



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 07:58 PM GMT

PDB ID : 4QG2
Title : Crystal structure of the tetrameric GTP/dATP/ATP-bound SAMHD1 (RN206) mutant catalytic core
Authors : Koharudin, L.M.I.; Wu, Y.; DeLucia, M.; Mehrens, J.; Gronenborn, A.M.; Ahn, J.
Deposited on : 2014-05-22
Resolution : 2.25 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
A user guide is available at
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

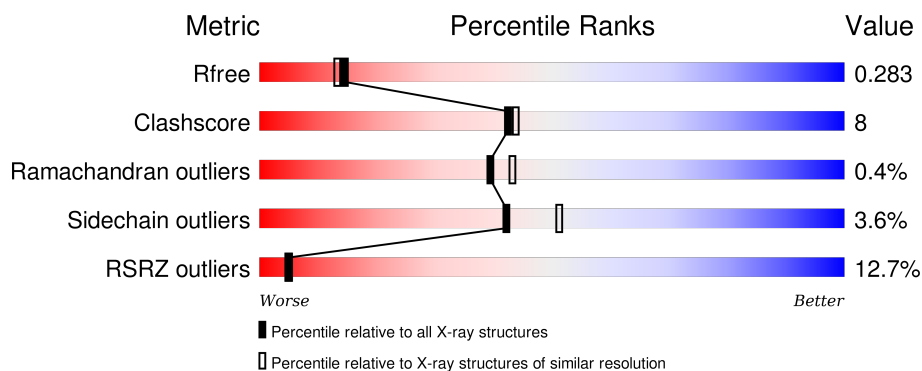
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.25 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}	91344	1640 (2.28-2.24)
Clashscore	102246	1095 (2.26-2.26)
Ramachandran outliers	100387	1063 (2.26-2.26)
Sidechain outliers	100360	1063 (2.26-2.26)
RSRZ outliers	91569	1647 (2.28-2.24)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	550	<div> <div>12%</div> <div>67%</div> <div>19%</div> <div>•</div> <div>13%</div> </div>
1	B	550	<div> <div>13%</div> <div>72%</div> <div>14%</div> <div>•</div> <div>13%</div> </div>
1	C	550	<div> <div>13%</div> <div>67%</div> <div>19%</div> <div>•</div> <div>13%</div> </div>
1	D	550	<div> <div>7%</div> <div>69%</div> <div>17%</div> <div>•</div> <div>13%</div> </div>

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 16094 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 Deoxynucleoside triphosphate triphosphohydrolase SAMHD1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	481	Total	C	N	O	S	0	1	0
			3939	2520	686	712	21			
1	B	481	Total	C	N	O	S	0	0	0
			3933	2517	685	711	20			
1	C	481	Total	C	N	O	S	0	1	0
			3939	2520	686	712	21			
1	D	481	Total	C	N	O	S	0	3	0
			3955	2528	689	717	21			

There are 152 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	77	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
A	78	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
A	79	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	80	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	81	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	82	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	83	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	84	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	85	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	86	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	87	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	88	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	89	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
A	90	LEU	-	EXPRESSION TAG	UNP Q9Y3Z3
A	91	VAL	-	EXPRESSION TAG	UNP Q9Y3Z3
A	92	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
A	93	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
A	94	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
A	95	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	96	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
A	97	MET	-	EXPRESSION TAG	UNP Q9Y3Z3

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Chain	Residue	Modelled	Actual	Comment	Reference
A	98	ALA	-	EXPRESSION TAG	UNP Q9Y3Z3
A	99	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	100	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
A	101	THR	-	EXPRESSION TAG	UNP Q9Y3Z3
A	102	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
A	103	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
A	104	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
A	105	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
A	106	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
A	107	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
A	108	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
A	109	ASP	-	EXPRESSION TAG	UNP Q9Y3Z3
A	110	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
A	111	ASN	-	EXPRESSION TAG	UNP Q9Y3Z3
A	112	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
A	206	ARG	HIS	ENGINEERED MUTATION	UNP Q9Y3Z3
A	207	ASN	ASP	ENGINEERED MUTATION	UNP Q9Y3Z3
B	77	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
B	78	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
B	79	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	80	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	81	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	82	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	83	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	84	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	85	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	86	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	87	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	88	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	89	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
B	90	LEU	-	EXPRESSION TAG	UNP Q9Y3Z3
B	91	VAL	-	EXPRESSION TAG	UNP Q9Y3Z3
B	92	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
B	93	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
B	94	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
B	95	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	96	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
B	97	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
B	98	ALA	-	EXPRESSION TAG	UNP Q9Y3Z3
B	99	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	100	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
B	101	THR	-	EXPRESSION TAG	UNP Q9Y3Z3

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Chain	Residue	Modelled	Actual	Comment	Reference
B	102	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
B	103	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
B	104	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
B	105	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
B	106	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
B	107	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
B	108	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
B	109	ASP	-	EXPRESSION TAG	UNP Q9Y3Z3
B	110	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
B	111	ASN	-	EXPRESSION TAG	UNP Q9Y3Z3
B	112	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
B	206	ARG	HIS	ENGINEERED MUTATION	UNP Q9Y3Z3
B	207	ASN	ASP	ENGINEERED MUTATION	UNP Q9Y3Z3
C	77	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
C	78	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
C	79	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	80	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	81	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	82	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	83	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	84	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	85	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	86	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	87	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	88	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	89	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
C	90	LEU	-	EXPRESSION TAG	UNP Q9Y3Z3
C	91	VAL	-	EXPRESSION TAG	UNP Q9Y3Z3
C	92	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
C	93	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
C	94	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
C	95	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	96	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
C	97	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
C	98	ALA	-	EXPRESSION TAG	UNP Q9Y3Z3
C	99	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	100	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
C	101	THR	-	EXPRESSION TAG	UNP Q9Y3Z3
C	102	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
C	103	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
C	104	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
C	105	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3

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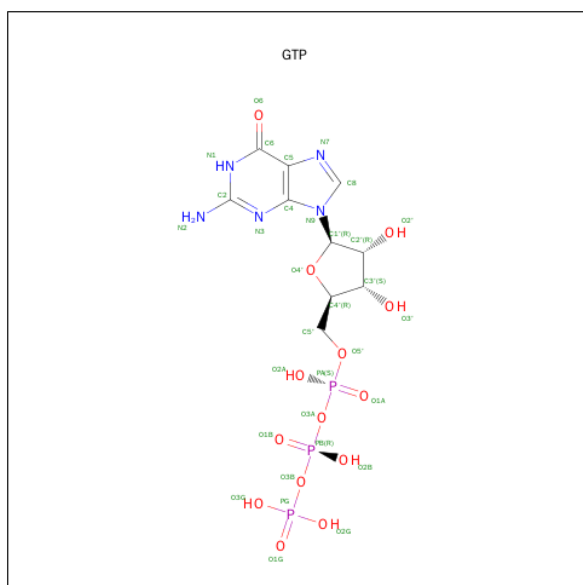
Chain	Residue	Modelled	Actual	Comment	Reference
C	106	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
C	107	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
C	108	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
C	109	ASP	-	EXPRESSION TAG	UNP Q9Y3Z3
C	110	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
C	111	ASN	-	EXPRESSION TAG	UNP Q9Y3Z3
C	112	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
C	206	ARG	HIS	ENGINEERED MUTATION	UNP Q9Y3Z3
C	207	ASN	ASP	ENGINEERED MUTATION	UNP Q9Y3Z3
D	77	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
D	78	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
D	79	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	80	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	81	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	82	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	83	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	84	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	85	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	86	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	87	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	88	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	89	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
D	90	LEU	-	EXPRESSION TAG	UNP Q9Y3Z3
D	91	VAL	-	EXPRESSION TAG	UNP Q9Y3Z3
D	92	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
D	93	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
D	94	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
D	95	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	96	HIS	-	EXPRESSION TAG	UNP Q9Y3Z3
D	97	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
D	98	ALA	-	EXPRESSION TAG	UNP Q9Y3Z3
D	99	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	100	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
D	101	THR	-	EXPRESSION TAG	UNP Q9Y3Z3
D	102	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
D	103	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
D	104	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
D	105	GLN	-	EXPRESSION TAG	UNP Q9Y3Z3
D	106	MET	-	EXPRESSION TAG	UNP Q9Y3Z3
D	107	GLY	-	EXPRESSION TAG	UNP Q9Y3Z3
D	108	ARG	-	EXPRESSION TAG	UNP Q9Y3Z3
D	109	ASP	-	EXPRESSION TAG	UNP Q9Y3Z3

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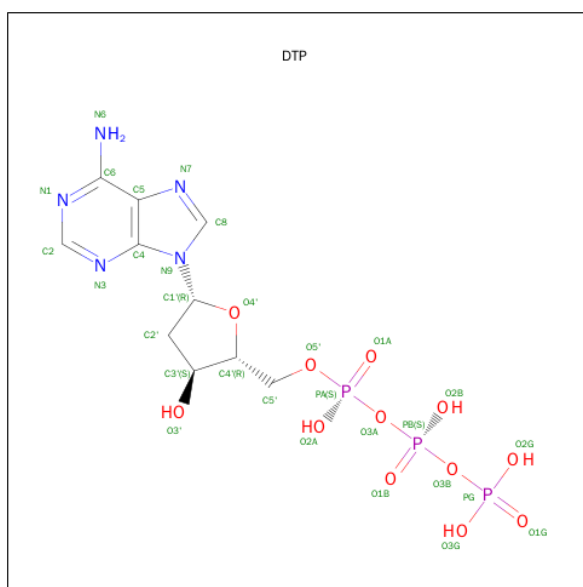
Chain	Residue	Modelled	Actual	Comment	Reference
D	110	PRO	-	EXPRESSION TAG	UNP Q9Y3Z3
D	111	ASN	-	EXPRESSION TAG	UNP Q9Y3Z3
D	112	SER	-	EXPRESSION TAG	UNP Q9Y3Z3
D	206	ARG	HIS	ENGINEERED MUTATION	UNP Q9Y3Z3
D	207	ASN	ASP	ENGINEERED MUTATION	UNP Q9Y3Z3

- Molecule 2 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	B	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	B	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	D	1	Total	C	N	O	P	0	0
			32	10	5	14	3		

- Molecule 3 is 2'-DEOXYADENOSINE 5'-TRIPHOSPHATE (three-letter code: DTP) (formula: $C_{10}H_{16}N_5O_{12}P_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			30	10	5	12	3		
3	B	1	Total	C	N	O	P	0	0
			30	10	5	12	3		
3	C	1	Total	C	N	O	P	0	0
			30	10	5	12	3		
3	D	1	Total	C	N	O	P	0	0
			30	10	5	12	3		

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	2	Total	Mg	0	0
			2	2		
4	D	1	Total	Mg	0	0
			1	1		
4	C	1	Total	Mg	0	0
			1	1		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	18	Total	O	0	0
			18	18		
5	B	16	Total	O	0	0
			16	16		

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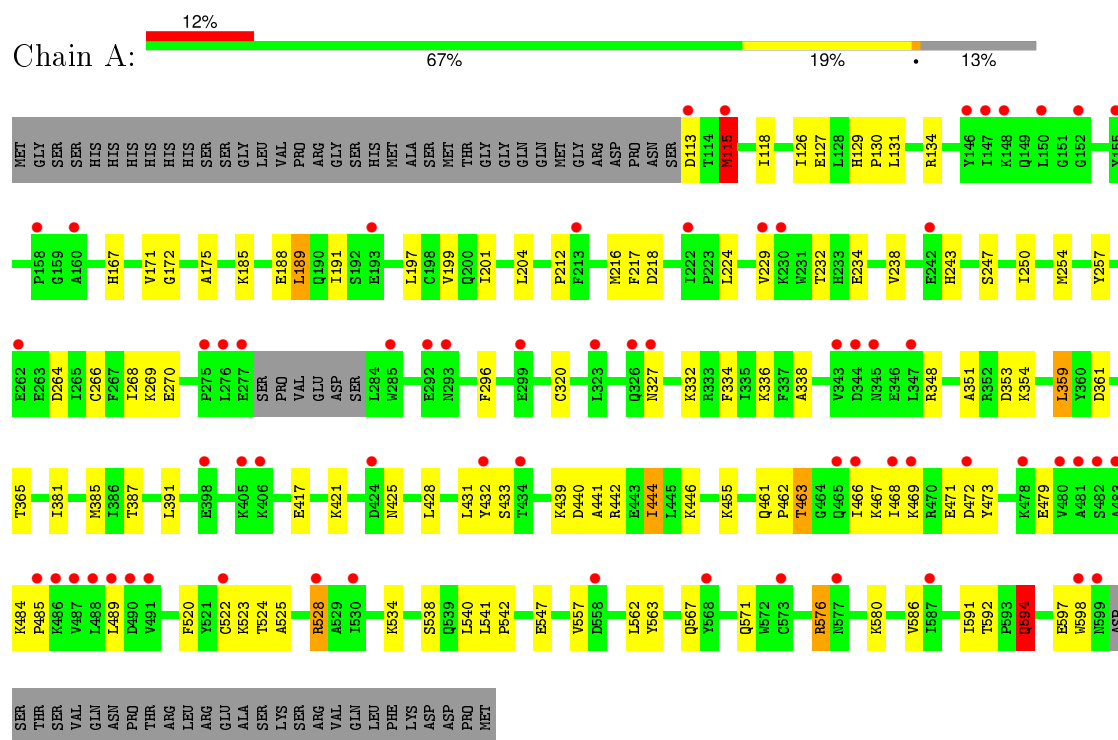
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	C	16	Total	O	0	0
			16	16		
5	D	26	Total	O	0	0
			26	26		

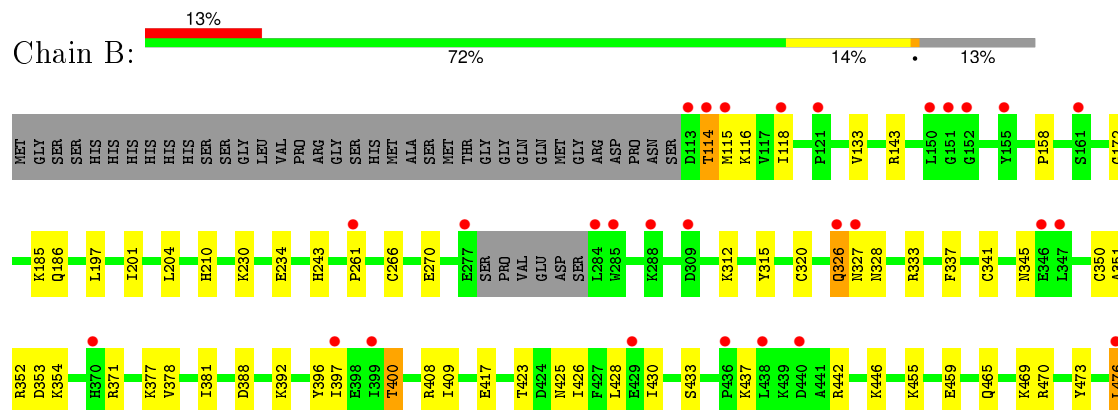
3 Residue-property plots

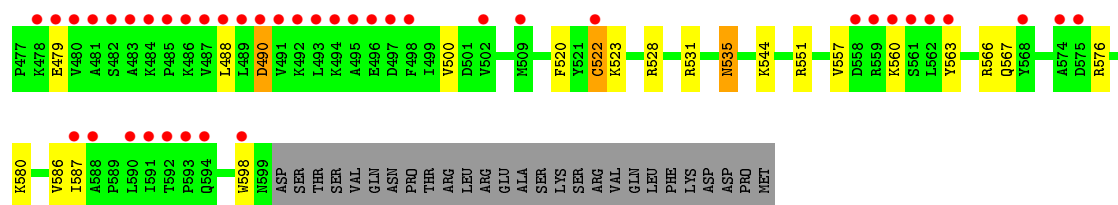
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according 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: Deoxynucleoside triphosphate triphosphohydrolase SAMHD1

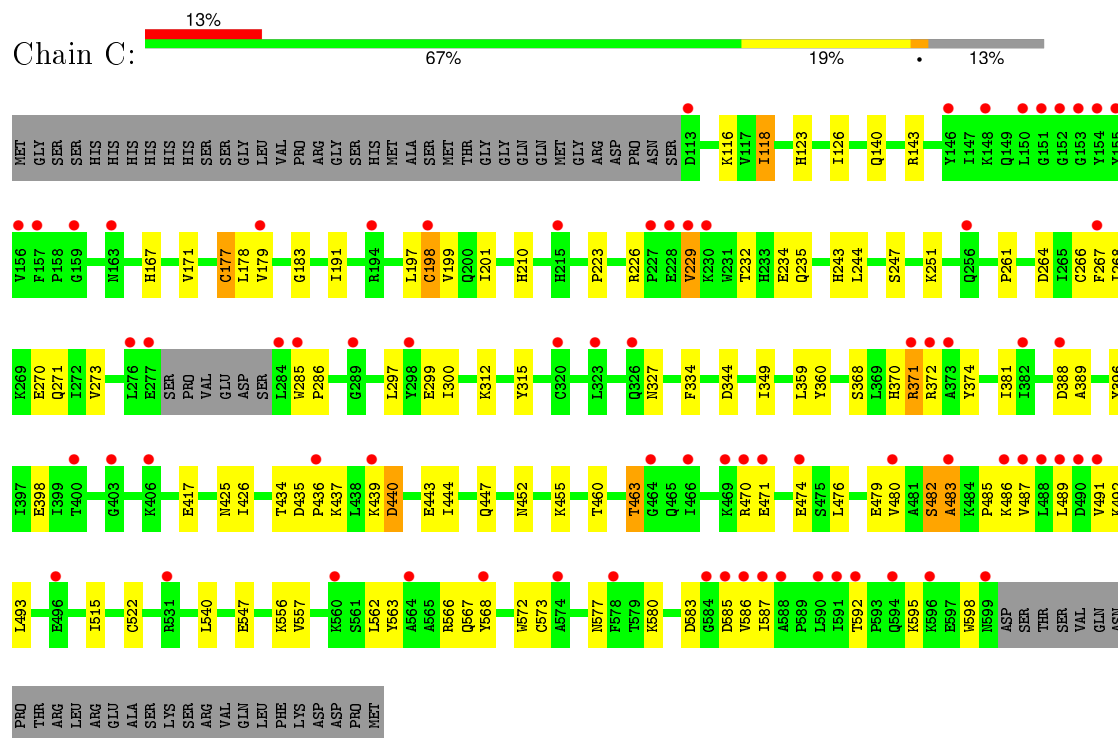


- Molecule 1: Deoxynucleoside triphosphate triphosphohydrolase SAMHD1

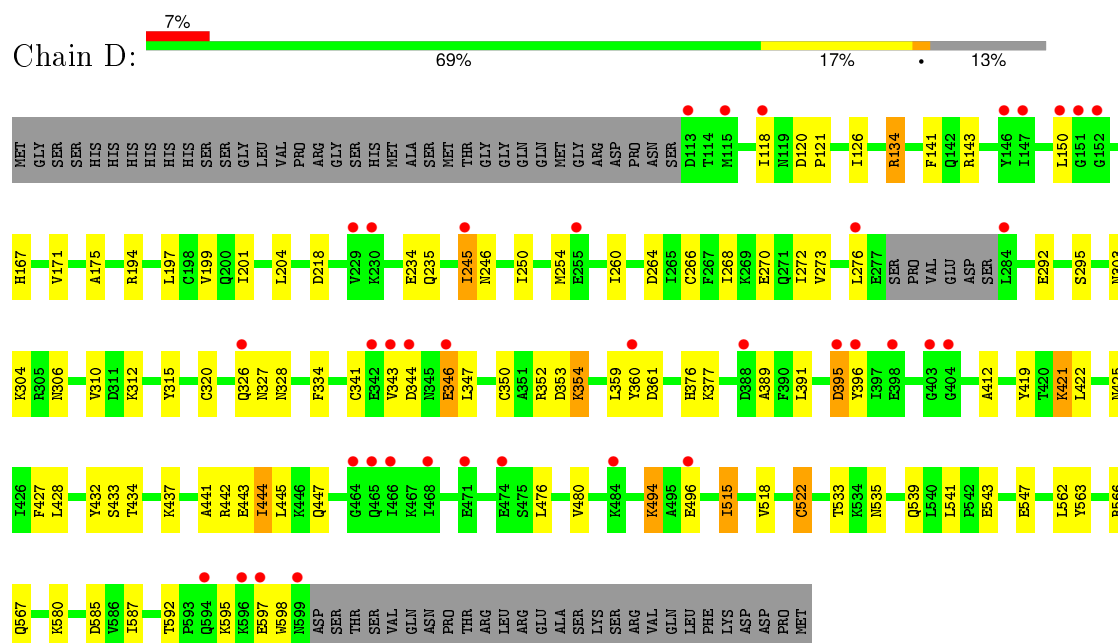




● Molecule 1: Deoxynucleoside triphosphate triphosphohydrolase SAMHD1



● Molecule 1: Deoxynucleoside triphosphate triphosphohydrolase SAMHD1



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	87.23Å 147.00Å 99.29Å 90.00° 114.60° 90.00°	Depositor
Resolution (Å)	43.07 – 2.25 43.07 – 2.25	Depositor EDS
% Data completeness (in resolution range)	96.5 (43.07-2.25) 91.7 (43.07-2.25)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.97 (at 2.24Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.1_1168)	Depositor
R, R_{free}	0.237 , 0.271 0.250 , 0.283	Depositor DCC
R_{free} test set	2008 reflections (2.08%)	DCC
Wilson B-factor (Å ²)	58.4	Xtriage
Anisotropy	0.360	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 59.4	EDS
Estimated twinning fraction	0.009 for h,-k,-h-l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Outliers	1 of 103923 reflections (0.001%)	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	16094	wwPDB-VP
Average B, all atoms (Å ²)	70.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.27% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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: GTP, MG, DTP

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	0.35	0/4031	0.57	1/5441 (0.0%)
1	B	0.28	0/4025	0.51	0/5433
1	C	0.32	0/4031	0.55	0/5441
1	D	0.31	0/4047	0.53	0/5463
All	All	0.32	0/16134	0.54	1/21778 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	115	MET	CA-CB-CG	5.60	122.83	113.30

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	3939	0	3923	85	0
1	B	3933	0	3921	52	0
1	C	3939	0	3923	82	0
1	D	3955	0	3933	69	0
2	A	32	0	11	0	0
2	B	64	0	22	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	32	0	11	0	0
3	A	30	0	12	0	0
3	B	30	0	12	3	0
3	C	30	0	12	0	0
3	D	30	0	12	0	0
4	A	2	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
5	A	18	0	0	2	0
5	B	16	0	0	2	0
5	C	16	0	0	1	0
5	D	26	0	0	4	0
All	All	16094	0	15792	263	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

All (263) 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:389:ALA:HB2	1:D:444:ILE:HD11	1.42	0.99
1:C:566:ARG:HD3	1:C:587:ILE:HB	1.52	0.91
1:A:113:ASP:OD2	1:A:257:TYR:OH	1.90	0.87
1:A:425:ASN:ND2	1:D:425:ASN:OD1	2.11	0.83
1:C:299:GLU:N	1:C:299:GLU:OE1	2.12	0.82
1:B:425:ASN:ND2	1:C:425:ASN:OD1	2.14	0.81
1:D:328:ASN:ND2	5:D:819:HOH:O	2.12	0.80
1:A:591:ILE:O	1:A:594:GLN:NE2	2.14	0.80
1:C:198:CYS:SG	1:C:271:GLN:NE2	2.55	0.79
1:A:361:ASP:OD2	1:C:371:ARG:NH2	2.16	0.78
1:C:179:VAL:HG21	1:C:199:VAL:HG21	1.68	0.76
1:D:292:GLU:HB3	1:D:346:GLU:OE1	1.87	0.75
1:A:528:ARG:HH22	1:C:586:VAL:HG13	1.53	0.74
1:D:312:LYS:NZ	5:D:801:HOH:O	2.20	0.74
1:A:432:TYR:CG	1:D:421:LYS:HD3	2.22	0.73
1:C:243:HIS:CE1	1:C:417:GLU:HG3	2.24	0.72
1:B:400:THR:HG21	1:C:434:THR:HG21	1.71	0.71
1:A:385:MET:O	1:A:444:ILE:HD11	1.92	0.70
1:A:185:LYS:NZ	1:A:338:ALA:O	2.18	0.70
1:B:114:THR:HG22	1:B:115:MET:H	1.57	0.70
3:B:703:DTP:O1B	1:D:377:LYS:NZ	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:341:CYS:HB2	1:B:350:CYS:SG	2.33	0.69
1:A:129:HIS:HD2	1:A:131:LEU:H	1.40	0.69
1:A:417:GLU:O	5:A:811:HOH:O	2.11	0.69
1:A:525:ALA:HB3	1:A:528:ARG:CZ	2.23	0.68
1:B:243:HIS:NE2	1:B:417:GLU:OE1	2.21	0.67
1:C:243:HIS:HE1	1:C:417:GLU:HG3	1.59	0.67
1:B:476:LEU:HD22	1:B:500:VAL:HG11	1.77	0.67
1:C:123:HIS:ND1	5:C:805:HOH:O	2.30	0.65
1:D:433:SER:OG	1:D:442:ARG:NH1	2.29	0.65
1:C:371:ARG:HH22	1:C:372:ARG:HH21	1.44	0.64
1:B:442:ARG:HG2	1:B:446:LYS:HE2	1.79	0.64
1:A:232:THR:OG1	1:A:234:GLU:OE1	2.10	0.64
1:A:455:LYS:HG2	1:A:557:VAL:HG12	1.78	0.64
1:D:341:CYS:HB2	1:D:350:CYS:SG	2.38	0.64
1:C:223:PRO:HB3	1:C:470:ARG:NH2	2.12	0.64
1:C:251:LYS:HD3	1:C:261:PRO:HB3	1.80	0.62
1:D:533:THR:OG1	1:D:535:ASN:OD1	2.13	0.62
1:B:544:LYS:HE2	1:D:539:GLN:HB3	1.81	0.62
1:D:194:ARG:HH21	1:D:260:ILE:HB	1.63	0.62
1:A:129:HIS:CD2	1:A:131:LEU:H	2.18	0.62
1:A:115:MET:HE2	1:A:127:GLU:CB	2.30	0.61
1:B:371:ARG:NH2	1:D:361:ASP:OD2	2.22	0.61
1:A:428:LEU:HB3	1:A:432:TYR:CE2	2.35	0.61
1:C:232:THR:OG1	1:C:234:GLU:OE1	2.17	0.61
1:A:243:HIS:NE2	1:A:417:GLU:OE1	2.20	0.61
1:A:216:MET:SD	1:A:387:THR:OG1	2.56	0.61
1:B:531:ARG:NE	5:B:813:HOH:O	2.33	0.60
1:C:583:ASP:O	1:C:587:ILE:HG12	2.01	0.59
1:A:431:LEU:HD23	1:A:432:TYR:CE1	2.38	0.59
1:D:396:TYR:CD1	1:D:437:LYS:HB3	2.37	0.59
1:B:158:PRO:HG3	1:C:118:ILE:HD11	1.85	0.59
1:C:440:ASP:N	1:C:440:ASP:OD1	2.36	0.58
1:C:566:ARG:HD3	1:C:587:ILE:CB	2.31	0.58
1:A:361:ASP:O	1:A:365:THR:HG23	2.03	0.58
1:A:586:VAL:HG11	1:C:522[A]:CYS:SG	2.42	0.58
1:A:433:SER:OG	1:A:442:ARG:NH1	2.36	0.58
1:D:143:ARG:HD3	5:D:808:HOH:O	2.04	0.58
1:C:183:GLY:HA2	1:C:191:ILE:HD12	1.85	0.58
1:A:534:LYS:HE3	1:A:541:LEU:HB2	1.86	0.57
1:C:455:LYS:HG2	1:C:557:VAL:HG12	1.85	0.57
1:B:469:LYS:HD3	1:B:470:ARG:H	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:354:LYS:NZ	3:B:703:DTP:O3G	2.38	0.57
1:D:234:GLU:HB3	1:D:273:VAL:HG22	1.87	0.57
1:A:172:GLY:HA3	1:A:204:LEU:HD12	1.87	0.57
1:B:580:LYS:HB2	1:B:598:TRP:CD2	2.40	0.56
1:A:432:TYR:CD1	1:D:421:LYS:HD3	2.41	0.56
1:A:528:ARG:HH22	1:C:586:VAL:CG1	2.16	0.56
1:A:175:ALA:HB1	1:A:199:VAL:HG12	1.87	0.55
1:D:334:PHE:CE2	1:D:359:LEU:HD21	2.41	0.55
1:A:525:ALA:HB3	1:A:528:ARG:NH2	2.22	0.55
1:C:388:ASP:OD1	1:C:389:ALA:N	2.39	0.55
1:A:130:PRO:O	1:A:134:ARG:HG2	2.07	0.55
1:D:150:LEU:O	5:D:815:HOH:O	2.18	0.55
1:C:266:CYS:O	1:C:270:GLU:HG3	2.06	0.55
1:C:371:ARG:NH2	1:C:372:ARG:HH21	2.05	0.54
1:D:566:ARG:HD3	1:D:587:ILE:HB	1.89	0.54
1:A:266:CYS:O	1:A:270:GLU:HG3	2.07	0.54
1:D:266:CYS:O	1:D:270:GLU:HG3	2.07	0.54
1:D:441:ALA:O	1:D:444:ILE:HG13	2.08	0.54
1:B:522:CYS:SG	1:B:523:LYS:N	2.80	0.54
1:B:479:GLU:OE1	1:B:576:ARG:NH1	2.41	0.53
1:A:462:PRO:HB2	1:A:466:ILE:HG23	1.89	0.53
1:C:474:GLU:N	1:C:474:GLU:OE1	2.42	0.53
1:D:250:ILE:HG22	1:D:254:MET:HG3	1.91	0.52
1:C:580:LYS:NZ	1:C:585:ASP:OD1	2.37	0.52
1:A:597:GLU:OE1	1:A:597:GLU:N	2.41	0.52
1:B:185:LYS:HG3	1:B:186:GLN:HG3	1.92	0.52
1:B:490:ASP:OD2	1:B:560:LYS:NZ	2.42	0.52
1:A:218:ASP:OD2	1:A:232:THR:HA	2.10	0.52
1:A:212:PRO:HD2	1:A:217:PHE:CD1	2.46	0.52
1:C:334:PHE:CE2	1:C:359:LEU:HD21	2.46	0.51
1:A:571:GLN:NE2	1:A:591:ILE:HD11	2.25	0.51
1:D:515:ILE:HA	1:D:518:VAL:HG12	1.92	0.51
1:D:395:ASP:OD1	1:D:395:ASP:N	2.43	0.51
1:B:143:ARG:NH2	1:B:210:HIS:O	2.31	0.51
1:A:522[A]:CYS:SG	1:A:523:LYS:N	2.83	0.51
1:D:592:THR:HG23	1:D:598:TRP:HE3	1.75	0.51
1:B:266:CYS:O	1:B:270:GLU:HG3	2.11	0.50
1:A:428:LEU:HD22	1:A:432:TYR:CZ	2.46	0.50
1:D:141:PHE:CZ	1:D:204:LEU:HD22	2.46	0.50
1:B:535:ASN:N	1:B:535:ASN:OD1	2.29	0.50
1:A:353:ASP:OD1	1:A:354:LYS:N	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:460:THR:HG21	1:C:573:CYS:SG	2.51	0.50
1:A:115:MET:HE2	1:A:127:GLU:HB3	1.92	0.50
1:A:528:ARG:HH12	1:C:586:VAL:HA	1.77	0.50
1:C:264:ASP:O	1:C:268:ILE:HG13	2.12	0.50
1:B:428:LEU:HD12	1:C:425:ASN:HB2	1.94	0.49
1:B:470:ARG:HD2	1:B:473:TYR:CE2	2.46	0.49
1:D:303:ASN:ND2	1:D:306:ASN:OD1	2.45	0.49
1:A:522[B]:CYS:SG	1:C:586:VAL:HG21	2.52	0.49
1:C:234:GLU:HB3	1:C:273:VAL:HG23	1.95	0.49
1:C:360:TYR:CZ	1:C:515:ILE:HG12	2.48	0.49
1:D:343:VAL:HG12	1:D:344:ASP:OD1	2.13	0.49
1:D:295:SER:OG	1:D:347:LEU:O	2.31	0.49
1:B:312:LYS:HA	1:B:315:TYR:CE2	2.48	0.49
1:A:167:HIS:O	1:A:171:VAL:HG23	2.13	0.49
1:A:461:GLN:NE2	1:A:547:GLU:OE1	2.40	0.49
1:D:312:LYS:HA	1:D:315:TYR:CE2	2.48	0.48
1:B:563:TYR:O	1:B:567:GLN:HG2	2.12	0.48
1:A:580:LYS:HB2	1:A:598:TRP:CD2	2.48	0.48
1:B:197:LEU:O	1:B:201:ILE:HG13	2.13	0.48
1:A:320:CYS:SG	1:A:327:ASN:HB3	2.53	0.48
1:C:443:GLU:O	1:C:447:GLN:HG2	2.12	0.48
1:D:412:ALA:HB3	1:D:422:LEU:HD22	1.94	0.47
1:D:476:LEU:O	1:D:480:VAL:HG23	2.14	0.47
1:A:421:LYS:HE2	5:A:811:HOH:O	2.14	0.47
1:D:419:TYR:CE1	1:D:422:LEU:HD23	2.49	0.47
1:C:381:ILE:HA	1:C:381:ILE:HD12	1.81	0.47
1:D:264:ASP:O	1:D:268:ILE:HG13	2.15	0.47
3:B:703:DTP:O2A	1:D:376:HIS:HE1	1.97	0.47
1:C:232:THR:HG23	1:C:235:GLN:H	1.78	0.47
1:A:238:VAL:HG13	1:A:269:LYS:HD3	1.96	0.47
1:A:115:MET:HE2	1:A:127:GLU:CA	2.44	0.47
1:D:346:GLU:OE2	1:D:347:LEU:N	2.25	0.47
1:B:328:ASN:HA	1:D:326:GLN:HG3	1.97	0.47
1:D:346:GLU:CD	1:D:347:LEU:H	2.16	0.46
1:C:388:ASP:OD1	1:C:444:ILE:HD13	2.15	0.46
1:C:493:LEU:HD23	1:C:556:LYS:HE2	1.96	0.46
1:C:226:ARG:HH21	1:C:229:VAL:HG21	1.79	0.46
1:D:585:ASP:OD1	1:D:592:THR:HG21	2.15	0.46
1:A:591:ILE:HG13	1:A:594:GLN:HE22	1.79	0.46
1:C:177:CYS:SG	1:C:178:LEU:N	2.89	0.46
1:A:421:LYS:HD2	1:D:432:TYR:CD1	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:471:GLU:O	1:A:473:TYR:N	2.49	0.46
1:D:245:ILE:HG22	1:D:246:ASN:N	2.30	0.46
1:A:188:GLU:HG2	1:A:189:LEU:HD13	1.97	0.46
1:B:352:ARG:NH2	1:B:354:LYS:HZ2	2.14	0.46
1:A:463:THR:O	1:A:466:ILE:HG22	2.15	0.46
1:C:476:LEU:O	1:C:480:VAL:HG23	2.15	0.46
1:A:538:SER:OG	1:C:547:GLU:OE2	2.34	0.46
1:C:463:THR:OG1	1:C:577:ASN:O	2.33	0.46
1:A:563:TYR:O	1:A:567:GLN:HG2	2.15	0.45
1:C:482:SER:OG	1:C:483:ALA:N	2.47	0.45
2:B:701:GTP:O1G	1:C:116:LYS:NZ	2.37	0.45
1:B:459:GLU:OE2	1:B:551:ARG:NE	2.37	0.45
1:A:332:LYS:O	1:A:336:LYS:HD3	2.17	0.45
1:B:172:GLY:HA3	1:B:204:LEU:HD12	1.96	0.45
1:B:320:CYS:SG	1:B:327:ASN:HB3	2.56	0.45
1:B:353:ASP:OD1	1:B:354:LYS:N	2.50	0.45
1:A:334:PHE:CE1	1:A:359:LEU:HD11	2.52	0.45
1:C:368:SER:O	1:C:372:ARG:HG2	2.16	0.45
1:C:179:VAL:HG23	1:C:300:ILE:HD13	1.98	0.45
1:C:223:PRO:HB3	1:C:470:ARG:HH21	1.82	0.45
1:B:580:LYS:HD2	1:B:598:TRP:HB3	1.97	0.45
1:C:580:LYS:HB2	1:C:598:TRP:CD2	2.51	0.45
1:A:592:THR:HG23	1:A:598:TRP:HE3	1.82	0.45
1:B:377:LYS:NZ	1:D:354:LYS:HD2	2.32	0.45
1:A:234:GLU:OE1	1:A:234:GLU:N	2.42	0.45
1:A:351:ALA:O	1:A:520:PHE:HA	2.16	0.45
1:C:583:ASP:O	1:C:586:VAL:HB	2.17	0.45
1:B:326:GLN:NE2	1:D:327:ASN:H	2.15	0.45
1:D:171:VAL:HG13	1:D:310:VAL:HG23	1.99	0.45
1:C:370:HIS:HA	1:C:374:TYR:HB2	1.99	0.44
1:A:191:ILE:HD11	1:A:296:PHE:CE1	2.52	0.44
1:A:580:LYS:HB2	1:A:598:TRP:CE2	2.52	0.44
1:D:580:LYS:HE3	1:D:585:ASP:OD1	2.17	0.44
1:B:381:ILE:HD12	1:B:381:ILE:HA	1.87	0.44
1:C:563:TYR:O	1:C:567:GLN:HG2	2.17	0.44
1:C:285:TRP:HA	1:C:286:PRO:HD3	1.89	0.44
1:D:391:LEU:HA	1:D:391:LEU:HD23	1.79	0.44
1:D:427:PHE:CE2	1:D:445:LEU:HD22	2.53	0.44
1:C:183:GLY:CA	1:C:191:ILE:HD12	2.48	0.44
1:A:243:HIS:O	1:A:247:SER:OG	2.27	0.44
1:D:443:GLU:OE2	1:D:447:GLN:NE2	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:433:SER:OG	1:B:442:ARG:NH1	2.49	0.43
1:C:267:PHE:HZ	1:C:297:LEU:HB3	1.83	0.43
1:C:489:LEU:HB3	1:C:492:LYS:HE3	2.00	0.43
1:C:143:ARG:NH2	1:C:210:HIS:O	2.44	0.43
1:B:396:TYR:CD1	1:B:437:LYS:HD3	2.53	0.43
1:B:455:LYS:HG2	1:B:557:VAL:HG12	1.99	0.43
1:C:388:ASP:OD1	1:C:444:ILE:HG21	2.18	0.43
1:A:118:ILE:HG22	1:A:126:ILE:HB	2.00	0.43
1:A:264:ASP:O	1:A:268:ILE:HG13	2.18	0.43
1:D:421:LYS:O	1:D:421:LYS:HD2	2.19	0.43
1:A:440:ASP:O	1:A:444:ILE:HG22	2.19	0.43
1:D:562:LEU:HD12	1:D:562:LEU:HA	1.80	0.43
1:B:116:LYS:HE2	1:B:133:VAL:HG11	2.01	0.43
1:A:250:ILE:HG22	1:A:254:MET:HG3	2.00	0.43
1:A:471:GLU:C	1:A:473:TYR:H	2.22	0.43
1:D:320:CYS:SG	1:D:327:ASN:HB2	2.59	0.43
1:A:528:ARG:NH1	1:C:586:VAL:HA	2.33	0.43
1:D:352:ARG:HG3	1:D:354:LYS:H	1.84	0.43
1:B:378:VAL:HG11	2:B:701:GTP:H5'	2.01	0.42
1:A:541:LEU:HB3	1:A:542:PRO:HD2	2.00	0.42
1:C:493:LEU:HB2	1:C:568:TYR:HE2	1.83	0.42
1:B:488:LEU:O	1:B:488:LEU:HD12	2.19	0.42
1:D:134:ARG:HE	1:D:134:ARG:HB2	1.75	0.42
1:B:333:ARG:O	1:B:337:PHE:HD2	2.02	0.42
1:B:531:ARG:CZ	5:B:813:HOH:O	2.66	0.42
1:A:462:PRO:HG3	1:A:468:ILE:HD11	2.01	0.42
1:B:423:THR:O	1:B:426:ILE:HG22	2.20	0.42
1:C:243:HIS:CD2	1:C:247:SER:OG	2.72	0.42
1:C:439:LYS:O	1:C:443:GLU:HG2	2.19	0.42
1:A:197:LEU:O	1:A:201:ILE:HG13	2.19	0.42
1:B:586:VAL:HG21	1:D:522[B]:CYS:SG	2.60	0.42
1:A:359:LEU:HA	1:A:359:LEU:HD12	1.83	0.42
1:C:140:GLN:HB2	1:C:244:LEU:HD13	2.02	0.42
1:C:562:LEU:O	1:C:566:ARG:HG3	2.20	0.42
1:C:595:LYS:HG2	1:C:598:TRP:CE2	2.55	0.42
1:C:489:LEU:HB3	1:C:492:LYS:NZ	2.34	0.42
1:C:197:LEU:O	1:C:201:ILE:HG13	2.20	0.42
1:A:381:ILE:HA	1:A:381:ILE:HD12	1.83	0.42
1:A:542:PRO:HB3	1:C:540:LEU:O	2.20	0.41
1:C:349:ILE:HG21	1:C:349:ILE:HD13	1.80	0.41
1:D:563:TYR:O	1:D:567:GLN:HG2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:167:HIS:O	1:C:171:VAL:HG23	2.20	0.41
1:D:118:ILE:HG22	1:D:126:ILE:HG12	2.01	0.41
1:A:469:LYS:HB3	1:A:469:LYS:HE3	1.79	0.41
1:D:120:ASP:OD1	1:D:121:PRO:HD2	2.20	0.41
1:B:397:ILE:HD11	1:B:430:ILE:HG12	2.02	0.41
1:A:524:THR:OG1	1:C:586:VAL:HG11	2.21	0.41
2:B:701:GTP:C8	1:C:118:ILE:HD12	2.56	0.41
1:A:479:GLU:OE1	1:A:576:ARG:NH1	2.50	0.41
1:B:116:LYS:HE3	2:B:702:GTP:HN22	1.85	0.41
1:A:576:ARG:HE	1:A:576:ARG:HB3	1.56	0.41
1:D:360:TYR:CE2	1:D:541:LEU:HD13	2.56	0.41
1:A:441:ALA:O	1:A:444:ILE:HG23	2.21	0.41
1:D:595:LYS:HG2	1:D:598:TRP:CE2	2.56	0.41
1:C:493:LEU:HB2	1:C:568:TYR:CE2	2.55	0.41
1:B:409:ILE:CD1	1:B:426:ILE:HD11	2.51	0.41
1:D:175:ALA:HB1	1:D:199:VAL:HG12	2.03	0.41
1:A:538:SER:HB3	1:A:541:LEU:CD1	2.50	0.41
1:B:351:ALA:O	1:B:520:PHE:HA	2.20	0.41
1:C:435:ASP:HA	1:C:436:PRO:HD2	1.96	0.41
1:A:485:PRO:HG2	1:A:489:LEU:HD11	2.02	0.41
1:C:479:GLU:HB3	1:C:572:TRP:HE1	1.85	0.41
1:D:494:LYS:HB2	1:D:496:GLU:OE1	2.21	0.41
1:C:118:ILE:HG23	1:C:126:ILE:HG13	2.03	0.41
1:C:396:TYR:CD1	1:C:437:LYS:HD3	2.56	0.41
1:B:388:ASP:OD2	1:B:392:LYS:NZ	2.40	0.41
1:C:312:LYS:HA	1:C:315:TYR:CE2	2.56	0.41
1:A:562:LEU:HD12	1:A:562:LEU:HA	1.88	0.40
1:D:197:LEU:O	1:D:201:ILE:HG13	2.22	0.40
1:D:167:HIS:O	1:D:171:VAL:HG23	2.21	0.40
1:C:492:LYS:HD3	1:C:492:LYS:HA	1.55	0.40
1:D:272:ILE:O	1:D:304:LYS:NZ	2.54	0.40
1:D:312:LYS:HA	1:D:315:TYR:CD2	2.57	0.40
1:D:352:ARG:HG3	1:D:353:ASP:N	2.35	0.40
1:A:224:LEU:HB3	1:A:391:LEU:HD11	2.03	0.40
1:A:425:ASN:HB2	1:D:428:LEU:HD12	2.03	0.40
1:D:118:ILE:HG22	1:D:126:ILE:CG1	2.52	0.40
1:B:566:ARG:HD3	1:B:587:ILE:HB	2.03	0.40

There are no symmetry-related clashes.

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	478/550 (87%)	464 (97%)	12 (2%)	2 (0%)	39	43
1	B	477/550 (87%)	466 (98%)	9 (2%)	2 (0%)	39	43
1	C	478/550 (87%)	464 (97%)	10 (2%)	4 (1%)	24	21
1	D	480/550 (87%)	471 (98%)	9 (2%)	0	100	100
All	All	1913/2200 (87%)	1865 (98%)	40 (2%)	8 (0%)	39	43

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	261	PRO
1	C	483	ALA
1	A	472	ASP
1	A	594	GLN
1	C	485	PRO
1	C	486	LYS
1	C	482	SER
1	B	490	ASP

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	428/488 (88%)	413 (96%)	15 (4%)	43	53
1	B	427/488 (88%)	414 (97%)	13 (3%)	48	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	428/488 (88%)	412 (96%)	16 (4%)	41	50
1	D	430/488 (88%)	412 (96%)	18 (4%)	36	42
All	All	1713/1952 (88%)	1651 (96%)	62 (4%)	42	51

All (62) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	115	MET
1	A	189	LEU
1	A	229	VAL
1	A	348	ARG
1	A	359	LEU
1	A	439	LYS
1	A	444	ILE
1	A	446	LYS
1	A	463	THR
1	A	467	LYS
1	A	484	LYS
1	A	528	ARG
1	A	540	LEU
1	A	576	ARG
1	A	594	GLN
1	B	114	THR
1	B	118	ILE
1	B	230	LYS
1	B	234	GLU
1	B	326	GLN
1	B	345	ASN
1	B	400	THR
1	B	408	ARG
1	B	465	GLN
1	B	476	LEU
1	B	522	CYS
1	B	528	ARG
1	B	535	ASN
1	C	118	ILE
1	C	177	CYS
1	C	198	CYS
1	C	229	VAL
1	C	327	ASN
1	C	344	ASP

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Mol	Chain	Res	Type
1	C	371	ARG
1	C	398	GLU
1	C	426	ILE
1	C	440	ASP
1	C	452	ASN
1	C	463	THR
1	C	471	GLU
1	C	487	VAL
1	C	491	VAL
1	C	592	THR
1	D	134	ARG
1	D	218	ASP
1	D	235	GLN
1	D	245	ILE
1	D	276	LEU
1	D	346	GLU
1	D	354	LYS
1	D	395	ASP
1	D	421	LYS
1	D	434	THR
1	D	444	ILE
1	D	494	LYS
1	D	515	ILE
1	D	522[A]	CYS
1	D	522[B]	CYS
1	D	543	GLU
1	D	547	GLU
1	D	597	GLU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	129	HIS
1	A	327	ASN
1	A	571	GLN
1	B	210	HIS
1	C	243	HIS
1	D	376	HIS
1	D	571	GLN

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 carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 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$
2	GTP	A	701	4	25,34,34	2.35	7 (28%)	34,54,54	1.65	9 (26%)
3	DTP	A	702	4	24,32,32	1.31	3 (12%)	32,50,50	2.18	6 (18%)
2	GTP	B	701	4	25,34,34	2.34	7 (28%)	34,54,54	1.69	8 (23%)
2	GTP	B	702	4	25,34,34	2.33	7 (28%)	34,54,54	1.76	8 (23%)
3	DTP	B	703	4	24,32,32	1.23	4 (16%)	32,50,50	2.27	5 (15%)
3	DTP	C	701	4	24,32,32	1.22	4 (16%)	32,50,50	2.25	5 (15%)
3	DTP	D	701	4	24,32,32	1.30	5 (20%)	32,50,50	2.24	6 (18%)
2	GTP	D	702	4	25,34,34	2.37	8 (32%)	34,54,54	1.72	9 (26%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	GTP	A	701	4	-	0/18/38/38	0/3/3/3
3	DTP	A	702	4	-	0/18/34/34	0/3/3/3
2	GTP	B	701	4	-	0/18/38/38	0/3/3/3
2	GTP	B	702	4	-	0/18/38/38	0/3/3/3
3	DTP	B	703	4	-	0/18/34/34	0/3/3/3
3	DTP	C	701	4	-	0/18/34/34	0/3/3/3
3	DTP	D	701	4	-	0/18/34/34	0/3/3/3
2	GTP	D	702	4	-	0/18/38/38	0/3/3/3

All (45) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	702	GTP	O2'-C2'	-3.12	1.35	1.43
2	B	702	GTP	O2'-C2'	-3.08	1.35	1.43
2	B	701	GTP	O2'-C2'	-3.08	1.35	1.43
2	A	701	GTP	O2'-C2'	-3.07	1.35	1.43
3	D	701	DTP	O3'-C3'	-2.56	1.37	1.43
3	C	701	DTP	O3'-C3'	-2.55	1.37	1.43
3	B	703	DTP	O3'-C3'	-2.53	1.37	1.43
3	A	702	DTP	O3'-C3'	-2.52	1.37	1.43
3	B	703	DTP	C5'-C4'	-2.48	1.43	1.51
3	A	702	DTP	C5'-C4'	-2.41	1.43	1.51
2	D	702	GTP	PG-O3G	-2.41	1.46	1.54
2	A	701	GTP	PG-O3G	-2.40	1.46	1.54
2	B	701	GTP	C5'-C4'	-2.38	1.43	1.51
3	C	701	DTP	C5'-C4'	-2.33	1.44	1.51
3	D	701	DTP	C5'-C4'	-2.29	1.44	1.51
2	B	702	GTP	C5'-C4'	-2.26	1.44	1.51
2	A	701	GTP	C2'-C3'	-2.25	1.47	1.53
2	B	701	GTP	C2'-C3'	-2.24	1.47	1.53
2	A	701	GTP	C5'-C4'	-2.24	1.44	1.51
2	B	702	GTP	C2'-C3'	-2.21	1.47	1.53
2	D	702	GTP	C5'-C4'	-2.18	1.44	1.51
2	D	702	GTP	C2'-C3'	-2.12	1.47	1.53
2	B	701	GTP	PG-O2G	-2.12	1.47	1.54
2	D	702	GTP	C3'-C4'	-2.11	1.47	1.53
3	C	701	DTP	C2'-C3'	-2.10	1.47	1.52
2	D	702	GTP	PG-O2G	-2.09	1.47	1.54
2	B	702	GTP	PG-O2G	-2.08	1.47	1.54
2	B	702	GTP	C3'-C4'	-2.07	1.47	1.53
2	A	701	GTP	PG-O2G	-2.07	1.47	1.54
3	B	703	DTP	PG-O3G	-2.07	1.47	1.54
2	B	701	GTP	C3'-C4'	-2.03	1.47	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	701	DTP	PG-O3G	-2.03	1.47	1.54
3	D	701	DTP	C2'-C3'	-2.01	1.47	1.52
3	C	701	DTP	C6-N6	2.85	1.43	1.34
3	D	701	DTP	C6-N6	2.90	1.43	1.34
3	A	702	DTP	C6-N6	2.91	1.43	1.34
3	B	703	DTP	C6-N6	2.92	1.43	1.34
2	B	702	GTP	C2-N2	6.89	1.48	1.34
2	A	701	GTP	C2-N2	6.92	1.48	1.34
2	D	702	GTP	C2-N2	6.93	1.48	1.34
2	B	701	GTP	C2-N2	6.98	1.48	1.34
2	B	702	GTP	O6-C6	6.99	1.41	1.24
2	A	701	GTP	O6-C6	6.99	1.41	1.24
2	B	701	GTP	O6-C6	7.03	1.41	1.24
2	D	702	GTP	O6-C6	7.09	1.41	1.24

All (56) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	703	DTP	N3-C2-N1	-10.13	121.14	128.89
3	C	701	DTP	N3-C2-N1	-9.98	121.25	128.89
3	D	701	DTP	N3-C2-N1	-9.87	121.33	128.89
3	A	702	DTP	N3-C2-N1	-9.82	121.38	128.89
2	D	702	GTP	C5-C6-N1	-4.31	117.70	123.59
2	B	702	GTP	C5-C6-N1	-4.17	117.89	123.59
2	B	701	GTP	C5-C6-N1	-4.04	118.06	123.59
2	A	701	GTP	C5-C6-N1	-4.02	118.10	123.59
2	B	701	GTP	PA-O3A-PB	-3.97	121.59	132.73
3	D	701	DTP	PA-O3A-PB	-3.79	122.09	132.73
3	A	702	DTP	PA-O3A-PB	-3.54	122.80	132.73
3	B	703	DTP	C4-C5-N7	-3.43	106.32	109.48
3	A	702	DTP	C4-C5-N7	-3.42	106.34	109.48
2	B	702	GTP	PA-O3A-PB	-3.37	123.26	132.73
3	B	703	DTP	PA-O3A-PB	-3.32	123.42	132.73
3	C	701	DTP	C4-C5-N7	-3.29	106.45	109.48
3	C	701	DTP	PA-O3A-PB	-3.27	123.55	132.73
3	B	703	DTP	PB-O3B-PG	-3.26	121.72	132.67
3	D	701	DTP	C4-C5-N7	-3.26	106.48	109.48
2	A	701	GTP	PA-O3A-PB	-3.20	123.74	132.73
2	D	702	GTP	PA-O3A-PB	-3.19	123.78	132.73
2	B	702	GTP	C4'-O4'-C1'	-3.18	106.22	109.72
2	A	701	GTP	N3-C2-N1	-3.17	122.62	127.44
2	D	702	GTP	N3-C2-N1	-3.16	122.64	127.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	702	GTP	N3-C2-N1	-3.12	122.70	127.44
3	C	701	DTP	PB-O3B-PG	-3.11	122.23	132.67
2	B	701	GTP	N3-C2-N1	-3.09	122.74	127.44
2	A	701	GTP	C4'-O4'-C1'	-2.87	106.56	109.72
3	D	701	DTP	PB-O3B-PG	-2.59	123.97	132.67
2	D	702	GTP	C4'-O4'-C1'	-2.58	106.89	109.72
2	D	702	GTP	C4-C5-N7	-2.37	107.30	109.48
2	B	701	GTP	PB-O3B-PG	-2.26	125.08	132.67
3	B	703	DTP	C1'-N9-C4	-2.24	123.36	127.16
3	A	702	DTP	PB-O3B-PG	-2.23	125.21	132.67
2	B	702	GTP	PB-O3B-PG	-2.22	125.24	132.67
2	A	701	GTP	PB-O3B-PG	-2.20	125.28	132.67
2	D	702	GTP	PB-O3B-PG	-2.19	125.31	132.67
2	A	701	GTP	C4-C5-N7	-2.13	107.52	109.48
3	D	701	DTP	C1'-N9-C4	-2.11	123.58	127.16
2	B	701	GTP	C4-C5-N7	-2.06	107.59	109.48
2	B	701	GTP	C5'-C4'-C3'	-2.00	107.25	115.21
3	A	702	DTP	O5'-C5'-C4'	2.12	116.92	109.12
2	B	702	GTP	O3A-PA-O5'	2.16	108.67	102.94
2	A	701	GTP	O3A-PA-O5'	2.17	108.70	102.94
3	A	702	DTP	O3A-PA-O5'	2.24	108.88	102.94
2	B	701	GTP	O3A-PA-O5'	2.24	108.89	102.94
2	A	701	GTP	O5'-C5'-C4'	2.32	117.69	109.12
2	D	702	GTP	O3A-PA-O5'	2.45	109.43	102.94
2	B	702	GTP	O5'-C5'-C4'	2.46	118.19	109.12
3	C	701	DTP	O5'-C5'-C4'	2.55	118.51	109.12
3	D	701	DTP	O5'-C5'-C4'	2.56	118.54	109.12
2	D	702	GTP	O5'-C5'-C4'	2.61	118.76	109.12
2	B	701	GTP	C6-N1-C2	3.43	120.70	115.94
2	A	701	GTP	C6-N1-C2	3.44	120.71	115.94
2	B	702	GTP	C6-N1-C2	3.57	120.89	115.94
2	D	702	GTP	C6-N1-C2	3.69	121.06	115.94

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	701	GTP	3	0
2	B	702	GTP	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	703	DTP	3	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

6.1 Protein, DNA and RNA chains

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(Å ²)	Q<0.9
1	A	481/550 (87%)	0.92	64 (13%) 4 4	31, 73, 112, 127	183 (38%)
1	B	481/550 (87%)	0.83	69 (14%) 4 4	44, 68, 107, 123	171 (35%)
1	C	481/550 (87%)	1.02	74 (15%) 3 3	43, 71, 97, 123	206 (42%)
1	D	481/550 (87%)	0.62	38 (7%) 15 17	38, 61, 82, 96	202 (41%)
All	All	1924/2200 (87%)	0.85	245 (12%) 5 5	31, 68, 100, 127	762 (39%)

All (245) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	284	LEU	7.8
1	A	466	ILE	7.2
1	A	528	ARG	6.5
1	D	464	GLY	6.5
1	B	493	LEU	6.4
1	B	479	GLU	6.4
1	B	284	LEU	6.3
1	A	115	MET	6.1
1	A	481	ALA	6.1
1	D	113	ASP	6.1
1	C	488	LEU	6.0
1	C	489	LEU	5.5
1	B	492	LYS	5.4
1	C	590	LEU	5.2
1	B	562	LEU	4.9
1	A	487	VAL	4.8
1	B	568	TYR	4.7
1	C	229	VAL	4.7
1	D	599	ASN	4.7
1	A	489	LEU	4.7
1	C	113	ASP	4.7

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Mol	Chain	Res	Type	RSRZ
1	C	586	VAL	4.7
1	B	490	ASP	4.7
1	C	151	GLY	4.6
1	A	230	LYS	4.5
1	D	465	GLN	4.5
1	A	483	ALA	4.5
1	D	326	GLN	4.5
1	C	276	LEU	4.4
1	D	466	ILE	4.4
1	B	594	GLN	4.4
1	C	596	LYS	4.3
1	B	563	TYR	4.3
1	B	489	LEU	4.2
1	A	465	GLN	4.2
1	C	568	TYR	4.2
1	B	114	THR	4.1
1	C	487	VAL	4.0
1	B	115	MET	4.0
1	B	560	LYS	4.0
1	C	591	ILE	4.0
1	B	113	ASP	3.9
1	C	592	THR	3.9
1	B	498	PHE	3.9
1	C	471	GLU	3.8
1	C	150	LEU	3.7
1	A	344	ASP	3.7
1	B	496	GLU	3.7
1	A	343	VAL	3.7
1	B	487	VAL	3.7
1	C	599	ASN	3.6
1	B	346	GLU	3.5
1	B	575	ASP	3.5
1	A	598	TRP	3.5
1	C	403	GLY	3.5
1	C	284	LEU	3.5
1	B	486	LYS	3.4
1	C	230	LYS	3.4
1	B	485	PRO	3.4
1	C	564	ALA	3.4
1	D	403	GLY	3.4
1	A	406	LYS	3.4
1	A	577	ASN	3.3

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Mol	Chain	Res	Type	RSRZ
1	D	115	MET	3.3
1	C	285	TRP	3.3
1	B	590	LEU	3.3
1	B	483	ALA	3.3
1	A	327	ASN	3.3
1	C	326	GLN	3.3
1	D	596	LYS	3.3
1	D	468	ILE	3.2
1	D	360	TYR	3.2
1	D	496	GLU	3.2
1	A	469	LYS	3.2
1	C	227	PRO	3.2
1	A	486	LYS	3.2
1	B	588	ALA	3.2
1	C	490	ASP	3.2
1	A	480	VAL	3.2
1	C	400	THR	3.2
1	B	591	ILE	3.2
1	C	373	ALA	3.1
1	D	396	TYR	3.1
1	A	490	ASP	3.1
1	A	468	ILE	3.1
1	B	488	LEU	3.1
1	B	495	ALA	3.0
1	A	345	ASN	3.0
1	A	568	TYR	3.0
1	A	292	GLU	3.0
1	A	587	ILE	3.0
1	D	343	VAL	3.0
1	B	481	ALA	3.0
1	B	288	LYS	2.9
1	C	585	ASP	2.9
1	B	438	LEU	2.9
1	C	480	VAL	2.9
1	A	155	TYR	2.9
1	D	404	GLY	2.9
1	D	594	GLN	2.9
1	A	158	PRO	2.9
1	A	277	GLU	2.9
1	C	148	LYS	2.8
1	B	347	LEU	2.8
1	C	587	ILE	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	488	LEU	2.8
1	D	276	LEU	2.8
1	B	482	SER	2.8
1	A	558	ASP	2.8
1	C	194	ARG	2.8
1	B	491	VAL	2.8
1	C	464	GLY	2.7
1	C	298	TYR	2.7
1	A	491	VAL	2.7
1	A	147	ILE	2.7
1	B	559	ARG	2.7
1	D	388[A]	ASP	2.7
1	C	474	GLU	2.7
1	A	472	ASP	2.7
1	A	148	LYS	2.7
1	C	277	GLU	2.6
1	D	346	GLU	2.6
1	D	344	ASP	2.6
1	D	147	ILE	2.6
1	B	497	ASP	2.6
1	C	574	ALA	2.6
1	A	160	ALA	2.6
1	B	480	VAL	2.6
1	B	587	ILE	2.6
1	A	152	GLY	2.6
1	A	299	GLU	2.6
1	A	398	GLU	2.6
1	B	277	GLU	2.6
1	C	289	GLY	2.6
1	B	155	TYR	2.6
1	A	424	ASP	2.5
1	B	484	LYS	2.5
1	B	593	PRO	2.5
1	A	275	PRO	2.5
1	A	522[A]	CYS	2.5
1	C	320	CYS	2.5
1	C	491	VAL	2.5
1	A	434	THR	2.5
1	A	482	SER	2.5
1	A	242	GLU	2.5
1	B	151	GLY	2.4
1	B	327	ASN	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	276	LEU	2.4
1	C	406	LYS	2.4
1	A	293	ASN	2.4
1	D	150	LEU	2.4
1	C	155	TYR	2.4
1	B	494	LYS	2.4
1	C	439	LYS	2.4
1	B	152	GLY	2.4
1	C	152	GLY	2.4
1	C	267	PHE	2.4
1	D	146	TYR	2.4
1	A	193	GLU	2.4
1	A	326	GLN	2.4
1	A	573	CYS	2.4
1	C	154	TYR	2.4
1	C	436	PRO	2.4
1	A	530	ILE	2.3
1	C	594	GLN	2.3
1	B	476	LEU	2.3
1	A	432	TYR	2.3
1	B	397	ILE	2.3
1	C	496	GLU	2.3
1	C	588	ALA	2.3
1	C	584	GLY	2.3
1	B	592	THR	2.3
1	B	285	TRP	2.3
1	B	326	GLN	2.3
1	B	399	ILE	2.3
1	D	118	ILE	2.3
1	A	213	PHE	2.3
1	D	398	GLU	2.3
1	B	478	LYS	2.3
1	B	436	PRO	2.3
1	B	561	SER	2.3
1	D	395	ASP	2.3
1	D	152	GLY	2.2
1	A	347	LEU	2.2
1	C	153	GLY	2.2
1	B	440	ASP	2.2
1	B	161	SER	2.2
1	C	371	ARG	2.2
1	C	531	ARG	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	156	VAL	2.2
1	D	484	LYS	2.2
1	B	522	CYS	2.2
1	C	159	GLY	2.2
1	D	255	GLU	2.2
1	B	370	HIS	2.2
1	C	163	ASN	2.2
1	A	222	ILE	2.2
1	C	382	ILE	2.2
1	B	502	VAL	2.2
1	D	471	GLU	2.2
1	C	146	TYR	2.2
1	C	388	ASP	2.2
1	C	466	ILE	2.2
1	C	179	VAL	2.2
1	A	146	TYR	2.2
1	C	470	ARG	2.2
1	C	578	PHE	2.2
1	B	150	LEU	2.2
1	B	429	GLU	2.2
1	B	118	ILE	2.1
1	B	261	PRO	2.1
1	A	113	ASP	2.1
1	A	485	PRO	2.1
1	A	478	LYS	2.1
1	B	509	MET	2.1
1	C	323	LEU	2.1
1	C	483	ALA	2.1
1	D	474	GLU	2.1
1	D	151	GLY	2.1
1	A	599	ASN	2.1
1	C	256	GLN	2.1
1	C	198	CYS	2.1
1	B	558	ASP	2.1
1	C	215	HIS	2.1
1	D	229	VAL	2.1
1	B	574	ALA	2.1
1	D	230	LYS	2.1
1	A	229	VAL	2.1
1	C	157	PHE	2.1
1	A	262	GLU	2.1
1	C	228	GLU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	598	TRP	2.1
1	C	469	LYS	2.1
1	D	245	ILE	2.1
1	A	150	LEU	2.0
1	A	323	LEU	2.0
1	A	285	TRP	2.0
1	C	486	LYS	2.0
1	D	342	GLU	2.0
1	C	372	ARG	2.0
1	B	309	ASP	2.0
1	A	405	LYS	2.0
1	C	560	LYS	2.0
1	D	597	GLU	2.0
1	B	121	PRO	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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95th 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	LLDF	B-factors(Å ²)	Q<0.9
3	DTP	B	703	30/30	0.95	0.16	-0.59	32,41,57,72	11
2	GTP	A	701	32/32	0.94	0.18	-0.69	47,57,63,67	0
3	DTP	A	702	30/30	0.96	0.18	-0.77	32,48,60,62	11
3	DTP	C	701	30/30	0.95	0.16	-0.90	44,48,57,60	14
3	DTP	D	701	30/30	0.97	0.15	-0.98	40,47,54,55	14
2	GTP	D	702	32/32	0.96	0.15	-1.02	31,50,61,80	0
2	GTP	B	702	32/32	0.95	0.15	-1.14	40,54,62,68	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
2	GTP	B	701	32/32	0.96	0.12	-1.67	40,55,63,66	0
4	MG	A	704	1/1	0.81	0.08	-	58,58,58,58	0
4	MG	D	703	1/1	0.79	0.05	-	56,56,56,56	0
4	MG	A	703	1/1	0.56	0.10	-	40,40,40,40	0
4	MG	C	702	1/1	0.85	0.10	-	56,56,56,56	0

6.5 Other polymers [i](#)

There are no such residues in this entry.