WORLDWIDE PDB PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report ⓘ

Nov 1, 2023 – 04:37 PM JST

|		
PDB ID	:	5WU5
Title	:	Crystal structure of apo human Tut1, form III
Authors	:	Yamashita, S.; Tomita, K.
Deposited on	:	2016-12-16
Resolution	:	3.40 Å(reported)

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 3.40 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	Percentile Ranks	Value
Rfree		0.264
Clashscore		8
Ramachandran outliers		0
Sidechain outliers		2.3%
RSRZ outliers		5.9%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
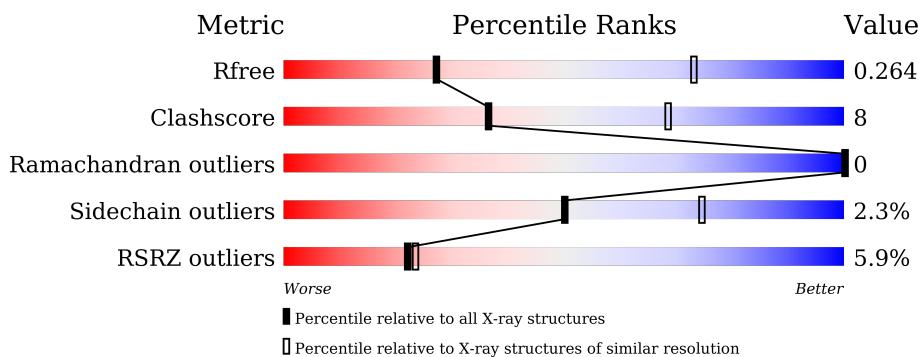
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% 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	573	3% / 65% 19% · 15%
1	B	573	5% / 68% 16% · 16%
1	C	573	5% / 68% 16% 15%
1	D	573	6% / 67% 17% · 16%

W O R L D W I D E
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PROTEIN DATA BANK
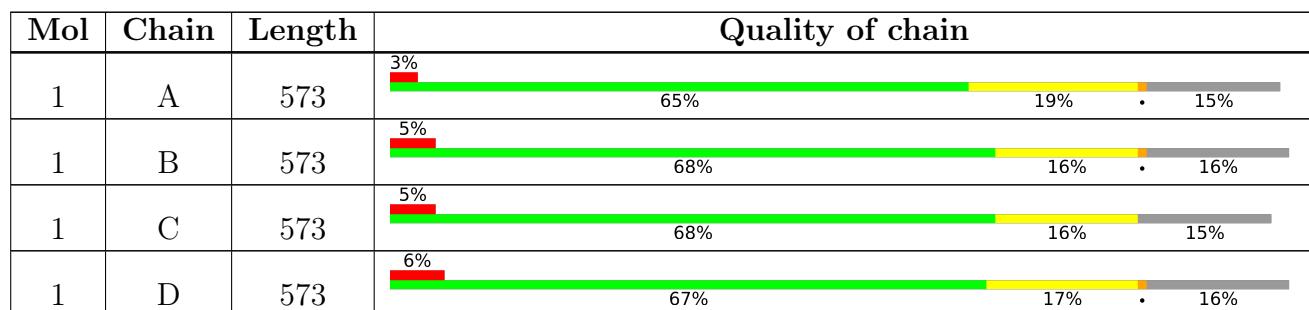
2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 15026 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 Speckle targeted PIP5K1A-regulated poly(A) polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	485	Total	C	N	O	S	0	0	0
			3760	2376	686	682	16			
1	B	483	Total	C	N	O	S	0	0	0
			3752	2371	684	681	16			
1	C	485	Total	C	N	O	S	0	0	0
			3763	2378	686	683	16			
1	D	483	Total	C	N	O	S	0	0	0
			3751	2371	683	681	16			

There are 724 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	140	MET	-	initiating methionine	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	CYS	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	PHE	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	501	ALA	CYS	engineered mutation	UNP Q9H6E5
A	504	SER	CYS	engineered mutation	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	LYS	deletion	UNP Q9H6E5
A	?	-	ARG	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	LYS	deletion	UNP Q9H6E5
A	?	-	VAL	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	LYS	deletion	UNP Q9H6E5
A	?	-	ASN	deletion	UNP Q9H6E5
A	?	-	CYS	deletion	UNP Q9H6E5
A	?	-	CYS	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	LYS	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	CYS	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	ARG	deletion	UNP Q9H6E5
A	?	-	VAL	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	MET	deletion	UNP Q9H6E5
A	?	-	VAL	deletion	UNP Q9H6E5
A	?	-	ILE	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	VAL	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	MET	deletion	UNP Q9H6E5
A	?	-	VAL	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	TRP	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	MET	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	ASP	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	THR	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	LYS	deletion	UNP Q9H6E5
A	?	-	HIS	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	?	-	HIS	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	LEU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	ARG	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	PRO	deletion	UNP Q9H6E5
A	?	-	LYS	deletion	UNP Q9H6E5
A	?	-	GLY	deletion	UNP Q9H6E5
A	?	-	HIS	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	ALA	deletion	UNP Q9H6E5
A	?	-	GLN	deletion	UNP Q9H6E5
A	?	-	GLU	deletion	UNP Q9H6E5
A	?	-	TRP	deletion	UNP Q9H6E5
A	?	-	SER	deletion	UNP Q9H6E5
A	875	LEU	-	expression tag	UNP Q9H6E5
A	876	GLU	-	expression tag	UNP Q9H6E5
A	877	HIS	-	expression tag	UNP Q9H6E5
A	878	HIS	-	expression tag	UNP Q9H6E5
A	879	HIS	-	expression tag	UNP Q9H6E5
A	880	HIS	-	expression tag	UNP Q9H6E5
A	881	HIS	-	expression tag	UNP Q9H6E5
A	882	HIS	-	expression tag	UNP Q9H6E5
B	140	MET	-	initiating methionine	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	CYS	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	PHE	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	501	ALA	CYS	engineered mutation	UNP Q9H6E5
B	504	SER	CYS	engineered mutation	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	LYS	deletion	UNP Q9H6E5
B	?	-	ARG	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	LYS	deletion	UNP Q9H6E5
B	?	-	VAL	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	LYS	deletion	UNP Q9H6E5
B	?	-	ASN	deletion	UNP Q9H6E5
B	?	-	CYS	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	CYS	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	LYS	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	CYS	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	ARG	deletion	UNP Q9H6E5
B	?	-	VAL	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	MET	deletion	UNP Q9H6E5
B	?	-	VAL	deletion	UNP Q9H6E5
B	?	-	ILE	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	VAL	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	MET	deletion	UNP Q9H6E5
B	?	-	VAL	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	TRP	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	MET	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	ASP	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	THR	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	LYS	deletion	UNP Q9H6E5
B	?	-	HIS	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	?	-	HIS	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	LEU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	ARG	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	PRO	deletion	UNP Q9H6E5
B	?	-	LYS	deletion	UNP Q9H6E5
B	?	-	GLY	deletion	UNP Q9H6E5
B	?	-	HIS	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	ALA	deletion	UNP Q9H6E5
B	?	-	GLN	deletion	UNP Q9H6E5
B	?	-	GLU	deletion	UNP Q9H6E5
B	?	-	TRP	deletion	UNP Q9H6E5
B	?	-	SER	deletion	UNP Q9H6E5
B	875	LEU	-	expression tag	UNP Q9H6E5
B	876	GLU	-	expression tag	UNP Q9H6E5
B	877	HIS	-	expression tag	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	878	HIS	-	expression tag	UNP Q9H6E5
B	879	HIS	-	expression tag	UNP Q9H6E5
B	880	HIS	-	expression tag	UNP Q9H6E5
B	881	HIS	-	expression tag	UNP Q9H6E5
B	882	HIS	-	expression tag	UNP Q9H6E5
C	140	MET	-	initiating methionine	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	CYS	deletion	UNP Q9H6E5
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	PHE	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	501	ALA	CYS	engineered mutation	UNP Q9H6E5
C	504	SER	CYS	engineered mutation	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	LYS	deletion	UNP Q9H6E5
C	?	-	ARG	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	LYS	deletion	UNP Q9H6E5
C	?	-	VAL	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	LYS	deletion	UNP Q9H6E5
C	?	-	ASN	deletion	UNP Q9H6E5
C	?	-	CYS	deletion	UNP Q9H6E5
C	?	-	CYS	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	LYS	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	CYS	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	ARG	deletion	UNP Q9H6E5
C	?	-	VAL	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	MET	deletion	UNP Q9H6E5
C	?	-	VAL	deletion	UNP Q9H6E5
C	?	-	ILE	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	VAL	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	?	-	MET	deletion	UNP Q9H6E5
C	?	-	VAL	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	TRP	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	MET	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	ASP	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	THR	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	LYS	deletion	UNP Q9H6E5
C	?	-	HIS	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	?	-	HIS	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	LEU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	ARG	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	PRO	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	?	-	LYS	deletion	UNP Q9H6E5
C	?	-	GLY	deletion	UNP Q9H6E5
C	?	-	HIS	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	ALA	deletion	UNP Q9H6E5
C	?	-	GLN	deletion	UNP Q9H6E5
C	?	-	GLU	deletion	UNP Q9H6E5
C	?	-	TRP	deletion	UNP Q9H6E5
C	?	-	SER	deletion	UNP Q9H6E5
C	875	LEU	-	expression tag	UNP Q9H6E5
C	876	GLU	-	expression tag	UNP Q9H6E5
C	877	HIS	-	expression tag	UNP Q9H6E5
C	878	HIS	-	expression tag	UNP Q9H6E5
C	879	HIS	-	expression tag	UNP Q9H6E5
C	880	HIS	-	expression tag	UNP Q9H6E5
C	881	HIS	-	expression tag	UNP Q9H6E5
C	882	HIS	-	expression tag	UNP Q9H6E5
D	140	MET	-	initiating methionine	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	CYS	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	PHE	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	501	ALA	CYS	engineered mutation	UNP Q9H6E5
D	504	SER	CYS	engineered mutation	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	LYS	deletion	UNP Q9H6E5
D	?	-	ARG	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	LYS	deletion	UNP Q9H6E5
D	?	-	VAL	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	LYS	deletion	UNP Q9H6E5
D	?	-	ASN	deletion	UNP Q9H6E5
D	?	-	CYS	deletion	UNP Q9H6E5
D	?	-	CYS	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	LYS	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	CYS	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	ARG	deletion	UNP Q9H6E5
D	?	-	VAL	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	MET	deletion	UNP Q9H6E5
D	?	-	VAL	deletion	UNP Q9H6E5
D	?	-	ILE	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	VAL	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	MET	deletion	UNP Q9H6E5
D	?	-	VAL	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	TRP	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	MET	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	ASP	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5
D	?	-	THR	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	LYS	deletion	UNP Q9H6E5
D	?	-	HIS	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5

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Chain	Residue	Modelled	Actual	Comment	Reference
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	?	-	HIS	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	LEU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	ARG	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	PRO	deletion	UNP Q9H6E5
D	?	-	LYS	deletion	UNP Q9H6E5
D	?	-	GLY	deletion	UNP Q9H6E5
D	?	-	HIS	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	ALA	deletion	UNP Q9H6E5
D	?	-	GLN	deletion	UNP Q9H6E5
D	?	-	GLU	deletion	UNP Q9H6E5
D	?	-	TRP	deletion	UNP Q9H6E5
D	?	-	SER	deletion	UNP Q9H6E5
D	875	LEU	-	expression tag	UNP Q9H6E5
D	876	GLU	-	expression tag	UNP Q9H6E5
D	877	HIS	-	expression tag	UNP Q9H6E5
D	878	HIS	-	expression tag	UNP Q9H6E5
D	879	HIS	-	expression tag	UNP Q9H6E5
D	880	HIS	-	expression tag	UNP Q9H6E5
D	881	HIS	-	expression tag	UNP Q9H6E5
D	882	HIS	-	expression tag	UNP Q9H6E5

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Speckle targeted PIP5K1A-regulated poly(A) polymerase
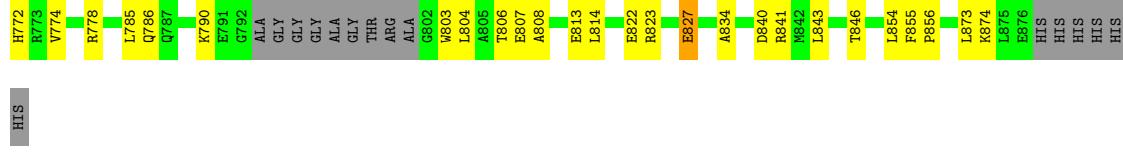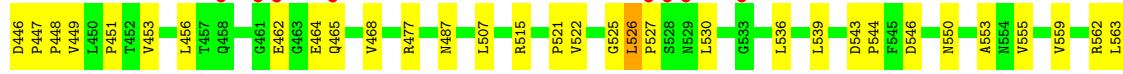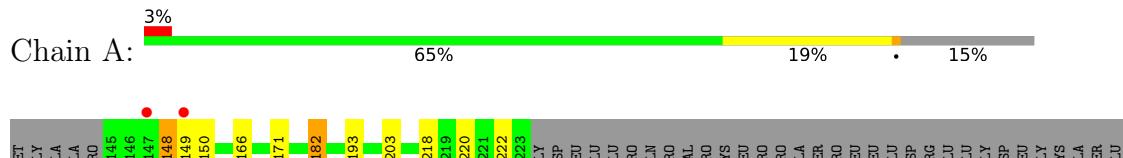
• Molecule 1: Speckle targeted PIP5K1A-regulated poly(A) polymerase
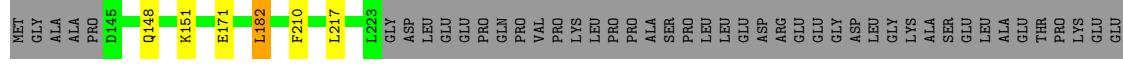
• Molecule 1: Speckle targeted PIP5K1A-regulated poly(A) polymerase
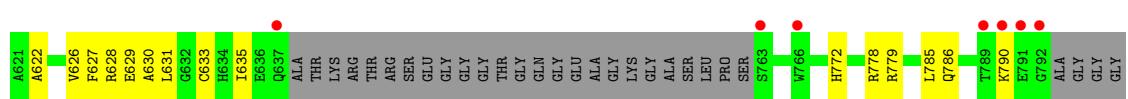
• Molecule 1: Speckle targeted PIP5K1A-regulated poly(A) polymerase

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4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α, β, γ	173.14Å 173.14Å 208.58Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.99 – 3.40 48.02 – 3.40	Depositor EDS
% Data completeness (in resolution range)	89.7 (19.99-3.40) 89.8 (48.02-3.40)	Depositor EDS
R_{merge}	0.33	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.23 (at 3.40Å)	Xtriage
Refinement program	PHENIX 1.8.4_1496	Depositor
R, R_{free}	0.214 , 0.258 0.218 , 0.264	Depositor DCC
R_{free} test set	1984 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å²)	54.5	Xtriage
Anisotropy	0.008	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.31 , 38.9	EDS
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.88	EDS
Total number of atoms	15026	wwPDB-VP
Average B, all atoms (Å²)	58.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.39% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ 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	0.24	0/3843	0.44	0/5222
1	B	0.23	0/3834	0.45	0/5209
1	C	0.23	0/3845	0.44	0/5224
1	D	0.23	0/3832	0.42	0/5204
All	All	0.23	0/15354	0.44	0/20859

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	3760	0	3773	71	1
1	B	3752	0	3761	59	1
1	C	3763	0	3773	53	1
1	D	3751	0	3765	66	0
All	All	15026	0	15072	237	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 8.

The worst 5 of 237 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:D:210:PHE:HB3	1:D:414:ARG:HH22	1.40	0.86
1:A:521:PRO:HG2	1:A:525:GLY:HA3	1.59	0.83
1:A:344:VAL:HG21	1:A:384:LEU:HD21	1.68	0.74
1:D:420:ARG:NH2	1:D:596:GLN:O	2.21	0.73
1:A:526:LEU:HD23	1:A:530:LEU:HD21	1.72	0.72

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:B:827:GLU:OE2	1:C:599:SER:OG[5_554]	1.97	0.23
1:A:462:GLU:OE2	1:A:465:GLN:NE2[8_554]	2.09	0.11

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	477/573 (83%)	456 (96%)	21 (4%)	0	100	100
1	B	473/573 (82%)	449 (95%)	24 (5%)	0	100	100
1	C	475/573 (83%)	457 (96%)	18 (4%)	0	100	100
1	D	473/573 (82%)	455 (96%)	18 (4%)	0	100	100
All	All	1898/2292 (83%)	1817 (96%)	81 (4%)	0	100	100

There are no Ramachandran outliers to report.

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 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	410/471 (87%)	400 (98%)	10 (2%)	49	74
1	B	409/471 (87%)	398 (97%)	11 (3%)	44	70
1	C	410/471 (87%)	403 (98%)	7 (2%)	60	80
1	D	409/471 (87%)	400 (98%)	9 (2%)	52	75
All	All	1638/1884 (87%)	1601 (98%)	37 (2%)	50	74

5 of 37 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	182	LEU
1	D	841	ARG
1	D	225	ASP
1	D	603	LEU
1	B	356	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3   RNA ⓘ

There are no RNA molecules in this entry.

5.4   Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5   Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6   Ligand geometry ⓘ

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, 95th 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(Å²)	Q<0.9
1	A	485/573 (84%)	0.30	19 (3%)	39	38	21, 48, 106, 148	0
1	B	483/573 (84%)	0.32	29 (6%)	21	23	20, 50, 107, 156	0
1	C	485/573 (84%)	0.42	30 (6%)	20	21	23, 50, 100, 155	0
1	D	483/573 (84%)	0.60	36 (7%)	14	16	22, 63, 116, 197	0
All	All	1936/2292 (84%)	0.41	114 (5%)	22	23	20, 52, 110, 197	0

The worst 5 of 114 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	528	SER	12.6
1	B	763	SER	9.6
1	D	527	PRO	8.1
1	D	525	GLY	6.9
1	C	790	LYS	6.8

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 ⓘ

There are no such residues in this entry.