D	248	GLN
1	D	319	HIS
1	E	22	GLN

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Mol	Chain	Res	Type
1	E	24	ASN
1	E	74	GLN
1	E	158	GLN
1	E	247	ASN
1	E	248	GLN
1	E	308	ASN
1	E	319	HIS
1	F	22	GLN
1	F	24	ASN
1	F	45	ASN
1	F	70	GLN
1	F	74	GLN
1	F	158	GLN
1	F	209	ASN
1	F	247	ASN
1	F	248	GLN
1	F	286	GLN
1	F	308	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

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	397/406 (97%)	0.10	13 (3%) 46 53	22, 44, 79, 87	0
1	B	396/406 (97%)	0.23	29 (7%) 15 20	22, 47, 101, 116	0
1	C	398/406 (98%)	0.08	8 (2%) 65 71	23, 52, 69, 75	0
1	D	396/406 (97%)	0.11	10 (2%) 57 64	22, 51, 83, 88	0
1	E	396/406 (97%)	0.00	5 (1%) 77 81	23, 51, 68, 71	0
1	F	398/406 (98%)	0.49	30 (7%) 14 19	25, 62, 86, 96	0
All	All	2381/2436 (97%)	0.17	95 (3%) 38 45	22, 51, 82, 116	0

All (95) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	221	ALA	6.2
1	B	44	GLU	5.7
1	B	50	ILE	5.4
1	B	49	PHE	5.2
1	B	33	VAL	5.1
1	F	67	HIS	4.6
1	B	43	PHE	4.2
1	F	10	LEU	4.2
1	F	104	ALA	4.2
1	D	105	ASN	4.1
1	D	65	TRP	4.0
1	F	105	ASN	3.9
1	B	32	GLN	3.9
1	B	45	ASN	3.8
1	D	103	TYR	3.7
1	D	133	TYR	3.7
1	F	282	LEU	3.7
1	D	29	TYR	3.7
1	F	347	THR	3.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	47	ARG	3.6
1	A	68	GLU	3.6
1	F	341	ASN	3.5
1	B	23	PHE	3.5
1	F	12	LEU	3.5
1	F	138	TYR	3.5
1	B	36	ALA	3.4
1	B	103	TYR	3.3
1	A	105	ASN	3.2
1	A	106	HIS	3.2
1	A	29	TYR	3.2
1	A	133	TYR	3.2
1	F	49	PHE	3.1
1	A	400	ALA	3.1
1	F	133	TYR	3.1
1	F	9	GLN	3.0
1	F	400	ALA	3.0
1	F	110	LYS	3.0
1	F	166	PRO	3.0
1	B	67	HIS	3.0
1	F	161	LYS	2.9
1	F	132	PRO	2.9
1	C	105	ASN	2.8
1	B	48	ALA	2.8
1	B	39	GLU	2.8
1	B	35	GLU	2.8
1	B	133	TYR	2.8
1	B	46	LYS	2.8
1	D	72	ILE	2.7
1	A	10	LEU	2.7
1	C	106	HIS	2.6
1	F	135	ILE	2.6
1	F	68	GLU	2.6
1	B	221	ALA	2.6
1	F	106	HIS	2.6
1	B	51	LYS	2.6
1	A	103	TYR	2.6
1	D	67	HIS	2.5
1	B	37	ASP	2.5
1	A	67	HIS	2.5
1	B	31	PHE	2.5
1	B	24	ASN	2.5

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Mol	Chain	Res	Type	RSRZ
1	F	306	LEU	2.5
1	E	221	ALA	2.4
1	C	288	LYS	2.4
1	C	296	MET	2.4
1	F	103	TYR	2.4
1	E	222	ASN	2.4
1	F	65	TRP	2.4
1	B	106	HIS	2.4
1	F	296	MET	2.3
1	B	207	PHE	2.3
1	D	44	GLU	2.3
1	F	349	GLU	2.3
1	F	146	MET	2.3
1	C	68	GLU	2.3
1	B	105	ASN	2.3
1	F	326	VAL	2.3
1	A	367	MET	2.3
1	F	348	ASP	2.2
1	D	68	GLU	2.2
1	B	20	ILE	2.2
1	C	43	PHE	2.2
1	E	41	SER	2.2
1	F	101	PRO	2.2
1	F	29	TYR	2.1
1	C	44	GLU	2.1
1	E	67	HIS	2.1
1	B	78	TYR	2.1
1	B	277	PRO	2.1
1	C	400	ALA	2.1
1	A	145	ILE	2.1
1	B	11	THR	2.1
1	E	275	ASN	2.0
1	A	206	ARG	2.0
1	D	296	MET	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.