



## wwPDB EM Map/Model Validation Report ⓘ

Apr 10, 2016 – 02:17 PM BST

PDB ID : 4BBL  
EMDB ID: : EMD-2205  
Title : Cryo-electron microscopy reconstruction of the helical part of influenza A virus ribonucleoprotein isolated from virions.  
Authors : Arranz, R.; Coloma, R.; Chichon, F.J.; Conesa, J.J.; Carrascosa, J.L.; Valpuesta, J.M.; Ortin, J.; Martin-Benito, J.  
Deposited on : 2012-09-26  
Resolution : 18.00 Å(reported)  
Based on PDB ID : 2IQH

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.  
For rigid body fitted models, validation errors reported here could stem from errors in the original structure(s) used in the fitting.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<http://wwpdb.org/validation/2016/EMValidationReportHelp>

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MolProbity : 4.02b-467  
Mogul : unknown  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk27241

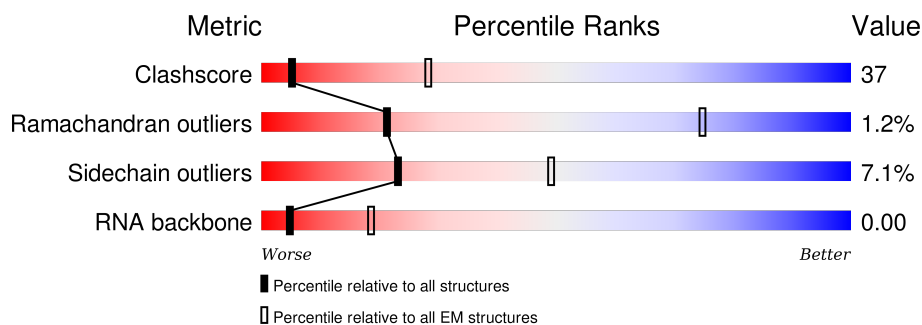
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 18.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.




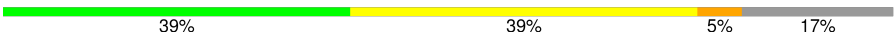



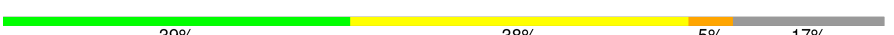
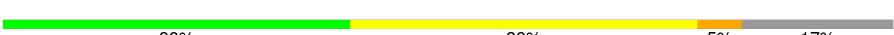
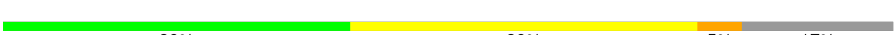



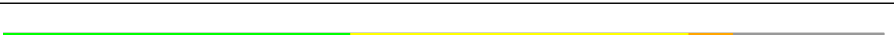

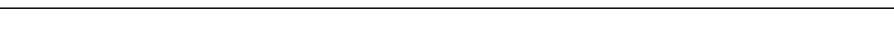




Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A	499	40% 38% 5% 17%
1	B	499	39% 36% 5% 20%
1	C	499	38% 39% 5% 17%
1	D	499	38% 39% 5% 17%
1	E	499	38% 39% 5% 17%
1	F	499	39% 39% 5% 17%
1	G	499	39% 39% 5% 17%
1	H	499	39% 38% 5% 17%

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Mol	Chain	Length	Quality of chain
1	I	499	
1	J	499	
1	K	499	
1	L	499	
1	M	499	
1	N	499	
1	O	499	
1	P	499	
1	Q	499	
1	R	499	
1	S	499	
1	T	499	
1	U	499	
1	V	499	
1	W	499	
1	X	499	
2	Y	308	
2	Z	308	

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 78901 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called NUCLEOPROTEIN.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	B	399	Total	C	N	O	S	0	0
			3151	1954	586	586	25		
1	C	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	D	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	E	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	F	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	G	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	H	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	I	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	J	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	K	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	L	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	M	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	N	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	O	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	P	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	Q	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	R	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	S	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	T	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	U	414	Total	C	N	O	S	0	0
			3271	2031	607	608	25		
1	V	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		
1	W	399	Total	C	N	O	S	0	0
			3151	1954	586	586	25		
1	X	414	Total	C	N	O	S	0	0
			3272	2031	608	608	25		

There are 312 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	499	LEU	-	EXPRESSION TAG	UNP P15682
A	500	GLU	-	EXPRESSION TAG	UNP P15682
A	501	HIS	-	EXPRESSION TAG	UNP P15682
A	502	HIS	-	EXPRESSION TAG	UNP P15682
A	503	HIS	-	EXPRESSION TAG	UNP P15682
A	504	HIS	-	EXPRESSION TAG	UNP P15682
A	505	HIS	-	EXPRESSION TAG	UNP P15682
A	506	HIS	-	EXPRESSION TAG	UNP P15682
A	34	ASP	GLY	CONFLICT	UNP P15682
A	105	ARG	MET	CONFLICT	UNP P15682
A	237	THR	ALA	CONFLICT	UNP P15682
A	283	SER	PRO	CONFLICT	UNP P15682
A	472	THR	ALA	CONFLICT	UNP P15682
B	499	LEU	-	EXPRESSION TAG	UNP P15682
B	500	GLU	-	EXPRESSION TAG	UNP P15682
B	501	HIS	-	EXPRESSION TAG	UNP P15682
B	502	HIS	-	EXPRESSION TAG	UNP P15682
B	503	HIS	-	EXPRESSION TAG	UNP P15682
B	504	HIS	-	EXPRESSION TAG	UNP P15682
B	505	HIS	-	EXPRESSION TAG	UNP P15682
B	506	HIS	-	EXPRESSION TAG	UNP P15682
B	34	ASP	GLY	CONFLICT	UNP P15682
B	105	ARG	MET	CONFLICT	UNP P15682
B	237	THR	ALA	CONFLICT	UNP P15682
B	283	SER	PRO	CONFLICT	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
B	472	THR	ALA	CONFLICT	UNP P15682
C	499	LEU	-	EXPRESSION TAG	UNP P15682
C	500	GLU	-	EXPRESSION TAG	UNP P15682
C	501	HIS	-	EXPRESSION TAG	UNP P15682
C	502	HIS	-	EXPRESSION TAG	UNP P15682
C	503	HIS	-	EXPRESSION TAG	UNP P15682
C	504	HIS	-	EXPRESSION TAG	UNP P15682
C	505	HIS	-	EXPRESSION TAG	UNP P15682
C	506	HIS	-	EXPRESSION TAG	UNP P15682
C	34	ASP	GLY	CONFLICT	UNP P15682
C	105	ARG	MET	CONFLICT	UNP P15682
C	237	THR	ALA	CONFLICT	UNP P15682
C	283	SER	PRO	CONFLICT	UNP P15682
C	472	THR	ALA	CONFLICT	UNP P15682
D	499	LEU	-	EXPRESSION TAG	UNP P15682
D	500	GLU	-	EXPRESSION TAG	UNP P15682
D	501	HIS	-	EXPRESSION TAG	UNP P15682
D	502	HIS	-	EXPRESSION TAG	UNP P15682
D	503	HIS	-	EXPRESSION TAG	UNP P15682
D	504	HIS	-	EXPRESSION TAG	UNP P15682
D	505	HIS	-	EXPRESSION TAG	UNP P15682
D	506	HIS	-	EXPRESSION TAG	UNP P15682
D	34	ASP	GLY	CONFLICT	UNP P15682
D	105	ARG	MET	CONFLICT	UNP P15682
D	237	THR	ALA	CONFLICT	UNP P15682
D	283	SER	PRO	CONFLICT	UNP P15682
D	472	THR	ALA	CONFLICT	UNP P15682
E	499	LEU	-	EXPRESSION TAG	UNP P15682
E	500	GLU	-	EXPRESSION TAG	UNP P15682
E	501	HIS	-	EXPRESSION TAG	UNP P15682
E	502	HIS	-	EXPRESSION TAG	UNP P15682
E	503	HIS	-	EXPRESSION TAG	UNP P15682
E	504	HIS	-	EXPRESSION TAG	UNP P15682
E	505	HIS	-	EXPRESSION TAG	UNP P15682
E	506	HIS	-	EXPRESSION TAG	UNP P15682
E	34	ASP	GLY	CONFLICT	UNP P15682
E	105	ARG	MET	CONFLICT	UNP P15682
E	237	THR	ALA	CONFLICT	UNP P15682
E	283	SER	PRO	CONFLICT	UNP P15682
E	472	THR	ALA	CONFLICT	UNP P15682
F	499	LEU	-	EXPRESSION TAG	UNP P15682
F	500	GLU	-	EXPRESSION TAG	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
F	501	HIS	-	EXPRESSION TAG	UNP P15682
F	502	HIS	-	EXPRESSION TAG	UNP P15682
F	503	HIS	-	EXPRESSION TAG	UNP P15682
F	504	HIS	-	EXPRESSION TAG	UNP P15682
F	505	HIS	-	EXPRESSION TAG	UNP P15682
F	506	HIS	-	EXPRESSION TAG	UNP P15682
F	34	ASP	GLY	CONFLICT	UNP P15682
F	105	ARG	MET	CONFLICT	UNP P15682
F	237	THR	ALA	CONFLICT	UNP P15682
F	283	SER	PRO	CONFLICT	UNP P15682
F	472	THR	ALA	CONFLICT	UNP P15682
G	499	LEU	-	EXPRESSION TAG	UNP P15682
G	500	GLU	-	EXPRESSION TAG	UNP P15682
G	501	HIS	-	EXPRESSION TAG	UNP P15682
G	502	HIS	-	EXPRESSION TAG	UNP P15682
G	503	HIS	-	EXPRESSION TAG	UNP P15682
G	504	HIS	-	EXPRESSION TAG	UNP P15682
G	505	HIS	-	EXPRESSION TAG	UNP P15682
G	506	HIS	-	EXPRESSION TAG	UNP P15682
G	34	ASP	GLY	CONFLICT	UNP P15682
G	105	ARG	MET	CONFLICT	UNP P15682
G	237	THR	ALA	CONFLICT	UNP P15682
G	283	SER	PRO	CONFLICT	UNP P15682
G	472	THR	ALA	CONFLICT	UNP P15682
H	499	LEU	-	EXPRESSION TAG	UNP P15682
H	500	GLU	-	EXPRESSION TAG	UNP P15682
H	501	HIS	-	EXPRESSION TAG	UNP P15682
H	502	HIS	-	EXPRESSION TAG	UNP P15682
H	503	HIS	-	EXPRESSION TAG	UNP P15682
H	504	HIS	-	EXPRESSION TAG	UNP P15682
H	505	HIS	-	EXPRESSION TAG	UNP P15682
H	506	HIS	-	EXPRESSION TAG	UNP P15682
H	34	ASP	GLY	CONFLICT	UNP P15682
H	105	ARG	MET	CONFLICT	UNP P15682
H	237	THR	ALA	CONFLICT	UNP P15682
H	283	SER	PRO	CONFLICT	UNP P15682
H	472	THR	ALA	CONFLICT	UNP P15682
I	499	LEU	-	EXPRESSION TAG	UNP P15682
I	500	GLU	-	EXPRESSION TAG	UNP P15682
I	501	HIS	-	EXPRESSION TAG	UNP P15682
I	502	HIS	-	EXPRESSION TAG	UNP P15682
I	503	HIS	-	EXPRESSION TAG	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
I	504	HIS	-	EXPRESSION TAG	UNP P15682
I	505	HIS	-	EXPRESSION TAG	UNP P15682
I	506	HIS	-	EXPRESSION TAG	UNP P15682
I	34	ASP	GLY	CONFLICT	UNP P15682
I	105	ARG	MET	CONFLICT	UNP P15682
I	237	THR	ALA	CONFLICT	UNP P15682
I	283	SER	PRO	CONFLICT	UNP P15682
I	472	THR	ALA	CONFLICT	UNP P15682
J	499	LEU	-	EXPRESSION TAG	UNP P15682
J	500	GLU	-	EXPRESSION TAG	UNP P15682
J	501	HIS	-	EXPRESSION TAG	UNP P15682
J	502	HIS	-	EXPRESSION TAG	UNP P15682
J	503	HIS	-	EXPRESSION TAG	UNP P15682
J	504	HIS	-	EXPRESSION TAG	UNP P15682
J	505	HIS	-	EXPRESSION TAG	UNP P15682
J	506	HIS	-	EXPRESSION TAG	UNP P15682
J	34	ASP	GLY	CONFLICT	UNP P15682
J	105	ARG	MET	CONFLICT	UNP P15682
J	237	THR	ALA	CONFLICT	UNP P15682
J	283	SER	PRO	CONFLICT	UNP P15682
J	472	THR	ALA	CONFLICT	UNP P15682
K	499	LEU	-	EXPRESSION TAG	UNP P15682
K	500	GLU	-	EXPRESSION TAG	UNP P15682
K	501	HIS	-	EXPRESSION TAG	UNP P15682
K	502	HIS	-	EXPRESSION TAG	UNP P15682
K	503	HIS	-	EXPRESSION TAG	UNP P15682
K	504	HIS	-	EXPRESSION TAG	UNP P15682
K	505	HIS	-	EXPRESSION TAG	UNP P15682
K	506	HIS	-	EXPRESSION TAG	UNP P15682
K	34	ASP	GLY	CONFLICT	UNP P15682
K	105	ARG	MET	CONFLICT	UNP P15682
K	237	THR	ALA	CONFLICT	UNP P15682
K	283	SER	PRO	CONFLICT	UNP P15682
K	472	THR	ALA	CONFLICT	UNP P15682
L	499	LEU	-	EXPRESSION TAG	UNP P15682
L	500	GLU	-	EXPRESSION TAG	UNP P15682
L	501	HIS	-	EXPRESSION TAG	UNP P15682
L	502	HIS	-	EXPRESSION TAG	UNP P15682
L	503	HIS	-	EXPRESSION TAG	UNP P15682
L	504	HIS	-	EXPRESSION TAG	UNP P15682
L	505	HIS	-	EXPRESSION TAG	UNP P15682
L	506	HIS	-	EXPRESSION TAG	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
L	34	ASP	GLY	CONFLICT	UNP P15682
L	105	ARG	MET	CONFLICT	UNP P15682
L	237	THR	ALA	CONFLICT	UNP P15682
L	283	SER	PRO	CONFLICT	UNP P15682
L	472	THR	ALA	CONFLICT	UNP P15682
M	499	LEU	-	EXPRESSION TAG	UNP P15682
M	500	GLU	-	EXPRESSION TAG	UNP P15682
M	501	HIS	-	EXPRESSION TAG	UNP P15682
M	502	HIS	-	EXPRESSION TAG	UNP P15682
M	503	HIS	-	EXPRESSION TAG	UNP P15682
M	504	HIS	-	EXPRESSION TAG	UNP P15682
M	505	HIS	-	EXPRESSION TAG	UNP P15682
M	506	HIS	-	EXPRESSION TAG	UNP P15682
M	34	ASP	GLY	CONFLICT	UNP P15682
M	105	ARG	MET	CONFLICT	UNP P15682
M	237	THR	ALA	CONFLICT	UNP P15682
M	283	SER	PRO	CONFLICT	UNP P15682
M	472	THR	ALA	CONFLICT	UNP P15682
N	499	LEU	-	EXPRESSION TAG	UNP P15682
N	500	GLU	-	EXPRESSION TAG	UNP P15682
N	501	HIS	-	EXPRESSION TAG	UNP P15682
N	502	HIS	-	EXPRESSION TAG	UNP P15682
N	503	HIS	-	EXPRESSION TAG	UNP P15682
N	504	HIS	-	EXPRESSION TAG	UNP P15682
N	505	HIS	-	EXPRESSION TAG	UNP P15682
N	506	HIS	-	EXPRESSION TAG	UNP P15682
N	34	ASP	GLY	CONFLICT	UNP P15682
N	105	ARG	MET	CONFLICT	UNP P15682
N	237	THR	ALA	CONFLICT	UNP P15682
N	283	SER	PRO	CONFLICT	UNP P15682
N	472	THR	ALA	CONFLICT	UNP P15682
O	499	LEU	-	EXPRESSION TAG	UNP P15682
O	500	GLU	-	EXPRESSION TAG	UNP P15682
O	501	HIS	-	EXPRESSION TAG	UNP P15682
O	502	HIS	-	EXPRESSION TAG	UNP P15682
O	503	HIS	-	EXPRESSION TAG	UNP P15682
O	504	HIS	-	EXPRESSION TAG	UNP P15682
O	505	HIS	-	EXPRESSION TAG	UNP P15682
O	506	HIS	-	EXPRESSION TAG	UNP P15682
O	34	ASP	GLY	CONFLICT	UNP P15682
O	105	ARG	MET	CONFLICT	UNP P15682
O	237	THR	ALA	CONFLICT	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
O	283	SER	PRO	CONFLICT	UNP P15682
O	472	THR	ALA	CONFLICT	UNP P15682
P	499	LEU	-	EXPRESSION TAG	UNP P15682
P	500	GLU	-	EXPRESSION TAG	UNP P15682
P	501	HIS	-	EXPRESSION TAG	UNP P15682
P	502	HIS	-	EXPRESSION TAG	UNP P15682
P	503	HIS	-	EXPRESSION TAG	UNP P15682
P	504	HIS	-	EXPRESSION TAG	UNP P15682
P	505	HIS	-	EXPRESSION TAG	UNP P15682
P	506	HIS	-	EXPRESSION TAG	UNP P15682
P	34	ASP	GLY	CONFLICT	UNP P15682
P	105	ARG	MET	CONFLICT	UNP P15682
P	237	THR	ALA	CONFLICT	UNP P15682
P	283	SER	PRO	CONFLICT	UNP P15682
P	472	THR	ALA	CONFLICT	UNP P15682
Q	499	LEU	-	EXPRESSION TAG	UNP P15682
Q	500	GLU	-	EXPRESSION TAG	UNP P15682
Q	501	HIS	-	EXPRESSION TAG	UNP P15682
Q	502	HIS	-	EXPRESSION TAG	UNP P15682
Q	503	HIS	-	EXPRESSION TAG	UNP P15682
Q	504	HIS	-	EXPRESSION TAG	UNP P15682
Q	505	HIS	-	EXPRESSION TAG	UNP P15682
Q	506	HIS	-	EXPRESSION TAG	UNP P15682
Q	34	ASP	GLY	CONFLICT	UNP P15682
Q	105	ARG	MET	CONFLICT	UNP P15682
Q	237	THR	ALA	CONFLICT	UNP P15682
Q	283	SER	PRO	CONFLICT	UNP P15682
Q	472	THR	ALA	CONFLICT	UNP P15682
R	499	LEU	-	EXPRESSION TAG	UNP P15682
R	500	GLU	-	EXPRESSION TAG	UNP P15682
R	501	HIS	-	EXPRESSION TAG	UNP P15682
R	502	HIS	-	EXPRESSION TAG	UNP P15682
R	503	HIS	-	EXPRESSION TAG	UNP P15682
R	504	HIS	-	EXPRESSION TAG	UNP P15682
R	505	HIS	-	EXPRESSION TAG	UNP P15682
R	506	HIS	-	EXPRESSION TAG	UNP P15682
R	34	ASP	GLY	CONFLICT	UNP P15682
R	105	ARG	MET	CONFLICT	UNP P15682
R	237	THR	ALA	CONFLICT	UNP P15682
R	283	SER	PRO	CONFLICT	UNP P15682
R	472	THR	ALA	CONFLICT	UNP P15682
S	499	LEU	-	EXPRESSION TAG	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
S	500	GLU	-	EXPRESSION TAG	UNP P15682
S	501	HIS	-	EXPRESSION TAG	UNP P15682
S	502	HIS	-	EXPRESSION TAG	UNP P15682
S	503	HIS	-	EXPRESSION TAG	UNP P15682
S	504	HIS	-	EXPRESSION TAG	UNP P15682
S	505	HIS	-	EXPRESSION TAG	UNP P15682
S	506	HIS	-	EXPRESSION TAG	UNP P15682
S	34	ASP	GLY	CONFLICT	UNP P15682
S	105	ARG	MET	CONFLICT	UNP P15682
S	237	THR	ALA	CONFLICT	UNP P15682
S	283	SER	PRO	CONFLICT	UNP P15682
S	472	THR	ALA	CONFLICT	UNP P15682
T	499	LEU	-	EXPRESSION TAG	UNP P15682
T	500	GLU	-	EXPRESSION TAG	UNP P15682
T	501	HIS	-	EXPRESSION TAG	UNP P15682
T	502	HIS	-	EXPRESSION TAG	UNP P15682
T	503	HIS	-	EXPRESSION TAG	UNP P15682
T	504	HIS	-	EXPRESSION TAG	UNP P15682
T	505	HIS	-	EXPRESSION TAG	UNP P15682
T	506	HIS	-	EXPRESSION TAG	UNP P15682
T	34	ASP	GLY	CONFLICT	UNP P15682
T	105	ARG	MET	CONFLICT	UNP P15682
T	237	THR	ALA	CONFLICT	UNP P15682
T	283	SER	PRO	CONFLICT	UNP P15682
T	472	THR	ALA	CONFLICT	UNP P15682
U	499	LEU	-	EXPRESSION TAG	UNP P15682
U	500	GLU	-	EXPRESSION TAG	UNP P15682
U	501	HIS	-	EXPRESSION TAG	UNP P15682
U	502	HIS	-	EXPRESSION TAG	UNP P15682
U	503	HIS	-	EXPRESSION TAG	UNP P15682
U	504	HIS	-	EXPRESSION TAG	UNP P15682
U	505	HIS	-	EXPRESSION TAG	UNP P15682
U	506	HIS	-	EXPRESSION TAG	UNP P15682
U	34	ASP	GLY	CONFLICT	UNP P15682
U	105	ARG	MET	CONFLICT	UNP P15682
U	237	THR	ALA	CONFLICT	UNP P15682
U	283	SER	PRO	CONFLICT	UNP P15682
U	472	THR	ALA	CONFLICT	UNP P15682
V	499	LEU	-	EXPRESSION TAG	UNP P15682
V	500	GLU	-	EXPRESSION TAG	UNP P15682
V	501	HIS	-	EXPRESSION TAG	UNP P15682
V	502	HIS	-	EXPRESSION TAG	UNP P15682

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Chain	Residue	Modelled	Actual	Comment	Reference
V	503	HIS	-	EXPRESSION TAG	UNP P15682
V	504	HIS	-	EXPRESSION TAG	UNP P15682
V	505	HIS	-	EXPRESSION TAG	UNP P15682
V	506	HIS	-	EXPRESSION TAG	UNP P15682
V	34	ASP	GLY	CONFLICT	UNP P15682
V	105	ARG	MET	CONFLICT	UNP P15682
V	237	THR	ALA	CONFLICT	UNP P15682
V	283	SER	PRO	CONFLICT	UNP P15682
V	472	THR	ALA	CONFLICT	UNP P15682
W	499	LEU	-	EXPRESSION TAG	UNP P15682
W	500	GLU	-	EXPRESSION TAG	UNP P15682
W	501	HIS	-	EXPRESSION TAG	UNP P15682
W	502	HIS	-	EXPRESSION TAG	UNP P15682
W	503	HIS	-	EXPRESSION TAG	UNP P15682
W	504	HIS	-	EXPRESSION TAG	UNP P15682
W	505	HIS	-	EXPRESSION TAG	UNP P15682
W	506	HIS	-	EXPRESSION TAG	UNP P15682
W	34	ASP	GLY	CONFLICT	UNP P15682
W	105	ARG	MET	CONFLICT	UNP P15682
W	237	THR	ALA	CONFLICT	UNP P15682
W	283	SER	PRO	CONFLICT	UNP P15682
W	472	THR	ALA	CONFLICT	UNP P15682
X	499	LEU	-	EXPRESSION TAG	UNP P15682
X	500	GLU	-	EXPRESSION TAG	UNP P15682
X	501	HIS	-	EXPRESSION TAG	UNP P15682
X	502	HIS	-	EXPRESSION TAG	UNP P15682
X	503	HIS	-	EXPRESSION TAG	UNP P15682
X	504	HIS	-	EXPRESSION TAG	UNP P15682
X	505	HIS	-	EXPRESSION TAG	UNP P15682
X	506	HIS	-	EXPRESSION TAG	UNP P15682
X	34	ASP	GLY	CONFLICT	UNP P15682
X	105	ARG	MET	CONFLICT	UNP P15682
X	237	THR	ALA	CONFLICT	UNP P15682
X	283	SER	PRO	CONFLICT	UNP P15682
X	472	THR	ALA	CONFLICT	UNP P15682

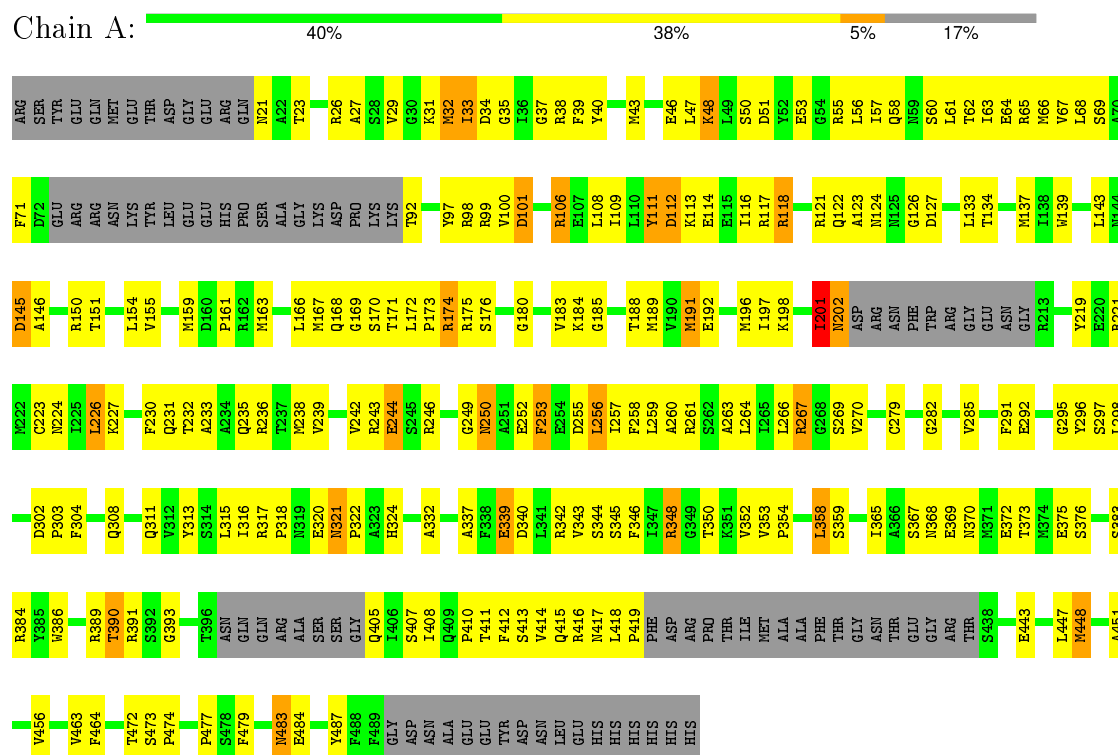
- Molecule 2 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms	AltConf	Trace
2	Y	308	Total P 308 308	0	308
2	Z	308	Total P 308 308	0	308

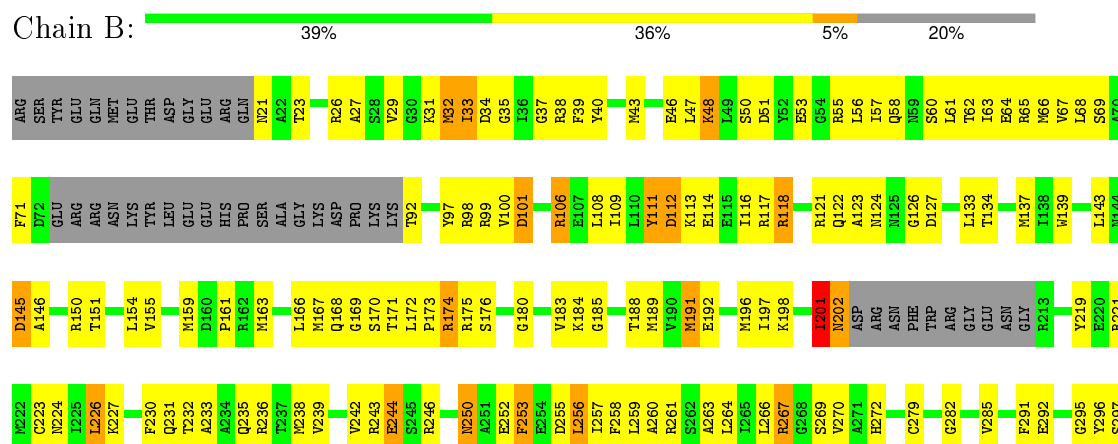
### 3 Residue-property plots

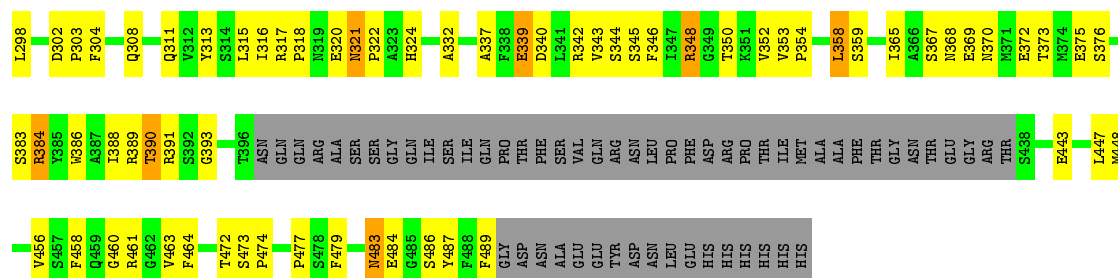
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric 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.

#### • Molecule 1: NUCLEOPROTEIN



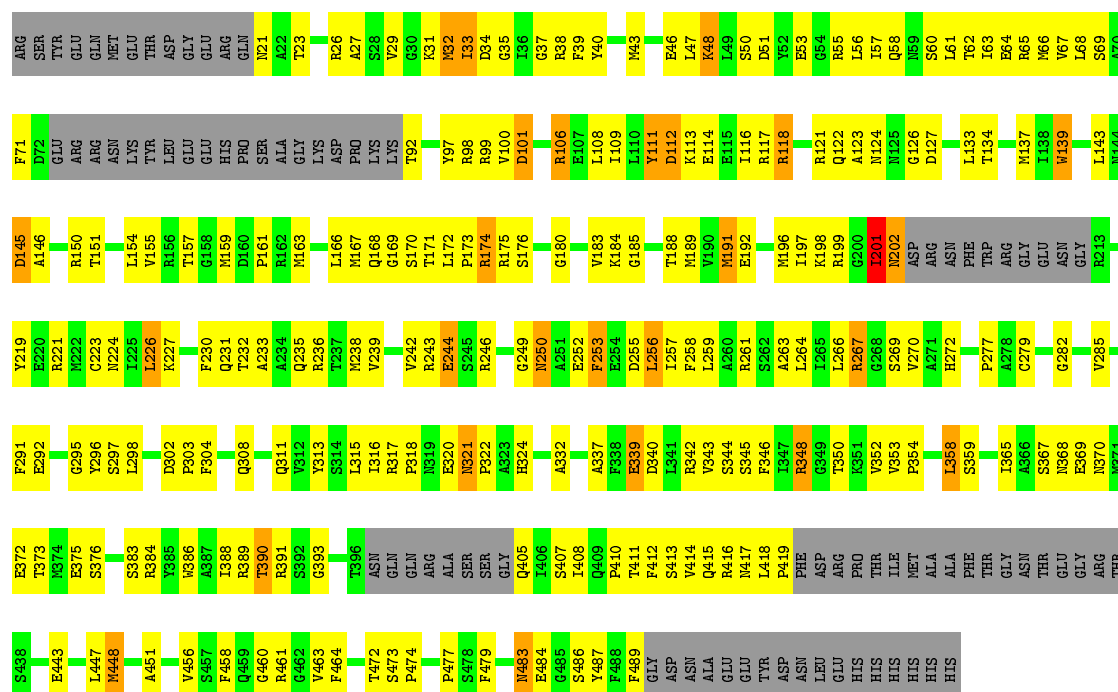
#### • Molecule 1: NUCLEOPROTEIN





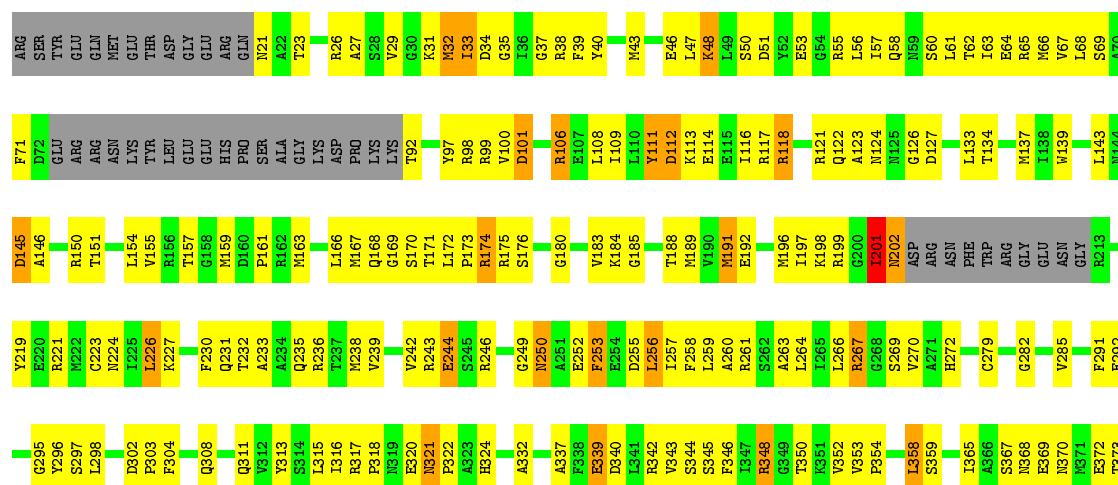
## • Molecule 1: NUCLEOPROTEIN

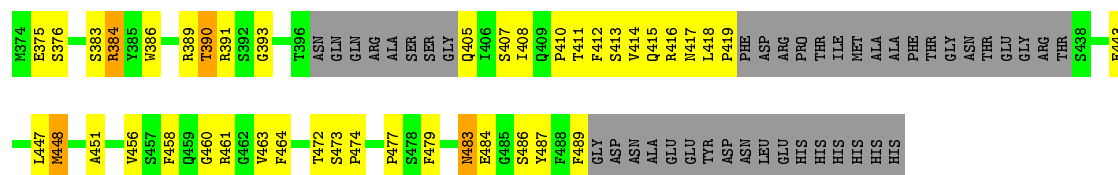
Chain C: 38% 39% 5% 17%



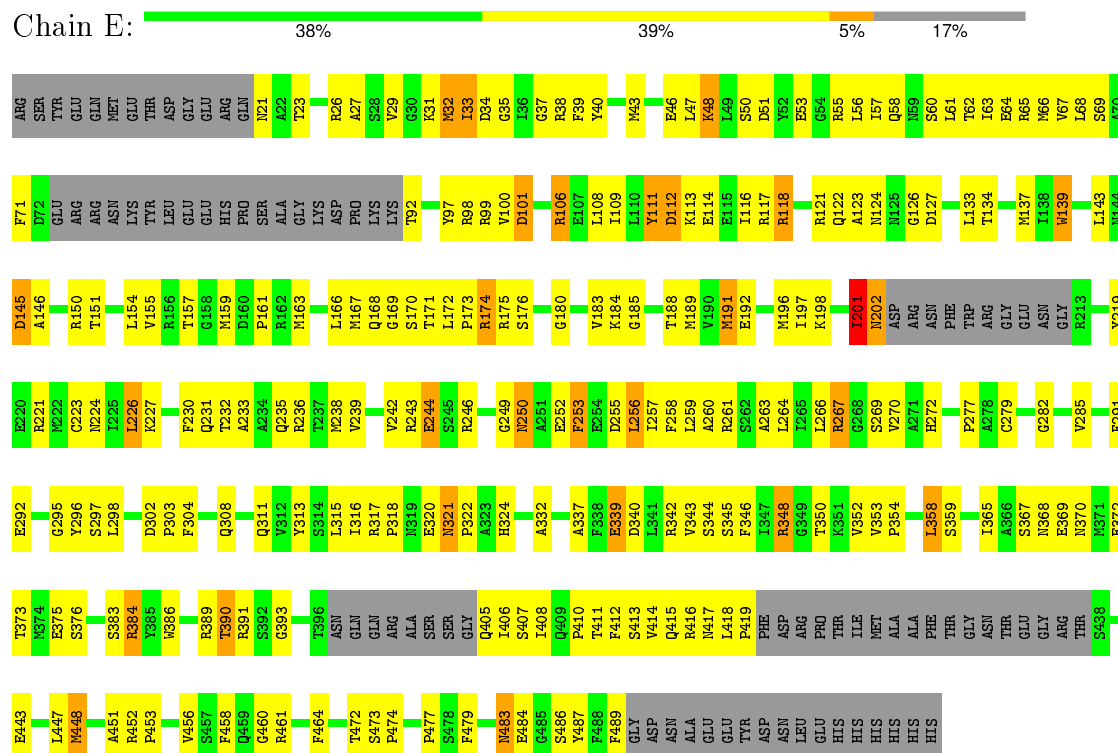
## • Molecule 1: NUCLEOPROTEIN

Chain D: 38% 39% 5% 17%

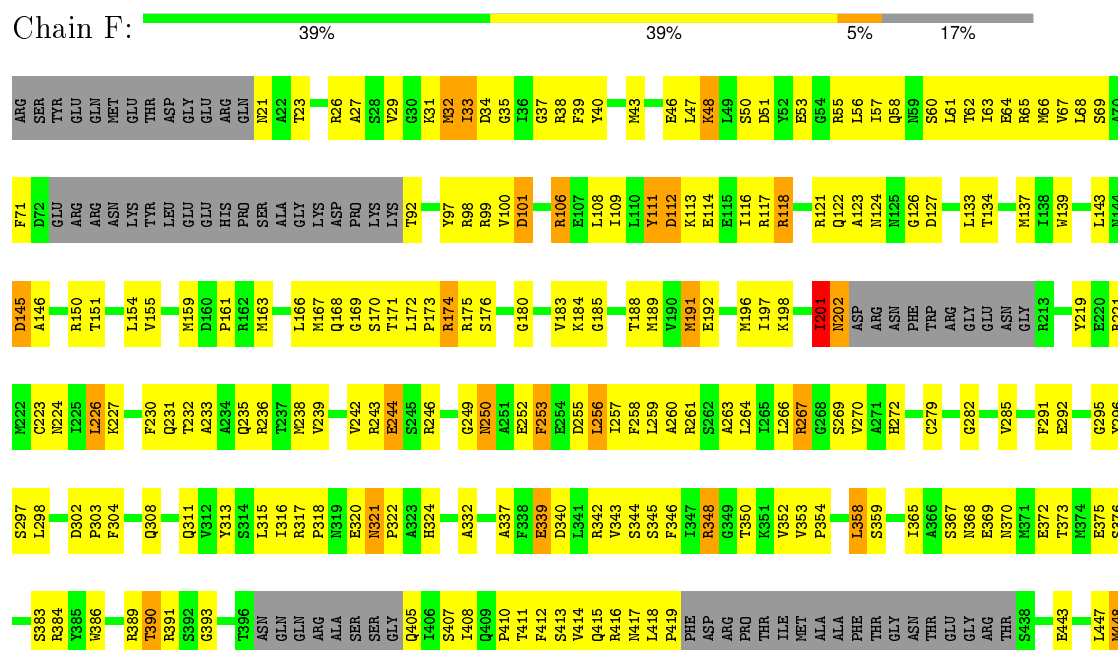


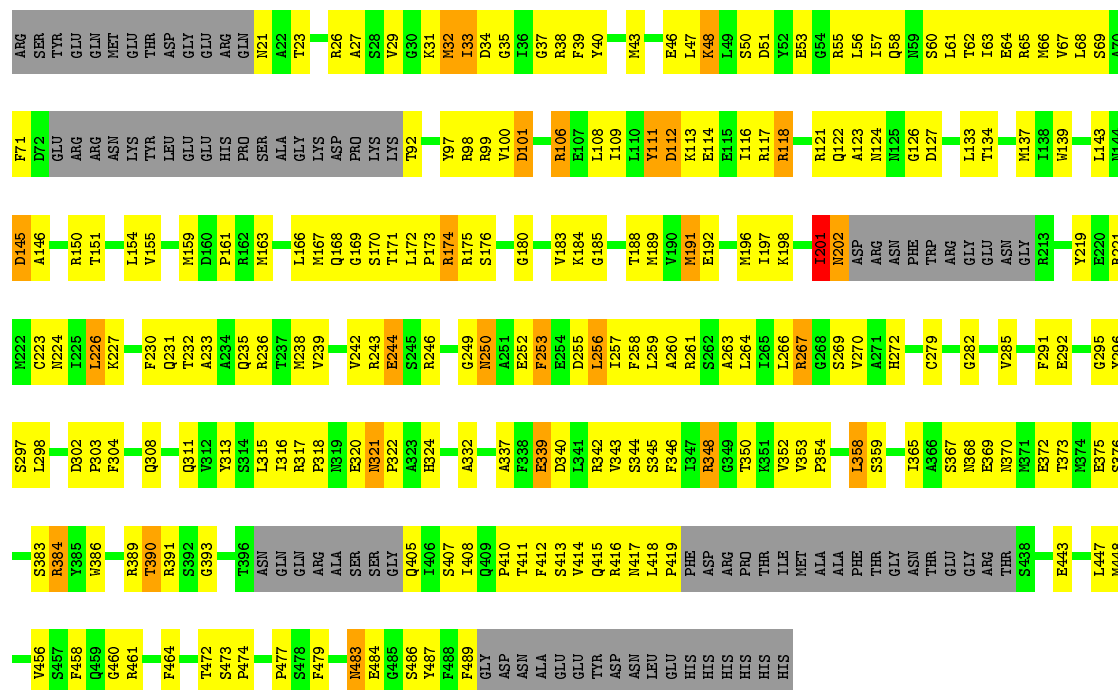


# Molecule 1: NUCLEOPROTEIN



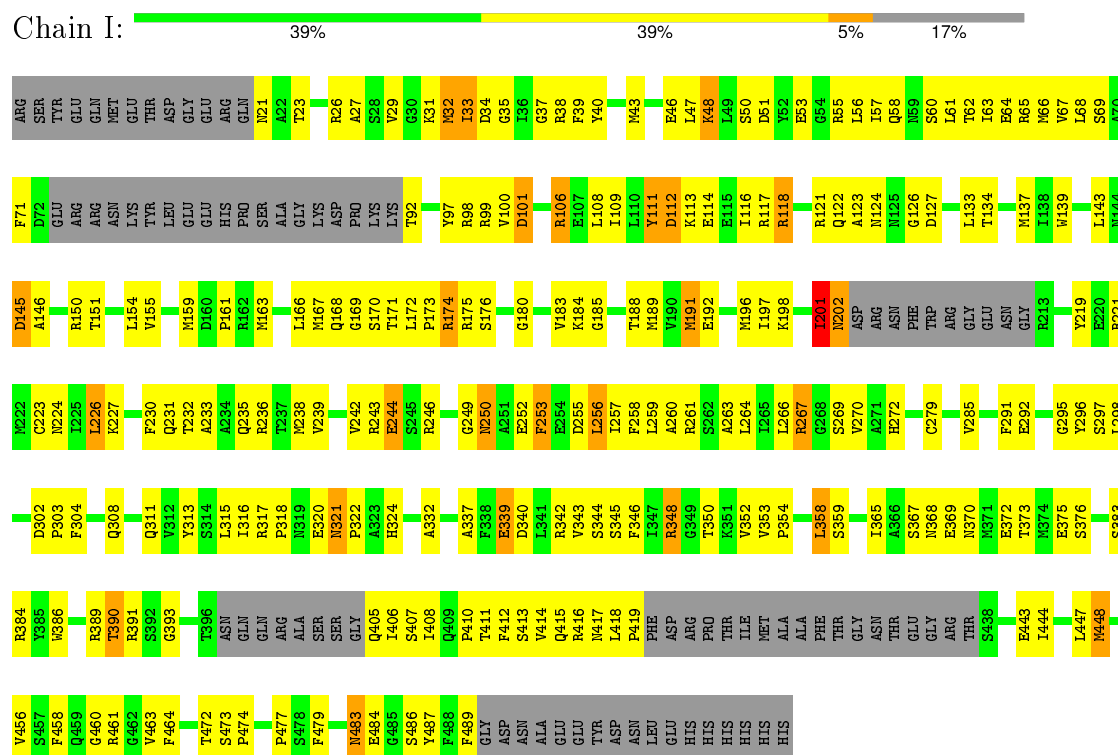
# Molecule 1: NUCLEOPROTEIN



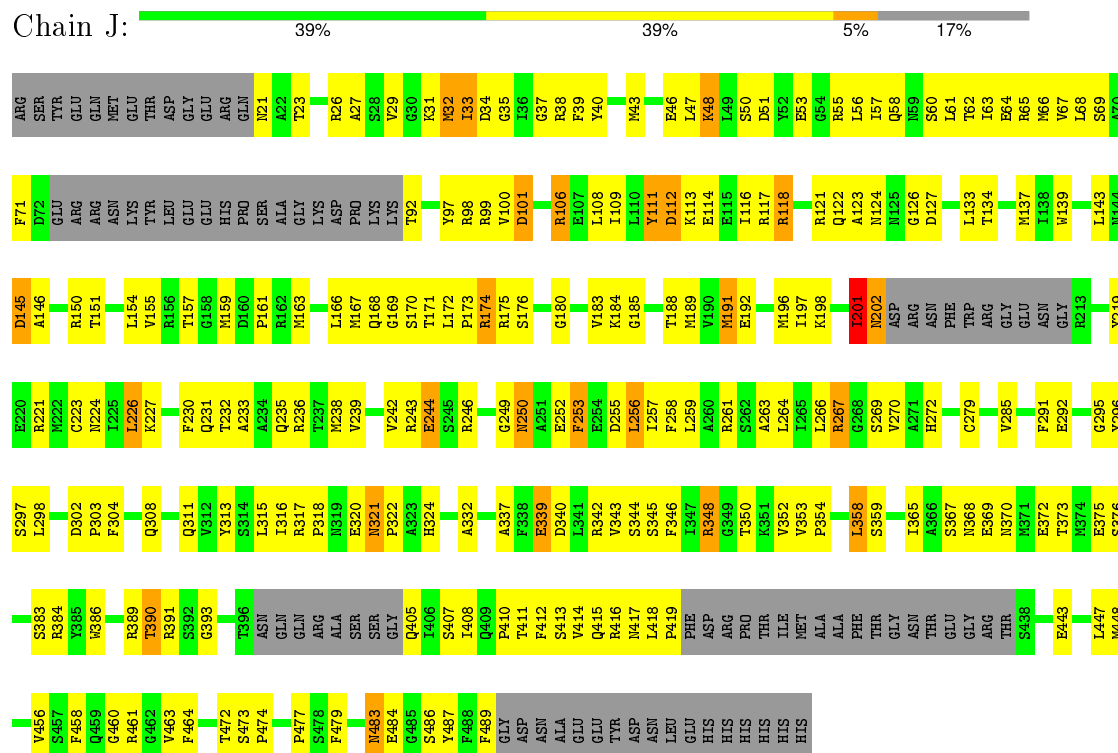




- Molecule 1: NUCLEOPROTEIN



- Molecule 1: NUCLEOPROTEIN



- Molecule 1: NUCLEOPROTEIN

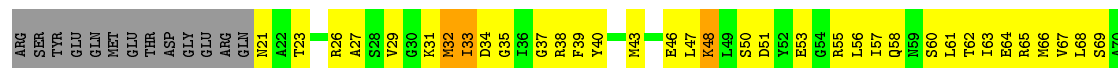
Category	Percentage
Very bad	39%
Bad	38%
Good	5%
Very good	17%

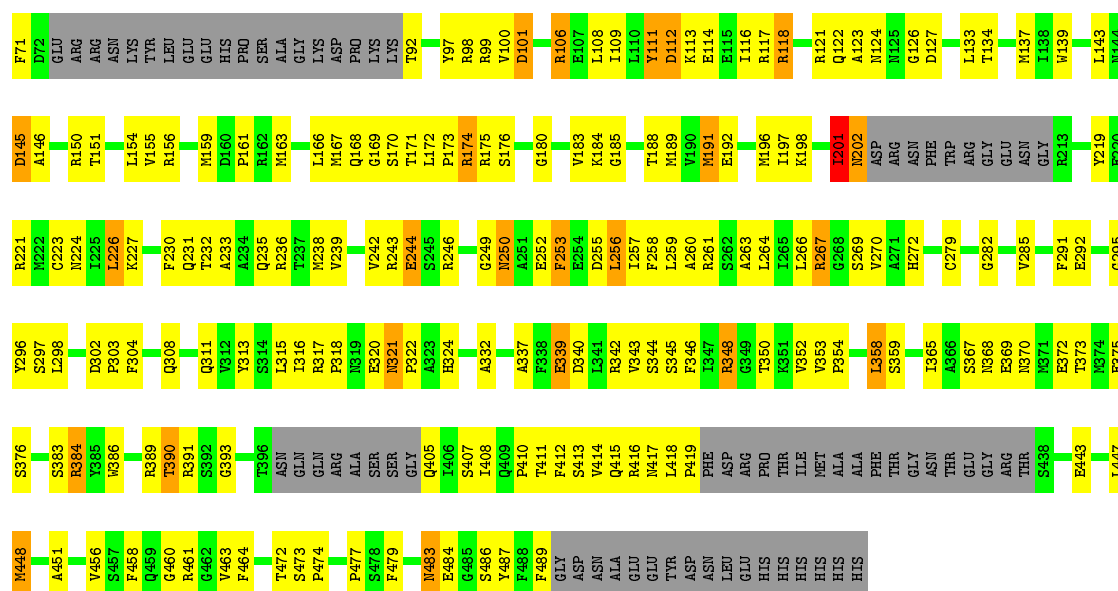


Device Type	Percentage
Smartphone	39%
Tablet	39%
Smartwatch	5%
Other	17%



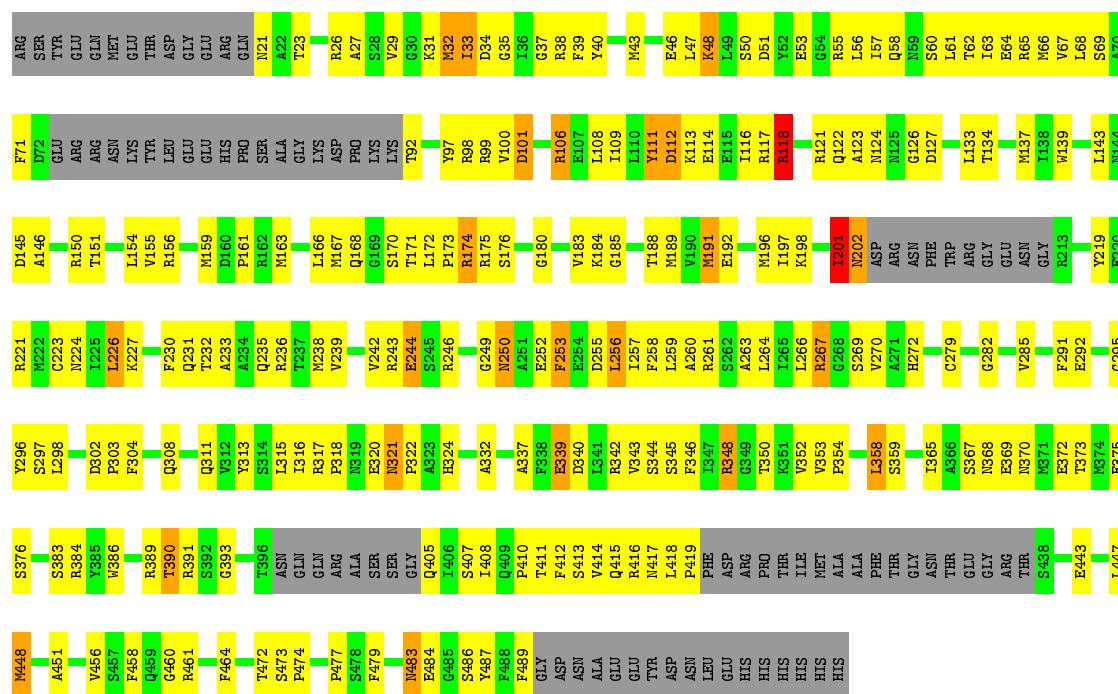
Response	Percentage
Yes, the U.S. should take action to protect the environment	39%
No, the U.S. should focus on the economy	39%
Don't know	5%
Refuse to answer	17%





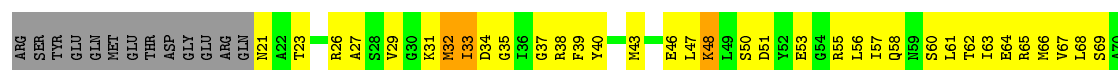
### • Molecule 1: NUCLEOPROTEIN

Chain P: 39% 39% 5% 17%

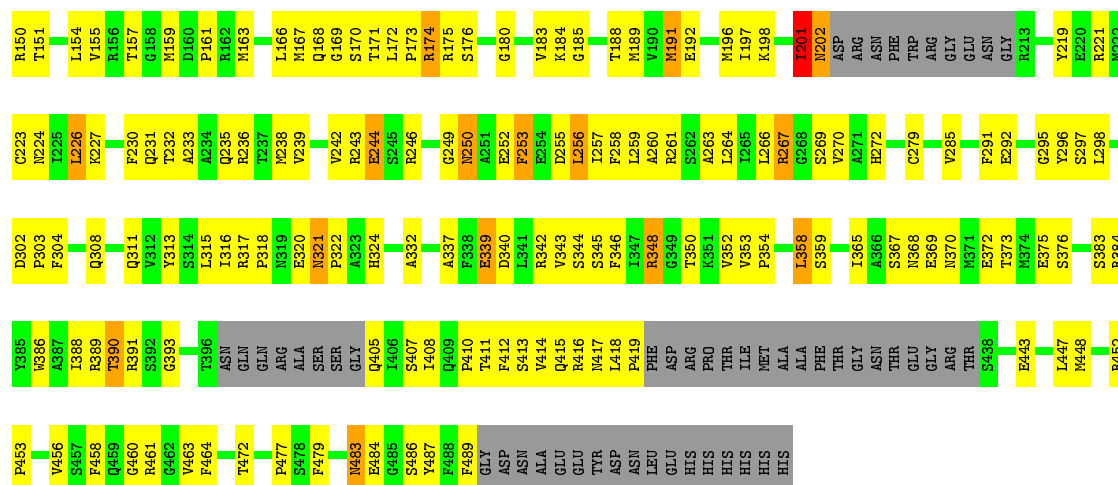


### • Molecule 1: NUCLEOPROTEIN

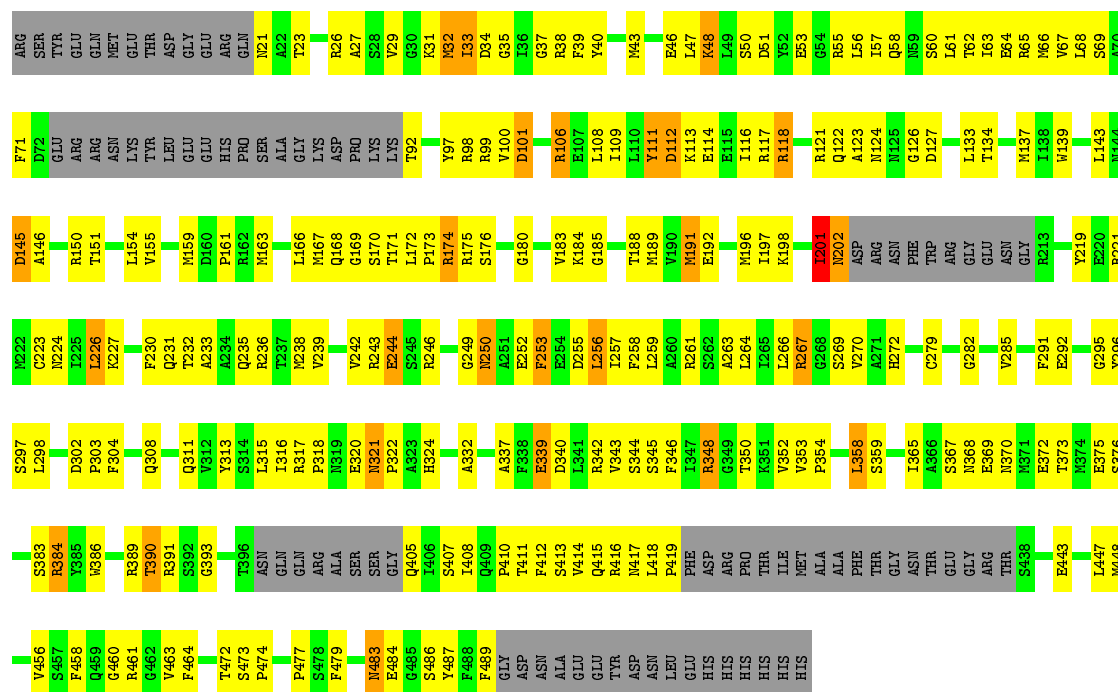
Chain Q: 39% 39% 5% 17%



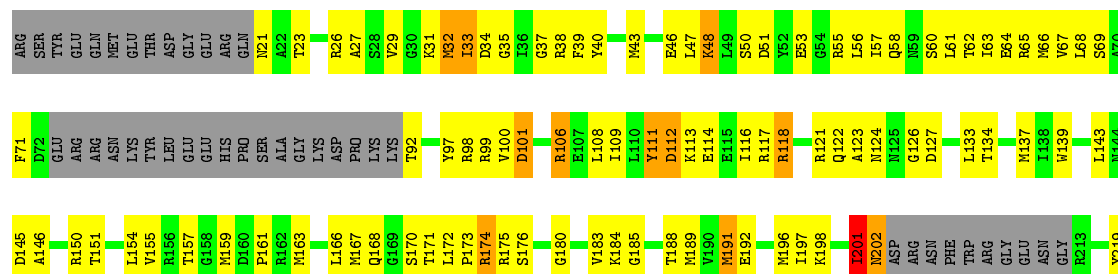


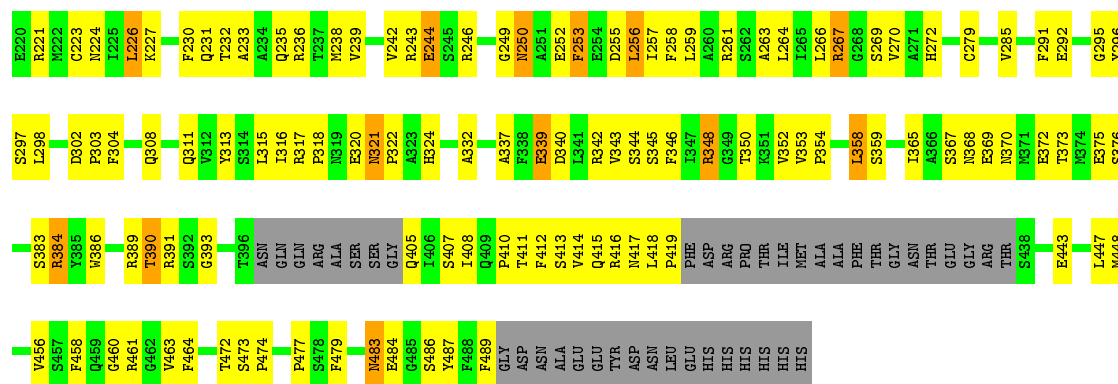


### • Molecule 1: NUCLEOPROTEIN



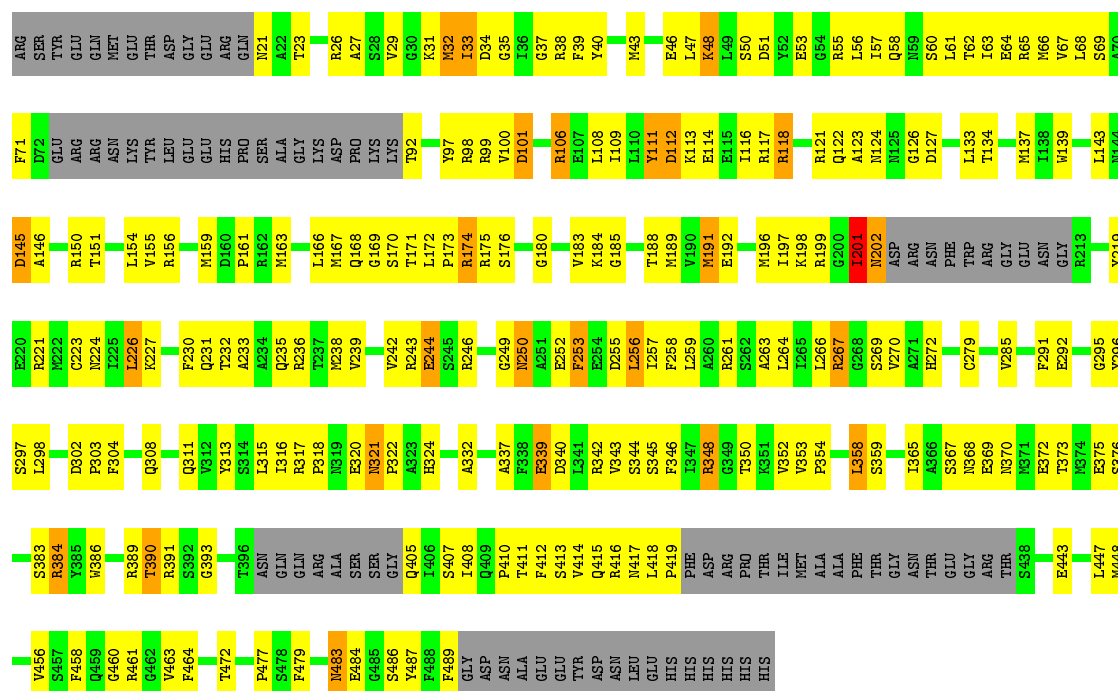
### • Molecule 1: NUCLEOPROTEIN





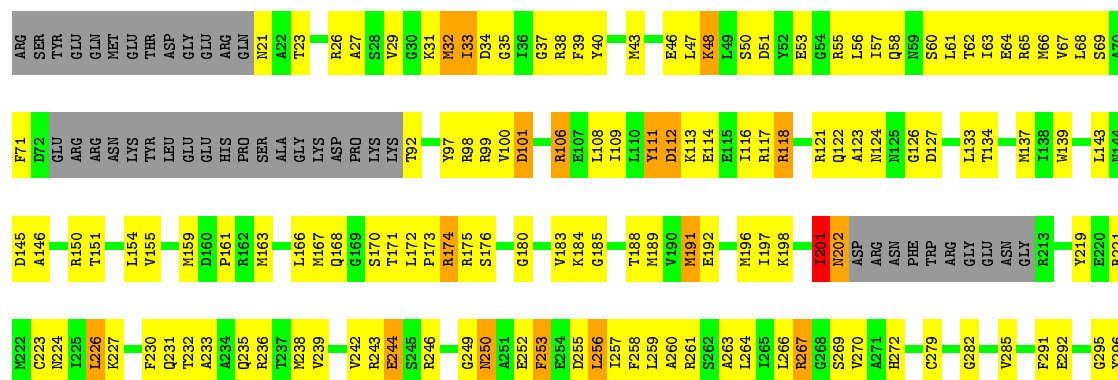
### • Molecule 1: NUCLEOPROTEIN

Chain V: 39% 38% 5% 17%



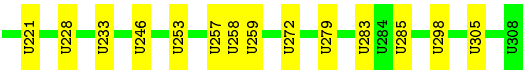
### • Molecule 1: NUCLEOPROTEIN

Chain W: 39% 36% 5% 20%









## 4 Experimental information

Property	Value	Source
Reconstruction method	HELICAL	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	EACH PLATE	Depositor
Microscope	FEI TECNAI F20	Depositor
Voltage (kV)	200	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	Not provided	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	65000	Depositor
Image detector	EAGLE 4K CCD	Depositor

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >2	RMSZ	# Z  >2
1	A	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	B	0.92	1/3200 (0.0%)	0.92	6/4299 (0.1%)
1	C	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	D	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	E	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	F	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	G	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	H	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	I	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	J	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	K	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	L	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	M	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	N	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	O	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	P	0.92	1/3323 (0.0%)	0.92	7/4466 (0.2%)
1	Q	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	R	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	S	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	T	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	U	0.92	1/3322 (0.0%)	0.92	6/4464 (0.1%)
1	V	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
1	W	0.92	1/3200 (0.0%)	0.92	6/4299 (0.1%)
1	X	0.92	1/3323 (0.0%)	0.92	6/4466 (0.1%)
All	All	0.92	24/79505 (0.0%)	0.92	145/106848 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1
1	C	0	1
1	D	0	1
1	E	0	1
1	F	0	1
1	G	0	1
1	H	0	1
1	I	0	1
1	J	0	1
1	K	0	1
1	L	0	1
1	M	0	1
1	N	0	1
1	O	0	1
1	P	0	1
1	Q	0	1
1	R	0	1
1	S	0	1
1	T	0	1
1	U	0	1
1	V	0	1
1	W	0	1
1	X	0	1
All	All	0	24

The worst 5 of 24 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	201	ILE	C-N	-5.31	1.21	1.34
1	T	201	ILE	C-N	-5.27	1.22	1.34
1	W	201	ILE	C-N	-5.27	1.22	1.34
1	Q	201	ILE	C-N	-5.27	1.22	1.34
1	F	201	ILE	C-N	-5.26	1.22	1.34

The worst 5 of 145 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	201	ILE	O-C-N	-6.22	112.74	122.70
1	M	201	ILE	O-C-N	-6.22	112.75	122.70
1	W	201	ILE	O-C-N	-6.22	112.75	122.70
1	A	201	ILE	O-C-N	-6.22	112.75	122.70
1	B	201	ILE	O-C-N	-6.21	112.76	122.70

There are no chirality outliers.

5 of 24 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	201	ILE	Mainchain
1	B	201	ILE	Mainchain
1	C	201	ILE	Mainchain
1	D	201	ILE	Mainchain
1	E	201	ILE	Mainchain

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3272	0	3272	249	0
1	B	3151	0	3148	236	0
1	C	3272	0	3272	267	0
1	D	3272	0	3272	264	0
1	E	3272	0	3272	271	0
1	F	3272	0	3272	261	0
1	G	3272	0	3272	262	0
1	H	3272	0	3272	264	0
1	I	3272	0	3272	262	0
1	J	3272	0	3272	259	0
1	K	3272	0	3272	260	0
1	L	3272	0	3272	269	0
1	M	3272	0	3272	265	0
1	N	3272	0	3272	268	0
1	O	3272	0	3272	268	0
1	P	3272	0	3272	262	0
1	Q	3272	0	3272	263	0
1	R	3272	0	3272	263	0
1	S	3272	0	3272	266	0
1	T	3272	0	3272	265	0
1	U	3271	0	3271	260	0
1	V	3272	0	3272	259	0
1	W	3151	0	3148	239	0
1	X	3272	0	3272	241	0
2	Y	308	0	0	95	0
2	Z	308	0	0	98	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	78901	0	78279	5798	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 37.

The worst 5 of 5798 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:221:ARG:HH22	2:Z:144:U:P	1.81	1.04
1:T:221:ARG:HH22	2:Y:67:U:P	1.81	1.04
1:D:221:ARG:HH22	2:Y:272:U:P	1.81	1.04
1:B:221:ARG:HH22	2:Y:298:U:P	1.81	1.04
1:L:221:ARG:HH22	2:Y:169:U:P	1.81	1.04

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM 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	
1	A	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	B	391/499 (78%)	339 (87%)	47 (12%)	5 (1%)	15	60
1	C	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	D	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	E	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	F	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	G	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	H	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	I	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	J	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	K	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	L	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	M	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	N	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	O	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	P	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	Q	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	R	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	S	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	T	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	U	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	V	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
1	W	391/499 (78%)	339 (87%)	47 (12%)	5 (1%)	15	60
1	X	404/499 (81%)	350 (87%)	49 (12%)	5 (1%)	16	61
All	All	9670/11976 (81%)	8378 (87%)	1172 (12%)	120 (1%)	21	61

5 of 120 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	233	ALA
1	A	472	THR
1	B	233	ALA
1	B	472	THR
1	C	233	ALA

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM 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	
1	A	353/425 (83%)	328 (93%)	25 (7%)	18	55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	338/425 (80%)	313 (93%)	25 (7%)	17	54
1	C	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	D	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	E	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	F	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	G	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	H	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	I	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	J	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	K	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	L	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	M	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	N	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	O	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	P	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	Q	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	R	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	S	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	T	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	U	352/425 (83%)	327 (93%)	25 (7%)	18	55
1	V	353/425 (83%)	328 (93%)	25 (7%)	18	55
1	W	338/425 (80%)	313 (93%)	25 (7%)	17	54
1	X	353/425 (83%)	328 (93%)	25 (7%)	18	55
All	All	8441/10200 (83%)	7841 (93%)	600 (7%)	23	55

5 of 600 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	K	390	THR
1	N	174	ARG
1	W	106	ARG
1	L	106	ARG
1	M	106	ARG



Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 296 such sidechains are listed below:

Mol	Chain	Res	Type
1	K	368	ASN
1	N	319	ASN
1	W	224	ASN
1	K	483	ASN
1	M	224	ASN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	Y	0/308	-	-
2	Z	0/308	-	-
All	All	0/616	-	-

There are no RNA backbone outliers to report.

There are no RNA pucker outliers to report.

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

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

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

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.