



# wwPDB X-ray Structure Validation Summary Report ⓘ

Nov 16, 2023 – 03:45 AM JST

PDB ID : 6KOI  
Title : Crystal structure of SNX11-PXe domain in dimer form.  
Authors : Xu, T.; Xu, J.; Liu, J.  
Deposited on : 2019-08-11  
Resolution : 3.50 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

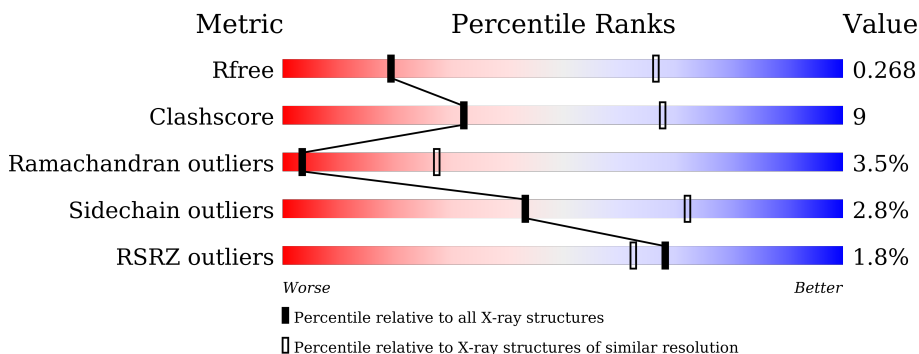
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.50 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1659 (3.60-3.40)
Clashscore	141614	1036 (3.58-3.42)
Ramachandran outliers	138981	1005 (3.58-3.42)
Sidechain outliers	138945	1006 (3.58-3.42)
RSRZ outliers	127900	1559 (3.60-3.40)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	160	
1	B	160	
1	C	160	
1	D	160	
1	E	160	
1	F	160	

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Mol	Chain	Length	Quality of chain
1	G	160	<p>2% 62% 15% 21%</p>
1	H	160	<p>% 67% 18% 5% 10%</p>
1	I	160	<p>63% 12% 22%</p>
1	J	160	<p>65% 19% 12%</p>
1	K	160	<p>% 61% 12% 27%</p>
1	L	160	<p>% 69% 16% 11%</p>
1	M	160	<p>64% 11% 22%</p>
1	N	160	<p>71% 16% 12%</p>
1	O	160	<p>% 62% 12% 26%</p>
1	P	160	<p>3% 69% 16% 12%</p>
1	Q	160	<p>% 62% 14% 24%</p>
1	R	160	<p>2% 65% 20% 13%</p>
1	S	160	<p>% 65% 12% 22%</p>
1	T	160	<p>% 68% 16% 6% 11%</p>
1	U	160	<p>% 61% 14% 24%</p>
1	V	160	<p>6% 65% 13% 19%</p>
1	W	160	<p>2% 62% 13% 24%</p>
1	X	160	<p>4% 62% 24% 12%</p>

## 2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 25878 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Sorting nexin-11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
1	A	124	Total	C	N	O	S	0	0	0	
			1018	651	183	182	2				
1	B	140	Total	C	N	O	S	Se	0	0	0
			1142	722	207	209	2	2			
1	C	126	Total	C	N	O	S	0	0	0	
			1036	661	186	187	2				
1	D	147	Total	C	N	O	S	Se	0	0	0
			1197	758	214	221	2	2			
1	E	125	Total	C	N	O	S	0	0	0	
			1027	656	185	184	2				
1	F	138	Total	C	N	O	S	Se	0	0	0
			1126	712	205	205	2	2			
1	G	126	Total	C	N	O	S	0	0	0	
			1036	661	186	187	2				
1	H	144	Total	C	N	O	S	Se	0	0	0
			1170	740	211	215	2	2			
1	I	125	Total	C	N	O	S	0	0	0	
			1027	656	184	185	2				
1	J	141	Total	C	N	O	S	Se	0	0	0
			1151	727	208	212	2	2			
1	K	117	Total	C	N	O	S	0	0	0	
			971	621	176	172	2				
1	L	143	Total	C	N	O	S	Se	0	0	0
			1164	737	210	213	2	2			
1	M	125	Total	C	N	O	S	0	0	0	
			1027	656	185	184	2				
1	N	141	Total	C	N	O	S	Se	0	0	0
			1148	725	208	211	2	2			
1	O	118	Total	C	N	O	S	0	0	0	
			973	622	176	173	2				
1	P	141	Total	C	N	O	S	Se	0	0	0
			1146	724	208	210	2	2			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Q	122	Total	C	N	O	S	0	0	0
			1005	644	181	178	2			
1	R	139	Total	C	N	O	S	Se	0	0
			1130	715	206	205	2	2		
1	S	124	Total	C	N	O	S		0	0
			1018	651	183	182	2			
1	T	143	Total	C	N	O	S	Se	0	0
			1164	737	210	213	2	2		
1	U	121	Total	C	N	O	S		0	0
			999	637	181	179	2			
1	V	130	Total	C	N	O	S	Se	0	0
			1065	673	195	193	2	2		
1	W	121	Total	C	N	O	S		0	0
			992	630	180	180	2			
1	X	141	Total	C	N	O	S	Se	0	0
			1146	724	208	210	2	2		

There are 192 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	159	LEU	-	expression tag	UNP Q9Y5W9
A	160	GLU	-	expression tag	UNP Q9Y5W9
A	161	HIS	-	expression tag	UNP Q9Y5W9
A	162	HIS	-	expression tag	UNP Q9Y5W9
A	163	HIS	-	expression tag	UNP Q9Y5W9
A	164	HIS	-	expression tag	UNP Q9Y5W9
A	165	HIS	-	expression tag	UNP Q9Y5W9
A	166	HIS	-	expression tag	UNP Q9Y5W9
B	159	LEU	-	expression tag	UNP Q9Y5W9
B	160	GLU	-	expression tag	UNP Q9Y5W9
B	161	HIS	-	expression tag	UNP Q9Y5W9
B	162	HIS	-	expression tag	UNP Q9Y5W9
B	163	HIS	-	expression tag	UNP Q9Y5W9
B	164	HIS	-	expression tag	UNP Q9Y5W9
B	165	HIS	-	expression tag	UNP Q9Y5W9
B	166	HIS	-	expression tag	UNP Q9Y5W9
C	159	LEU	-	expression tag	UNP Q9Y5W9
C	160	GLU	-	expression tag	UNP Q9Y5W9
C	161	HIS	-	expression tag	UNP Q9Y5W9
C	162	HIS	-	expression tag	UNP Q9Y5W9
C	163	HIS	-	expression tag	UNP Q9Y5W9
C	164	HIS	-	expression tag	UNP Q9Y5W9
C	165	HIS	-	expression tag	UNP Q9Y5W9

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Chain	Residue	Modelled	Actual	Comment	Reference
C	166	HIS	-	expression tag	UNP Q9Y5W9
D	159	LEU	-	expression tag	UNP Q9Y5W9
D	160	GLU	-	expression tag	UNP Q9Y5W9
D	161	HIS	-	expression tag	UNP Q9Y5W9
D	162	HIS	-	expression tag	UNP Q9Y5W9
D	163	HIS	-	expression tag	UNP Q9Y5W9
D	164	HIS	-	expression tag	UNP Q9Y5W9
D	165	HIS	-	expression tag	UNP Q9Y5W9
D	166	HIS	-	expression tag	UNP Q9Y5W9
E	159	LEU	-	expression tag	UNP Q9Y5W9
E	160	GLU	-	expression tag	UNP Q9Y5W9
E	161	HIS	-	expression tag	UNP Q9Y5W9
E	162	HIS	-	expression tag	UNP Q9Y5W9
E	163	HIS	-	expression tag	UNP Q9Y5W9
E	164	HIS	-	expression tag	UNP Q9Y5W9
E	165	HIS	-	expression tag	UNP Q9Y5W9
E	166	HIS	-	expression tag	UNP Q9Y5W9
F	159	LEU	-	expression tag	UNP Q9Y5W9
F	160	GLU	-	expression tag	UNP Q9Y5W9
F	161	HIS	-	expression tag	UNP Q9Y5W9
F	162	HIS	-	expression tag	UNP Q9Y5W9
F	163	HIS	-	expression tag	UNP Q9Y5W9
F	164	HIS	-	expression tag	UNP Q9Y5W9
F	165	HIS	-	expression tag	UNP Q9Y5W9
F	166	HIS	-	expression tag	UNP Q9Y5W9
G	159	LEU	-	expression tag	UNP Q9Y5W9
G	160	GLU	-	expression tag	UNP Q9Y5W9
G	161	HIS	-	expression tag	UNP Q9Y5W9
G	162	HIS	-	expression tag	UNP Q9Y5W9
G	163	HIS	-	expression tag	UNP Q9Y5W9
G	164	HIS	-	expression tag	UNP Q9Y5W9
G	165	HIS	-	expression tag	UNP Q9Y5W9
G	166	HIS	-	expression tag	UNP Q9Y5W9
H	159	LEU	-	expression tag	UNP Q9Y5W9
H	160	GLU	-	expression tag	UNP Q9Y5W9
H	161	HIS	-	expression tag	UNP Q9Y5W9
H	162	HIS	-	expression tag	UNP Q9Y5W9
H	163	HIS	-	expression tag	UNP Q9Y5W9
H	164	HIS	-	expression tag	UNP Q9Y5W9
H	165	HIS	-	expression tag	UNP Q9Y5W9
H	166	HIS	-	expression tag	UNP Q9Y5W9
I	159	LEU	-	expression tag	UNP Q9Y5W9

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Chain	Residue	Modelled	Actual	Comment	Reference
I	160	GLU	-	expression tag	UNP Q9Y5W9
I	161	HIS	-	expression tag	UNP Q9Y5W9
I	162	HIS	-	expression tag	UNP Q9Y5W9
I	163	HIS	-	expression tag	UNP Q9Y5W9
I	164	HIS	-	expression tag	UNP Q9Y5W9
I	165	HIS	-	expression tag	UNP Q9Y5W9
I	166	HIS	-	expression tag	UNP Q9Y5W9
J	159	LEU	-	expression tag	UNP Q9Y5W9
J	160	GLU	-	expression tag	UNP Q9Y5W9
J	161	HIS	-	expression tag	UNP Q9Y5W9
J	162	HIS	-	expression tag	UNP Q9Y5W9
J	163	HIS	-	expression tag	UNP Q9Y5W9
J	164	HIS	-	expression tag	UNP Q9Y5W9
J	165	HIS	-	expression tag	UNP Q9Y5W9
J	166	HIS	-	expression tag	UNP Q9Y5W9
K	159	LEU	-	expression tag	UNP Q9Y5W9
K	160	GLU	-	expression tag	UNP Q9Y5W9
K	161	HIS	-	expression tag	UNP Q9Y5W9
K	162	HIS	-	expression tag	UNP Q9Y5W9
K	163	HIS	-	expression tag	UNP Q9Y5W9
K	164	HIS	-	expression tag	UNP Q9Y5W9
K	165	HIS	-	expression tag	UNP Q9Y5W9
K	166	HIS	-	expression tag	UNP Q9Y5W9
L	159	LEU	-	expression tag	UNP Q9Y5W9
L	160	GLU	-	expression tag	UNP Q9Y5W9
L	161	HIS	-	expression tag	UNP Q9Y5W9
L	162	HIS	-	expression tag	UNP Q9Y5W9
L	163	HIS	-	expression tag	UNP Q9Y5W9
L	164	HIS	-	expression tag	UNP Q9Y5W9
L	165	HIS	-	expression tag	UNP Q9Y5W9
L	166	HIS	-	expression tag	UNP Q9Y5W9
M	159	LEU	-	expression tag	UNP Q9Y5W9
M	160	GLU	-	expression tag	UNP Q9Y5W9
M	161	HIS	-	expression tag	UNP Q9Y5W9
M	162	HIS	-	expression tag	UNP Q9Y5W9
M	163	HIS	-	expression tag	UNP Q9Y5W9
M	164	HIS	-	expression tag	UNP Q9Y5W9
M	165	HIS	-	expression tag	UNP Q9Y5W9
M	166	HIS	-	expression tag	UNP Q9Y5W9
N	159	LEU	-	expression tag	UNP Q9Y5W9
N	160	GLU	-	expression tag	UNP Q9Y5W9
N	161	HIS	-	expression tag	UNP Q9Y5W9

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Chain	Residue	Modelled	Actual	Comment	Reference
N	162	HIS	-	expression tag	UNP Q9Y5W9
N	163	HIS	-	expression tag	UNP Q9Y5W9
N	164	HIS	-	expression tag	UNP Q9Y5W9
N	165	HIS	-	expression tag	UNP Q9Y5W9
N	166	HIS	-	expression tag	UNP Q9Y5W9
O	159	LEU	-	expression tag	UNP Q9Y5W9
O	160	GLU	-	expression tag	UNP Q9Y5W9
O	161	HIS	-	expression tag	UNP Q9Y5W9
O	162	HIS	-	expression tag	UNP Q9Y5W9
O	163	HIS	-	expression tag	UNP Q9Y5W9
O	164	HIS	-	expression tag	UNP Q9Y5W9
O	165	HIS	-	expression tag	UNP Q9Y5W9
O	166	HIS	-	expression tag	UNP Q9Y5W9
P	159	LEU	-	expression tag	UNP Q9Y5W9
P	160	GLU	-	expression tag	UNP Q9Y5W9
P	161	HIS	-	expression tag	UNP Q9Y5W9
P	162	HIS	-	expression tag	UNP Q9Y5W9
P	163	HIS	-	expression tag	UNP Q9Y5W9
P	164	HIS	-	expression tag	UNP Q9Y5W9
P	165	HIS	-	expression tag	UNP Q9Y5W9
P	166	HIS	-	expression tag	UNP Q9Y5W9
Q	159	LEU	-	expression tag	UNP Q9Y5W9
Q	160	GLU	-	expression tag	UNP Q9Y5W9
Q	161	HIS	-	expression tag	UNP Q9Y5W9
Q	162	HIS	-	expression tag	UNP Q9Y5W9
Q	163	HIS	-	expression tag	UNP Q9Y5W9
Q	164	HIS	-	expression tag	UNP Q9Y5W9
Q	165	HIS	-	expression tag	UNP Q9Y5W9
Q	166	HIS	-	expression tag	UNP Q9Y5W9
R	159	LEU	-	expression tag	UNP Q9Y5W9
R	160	GLU	-	expression tag	UNP Q9Y5W9
R	161	HIS	-	expression tag	UNP Q9Y5W9
R	162	HIS	-	expression tag	UNP Q9Y5W9
R	163	HIS	-	expression tag	UNP Q9Y5W9
R	164	HIS	-	expression tag	UNP Q9Y5W9
R	165	HIS	-	expression tag	UNP Q9Y5W9
R	166	HIS	-	expression tag	UNP Q9Y5W9
S	159	LEU	-	expression tag	UNP Q9Y5W9
S	160	GLU	-	expression tag	UNP Q9Y5W9
S	161	HIS	-	expression tag	UNP Q9Y5W9
S	162	HIS	-	expression tag	UNP Q9Y5W9
S	163	HIS	-	expression tag	UNP Q9Y5W9

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Chain	Residue	Modelled	Actual	Comment	Reference
S	164	HIS	-	expression tag	UNP Q9Y5W9
S	165	HIS	-	expression tag	UNP Q9Y5W9
S	166	HIS	-	expression tag	UNP Q9Y5W9
T	159	LEU	-	expression tag	UNP Q9Y5W9
T	160	GLU	-	expression tag	UNP Q9Y5W9
T	161	HIS	-	expression tag	UNP Q9Y5W9
T	162	HIS	-	expression tag	UNP Q9Y5W9
T	163	HIS	-	expression tag	UNP Q9Y5W9
T	164	HIS	-	expression tag	UNP Q9Y5W9
T	165	HIS	-	expression tag	UNP Q9Y5W9
T	166	HIS	-	expression tag	UNP Q9Y5W9
U	159	LEU	-	expression tag	UNP Q9Y5W9
U	160	GLU	-	expression tag	UNP Q9Y5W9
U	161	HIS	-	expression tag	UNP Q9Y5W9
U	162	HIS	-	expression tag	UNP Q9Y5W9
U	163	HIS	-	expression tag	UNP Q9Y5W9
U	164	HIS	-	expression tag	UNP Q9Y5W9
U	165	HIS	-	expression tag	UNP Q9Y5W9
U	166	HIS	-	expression tag	UNP Q9Y5W9
V	159	LEU	-	expression tag	UNP Q9Y5W9
V	160	GLU	-	expression tag	UNP Q9Y5W9
V	161	HIS	-	expression tag	UNP Q9Y5W9
V	162	HIS	-	expression tag	UNP Q9Y5W9
V	163	HIS	-	expression tag	UNP Q9Y5W9
V	164	HIS	-	expression tag	UNP Q9Y5W9
V	165	HIS	-	expression tag	UNP Q9Y5W9
V	166	HIS	-	expression tag	UNP Q9Y5W9
W	159	LEU	-	expression tag	UNP Q9Y5W9
W	160	GLU	-	expression tag	UNP Q9Y5W9
W	161	HIS	-	expression tag	UNP Q9Y5W9
W	162	HIS	-	expression tag	UNP Q9Y5W9
W	163	HIS	-	expression tag	UNP Q9Y5W9
W	164	HIS	-	expression tag	UNP Q9Y5W9
W	165	HIS	-	expression tag	UNP Q9Y5W9
W	166	HIS	-	expression tag	UNP Q9Y5W9
X	159	LEU	-	expression tag	UNP Q9Y5W9
X	160	GLU	-	expression tag	UNP Q9Y5W9
X	161	HIS	-	expression tag	UNP Q9Y5W9
X	162	HIS	-	expression tag	UNP Q9Y5W9
X	163	HIS	-	expression tag	UNP Q9Y5W9
X	164	HIS	-	expression tag	UNP Q9Y5W9
X	165	HIS	-	expression tag	UNP Q9Y5W9

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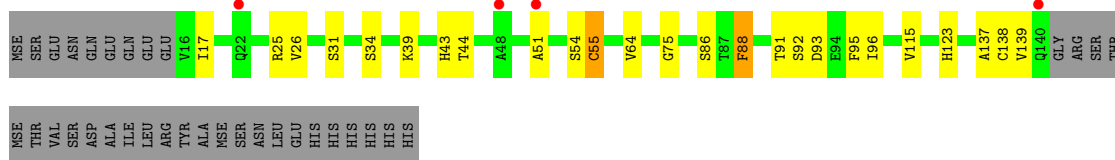
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Chain	Residue	Modelled	Actual	Comment	Reference
X	166	HIS	-	expression tag	UNP Q9Y5W9

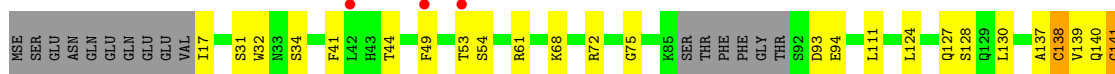




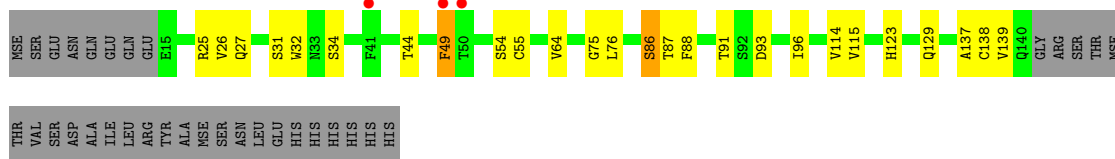
• Molecule 1: Sorting nexin-11



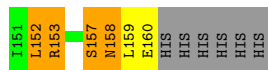
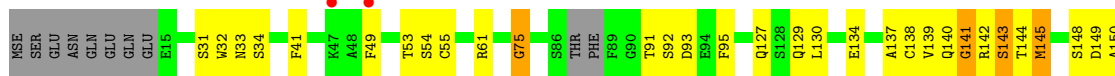
• Molecule 1: Sorting nexin-11



• Molecule 1: Sorting nexin-11



• Molecule 1: Sorting nexin-11



• Molecule 1: Sorting nexin-11



ASP  
ALA  
ILE  
LEU  
LEU  
ARG  
TYR  
ALA  
MSE  
SER  
ASN  
LEU  
GLU  
HIS  
HIS  
HIS  
HIS  
HIS

- Molecule 1: Sorting nexin-11

Chain J: 65% 19% 12%

MSE SER ASN ASN GLN GLU GLN E4 E5 E16 I17 T18 S31 W32 N33 S34 F41 F49 T63 S54 R61 R72 G75 F83 G84 K85 SER THR PHE PHE GLY THR S92 D93 E94 F95 Q104 Q127 Q129 L130 S131 V132 P133 A137 C138 V139 Q140 G141 R142

S143 I144 M145 S148 D149 A150 S157 M158 L159 E160 HIS HIS HIS HIS HIS HIS HIS

- Molecule 1: Sorting nexin-11

Chain K: 61% 12% 27%

MSE SER GLU ASN GLN GLU GLN GLU V16 Q22 R25 V26 S31 S34 F41 K39 M45 LYS ALL PHE THR THR K52 C55 V64 G75 L76 E81 K85 SER THR F88 S92 D93 E94 F95 I96 V114 V115 Q129 A137 C138 V139 Q140

GLY ARG SER THR MSE THR THR VAL SER ASP ALA ILE LEU ARG TYR ALA MSE ASN LEU GLU HIS HIS HIS HIS HIS HIS

- Molecule 1: Sorting nexin-11

Chain L: 69% 16% 11%

MSE SER GLU ASN GLN GLU GLN GLU E15 V16 Q27 S31 S34 F41 K47 A48 F49 T53 S54 R61 K68 G75 K85 SER THR PHE F89 G90 T91 S92 D93 E94 F95 Q127 L130 A137 C138 V139 Q140 G141 R142 S143 T144 M145 S148 D149

A150 M156 S157 M158 L159 E160 HIS HIS HIS HIS HIS HIS

- Molecule 1: Sorting nexin-11

Chain M: 64% 11% 22%

MSE SER ASN ASN GLN GLU GLN GLU V16 V26 S31 S34 K39 M45 S46 F49 T50 C55 V64 G75 K85 S86 T87 F88 S92 D93 E94 F95 V114 V115 A137 C138 V139 Q140 GLY ARG SER THR MSE THR THR VAL SER ASP ALA ILE LEU

ARG TYR ALA MSE SER ASN LEU LEU HIS HIS HIS HIS HIS HIS

- Molecule 1: Sorting nexin-11

Chain N: 71% 16% 12%

MSE SER GLU ASN GLN GLU GLN E4 R25 S31 K32 N33 S34 F41 F49 T63 S54 R59 Y60 R61 G75 S96 THR PHE PHE GLY THR S92 D93 Q127 L130 A137 C138 V139 Q140 G141 R142 S143 T144 M145 S148 D149 A150 M156 S157 N158 L159

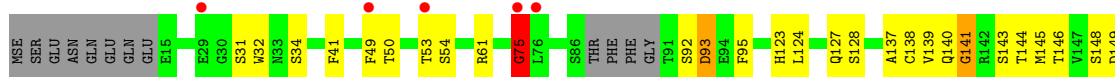
GLU  
HIS  
HIS  
HIS  
HIS  
HIS  
HIS

● Molecule 1: Sorting nexin-11



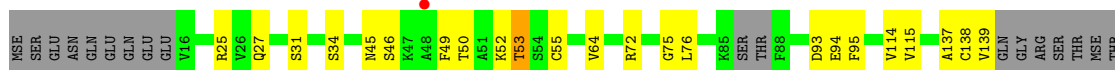
THR  
MSE  
THR  
VAL  
SER  
ASP  
ALA  
ILE  
LEU  
ARG  
TYR  
ALA  
MSE  
SER  
ASN  
GLU  
HIS  
HIS  
HIS  
HIS  
HIS

● Molecule 1: Sorting nexin-11



A150  
S157  
N158  
L159  
GLU  
HIS  
HIS  
HIS  
HIS  
HIS

● Molecule 1: Sorting nexin-11



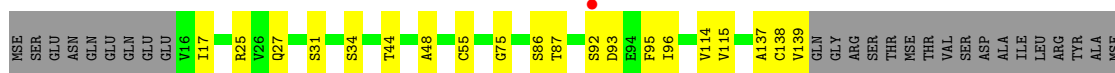
VAL  
SER  
ASP  
ALA  
ILE  
LEU  
ARG  
TYR  
ALA  
MSE  
SER  
ASN  
LEU  
GLU  
HIS  
HIS  
HIS  
HIS  
HIS

● Molecule 1: Sorting nexin-11



M145  
T146  
V147  
S148  
D149  
A150  
I151  
M156  
S157  
N158  
L159  
GLU  
HIS  
HIS  
HIS  
HIS  
HIS

● Molecule 1: Sorting nexin-11



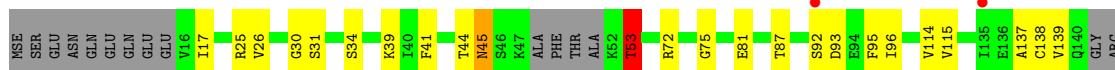
SER  
ASN  
LEU  
GLU  
HIS  
HIS  
HIS  
HIS

• Molecule 1: Sorting nexin-11



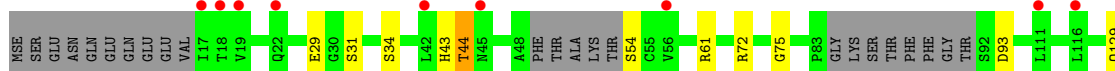
Y154 A155 M156 S157 E160  
HIS HIS HIS HIS HIS HIS HIS

• Molecule 1: Sorting nexin-11



SER THR MSE THR VAL SER ASP ALA ILE LEU ARG TYR ALA MSE SER ASN LEU GLU HIS HIS HIS HIS HIS

• Molecule 1: Sorting nexin-11



I135 E136 A137 C138 V139 Q140 G141 R142 S143 T144 S148 D149 A150 R153 Y154 A155 M156 S157 N158 L159  
GLU HIS HIS HIS HIS HIS HIS HIS

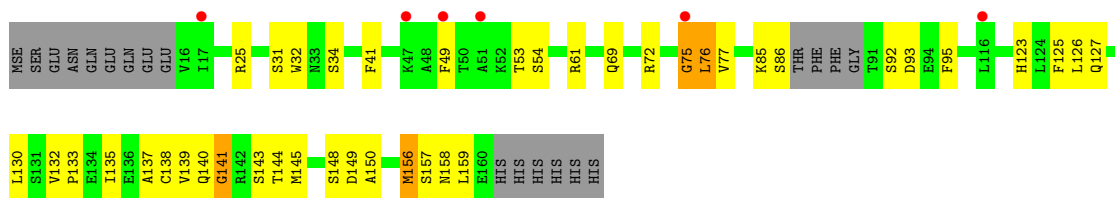
• Molecule 1: Sorting nexin-11



Q140 GLY ARG SER THR MSE THR VAL ASP ALA ILE LEU ARG TYR ALA MSE SER ASN LEU HIS HIS HIS HIS HIS HIS HIS

• Molecule 1: Sorting nexin-11







## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	142.04Å 190.43Å 237.01Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	65.87 – 3.50 65.79 – 3.50	Depositor EDS
% Data completeness (in resolution range)	99.0 (65.87-3.50) 99.1 (65.79-3.50)	Depositor EDS
$R_{merge}$	0.13	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.58 (at 3.49Å)	Xtrriage
Refinement program	REFMAC 5.8.0253	Depositor
R, $R_{free}$	0.234 , 0.265 0.238 , 0.268	Depositor DCC
$R_{free}$ test set	3921 reflections (4.85%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	102.0	Xtrriage
Anisotropy	0.032	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 79.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.90	EDS
Total number of atoms	25878	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	119.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.37% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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

## 5 Model quality i

### 5.1 Standard geometry i

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.95	4/1040 (0.4%)	1.22	6/1406 (0.4%)
1	B	0.67	0/1160	0.94	5/1562 (0.3%)
1	C	0.69	0/1058	0.89	2/1430 (0.1%)
1	D	0.68	0/1218	0.90	5/1642 (0.3%)
1	E	0.69	0/1049	0.84	0/1418
1	F	0.68	0/1144	0.84	2/1540 (0.1%)
1	G	0.66	0/1058	0.82	0/1430
1	H	0.72	1/1189 (0.1%)	0.92	4/1601 (0.2%)
1	I	0.69	1/1049 (0.1%)	0.89	3/1418 (0.2%)
1	J	0.71	1/1169 (0.1%)	0.86	5/1574 (0.3%)
1	K	0.67	0/990	0.78	0/1335
1	L	0.69	1/1183 (0.1%)	0.86	3/1593 (0.2%)
1	M	0.72	2/1049 (0.2%)	0.85	1/1418 (0.1%)
1	N	0.68	0/1166	0.80	1/1570 (0.1%)
1	O	0.65	0/992	0.79	1/1338 (0.1%)
1	P	0.70	1/1164 (0.1%)	0.83	1/1568 (0.1%)
1	Q	0.70	1/1026 (0.1%)	0.82	1/1385 (0.1%)
1	R	0.69	0/1148	0.84	1/1546 (0.1%)
1	S	0.67	0/1040	0.80	0/1406
1	T	0.67	0/1183	0.88	4/1594 (0.3%)
1	U	0.69	0/1019	0.87	3/1375 (0.2%)
1	V	0.66	0/1081	0.92	4/1455 (0.3%)
1	W	0.68	0/1011	0.83	0/1366
1	X	0.70	0/1164	0.80	2/1568 (0.1%)
All	All	0.70	12/26350 (0.0%)	0.87	54/35538 (0.2%)

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	5

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1
1	D	0	1
1	G	0	2
1	H	0	1
1	I	0	1
1	J	0	1
1	R	0	3
1	W	0	2
All	All	0	17

The worst 5 of 12 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	72	ARG	CZ-NH2	10.74	1.47	1.33
1	A	72	ARG	CZ-NH1	9.97	1.46	1.33
1	A	72	ARG	NE-CZ	8.87	1.44	1.33
1	A	72	ARG	CG-CD	7.93	1.71	1.51
1	H	75	GLY	C-O	-5.99	1.14	1.23

The worst 5 of 54 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	72	ARG	NE-CZ-NH1	-26.54	107.03	120.30
1	A	72	ARG	NE-CZ-NH2	12.23	126.42	120.30
1	B	128	SER	N-CA-CB	11.80	128.19	110.50
1	V	72	ARG	NE-CZ-NH2	-10.24	115.18	120.30
1	A	72	ARG	CD-NE-CZ	-9.26	110.64	123.60

There are no chirality outliers.

5 of 17 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	22	GLN	Sidechain
1	A	45	ASN	Peptide,Mainchain
1	A	53	THR	Mainchain
1	A	72	ARG	Sidechain
1	B	127	GLN	Mainchain

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1018	0	1028	20	0
1	B	1142	0	1154	24	0
1	C	1036	0	1042	33	0
1	D	1197	0	1201	42	0
1	E	1027	0	1036	27	0
1	F	1126	0	1139	37	0
1	G	1036	0	1042	25	0
1	H	1170	0	1178	36	0
1	I	1027	0	1034	19	0
1	J	1151	0	1160	31	1
1	K	971	0	978	27	0
1	L	1164	0	1173	32	0
1	M	1027	0	1036	19	0
1	N	1148	0	1159	21	1
1	O	973	0	980	12	0
1	P	1146	0	1160	21	1
1	Q	1005	0	1015	23	1
1	R	1130	0	1147	40	0
1	S	1018	0	1028	25	0
1	T	1164	0	1176	38	0
1	U	999	0	1009	23	0
1	V	1065	0	1075	27	0
1	W	992	0	998	20	0
1	X	1146	0	1160	38	0
All	All	25878	0	26108	457	2

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 9.

The worst 5 of 457 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:129:GLN:HE22	1:L:137:ALA:CB	1.62	1.12
1:I:39:LYS:HD2	1:J:138:CYS:SG	1.95	1.05
1:K:39:LYS:HD2	1:L:138:CYS:SG	1.99	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:152:LEU:O	1:B:156:MSE:HG3	1.64	0.97
1:Q:95:PHE:HD2	1:R:156:MSE:HE3	1.30	0.94

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:104:GLN:NE2	1:Q:94:GLU:OE2[4_555]	1.20	1.00
1:N:150:ALA:CB	1:P:75:GLY:O[3_444]	1.64	0.56

## 5.3 Torsion angles [i](#)

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

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	122/160 (76%)	103 (84%)	15 (12%)	4 (3%)	4	28
1	B	136/160 (85%)	116 (85%)	13 (10%)	7 (5%)	2	19
1	C	124/160 (78%)	102 (82%)	17 (14%)	5 (4%)	3	24
1	D	145/160 (91%)	128 (88%)	12 (8%)	5 (3%)	3	28
1	E	123/160 (77%)	104 (85%)	16 (13%)	3 (2%)	6	35
1	F	134/160 (84%)	119 (89%)	11 (8%)	4 (3%)	4	30
1	G	124/160 (78%)	106 (86%)	14 (11%)	4 (3%)	4	29
1	H	140/160 (88%)	120 (86%)	15 (11%)	5 (4%)	3	26
1	I	123/160 (77%)	104 (85%)	14 (11%)	5 (4%)	3	23
1	J	137/160 (86%)	118 (86%)	13 (10%)	6 (4%)	2	21
1	K	111/160 (69%)	99 (89%)	10 (9%)	2 (2%)	8	41
1	L	139/160 (87%)	119 (86%)	15 (11%)	5 (4%)	3	26
1	M	123/160 (77%)	106 (86%)	12 (10%)	5 (4%)	3	23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	N	137/160 (86%)	119 (87%)	13 (10%)	5 (4%)	3	26
1	O	112/160 (70%)	101 (90%)	9 (8%)	2 (2%)	8	41
1	P	137/160 (86%)	120 (88%)	11 (8%)	6 (4%)	2	21
1	Q	118/160 (74%)	101 (86%)	14 (12%)	3 (2%)	5	34
1	R	135/160 (84%)	116 (86%)	15 (11%)	4 (3%)	4	30
1	S	122/160 (76%)	106 (87%)	12 (10%)	4 (3%)	4	28
1	T	139/160 (87%)	120 (86%)	12 (9%)	7 (5%)	2	19
1	U	117/160 (73%)	100 (86%)	14 (12%)	3 (3%)	5	33
1	V	124/160 (78%)	105 (85%)	13 (10%)	6 (5%)	2	20
1	W	117/160 (73%)	101 (86%)	13 (11%)	3 (3%)	5	33
1	X	137/160 (86%)	118 (86%)	13 (10%)	6 (4%)	2	21
All	All	3076/3840 (80%)	2651 (86%)	316 (10%)	109 (4%)	3	27

5 of 109 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	54	SER
1	A	87	THR
1	B	128	SER
1	B	141	GLY
1	B	158	ASN

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	115/145 (79%)	113 (98%)	2 (2%)	60	82
1	B	129/145 (89%)	123 (95%)	6 (5%)	26	60
1	C	117/145 (81%)	115 (98%)	2 (2%)	60	82
1	D	135/145 (93%)	131 (97%)	4 (3%)	41	71
1	E	116/145 (80%)	111 (96%)	5 (4%)	29	62

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	F	127/145 (88%)	124 (98%)	3 (2%)	49	76
1	G	117/145 (81%)	114 (97%)	3 (3%)	46	74
1	H	132/145 (91%)	127 (96%)	5 (4%)	33	65
1	I	116/145 (80%)	112 (97%)	4 (3%)	37	68
1	J	130/145 (90%)	126 (97%)	4 (3%)	40	70
1	K	110/145 (76%)	108 (98%)	2 (2%)	59	81
1	L	131/145 (90%)	124 (95%)	7 (5%)	22	55
1	M	116/145 (80%)	114 (98%)	2 (2%)	60	82
1	N	130/145 (90%)	126 (97%)	4 (3%)	40	70
1	O	110/145 (76%)	106 (96%)	4 (4%)	35	66
1	P	130/145 (90%)	127 (98%)	3 (2%)	50	77
1	Q	113/145 (78%)	112 (99%)	1 (1%)	78	90
1	R	128/145 (88%)	125 (98%)	3 (2%)	50	77
1	S	115/145 (79%)	114 (99%)	1 (1%)	78	90
1	T	132/145 (91%)	127 (96%)	5 (4%)	33	65
1	U	114/145 (79%)	111 (97%)	3 (3%)	46	74
1	V	121/145 (83%)	117 (97%)	4 (3%)	38	68
1	W	112/145 (77%)	110 (98%)	2 (2%)	59	81
1	X	130/145 (90%)	128 (98%)	2 (2%)	65	84
All	All	2926/3480 (84%)	2845 (97%)	81 (3%)	43	72

5 of 81 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	P	54	SER
1	U	53	THR
1	P	157	SER
1	T	54	SER
1	V	129	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 109 such sidechains are listed below:

Mol	Chain	Res	Type
1	M	73	ASN

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Mol	Chain	Res	Type
1	P	127	GLN
1	V	121	GLN
1	N	69	GLN
1	O	73	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

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

There are no ligands in this entry.

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

There are no such residues in this entry.

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

There are no chain breaks in this entry.



## 6 Fit of model and data i

### 6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	124/160 (77%)	0.22	0 <span style="border: 2px solid blue; padding: 2px;">100</span> <span style="border: 2px solid blue; padding: 2px;">100</span>	63, 95, 159, 217	0
1	B	138/160 (86%)	0.39	3 (2%) <span style="border: 1px solid blue; padding: 2px;">62</span> <span style="border: 1px solid blue; padding: 2px;">56</span>	68, 120, 173, 184	0
1	C	126/160 (78%)	0.36	3 (2%) <span style="border: 1px solid blue; padding: 2px;">59</span> <span style="border: 1px solid blue; padding: 2px;">53</span>	68, 104, 170, 206	0
1	D	145/160 (90%)	0.17	2 (1%) <span style="border: 1px solid blue; padding: 2px;">75</span> <span style="border: 1px solid blue; padding: 2px;">69</span>	66, 110, 165, 201	0
1	E	125/160 (78%)	0.33	4 (3%) <span style="border: 1px solid red; padding: 2px;">47</span> <span style="border: 1px solid red; padding: 2px;">42</span>	71, 105, 177, 217	0
1	F	136/160 (85%)	0.22	3 (2%) <span style="border: 1px solid blue; padding: 2px;">62</span> <span style="border: 1px solid blue; padding: 2px;">56</span>	78, 131, 170, 180	0
1	G	126/160 (78%)	0.29	3 (2%) <span style="border: 1px solid blue; padding: 2px;">59</span> <span style="border: 1px solid blue; padding: 2px;">53</span>	60, 97, 173, 212	0
1	H	142/160 (88%)	0.19	2 (1%) <span style="border: 1px solid blue; padding: 2px;">75</span> <span style="border: 1px solid blue; padding: 2px;">69</span>	64, 102, 154, 215	0
1	I	125/160 (78%)	0.28	0 <span style="border: 2px solid blue; padding: 2px;">100</span> <span style="border: 2px solid blue; padding: 2px;">100</span>	60, 94, 159, 204	0
1	J	139/160 (86%)	0.07	0 <span style="border: 2px solid blue; padding: 2px;">100</span> <span style="border: 2px solid blue; padding: 2px;">100</span>	64, 105, 154, 186	0
1	K	117/160 (73%)	0.27	1 (0%) <span style="border: 1px solid blue; padding: 2px;">84</span> <span style="border: 1px solid blue; padding: 2px;">79</span>	72, 103, 155, 194	0
1	L	141/160 (88%)	0.14	2 (1%) <span style="border: 1px solid blue; padding: 2px;">75</span> <span style="border: 1px solid blue; padding: 2px;">69</span>	69, 121, 167, 188	0
1	M	125/160 (78%)	0.19	0 <span style="border: 2px solid blue; padding: 2px;">100</span> <span style="border: 2px solid blue; padding: 2px;">100</span>	74, 105, 169, 220	0
1	N	139/160 (86%)	0.11	0 <span style="border: 2px solid blue; padding: 2px;">100</span> <span style="border: 2px solid blue; padding: 2px;">100</span>	79, 135, 177, 195	0
1	O	118/160 (73%)	0.39	2 (1%) <span style="border: 1px solid blue; padding: 2px;">70</span> <span style="border: 1px solid blue; padding: 2px;">64</span>	77, 108, 165, 182	0
1	P	139/160 (86%)	0.35	5 (3%) <span style="border: 1px solid red; padding: 2px;">42</span> <span style="border: 1px solid red; padding: 2px;">38</span>	65, 122, 164, 200	0
1	Q	122/160 (76%)	0.30	1 (0%) <span style="border: 1px solid blue; padding: 2px;">86</span> <span style="border: 1px solid blue; padding: 2px;">81</span>	66, 100, 167, 205	0
1	R	137/160 (85%)	0.30	3 (2%) <span style="border: 1px solid blue; padding: 2px;">62</span> <span style="border: 1px solid blue; padding: 2px;">56</span>	70, 119, 166, 199	0
1	S	124/160 (77%)	0.16	1 (0%) <span style="border: 1px solid blue; padding: 2px;">86</span> <span style="border: 1px solid blue; padding: 2px;">81</span>	90, 123, 191, 211	0
1	T	141/160 (88%)	0.31	1 (0%) <span style="border: 1px solid blue; padding: 2px;">87</span> <span style="border: 1px solid blue; padding: 2px;">83</span>	92, 147, 184, 200	0
1	U	121/160 (75%)	0.36	2 (1%) <span style="border: 1px solid blue; padding: 2px;">70</span> <span style="border: 1px solid blue; padding: 2px;">64</span>	86, 120, 169, 193	0
1	V	128/160 (80%)	0.43	10 (7%) <span style="border: 2px solid red; padding: 2px;">13</span> <span style="border: 2px solid red; padding: 2px;">13</span>	92, 148, 185, 204	0
1	W	121/160 (75%)	0.34	4 (3%) <span style="border: 1px solid red; padding: 2px;">46</span> <span style="border: 1px solid red; padding: 2px;">41</span>	87, 122, 173, 199	0
1	X	139/160 (86%)	0.41	6 (4%) <span style="border: 1px solid red; padding: 2px;">35</span> <span style="border: 1px solid red; padding: 2px;">31</span>	86, 131, 187, 206	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
All	All	3138/3840 (81%)	0.27	58 (1%) 68 62	60, 116, 176, 220	0

The worst 5 of 58 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	140	GLN	7.1
1	V	111	LEU	4.1
1	P	49	PHE	3.8
1	R	51	ALA	3.7
1	G	49	PHE	3.5

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

There are no ligands in this entry.

## 6.5 Other polymers [i](#)

There are no such residues in this entry.