



# Full wwPDB NMR Structure Validation Report ⓘ

Feb 14, 2022 – 09:37 AM EST

PDB ID : 1J5N  
Title : Solution Structure of the Non-Sequence-Specific HMGB protein NHP6A in complex with SRY DNA  
Authors : Masse, J.E.; Wong, B.; Yen, Y.-M.; Allain, F.H.-T.; Johnson, R.C.; Feigon, J.  
Deposited on : 2002-05-15

This is a Full wwPDB NMR 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/NMRValidationReportHelp>

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  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
RCI : v\_1n\_11\_5\_13\_A (Berjanski et al., 2005)  
PANAV : Wang et al. (2010)  
ShiftChecker : 2.26  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.26

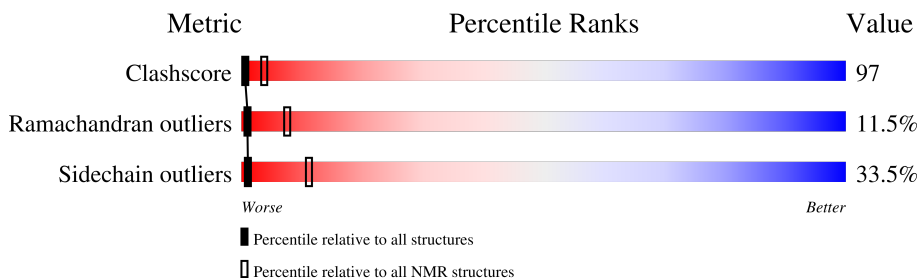
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment was not calculated.

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)	NMR archive (#Entries)
Clashscore	158937	12864
Ramachandran outliers	154571	11451
Sidechain outliers	154315	11428

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and 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  $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	B	15	33% 67%
2	C	15	13% 87%
3	A	93	51% 22% 23%

## 2 Ensemble composition and analysis

This entry contains 20 models. Model 1 is the overall representative, medoid model (most similar to other models).

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:17-A:88 (72)	0.26	1

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 3 clusters and 2 single-model clusters were found.

Cluster number	Models
1	1, 3, 4, 5, 6, 7, 9, 10, 11, 13, 17, 19, 20
2	2, 14, 18
3	12, 15
Single-model clusters	8; 16

### 3 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 2489 atoms, of which 1119 are hydrogens and 0 are deuteriums.

- Molecule 1 is a DNA chain called 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		P
1	B	15	484	149	172	58	91	14	0

- Molecule 2 is a DNA chain called 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		P
2	C	15	466	143	169	55	85	14	0

- Molecule 3 is a protein called Nonhistone chromosomal protein 6A.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		S
3	A	93	1539	478	778	138	143	2	0

## 4 Residue-property plots [i](#)

### 4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-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 outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  33% 67%

G101  
G102  
G103  
G104  
G105  
G106  
G107  
G108  
G109  
G110  
G111  
G112  
G113  
G114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C:  13% 87%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:  51% 22% 23%

H1  
H2  
T3  
F4  
H5  
E6  
P7  
K8  
R9  
R10  
T11  
T12  
R13  
K14  
K15  
K16  
D17  
P18  
M19  
A20  
F21  
K22  
K23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
K33  
E34  
K35  
R36  
D37  
L38  
V39  
R40  
S41  
E42  
K43  
P44  
D45  
T46  
T47  
F48  
G49  
N51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
Q75  
A76  
D77  
K78  
K79  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
M89  
A90  
T91  
L92  
A93

### 4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

#### 4.2.1 Score per residue for model 1 (medoid)

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  33% 67%

G101  
G102  
G103  
G104  
G105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 7% 93%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 6% 51% 18% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K6  
Q68  
K9  
Y70  
E71  
T11  
T12  
R13  
K14  
A74  
D77  
K15  
K16  
D17  
K78  
P18  
R80  
N19  
A20  
P21  
E82  
S83  
E84  
K85  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
L38  
V39  
R40  
S41  
E42  
N43  
P44  
D45  
T47  
F48  
G49  
O50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
T11  
T12  
R13  
K14  
A74  
D77  
K78  
R79  
R80  
Y81  
E82  
S83  
E84  
K85  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

#### 4.2.2 Score per residue for model 2

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 33% 67%

G101  
G102  
G103  
G104  
G105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 20% 80%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 5% 45% 22% 5% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K6  
Q68  
P69  
Y70  
E71  
T11  
T12  
R13  
K14  
A74  
D77  
K15  
K16  
D17  
K78  
P18  
R80  
N19  
A20  
P21  
E82  
S83  
E84  
K85  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
L38  
V39  
R40  
S41  
E42  
N43  
P44  
D45  
T47  
F48  
G49  
O50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
T11  
T12  
R13  
K14  
A74  
D77  
K78  
R79  
R80  
Y81  
E82  
S83  
E84  
K85  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

#### 4.2.3 Score per residue for model 3

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  40% 60%

G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C:  13% 87%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:  5% 47% 20% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
K9  
R10  
T11  
T12  
R13  
K14  
K15  
K16  
D17  
P18  
N19  
A20  
P21  
K22  
R23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
I38  
V39  
R40  
S41  
E42  
N43  
P44  
D45  
I46  
T47  
F48  
G49  
Q50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
D77  
K78  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
R89  
A90  
T91  
L92  
A93

#### 4.2.4 Score per residue for model 4

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  33% 67%

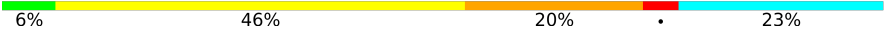
G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C:  20% 80%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:  6% 46% 20% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
K9  
R10  
T11  
T12  
R13  
K14  
K15  
K16  
D17  
P18  
N19  
A20  
P21  
K22  
R23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
I38  
V39  
R40  
S41  
E42  
N43  
P44  
D45  
I46  
T47  
F48  
G49  
Q50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
D77  
K78  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
R89  
A90  
T91  
L92  
A93

### 4.2.5 Score per residue for model 5

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  40% 60%

G101 G102 G103 G104 G105 G106 G107 T108 T109 T110 T111 T112 C113 A114 G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'

Chain C:  27% 73%

C116 T117 G118 A119 A120 C121 A122 A123 T124 C125 A126 C127 C128 C129 C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:  8% 43% 24% 23%

M1 V2 T3 P4 R5 E6 P7 K8 K9 R10 T11 T12 T13 K14 K15 K16 D17 P18 M19 R20 A21 P21 R22 R23 A24 L25 E26 S27 A28 Y28 M29 F30 F31 A32 N33 N34 E35 N36 R37 D37 I38 V39 R40 S41 S42 E42 N43 P44 P45 I46 T47 F48 F49 Q50 V51 V52 K53 K54 L55 G56 E57 K58 W59 K60

A61 E62 T63 P64 E65 E66 K67 Q68 P69 Y70 E71 A72 K73 K74 A74 D77 K78 R79 R80 Y81 E82 S83 E84 K85 E86 L87 Y88 M89 A90 T91 L92 L93 A93

### 4.2.6 Score per residue for model 6

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  33% 67%

G101 G102 G103 G104 G105 G106 G107 T108 T109 T110 T111 T112 C113 A114 G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'

Chain C:  7% 93%

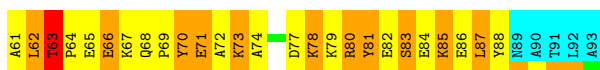
C116 T117 G118 A119 A120 C121 A122 A123 T124 C125 A126 C127 C128 C129 C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:  6% 45% 23% 23%

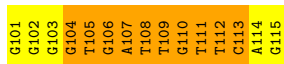
M1 V2 T3 P4 R5 E6 P7 K8 K9 R10 T11 T12 T13 K14 K15 K16 D17 P18 M19 R20 A21 P21 R22 R23 A24 L25 E26 S27 A28 Y28 M29 F30 F31 A32 N33 N34 E35 N36 R37 D37 I38 V39 R40 S41 S42 E42 N43 P44 P45 I46 T47 F48 F49 Q50 V51 V52 K53 K54 L55 G56 E57 K58 W59 K60



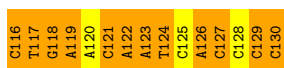


#### 4.2.7 Score per residue for model 7

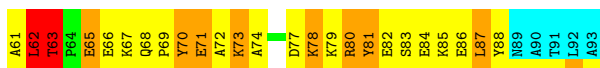
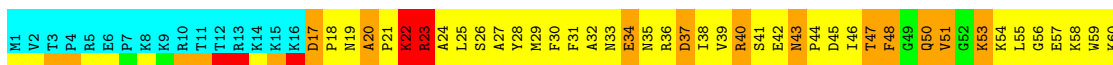
- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'



- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'



- Molecule 3: Nonhistone chromosomal protein 6A

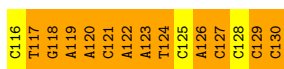


#### 4.2.8 Score per residue for model 8

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

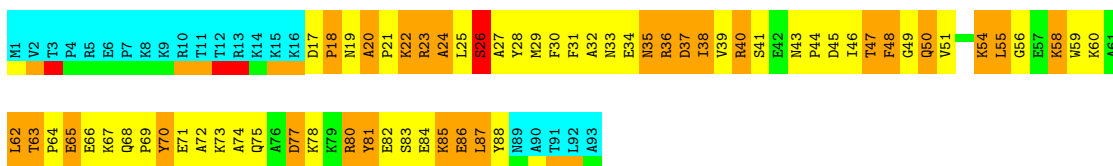


- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'



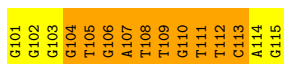
- Molecule 3: Nonhistone chromosomal protein 6A





#### 4.2.9 Score per residue for model 9

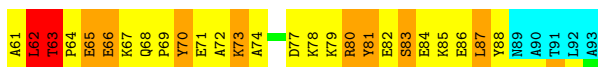
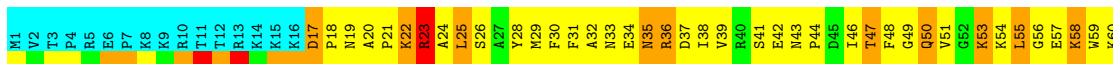
- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'



- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'

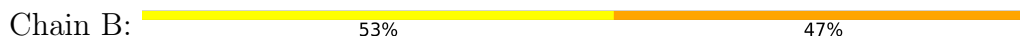


- Molecule 3: Nonhistone chromosomal protein 6A

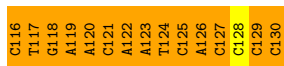


#### 4.2.10 Score per residue for model 10

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

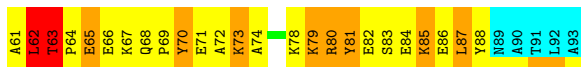


- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'



- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 44% 25% 23%



#### 4.2.11 Score per residue for model 11

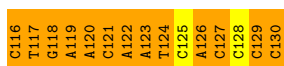
- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 47% 53%



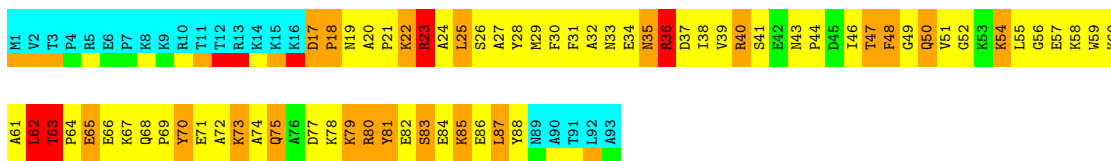
- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 13% 87%



- Molecule 3: Nonhistone chromosomal protein 6A

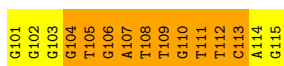
Chain A: 47% 22% 23%



#### 4.2.12 Score per residue for model 12

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 33% 67%



- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 13% 87%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 8% 41% 24% 5% 23%

M1 V2 T3 P4 R5 E6 P7 K8 K9 R10 T11 T12 R13 K14 K15 K16 D17 P18 N19 A20 P21 K22 R23 R24 A25 L26 S26 A27 Y28 M29 F30 F31 F32 A32 R33 E34 N35 R36 D37 I38 V39 R40 R41 S41 E42 N43 P44 D45 I46 T47 F48 F49 Q50 V51 G52 K53 K54 K55 L55 G56 E57 K58 W59 K60

A61 L62 T63 P64 E65 E66 K67 Q68 P69 Y70 E71 T72 A73 K73 A74 A75 A76 D77 K78 K79 R80 Y81 E82 S83 E84 K85 L85 E86 L87 Y88 M89 A90 T91 L92 L93 A93

#### 4.2.13 Score per residue for model 13

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 40% 60%

G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 20% 80%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 9% 43% 22% 23%

M1 V2 T3 P4 R5 E6 P7 K8 K9 R10 T11 T12 R13 K14 K15 K16 D17 P18 N19 A20 P21 K22 R23 R24 A25 L26 S26 A27 Y28 M29 F30 F31 F32 A32 R33 E34 N35 R36 D37 I38 V39 R40 R41 S41 E42 N43 P44 D45 I46 T47 F48 F49 Q50 V51 G52 K53 K54 K55 L55 G56 E57 K58 W59 K60

A61 L62 T63 P64 E65 E66 K67 Q68 P69 Y70 E71 T72 A73 K73 A74 A75 A76 D77 K78 K79 R80 Y81 E82 S83 E84 K85 L85 E86 L87 Y88 M89 A90 T91 L92 L93 A93

#### 4.2.14 Score per residue for model 14

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 33% 67%

G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C:

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
K9  
R10  
T11  
T12  
T13  
K14  
K15  
K16  
D17  
P18  
N19  
A20  
P21  
K22  
K23  
R23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
I38  
V39  
R40  
S41  
S41  
M43  
P44  
D45  
I46  
T47  
F48  
G49  
Q50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
Q75  
A76  
D77  
K78  
K79  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

#### 4.2.15 Score per residue for model 15

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:

G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C:

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
K9  
R10  
T11  
T12  
T13  
K14  
K15  
K16  
D17  
P18  
N19  
A20  
P21  
K22  
K23  
R23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
I38  
V39  
R40  
S41  
S41  
M43  
P44  
D45  
I46  
T47  
F48  
G49  
Q50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
Q75  
A76  
D77  
K78  
K79  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

#### 4.2.16 Score per residue for model 16

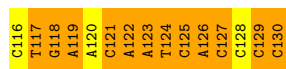
- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:

G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

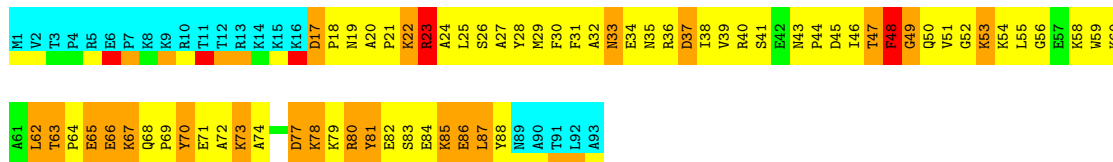
- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 



- Molecule 3: Nonhistone chromosomal protein 6A

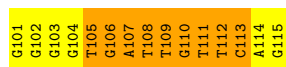
Chain A: 



#### 4.2.17 Score per residue for model 17

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 



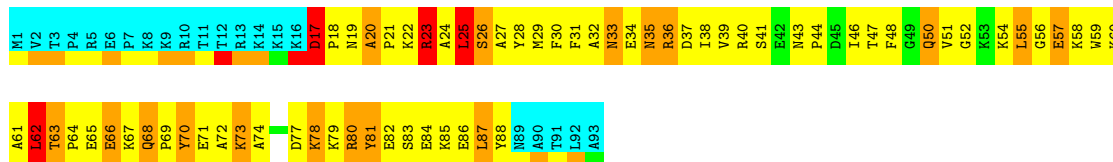
- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 



- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 



#### 4.2.18 Score per residue for model 18

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 

G101  
G102  
G103  
G104  
G105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 13% 87%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 5% 48% 17% 6% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
Q88  
K9  
R10  
Y70  
E71  
T11  
T12  
R13  
K14  
A74  
K15  
K16  
D17  
P18  
R19  
A20  
P21  
K22  
R23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
I38  
V39  
R40  
S41  
E42  
N43  
P44  
D45  
I46  
T47  
F48  
G49  
O50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
Q75  
K78  
K79  
R80  
Y81  
E82  
E83  
K85  
E86  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

#### 4.2.19 Score per residue for model 19

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B: 40% 60%

G101  
G102  
G103  
G104  
G105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*CP\*C)-3'

Chain C: 13% 87%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A: 10% 44% 19% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
Q88  
P69  
Y70  
E71  
A72  
K73  
A74  
K78  
K79  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
K78  
K79  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
N89  
A90  
T91  
L92  
A93

#### 4.2.20 Score per residue for model 20

- Molecule 1: 5'-D(\*GP\*GP\*GP\*GP\*TP\*GP\*AP\*TP\*TP\*GP\*TP\*TP\*CP\*AP\*G)-3'

Chain B:  27% 73%

G101  
G102  
G103  
G104  
T105  
G106  
A107  
T108  
T109  
G110  
T111  
T112  
C113  
A114  
G115

- Molecule 2: 5'-D(\*CP\*TP\*GP\*AP\*AP\*CP\*AP\*AP\*TP\*CP\*AP\*CP\*CP\*C)-3'

Chain C:  20% 80%

C116  
T117  
G118  
A119  
A120  
C121  
A122  
A123  
T124  
C125  
A126  
C127  
C128  
C129  
C130

- Molecule 3: Nonhistone chromosomal protein 6A

Chain A:  6% 45% 22% 23%

M1  
V2  
T3  
P4  
R5  
E6  
P7  
K8  
K9  
T10  
T11  
T12  
R13  
K14  
K15  
K16  
D17  
P18  
N19  
A20  
P21  
K22  
R23  
A24  
L25  
S26  
A27  
Y28  
M29  
F30  
F31  
A32  
N33  
E34  
N35  
R36  
D37  
I38  
V39  
R40  
S41  
E42  
N43  
P44  
D45  
I46  
T47  
F48  
G49  
Q50  
V51  
G52  
K53  
K54  
L55  
G56  
E57  
K58  
W59  
K60

A61  
L62  
T63  
P64  
E65  
E66  
K67  
Q68  
P69  
Y70  
E71  
A72  
K73  
A74  
Q75  
A76  
D77  
K78  
K79  
R80  
Y81  
E82  
S83  
E84  
K85  
E86  
L87  
Y88  
M89  
A90  
T91  
L92  
A93



## 5 Refinement protocol and experimental data overview

The models were refined using the following method: *simulated annealing*.

Of the 100 calculated structures, 20 were deposited, based on the following criterion: *structures with acceptable covalent geometry*.

The following table shows the software used for structure solution, optimisation and refinement.

Software name	Classification	Version
X-PLOR	refinement	3.1

No chemical shift data was provided.

## 6 Model quality i

### 6.1 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 (average) 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	B	1.08±0.01	0±0/350 ( 0.0± 0.1%)	2.24±0.02	35±1/541 ( 6.5± 0.2%)
2	C	1.09±0.02	0±0/332 ( 0.0± 0.0%)	2.22±0.02	25±1/508 ( 5.0± 0.1%)
3	A	0.21±0.00	0±0/604 ( 0.0± 0.0%)	0.32±0.00	0±0/812 ( 0.0± 0.0%)
All	All	0.80	2/25720 ( 0.0%)	1.69	1208/37220 ( 3.2%)

All unique bond outliers are listed below.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
1	B	109	DT	C5-C7	5.12	1.53	1.50	3	2

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
2	C	124	DT	O4'-C1'-N1	10.30	115.21	108.00	16	20
1	B	109	DT	O4'-C1'-N1	10.20	115.14	108.00	15	20
1	B	108	DT	O4'-C1'-N1	10.02	115.02	108.00	13	20
1	B	103	DG	O4'-C1'-N9	9.68	114.78	108.00	20	20
1	B	107	DA	O4'-C1'-N9	9.39	114.57	108.00	16	20
2	C	128	DC	O4'-C1'-N1	9.06	114.34	108.00	18	20
1	B	110	DG	O4'-C1'-N9	9.04	114.33	108.00	11	3
1	B	101	DG	O4'-C1'-N9	8.51	113.95	108.00	20	20
2	C	121	DC	O4'-C1'-N1	8.45	113.92	108.00	17	20
2	C	117	DT	C6-C5-C7	-8.36	117.88	122.90	7	20
2	C	122	DA	O4'-C1'-N9	8.25	113.78	108.00	16	20
2	C	116	DC	O4'-C4'-C3'	7.92	110.75	106.00	4	20
2	C	130	DC	O4'-C4'-C3'	7.87	110.72	106.00	4	20
2	C	127	DC	O4'-C1'-N1	7.60	113.32	108.00	17	20
2	C	125	DC	O4'-C1'-N1	7.54	113.28	108.00	9	20
2	C	119	DA	O4'-C4'-C3'	7.54	110.53	106.00	9	20
1	B	103	DG	O4'-C4'-C3'	7.39	110.43	106.00	3	20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	B	108	DT	C6-C5-C7	-7.37	118.48	122.90	10	20
1	B	106	DG	O4'-C4'-C3'	7.36	110.41	106.00	7	20
1	B	104	DG	O4'-C4'-C3'	7.34	110.41	106.00	4	20
1	B	101	DG	O4'-C4'-C3'	7.32	110.39	106.00	12	20
2	C	123	DA	O4'-C4'-C3'	7.17	110.30	106.00	11	20
1	B	108	DT	O4'-C4'-C3'	7.13	110.28	106.00	13	20
2	C	129	DC	O4'-C4'-C3'	7.10	110.26	106.00	9	20
2	C	128	DC	O4'-C4'-C3'	7.09	110.25	106.00	5	20
2	C	118	DG	O4'-C4'-C3'	7.07	110.24	106.00	3	20
1	B	102	DG	O4'-C4'-C3'	7.05	110.23	106.00	7	20
1	B	110	DG	O4'-C4'-C3'	7.01	110.21	106.00	13	20
1	B	115	DG	O4'-C4'-C3'	7.00	110.20	106.00	10	20
1	B	111	DT	O4'-C4'-C3'	7.00	110.20	106.00	15	20
1	B	107	DA	O4'-C4'-C3'	6.97	110.18	106.00	10	20
2	C	123	DA	O4'-C1'-N9	6.96	112.87	108.00	11	1
2	C	124	DT	O4'-C4'-C3'	6.94	110.16	106.00	2	20
2	C	122	DA	O4'-C4'-C3'	6.93	110.16	106.00	17	20
1	B	112	DT	O4'-C4'-C3'	6.92	110.15	106.00	11	20
1	B	102	DG	O4'-C1'-N9	6.87	112.81	108.00	5	20
2	C	121	DC	O4'-C4'-C3'	6.87	110.12	106.00	8	20
2	C	125	DC	O4'-C4'-C3'	6.81	110.09	106.00	2	20
1	B	105	DT	O4'-C4'-C3'	6.78	110.07	106.00	10	20
1	B	113	DC	O4'-C4'-C3'	6.76	110.06	106.00	14	20
2	C	126	DA	O4'-C4'-C3'	6.76	110.06	106.00	19	20
1	B	114	DA	O4'-C1'-N9	6.76	112.73	108.00	10	20
2	C	120	DA	O4'-C4'-C3'	6.76	110.05	106.00	16	20
2	C	117	DT	O4'-C4'-C3'	6.75	110.05	106.00	16	20
1	B	105	DT	O4'-C1'-N1	6.72	112.70	108.00	8	14
2	C	127	DC	O4'-C4'-C3'	6.68	110.01	106.00	6	20
1	B	114	DA	O4'-C4'-C3'	6.62	109.97	106.00	7	20
1	B	111	DT	O4'-C1'-N1	6.61	112.63	108.00	16	20
1	B	109	DT	O4'-C4'-C3'	6.58	109.95	106.00	16	20
1	B	109	DT	C6-C5-C7	-6.50	119.00	122.90	15	20
1	B	105	DT	C6-C5-C7	-6.39	119.07	122.90	10	20
2	C	126	DA	O4'-C1'-N9	6.21	112.34	108.00	10	4
2	C	124	DT	C6-C5-C7	-6.06	119.27	122.90	17	20
1	B	115	DG	O4'-C1'-N9	6.02	112.21	108.00	18	9
1	B	111	DT	C6-C5-C7	-6.00	119.30	122.90	16	20
1	B	108	DT	C4-C5-C6	5.86	121.52	118.00	10	20
1	B	109	DT	C4-C5-C6	5.65	121.39	118.00	16	20
2	C	117	DT	C4-C5-C6	5.62	121.38	118.00	18	20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
2	C	116	DC	C3'-C2'-C1'	5.61	109.23	102.50	14	3
2	C	124	DT	C4-C5-C6	5.57	121.34	118.00	11	15
1	B	111	DT	C4-C5-C6	5.52	121.31	118.00	16	20
1	B	105	DT	C4-C5-C6	5.49	121.29	118.00	3	20
1	B	104	DG	O4'-C1'-N9	5.46	111.82	108.00	5	16
1	B	112	DT	O4'-C1'-N1	5.40	111.78	108.00	5	11
2	C	120	DA	O4'-C1'-N9	5.38	111.77	108.00	17	1
1	B	113	DC	O4'-C1'-N1	5.36	111.75	108.00	20	18
1	B	112	DT	C6-C5-C7	-5.19	119.79	122.90	19	8
1	B	106	DG	O4'-C1'-N9	5.12	111.59	108.00	8	1
2	C	116	DC	C6-N1-C2	5.08	122.33	120.30	18	2
1	B	107	DA	C3'-C2'-C1'	5.07	108.59	102.50	2	1
1	B	112	DT	C4-C5-C6	5.00	121.00	118.00	1	1

There are no chirality outliers.

There are no planarity outliers.

## 6.2 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 each 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 averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	B	312	172	172	28±4
2	C	297	169	169	38±7
3	A	590	579	579	170±9
All	All	23980	18400	18400	4125

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 97.

All unique clashes are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:47:THR:O	3:A:51:VAL:HG12	0.93	1.63	19	11
3:A:59:TRP:O	3:A:62:LEU:HD12	0.93	1.64	5	19
2:C:116:DC:H4'	2:C:117:DT:OP1	0.90	1.66	14	3
3:A:23:ARG:NH2	3:A:24:ALA:HB3	0.90	1.80	8	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:C:126:DA:H4'	2:C:127:DC:OP1	0.89	1.67	13	6
1:B:110:DG:C5'	3:A:25:LEU:HD21	0.88	1.98	2	20
3:A:34:GLU:O	3:A:38:ILE:HD13	0.88	1.68	18	16
1:B:110:DG:H5''	3:A:25:LEU:HD21	0.87	1.46	18	19
3:A:25:LEU:HD23	3:A:29:MET:HB2	0.86	1.47	18	20
1:B:110:DG:OP1	3:A:25:LEU:HD11	0.86	1.70	16	2
3:A:87:LEU:HD23	3:A:88:TYR:N	0.85	1.87	19	3
3:A:35:ASN:HB2	3:A:55:LEU:HD21	0.82	1.52	1	10
2:C:120:DA:H4'	2:C:121:DC:OP1	0.82	1.71	17	1
2:C:124:DT:H4'	2:C:125:DC:OP1	0.81	1.77	9	13
3:A:30:PHE:CE2	3:A:74:ALA:HA	0.80	2.11	15	20
1:B:110:DG:O5'	3:A:25:LEU:HD21	0.79	1.78	16	1
3:A:39:VAL:HG12	3:A:51:VAL:HG22	0.78	1.54	1	1
3:A:68:GLN:O	3:A:72:ALA:HB3	0.76	1.79	8	20
2:C:118:DG:C6	2:C:119:DA:C6	0.76	2.74	17	20
3:A:63:THR:HG23	3:A:64:PRO:HD2	0.76	1.56	8	17
2:C:126:DA:C2	2:C:127:DC:C2	0.75	2.75	13	20
3:A:25:LEU:HD23	3:A:29:MET:CB	0.74	2.11	18	20
3:A:46:ILE:O	3:A:47:THR:CB	0.74	2.36	7	11
2:C:120:DA:C6	2:C:121:DC:C4	0.74	2.76	10	15
3:A:31:PHE:CG	3:A:59:TRP:CE3	0.74	2.76	16	20
2:C:119:DA:N3	3:A:48:PHE:CE2	0.72	2.57	17	3
3:A:35:ASN:CB	3:A:55:LEU:HD21	0.72	2.14	1	3
2:C:126:DA:C4	2:C:127:DC:C5	0.72	2.77	17	17
3:A:35:ASN:C	3:A:39:VAL:HG12	0.72	2.04	17	1
1:B:104:DG:N2	1:B:105:DT:C2	0.71	2.58	11	16
3:A:71:GLU:O	3:A:74:ALA:HB3	0.71	1.85	8	20
3:A:46:ILE:C	3:A:47:THR:HG23	0.71	2.04	13	1
1:B:106:DG:C6	1:B:107:DA:N6	0.71	2.59	12	5
3:A:46:ILE:HD12	3:A:50:GLN:HB2	0.71	1.63	1	1
3:A:62:LEU:O	3:A:63:THR:CB	0.71	2.39	1	20
3:A:23:ARG:HH21	3:A:24:ALA:HB3	0.70	1.46	8	1
2:C:120:DA:C5	2:C:121:DC:C5	0.70	2.79	10	13
3:A:23:ARG:HA	3:A:81:TYR:CE2	0.70	2.22	7	20
3:A:28:TYR:O	3:A:32:ALA:HB3	0.70	1.87	7	14
2:C:126:DA:C2	2:C:127:DC:N3	0.69	2.60	10	16
2:C:121:DC:N4	2:C:122:DA:N6	0.69	2.40	13	3
3:A:31:PHE:CE2	3:A:35:ASN:OD1	0.69	2.46	6	15
3:A:46:ILE:HD12	3:A:51:VAL:CA	0.69	2.17	4	7
3:A:35:ASN:O	3:A:38:ILE:N	0.69	2.26	17	16
3:A:17:ASP:CG	3:A:20:ALA:HB2	0.68	2.08	10	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:47:THR:C	3:A:51:VAL:HG12	0.68	2.09	15	6
2:C:116:DC:C2'	2:C:117:DT:C6	0.67	2.77	18	9
3:A:68:GLN:O	3:A:72:ALA:CB	0.67	2.42	8	20
3:A:50:GLN:N	3:A:50:GLN:CD	0.67	2.45	8	10
3:A:17:ASP:CB	3:A:20:ALA:HB2	0.67	2.19	5	6
3:A:17:ASP:HB3	3:A:20:ALA:HB2	0.67	1.64	9	2
1:B:110:DG:C4	3:A:29:MET:CE	0.67	2.78	15	5
2:C:118:DG:C5	2:C:119:DA:C6	0.67	2.83	18	20
3:A:46:ILE:O	3:A:47:THR:HG23	0.67	1.90	13	1
3:A:68:GLN:N	3:A:69:PRO:CD	0.66	2.58	5	17
2:C:127:DC:P	3:A:85:LYS:CE	0.66	2.84	10	5
3:A:46:ILE:O	3:A:50:GLN:HG3	0.66	1.89	13	9
3:A:24:ALA:HB2	3:A:77:ASP:O	0.66	1.91	16	1
3:A:38:ILE:HG22	3:A:39:VAL:N	0.66	2.05	18	20
1:B:110:DG:N3	3:A:29:MET:CE	0.66	2.58	15	4
3:A:21:PRO:O	3:A:22:LYS:CB	0.66	2.44	8	16
3:A:35:ASN:O	3:A:36:ARG:C	0.66	2.35	17	16
3:A:31:PHE:CE1	3:A:62:LEU:HD11	0.66	2.26	6	4
1:B:109:DT:C2	1:B:110:DG:N7	0.65	2.64	16	1
1:B:110:DG:C4	3:A:29:MET:SD	0.65	2.90	4	15
1:B:110:DG:O4'	3:A:29:MET:HE2	0.65	1.90	16	1
2:C:116:DC:H2'	2:C:117:DT:C6	0.65	2.27	18	9
2:C:119:DA:C6	2:C:120:DA:N6	0.65	2.64	17	1
3:A:28:TYR:O	3:A:32:ALA:CB	0.65	2.45	7	20
1:B:110:DG:N3	3:A:29:MET:HE1	0.65	2.06	16	5
3:A:21:PRO:O	3:A:22:LYS:HB2	0.65	1.92	3	20
3:A:50:GLN:N	3:A:50:GLN:NE2	0.65	2.44	8	9
1:B:112:DT:O2	3:A:48:PHE:CG	0.65	2.50	1	12
3:A:23:ARG:CA	3:A:81:TYR:CE2	0.64	2.80	19	20
3:A:66:GLU:O	3:A:70:TYR:CE2	0.64	2.50	17	13
3:A:23:ARG:O	3:A:81:TYR:CD2	0.64	2.51	15	13
3:A:28:TYR:HB3	3:A:29:MET:HE2	0.64	1.67	11	9
2:C:126:DA:C5	2:C:127:DC:C4	0.64	2.86	7	16
3:A:39:VAL:CG1	3:A:51:VAL:HG22	0.64	2.22	1	1
3:A:48:PHE:O	3:A:50:GLN:N	0.64	2.31	18	6
3:A:87:LEU:HD23	3:A:88:TYR:H	0.64	1.50	19	2
3:A:50:GLN:O	3:A:54:LYS:CB	0.64	2.46	17	20
3:A:22:LYS:O	3:A:23:ARG:O	0.64	2.16	17	20
3:A:81:TYR:CD1	3:A:82:GLU:N	0.64	2.66	2	18
1:B:106:DG:C6	1:B:107:DA:C6	0.64	2.86	12	5
3:A:23:ARG:N	3:A:81:TYR:CE2	0.63	2.66	13	19

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:63:THR:HG22	3:A:65:GLU:H	0.63	1.52	5	2
1:B:110:DG:N3	3:A:29:MET:SD	0.63	2.71	8	2
2:C:126:DA:OP2	2:C:126:DA:C8	0.63	2.51	13	1
2:C:120:DA:N6	2:C:121:DC:N4	0.63	2.46	10	11
3:A:31:PHE:CD1	3:A:32:ALA:N	0.63	2.67	16	1
2:C:126:DA:N3	2:C:127:DC:C2	0.63	2.67	19	6
3:A:67:LYS:C	3:A:69:PRO:HD2	0.63	2.14	17	17
2:C:123:DA:H4'	2:C:124:DT:OP1	0.62	1.93	11	2
1:B:110:DG:C4	3:A:29:MET:HE1	0.62	2.28	15	5
3:A:70:TYR:O	3:A:73:LYS:N	0.62	2.32	8	20
3:A:87:LEU:HD12	3:A:88:TYR:N	0.62	2.09	5	1
2:C:121:DC:O2	3:A:28:TYR:CZ	0.62	2.52	3	20
3:A:31:PHE:CD2	3:A:59:TRP:CE3	0.62	2.88	5	19
3:A:48:PHE:CG	3:A:49:GLY:N	0.62	2.67	14	6
3:A:37:ASP:OD2	3:A:38:ILE:HD12	0.62	1.94	3	1
3:A:66:GLU:O	3:A:70:TYR:CE1	0.62	2.53	8	7
3:A:29:MET:SD	3:A:29:MET:N	0.62	2.73	15	4
3:A:37:ASP:O	3:A:41:SER:CB	0.62	2.48	20	20
3:A:32:ALA:HB1	3:A:36:ARG:NE	0.62	2.09	18	1
3:A:17:ASP:HB2	3:A:20:ALA:HB2	0.62	1.71	18	8
3:A:84:GLU:HA	3:A:87:LEU:HD22	0.62	1.71	19	2
1:B:112:DT:C4	1:B:113:DC:N4	0.61	2.68	15	17
1:B:108:DT:C4'	1:B:109:DT:OP1	0.61	2.48	13	1
3:A:43:ASN:O	3:A:46:ILE:CG1	0.61	2.49	15	11
3:A:46:ILE:HD12	3:A:51:VAL:HB	0.61	1.71	19	9
1:B:112:DT:O2	3:A:48:PHE:CD1	0.61	2.54	17	14
2:C:123:DA:C4'	2:C:124:DT:OP1	0.61	2.47	11	2
3:A:31:PHE:CD1	3:A:35:ASN:ND2	0.61	2.69	15	1
3:A:19:ASN:OD1	3:A:88:TYR:CD1	0.61	2.54	18	3
2:C:118:DG:C6	2:C:119:DA:N6	0.61	2.68	15	20
3:A:24:ALA:HB1	3:A:77:ASP:OD1	0.61	1.96	12	6
2:C:116:DC:C4'	2:C:117:DT:OP1	0.61	2.48	18	3
2:C:126:DA:C4	2:C:127:DC:C4	0.60	2.90	10	9
3:A:25:LEU:HB3	3:A:30:PHE:CZ	0.60	2.32	7	18
3:A:46:ILE:O	3:A:50:GLN:CG	0.60	2.50	2	8
3:A:31:PHE:CE1	3:A:35:ASN:ND2	0.60	2.69	15	2
2:C:127:DC:P	3:A:85:LYS:HE3	0.60	2.37	10	4
2:C:124:DT:C4'	2:C:125:DC:OP1	0.60	2.47	4	13
3:A:46:ILE:O	3:A:47:THR:HB	0.60	1.96	7	10
2:C:120:DA:C6	2:C:121:DC:N4	0.60	2.70	6	13
2:C:121:DC:O2	3:A:28:TYR:CE1	0.60	2.54	20	11

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:68:GLN:HG2	3:A:69:PRO:HD3	0.60	1.72	17	2
3:A:43:ASN:CB	3:A:46:ILE:CD1	0.59	2.80	13	5
3:A:35:ASN:OD1	3:A:55:LEU:HD21	0.59	1.96	8	8
2:C:122:DA:O4'	3:A:28:TYR:CD2	0.59	2.55	1	5
3:A:25:LEU:CB	3:A:30:PHE:CE1	0.59	2.86	18	17
3:A:26:SER:O	3:A:30:PHE:CE2	0.59	2.56	13	19
3:A:26:SER:O	3:A:30:PHE:CD2	0.59	2.55	3	19
3:A:32:ALA:O	3:A:36:ARG:CG	0.59	2.50	15	3
3:A:25:LEU:HD23	3:A:25:LEU:O	0.59	1.97	8	1
3:A:31:PHE:CD2	3:A:32:ALA:N	0.59	2.70	15	4
3:A:23:ARG:HB2	3:A:23:ARG:CZ	0.59	2.28	18	1
2:C:126:DA:OP1	3:A:78:LYS:CD	0.59	2.51	16	11
3:A:23:ARG:CZ	3:A:23:ARG:CB	0.59	2.81	1	2
3:A:25:LEU:CB	3:A:30:PHE:CZ	0.59	2.86	5	13
1:B:108:DT:O2	3:A:23:ARG:NE	0.59	2.36	10	4
3:A:23:ARG:HA	3:A:81:TYR:CD2	0.58	2.33	8	2
3:A:56:GLY:O	3:A:59:TRP:HB3	0.58	1.97	17	20
3:A:29:MET:O	3:A:33:ASN:ND2	0.58	2.36	7	11
3:A:83:SER:O	3:A:86:GLU:HG2	0.58	1.97	16	19
3:A:26:SER:C	3:A:30:PHE:CE2	0.58	2.76	15	19
3:A:35:ASN:O	3:A:39:VAL:HG23	0.58	1.98	19	4
1:B:109:DT:OP1	3:A:22:LYS:O	0.58	2.22	13	1
1:B:109:DT:O2	3:A:29:MET:CE	0.58	2.51	8	7
3:A:48:PHE:O	3:A:48:PHE:CD1	0.58	2.57	15	3
2:C:124:DT:OP2	3:A:27:ALA:HB3	0.58	1.98	19	2
3:A:80:ARG:NE	3:A:80:ARG:CA	0.58	2.67	17	10
1:B:109:DT:O3'	3:A:25:LEU:CD1	0.57	2.52	8	8
2:C:123:DA:C8	2:C:124:DT:H71	0.57	2.34	19	20
3:A:46:ILE:CG2	3:A:47:THR:N	0.57	2.67	8	4
2:C:123:DA:C6	2:C:124:DT:C4	0.57	2.92	9	4
3:A:28:TYR:O	3:A:28:TYR:CD1	0.57	2.57	4	9
1:B:108:DT:O2	3:A:23:ARG:CZ	0.57	2.52	14	3
1:B:111:DT:O3'	3:A:36:ARG:CD	0.57	2.52	14	13
3:A:25:LEU:HB3	3:A:30:PHE:CE1	0.57	2.34	14	14
1:B:110:DG:P	3:A:25:LEU:HD11	0.57	2.40	16	5
1:B:110:DG:O4'	3:A:29:MET:CE	0.57	2.53	16	1
3:A:51:VAL:HG13	3:A:52:GLY:N	0.57	2.15	18	6
3:A:85:LYS:HG3	3:A:86:GLU:N	0.57	2.14	16	10
2:C:129:DC:H2'	2:C:130:DC:C5	0.57	2.34	6	20
3:A:23:ARG:CZ	3:A:23:ARG:HB2	0.57	2.30	1	1
3:A:85:LYS:O	3:A:88:TYR:HB3	0.57	1.99	9	17

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:C:127:DC:OP1	3:A:85:LYS:CE	0.57	2.53	16	2
3:A:21:PRO:O	3:A:22:LYS:CG	0.56	2.53	8	8
3:A:22:LYS:C	3:A:81:TYR:CD2	0.56	2.78	8	5
2:C:123:DA:C8	2:C:124:DT:C7	0.56	2.88	19	19
3:A:37:ASP:OD1	3:A:38:ILE:HD13	0.56	2.00	8	1
3:A:43:ASN:CB	3:A:46:ILE:HD13	0.56	2.30	16	3
3:A:21:PRO:HB2	3:A:81:TYR:CE2	0.56	2.36	7	20
3:A:30:PHE:CE2	3:A:74:ALA:CA	0.56	2.88	6	20
3:A:46:ILE:CG1	3:A:51:VAL:HG23	0.56	2.30	1	1
3:A:46:ILE:HD12	3:A:51:VAL:HA	0.56	1.76	5	5
3:A:84:GLU:HA	3:A:87:LEU:HD21	0.56	1.75	5	1
1:B:110:DG:C4'	1:B:111:DT:OP1	0.56	2.53	11	1
1:B:112:DT:OP1	3:A:36:ARG:CD	0.56	2.54	11	1
2:C:124:DT:OP2	3:A:27:ALA:CB	0.56	2.53	19	2
3:A:31:PHE:CD2	3:A:35:ASN:ND2	0.56	2.74	16	1
2:C:121:DC:O5'	3:A:53:LYS:CD	0.56	2.52	7	1
1:B:111:DT:O2	3:A:36:ARG:CZ	0.56	2.53	16	1
2:C:119:DA:C5	2:C:120:DA:N6	0.56	2.73	17	1
1:B:110:DG:N3	3:A:36:ARG:NH2	0.56	2.52	18	1
3:A:68:GLN:HB2	3:A:69:PRO:HD3	0.56	1.78	15	15
3:A:51:VAL:O	3:A:55:LEU:HB2	0.56	2.00	20	11
3:A:67:LYS:C	3:A:69:PRO:CD	0.56	2.74	17	2
3:A:23:ARG:NH1	3:A:24:ALA:O	0.56	2.39	13	5
2:C:125:DC:O5'	3:A:78:LYS:CD	0.56	2.54	19	4
2:C:126:DA:OP1	3:A:78:LYS:NZ	0.56	2.38	20	3
3:A:22:LYS:O	3:A:23:ARG:C	0.56	2.44	12	19
3:A:62:LEU:O	3:A:63:THR:HB	0.56	2.01	20	18
1:B:108:DT:H4'	1:B:109:DT:OP1	0.56	1.99	13	1
2:C:123:DA:OP1	3:A:60:LYS:CE	0.56	2.54	14	10
3:A:21:PRO:HD3	3:A:88:TYR:CD1	0.56	2.35	16	6
3:A:46:ILE:HG12	3:A:50:GLN:CB	0.56	2.31	8	3
3:A:36:ARG:NE	3:A:55:LEU:HD13	0.56	2.15	16	1
3:A:23:ARG:HA	3:A:81:TYR:CZ	0.55	2.35	16	18
3:A:31:PHE:CE2	3:A:59:TRP:HB2	0.55	2.37	8	19
3:A:35:ASN:O	3:A:37:ASP:N	0.55	2.39	6	16
2:C:117:DT:C2'	2:C:118:DG:OP2	0.55	2.52	18	17
2:C:120:DA:C4	2:C:121:DC:C5	0.55	2.94	10	13
3:A:31:PHE:HB2	3:A:70:TYR:CG	0.55	2.37	16	19
3:A:37:ASP:OD2	3:A:38:ILE:HD13	0.55	2.00	14	3
3:A:48:PHE:CD1	3:A:48:PHE:C	0.55	2.79	3	10
3:A:54:LYS:CE	3:A:58:LYS:CG	0.55	2.84	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:35:ASN:O	3:A:39:VAL:CG2	0.55	2.55	15	4
2:C:124:DT:O2	3:A:23:ARG:CZ	0.55	2.54	8	4
1:B:112:DT:OP1	3:A:36:ARG:NE	0.55	2.39	7	9
3:A:32:ALA:O	3:A:36:ARG:CB	0.55	2.54	11	2
1:B:109:DT:O3'	3:A:25:LEU:HD11	0.55	2.01	15	12
3:A:67:LYS:HA	3:A:70:TYR:CE2	0.55	2.37	5	13
3:A:24:ALA:HB1	3:A:77:ASP:OD2	0.55	2.01	14	1
3:A:43:ASN:CB	3:A:46:ILE:HD12	0.55	2.31	8	1
3:A:49:GLY:C	3:A:50:GLN:NE2	0.55	2.61	1	2
3:A:43:ASN:HB2	3:A:46:ILE:CD1	0.55	2.31	20	8
2:C:120:DA:C4'	2:C:121:DC:OP1	0.55	2.50	17	1
3:A:81:TYR:O	3:A:84:GLU:HG2	0.55	2.01	15	11
2:C:126:DA:C4'	2:C:127:DC:OP1	0.55	2.53	10	6
2:C:126:DA:OP1	3:A:78:LYS:CE	0.55	2.55	17	3
2:C:120:DA:C5	2:C:121:DC:C4	0.55	2.95	19	12
3:A:21:PRO:HA	3:A:84:GLU:CG	0.55	2.32	9	9
3:A:36:ARG:O	3:A:40:ARG:CG	0.55	2.55	20	6
3:A:27:ALA:HB2	3:A:71:GLU:HA	0.55	1.78	5	4
3:A:54:LYS:O	3:A:57:GLU:CG	0.55	2.55	6	2
1:B:111:DT:H2'	1:B:112:DT:C6	0.54	2.37	19	20
3:A:28:TYR:O	3:A:32:ALA:HB2	0.54	2.01	8	8
3:A:58:LYS:HA	3:A:61:ALA:HB3	0.54	1.79	2	17
3:A:25:LEU:N	3:A:77:ASP:OD2	0.54	2.40	14	1
1:B:109:DT:O2	1:B:110:DG:C8	0.54	2.60	16	1
3:A:81:TYR:CD1	3:A:81:TYR:C	0.54	2.81	11	19
3:A:51:VAL:CG1	3:A:52:GLY:N	0.54	2.70	16	5
3:A:46:ILE:C	3:A:47:THR:CG2	0.54	2.75	13	1
1:B:110:DG:N2	3:A:28:TYR:CE1	0.54	2.76	11	7
2:C:124:DT:O2	3:A:23:ARG:NH1	0.54	2.40	5	5
3:A:49:GLY:CA	3:A:50:GLN:NE2	0.54	2.70	8	2
3:A:50:GLN:NE2	3:A:50:GLN:N	0.54	2.55	9	1
3:A:31:PHE:CE2	3:A:35:ASN:ND2	0.54	2.76	16	1
3:A:37:ASP:OD2	3:A:38:ILE:CD1	0.54	2.56	1	4
3:A:62:LEU:O	3:A:63:THR:OG1	0.54	2.24	16	5
3:A:29:MET:HE3	3:A:29:MET:HA	0.54	1.79	16	1
3:A:80:ARG:NE	3:A:80:ARG:O	0.54	2.41	15	4
3:A:85:LYS:CG	3:A:86:GLU:N	0.54	2.71	14	12
3:A:23:ARG:CZ	3:A:24:ALA:O	0.54	2.56	5	11
3:A:34:GLU:O	3:A:38:ILE:CD1	0.54	2.56	9	8
3:A:23:ARG:NH2	3:A:24:ALA:O	0.54	2.41	14	6
3:A:43:ASN:HB2	3:A:46:ILE:HD11	0.54	1.78	12	5

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:112:DT:O4	2:C:118:DG:O6	0.54	2.25	14	18
3:A:35:ASN:N	3:A:35:ASN:ND2	0.54	2.55	13	15
3:A:48:PHE:CD1	3:A:48:PHE:O	0.54	2.60	19	10
3:A:57:GLU:CG	3:A:58:LYS:N	0.54	2.71	10	5
3:A:82:GLU:O	3:A:85:LYS:CG	0.54	2.55	8	6
2:C:119:DA:C2	3:A:48:PHE:CE2	0.54	2.96	12	4
3:A:80:ARG:O	3:A:80:ARG:CZ	0.54	2.56	15	4
3:A:82:GLU:O	3:A:85:LYS:HG3	0.54	2.03	16	2
2:C:122:DA:O4'	3:A:28:TYR:CE2	0.54	2.61	1	4
3:A:46:ILE:HB	3:A:50:GLN:CB	0.54	2.32	14	6
3:A:58:LYS:O	3:A:62:LEU:HG	0.54	2.03	8	20
3:A:49:GLY:O	3:A:53:LYS:CD	0.54	2.56	10	4
2:C:125:DC:OP2	3:A:78:LYS:NZ	0.54	2.41	12	1
2:C:123:DA:P	3:A:60:LYS:HD2	0.54	2.43	16	1
3:A:31:PHE:HA	3:A:70:TYR:CD2	0.54	2.38	1	7
3:A:35:ASN:OD1	3:A:55:LEU:CD2	0.54	2.56	1	8
3:A:50:GLN:O	3:A:54:LYS:CG	0.54	2.55	10	5
1:B:110:DG:H4'	1:B:111:DT:OP1	0.54	2.01	11	1
3:A:23:ARG:NE	3:A:24:ALA:O	0.54	2.41	3	6
3:A:48:PHE:O	3:A:49:GLY:C	0.54	2.47	14	6
3:A:19:ASN:HB2	3:A:88:TYR:CD2	0.54	2.38	17	3
3:A:51:VAL:O	3:A:55:LEU:CG	0.54	2.56	14	3
1:B:113:DC:OP2	3:A:40:ARG:CZ	0.54	2.55	16	1
3:A:31:PHE:CE1	3:A:59:TRP:HB2	0.54	2.38	16	1
2:C:126:DA:C6	2:C:127:DC:C4	0.53	2.96	2	13
3:A:21:PRO:CB	3:A:84:GLU:HG3	0.53	2.33	20	9
3:A:67:LYS:HA	3:A:70:TYR:CD2	0.53	2.37	11	13
3:A:47:THR:O	3:A:51:VAL:CG1	0.53	2.53	17	6
3:A:25:LEU:HB2	3:A:30:PHE:CE1	0.53	2.38	16	4
3:A:50:GLN:O	3:A:54:LYS:HB2	0.53	2.04	3	18
3:A:47:THR:O	3:A:49:GLY:N	0.53	2.41	15	3
3:A:48:PHE:O	3:A:51:VAL:N	0.53	2.42	16	6
1:B:112:DT:OP1	3:A:36:ARG:CG	0.53	2.56	11	3
3:A:31:PHE:HA	3:A:70:TYR:CD1	0.53	2.38	7	9
2:C:127:DC:OP2	3:A:85:LYS:CE	0.53	2.57	19	2
3:A:43:ASN:N	3:A:44:PRO:HD3	0.53	2.19	16	20
3:A:36:ARG:CZ	3:A:37:ASP:OD2	0.53	2.57	4	2
3:A:51:VAL:O	3:A:55:LEU:CB	0.53	2.57	14	1
1:B:107:DA:C5	1:B:108:DT:C7	0.53	2.91	1	3
3:A:80:ARG:O	3:A:80:ARG:NE	0.53	2.41	5	1
2:C:128:DC:C2	2:C:129:DC:C5	0.53	2.97	6	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:37:ASP:OD1	3:A:38:ILE:CD1	0.53	2.56	8	1
3:A:27:ALA:HA	3:A:30:PHE:CD2	0.53	2.39	8	7
3:A:24:ALA:CB	3:A:77:ASP:O	0.53	2.56	16	1
3:A:76:ALA:O	3:A:79:LYS:CG	0.53	2.57	20	1
1:B:112:DT:P	3:A:36:ARG:HG3	0.53	2.44	11	4
3:A:22:LYS:O	3:A:81:TYR:CD2	0.53	2.62	2	5
2:C:116:DC:H2''	2:C:117:DT:C6	0.53	2.39	7	3
3:A:23:ARG:NH2	3:A:25:LEU:O	0.53	2.42	2	4
3:A:21:PRO:O	3:A:22:LYS:CD	0.53	2.57	13	7
1:B:109:DT:O2	3:A:29:MET:HE3	0.53	2.04	8	1
2:C:119:DA:C2	3:A:48:PHE:CZ	0.53	2.97	20	3
1:B:112:DT:P	3:A:36:ARG:HD2	0.53	2.44	14	2
3:A:19:ASN:OD1	3:A:87:LEU:HD21	0.53	2.03	12	1
2:C:124:DT:H2''	2:C:125:DC:C6	0.52	2.40	12	11
3:A:66:GLU:OE1	3:A:66:GLU:CA	0.52	2.57	6	6
3:A:31:PHE:CG	3:A:59:TRP:CZ3	0.52	2.96	17	14
3:A:18:PRO:HG2	3:A:88:TYR:CE2	0.52	2.38	9	3
3:A:46:ILE:C	3:A:50:GLN:HG2	0.52	2.24	15	1
1:B:111:DT:O2	3:A:36:ARG:NH2	0.52	2.41	16	1
3:A:36:ARG:O	3:A:40:ARG:CB	0.52	2.57	8	4
1:B:108:DT:O4'	3:A:23:ARG:HG2	0.52	2.05	12	7
3:A:54:LYS:O	3:A:58:LYS:CG	0.52	2.57	18	7
3:A:82:GLU:O	3:A:85:LYS:HG2	0.52	2.04	20	9
3:A:46:ILE:HD12	3:A:51:VAL:CB	0.52	2.34	11	7
1:B:109:DT:O2	3:A:29:MET:SD	0.52	2.67	1	18
1:B:110:DG:N9	3:A:29:MET:SD	0.52	2.83	1	3
3:A:18:PRO:HG2	3:A:88:TYR:CE1	0.52	2.40	16	8
3:A:51:VAL:O	3:A:55:LEU:HG	0.52	2.03	11	9
2:C:125:DC:P	3:A:78:LYS:HD2	0.52	2.43	14	2
3:A:31:PHE:CD2	3:A:35:ASN:OD1	0.52	2.63	11	15
3:A:66:GLU:N	3:A:66:GLU:OE1	0.52	2.43	9	1
1:B:113:DC:OP2	3:A:40:ARG:NH2	0.52	2.42	1	1
1:B:105:DT:C2'	1:B:106:DG:C8	0.52	2.93	17	2
3:A:83:SER:O	3:A:86:GLU:CG	0.52	2.57	5	1
3:A:66:GLU:OE1	3:A:66:GLU:N	0.52	2.43	18	3
1:B:108:DT:O2	3:A:23:ARG:CD	0.52	2.57	11	2
2:C:125:DC:O4'	3:A:23:ARG:NH2	0.52	2.42	18	2
3:A:46:ILE:O	3:A:47:THR:OG1	0.52	2.28	20	11
1:B:108:DT:C2	3:A:23:ARG:HD3	0.52	2.40	17	2
3:A:31:PHE:CD1	3:A:59:TRP:CE3	0.52	2.98	15	11
3:A:80:ARG:C	3:A:80:ARG:CD	0.52	2.77	8	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:54:LYS:HD3	3:A:58:LYS:CG	0.51	2.35	14	6
3:A:46:ILE:O	3:A:47:THR:CG2	0.51	2.57	13	1
3:A:21:PRO:HD3	3:A:88:TYR:CD2	0.51	2.40	17	2
3:A:17:ASP:HB3	3:A:88:TYR:CE1	0.51	2.40	18	5
3:A:36:ARG:O	3:A:40:ARG:HG2	0.51	2.05	18	8
3:A:24:ALA:HB3	3:A:78:LYS:HA	0.51	1.81	16	2
1:B:110:DG:H5'	3:A:25:LEU:HD21	0.51	1.82	8	12
1:B:108:DT:O4'	3:A:23:ARG:CG	0.51	2.59	16	1
3:A:54:LYS:CD	3:A:58:LYS:CG	0.51	2.89	14	4
3:A:82:GLU:CG	3:A:85:LYS:CE	0.51	2.89	4	1
3:A:67:LYS:O	3:A:68:GLN:C	0.51	2.49	6	18
3:A:80:ARG:HG3	3:A:81:TYR:N	0.51	2.21	8	6
3:A:39:VAL:HG12	3:A:51:VAL:HG23	0.51	1.82	3	5
3:A:35:ASN:O	3:A:39:VAL:HG12	0.51	2.06	17	1
3:A:46:ILE:HB	3:A:50:GLN:CG	0.51	2.36	6	9
3:A:39:VAL:CG1	3:A:51:VAL:HG23	0.51	2.36	3	5
3:A:36:ARG:NH1	3:A:37:ASP:OD1	0.51	2.43	20	1
3:A:78:LYS:HZ3	3:A:78:LYS:HB3	0.51	1.66	20	1
3:A:31:PHE:O	3:A:35:ASN:ND2	0.51	2.43	3	10
3:A:50:GLN:O	3:A:54:LYS:HG3	0.51	2.06	1	5
3:A:23:ARG:HA	3:A:81:TYR:CG	0.51	2.41	8	2
3:A:23:ARG:NH2	3:A:25:LEU:C	0.51	2.64	17	2
3:A:31:PHE:HB2	3:A:70:TYR:CD2	0.51	2.41	11	8
3:A:82:GLU:CG	3:A:85:LYS:HE2	0.51	2.36	4	1
3:A:19:ASN:OD1	3:A:88:TYR:O	0.50	2.29	1	2
3:A:34:GLU:N	3:A:34:GLU:OE1	0.50	2.45	7	1
1:B:108:DT:C2	3:A:23:ARG:HD2	0.50	2.41	11	1
1:B:112:DT:O4'	3:A:36:ARG:NH1	0.50	2.45	15	1
3:A:24:ALA:CB	3:A:77:ASP:C	0.50	2.80	16	1
3:A:43:ASN:O	3:A:46:ILE:HG12	0.50	2.07	14	16
2:C:123:DA:N3	3:A:26:SER:OG	0.50	2.37	2	2
3:A:25:LEU:O	3:A:29:MET:HB2	0.50	2.05	8	1
2:C:126:DA:C6	2:C:127:DC:N4	0.50	2.80	17	3
1:B:110:DG:C5'	3:A:25:LEU:CD2	0.50	2.88	16	2
3:A:84:GLU:O	3:A:87:LEU:HD23	0.50	2.07	17	2
3:A:67:LYS:HA	3:A:70:TYR:CD1	0.50	2.41	16	7
3:A:75:GLN:CG	3:A:78:LYS:HZ2	0.50	2.19	2	1
3:A:68:GLN:N	3:A:69:PRO:HD2	0.50	2.22	14	4
1:B:104:DG:H4'	1:B:105:DT:OP1	0.50	2.07	20	17
3:A:43:ASN:HB3	3:A:46:ILE:HB	0.50	1.82	7	4
2:C:124:DT:P	3:A:27:ALA:HB3	0.50	2.46	11	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:32:ALA:O	3:A:36:ARG:HG2	0.50	2.06	16	2
1:B:111:DT:O4'	3:A:36:ARG:HD3	0.50	2.06	18	1
3:A:47:THR:OG1	3:A:50:GLN:NE2	0.50	2.45	17	1
3:A:21:PRO:HG3	3:A:88:TYR:CB	0.50	2.37	12	7
3:A:54:LYS:CD	3:A:58:LYS:HG3	0.49	2.37	4	3
3:A:46:ILE:CG2	3:A:50:GLN:HB2	0.49	2.36	15	5
3:A:80:ARG:NE	3:A:80:ARG:HA	0.49	2.22	17	7
3:A:55:LEU:O	3:A:59:TRP:CB	0.49	2.59	16	4
1:B:110:DG:N9	3:A:29:MET:HE2	0.49	2.22	19	3
1:B:109:DT:OP2	3:A:22:LYS:HB3	0.49	2.07	13	1
1:B:107:DA:C6	1:B:108:DT:C4	0.49	2.99	1	2
1:B:111:DT:C2'	1:B:112:DT:C6	0.49	2.95	16	20
2:C:126:DA:H2''	2:C:127:DC:O5'	0.49	2.08	7	12
3:A:23:ARG:O	3:A:81:TYR:CG	0.49	2.66	13	7
2:C:126:DA:O3'	3:A:85:LYS:NZ	0.49	2.43	8	2
3:A:47:THR:N	3:A:50:GLN:HG2	0.49	2.22	17	7
3:A:35:ASN:O	3:A:39:VAL:HB	0.49	2.08	16	4
3:A:25:LEU:O	3:A:26:SER:O	0.49	2.29	8	1
3:A:35:ASN:HB3	3:A:55:LEU:CD2	0.49	2.37	18	1
3:A:79:LYS:HA	3:A:82:GLU:CB	0.49	2.38	10	10
1:B:108:DT:C1'	3:A:23:ARG:HD3	0.49	2.38	7	3
3:A:65:GLU:O	3:A:69:PRO:HD3	0.49	2.07	5	2
3:A:20:ALA:O	3:A:22:LYS:NZ	0.49	2.46	12	1
1:B:110:DG:C1'	3:A:29:MET:HE2	0.49	2.38	16	2
3:A:36:ARG:HG2	3:A:37:ASP:N	0.49	2.23	5	15
2:C:119:DA:N3	3:A:48:PHE:CZ	0.49	2.80	17	1
3:A:18:PRO:HD2	3:A:88:TYR:CE1	0.49	2.42	12	3
2:C:126:DA:C5	2:C:127:DC:C5	0.49	3.01	17	2
1:B:109:DT:OP2	3:A:22:LYS:CB	0.49	2.60	13	1
1:B:109:DT:O2	1:B:110:DG:C5	0.49	2.65	16	1
3:A:87:LEU:CD2	3:A:88:TYR:N	0.49	2.71	19	2
2:C:127:DC:P	3:A:85:LYS:HE2	0.49	2.48	12	3
3:A:80:ARG:CZ	3:A:80:ARG:HA	0.49	2.37	1	1
1:B:109:DT:OP1	3:A:23:ARG:HG3	0.49	2.08	13	1
3:A:21:PRO:HD3	3:A:88:TYR:CG	0.49	2.43	16	1
1:B:110:DG:O4'	3:A:29:MET:SD	0.49	2.71	10	3
3:A:24:ALA:CB	3:A:78:LYS:HA	0.49	2.38	1	13
3:A:57:GLU:HG3	3:A:58:LYS:N	0.49	2.23	3	6
3:A:62:LEU:HB3	3:A:66:GLU:CB	0.49	2.38	6	4
1:B:104:DG:N2	1:B:105:DT:N3	0.49	2.60	18	4
1:B:111:DT:O3'	3:A:36:ARG:HD3	0.49	2.08	6	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:19:ASN:O	3:A:20:ALA:O	0.49	2.30	2	6
3:A:54:LYS:HE2	3:A:58:LYS:CD	0.49	2.37	4	1
2:C:126:DA:OP1	3:A:78:LYS:HD2	0.49	2.08	7	6
3:A:29:MET:O	3:A:33:ASN:CB	0.49	2.61	18	2
2:C:125:DC:OP2	3:A:78:LYS:CE	0.49	2.61	12	1
3:A:21:PRO:CG	3:A:85:LYS:HA	0.48	2.38	5	2
3:A:63:THR:O	3:A:67:LYS:HG3	0.48	2.08	5	2
3:A:38:ILE:CD1	3:A:38:ILE:N	0.48	2.76	16	3
1:B:106:DG:N1	1:B:107:DA:C6	0.48	2.81	12	2
3:A:38:ILE:CG2	3:A:39:VAL:N	0.48	2.76	18	4
3:A:54:LYS:O	3:A:57:GLU:N	0.48	2.46	17	2
3:A:39:VAL:HG13	3:A:40:ARG:H	0.48	1.67	17	1
3:A:59:TRP:CZ2	3:A:67:LYS:HD2	0.48	2.43	1	16
3:A:24:ALA:HB2	3:A:78:LYS:HA	0.48	1.84	3	3
2:C:121:DC:O5'	3:A:53:LYS:HG2	0.48	2.07	7	3
3:A:23:ARG:HA	3:A:81:TYR:CE1	0.48	2.43	16	2
3:A:36:ARG:NH1	3:A:37:ASP:CG	0.48	2.67	20	1
1:B:108:DT:O2	3:A:23:ARG:HD3	0.48	2.08	19	8
1:B:111:DT:O3'	3:A:36:ARG:HD2	0.48	2.09	1	11
3:A:87:LEU:O	3:A:88:TYR:C	0.48	2.52	19	15
3:A:49:GLY:N	3:A:50:GLN:NE2	0.48	2.61	8	3
3:A:63:THR:HG23	3:A:64:PRO:CD	0.48	2.38	20	2
3:A:23:ARG:C	3:A:81:TYR:CD2	0.48	2.86	15	3
3:A:32:ALA:CB	3:A:36:ARG:NE	0.48	2.76	18	1
2:C:118:DG:C5	2:C:119:DA:N6	0.48	2.81	15	12
2:C:126:DA:OP1	3:A:78:LYS:HD3	0.48	2.08	10	6
1:B:112:DT:OP1	3:A:36:ARG:HG3	0.48	2.09	11	5
3:A:21:PRO:HA	3:A:84:GLU:HG3	0.48	1.86	8	7
3:A:59:TRP:CH2	3:A:67:LYS:HB3	0.48	2.43	17	2
3:A:66:GLU:CD	3:A:66:GLU:N	0.48	2.67	17	2
2:C:122:DA:C2	3:A:29:MET:CE	0.48	2.97	11	2
3:A:23:ARG:O	3:A:24:ALA:O	0.48	2.32	8	1
2:C:127:DC:OP2	3:A:85:LYS:HE2	0.48	2.09	19	4
3:A:63:THR:HB	3:A:66:GLU:HG2	0.48	1.85	8	14
2:C:127:DC:OP1	3:A:81:TYR:OH	0.48	2.28	19	2
3:A:42:GLU:C	3:A:43:ASN:ND2	0.48	2.67	7	1
2:C:126:DA:H1'	2:C:127:DC:C6	0.48	2.44	12	6
3:A:36:ARG:NE	3:A:37:ASP:OD1	0.48	2.47	17	1
3:A:23:ARG:CB	3:A:23:ARG:NH1	0.48	2.77	18	2
3:A:46:ILE:O	3:A:50:GLN:HG2	0.48	2.09	10	7
2:C:123:DA:C5	2:C:124:DT:C5	0.48	3.02	9	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:C:123:DA:C4	2:C:124:DT:C5	0.48	3.01	19	4
1:B:105:DT:C2'	1:B:106:DG:OP2	0.47	2.62	20	7
3:A:21:PRO:HB2	3:A:81:TYR:CD2	0.47	2.44	6	2
3:A:67:LYS:HA	3:A:70:TYR:CE1	0.47	2.44	1	7
2:C:125:DC:O5'	3:A:78:LYS:HD2	0.47	2.09	15	4
1:B:111:DT:C4'	3:A:36:ARG:HD3	0.47	2.39	18	1
3:A:46:ILE:HG13	3:A:51:VAL:HG23	0.47	1.84	1	1
3:A:37:ASP:O	3:A:41:SER:OG	0.47	2.32	16	7
3:A:30:PHE:CZ	3:A:74:ALA:HA	0.47	2.43	5	7
3:A:27:ALA:HA	3:A:30:PHE:HD2	0.47	1.70	8	6
3:A:79:LYS:O	3:A:82:GLU:N	0.47	2.47	15	3
1:B:110:DG:C5'	1:B:111:DT:OP1	0.47	2.61	11	1
3:A:36:ARG:O	3:A:40:ARG:HB2	0.47	2.09	8	2
3:A:21:PRO:HB3	3:A:84:GLU:HG3	0.47	1.85	5	10
3:A:47:THR:HG22	3:A:48:PHE:H	0.47	1.69	14	2
3:A:68:GLN:HB2	3:A:69:PRO:CD	0.47	2.39	11	3
3:A:31:PHE:CE2	3:A:55:LEU:HD23	0.47	2.44	8	1
3:A:72:ALA:HA	3:A:75:GLN:NE2	0.47	2.25	15	4
1:B:110:DG:OP1	3:A:25:LEU:CD1	0.47	2.55	16	1
3:A:34:GLU:O	3:A:37:ASP:OD1	0.47	2.31	3	4
2:C:125:DC:OP1	3:A:78:LYS:CE	0.47	2.62	2	1
3:A:38:ILE:N	3:A:38:ILE:CD1	0.47	2.78	6	5
1:B:110:DG:C4	3:A:29:MET:HE2	0.47	2.45	19	4
1:B:103:DG:H4'	1:B:104:DG:OP1	0.47	2.09	20	1
3:A:31:PHE:CZ	3:A:35:ASN:OD1	0.47	2.67	11	9
3:A:50:GLN:O	3:A:54:LYS:HB3	0.47	2.10	7	8
3:A:33:ASN:O	3:A:37:ASP:OD2	0.47	2.33	8	1
3:A:43:ASN:HB3	3:A:46:ILE:CD1	0.47	2.39	13	1
1:B:111:DT:O3'	3:A:36:ARG:CG	0.47	2.63	20	9
3:A:77:ASP:OD1	3:A:77:ASP:O	0.47	2.33	17	12
2:C:122:DA:C2'	2:C:123:DA:OP2	0.47	2.62	16	5
3:A:59:TRP:HZ3	3:A:70:TYR:CD2	0.47	2.28	11	13
3:A:35:ASN:O	3:A:39:VAL:CB	0.47	2.63	16	4
3:A:80:ARG:HA	3:A:80:ARG:CZ	0.47	2.40	7	6
3:A:23:ARG:NH2	3:A:24:ALA:CB	0.47	2.68	8	1
3:A:32:ALA:O	3:A:36:ARG:HB3	0.47	2.09	11	1
3:A:24:ALA:O	3:A:25:LEU:O	0.47	2.32	14	1
3:A:36:ARG:NH2	3:A:52:GLY:HA2	0.47	2.24	16	1
3:A:71:GLU:O	3:A:74:ALA:CB	0.47	2.62	8	16
3:A:37:ASP:O	3:A:41:SER:HB3	0.47	2.09	20	7
3:A:31:PHE:CZ	3:A:59:TRP:HA	0.47	2.45	15	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:82:GLU:CG	3:A:85:LYS:HE3	0.47	2.40	18	2
3:A:46:ILE:HB	3:A:50:GLN:HB2	0.47	1.86	19	7
3:A:46:ILE:CD1	3:A:51:VAL:HG23	0.47	2.40	1	1
3:A:63:THR:CG2	3:A:64:PRO:HD2	0.47	2.37	1	3
3:A:86:GLU:HG3	3:A:87:LEU:N	0.47	2.25	16	11
1:B:107:DA:H2''	1:B:108:DT:C5'	0.47	2.40	13	7
3:A:55:LEU:O	3:A:59:TRP:HB2	0.47	2.10	16	3
3:A:35:ASN:HB2	3:A:55:LEU:CD2	0.47	2.40	11	3
3:A:17:ASP:N	3:A:17:ASP:OD1	0.47	2.48	18	2
3:A:33:ASN:O	3:A:37:ASP:OD1	0.47	2.33	14	2
2:C:122:DA:O3'	3:A:60:LYS:HD2	0.47	2.10	16	1
3:A:30:PHE:O	3:A:33:ASN:HB2	0.46	2.11	18	14
3:A:51:VAL:HG22	3:A:55:LEU:HD12	0.46	1.86	2	2
3:A:29:MET:O	3:A:33:ASN:HB2	0.46	2.10	16	4
2:C:124:DT:OP1	3:A:26:SER:OG	0.46	2.31	19	1
3:A:54:LYS:O	3:A:57:GLU:HG2	0.46	2.10	6	5
3:A:84:GLU:O	3:A:84:GLU:OE1	0.46	2.33	2	1
3:A:21:PRO:O	3:A:84:GLU:CD	0.46	2.53	3	4
3:A:23:ARG:CA	3:A:81:TYR:CD2	0.46	2.97	7	6
3:A:81:TYR:O	3:A:84:GLU:CG	0.46	2.63	10	1
3:A:36:ARG:HG2	3:A:55:LEU:CD1	0.46	2.41	18	1
3:A:37:ASP:O	3:A:41:SER:HB2	0.46	2.11	13	13
1:B:108:DT:H2''	1:B:109:DT:O5'	0.46	2.09	14	5
3:A:43:ASN:CB	3:A:46:ILE:HG12	0.46	2.40	19	6
2:C:125:DC:O5'	3:A:78:LYS:HG3	0.46	2.11	19	3
3:A:65:GLU:HA	3:A:68:GLN:HG3	0.46	1.87	8	16
3:A:46:ILE:HG12	3:A:50:GLN:HB3	0.46	1.88	7	1
1:B:110:DG:C2	3:A:29:MET:HE1	0.46	2.45	15	1
3:A:76:ALA:O	3:A:79:LYS:HG2	0.46	2.10	20	1
3:A:54:LYS:CE	3:A:58:LYS:CD	0.46	2.93	4	1
3:A:60:LYS:HA	3:A:67:LYS:NZ	0.46	2.26	5	2
1:B:108:DT:O2	3:A:23:ARG:NH1	0.46	2.49	8	1
3:A:45:ASP:O	3:A:46:ILE:C	0.46	2.53	15	5
2:C:124:DT:C5'	2:C:125:DC:OP1	0.46	2.64	19	3
3:A:67:LYS:CE	3:A:71:GLU:OE1	0.46	2.64	2	1
3:A:84:GLU:O	3:A:88:TYR:HB2	0.46	2.11	15	3
3:A:43:ASN:O	3:A:46:ILE:HG13	0.46	2.11	9	7
1:B:113:DC:H4'	3:A:47:THR:HG22	0.46	1.87	19	2
3:A:23:ARG:NH1	3:A:23:ARG:HB3	0.46	2.25	1	2
3:A:70:TYR:O	3:A:74:ALA:N	0.46	2.49	17	20
3:A:81:TYR:O	3:A:84:GLU:N	0.46	2.49	2	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:79:LYS:HG3	3:A:80:ARG:N	0.46	2.26	20	2
2:C:126:DA:C3'	3:A:85:LYS:HE3	0.46	2.40	12	1
2:C:120:DA:N3	3:A:48:PHE:CZ	0.46	2.84	15	1
3:A:17:ASP:OD1	3:A:88:TYR:OH	0.46	2.34	3	2
3:A:17:ASP:HB3	3:A:20:ALA:CB	0.46	2.39	9	1
2:C:126:DA:C2	2:C:127:DC:C4	0.46	3.04	10	1
1:B:111:DT:O3'	3:A:36:ARG:HG3	0.46	2.11	20	15
3:A:46:ILE:HG23	3:A:50:GLN:HB2	0.46	1.88	3	3
3:A:21:PRO:O	3:A:84:GLU:OE2	0.46	2.33	4	2
2:C:127:DC:OP1	3:A:85:LYS:HE2	0.46	2.09	16	2
2:C:119:DA:C2'	2:C:120:DA:C8	0.46	2.99	17	1
2:C:127:DC:OP1	3:A:85:LYS:HD2	0.45	2.11	10	7
3:A:17:ASP:HB2	3:A:88:TYR:CE1	0.45	2.47	12	1
3:A:60:LYS:NZ	3:A:60:LYS:HB3	0.45	2.27	16	1
3:A:54:LYS:CD	3:A:58:LYS:HG2	0.45	2.40	20	1
3:A:32:ALA:HA	3:A:35:ASN:OD1	0.45	2.11	1	13
3:A:46:ILE:HD11	3:A:51:VAL:HG23	0.45	1.88	1	1
3:A:21:PRO:HB3	3:A:84:GLU:CG	0.45	2.42	19	5
3:A:46:ILE:CB	3:A:50:GLN:CG	0.45	2.94	6	6
3:A:23:ARG:HA	3:A:81:TYR:CD1	0.45	2.46	8	2
2:C:126:DA:C4	2:C:127:DC:C6	0.45	3.04	8	8
3:A:46:ILE:CD1	3:A:51:VAL:HB	0.45	2.40	11	7
3:A:54:LYS:CE	3:A:58:LYS:HG3	0.45	2.41	4	1
3:A:62:LEU:HB3	3:A:66:GLU:CG	0.45	2.41	5	2
3:A:23:ARG:O	3:A:24:ALA:C	0.45	2.55	8	1
3:A:31:PHE:O	3:A:34:GLU:N	0.45	2.50	15	2
3:A:17:ASP:CG	3:A:88:TYR:OH	0.45	2.55	5	8
2:C:123:DA:OP1	3:A:60:LYS:HE3	0.45	2.12	4	6
3:A:23:ARG:HG3	3:A:24:ALA:N	0.45	2.26	15	2
3:A:81:TYR:CE1	3:A:85:LYS:HD2	0.45	2.46	5	1
1:B:107:DA:C8	1:B:108:DT:H71	0.45	2.47	16	11
1:B:112:DT:OP1	3:A:36:ARG:HD2	0.45	2.12	6	8
3:A:46:ILE:HG23	3:A:47:THR:N	0.45	2.27	7	3
1:B:113:DC:OP1	3:A:40:ARG:NE	0.45	2.49	16	1
2:C:124:DT:C2'	2:C:125:DC:C6	0.45	3.00	14	8
3:A:36:ARG:O	3:A:40:ARG:HB3	0.45	2.12	20	5
3:A:28:TYR:HB3	3:A:29:MET:HE1	0.45	1.88	7	1
3:A:78:LYS:CA	3:A:78:LYS:HE2	0.45	2.42	7	1
3:A:32:ALA:O	3:A:36:ARG:HG3	0.45	2.12	18	1
2:C:126:DA:C2'	2:C:127:DC:O5'	0.45	2.65	2	12
3:A:28:TYR:CD1	3:A:28:TYR:C	0.45	2.90	16	7

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:49:GLY:O	3:A:53:LYS:HB2	0.45	2.11	2	5
3:A:46:ILE:CG1	3:A:50:GLN:HB2	0.45	2.42	16	2
3:A:47:THR:N	3:A:50:GLN:CG	0.45	2.80	19	1
1:B:113:DC:O4'	3:A:48:PHE:HB2	0.45	2.12	2	3
3:A:54:LYS:O	3:A:55:LEU:C	0.45	2.56	17	3
3:A:40:ARG:NH2	3:A:44:PRO:HB3	0.45	2.27	18	2
3:A:43:ASN:CB	3:A:46:ILE:HB	0.45	2.40	7	1
2:C:124:DT:O2	3:A:23:ARG:NH2	0.45	2.50	18	1
3:A:80:ARG:NE	3:A:80:ARG:C	0.44	2.70	15	4
3:A:79:LYS:HA	3:A:82:GLU:HB3	0.44	1.89	4	9
2:C:125:DC:O5'	3:A:78:LYS:CG	0.44	2.65	19	1
3:A:52:GLY:O	3:A:55:LEU:HB2	0.44	2.11	14	2
3:A:43:ASN:HB3	3:A:46:ILE:HG12	0.44	1.89	6	9
3:A:52:GLY:O	3:A:55:LEU:N	0.44	2.50	17	4
2:C:123:DA:OP1	3:A:60:LYS:HD3	0.44	2.12	13	3
2:C:123:DA:OP1	3:A:60:LYS:HD2	0.44	2.12	3	3
2:C:118:DG:C5	2:C:119:DA:C5	0.44	3.04	18	4
3:A:23:ARG:N	3:A:81:TYR:CD2	0.44	2.85	8	2
3:A:49:GLY:O	3:A:53:LYS:HD2	0.44	2.13	18	2
3:A:46:ILE:C	3:A:50:GLN:CG	0.44	2.85	16	1
2:C:126:DA:OP1	3:A:78:LYS:HG2	0.44	2.12	19	1
3:A:36:ARG:NH1	3:A:37:ASP:OD2	0.44	2.51	20	1
3:A:48:PHE:C	3:A:50:GLN:N	0.44	2.71	10	3
2:C:116:DC:H2'	2:C:117:DT:C5	0.44	2.47	18	3
2:C:124:DT:O2	3:A:23:ARG:NE	0.44	2.50	8	1
3:A:26:SER:HB3	3:A:29:MET:HG2	0.44	1.88	8	1
3:A:80:ARG:CG	3:A:81:TYR:N	0.44	2.80	8	1
2:C:125:DC:O5'	3:A:78:LYS:HD3	0.44	2.12	12	2
1:B:110:DG:C1'	3:A:29:MET:CE	0.44	2.95	16	1
3:A:18:PRO:HD2	3:A:88:TYR:OH	0.44	2.12	17	8
3:A:47:THR:O	3:A:48:PHE:C	0.44	2.56	12	4
3:A:19:ASN:O	3:A:20:ALA:C	0.44	2.55	19	9
3:A:46:ILE:HG22	3:A:50:GLN:HG3	0.44	1.89	6	5
1:B:112:DT:O2	3:A:48:PHE:HB2	0.44	2.11	17	4
3:A:27:ALA:O	3:A:31:PHE:HB3	0.44	2.13	6	9
1:B:107:DA:H2''	1:B:108:DT:O5'	0.44	2.13	8	5
3:A:68:GLN:HG2	3:A:69:PRO:CD	0.44	2.42	17	2
3:A:54:LYS:O	3:A:58:LYS:HG2	0.44	2.12	19	3
1:B:109:DT:O2	1:B:110:DG:N7	0.44	2.50	16	1
3:A:32:ALA:O	3:A:36:ARG:HD2	0.44	2.13	18	1
3:A:80:ARG:HA	3:A:80:ARG:NH1	0.44	2.27	1	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:79:LYS:HD2	3:A:80:ARG:N	0.44	2.28	2	1
3:A:59:TRP:CZ3	3:A:70:TYR:CD2	0.44	3.06	14	7
1:B:112:DT:H2''	1:B:113:DC:O5'	0.44	2.13	18	3
1:B:111:DT:H2'	1:B:112:DT:H71	0.44	1.90	18	17
3:A:59:TRP:HZ3	3:A:70:TYR:CD1	0.44	2.31	9	5
2:C:126:DA:O3'	3:A:85:LYS:HE3	0.44	2.13	10	1
3:A:46:ILE:O	3:A:50:GLN:HB2	0.44	2.13	13	1
3:A:75:GLN:HA	3:A:78:LYS:CE	0.44	2.43	14	1
1:B:107:DA:C5	1:B:108:DT:C5	0.44	3.06	1	2
2:C:125:DC:H4'	2:C:126:DA:OP1	0.44	2.13	1	3
3:A:46:ILE:HD11	3:A:51:VAL:CG2	0.44	2.42	1	1
3:A:21:PRO:HA	3:A:84:GLU:HG2	0.44	1.89	20	5
1:B:109:DT:O2	3:A:26:SER:HB2	0.44	2.13	8	1
3:A:59:TRP:O	3:A:62:LEU:HG	0.44	2.12	8	1
3:A:31:PHE:O	3:A:32:ALA:C	0.44	2.56	16	2
3:A:85:LYS:HG2	3:A:86:GLU:N	0.43	2.27	19	3
3:A:78:LYS:HE3	3:A:78:LYS:O	0.43	2.12	6	1
3:A:71:GLU:O	3:A:71:GLU:OE1	0.43	2.35	7	1
3:A:38:ILE:O	3:A:41:SER:HB3	0.43	2.12	20	2
2:C:126:DA:OP1	3:A:78:LYS:HE3	0.43	2.13	15	1
1:B:111:DT:C1'	3:A:36:ARG:HD3	0.43	2.42	18	1
3:A:79:LYS:O	3:A:82:GLU:HB3	0.43	2.13	15	10
3:A:21:PRO:CA	3:A:84:GLU:HG3	0.43	2.43	4	7
3:A:49:GLY:O	3:A:53:LYS:HD3	0.43	2.13	9	3
3:A:31:PHE:CE1	3:A:62:LEU:CD1	0.43	3.00	6	1
3:A:35:ASN:ND2	3:A:35:ASN:H	0.43	2.10	11	7
3:A:29:MET:O	3:A:33:ASN:CG	0.43	2.57	18	2
3:A:36:ARG:NE	3:A:37:ASP:OD2	0.43	2.51	11	1
2:C:123:DA:C5	2:C:124:DT:C7	0.43	3.01	16	1
3:A:35:ASN:CB	3:A:55:LEU:CD2	0.43	2.96	18	1
1:B:105:DT:H2''	1:B:106:DG:C8	0.43	2.47	17	4
3:A:54:LYS:HE2	3:A:58:LYS:CG	0.43	2.43	4	2
3:A:47:THR:HG22	3:A:48:PHE:N	0.43	2.28	14	2
2:C:122:DA:O3'	3:A:60:LYS:HE3	0.43	2.12	10	1
2:C:125:DC:OP2	3:A:78:LYS:HE2	0.43	2.13	12	1
3:A:43:ASN:HB3	3:A:46:ILE:CG1	0.43	2.43	13	1
3:A:36:ARG:CZ	3:A:55:LEU:CD1	0.43	2.96	16	1
3:A:82:GLU:HG2	3:A:85:LYS:CE	0.43	2.43	4	1
1:B:110:DG:H5'	3:A:25:LEU:CD2	0.43	2.44	7	3
3:A:84:GLU:HA	3:A:87:LEU:CD2	0.43	2.41	5	1
1:B:110:DG:C5'	3:A:25:LEU:HD11	0.43	2.44	8	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:59:TRP:CZ3	3:A:70:TYR:CD1	0.43	3.07	16	1
3:A:49:GLY:CA	3:A:53:LYS:HD2	0.43	2.43	20	1
2:C:129:DC:C2'	2:C:130:DC:C5	0.43	3.02	19	19
3:A:65:GLU:O	3:A:68:GLN:HG3	0.43	2.13	6	12
3:A:19:ASN:ND2	3:A:19:ASN:N	0.43	2.66	4	1
2:C:119:DA:H2'	2:C:120:DA:C8	0.43	2.49	17	1
2:C:125:DC:OP1	3:A:78:LYS:HD2	0.43	2.13	2	1
3:A:21:PRO:O	3:A:84:GLU:OE1	0.43	2.36	3	1
3:A:35:ASN:HB3	3:A:39:VAL:HG23	0.43	1.91	12	2
2:C:126:DA:O3'	3:A:85:LYS:HE2	0.43	2.13	8	2
3:A:39:VAL:HG13	3:A:40:ARG:N	0.43	2.27	17	1
1:B:103:DG:N2	2:C:129:DC:C2	0.43	2.87	20	1
1:B:103:DG:H2''	1:B:104:DG:O5'	0.43	2.14	3	1
3:A:49:GLY:C	3:A:50:GLN:CD	0.43	2.78	1	1
2:C:128:DC:C4	2:C:129:DC:N4	0.43	2.87	6	1
1:B:109:DT:O2	3:A:29:MET:CG	0.43	2.67	15	1
3:A:79:LYS:O	3:A:80:ARG:C	0.43	2.56	15	8
3:A:54:LYS:HD2	3:A:54:LYS:O	0.43	2.14	2	1
2:C:125:DC:C3'	3:A:78:LYS:HD3	0.43	2.43	9	1
3:A:72:ALA:O	3:A:75:GLN:HG2	0.43	2.14	12	3
3:A:26:SER:H	3:A:29:MET:HG2	0.43	1.72	14	3
3:A:46:ILE:CG2	3:A:50:GLN:HB3	0.43	2.44	12	1
3:A:80:ARG:CD	3:A:80:ARG:C	0.43	2.87	14	1
3:A:66:GLU:O	3:A:69:PRO:HD2	0.43	2.14	1	6
2:C:125:DC:C5'	3:A:23:ARG:NH2	0.43	2.81	4	2
3:A:27:ALA:CB	3:A:71:GLU:HA	0.43	2.44	16	2
2:C:126:DA:O3'	3:A:85:LYS:HD2	0.42	2.14	1	1
1:B:106:DG:O6	1:B:107:DA:N6	0.42	2.52	12	2
3:A:43:ASN:HB3	3:A:46:ILE:HD13	0.42	1.89	13	1
3:A:50:GLN:CD	3:A:50:GLN:N	0.42	2.72	17	1
1:B:111:DT:O4'	3:A:36:ARG:NH1	0.42	2.51	18	1
3:A:82:GLU:HA	3:A:85:LYS:CD	0.42	2.44	5	1
3:A:71:GLU:OE1	3:A:74:ALA:HB3	0.42	2.14	15	1
3:A:46:ILE:CD1	3:A:50:GLN:HB2	0.42	2.40	1	1
3:A:47:THR:C	3:A:51:VAL:CG1	0.42	2.87	6	2
2:C:125:DC:P	3:A:78:LYS:HE2	0.42	2.54	12	1
3:A:31:PHE:CE1	3:A:35:ASN:CG	0.42	2.93	15	1
3:A:21:PRO:O	3:A:22:LYS:HD3	0.42	2.14	1	2
3:A:39:VAL:HG11	3:A:51:VAL:HG13	0.42	1.91	1	1
3:A:54:LYS:HD3	3:A:58:LYS:HG2	0.42	1.90	20	3
3:A:23:ARG:CG	3:A:24:ALA:N	0.42	2.82	15	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:40:ARG:NH1	3:A:44:PRO:HB3	0.42	2.30	7	1
2:C:122:DA:O3'	3:A:60:LYS:CD	0.42	2.68	16	1
1:B:107:DA:N7	1:B:108:DT:C7	0.42	2.83	16	2
3:A:19:ASN:OD1	3:A:88:TYR:HA	0.42	2.15	1	1
2:C:121:DC:C5'	3:A:53:LYS:HG2	0.42	2.45	6	4
2:C:126:DA:O3'	3:A:85:LYS:CE	0.42	2.67	8	1
3:A:31:PHE:O	3:A:35:ASN:CG	0.42	2.57	3	2
3:A:46:ILE:HG13	3:A:47:THR:N	0.42	2.30	16	1
3:A:79:LYS:CG	3:A:80:ARG:N	0.42	2.82	3	1
3:A:54:LYS:O	3:A:57:GLU:HG3	0.42	2.15	6	1
3:A:43:ASN:ND2	3:A:43:ASN:N	0.42	2.68	7	1
3:A:70:TYR:O	3:A:71:GLU:C	0.42	2.58	8	1
3:A:54:LYS:O	3:A:54:LYS:HD2	0.42	2.15	14	1
3:A:48:PHE:HA	3:A:51:VAL:CG1	0.42	2.45	15	1
2:C:120:DA:N3	3:A:48:PHE:CE1	0.42	2.88	12	1
2:C:121:DC:O2	3:A:28:TYR:OH	0.42	2.30	16	1
3:A:63:THR:CB	3:A:66:GLU:HG2	0.42	2.44	15	2
1:B:110:DG:O4'	3:A:29:MET:HB3	0.41	2.15	19	3
3:A:28:TYR:HB3	3:A:29:MET:CE	0.41	2.46	20	2
3:A:21:PRO:O	3:A:22:LYS:HD2	0.41	2.14	6	1
3:A:78:LYS:C	3:A:78:LYS:HE2	0.41	2.35	6	1
3:A:63:THR:HB	3:A:66:GLU:CG	0.41	2.44	8	1
3:A:21:PRO:O	3:A:22:LYS:HG3	0.41	2.15	9	1
2:C:118:DG:C2'	2:C:119:DA:C8	0.41	3.03	18	6
3:A:30:PHE:CE2	3:A:74:ALA:CB	0.41	3.03	3	1
3:A:25:LEU:HD13	3:A:77:ASP:OD2	0.41	2.16	7	3
3:A:17:ASP:HB2	3:A:20:ALA:CB	0.41	2.44	7	1
3:A:36:ARG:CG	3:A:55:LEU:HD13	0.41	2.45	18	1
3:A:80:ARG:CZ	3:A:80:ARG:CA	0.41	2.99	1	1
3:A:40:ARG:CZ	3:A:44:PRO:HB3	0.41	2.46	7	1
3:A:35:ASN:HB3	3:A:39:VAL:CG2	0.41	2.46	12	2
3:A:36:ARG:NE	3:A:55:LEU:CD1	0.41	2.84	16	1
3:A:47:THR:CG2	3:A:48:PHE:N	0.41	2.83	20	1
3:A:83:SER:HA	3:A:86:GLU:HG2	0.41	1.92	5	1
3:A:26:SER:CB	3:A:29:MET:HG2	0.41	2.46	8	1
3:A:38:ILE:O	3:A:41:SER:HB2	0.41	2.16	12	2
1:B:109:DT:C2	1:B:110:DG:C5	0.41	3.08	16	1
3:A:69:PRO:O	3:A:73:LYS:HB2	0.41	2.15	8	3
3:A:47:THR:HB	3:A:50:GLN:HG2	0.41	1.92	8	1
3:A:54:LYS:O	3:A:58:LYS:HG3	0.41	2.16	10	1
3:A:82:GLU:HA	3:A:85:LYS:HG2	0.41	1.91	11	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:A:17:ASP:HB3	3:A:20:ALA:CA	0.41	2.46	17	1
3:A:57:GLU:HA	3:A:57:GLU:OE1	0.41	2.15	17	1
2:C:121:DC:O5'	3:A:53:LYS:CG	0.41	2.69	7	1
3:A:30:PHE:HB2	3:A:70:TYR:HB3	0.41	1.91	11	1
3:A:78:LYS:O	3:A:78:LYS:HE2	0.41	2.16	16	1
3:A:75:GLN:CG	3:A:78:LYS:NZ	0.41	2.84	18	2
3:A:68:GLN:CB	3:A:69:PRO:CD	0.41	2.99	11	2
3:A:58:LYS:HA	3:A:58:LYS:CE	0.41	2.46	7	1
1:B:110:DG:O4'	3:A:29:MET:HG3	0.41	2.15	8	1
3:A:31:PHE:CB	3:A:59:TRP:CZ3	0.41	3.04	16	2
3:A:51:VAL:O	3:A:55:LEU:HD12	0.41	2.16	17	1
3:A:21:PRO:C	3:A:22:LYS:CG	0.41	2.89	7	1
3:A:54:LYS:O	3:A:58:LYS:HB2	0.41	2.16	10	2
3:A:46:ILE:HB	3:A:50:GLN:HB3	0.41	1.92	20	1
3:A:54:LYS:O	3:A:58:LYS:CB	0.40	2.70	13	1
3:A:20:ALA:O	3:A:22:LYS:HG3	0.40	2.17	18	1
3:A:40:ARG:HG3	3:A:41:SER:N	0.40	2.30	18	1
3:A:78:LYS:O	3:A:82:GLU:HB2	0.40	2.17	3	1
3:A:82:GLU:HG2	3:A:85:LYS:HE3	0.40	1.93	4	1
1:B:108:DT:H2''	1:B:109:DT:C6	0.40	2.51	13	1
3:A:50:GLN:NE2	3:A:50:GLN:H	0.40	2.14	14	1
3:A:71:GLU:OE1	3:A:71:GLU:HA	0.40	2.16	15	1
3:A:77:ASP:O	3:A:80:ARG:HB3	0.40	2.16	11	1
1:B:111:DT:C5'	3:A:33:ASN:ND2	0.40	2.85	15	1
2:C:129:DC:H2''	2:C:130:DC:C6	0.40	2.52	17	2
3:A:36:ARG:CG	3:A:55:LEU:CD1	0.40	2.99	18	1
3:A:54:LYS:HD3	3:A:58:LYS:CD	0.40	2.47	20	1
3:A:47:THR:O	3:A:50:GLN:HG2	0.40	2.17	2	1
2:C:125:DC:O3'	3:A:78:LYS:HD3	0.40	2.16	9	1
3:A:18:PRO:HD2	3:A:88:TYR:CZ	0.40	2.52	12	1
3:A:21:PRO:HG3	3:A:88:TYR:HB2	0.40	1.94	15	1
2:C:126:DA:C5'	3:A:78:LYS:HD3	0.40	2.46	1	1
3:A:70:TYR:HA	3:A:73:LYS:HB2	0.40	1.94	8	1
3:A:21:PRO:C	3:A:22:LYS:HG3	0.40	2.37	11	1
1:B:109:DT:O2	3:A:29:MET:HG3	0.40	2.16	15	1
3:A:21:PRO:O	3:A:84:GLU:HG3	0.40	2.16	17	1

## 6.3 Torsion angles [i](#)

### 6.3.1 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 PDB entries followed by that with respect to all NMR entries. 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	
3	A	72/93 (77%)	53±2 (73±3%)	11±2 (15±3%)	8±2 (12±3%)	1	7
All	All	1440/1860 (77%)	1055 (73%)	219 (15%)	166 (12%)	1	7

All 17 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
3	A	23	ARG	20
3	A	63	THR	20
3	A	17	ASP	18
3	A	62	LEU	18
3	A	22	LYS	16
3	A	36	ARG	16
3	A	20	ALA	14
3	A	47	THR	10
3	A	48	PHE	9
3	A	25	LEU	8
3	A	49	GLY	6
3	A	18	PRO	4
3	A	38	ILE	2
3	A	46	ILE	2
3	A	24	ALA	1
3	A	26	SER	1
3	A	21	PRO	1

### 6.3.2 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 PDB entries followed by that with respect to all NMR entries. 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	
3	A	61/80 (76%)	41±2 (66±3%)	20±2 (34±3%)	1	11
All	All	1220/1600 (76%)	811 (66%)	409 (34%)	1	11

All 48 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
3	A	70	TYR	20
3	A	80	ARG	20
3	A	81	TYR	20
3	A	23	ARG	19
3	A	87	LEU	19
3	A	62	LEU	18
3	A	65	GLU	18
3	A	73	LYS	18
3	A	35	ASN	15
3	A	63	THR	15
3	A	78	LYS	13
3	A	50	GLN	13
3	A	22	LYS	12
3	A	40	ARG	12
3	A	85	LYS	12
3	A	26	SER	11
3	A	55	LEU	11
3	A	58	LYS	11
3	A	45	ASP	10
3	A	48	PHE	10
3	A	54	LYS	9
3	A	47	THR	8
3	A	25	LEU	8
3	A	79	LYS	8
3	A	66	GLU	8
3	A	38	ILE	6
3	A	83	SER	6
3	A	37	ASP	6
3	A	82	GLU	5
3	A	71	GLU	5
3	A	19	ASN	4
3	A	33	ASN	4
3	A	51	VAL	4
3	A	53	LYS	4
3	A	77	ASP	3
3	A	46	ILE	3

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Mol	Chain	Res	Type	Models (Total)
3	A	75	GLN	3
3	A	17	ASP	3
3	A	43	ASN	2
3	A	68	GLN	2
3	A	86	GLU	2
3	A	36	ARG	2
3	A	29	MET	2
3	A	34	GLU	1
3	A	60	LYS	1
3	A	42	GLU	1
3	A	67	LYS	1
3	A	57	GLU	1

### 6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 6.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

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

There are no ligands in this entry.

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

There are no such molecules in this entry.

### 6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 7 Chemical shift validation

No chemical shift data were provided