



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 13, 2023 – 03:55 am GMT

PDB ID : 4A63  
Title : Crystal structure of the p73-ASPP2 complex at 2.6Å resolution  
Authors : Canning, P.; Sharpe, T.; Krojer, T.; Savitsky, P.; Cooper, C.D.O.; Salah, E.; Keates, T.; Muniz, J.; Vollmar, M.; von Delft, F.; Weigelt, J.; Arrowsmith, C.; Bountra, C.; Edwards, A.; Bullock, A.N.  
Deposited on : 2011-10-31  
Resolution : 2.27 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](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 : 1.8.4, 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

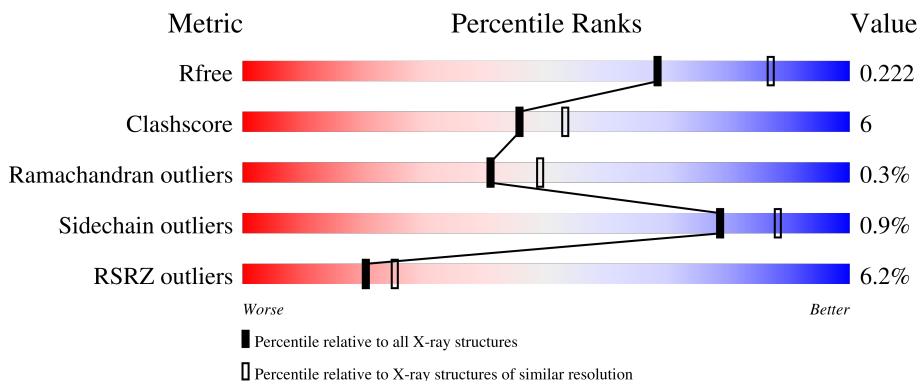
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.27 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	6980 (2.30-2.26)
Clashscore	141614	7711 (2.30-2.26)
Ramachandran outliers	138981	7597 (2.30-2.26)
Sidechain outliers	138945	7598 (2.30-2.26)
RSRZ outliers	127900	6849 (2.30-2.26)

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	208	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 2px;"></div> <div style="width: 91%; height: 10px; background-color: green; margin-right: 2px;"></div> <div style="width: 7%; height: 10px; background-color: yellow; margin-right: 2px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin: 0;">2%      91%      7% .</p>
1	C	208	<div style="display: flex; align-items: center;"> <div style="width: 9%; height: 10px; background-color: red; margin-right: 2px;"></div> <div style="width: 87%; height: 10px; background-color: green; margin-right: 2px;"></div> <div style="width: 11%; height: 10px; background-color: yellow; margin-right: 2px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin: 0;">9%      87%      11% .</p>
1	E	208	<div style="display: flex; align-items: center;"> <div style="width: 7%; height: 10px; background-color: red; margin-right: 2px;"></div> <div style="width: 85%; height: 10px; background-color: green; margin-right: 2px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 2px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin: 0;">7%      85%      13% .</p>
1	G	208	<div style="display: flex; align-items: center;"> <div style="width: 4%; height: 10px; background-color: red; margin-right: 2px;"></div> <div style="width: 85%; height: 10px; background-color: green; margin-right: 2px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 2px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin: 0;">4%      85%      13% .</p>
1	I	208	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 2px;"></div> <div style="width: 90%; height: 10px; background-color: green; margin-right: 2px;"></div> <div style="width: 8%; height: 10px; background-color: yellow; margin-right: 2px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin: 0;">2%      90%      8% .</p>

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Mol	Chain	Length	Quality of chain
1	K	208	<p>7% 87% 12%</p>
2	B	239	<p>3% 82% 15%</p>
2	D	239	<p>12% 78% 18%</p>
2	F	239	<p>6% 78% 5% 18%</p>
2	H	239	<p>6% 79% 17%</p>
2	J	239	<p>2% 78% 5% 16%</p>
2	L	239	<p>5% 75% 7% 18%</p>

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 19119 atoms, of which 27 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 TUMOUR PROTEIN 73.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	205	1592	1002	280	299	11	0	0	0
1	C	205	1586	1000	278	297	11	0	0	0
1	E	205	1558	983	272	292	11	0	0	0
1	G	205	1608	1011	285	299	13	0	2	0
1	I	205	1593	1001	282	299	11	0	0	0
1	K	205	1588	1000	281	296	11	0	0	0

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	111	MET	-	expression tag	UNP O15350
A	312	ALA	-	expression tag	UNP O15350
A	313	GLU	-	expression tag	UNP O15350
A	314	ASN	-	expression tag	UNP O15350
A	315	LEU	-	expression tag	UNP O15350
A	316	TYR	-	expression tag	UNP O15350
A	317	PHE	-	expression tag	UNP O15350
A	318	GLN	-	expression tag	UNP O15350
C	111	MET	-	expression tag	UNP O15350
C	312	ALA	-	expression tag	UNP O15350
C	313	GLU	-	expression tag	UNP O15350
C	314	ASN	-	expression tag	UNP O15350
C	315	LEU	-	expression tag	UNP O15350
C	316	TYR	-	expression tag	UNP O15350
C	317	PHE	-	expression tag	UNP O15350
C	318	GLN	-	expression tag	UNP O15350
E	111	MET	-	expression tag	UNP O15350

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Chain	Residue	Modelled	Actual	Comment	Reference
E	312	ALA	-	expression tag	UNP O15350
E	313	GLU	-	expression tag	UNP O15350
E	314	ASN	-	expression tag	UNP O15350
E	315	LEU	-	expression tag	UNP O15350
E	316	TYR	-	expression tag	UNP O15350
E	317	PHE	-	expression tag	UNP O15350
E	318	GLN	-	expression tag	UNP O15350
G	111	MET	-	expression tag	UNP O15350
G	312	ALA	-	expression tag	UNP O15350
G	313	GLU	-	expression tag	UNP O15350
G	314	ASN	-	expression tag	UNP O15350
G	315	LEU	-	expression tag	UNP O15350
G	316	TYR	-	expression tag	UNP O15350
G	317	PHE	-	expression tag	UNP O15350
G	318	GLN	-	expression tag	UNP O15350
I	111	MET	-	expression tag	UNP O15350
I	312	ALA	-	expression tag	UNP O15350
I	313	GLU	-	expression tag	UNP O15350
I	314	ASN	-	expression tag	UNP O15350
I	315	LEU	-	expression tag	UNP O15350
I	316	TYR	-	expression tag	UNP O15350
I	317	PHE	-	expression tag	UNP O15350
I	318	GLN	-	expression tag	UNP O15350
K	111	MET	-	expression tag	UNP O15350
K	312	ALA	-	expression tag	UNP O15350
K	313	GLU	-	expression tag	UNP O15350
K	314	ASN	-	expression tag	UNP O15350
K	315	LEU	-	expression tag	UNP O15350
K	316	TYR	-	expression tag	UNP O15350
K	317	PHE	-	expression tag	UNP O15350
K	318	GLN	-	expression tag	UNP O15350

- Molecule 2 is a protein called APOPTOSIS STIMULATING OF P53 PROTEIN 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	202	Total	C	N	O	S	0	0	0
			1538	973	249	303	13			
2	D	196	Total	C	N	O	S	0	0	0
			1411	892	238	267	14			
2	F	197	Total	C	N	O	S	0	0	0
			1436	905	234	284	13			
2	H	198	Total	C	N	O	S	0	0	0
			1467	936	237	281	13			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	J	200	1531	974	250	294	13	0	0	0
2	L	196	1472	933	240	286	13	0	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	890	SER	-	expression tag	UNP Q13625
B	891	MET	-	expression tag	UNP Q13625
D	890	SER	-	expression tag	UNP Q13625
D	891	MET	-	expression tag	UNP Q13625
F	890	SER	-	expression tag	UNP Q13625
F	891	MET	-	expression tag	UNP Q13625
H	890	SER	-	expression tag	UNP Q13625
H	891	MET	-	expression tag	UNP Q13625
J	890	SER	-	expression tag	UNP Q13625
J	891	MET	-	expression tag	UNP Q13625
L	890	SER	-	expression tag	UNP Q13625
L	891	MET	-	expression tag	UNP Q13625

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	C	1	Total 1	Zn 1	0	0
3	E	1	Total 1	Zn 1	0	0
3	G	1	Total 1	Zn 1	0	0
3	I	1	Total 1	Zn 1	0	0
3	K	1	Total 1	Zn 1	0	0

- Molecule 4 is ACETATE ION (three-letter code: ACT) (formula: C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
4	C	1	7	2	3	2	0	0
4	C	1	7	2	3	2	0	0
4	C	1	7	2	3	2	0	0
4	G	1	7	2	3	2	0	0
4	I	1	7	2	3	2	0	0
4	I	1	7	2	3	2	0	0
4	K	1	7	2	3	2	0	0
4	K	1	7	2	3	2	0	0
4	L	1	7	2	3	2	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	28	Total	O	0	0
			28	28		
5	C	102	Total	O	0	0
			102	102		
5	D	8	Total	O	0	0
			8	8		

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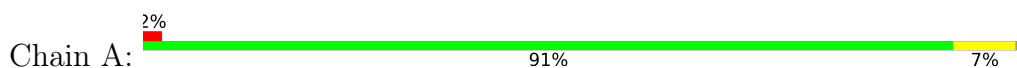
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	E	64	Total 64	O 64	0	0
5	F	12	Total 12	O 12	0	0
5	G	128	Total 128	O 128	0	0
5	H	12	Total 12	O 12	0	0
5	I	137	Total 137	O 137	0	0
5	J	52	Total 52	O 52	0	0
5	K	98	Total 98	O 98	0	0
5	L	30	Total 30	O 30	0	0



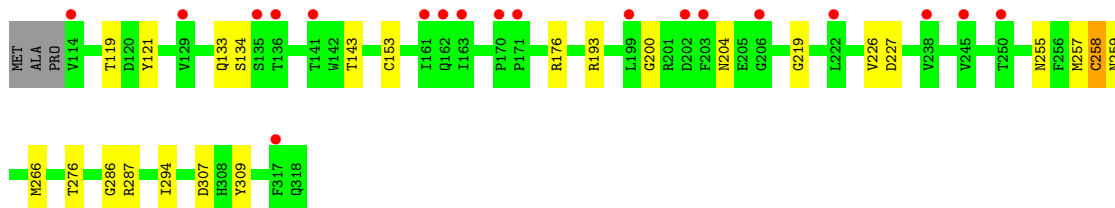
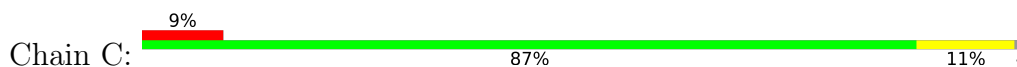
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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.

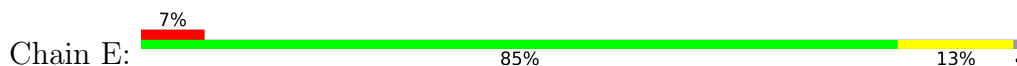
- Molecule 1: TUMOUR PROTEIN 73



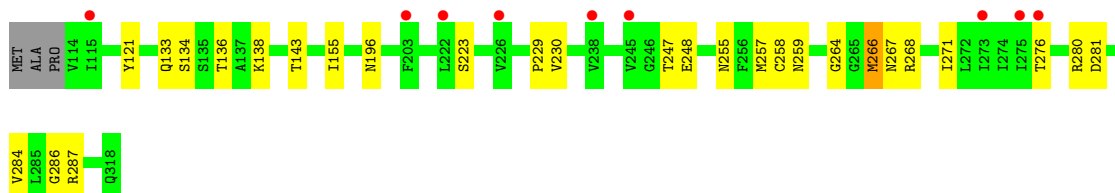
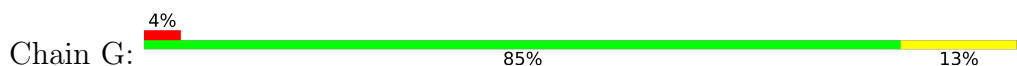
- Molecule 1: TUMOUR PROTEIN 73



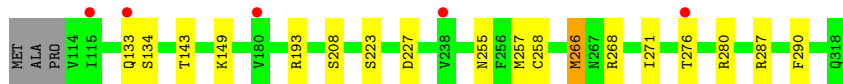
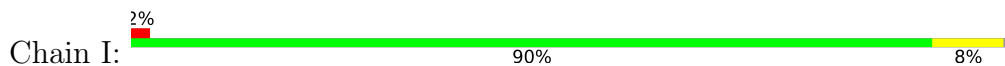
- Molecule 1: TUMOUR PROTEIN 73



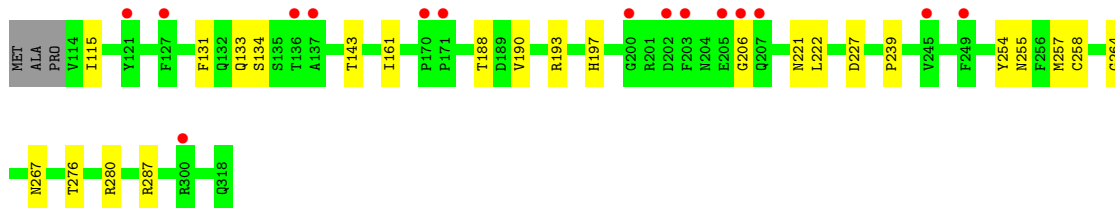
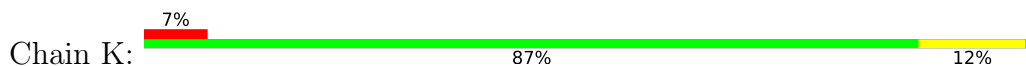
- Molecule 1: TUMOUR PROTEIN 73



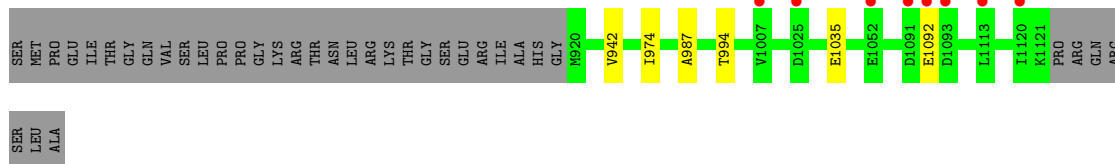
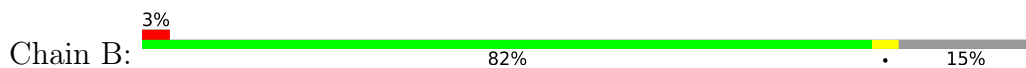
• Molecule 1: TUMOUR PROTEIN 73



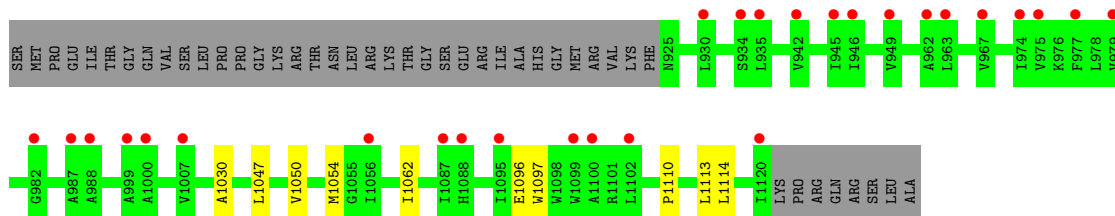
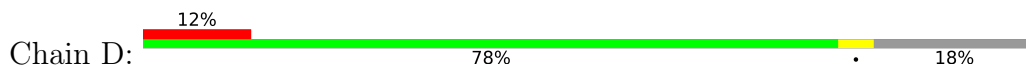
• Molecule 1: TUMOUR PROTEIN 73



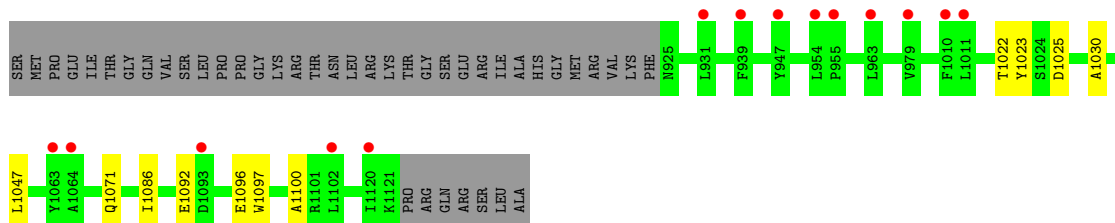
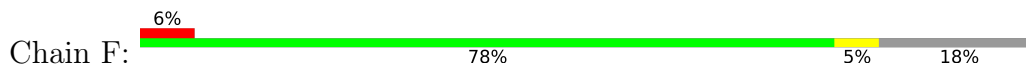
• Molecule 2: APOPTOSIS STIMULATING OF P53 PROTEIN 2



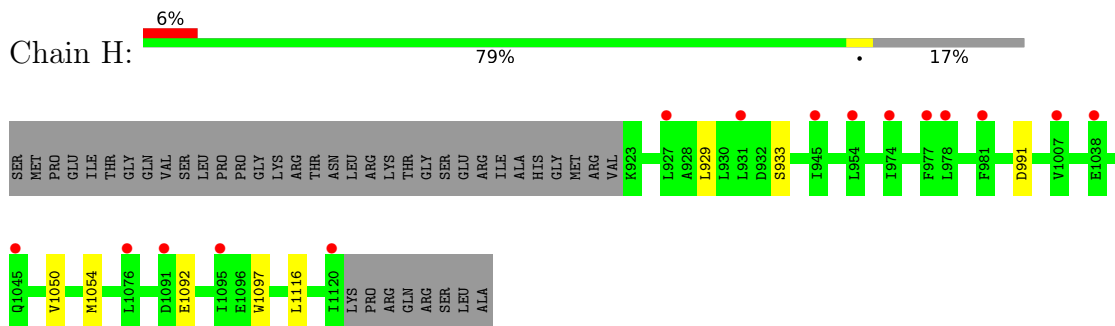
• Molecule 2: APOPTOSIS STIMULATING OF P53 PROTEIN 2



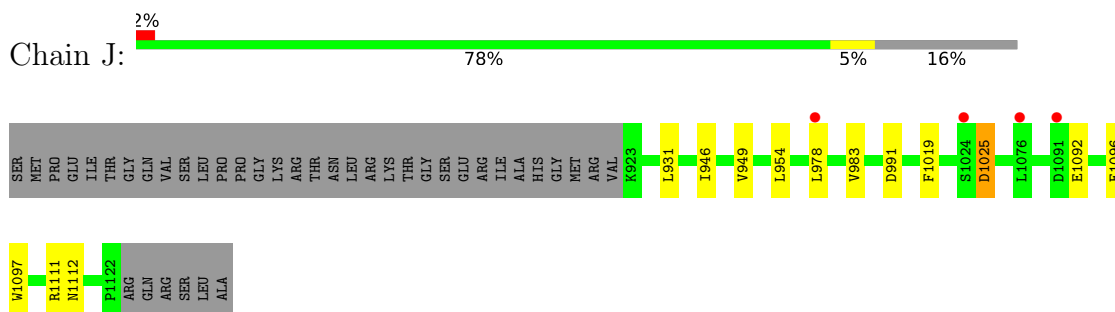
• Molecule 2: APOPTOSIS STIMULATING OF P53 PROTEIN 2



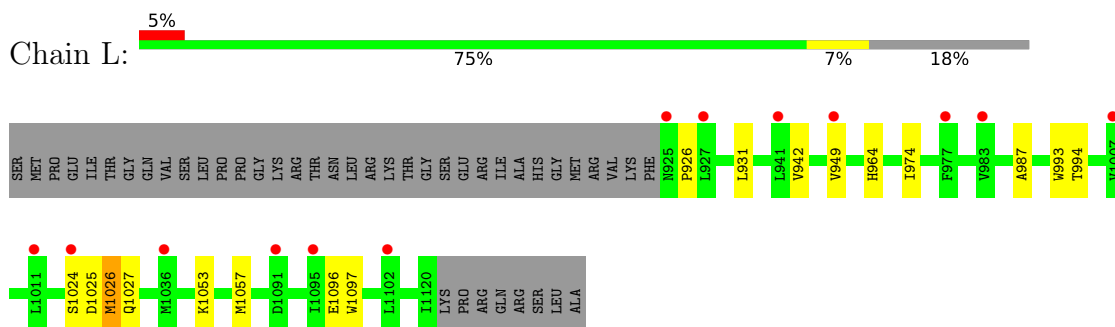
- Molecule 2: APOPTOSIS STIMULATING OF P53 PROTEIN 2



- Molecule 2: APOPTOSIS STIMULATING OF P53 PROTEIN 2



- Molecule 2: APOPTOSIS STIMULATING OF P53 PROTEIN 2



## 4 Data and refinement statistics i

Property	Value	Source
Space group	I 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	132.81Å 170.10Å 177.56Å 90.00° 91.98° 90.00°	Depositor
Resolution (Å)	85.05 – 2.27 85.05 – 2.65	Depositor EDS
% Data completeness (in resolution range)	97.1 (85.05-2.27) 97.3 (85.05-2.65)	Depositor EDS
$R_{merge}$	0.12	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.16 (at 2.65Å)	Xtrriage
Refinement program	BUSTER 2.10.0	Depositor
R, $R_{free}$	0.215 , 0.244 0.225 , 0.222	Depositor DCC
$R_{free}$ test set	5537 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	45.4	Xtrriage
Anisotropy	0.412	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.32 , 58.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	0.000 for -h,-l,-k 0.000 for -h,l,k 0.000 for h,-k,-l	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	19119	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	51.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 46.98 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.0594e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<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](#)

Bond lengths and bond angles in the following residue types are not validated in this section: ACT, ZN

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	0.54	0/1633	0.68	0/2226
1	C	0.51	1/1627 (0.1%)	0.67	0/2217
1	E	0.49	0/1599	0.68	1/2186 (0.0%)
1	G	0.56	1/1655 (0.1%)	0.68	0/2255
1	I	0.55	1/1634 (0.1%)	0.69	0/2227
1	K	0.52	0/1629	0.67	0/2220
2	B	0.52	0/1574	0.64	0/2149
2	D	0.48	0/1443	0.62	0/1977
2	F	0.46	0/1469	0.63	0/2014
2	H	0.46	0/1503	0.61	0/2057
2	J	0.52	0/1568	0.67	2/2140 (0.1%)
2	L	0.52	0/1506	0.65	0/2059
All	All	0.51	3/18840 (0.0%)	0.66	3/25727 (0.0%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	266	MET	SD-CE	-5.93	1.44	1.77
1	C	266	MET	SD-CE	-5.82	1.45	1.77
1	I	266	MET	SD-CE	-5.71	1.45	1.77

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	J	1025	ASP	CB-CG-OD2	6.75	124.38	118.30
1	E	266	MET	CB-CG-SD	-6.57	92.68	112.40
2	J	1025	ASP	CB-CG-OD1	-6.52	112.43	118.30

There are no chirality outliers.

There are no planarity outliers.

## 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	1592	0	1536	20	0
1	C	1586	0	1535	32	0
1	E	1558	0	1478	39	0
1	G	1608	0	1568	39	0
1	I	1593	0	1541	27	0
1	K	1588	0	1537	37	0
2	B	1538	0	1390	3	0
2	D	1411	0	1254	6	0
2	F	1436	0	1249	7	0
2	H	1467	0	1311	5	0
2	J	1531	0	1415	10	0
2	L	1472	0	1332	8	0
3	C	1	0	0	0	0
3	E	1	0	0	0	0
3	G	1	0	0	0	0
3	I	1	0	0	0	0
3	K	1	0	0	0	0
4	C	12	9	9	1	0
4	G	4	3	3	1	0
4	I	8	6	6	0	0
4	K	8	6	6	1	0
4	L	4	3	3	0	0
5	B	28	0	0	0	0
5	C	102	0	0	15	1
5	D	8	0	0	1	0
5	E	64	0	0	21	0
5	F	12	0	0	1	0
5	G	128	0	0	18	0
5	H	12	0	0	1	0
5	I	137	0	0	13	0
5	J	52	0	0	1	0
5	K	98	0	0	12	0
5	L	30	0	0	1	0
All	All	19092	27	17173	226	1

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 6.

All (226) 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:E:288:ARG:CD	5:E:2007:HOH:O	1.72	1.32
1:I:149:LYS:HB2	5:I:2026:HOH:O	1.15	1.31
1:I:290:PHE:CD2	5:I:2115:HOH:O	1.78	1.30
5:I:2098:HOH:O	2:J:1097:TRP:CZ2	1.84	1.29
1:K:280:ARG:HB2	5:K:2035:HOH:O	1.13	1.29
1:E:276:THR:CG2	1:E:287:ARG:HG3	1.65	1.27
1:K:221:ASN:HA	5:K:2070:HOH:O	1.33	1.26
1:I:276:THR:CG2	1:I:287:ARG:HG3	1.64	1.25
1:C:307:ASP:HB3	5:C:2090:HOH:O	1.37	1.24
1:A:276:THR:CG2	1:A:287:ARG:HG3	1.69	1.22
1:K:276:THR:CG2	1:K:287:ARG:HG3	1.70	1.21
5:E:2049:HOH:O	1:K:280:ARG:NH2	1.69	1.20
1:C:307:ASP:CB	5:C:2090:HOH:O	1.89	1.17
1:E:270:PRO:HG2	5:E:2024:HOH:O	0.99	1.16
1:C:121:TYR:HB3	5:C:2011:HOH:O	1.46	1.16
1:E:276:THR:HG22	1:E:287:ARG:CG	1.76	1.15
1:G:276:THR:CG2	1:G:287:ARG:HG3	1.77	1.15
1:K:239:PRO:HG2	5:K:2082:HOH:O	1.42	1.14
1:G:136:THR:HG23	5:G:2110:HOH:O	1.48	1.14
1:A:276:THR:HG22	1:A:287:ARG:CG	1.79	1.12
1:K:276:THR:HG22	1:K:287:ARG:CG	1.79	1.12
1:I:276:THR:HG22	1:I:287:ARG:CG	1.78	1.11
1:I:290:PHE:CE2	5:I:2115:HOH:O	1.96	1.10
1:C:307:ASP:CG	5:C:2090:HOH:O	1.87	1.09
1:G:281:ASP:HB3	5:I:2060:HOH:O	1.55	1.05
1:G:276:THR:HG22	1:G:287:ARG:CG	1.86	1.04
1:G:259:ASN:ND2	5:G:2036:HOH:O	1.91	1.00
1:E:288:ARG:HD3	5:E:2007:HOH:O	1.44	0.99
1:G:286:GLY:C	5:G:2101:HOH:O	1.99	0.99
1:K:206:GLY:O	5:K:2062:HOH:O	1.80	0.99
1:E:288:ARG:NE	5:E:2007:HOH:O	1.82	0.98
1:G:255:ASN:HB3	1:G:257:MET:HE1	1.43	0.98
1:C:226:VAL:HG11	5:C:2042:HOH:O	1.63	0.98
1:E:236:VAL:HG23	5:E:2032:HOH:O	1.63	0.96
1:G:121:TYR:O	5:G:2010:HOH:O	1.72	0.95
1:E:280:ARG:O	5:E:2049:HOH:O	1.84	0.94
1:E:225:TYR:CE1	5:E:2032:HOH:O	2.21	0.92
1:C:121:TYR:CD2	5:C:2011:HOH:O	2.23	0.92
1:G:276:THR:HG22	1:G:287:ARG:HG3	0.93	0.91
1:I:268:ARG:HG3	5:I:2098:HOH:O	1.69	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:176:ARG:NH1	5:C:2042:HOH:O	2.03	0.90
1:K:276:THR:HG21	1:K:287:ARG:NH1	1.89	0.88
1:E:225:TYR:CD1	5:E:2032:HOH:O	2.27	0.85
1:I:255:ASN:HB2	1:I:257:MET:CE	2.07	0.84
1:A:276:THR:HG21	1:A:287:ARG:NH1	1.93	0.83
1:E:276:THR:HG21	1:E:287:ARG:NH1	1.92	0.83
1:C:121:TYR:CB	5:C:2011:HOH:O	2.12	0.83
1:G:284:VAL:CG1	5:G:2101:HOH:O	2.26	0.83
1:G:230:VAL:HG23	5:G:2090:HOH:O	1.79	0.82
1:G:229:PRO:HG2	5:G:2090:HOH:O	1.78	0.82
1:G:276:THR:HG21	1:G:287:ARG:NH1	1.94	0.82
1:I:255:ASN:CB	1:I:257:MET:CE	2.58	0.82
1:G:230:VAL:N	5:G:2088:HOH:O	2.04	0.82
1:I:276:THR:HG21	1:I:287:ARG:NH1	1.95	0.81
1:A:276:THR:HG22	1:A:287:ARG:HG3	0.84	0.81
1:C:276:THR:HG22	1:C:287:ARG:HG3	1.61	0.80
1:K:190:VAL:O	5:K:2051:HOH:O	1.97	0.80
1:G:138:LYS:CB	5:G:2109:HOH:O	2.30	0.79
1:A:255:ASN:CB	1:A:257:MET:CE	2.61	0.78
1:K:276:THR:HG22	1:K:287:ARG:HG3	0.86	0.78
1:E:276:THR:HG22	1:E:287:ARG:HG3	0.81	0.77
1:K:222:LEU:HD12	5:K:2082:HOH:O	1.83	0.77
1:E:276:THR:HG21	1:E:287:ARG:HH11	1.49	0.77
1:K:276:THR:HG21	1:K:287:ARG:HH11	1.47	0.77
1:I:290:PHE:HD2	5:I:2115:HOH:O	1.33	0.76
1:K:280:ARG:CB	5:K:2035:HOH:O	1.89	0.76
1:E:129:VAL:HG23	5:E:2009:HOH:O	1.86	0.76
1:G:259:ASN:O	5:G:2094:HOH:O	2.03	0.76
1:G:286:GLY:O	5:G:2101:HOH:O	1.99	0.76
1:K:254:TYR:O	5:K:2032:HOH:O	1.96	0.76
1:I:276:THR:HG22	1:I:287:ARG:HG3	0.84	0.75
1:A:255:ASN:HB2	1:A:257:MET:CE	2.17	0.74
1:A:276:THR:HG21	1:A:287:ARG:HH11	1.51	0.73
1:K:255:ASN:HB2	1:K:257:MET:CE	2.18	0.73
1:E:152:TYR:CD2	5:E:2055:HOH:O	2.42	0.73
1:C:287:ARG:N	5:C:2011:HOH:O	2.21	0.73
1:A:255:ASN:HB3	1:A:257:MET:CE	2.19	0.73
1:E:193:ARG:HG3	1:E:258:CYS:SG	2.29	0.72
1:G:276:THR:HG21	1:G:287:ARG:HH11	1.52	0.72
1:K:239:PRO:CG	5:K:2082:HOH:O	2.17	0.72
1:C:255:ASN:HB2	1:C:257:MET:CE	2.20	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:309:TYR:O	5:C:2093:HOH:O	2.07	0.71
1:K:255:ASN:CB	1:K:257:MET:CE	2.69	0.69
1:C:255:ASN:CB	1:C:257:MET:CE	2.70	0.69
1:I:276:THR:HG21	1:I:287:ARG:HH11	1.55	0.69
1:G:255:ASN:CB	1:G:257:MET:HE1	2.21	0.68
1:A:193:ARG:HD3	1:A:211:ALA:O	1.92	0.68
1:A:255:ASN:HB3	1:A:257:MET:HE2	1.75	0.68
1:I:255:ASN:HB3	1:I:257:MET:CE	2.23	0.67
2:L:1026:MET:HG2	5:L:2006:HOH:O	1.93	0.67
1:G:255:ASN:HB3	1:G:257:MET:CE	2.20	0.67
1:E:182:LYS:HB3	5:E:2024:HOH:O	1.96	0.65
1:I:255:ASN:HB3	1:I:257:MET:HE2	1.79	0.65
1:C:121:TYR:O	5:C:2011:HOH:O	2.15	0.65
1:A:264:GLY:H	1:A:267:ASN:HD22	1.44	0.64
1:K:255:ASN:CB	1:K:257:MET:HE1	2.28	0.64
1:E:128:GLU:C	5:E:2009:HOH:O	2.35	0.64
1:I:149:LYS:CB	5:I:2026:HOH:O	1.94	0.63
1:E:287:ARG:O	5:E:2007:HOH:O	2.15	0.63
1:G:255:ASN:CB	1:G:257:MET:CE	2.76	0.62
1:G:266:MET:HE2	1:G:271:ILE:HG21	1.81	0.62
1:I:266:MET:HE2	1:I:271:ILE:HG21	1.81	0.61
1:I:255:ASN:CB	1:I:257:MET:HE2	2.30	0.61
1:E:260:SER:HA	1:E:266:MET:SD	2.42	0.59
1:I:193:ARG:HG3	1:I:258:CYS:SG	2.42	0.59
1:K:222:LEU:CD1	5:K:2082:HOH:O	2.46	0.59
1:K:255:ASN:HB2	1:K:257:MET:HE1	1.85	0.59
1:C:121:TYR:HD2	5:C:2011:HOH:O	1.73	0.58
1:E:288:ARG:HG2	5:E:2007:HOH:O	2.01	0.58
2:D:1110:PRO:HG2	2:D:1113:LEU:HD22	1.86	0.57
1:E:193:ARG:NE	1:E:257:MET:HB3	2.19	0.57
1:E:280:ARG:HA	5:E:2049:HOH:O	2.04	0.57
2:J:991:ASP:HB3	5:J:2016:HOH:O	2.04	0.57
2:F:1022:THR:HG21	5:F:2002:HOH:O	2.05	0.57
1:A:255:ASN:CB	1:A:257:MET:HE2	2.33	0.56
1:E:132:GLN:H	1:E:162:GLN:HE22	1.52	0.56
1:I:255:ASN:CB	1:I:257:MET:HE1	2.34	0.56
1:I:276:THR:CG2	1:I:287:ARG:CG	2.59	0.56
1:K:255:ASN:HB3	1:K:257:MET:CE	2.34	0.56
1:C:255:ASN:HB3	1:C:257:MET:CE	2.34	0.56
1:G:247:THR:HG22	1:G:248:GLU:H	1.71	0.56
1:E:255:ASN:HB3	1:E:257:MET:CE	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:290:PHE:HB3	5:I:2022:HOH:O	2.06	0.55
1:K:161:ILE:HD12	1:K:254:TYR:CD2	2.42	0.55
1:K:264:GLY:H	1:K:267:ASN:HD22	1.54	0.55
2:L:1053:LYS:O	2:L:1057:MET:HG2	2.07	0.55
1:E:156:ALA:HA	1:E:257:MET:CE	2.37	0.55
1:C:255:ASN:HB2	1:C:257:MET:HE3	1.88	0.54
1:E:276:THR:CG2	1:E:287:ARG:CG	2.59	0.54
1:C:193:ARG:NE	1:C:257:MET:HB3	2.23	0.54
1:C:255:ASN:HB3	1:C:257:MET:HE1	1.89	0.53
1:C:255:ASN:CB	1:C:257:MET:HE3	2.37	0.53
1:I:255:ASN:HB2	1:I:257:MET:HE3	1.89	0.53
1:C:193:ARG:HG3	1:C:258:CYS:SG	2.48	0.53
1:E:156:ALA:HA	1:E:257:MET:HE2	1.89	0.53
1:K:287:ARG:HE	4:K:1319:ACT:C	2.22	0.52
1:E:225:TYR:CZ	5:E:2032:HOH:O	2.54	0.52
1:G:284:VAL:HG12	5:G:2101:HOH:O	1.98	0.52
2:D:1050:VAL:HG13	5:D:2007:HOH:O	2.09	0.51
1:K:193:ARG:HG2	1:K:258:CYS:SG	2.51	0.51
2:J:1025:ASP:O	2:J:1025:ASP:OD1	2.29	0.51
4:C:1320:ACT:OXT	1:I:287:ARG:NE	2.36	0.51
1:K:255:ASN:HB3	1:K:257:MET:HE1	1.92	0.51
2:L:1096:GLU:HG2	2:L:1097:TRP:CD1	2.46	0.50
1:A:255:ASN:CB	1:A:257:MET:HE1	2.38	0.50
1:E:200:GLY:HA2	2:F:1023:TYR:O	2.11	0.50
2:H:1050:VAL:O	2:H:1054:MET:HB2	2.12	0.50
2:L:1025:ASP:C	2:L:1027:GLN:H	2.15	0.50
1:A:193:ARG:HG3	1:A:258:CYS:SG	2.51	0.49
2:H:1054:MET:HG3	2:H:1116:LEU:HD13	1.93	0.49
1:G:264:GLY:H	1:G:267:ASN:HD22	1.58	0.49
1:C:255:ASN:CB	1:C:257:MET:HE1	2.42	0.49
1:E:270:PRO:CG	5:E:2024:HOH:O	1.85	0.49
1:G:155:ILE:CG2	5:G:2032:HOH:O	2.61	0.49
1:C:286:GLY:HA2	5:C:2011:HOH:O	2.11	0.49
1:G:268:ARG:HD2	2:H:1097:TRP:CD2	2.48	0.49
2:B:942:VAL:HG11	2:B:974:ILE:HG23	1.94	0.48
1:E:152:TYR:CE2	5:E:2055:HOH:O	2.63	0.48
1:A:255:ASN:HB3	1:A:257:MET:HE1	1.95	0.48
1:K:239:PRO:CD	5:K:2082:HOH:O	2.56	0.48
2:L:964:HIS:HE1	2:L:993:TRP:O	1.97	0.48
2:D:1096:GLU:HG3	2:D:1097:TRP:CD1	2.50	0.47
1:K:131:PHE:CE2	1:K:161:ILE:HG12	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:119:THR:HG21	5:I:2025:HOH:O	2.14	0.47
1:C:226:VAL:CG1	5:C:2042:HOH:O	2.41	0.47
1:K:276:THR:CG2	1:K:287:ARG:CG	2.63	0.47
1:C:134:SER:HB2	1:C:143:THR:HA	1.98	0.46
1:G:247:THR:HG22	1:G:248:GLU:N	2.31	0.46
1:G:255:ASN:HB2	1:G:257:MET:CE	2.45	0.46
1:K:239:PRO:HD2	5:K:2082:HOH:O	2.15	0.46
1:C:200:GLY:O	1:C:204:ASN:ND2	2.48	0.46
1:E:288:ARG:CG	5:E:2007:HOH:O	2.30	0.46
1:G:280:ARG:NH2	1:I:223:SER:OG	2.48	0.46
1:K:134:SER:HB2	1:K:143:THR:HA	1.98	0.46
1:G:286:GLY:CA	5:G:2101:HOH:O	2.58	0.45
2:F:1096:GLU:HG2	2:F:1097:TRP:CD1	2.51	0.45
1:I:134:SER:HB2	1:I:143:THR:HA	1.98	0.45
5:I:2096:HOH:O	2:J:1096:GLU:HG2	2.15	0.45
1:K:193:ARG:HH21	1:K:197:HIS:HB3	1.81	0.45
1:E:225:TYR:CG	5:E:2032:HOH:O	2.63	0.45
1:C:193:ARG:HE	1:C:257:MET:HB3	1.80	0.45
2:D:1050:VAL:O	2:D:1054:MET:HB2	2.15	0.45
1:G:136:THR:CG2	5:G:2110:HOH:O	2.31	0.45
2:H:991:ASP:HB3	5:H:2001:HOH:O	2.16	0.45
2:L:942:VAL:HG11	2:L:974:ILE:HG23	1.99	0.45
2:J:978:LEU:O	2:J:983:VAL:HB	2.18	0.44
1:A:276:THR:CG2	1:A:287:ARG:CG	2.62	0.44
2:F:1025:ASP:O	2:F:1025:ASP:OD1	2.36	0.44
1:G:223:SER:OG	1:I:280:ARG:NH2	2.50	0.44
1:K:264:GLY:H	1:K:267:ASN:ND2	2.15	0.44
1:A:134:SER:HB2	1:A:143:THR:HA	2.00	0.44
1:A:264:GLY:H	1:A:267:ASN:ND2	2.14	0.43
1:A:255:ASN:HB2	1:A:257:MET:HE3	1.95	0.43
1:C:286:GLY:C	5:C:2011:HOH:O	2.52	0.43
1:E:279:MET:SD	1:E:285:LEU:HD11	2.58	0.43
2:J:946:ILE:O	2:J:949:VAL:HG22	2.18	0.43
1:K:193:ARG:NH2	1:K:197:HIS:HB3	2.33	0.43
2:L:926:PRO:HB2	2:L:949:VAL:HG12	2.00	0.43
1:E:186:HIS:NE2	2:F:1071:GLN:O	2.51	0.43
2:D:1062:ILE:HD13	2:D:1114:LEU:HD13	2.01	0.43
1:G:134:SER:HB2	1:G:143:THR:HA	2.01	0.43
1:E:134:SER:HB2	1:E:143:THR:HA	1.99	0.42
1:G:155:ILE:HG23	5:G:2032:HOH:O	2.17	0.42
1:G:284:VAL:HG13	5:G:2101:HOH:O	2.05	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:1019:PHE:HB2	2:J:1112:ASN:HA	1.99	0.42
1:C:119:THR:CG2	5:I:2025:HOH:O	2.66	0.42
1:G:121:TYR:HB2	4:G:1319:ACT:H2	2.01	0.42
1:G:196:ASN:ND2	5:G:2066:HOH:O	2.43	0.42
2:L:987:ALA:O	2:L:994:THR:HA	2.20	0.42
1:C:259:ASN:HA	1:C:294:ILE:HB	2.02	0.42
1:K:255:ASN:HB2	1:K:257:MET:HE3	2.00	0.42
1:E:181:TYR:OH	1:E:266:MET:HA	2.19	0.42
2:H:929:LEU:O	2:H:933:SER:HB2	2.20	0.42
2:J:1025:ASP:OD1	2:J:1025:ASP:C	2.59	0.42
2:B:987:ALA:O	2:B:994:THR:HA	2.20	0.41
1:A:193:ARG:HE	1:A:197:HIS:HB3	1.84	0.41
2:F:1030:ALA:HB2	2:F:1047:LEU:HB3	2.02	0.41
2:J:1096:GLU:HA	2:J:1111:ARG:HG2	2.02	0.41
2:B:1035:GLU:HG2	1:C:219:GLY:HA2	2.03	0.41
1:G:280:ARG:HG2	1:I:208:SER:HB2	2.03	0.41
2:F:1086:ILE:HD13	2:F:1100:ALA:HB2	2.03	0.40
5:I:2098:HOH:O	2:J:1097:TRP:CE2	2.46	0.40
2:D:1030:ALA:HB2	2:D:1047:LEU:HB3	2.04	0.40
1:E:255:ASN:HB3	1:E:257:MET:HE3	2.02	0.40
1:K:115:ILE:HD11	1:K:188:THR:HG22	2.04	0.40
1:K:161:ILE:HD12	1:K:254:TYR:HD2	1.83	0.40

All (1) 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)
5:C:2062:HOH:O	5:C:2076:HOH:O[2_656]	0.87	1.33

## 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	203/208 (98%)	201 (99%)	1 (0%)	1 (0%)	29	34
1	C	203/208 (98%)	201 (99%)	1 (0%)	1 (0%)	29	34
1	E	203/208 (98%)	200 (98%)	2 (1%)	1 (0%)	29	34
1	G	205/208 (99%)	203 (99%)	1 (0%)	1 (0%)	29	34
1	I	203/208 (98%)	201 (99%)	1 (0%)	1 (0%)	29	34
1	K	203/208 (98%)	200 (98%)	2 (1%)	1 (0%)	29	34
2	B	200/239 (84%)	193 (96%)	7 (4%)	0	100	100
2	D	194/239 (81%)	187 (96%)	7 (4%)	0	100	100
2	F	195/239 (82%)	189 (97%)	6 (3%)	0	100	100
2	H	196/239 (82%)	189 (96%)	7 (4%)	0	100	100
2	J	198/239 (83%)	190 (96%)	8 (4%)	0	100	100
2	L	194/239 (81%)	186 (96%)	6 (3%)	2 (1%)	15	16
All	All	2397/2682 (89%)	2340 (98%)	49 (2%)	8 (0%)	41	49

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	133	GLN
1	I	133	GLN
2	L	1026	MET
1	E	133	GLN
1	G	133	GLN
1	K	133	GLN
2	L	1024	SER
1	C	133	GLN

### 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	174/183 (95%)	171 (98%)	3 (2%)	60	74
1	C	174/183 (95%)	171 (98%)	3 (2%)	60	74

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	E	167/183 (91%)	166 (99%)	1 (1%)	86	93
1	G	179/183 (98%)	178 (99%)	1 (1%)	86	93
1	I	176/183 (96%)	175 (99%)	1 (1%)	86	93
1	K	174/183 (95%)	173 (99%)	1 (1%)	86	93
2	B	156/205 (76%)	155 (99%)	1 (1%)	86	93
2	D	132/205 (64%)	132 (100%)	0	100	100
2	F	136/205 (66%)	135 (99%)	1 (1%)	84	91
2	H	142/205 (69%)	141 (99%)	1 (1%)	84	91
2	J	157/205 (77%)	154 (98%)	3 (2%)	57	71
2	L	146/205 (71%)	145 (99%)	1 (1%)	84	91
All	All	1913/2328 (82%)	1896 (99%)	17 (1%)	78	88

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	162	GLN
1	A	227	ASP
1	A	258	CYS
2	B	1092	GLU
1	C	153	CYS
1	C	227	ASP
1	C	258	CYS
1	E	227	ASP
2	F	1092	GLU
1	G	258	CYS
2	H	1092	GLU
1	I	227	ASP
2	J	931	LEU
2	J	954	LEU
2	J	1092	GLU
1	K	227	ASP
2	L	931	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	162	GLN

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Mol	Chain	Res	Type
1	A	267	ASN
1	C	224	GLN
1	C	267	ASN
1	E	162	GLN
1	E	267	ASN
1	G	207	GLN
1	G	267	ASN
1	I	267	ASN
1	K	267	ASN
2	L	964	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

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

Of 14 ligands modelled in this entry, 5 are monoatomic - leaving 9 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
4	ACT	C	1319	-	3,3,3	1.06	0	3,3,3	0.82	0
4	ACT	C	1320	-	3,3,3	1.18	0	3,3,3	0.89	0
4	ACT	K	1319	-	3,3,3	0.93	0	3,3,3	0.90	0
4	ACT	G	1319	-	3,3,3	0.74	0	3,3,3	1.04	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
4	ACT	I	1319	-	3,3,3	1.29	0	3,3,3	0.99	0
4	ACT	C	1321	-	3,3,3	0.91	0	3,3,3	1.10	0
4	ACT	L	1522	-	3,3,3	0.93	0	3,3,3	0.95	0
4	ACT	I	1320	-	3,3,3	0.93	0	3,3,3	1.33	0
4	ACT	K	1320	-	3,3,3	1.13	0	3,3,3	1.15	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	1320	ACT	1	0
4	K	1319	ACT	1	0
4	G	1319	ACT	1	0

## 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	205/208 (98%)	0.79	5 (2%) 59 65	24, 40, 68, 118	0
1	C	205/208 (98%)	0.97	19 (9%) 8 11	26, 43, 85, 96	0
1	E	205/208 (98%)	0.94	14 (6%) 17 21	34, 52, 83, 102	0
1	G	205/208 (98%)	0.91	9 (4%) 34 40	20, 37, 71, 112	0
1	I	205/208 (98%)	0.85	5 (2%) 59 65	21, 36, 66, 115	0
1	K	205/208 (98%)	0.91	15 (7%) 15 18	23, 41, 75, 104	0
2	B	202/239 (84%)	0.73	8 (3%) 38 43	33, 49, 71, 97	0
2	D	196/239 (82%)	1.06	28 (14%) 2 3	38, 64, 104, 111	0
2	F	197/239 (82%)	0.88	14 (7%) 16 19	35, 61, 99, 114	0
2	H	198/239 (82%)	0.87	15 (7%) 13 17	38, 61, 89, 96	0
2	J	200/239 (83%)	0.71	4 (2%) 65 70	26, 44, 68, 86	0
2	L	196/239 (82%)	0.88	13 (6%) 18 22	32, 56, 102, 111	0
All	All	2419/2682 (90%)	0.87	149 (6%) 20 25	20, 48, 90, 118	0

All (149) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	1091	ASP	5.3
1	K	203	PHE	5.2
2	F	947	TYR	5.0
1	E	245	VAL	4.6
2	D	942	VAL	4.4
2	H	981	PHE	4.4
2	D	935	LEU	4.1
2	L	927	LEU	4.1
2	L	941	LEU	4.0
2	D	974	ILE	4.0
1	C	136	THR	3.8

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Mol	Chain	Res	Type	RSRZ
1	C	245	VAL	3.8
1	C	222	LEU	3.7
2	D	1088	HIS	3.7
1	A	136	THR	3.7
2	H	1091	ASP	3.6
2	H	945	ILE	3.6
1	C	135	SER	3.6
1	E	161	ILE	3.6
1	K	206	GLY	3.5
2	L	1095	ILE	3.5
1	K	245	VAL	3.5
2	L	949	VAL	3.5
1	E	127	PHE	3.5
2	B	1093	ASP	3.5
2	B	1120	ILE	3.4
1	E	203	PHE	3.4
2	L	977	PHE	3.4
2	D	962	ALA	3.3
2	F	939	PHE	3.3
2	D	975	VAL	3.3
1	C	203	PHE	3.2
2	D	1095	ILE	3.1
2	H	931	LEU	3.1
2	D	1007	VAL	3.1
2	D	963	LEU	3.0
1	E	135	SER	3.0
1	K	200	GLY	3.0
2	D	946	ILE	3.0
2	H	978	LEU	3.0
1	K	205	GLU	3.0
1	C	161	ILE	3.0
1	C	199	LEU	2.9
2	H	927	LEU	2.9
2	D	1056	ILE	2.9
2	H	1095	ILE	2.9
1	K	249	PHE	2.9
2	F	979	VAL	2.9
2	D	1087	ILE	2.9
2	H	977	PHE	2.9
1	K	170	PRO	2.8
2	B	1092	GLU	2.8
2	D	977	PHE	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	E	184	ALA	2.8
2	H	1120	ILE	2.8
1	K	136	THR	2.8
2	D	1102	LEU	2.7
2	F	963	LEU	2.7
2	J	1091	ASP	2.7
2	F	955	PRO	2.7
2	L	925	ASN	2.7
1	G	222	LEU	2.7
2	F	1102	LEU	2.7
2	D	934	SER	2.7
2	D	1120	ILE	2.7
1	K	202	ASP	2.7
1	C	114	VAL	2.7
2	D	1099	TRP	2.6
1	C	202	ASP	2.6
2	D	1100	ALA	2.6
2	L	1007	VAL	2.6
2	D	979	VAL	2.6
2	D	967	VAL	2.6
1	A	258	CYS	2.6
1	E	214	LEU	2.6
2	B	1113	LEU	2.6
2	D	999	ALA	2.6
1	C	206	GLY	2.5
2	F	1120	ILE	2.5
2	L	1091	ASP	2.5
1	I	115	ILE	2.5
2	D	930	LEU	2.5
2	L	1102	LEU	2.5
2	F	1063	TYR	2.5
1	G	115	ILE	2.5
1	E	165	VAL	2.4
1	E	187	VAL	2.4
2	H	1007	VAL	2.4
2	F	954	LEU	2.4
1	G	226	VAL	2.4
1	I	276	THR	2.4
1	A	115	ILE	2.4
1	E	222	LEU	2.4
1	C	317	PHE	2.4
2	H	954	LEU	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	141	THR	2.4
1	C	171	PRO	2.3
1	G	245	VAL	2.3
2	D	988	ALA	2.3
2	D	949	VAL	2.3
1	K	137	ALA	2.3
1	I	238	VAL	2.3
1	C	162	GLN	2.3
1	E	275	ILE	2.3
2	F	1064	ALA	2.3
2	J	1024	SER	2.3
1	E	290	PHE	2.3
1	G	238	VAL	2.3
1	G	273	ILE	2.3
2	B	1007	VAL	2.2
2	D	945	ILE	2.2
2	D	982	GLY	2.2
1	C	238	VAL	2.2
1	C	163	ILE	2.2
2	D	987	ALA	2.2
2	D	1000	ALA	2.2
1	K	207	GLN	2.2
1	C	250	THR	2.2
1	G	275	ILE	2.2
1	E	133	GLN	2.2
2	H	1045	GLN	2.2
2	L	1011	LEU	2.2
2	H	1038	GLU	2.2
2	L	1036	MET	2.2
2	L	1024	SER	2.2
2	B	1025	ASP	2.1
2	H	1076	LEU	2.1
1	C	129	VAL	2.1
1	I	180	VAL	2.1
2	B	1052	GLU	2.1
2	F	931	LEU	2.1
2	J	1076	LEU	2.1
1	I	133	GLN	2.1
1	K	127	PHE	2.1
2	F	1010	PHE	2.1
1	K	171	PRO	2.1
1	A	133	GLN	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	170	PRO	2.1
1	E	192	LYS	2.1
1	A	226	VAL	2.1
1	G	203	PHE	2.1
1	K	121	TYR	2.1
2	L	983	VAL	2.1
2	F	1093	ASP	2.0
2	F	1011	LEU	2.0
2	J	978	LEU	2.0
1	K	300	ARG	2.0
2	H	974	ILE	2.0
1	G	276	THR	2.0

## 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](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
4	ACT	C	1321	4/4	0.87	0.53	42,50,55,58	0
4	ACT	I	1320	4/4	0.88	0.27	49,50,51,52	0
4	ACT	K	1320	4/4	0.89	0.20	60,64,64,66	0
4	ACT	C	1319	4/4	0.90	0.19	75,77,78,81	0
4	ACT	L	1522	4/4	0.91	0.36	49,50,55,56	0
4	ACT	G	1319	4/4	0.92	0.32	46,46,52,56	0
4	ACT	K	1319	4/4	0.93	0.72	88,89,89,94	0
4	ACT	I	1319	4/4	0.94	0.20	54,54,57,67	0
4	ACT	C	1320	4/4	0.96	0.33	34,35,41,56	0
3	ZN	C	1	1/1	0.99	0.15	44,44,44,44	0
3	ZN	E	1	1/1	0.99	0.17	45,45,45,45	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	ZN	K	1	1/1	0.99	0.18	39,39,39,39	0
3	ZN	G	1	1/1	1.00	0.21	37,37,37,37	0
3	ZN	I	1	1/1	1.00	0.20	30,30,30,30	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.