

Full wwPDB X-ray Structure Validation Report (i)

Aug 16, 2023 - 06:16 AM EDT

PDB ID	:	1YG8
Title	:	The structure of a V6A variant of ClpP.
Authors	:	Bewley, M.C.; Graziano, V.; Griffin, K.; Flanagan, J.M.
Deposited on	:	2005-01-04
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* A user guide is available at https://www.wwpdb.org/validation/2017/XrayValidationReportHelp with specific help available everywhere you see the (i) 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 (1)) were used in the production of this report:

MolProbity	:	4.02b-467
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure: $X\text{-}RAY\;DIFFRACTION$

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.



${f Metric}$	$egin{array}{c} { m Whole \ archive} \ (\#{ m Entries}) \end{array}$	${f Similar\ resolution}\ (\#{ m Entries,\ resolution\ range(Å)})$		
Ramachandran outliers	138981	3455 (2.60-2.60)		
Sidechain outliers	138945	3455 (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 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%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain	
1	А	193	87%	6% • 7%
1	В	193	88%	5% • 7%
1	С	193	87%	5% • 7%
1	D	193	88%	5% 7%
1	Е	193	88%	5% 7%
1	F	193	88%	5%• 7%
1	G	193	90%	• 7%
1	Н	193	90%	•• 7%
1	Ι	193	87%	6% 7%



Mol	Chain	Length	Quality of chain		
1	J	193	82%	10%	7%
1	Κ	193	86%	6% •	7%
1	L	193	88%	•••	7%
1	М	193	87%	6%	7%
1	Ν	193	88%	5%	7%
1	0	193	81%	10% •	7%
1	Р	193	87%	5% •	7%
1	Q	193	88%	5%	7%
1	R	193	86%	6% •	7%
1	S	193	85%	7%	7%
1	Т	193	88%	•••	7%
1	U	193	88%	•••	7%
1	V	193	86%	7%	7%
1	W	193	84%	8% •	7%
1	Х	193	86%	6% •	7%
1	Y	193	87%	5% •	7%
1	Ζ	193	82%	10% •	7%
1	a	193	86%	7%	7%
1	b	193	86%	6% •	7%



2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 39312 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.

Mol	Chain	Residues		A	toms			ZeroOcc	AltConf	Trace
1	Δ	170	Total	С	Ν	0	S	0	0	0
	A	179	1404	885	244	264	11	0	0	0
1	P	170	Total	С	Ν	0	S	0	0	0
	D	179	1404	885	244	264	11	0	0	0
1	С	170	Total	С	Ν	0	S	0	0	0
	U	119	1404	885	244	264	11	0	0	0
1	а	170	Total	С	Ν	0	\mathbf{S}	0	0	0
	D	115	1404	885	244	264	11	0	0	0
1	E	170	Total	С	Ν	Ο	\mathbf{S}	0	0	0
1		115	1404	885	244	264	11	0	0	0
1	F	170	Total	С	Ν	Ο	\mathbf{S}	0	0	0
	Ľ	115	1404	885	244	264	11	0	0	0
1	G	170	Total	С	Ν	0	\mathbf{S}	0	0	0
	G	115	1404	885	244	264	11	0	0	0
1	н	170	Total	С	Ν	0	\mathbf{S}	0	0	0
	11	115	1404	885	244	264	11	0	0	
1	т	170	Total	С	Ν	0	\mathbf{S}	0	0	0
	L	113	1404	885	244	264	11		0	0
1	Т	170	Total	С	Ν	0	\mathbf{S}	0	0	0
	5	113	1404	885	244	264	11	0	0	0
1	K	170	Total	С	Ν	Ο	\mathbf{S}	0	0	0
1	11	115	1404	885	244	264	11	0	0	0
1	T.	170	Total	С	Ν	Ο	\mathbf{S}	0	0	0
1		115	1404	885	244	264	11	0	0	0
1	М	170	Total	С	Ν	Ο	\mathbf{S}	0	0	0
	111	115	1404	885	244	264	11	0	0	0
1	N	179	Total	С	Ν	Ο	\mathbf{S}	0	0	0
		110	1404	885	244	264	11	0	0	0
1	0	179	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
		110	1404	885	244	264	11		0	0
1	Р	179	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
	1	115	1404	885	244	264	11		U	U

• Molecule 1 is a protein called ATP-dependent Clp protease proteolytic subunit.



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Mol	Chain	Residues		A	toms			ZeroOcc	AltConf	Trace
1	0	170	Total	С	Ν	0	S	0	0	0
1	Q	179	1404	885	244	264	11	0	0	0
1	р	170	Total	С	Ν	0	S	0	0	0
1	n	179	1404	885	244	264	11	0	0	0
1	C	170	Total	С	Ν	0	S	0	0	0
	b b	119	1404	885	244	264	11	0	0	0
1	т	170	Total	С	Ν	0	\mathbf{S}	0	0	0
1	L	119	1404	885	244	264	11	0	0	0
1	I	170	Total	С	Ν	0	\mathbf{S}	0	0	0
1	U	113	1404	885	244	264	11	0	0	0
1	V	170	Total	С	Ν	Ο	\mathbf{S}	0	0	0
	v	115	1404	885	244	264	11	0	0	
1	W	179	Total	С	Ν	Ο	\mathbf{S}	0	0	0
	**	115	1404	885	244	264	11	0	0	0
1	x	179	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
-		115	1404	885	244	264	11	0	0	0
1	V	179	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
-	1	115	1404	885	244	264	11	0	0	0
1	Z	170	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
1		115	1404	885	244	264	11	0	0	0
1	9	170	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
1	a	115	1404	885	244	264	11	0	0	0
1	h	179	Total	\mathbf{C}	Ν	0	S	0	0	0
1	U	113	1404	885	244	264	11		0	

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
А	3	ALA	VAL	engineered mutation	UNP P19245
В	3	ALA	VAL	engineered mutation	UNP P19245
С	3	ALA	VAL	engineered mutation	UNP P19245
D	3	ALA	VAL	engineered mutation	UNP P19245
Е	3	ALA	VAL	engineered mutation	UNP P19245
F	3	ALA	VAL	engineered mutation	UNP P19245
G	3	ALA	VAL	engineered mutation	UNP P19245
Н	3	ALA	VAL	engineered mutation	UNP P19245
Ι	3	ALA	VAL	engineered mutation	UNP P19245
J	3	ALA	VAL	engineered mutation	UNP P19245
K	3	ALA	VAL	engineered mutation	UNP P19245
L	3	ALA	VAL	engineered mutation	UNP P19245
М	3	ALA	VAL	engineered mutation	UNP P19245
N	3	ALA	VAL	engineered mutation	UNP P19245
0	3	ALA	VAL	engineered mutation	UNP P19245



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Chain	Residue	Modelled	Actual	Comment	Reference
Р	3	ALA	VAL	engineered mutation	UNP P19245
Q	3	ALA	VAL	engineered mutation	UNP P19245
R	3	ALA	VAL	engineered mutation	UNP P19245
S	3	ALA	VAL	engineered mutation	UNP P19245
Т	3	ALA	VAL	engineered mutation	UNP P19245
U	3	ALA	VAL	engineered mutation	UNP P19245
V	3	ALA	VAL	engineered mutation	UNP P19245
W	3	ALA	VAL	engineered mutation	UNP P19245
Х	3	ALA	VAL	engineered mutation	UNP P19245
Y	3	ALA	VAL	engineered mutation	UNP P19245
Z	3	ALA	VAL	engineered mutation	UNP P19245
a	3	ALA	VAL	engineered mutation	UNP P19245
b	3	ALA	VAL	engineered mutation	UNP P19245



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. 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. 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.

Note EDS was not executed.

• Molecule 1: ATP-dependent Clp protease proteolytic subunit

Chain A:	87%	6% • 7%
LEU LEU ALA MET PRO PRO PRO PRO CLU CLU CLU CLU CLU CLU CLU CLU	N193 N193 N193 N193 N193 N193 N193 N193	
• Molecule 1: ATP-d	lependent Clp protease proteolytic subu	ınit
Chain B:	88%	5% • 7%
ALA LEU ALA ALA ALA ARC CLU CLU CLU CLU CLU CLU CLU CLU CLU CL	R22 E31 N54 N54 R122 R148 L155 L194 L194 L194	
• Molecule 1: ATP-d	lependent Clp protease proteolytic subu	ınit
Chain C:	87%	5% • 7%
ALA LEU ALA ALA ARC MET ARC GLU GLU GLU GLU GLU GLU GLU	816 17 17 122 123 123 124 1122 1142 1142 1142 114	
• Molecule 1: ATP-d	lependent Clp protease proteolytic subu	ınit
Chain D:	88%	5% 7%
ALA LEU ALA ALA ALA ARC GLU GLU GLU GLU GLU GLU	516 119 119 1142 1142 1142 1142 1142 1142 1	
• Molecule 1: ATP-d	lependent Clp protease proteolytic subu	unit
Chain E:	88%	5% 7%
ALA LEU ALA MET MET PRO PRO PRO PRO GLU GLU GLU GLU GLU	116 119 119 119 119 113 1123 1123 1123 1123	



Chain F:	88%	5% • 7%
ALA LEU LEU ALA PRO PRO MET VAL ILE GLU GLN	THR SER ARG ALV GLV GLV R15 L31 L31 L31 F35 E66 S55 S55 S55 S55 S55 S55 S55 S55 S55 S	
• Molecule 2	1: ATP-dependent Clp protease proteolytic subunit	
Chain G:	90%	• 7%
ALA LEU ALA PRO PRO MET VAL TLE GLU GLU	THR BER ARG GLU GLU CJI C31 L31 C31 L31 C31 L31 C31 L31 C31 L31 C31 L31 C31 L31 C31 L31 C31 C31 L31 C31 C31 C31 C31 C31 C31 C31 C31 C31 C	
• Molecule 2	1: ATP-dependent Clp protease proteolytic subunit	
Chain H:	90%	•• 7%
ALA LEU ALA ALA PRO PRO MET VAL ILE GLU GLN	THR REC ARG GLV GLV B56 H172 H172 H172 H172 H172 H173 H173 H173 H173 H173 H173 H173 H173	
• Molecule 2	1: ATP-dependent Clp protease proteolytic subunit	
Chain I:	87%	6% 7%
ALA LEU ALA PRO PRO MET VAL ILE GLU GLU	THR ARG GLV GLV GLV GLV F17 F17 F17 F18 F19 F19 F19 F19 F13 F13 F13 F13 F13 F13 F13 F13 F13 F13	
• Molecule 2	1: ATP-dependent Clp protease proteolytic subunit	
Chain J:	82%	10% 7%
ALA LEU ALA PRO MET VAL ILE GLU GLU	THR THR SER ALU GLU GLU GLU GLU GLU GLI F17 E16 C91 F12 F112 F112 F112 F112 F112 F112 F11	R172 L184 N193
• Molecule 1	1: ATP-dependent Clp protease proteolytic subunit	
Chain K:	86%	6% • 7%
ALA LEU ALA ALA PRO PRO MET VAL CLU GLU GLN	THR RER ARG GLV GLV GLV GLV GLJ F17 F17 F17 F17 F17 F17 F17 F17 F116 F116	
• Molecule 2	1: ATP-dependent Clp protease proteolytic subunit	
Chain L:	88%	•• 7%
ALA LEU ALA ALA ALA PRO PRO VAL TLE GLU GLU	THR SEA ANG GUY GUY GUY F17 F17 F17 F17 F17 F17 F17 F17 F17 F17	



Chain M:	87%	6% 7%
ALA LEU ALA PRO MET VAL ILE	CILU CILU CILY ANG ANG ANG ANG CILY CILS CILS CILS CILS CILS CILS CILS CILS	
• Molecule	e 1: ATP-dependent Clp protease proteolytic subunit	
Chain N:	88%	5% 7%
ALA LEU ALA PRO MET VAL ILE	440 GLV SER ARG GLY GLY GLY GLY GLJ H15 H15 H15 H122 H122 H122 H122 H122 H1	
• Molecule	e 1: ATP-dependent Clp protease proteolytic subunit	
Chain O:	81%	10% • 7%
ALA LEU ALA PRO MET VAL ILE	44.0 17.11 2.12 2.17 2.16 2.17 2.16 1.19 1.19 1.19 1.19 1.19 2.16 1.114 2.114	P177 E178 E178 1189 T190 H191 R192 N193
• Molecule	e 1: ATP-dependent Clp protease proteolytic subunit	
Chain P:	87%	5% • 7%
ALA LEU ALA PRO MET VAL ILE	GLU THR ARG GLV GLV GLV GLV GLV GLV F119 F112 F112 F112 F112 F112 F112 F112	
• Molecule	e 1: ATP-dependent Clp protease proteolytic subunit	
Chain Q:	88%	5% 7%
ALA LEU ALA PRO MET VAL LLE	CLU CLU ARC ARC ARC ARC CLY CLI SIG CLI CLI CLI CLI CLI CLI CLI CLI CLI CLI	
• Molecule	e 1: ATP-dependent Clp protease proteolytic subunit	
Chain R:	86%	6% • 7%
ALA LEU ALA PRO MET VAL ILE	GLU GLU SER ARG GLY GLY GLY GLY GLY GLY CLI E5 6 CLI CLI CLI CLI CLI CLI CLI CLI CLI CLI	
• Molecule	e 1: ATP-dependent Clp protease proteolytic subunit	
Chain S:	85%	7% 7%
ALA LEU ALA PRO MET VAL ILE	0.1.0 1.1.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	



Chain T:	88%	•• 7%
ALA LEU ALA PRO MET VAL TLE GLU GLU	ARR ARG GLV GLV GLV R15 F17 F17 F17 F17 F17 F17 F17 F17 F17 F17	
• Molecule 1:	ATP-dependent Clp protease proteolytic subunit	
Chain U:	88%	•• 7%
ALA LEU ALA PRO MET VAL GLU GLU THR	ARG ARG GLU GLU AL7 AL7 AL7 AL7 AL7 AL7 AL7 AL7 AL7 AL7	
• Molecule 1:	ATP-dependent Clp protease proteolytic subunit	
Chain V:	86%	7% 7%
ALA LEU PRO PRO MET VAL ILE GLU GLU THR	ASR ASR (GLY GLY CIU T19 F17 F17 F17 F16 F16 F118 F118 F118 F118 F118 F118 F	
• Molecule 1:	ATP-dependent Clp protease proteolytic subunit	
Chain W:	84%	8% • 7%
ALA LEU PRO PRO TLE GLU GLU CLU	SER SER GLV GLV GLV GLV L11 L11 F170 F170 F170 F170 F170 F170 F170 F1	
• Molecule 1:	ATP-dependent Clp protease proteolytic subunit	
Chain X:	86%	6% • 7%
ALA LEU ALA PRO MET VAL ILE GLU GLU GLU	SER SER GLY CLJ CLJ CLJ CLJ F17 T191 H122 D167 D167 D167 D167 D167 D167 D167 D167	
• Molecule 1:	ATP-dependent Clp protease proteolytic subunit	
Chain Y:	87%	5%•7%
ALA LEU ALA PRO PRO VAL TLE GLU GLU GLU	SER SER GLY GLY M15 S88 S88 S88 CL18 H122 L184 H122 L184 H122 L184 H122 L184 H122 L184	
• Molecule 1:	ATP-dependent Clp protease proteolytic subunit	
Chain Z:	82%	10% • 7%
ALA LEU PRO PRO TLE GLU GLU GLU	SER SER GLU GLU GLU F17 F17 F17 CL18 CL18 M122 M122 M122 Q123 Q123 Q123 Q123 Q123 Q123 CL15 CL15 CL15 CL15 CL15 CL15 CL15 CL15	L184 V185 R192 N193



Chain a:	86%				7%
LEU ALA PRO MET VAL ILE GLU GLU GLU GLU	R15 816 119 822 131	N54 P55 556 565 771 771 771 783 783 783 783 783	L184 M193		

Chain b:	86%	6% • 7%
ALA LEU ALA ALA ALA ALA ALA MET VAL CLU CLU CLU CLU CLU CLU CLU CLU CLU CL	L3 1 3 4 3 4 3 5 5 5 5 6 8 3 6 6 1 1 2 2 1 4 8 1 2 2 1 2 2 1 4 8 1 4 8 1 2 2 1 4 8 1 4 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1	



4 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source	
Space group	P 1 21 1	Depositor	
Cell constants	94.80Å 161.00Å 186.60Å	Depositor	
a, b, c, α , β , γ	90.00° 90.30° 90.00°	Depositor	
Resolution (Å)	30.00 - 2.60	Depositor	
% Data completeness	(Not available) $(30.00-2.60)$	Depositor	
(in resolution range)	(100 available) (50.00-2.00)	Depositor	
R_{merge}	(Not available)	Depositor	
R_{sym}	(Not available)	Depositor	
Refinement program	CNS 1.0	Depositor	
R, R_{free}	0.220 , 0.267	Depositor	
Estimated twinning fraction	No twinning to report.	Xtriage	
Total number of atoms	39312	wwPDB-VP	
Average B, all atoms $(Å^2)$	37.0	wwPDB-VP	



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).

Mal	Chain	Bo	nd lengths	Bond angles		
IVIOI	Ullalli	RMSZ	# Z > 5	RMSZ	# Z > 5	
1	А	0.59	0/1427	0.81	1/1921~(0.1%)	
1	В	0.60	0/1427	0.81	1/1921~(0.1%)	
1	С	0.59	0/1427	0.80	1/1921~(0.1%)	
1	D	0.60	0/1427	0.77	0/1921	
1	Е	0.57	0/1427	0.82	0/1921	
1	F	0.58	0/1427	0.79	0/1921	
1	G	0.56	0/1427	0.80	0/1921	
1	Н	0.60	0/1427	0.78	1/1921~(0.1%)	
1	Ι	0.59	0/1427	0.82	1/1921~(0.1%)	
1	J	0.62	1/1427~(0.1%)	0.82	0/1921	
1	Κ	0.62	0/1427	0.83	0/1921	
1	L	0.58	0/1427	0.78	1/1921~(0.1%)	
1	М	0.58	0/1427	0.80	0/1921	
1	Ν	0.60	0/1427	0.81	0/1921	
1	0	0.62	0/1427	0.79	1/1921~(0.1%)	
1	Р	0.62	0/1427	0.85	1/1921~(0.1%)	
1	Q	0.59	0/1427	0.79	0/1921	
1	R	0.57	0/1427	0.77	1/1921~(0.1%)	
1	S	0.61	0/1427	0.82	0/1921	
1	Т	0.59	0/1427	0.82	1/1921~(0.1%)	
1	U	0.61	0/1427	0.85	1/1921~(0.1%)	
1	V	0.62	0/1427	0.85	2/1921~(0.1%)	
1	W	0.59	0/1427	0.84	3/1921~(0.2%)	
1	Х	0.56	0/1427	0.81	1/1921~(0.1%)	
1	Y	0.58	0/1427	0.83	1/1921~(0.1%)	
1	Z	0.59	0/1427	0.78	0/1921	
1	a	0.58	$0/1\overline{427}$	0.79	$0/1\overline{921}$	
1	b	0.57	0/1427	0.81	$1/\overline{1921}~(0.1\%)$	
All	All	0.59	1/39956~(0.0%)	0.81	19/53788~(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	В	0	1
1	S	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	$\mathrm{Ideal}(\mathrm{\AA})$
1	J	91	CYS	CB-SG	-5.19	1.73	1.81

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$Observed(^{o})$	$Ideal(^{o})$
1	V	78	ASP	CB-CG-OD1	-7.39	111.65	118.30
1	U	31	LEU	CA-CB-CG	6.66	130.62	115.30
1	А	31	LEU	CA-CB-CG	6.23	129.62	115.30
1	Х	31	LEU	CA-CB-CG	6.20	129.56	115.30
1	V	78	ASP	CB-CG-OD2	6.08	123.77	118.30
1	В	31	LEU	CA-CB-CG	5.86	128.77	115.30
1	Y	31	LEU	CA-CB-CG	5.75	128.53	115.30
1	L	31	LEU	CA-CB-CG	5.75	128.51	115.30
1	Т	155	LEU	CA-CB-CG	5.69	128.38	115.30
1	W	114	LEU	CA-CB-CG	-5.31	103.09	115.30
1	R	31	LEU	CA-CB-CG	5.30	127.49	115.30
1	W	31	LEU	CA-CB-CG	5.29	127.47	115.30
1	W	93	GLY	N-CA-C	-5.25	99.97	113.10
1	0	31	LEU	N-CA-C	-5.23	96.88	111.00
1	Р	31	LEU	N-CA-C	-5.19	96.98	111.00
1	Н	31	LEU	CA-CB-CG	5.16	127.16	115.30
1	С	17	PHE	N-CA-C	-5.11	97.21	111.00
1	Ι	37	ASP	N-CA-C	5.06	124.66	111.00
1	b	174	LEU	CA-CB-CG	5.01	126.82	115.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	В	60	TYR	Sidechain
1	S	60	TYR	Sidechain

5.2 Too-close contacts (i)

Due to software issues we are unable to calculate clashes - this section is therefore empty.



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	Perce	ntiles
1	А	177/193~(92%)	167~(94%)	8 (4%)	2(1%)	14	30
1	В	177/193~(92%)	166 (94%)	10 (6%)	1 (1%)	25	47
1	С	177/193~(92%)	162 (92%)	14 (8%)	1 (1%)	25	47
1	D	177/193~(92%)	165~(93%)	11 (6%)	1 (1%)	25	47
1	Ε	177/193~(92%)	165 (93%)	10 (6%)	2(1%)	14	30
1	F	177/193~(92%)	163 (92%)	12 (7%)	2(1%)	14	30
1	G	177/193~(92%)	161 (91%)	16 (9%)	0	100	100
1	Η	177/193~(92%)	170 (96%)	7 (4%)	0	100	100
1	Ι	177/193~(92%)	162 (92%)	14 (8%)	1 (1%)	25	47
1	J	177/193~(92%)	162 (92%)	12 (7%)	3(2%)	9	18
1	K	177/193~(92%)	156 (88%)	18 (10%)	3(2%)	9	18
1	L	177/193~(92%)	160 (90%)	16 (9%)	1 (1%)	25	47
1	М	177/193~(92%)	167 (94%)	10 (6%)	0	100	100
1	Ν	177/193~(92%)	163~(92%)	14 (8%)	0	100	100
1	Ο	177/193~(92%)	144 (81%)	22 (12%)	11 (6%)	1	1
1	Р	177/193~(92%)	154 (87%)	20 (11%)	3~(2%)	9	18
1	Q	177/193~(92%)	166 (94%)	10 (6%)	1 (1%)	25	47
1	R	177/193~(92%)	171 (97%)	6 (3%)	0	100	100
1	S	177/193~(92%)	158 (89%)	16 (9%)	3~(2%)	9	18
1	Т	177/193~(92%)	162 (92%)	13 (7%)	2(1%)	14	30
1	U	177/193~(92%)	157 (89%)	18 (10%)	2(1%)	14	30
1	V	177/193~(92%)	154 (87%)	19 (11%)	4 (2%)	6	11
1	W	177/193~(92%)	157 (89%)	16 (9%)	4 (2%)	6	11
1	Х	177/193~(92%)	162 (92%)	14 (8%)	1 (1%)	25	47
1	Y	177/193~(92%)	161 (91%)	14 (8%)	2 (1%)	14	30



Mol	Chain	Analysed	Favoured	Allowed	Outliers	Perce	entiles
1	Ζ	177/193~(92%)	164 (93%)	10 (6%)	3~(2%)	9	18
1	a	177/193~(92%)	168~(95%)	5(3%)	4(2%)	6	11
1	b	177/193~(92%)	161 (91%)	13 (7%)	3~(2%)	9	18
All	All	4956/5404~(92%)	4528 (91%)	368 (7%)	60 (1%)	13	27

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All (60) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	16	SER
1	В	54	ASN
1	J	16	SER
1	J	155	LEU
1	0	54	ASN
1	0	189	LEU
1	0	190	THR
1	Р	122	HIS
1	Q	16	SER
1	S	191	HIS
1	V	124	PRO
1	W	155	LEU
1	W	156	HIS
1	b	17	PHE
1	b	54	ASN
1	С	16	SER
1	D	16	SER
1	Е	19	ILE
1	F	113	CYS
1	J	156	HIS
1	K	155	LEU
1	L	175	SER
1	0	161	LEU
1	0	167	ASP
1	0	192	ARG
1	S	162	GLU
1	Т	16	SER
1	Т	17	PHE
1	Х	17	PHE
1	a	16	SER
1	a	83	ILE
1	K	34	GLN
1	K	159	GLN



Mol	Chain	Res	Type
1	U	54	ASN
1	Y	54	ASN
1	a	82	PHE
1	b	167	ASP
1	0	77	TYR
1	0	178	GLU
1	Р	192	ARG
1	U	192	ARG
1	A	115	PRO
1	Е	54	ASN
1	S	98	MET
1	Y	16	SER
1	Ζ	54	ASN
1	F	54	ASN
1	Ι	137	ILE
1	0	95	ALA
1	0	97	SER
1	V	54	ASN
1	W	70	ILE
1	Ζ	122	HIS
1	V	55	PRO
1	Ζ	115	PRO
1	0	76	ILE
1	V	66	PRO
1	a	54	ASN
1	Р	19	ILE
1	W	177	PRO

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	Percenti	les
1	А	151/162~(93%)	141 (93%)	10 (7%)	16 33	;
1	В	151/162~(93%)	143~(95%)	8 (5%)	22 45	5
1	С	151/162~(93%)	141 (93%)	10 (7%)	16 33	;



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Mol	Chain	Analysed	Rotameric	Outliers	Perce	entiles
1	D	151/162~(93%)	143~(95%)	8 (5%)	22	45
1	Ε	151/162~(93%)	144~(95%)	7 (5%)	27	51
1	F	151/162~(93%)	142 (94%)	9~(6%)	19	39
1	G	151/162~(93%)	145~(96%)	6 (4%)	31	57
1	Н	151/162~(93%)	145~(96%)	6 (4%)	31	57
1	Ι	151/162~(93%)	141 (93%)	10 (7%)	16	33
1	J	151/162~(93%)	135~(89%)	16 (11%)	6	12
1	Κ	151/162~(93%)	140 (93%)	11 (7%)	14	28
1	L	151/162~(93%)	143~(95%)	8 (5%)	22	45
1	М	151/162~(93%)	139~(92%)	12 (8%)	12	24
1	Ν	151/162~(93%)	142 (94%)	9~(6%)	19	39
1	Ο	151/162~(93%)	138 (91%)	13 (9%)	10	20
1	Р	151/162~(93%)	141 (93%)	10 (7%)	16	33
1	Q	151/162~(93%)	142 (94%)	9~(6%)	19	39
1	R	151/162~(93%)	138~(91%)	13 (9%)	10	20
1	S	151/162~(93%)	141 (93%)	10 (7%)	16	33
1	Т	151/162~(93%)	144~(95%)	7~(5%)	27	51
1	U	151/162~(93%)	144~(95%)	7 (5%)	27	51
1	V	151/162~(93%)	143~(95%)	8 (5%)	22	45
1	W	151/162~(93%)	141~(93%)	10 (7%)	16	33
1	Х	151/162~(93%)	138 (91%)	13 (9%)	10	20
1	Y	151/162~(93%)	142 (94%)	9~(6%)	19	39
1	Ζ	151/162~(93%)	133 (88%)	18 (12%)	5	9
1	a	151/162~(93%)	142 (94%)	9~(6%)	19	39
1	b	151/162~(93%)	141 (93%)	10 (7%)	16	33
All	All	4228/4536~(93%)	3952 (94%)	276 (6%)	17	34

All (276) residues with a non-rotameric side chain are listed below:

Mol	Chain	Res	Type
1	А	15	ARG
1	А	22	ARG
1	А	26	GLU



Mol	Chain	Res	Type
1	А	31	LEU
1	А	34	GLN
1	A	94	GLN
1	A	113	CYS
1	A	122	HIS
1	А	136	GLU
1	А	184	LEU
1	В	15	ARG
1	В	22	ARG
1	В	31	LEU
1	В	113	CYS
1	В	122	HIS
1	В	148	ARG
1	В	155	LEU
1	В	184	LEU
1	С	17	PHE
1	С	22	ARG
1	С	25	LYS
1	С	31	LEU
1	С	113	CYS
1	С	118	ARG
1	С	122	HIS
1	С	142	ILE
1	С	172	ARG
1	С	184	LEU
1	D	19	ILE
1	D	31	LEU
1	D	34	GLN
1	D	56	GLU
1	D	122	HIS
1	D	142	ILE
1	D	172	ARG
1	D	189	LEU
1	E	16	SER
1	Ε	56	GLU
1	E	86	ASP
1	E	113	CYS
1	Е	122	HIS
1	E	123	GLN
1	E	174	LEU
1	F	31	LEU
1	F	56	GLU



1 F 65 SER 1 F 113 CYS 1 F 122 HIS 1 F 155 LEU 1 F 160 SER 1 F 166 ARG 1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 31 LEU 1 G 14 LEU 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 H 122 HIS 1 H 122 HIS 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 174	Mol	Chain	Res	Type
1 F 113 CYS 1 F 122 HIS 1 F 155 LEU 1 F 160 SER 1 F 166 ARG 1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 91 CYS 1 G 114 LEU 1 G 1122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 172 ARG 1 H 174 LEU 1 H 174	1	F	65	SER
1 F 122 HIS 1 F 155 LEU 1 F 160 SER 1 F 166 ARG 1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 14 LEU 1 G 122 HIS 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 31 LEU 1 H 122 HIS 1 H 122 HIS 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 H 174 LEU 1 H 175	1	F	113	CYS
1 F 155 LEU 1 F 160 SER 1 F 166 ARG 1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 114 LEU 1 G 114 LEU 1 G 114 LEU 1 G 112 HIS 1 H 31 LEU 1 H 31 LEU 1 H 31 LEU 1 H 122 HIS 1 H 172 ARG 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 175	1	F	122	HIS
1 F 160 SER 1 F 166 ARG 1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 91 CYS 1 G 122 HIS 1 H 31 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 122 HIS 1 H 122 HIS 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 I 17 PHE 1 I 13 LEU 1 I 13 LEU 1 I 168	1	F	155	LEU
1 F 166 ARG 1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 91 CYS 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 G 122 HIS 1 H 31 LEU 1 H 12 HIS 1 H 122 HIS 1 H 172 ARG 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 I 17 PHE 1 I 13 LEU 1 I 13 CYS 1 I 168	1	F	160	SER
1 F 193 ASN 1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 91 CYS 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 122 HIS 1 H 172 ARG 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 I 17 PHE 1 I 17 PHE 1 I 131 LEU 1 I 17	1	F	166	ARG
1 G 22 ARG 1 G 31 LEU 1 G 34 GLN 1 G 91 CYS 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 122 HIS 1 H 122 HIS 1 H 122 HIS 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 I 17 PHE 1 I 17 PHE 1 I 131 LEU 1 I 132 LEU 1 I 17 PHE 1 J <td>1</td> <td>F</td> <td>193</td> <td>ASN</td>	1	F	193	ASN
1 G 31 LEU 1 G 34 GLN 1 G 91 CYS 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 31 LEU 1 H 31 LEU 1 H 56 GLU 1 H 122 HIS 1 H 122 HIS 1 H 122 HIS 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 I 17 PHE 1 I 17 PHE 1 I 13 LEU 1 I 168 THR 1 I 17 PHE 1 J 19 ILE 1 J	1	G	22	ARG
1 G 34 GLN 1 G 91 CYS 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 31 LEU 1 H 56 GLU 1 H 122 HIS 1 H 122 HIS 1 H 172 ARG 1 H 174 LEU 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 H 184 LEU 1 I 17 PHE 1 I 131 LEU 1 I 131 LEU 1 I 168 THR 1 I 172 ARG 1 J 17 PHE 1 J </td <td>1</td> <td>G</td> <td>31</td> <td>LEU</td>	1	G	31	LEU
1 G 91 CYS 1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 31 LEU 1 H 56 GLU 1 H 172 ARG 1 H 174 LEU 1 I 17 PHE 1 I 19 ILE 1 I 23 LEU 1 I 168 THR 1 I 168 THR 1 I 172 ARG 1 J 19 ILE 1 J 19 MET 1 J <td>1</td> <td>G</td> <td>34</td> <td>GLN</td>	1	G	34	GLN
1 G 114 LEU 1 G 122 HIS 1 H 31 LEU 1 H 31 LEU 1 H 56 GLU 1 H 122 HIS 1 H 122 HIS 1 H 122 HIS 1 H 172 ARG 1 H 174 LEU 1 H 174 LEU 1 H 184 LEU 1 H 174 PHE 1 I 19 ILE 1 I 23 LEU 1 I 23 LEU 1 I 131 CYS 1 I 113 CYS 1 I 122 HIS 1 I 177 PHE 1 J 19 ILE 1 J 19 MET 1 J </td <td>1</td> <td>G</td> <td>91</td> <td>CYS</td>	1	G	91	CYS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	G	114	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	G	122	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	31	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	56	GLU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	122	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	172	ARG
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	174	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	184	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	17	PHE
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	19	ILE
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	21	SER
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	23	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	31	LEU
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1	Ι	56	GLU
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1	Ι	113	CYS
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1	Ι	122	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	168	THR
1 J 17 PHE 1 J 19 ILE 1 J 31 LEU 1 J 39 MET 1 J 42 LEU 1 J 56 GLU 1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 136 GLU	1	Ι	172	ARG
1 J 19 ILE 1 J 31 LEU 1 J 39 MET 1 J 42 LEU 1 J 56 GLU 1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 136 GLU	1	J	17	PHE
1 J 31 LEU 1 J 39 MET 1 J 42 LEU 1 J 56 GLU 1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	19	ILE
1 J 39 MET 1 J 42 LEU 1 J 56 GLU 1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	31	LEU
1 J 42 LEU 1 J 56 GLU 1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	39	MET
1 J 56 GLU 1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	42	LEU
1 J 108 LYS 1 J 112 PHE 1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	56	GLU
1 J 112 PHE 1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	108	LYS
1 J 121 ILE 1 J 122 HIS 1 J 136 GLU	1	J	112	PHE
1 J 122 HIS 1 J 136 GLU	1	J	121	ILE
1 J 136 GLU	1	J	122	HIS
	1	J	136	GLU
1 J 142 ILE	1	J	142	ILE
1 J 159 GLN	1	J	159	GLN



Mol	Chain	Res	Type
1	J	162	GLU
1	J	172	ARG
1	J	184	LEU
1	K	17	PHE
1	K	111	ARG
1	K	113	CYS
1	K	115	PRO
1	K	122	HIS
1	K	123	GLN
1	K	136	GLU
1	K	155	LEU
1	K	163	GLN
1	K	180	VAL
1	K	181	GLU
1	L	17	PHE
1	L	31	LEU
1	L	56	GLU
1	L	91	CYS
1	L	108	LYS
1	L	122	HIS
1	L	155	LEU
1	L	174	LEU
1	М	17	PHE
1	М	19	ILE
1	М	22	ARG
1	М	31	LEU
1	М	34	GLN
1	М	56	GLU
1	М	113	CYS
1	М	122	HIS
1	М	124	PRO
1	М	161	LEU
1	М	172	ARG
1	М	190	THR
1	Ν	22	ARG
1	Ν	26	GLU
1	Ν	31	LEU
1	Ν	39	MET
1	Ν	104	THR
1	N	113	CYS
1	N	122	HIS
1	Ν	123	GLN



Mol	Chain	Res	Type
1	N	172	ARG
1	0	17	PHE
1	0	19	ILE
1	0	31	LEU
1	0	79	THR
1	0	81	GLN
1	0	87	VAL
1	0	114	LEU
1	0	115	PRO
1	0	122	HIS
1	0	164	ILE
1	0	167	ASP
1	Ο	177	PRO
1	Ο	189	LEU
1	Р	31	LEU
1	Р	56	GLU
1	Р	66	PRO
1	Р	81	GLN
1	Р	104	THR
1	Р	112	PHE
1	Р	122	HIS
1	Р	166	ARG
1	Р	178	GLU
1	Р	185	VAL
1	Q	25	LYS
1	Q	31	LEU
1	Q	56	GLU
1	Q	114	LEU
1	Q	118	ARG
1	Q	122	HIS
1	Q	123	GLN
1	Q	155	LEU
1	Q	186	ASP
1	R	15	ARG
1	R	19	ILE
1	R	31	LEU
1	R	56	GLU
1	R	113	CYS
1	R	118	ARG
1	R	120	MET
1	R	122	HIS
1	R	136	GLU



Mol	Chain	Res	Type
1	R	172	ARG
1	R	174	LEU
1	R	184	LEU
1	R	193	ASN
1	S	15	ARG
1	S	17	PHE
1	S	22	ARG
1	S	31	LEU
1	S	56	GLU
1	S	122	HIS
1	S	136	GLU
1	S	161	LEU
1	S	163	GLN
1	S	189	LEU
1	Т	15	ARG
1	Т	17	PHE
1	Т	22	ARG
1	Т	122	HIS
1	Т	167	ASP
1	Т	172	ARG
1	Т	184	LEU
1	U	31	LEU
1	U	47	MET
1	U	81	GLN
1	U	91	CYS
1	U	108	LYS
1	U	122	HIS
1	U	162	GLU
1	V	17	PHE
1	V	19	ILE
1	V	81	GLN
1	V	118	ARG
1	V	122	HIS
1	V	142	ILE
1	V	155	LEU
1	V	184	LEU
1	W	31	LEU
1	W	36	GLU
1	W	66	PRO
1	W	121	ILE
1	W	122	HIS
1	W	170	ARG



1 W 172 ARG 1 W 175 SER 1 W 184 LEU 1 W 192 ARG 1 X 15 ARG 1 X 17 PHE 1 X 17 PHE 1 X 17 THR 1 X 11 CYS 1 X 113 CYS 1 X 118 ARG 1 X 113 CYS 1 X 113 CYS 1 X 118 ARG 1 X 122 HIS 1 X 165 GLU 1 X 190 THR 1 X 190 THR 1 Y 94 GLN 1 Y 104 THR 1 Y 162	Mol	Chain	Res	Type
1 W 175 SER 1 W 184 LEU 1 W 192 ARG 1 X 15 ARG 1 X 17 PHE 1 X 17 PHE 1 X 17 THR 1 X 13 CYS 1 X 113 CYS 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 167 ASP 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 104 THR 1 Y 162 GLU 1 Y 162	1	W	172	ARG
1 W 184 LEU 1 W 192 ARG 1 X 15 ARG 1 X 17 PHE 1 X 31 LEU 1 X 71 THR 1 X 113 CYS 1 X 113 CYS 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 104 THR 1 Y 162 GLU 1 Y 155 LEU 1 Z 17	1	W	175	SER
1 W 192 ARG 1 X 15 ARG 1 X 17 PHE 1 X 31 LEU 1 X 113 CYS 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 104 THR 1 Y 104 THR 1 Y 162 GLU 1 Y 162	1	W	184	LEU
1 X 15 ARG 1 X 17 PHE 1 X 31 LEU 1 X 71 THR 1 X 113 CYS 1 X 118 ARG 1 X 112 HIS 1 X 122 HIS 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 166 ARG 1 X 166 ARG 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 104 THR 1 Y 162 GLU 1 Y 155 LEU 1 Z 17 PHE 1 Z 19	1	W	192	ARG
1 X 17 PHE 1 X 31 LEU 1 X 71 THR 1 X 113 CYS 1 X 113 CYS 1 X 122 HIS 1 X 122 HIS 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 104 THR 1 Y 104 THR 1 Y 155 LEU 1 Y 162 GLU 1 Y 162 GLU 1 Z 17	1	Х	15	ARG
1 X 31 LEU 1 X 71 THR 1 X 113 CYS 1 X 118 ARG 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 166 ARG 1 X 190 THR 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 104 THR 1 Y 104 THR 1 Y 104 THR 1 Y 162 GLU 1 Y 162 GLU 1 Z 17 PHE 1 Z 19	1	Х	17	PHE
1 X 71 THR 1 X 113 CYS 1 X 118 ARG 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 191 HIS 1 Y 31 LEU 1 Y 104 THR 1 Y 104 THR 1 Y 122 HIS 1 Y 155 LEU 1 Y 162 GLU 1 Z 17 PHE 1 Z 19 ILE 1 Z 10	1	Х	31	LEU
1 X 113 CYS 1 X 118 ARG 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 88 SER 1 Y 104 THR 1 Y 104 THR 1 Y 122 HIS 1 Y 155 LEU 1 Y 162 GLU 1 Z 17 PHE 1 Z 10	1	Х	71	THR
1 X 118 ARG 1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 X 190 THR 1 Y 31 LEU 1 Y 31 LEU 1 Y 94 GLN 1 Y 104 THR 1 Y 104 THR 1 Y 122 HIS 1 Y 155 LEU 1 Y 162 GLU 1 Y 184 LEU 1 Z 17 PHE 1 Z 16 ASN 1 Z 116 ASN 1	1	Х	113	CYS
1 X 122 HIS 1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 191 HIS 1 Y 31 LEU 1 Y 31 LEU 1 Y 94 GLN 1 Y 104 THR 1 Y 104 THR 1 Y 118 ARG 1 Y 122 HIS 1 Y 155 LEU 1 Y 162 GLU 1 Z 17 PHE 1 Z 19 ILE 1 Z 116 ASN 1 Z 116	1	Х	118	ARG
1 X 149 MET 1 X 165 GLU 1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 190 THR 1 X 191 HIS 1 Y 31 LEU 1 Y 31 LEU 1 Y 94 GLN 1 Y 94 GLN 1 Y 104 THR 1 Y 104 THR 1 Y 162 GLU 1 Y 155 LEU 1 Y 162 GLU 1 Z 17 PHE 1 Z 19 ILE 1 Z 22 ARG 1 Z 16 GLN 1 Z 16 ASN 1 Z 116 ASN 1 Z <td>1</td> <td>Х</td> <td>122</td> <td>HIS</td>	1	Х	122	HIS
1 X 165 GLU 1 X 166 ARG 1 X 190 THR 1 X 190 THR 1 X 191 HIS 1 Y 31 LEU 1 Y 88 SER 1 Y 94 GLN 1 Y 94 GLN 1 Y 94 GLN 1 Y 104 THR 1 Y 118 ARG 1 Y 122 HIS 1 Y 155 LEU 1 Y 162 GLU 1 Y 162 GLU 1 Z 17 PHE 1 Z 19 ILE 1 Z 19 ILE 1 Z 31 LEU 1 Z 116 ASN 1 Z 123 GLN 1 Z <td>1</td> <td>Х</td> <td>149</td> <td>MET</td>	1	Х	149	MET
1 X 166 ARG 1 X 167 ASP 1 X 190 THR 1 X 191 HIS 1 Y 31 LEU 1 Y 31 LEU 1 Y 88 SER 1 Y 94 GLN 1 Y 104 THR 1 Y 162 GLU 1 Y 155 LEU 1 Y 162 GLU 1 Z 17 PHE 1 Z 19 ILE 1 Z 11 EU 1 Z 31 LEU 1 Z 114 LEU 1 Z 123 GLN 1 Z <td>1</td> <td>Х</td> <td>165</td> <td>GLU</td>	1	Х	165	GLU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Х	166	ARG
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Х	167	ASP
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Х	190	THR
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Х	191	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	31	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	88	SER
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	94	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	104	THR
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	118	ARG
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	122	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	155	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	162	GLU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Y	184	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ζ	17	PHE
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Z	19	ILE
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ζ	22	ARG
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ζ	31	LEU
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ζ	56	GLU
1 Z 114 LEU 1 Z 116 ASN 1 Z 122 HIS 1 Z 123 GLN 1 Z 129 GLN 1 Z 136 GLU 1 Z 155 LEU 1 Z 160 SER 1 Z 184 LEU	1	Ζ	81	GLN
1 Z 116 ASN 1 Z 122 HIS 1 Z 123 GLN 1 Z 129 GLN 1 Z 136 GLU 1 Z 155 LEU 1 Z 160 SER 1 Z 184 LEU	1	Z	114	LEU
1 Z 122 HIS 1 Z 123 GLN 1 Z 129 GLN 1 Z 136 GLU 1 Z 155 LEU 1 Z 160 SER 1 Z 172 ARG 1 Z 184 LEU	1	Ζ	116	ASN
1 Z 123 GLN 1 Z 129 GLN 1 Z 136 GLU 1 Z 155 LEU 1 Z 160 SER 1 Z 172 ARG 1 Z 184 LEU	1	Ζ	122	HIS
1 Z 129 GLN 1 Z 136 GLU 1 Z 155 LEU 1 Z 160 SER 1 Z 172 ARG 1 Z 184 LEU	1	Ζ	123	GLN
1 Z 136 GLU 1 Z 155 LEU 1 Z 160 SER 1 Z 172 ARG 1 Z 184 LEU	1	Ζ	129	GLN
1 Z 155 LEU 1 Z 160 SER 1 Z 172 ARG 1 Z 184 LEU	1	Z	136	GLU
1 Z 160 SER 1 Z 172 ARG 1 Z 184 LEU	1	Ζ	155	LEU
1 Z 172 ARG 1 Z 184 LEU	1	Ζ	160	SER
1 Z 184 LEU	1	Ζ	172	ARG
	1	Ζ	184	LEU



Mol	Chain	Res	Type
1	Ζ	185	VAL
1	Ζ	192	ARG
1	a	15	ARG
1	a	19	ILE
1	a	22	ARG
1	a	31	LEU
1	a	56	GLU
1	a	65	SER
1	a	71	THR
1	a	122	HIS
1	a	184	LEU
1	b	17	PHE
1	b	19	ILE
1	b	31	LEU
1	b	34	GLN
1	b	36	GLU
1	b	91	CYS
1	b	122	HIS
1	b	136	GLU
1	b	148	ARG
1	b	172	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (159) such sidechains are listed below:

Mol	Chain	Res	Type
1	А	34	GLN
1	А	116	ASN
1	А	123	GLN
1	А	156	HIS
1	В	41	ASN
1	В	123	GLN
1	В	156	HIS
1	С	41	ASN
1	С	116	ASN
1	С	123	GLN
1	С	129	GLN
1	С	156	HIS
1	D	34	GLN
1	D	41	ASN
1	D	116	ASN
1	D	123	GLN
1	D	156	HIS



1 E 34 GLN 1 E 116 ASN 1 E 123 GLN 1 E 156 HIS 1 E 163 GLN 1 E 191 HIS 1 F 41 ASN 1 F 123 GLN 1 F 123 GLN 1 F 123 GLN 1 F 123 GLN 1 F 163 GLN 1 F 163 GLN 1 G 34 GLN 1 G 123 GLN 1 G 123 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 <th>Mol</th> <th>Chain</th> <th>Res</th> <th>Type</th>	Mol	Chain	Res	Type
1 E 116 ASN 1 E 123 GLN 1 E 156 HIS 1 E 163 GLN 1 E 191 HIS 1 F 41 ASN 1 F 116 ASN 1 F 123 GLN 1 F 123 GLN 1 F 123 GLN 1 F 163 GLN 1 F 163 GLN 1 G 34 GLN 1 G 16 ASN 1 G 123 GLN 1 G 156 HIS 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 H 164 <td>1</td> <td>Е</td> <td>34</td> <td>GLN</td>	1	Е	34	GLN
1 E 123 GLN 1 E 156 HIS 1 E 191 HIS 1 F 41 ASN 1 F 116 ASN 1 F 123 GLN 1 F 123 GLN 1 F 123 GLN 1 F 126 HIS 1 F 163 GLN 1 F 163 GLN 1 F 163 GLN 1 G 34 GLN 1 G 123 GLN 1 G 123 GLN 1 H 163 GLN 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 J 123 <td>1</td> <td>Е</td> <td>116</td> <td>ASN</td>	1	Е	116	ASN
1 E 156 HIS 1 E 191 HIS 1 F 11 ASN 1 F 116 ASN 1 F 123 GLN 1 F 123 GLN 1 F 123 GLN 1 F 156 HIS 1 F 163 GLN 1 G 34 GLN 1 G 34 GLN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 I 116 ASN 1 J 14	1	Е	123	GLN
1 E 163 GLN 1 F 191 HIS 1 F 41 ASN 1 F 116 ASN 1 F 123 GLN 1 F 129 GLN 1 F 163 GLN 1 F 163 GLN 1 F 163 GLN 1 G 34 GLN 1 G 116 ASN 1 G 116 ASN 1 G 123 GLN 1 H 123 GLN 1 H 163 GLN 1 J 34 GLN 1 J 16	1	Е	156	HIS
1 E 191 HIS 1 F 41 ASN 1 F 116 ASN 1 F 123 GLN 1 F 129 GLN 1 F 163 GLN 1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 163 GLN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 163 GLN 1 I 164 ASN 1 J 34 GLN 1 J 16	1	Е	163	GLN
1 F 41 ASN 1 F 116 ASN 1 F 123 GLN 1 F 129 GLN 1 F 156 HIS 1 F 163 GLN 1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 163 GLN 1 G 116 ASN 1 G 123 GLN 1 H 166 HIS 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 I 116 ASN 1 J 34 GLN 1 J 141 ASN 1 J 150	1	Е	191	HIS
1 F 116 ASN 1 F 123 GLN 1 F 129 GLN 1 F 156 HIS 1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 I 16 ASN 1 I 16 ASN 1 J 34 GLN 1 J 16 ASN 1 J 150	1	F	41	ASN
1 F 123 GLN 1 F 129 GLN 1 F 156 HIS 1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 H 163 GLN 1 I 116 ASN 1 I 123 GLN 1 J 14 ASN 1 J 150 ASN 1 J 150 <td>1</td> <td>F</td> <td>116</td> <td>ASN</td>	1	F	116	ASN
1 F 129 GLN 1 F 156 HIS 1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 123 GLN 1 G 156 HIS 1 H 16 ASN 1 H 163 GLN 1 I 116 ASN 1 I 123 GLN 1 J 34 GLN 1 J 16 ASN 1 J 150 ASN 1 J 150	1	F	123	GLN
1 F 156 HIS 1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 G 156 HIS 1 H 116 ASN 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 I 16 ASN 1 I 123 GLN 1 J 34 GLN 1 J 141 ASN 1 J 123 GLN 1 J 150 ASN 1 J 150 ASN 1 J 159	1	F	129	GLN
1 F 163 GLN 1 G 34 GLN 1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 G 156 HIS 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 I 16 ASN 1 I 16 ASN 1 I 16 ASN 1 J 34 GLN 1 J 16 ASN 1 J 123 GLN 1 J 123 GLN 1 J 150 ASN 1 J 159	1	F	156	HIS
1 G 34 GLN 1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 H 123 GLN 1 H 116 ASN 1 H 123 GLN 1 H 123 GLN 1 H 123 GLN 1 H 163 GLN 1 H 163 GLN 1 I 116 ASN 1 I 123 GLN 1 J 34 GLN 1 J 14 ASN 1 J 14 ASN 1 J 123 GLN 1 J 150 ASN 1 J 150 ASN 1 J 150 GLN	1	F	163	GLN
1 G 41 ASN 1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 H 166 HIS 1 H 123 GLN 1 H 126 HIS 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 I 16 ASN 1 I 16 ASN 1 J 34 GLN 1 J 34 GLN 1 J 16 ASN 1 J 123 GLN 1 J 123 GLN 1 J 150 ASN 1 J 159 GLN 1 J 159 GLN 1 K	1	G	34	GLN
1 G 116 ASN 1 G 123 GLN 1 G 156 HIS 1 H 116 ASN 1 H 116 ASN 1 H 123 GLN 1 H 123 GLN 1 H 156 HIS 1 H 163 GLN 1 H 163 GLN 1 H 163 GLN 1 I 16 ASN 1 I 16 ASN 1 I 123 GLN 1 J 34 GLN 1 J 94 GLN 1 J 123 GLN 1 J 150 ASN 1 J 150 ASN 1 J 159 GLN 1 J 159 GLN 1 K 41 ASN 1	1	G	41	ASN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	G	116	ASN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	G	123	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	G	156	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	116	ASN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	123	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	156	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Н	163	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	41	ASN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	116	ASN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	123	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Ι	156	HIS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	J	34	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	J	41	ASN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	J	94	GLN
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	J	116	ASN
1 J 150 ASN 1 J 156 HIS 1 J 159 GLN 1 J 191 HIS 1 J 191 HIS 1 K 41 ASN 1 K 46 GLN 1 K 166 ASN 1 K 166 GLN 1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 191 HIS 1 K 191 HIS 1 L 41 ASN	1	J	123	GLN
1 J 156 HIS 1 J 159 GLN 1 J 191 HIS 1 J 191 HIS 1 K 41 ASN 1 K 46 GLN 1 K 116 ASN 1 K 123 GLN 1 K 156 HIS 1 K 156 HIS 1 K 163 GLN 1 K 191 HIS 1 K 183 GLN 1 K 163 GLN 1 K 191 HIS 1 L 41 ASN	1	J	150	ASN
1 J 159 GLN 1 J 191 HIS 1 K 41 ASN 1 K 46 GLN 1 K 16 ASN 1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 191 HIS 1 K 183 GLN 1 K 163 GLN 1 K 191 HIS 1 L 41 ASN	1	J	156	HIS
1 J 191 HIS 1 K 41 ASN 1 K 46 GLN 1 K 116 ASN 1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 163 GLN 1 K 163 SLN 1 L 41 ASN	1	J	159	GLN
1 K 41 ASN 1 K 46 GLN 1 K 116 ASN 1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 191 HIS 1 L 41 ASN	1	J	191	HIS
1 K 46 GLN 1 K 116 ASN 1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 163 GLN 1 K 140 HIS 1 L 41 ASN	1	K	41	ASN
1 K 116 ASN 1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 163 GLN 1 K 140 HIS 1 L 41 ASN	1	K	46	GLN
1 K 123 GLN 1 K 156 HIS 1 K 163 GLN 1 K 191 HIS 1 L 41 ASN	1	K	116	ASN
1 K 156 HIS 1 K 163 GLN 1 K 191 HIS 1 L 41 ASN	1	K	123	GLN
1 K 163 GLN 1 K 191 HIS 1 L 41 ASN	1	K	156	HIS
1 K 191 HIS 1 L 41 ASN	1	K	163	GLN
1 L 41 ASN	1	K	191	HIS
	1	L	41	ASN



Mol	Chain	Res	Type
1	L	46	GLN
1	L	123	GLN
1	L	156	HIS
1	L	193	ASN
1	М	34	GLN
1	М	41	ASN
1	М	116	ASN
1	М	123	GLN
1	М	156	HIS
1	М	163	GLN
1	Ν	34	GLN
1	Ν	123	GLN
1	Ν	129	GLN
1	Ν	156	HIS
1	0	34	GLN
1	0	41	ASN
1	0	122	HIS
1	0	123	GLN
1	0	129	GLN
1	0	156	HIS
1	0	159	GLN
1	0	163	GLN
1	0	191	HIS
1	0	193	ASN
1	Р	41	ASN
1	Р	94	GLN
1	Р	116	ASN
1	Р	123	GLN
1	Р	156	HIS
1	Q	41	ASN
1	Q	116	ASN
1	Q	123	GLN
1	Q	129	GLN
1	Q	156	HIS
1	Q	163	GLN
1	R	41	ASN
1	R	46	GLN
1	R	116	ASN
1	R	123	GLN
1	R	156	HIS
1	R	193	ASN
1	S	34	GLN



Mol	Chain	Res	Type
1	S	41	ASN
1	S	116	ASN
1	S	123	GLN
1	S	129	GLN
1	S	156	HIS
1	Т	116	ASN
1	Т	123	GLN
1	Т	156	HIS
1	Т	163	GLN
1	U	41	ASN
1	U	54	ASN
1	U	81	GLN
1	U	116	ASN
1	U	123	GLN
1	U	156	HIS
1	V	34	GLN
1	V	41	ASN
1	V	116	ASN
1	V	123	GLN
1	V	138	HIS
1	V	150	ASN
1	V	156	HIS
1	V	163	GLN
1	W	34	GLN
1	W	94	GLN
1	W	129	GLN
1	W	156	HIS
1	W	163	GLN
1	Х	34	GLN
1	Х	41	ASN
1	X	116	ASN
1	X	123	GLN
1	X	129	GLN
1	X	156	HIS
1	Х	159	GLN
1	Х	163	GLN
1	Y	41	ASN
1	Y	116	ASN
1	Y	123	GLN
1	Y	156	HIS
1	Z	41	ASN
1	Z	123	GLN



Mol	Chain	Res	Type
1	Z	156	HIS
1	Ζ	163	GLN
1	a	41	ASN
1	a	116	ASN
1	a	122	HIS
1	a	123	GLN
1	a	156	HIS
1	a	163	GLN
1	b	34	GLN
1	b	41	ASN
1	b	116	ASN
1	b	123	GLN
1	b	150	ASN
1	b	156	HIS
1	b	163	GLN
1	b	191	HIS

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 (i)

There are no chain breaks in this entry.



6 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates (i)

EDS was not executed - this section is therefore empty.

6.4 Ligands (i)

EDS was not executed - this section is therefore empty.

6.5 Other polymers (i)

EDS was not executed - this section is therefore empty.

