



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 07:10 PM GMT

PDB ID : 4O0M
Title : Crystal structure of T. Elongatus BP-1 Clock Protein KaiC
Authors : Pattanayek, R.; Egli, M.
Deposited on : 2013-12-13
Resolution : 2.84 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

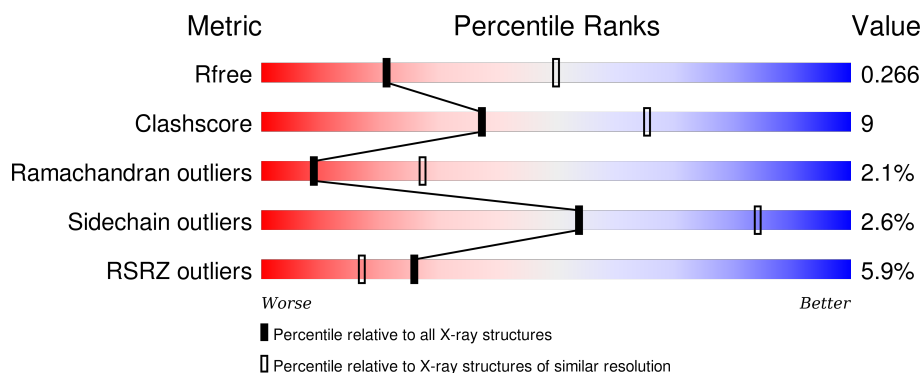
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.84 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	3170 (2.88-2.80)
Clashscore	102246	3658 (2.88-2.80)
Ramachandran outliers	100387	3591 (2.88-2.80)
Sidechain outliers	100360	3594 (2.88-2.80)
RSRZ outliers	91569	3184 (2.88-2.80)

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	524	<div> <div>6%</div> <div> <div></div> <div>73%</div> <div>20%</div> <div>6%</div> </div> </div>
1	B	524	<div> <div>6%</div> <div> <div></div> <div>67%</div> <div>24%</div> <div>6%</div> </div> </div>
1	C	524	<div> <div>4%</div> <div> <div></div> <div>73%</div> <div>20%</div> <div>6%</div> </div> </div>

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	MG	A	801	-	-	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 11943 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 Circadian clock protein kinase KaiC.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	494	Total	C	N	O	P	S	0	0	0
			3873	2439	670	751	2	11			
1	B	490	Total	C	N	O	P	S	0	0	0
			3841	2419	665	744	2	11			
1	C	490	Total	C	N	O	P	S	0	0	0
			3832	2413	665	741	2	11			

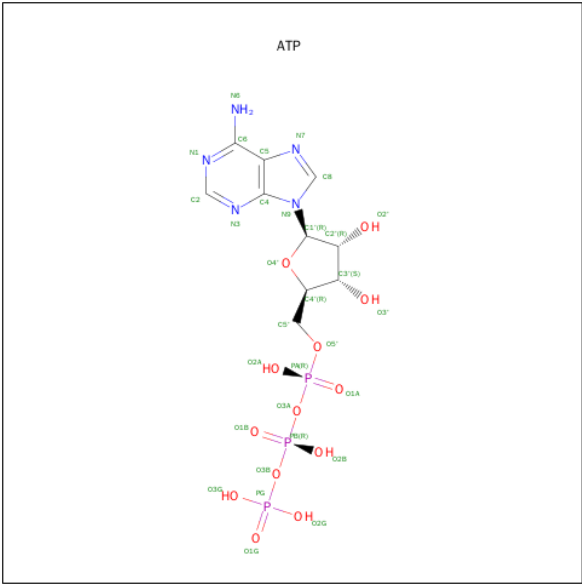
There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	519	HIS	-	EXPRESSION TAG	UNP Q79V60
A	520	HIS	-	EXPRESSION TAG	UNP Q79V60
A	521	HIS	-	EXPRESSION TAG	UNP Q79V60
A	522	HIS	-	EXPRESSION TAG	UNP Q79V60
A	523	HIS	-	EXPRESSION TAG	UNP Q79V60
A	524	HIS	-	EXPRESSION TAG	UNP Q79V60
B	519	HIS	-	EXPRESSION TAG	UNP Q79V60
B	520	HIS	-	EXPRESSION TAG	UNP Q79V60
B	521	HIS	-	EXPRESSION TAG	UNP Q79V60
B	522	HIS	-	EXPRESSION TAG	UNP Q79V60
B	523	HIS	-	EXPRESSION TAG	UNP Q79V60
B	524	HIS	-	EXPRESSION TAG	UNP Q79V60
C	519	HIS	-	EXPRESSION TAG	UNP Q79V60
C	520	HIS	-	EXPRESSION TAG	UNP Q79V60
C	521	HIS	-	EXPRESSION TAG	UNP Q79V60
C	522	HIS	-	EXPRESSION TAG	UNP Q79V60
C	523	HIS	-	EXPRESSION TAG	UNP Q79V60
C	524	HIS	-	EXPRESSION TAG	UNP Q79V60

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	2	Total	Mg	0	0
			2	2		
2	A	2	Total	Mg	0	0
			2	2		
2	C	2	Total	Mg	0	0
			2	2		

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	A	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	B	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	B	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	C	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	C	1	Total	C	N	O	P	0	0
			31	10	5	13	3		

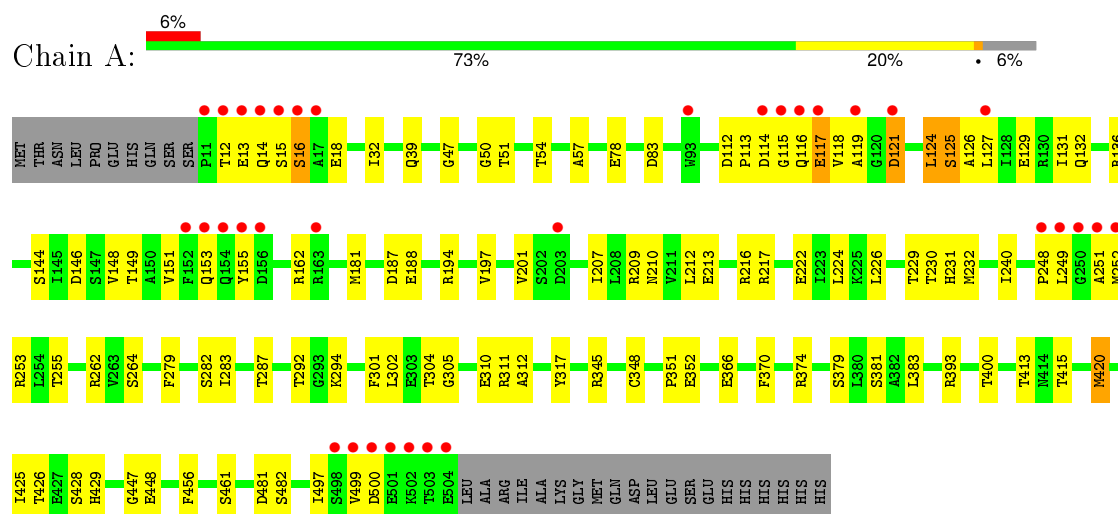
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	80	Total 80	O 80	0	0
4	B	66	Total 66	O 66	0	0
4	C	59	Total 59	O 59	0	0

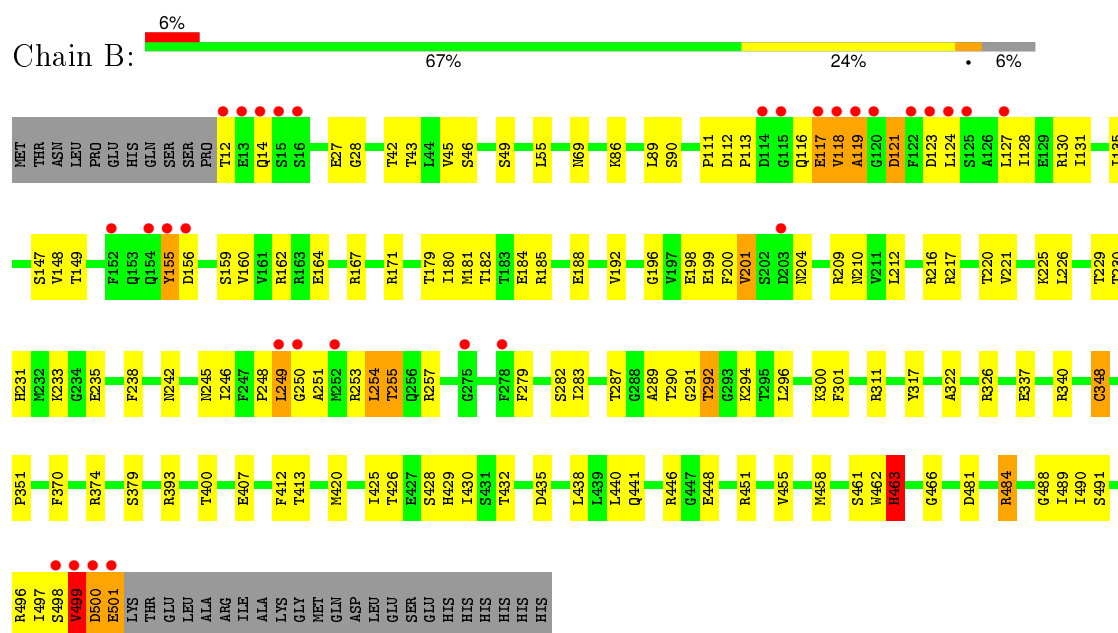
3 Residue-property plots [i](#)

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.

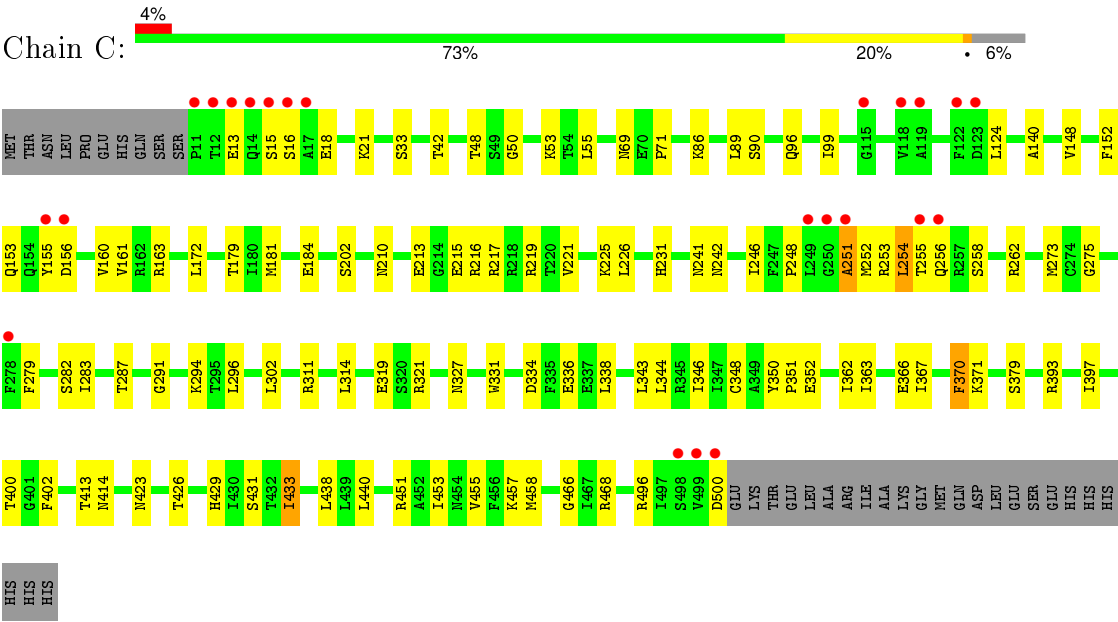
- Molecule 1: Circadian clock protein kinase KaiC



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4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	130.81Å 195.29Å 136.64Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	58.99 – 2.84 68.32 – 2.84	Depositor EDS
% Data completeness (in resolution range)	99.4 (58.99-2.84) 94.6 (68.32-2.84)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.03 (at 2.86Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.4_1496)	Depositor
R, R_{free}	0.225 , 0.270 0.224 , 0.266	Depositor DCC
R_{free} test set	1977 reflections (5.03%)	DCC
Wilson B-factor (Å ²)	45.8	Xtriage
Anisotropy	0.688	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 44.1	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Outliers	2 of 41357 reflections (0.005%)	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	11943	wwPDB-VP
Average B, all atoms (Å ²)	52.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 13.51% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: TPO, MG, ATP, SEP

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	0.26	0/3915	0.45	0/5279
1	B	0.27	0/3882	0.44	0/5235
1	C	0.24	0/3873	0.41	0/5223
All	All	0.26	0/11670	0.43	0/15737

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

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	3873	0	3858	72	0
1	B	3841	0	3824	92	0
1	C	3832	0	3820	69	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
2	C	2	0	0	0	0
3	A	62	0	24	0	0
3	B	62	0	24	2	0
3	C	62	0	24	3	0
4	A	80	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	66	0	0	3	0
4	C	59	0	0	4	0
All	All	11943	0	11574	217	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 9.

All (217) 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:C:438:LEU:CD2	1:C:455:VAL:HG22	1.78	1.13
1:C:438:LEU:HD21	1:C:455:VAL:HG22	1.57	0.86
1:A:116:GLN:HB2	1:A:117:GLU:HB2	1.58	0.85
1:B:379:SER:H	1:B:413:THR:HB	1.43	0.83
1:A:415:THR:HG21	1:B:432:TPO:HG21	1.60	0.82
1:B:112:ASP:HB3	1:B:113:PRO:HD2	1.65	0.78
1:A:283:ILE:HG13	1:A:400:THR:HG23	1.65	0.78
1:C:248:PRO:HB2	1:C:251:ALA:HB3	1.68	0.75
1:C:393:ARG:HH21	1:C:429:HIS:HB2	1.50	0.74
1:A:209:ARG:NH2	1:A:222:GLU:OE1	2.23	0.72
1:B:124:LEU:HD21	1:B:167:ARG:HD3	1.74	0.70
1:B:42:THR:HG22	1:B:179:THR:HB	1.74	0.69
1:A:126:ALA:HB2	1:A:129:GLU:HB2	1.74	0.69
1:C:438:LEU:HD22	1:C:455:VAL:HG22	1.72	0.68
1:B:253:ARG:O	1:B:255:THR:N	2.27	0.68
1:A:194:ARG:NH2	1:B:196:GLY:O	2.27	0.68
1:A:125:SER:O	1:A:129:GLU:N	2.28	0.67
1:B:86:LYS:HA	1:B:89:LEU:HD12	1.76	0.67
1:B:248:PRO:O	1:B:251:ALA:N	2.24	0.66
1:C:156:ASP:HB3	1:C:160:VAL:HG21	1.77	0.66
1:B:294:LYS:HG3	1:B:440:LEU:HD12	1.78	0.66
1:B:28:GLY:HA2	1:B:248:PRO:HG3	1.77	0.65
1:C:283:ILE:HG13	1:C:400:THR:HG23	1.77	0.65
1:A:57:ALA:HB1	1:A:144:SER:HB3	1.78	0.65
1:C:241:ASN:OD1	1:C:242:ASN:N	2.29	0.64
1:A:117:GLU:H	1:A:118:VAL:HG22	1.62	0.64
1:B:45:VAL:HG23	1:B:180:ILE:HD11	1.80	0.64
1:A:124:LEU:O	1:A:126:ALA:N	2.32	0.62
1:B:69:ASN:ND2	4:B:720:HOH:O	2.31	0.62
1:C:253:ARG:O	1:C:255:THR:N	2.33	0.62
1:B:121:ASP:C	1:B:123:ASP:H	2.03	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:127:LEU:HA	1:B:130:ARG:HB2	1.80	0.62
1:B:426:THR:HG22	1:B:428:SER:H	1.65	0.62
1:A:210:ASN:O	1:A:217:ARG:NH1	2.33	0.61
1:C:202:SER:O	1:C:225:LYS:NZ	2.31	0.61
1:A:118:VAL:H	1:A:121:ASP:HA	1.65	0.61
1:C:21:LYS:NZ	1:C:33:SER:O	2.29	0.61
1:A:352:GLU:HB3	1:B:249:LEU:HD21	1.83	0.61
1:C:397:ILE:HD11	1:C:433:ILE:HD13	1.82	0.61
1:A:426:THR:HG22	1:A:428:SER:H	1.65	0.61
1:A:345:ARG:NH1	1:A:366:GLU:OE1	2.32	0.61
1:A:226:LEU:HD12	1:A:231:HIS:HB3	1.83	0.61
1:C:50:GLY:O	1:C:219:ARG:NH2	2.34	0.61
1:C:15:SER:HB2	1:C:16:SER:HA	1.82	0.61
1:B:221:VAL:HG23	1:B:238:PHE:CD1	2.36	0.61
1:C:438:LEU:HD23	1:C:455:VAL:HA	1.82	0.60
1:A:216:ARG:NH2	1:B:235:GLU:O	2.34	0.60
1:A:393:ARG:NH2	1:A:428:SER:O	2.35	0.60
1:B:283:ILE:HG13	1:B:400:THR:HG23	1.83	0.60
1:B:498:SER:HA	1:B:499:VAL:C	2.23	0.59
1:B:317:TYR:HB3	1:B:351:PRO:HG3	1.85	0.59
1:B:124:LEU:HD11	1:B:167:ARG:HB2	1.84	0.59
1:A:481:ASP:OD1	1:A:482:SER:N	2.36	0.59
1:C:338:LEU:HB3	1:C:344:LEU:HB3	1.85	0.58
1:B:326:ARG:HD3	1:C:258:SER:HB3	1.85	0.58
1:B:162:ARG:HH12	1:B:200:PHE:HB2	1.69	0.58
1:B:118:VAL:O	1:B:119:ALA:C	2.42	0.58
1:A:287:THR:HG21	1:A:425:ILE:HG23	1.85	0.58
1:A:148:VAL:HG21	1:A:181:MET:HG2	1.84	0.57
1:C:69:ASN:ND2	4:C:729:HOH:O	2.37	0.57
1:B:438:LEU:HD23	1:B:455:VAL:HA	1.87	0.57
1:C:311:ARG:HG2	1:C:343:LEU:HA	1.86	0.57
1:B:446:ARG:HH21	1:B:496:ARG:HH12	1.49	0.57
1:C:287:THR:HG22	1:C:414:ASN:HB3	1.87	0.57
1:B:337:GLU:OE2	1:B:340:ARG:NH1	2.38	0.57
1:B:116:GLN:OE1	1:B:116:GLN:N	2.38	0.57
1:A:127:LEU:HD23	1:A:127:LEU:H	1.70	0.56
1:B:246:ILE:O	1:B:248:PRO:HD3	2.05	0.56
1:C:321:ARG:HD3	1:C:346:ILE:HG21	1.86	0.56
1:C:311:ARG:NH1	1:C:370:PHE:O	2.38	0.55
1:A:47:GLY:HA3	1:A:51:THR:HG21	1.88	0.55
1:A:229:THR:OG1	1:A:230:THR:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:248:PRO:HB2	1:A:251:ALA:HB3	1.87	0.55
1:C:379:SER:H	1:C:413:THR:HG1	1.53	0.55
1:A:302:LEU:HD22	1:A:312:ALA:HB1	1.88	0.55
1:A:317:TYR:HB3	1:A:351:PRO:HG3	1.90	0.54
1:B:462:TRP:O	1:B:463:HIS:ND1	2.40	0.54
1:A:153:GLN:O	1:B:159:SER:HB3	2.07	0.54
1:B:121:ASP:OD1	1:B:123:ASP:HB2	2.08	0.54
1:A:240:ILE:HG12	4:A:967:HOH:O	2.08	0.54
1:C:311:ARG:HH22	1:C:371:LYS:HB2	1.72	0.53
1:B:481:ASP:HB3	1:B:484:ARG:NH2	2.24	0.53
1:A:305:GLY:O	1:A:310:GLU:HG2	2.08	0.53
1:B:90:SER:OG	3:B:604:ATP:N6	2.38	0.53
1:B:149:THR:HG21	1:B:184:GLU:H	1.74	0.53
1:B:438:LEU:CD2	1:B:455:VAL:HG22	2.39	0.52
1:B:198:GLU:N	1:B:198:GLU:OE1	2.39	0.52
1:C:262:ARG:NH1	1:C:275:GLY:O	2.40	0.52
1:B:301:PHE:O	1:B:374:ARG:NH1	2.42	0.52
1:A:351:PRO:HB3	1:A:383:LEU:HD23	1.92	0.52
1:B:127:LEU:O	1:B:131:ILE:N	2.41	0.52
1:A:127:LEU:HD12	1:A:131:ILE:HD11	1.92	0.52
1:A:117:GLU:H	1:A:118:VAL:CG2	2.23	0.51
1:C:334:ASP:OD1	1:C:336:GLU:HG2	2.11	0.51
1:C:319:GLU:OE1	1:C:327:ASN:ND2	2.44	0.51
1:B:160:VAL:O	1:B:164:GLU:HG3	2.10	0.51
1:C:90:SER:OG	3:C:603:ATP:N6	2.32	0.50
1:A:112:ASP:O	1:A:114:ASP:N	2.40	0.50
1:A:216:ARG:NH1	1:B:233:LYS:O	2.44	0.50
1:B:117:GLU:C	1:B:119:ALA:H	2.15	0.50
1:B:311:ARG:HB3	1:B:370:PHE:CE2	2.46	0.50
1:C:251:ALA:O	1:C:253:ARG:N	2.45	0.50
1:C:184:GLU:OE2	4:C:756:HOH:O	2.20	0.50
1:A:116:GLN:CB	1:A:117:GLU:HB2	2.38	0.50
1:B:283:ILE:N	1:B:435:ASP:OD2	2.41	0.50
1:B:279:PHE:HB2	1:B:282:SER:HB3	1.94	0.50
1:B:287:THR:HG21	1:B:425:ILE:HG23	1.94	0.49
1:C:291:GLY:O	1:C:451:ARG:NH1	2.40	0.49
1:C:221:VAL:HG11	1:C:246:ILE:HD13	1.93	0.49
1:A:162:ARG:HB2	1:A:197:VAL:HG11	1.95	0.48
1:A:301:PHE:O	1:A:374:ARG:NH1	2.44	0.48
1:B:128:ILE:HD11	1:B:171:ARG:HB2	1.96	0.48
1:A:125:SER:O	1:A:129:GLU:HG2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:117:GLU:N	1:A:118:VAL:HA	2.27	0.48
1:B:488:GLY:O	1:B:491:SER:OG	2.28	0.48
1:A:32:ILE:HA	1:A:232:MET:SD	2.54	0.48
1:B:112:ASP:HB3	1:B:113:PRO:CD	2.41	0.48
1:C:279:PHE:HB2	1:C:282:SER:HB2	1.95	0.48
1:B:156:ASP:O	4:B:732:HOH:O	2.20	0.48
1:C:160:VAL:HG22	1:C:163:ARG:HH12	1.79	0.47
1:A:78:GLU:HG3	1:B:162:ARG:HH21	1.78	0.47
1:C:371:LYS:NZ	4:C:757:HOH:O	2.30	0.47
1:C:172:LEU:HD13	1:C:179:THR:HG21	1.96	0.47
1:A:132:GLN:HE21	1:A:136:ARG:NH2	2.12	0.47
1:B:147:SER:H	1:B:182:THR:HB	1.79	0.47
1:B:27:GLU:HG2	1:B:245:ASN:HA	1.97	0.47
1:B:248:PRO:O	1:B:250:GLY:N	2.47	0.47
1:C:42:THR:HG21	1:C:181:MET:SD	2.54	0.47
1:C:215:GLU:HB2	1:C:216:ARG:NH1	2.29	0.47
1:A:311:ARG:HB3	1:A:370:PHE:CE2	2.50	0.47
1:B:441:GLN:NE2	1:B:490:ILE:O	2.33	0.47
1:B:348:CYS:HB3	1:C:254:LEU:HB2	1.97	0.46
1:C:362:ILE:O	1:C:366:GLU:HG2	2.16	0.46
1:C:153:GLN:C	1:C:155:TYR:H	2.17	0.46
1:B:212:LEU:HD12	1:B:216:ARG:O	2.15	0.46
1:C:226:LEU:HD12	1:C:231:HIS:HB3	1.97	0.46
1:A:381:SER:OG	1:A:415:THR:HG22	2.15	0.46
1:A:112:ASP:C	1:A:114:ASP:H	2.18	0.46
1:A:114:ASP:OD1	1:A:115:GLY:N	2.49	0.46
1:C:210:ASN:O	1:C:217:ARG:NH1	2.48	0.46
1:A:279:PHE:HB2	1:A:282:SER:HB3	1.98	0.46
1:B:499:VAL:O	1:B:500:ASP:HB2	2.15	0.46
1:A:262:ARG:HH22	1:A:461:SER:HB2	1.81	0.46
1:A:162:ARG:HG3	1:A:201:VAL:HG21	1.98	0.46
1:A:13:GLU:HG2	1:A:14:GLN:H	1.79	0.45
1:C:367:ILE:HG21	1:C:402:PHE:HE2	1.81	0.45
1:B:291:GLY:O	1:B:451:ARG:NH1	2.31	0.45
1:A:12:THR:H	1:A:13:GLU:HA	1.82	0.45
1:C:273:MET:SD	1:C:468:ARG:HD3	2.57	0.45
1:A:499:VAL:HA	1:A:500:ASP:C	2.35	0.45
1:C:86:LYS:HA	1:C:89:LEU:HD12	1.99	0.45
1:B:185:ARG:NH1	1:B:188:GLU:O	2.49	0.45
1:C:55:LEU:HG	3:C:603:ATP:O1A	2.17	0.45
1:C:367:ILE:O	1:C:371:LYS:N	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:43:THR:HA	1:B:204:ASN:HB2	1.99	0.44
1:B:426:THR:HG21	1:B:430:ILE:HG12	1.99	0.44
1:B:123:ASP:HA	1:B:127:LEU:H	1.83	0.44
1:A:50:GLY:HA3	1:B:225:LYS:HB3	1.98	0.44
1:C:338:LEU:HB3	1:C:344:LEU:CB	2.47	0.44
1:C:294:LYS:HG3	1:C:440:LEU:HD12	1.99	0.44
1:B:55:LEU:HG	3:B:604:ATP:O1A	2.17	0.44
1:C:296:LEU:HD13	1:C:331:TRP:CD2	2.52	0.44
1:B:162:ARG:HG3	1:B:201:VAL:CG2	2.48	0.44
1:A:54:THR:HG23	1:A:146:ASP:OD2	2.18	0.43
1:C:363:ILE:O	1:C:367:ILE:HG12	2.18	0.43
1:C:217:ARG:NH2	4:C:741:HOH:O	2.52	0.43
1:C:48:THR:O	1:C:53:LYS:NZ	2.51	0.43
1:A:115:GLY:HA3	1:A:116:GLN:HA	1.66	0.43
1:B:121:ASP:C	1:B:123:ASP:N	2.72	0.43
1:B:123:ASP:O	1:B:127:LEU:N	2.51	0.43
1:C:152:PHE:CE2	1:C:161:VAL:HG13	2.53	0.43
1:A:149:THR:HG21	1:A:194:ARG:HD2	2.00	0.43
1:B:248:PRO:HG2	1:B:251:ALA:HB2	2.00	0.43
1:A:448:GLU:HG2	1:B:466:GLY:HA2	1.99	0.43
1:B:210:ASN:O	1:B:217:ARG:NH1	2.51	0.43
1:C:148:VAL:HG21	1:C:181:MET:HE3	2.00	0.43
1:B:148:VAL:HG21	1:B:181:MET:SD	2.58	0.43
1:A:425:ILE:HD11	1:A:456:PHE:CE2	2.53	0.43
1:A:207:ILE:HD11	1:A:224:LEU:HD22	2.00	0.43
1:B:448:GLU:HG2	1:C:466:GLY:HA2	2.01	0.43
1:C:426:THR:OG1	1:C:431:SEP:O1P	2.25	0.43
1:A:253:ARG:O	1:A:255:THR:N	2.48	0.43
1:A:15:SER:HB3	1:A:16:SER:HA	2.01	0.43
1:B:209:ARG:NH1	4:B:737:HOH:O	2.51	0.42
1:C:90:SER:HG	3:C:603:ATP:HN61	1.59	0.42
1:B:458:MET:HG2	1:B:461:SER:HB3	1.99	0.42
1:A:447:GLY:HA2	1:B:489:ILE:HD12	2.02	0.42
1:B:283:ILE:HD12	1:B:412:PHE:HE2	1.84	0.42
1:A:117:GLU:HB3	1:A:118:VAL:HA	2.01	0.42
1:B:322:ALA:HB3	1:C:256:GLN:O	2.19	0.42
1:C:302:LEU:HD11	1:C:314:LEU:HD13	2.02	0.42
1:B:254:LEU:HD23	1:B:254:LEU:HA	1.94	0.42
1:C:71:PRO:HB2	1:C:140:ALA:HA	2.01	0.42
1:C:423:ASN:OD1	1:C:423:ASN:N	2.50	0.42
1:B:226:LEU:HD12	1:B:231:HIS:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:420:MET:HE2	1:A:420:MET:HB2	1.93	0.42
1:B:497:ILE:O	1:B:500:ASP:N	2.53	0.41
1:A:379:SER:N	1:A:413:THR:OG1	2.35	0.41
1:B:499:VAL:O	1:B:501:GLU:HA	2.20	0.41
1:A:126:ALA:HA	1:A:129:GLU:H	1.85	0.41
1:A:348:CYS:HB3	1:B:254:LEU:HB3	2.02	0.41
1:A:294:LYS:HE2	1:A:294:LYS:HB2	1.84	0.41
1:B:257:ARG:HH21	1:B:407:GLU:HG2	1.86	0.41
1:C:216:ARG:NH2	1:C:352:GLU:OE1	2.53	0.41
1:C:350:TYR:HA	1:C:351:PRO:HD3	1.94	0.41
1:C:458:MET:HB3	1:C:458:MET:HE3	1.97	0.41
1:A:393:ARG:HH21	1:A:429:HIS:HB2	1.85	0.41
1:A:264:SER:OG	1:A:304:THR:HG21	2.21	0.41
1:B:393:ARG:NH2	1:B:429:HIS:HB2	2.36	0.41
1:B:43:THR:O	1:B:180:ILE:HD12	2.20	0.41
1:B:289:ALA:O	1:B:292:THR:OG1	2.25	0.41
1:A:187:ASP:OD1	1:A:188:GLU:N	2.53	0.41
1:B:296:LEU:O	1:B:300:LYS:HG2	2.20	0.41
1:B:290:THR:OG1	1:C:457:LYS:NZ	2.35	0.40
1:C:96:GLN:HA	1:C:99:ILE:HD12	2.03	0.40
1:C:438:LEU:HD23	1:C:455:VAL:HG22	1.87	0.40
1:B:229:THR:OG1	1:B:230:THR:N	2.54	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	490/524 (94%)	455 (93%)	24 (5%)	11 (2%)	8	26
1	B	486/524 (93%)	443 (91%)	31 (6%)	12 (2%)	7	22
1	C	486/524 (93%)	447 (92%)	32 (7%)	7 (1%)	14	40

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	1462/1572 (93%)	1345 (92%)	87 (6%)	30 (2%)	9	27

All (30) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	119	ALA
1	B	117	GLU
1	B	118	VAL
1	B	500	ASP
1	C	254	LEU
1	A	18	GLU
1	A	117	GLU
1	A	155	TYR
1	A	212	LEU
1	B	119	ALA
1	B	121	ASP
1	B	249	LEU
1	B	254	LEU
1	C	251	ALA
1	C	252	MET
1	A	213	GLU
1	A	420	MET
1	B	420	MET
1	C	13	GLU
1	C	124	LEU
1	B	155	TYR
1	B	348	CYS
1	B	463	HIS
1	B	499	VAL
1	C	18	GLU
1	C	348	CYS
1	A	113	PRO
1	A	125	SER
1	A	252	MET
1	A	121	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	418/445 (94%)	410 (98%)	8 (2%)	65	89
1	B	414/445 (93%)	396 (96%)	18 (4%)	35	69
1	C	413/445 (93%)	407 (98%)	6 (2%)	72	92
All	All	1245/1335 (93%)	1213 (97%)	32 (3%)	54	84

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	16	SER
1	A	39	GLN
1	A	83	ASP
1	A	124	LEU
1	A	151	VAL
1	A	249	LEU
1	A	292	THR
1	A	497	ILE
1	B	12	THR
1	B	14	GLN
1	B	46	SER
1	B	49	SER
1	B	111	PRO
1	B	135	ILE
1	B	155	TYR
1	B	192	VAL
1	B	199	GLU
1	B	201	VAL
1	B	220	THR
1	B	242	ASN
1	B	255	THR
1	B	292	THR
1	B	463	HIS
1	B	484	ARG
1	B	499	VAL
1	B	501	GLU
1	C	213	GLU
1	C	370	PHE
1	C	433	ILE
1	C	453	ILE
1	C	496	ARG

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Mol	Chain	Res	Type
1	C	500	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	231	HIS
1	A	323	GLN
1	B	361	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

6 non-standard protein/DNA/RNA residues are modelled in this entry.

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	$\# Z > 2$
1	SEP	A	431	1	8,9,10	1.50	1 (12%)	8,12,14	1.43	1 (12%)
1	TPO	A	432	1	8,10,11	1.11	0	7,14,16	1.21	1 (14%)
1	SEP	B	431	1	8,9,10	1.50	1 (12%)	8,12,14	1.41	1 (12%)
1	TPO	B	432	1	8,10,11	1.23	0	7,14,16	1.71	1 (14%)
1	SEP	C	431	1	8,9,10	1.51	1 (12%)	8,12,14	1.41	1 (12%)
1	TPO	C	432	1	8,10,11	1.12	0	7,14,16	1.28	1 (14%)

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
1	SEP	A	431	1	-	0/6/8/10	0/0/0/0
1	TPO	A	432	1	-	0/8/11/13	0/0/0/0
1	SEP	B	431	1	-	0/6/8/10	0/0/0/0
1	TPO	B	432	1	-	0/8/11/13	0/0/0/0
1	SEP	C	431	1	-	0/6/8/10	0/0/0/0
1	TPO	C	432	1	-	0/8/11/13	0/0/0/0

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	431	SEP	P-O1P	3.09	1.61	1.51
1	A	431	SEP	P-O1P	3.11	1.61	1.51
1	C	431	SEP	P-O1P	3.11	1.61	1.51

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	432	TPO	CG2-CB-CA	-4.06	104.91	113.17
1	C	432	TPO	CG2-CB-CA	-2.59	107.90	113.17
1	A	432	TPO	CG2-CB-CA	-2.44	108.22	113.17
1	B	431	SEP	OG-CB-CA	2.86	110.72	108.27
1	C	431	SEP	OG-CB-CA	3.00	110.83	108.27
1	A	431	SEP	OG-CB-CA	3.02	110.85	108.27

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	432	TPO	1	0
1	C	431	SEP	1	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 6 are monoatomic - leaving 6 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	$\# Z > 2$
3	ATP	A	802	2	24,33,33	0.99	1 (4%)	31,52,52	1.87	6 (19%)
3	ATP	A	803	-	24,33,33	0.96	1 (4%)	31,52,52	1.91	5 (16%)
3	ATP	B	602	2	24,33,33	0.94	1 (4%)	31,52,52	1.96	5 (16%)
3	ATP	B	604	2	24,33,33	0.95	1 (4%)	31,52,52	1.88	6 (19%)
3	ATP	C	602	2	24,33,33	0.95	1 (4%)	31,52,52	1.92	6 (19%)
3	ATP	C	603	2	24,33,33	0.97	1 (4%)	31,52,52	1.90	5 (16%)

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
3	ATP	A	802	2	-	0/18/38/38	0/3/3/3
3	ATP	A	803	-	-	0/18/38/38	0/3/3/3
3	ATP	B	602	2	-	0/18/38/38	0/3/3/3
3	ATP	B	604	2	-	0/18/38/38	0/3/3/3
3	ATP	C	602	2	-	0/18/38/38	0/3/3/3
3	ATP	C	603	2	-	0/18/38/38	0/3/3/3

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	604	ATP	C5-C4	2.95	1.47	1.40
3	A	803	ATP	C5-C4	3.00	1.47	1.40
3	C	603	ATP	C5-C4	3.01	1.47	1.40
3	B	602	ATP	C5-C4	3.04	1.47	1.40
3	C	602	ATP	C5-C4	3.05	1.47	1.40
3	A	802	ATP	C5-C4	3.11	1.47	1.40

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	803	ATP	N3-C2-N1	-6.91	123.60	128.89
3	C	603	ATP	N3-C2-N1	-6.81	123.68	128.89
3	B	602	ATP	N3-C2-N1	-6.81	123.68	128.89
3	B	604	ATP	N3-C2-N1	-6.78	123.70	128.89
3	C	602	ATP	N3-C2-N1	-6.71	123.76	128.89
3	A	802	ATP	N3-C2-N1	-6.18	124.17	128.89
3	B	602	ATP	PB-O3B-PG	-3.95	119.42	132.67
3	C	602	ATP	PB-O3B-PG	-3.65	120.44	132.67
3	A	802	ATP	PB-O3B-PG	-3.60	120.61	132.67
3	B	602	ATP	PA-O3A-PB	-3.59	122.66	132.73
3	C	602	ATP	PA-O3A-PB	-3.59	122.66	132.73
3	B	602	ATP	C2'-C1'-N9	-3.52	108.92	114.29
3	C	603	ATP	PA-O3A-PB	-3.49	122.92	132.73
3	A	803	ATP	PA-O3A-PB	-3.41	123.16	132.73
3	A	802	ATP	C2'-C1'-N9	-3.39	109.11	114.29
3	C	602	ATP	C2'-C1'-N9	-3.30	109.26	114.29
3	A	802	ATP	PA-O3A-PB	-3.26	123.58	132.73
3	A	803	ATP	PB-O3B-PG	-3.20	121.93	132.67
3	B	604	ATP	C4-C5-N7	-3.17	106.56	109.48
3	A	803	ATP	C4-C5-N7	-3.17	106.56	109.48
3	C	603	ATP	C4-C5-N7	-3.14	106.59	109.48
3	B	604	ATP	PB-O3B-PG	-3.13	122.16	132.67
3	A	802	ATP	C4-C5-N7	-2.97	106.75	109.48
3	C	603	ATP	PB-O3B-PG	-2.89	122.97	132.67
3	C	602	ATP	C4-C5-N7	-2.83	106.88	109.48
3	B	602	ATP	C4-C5-N7	-2.83	106.88	109.48
3	C	603	ATP	C2'-C1'-N9	-2.73	110.12	114.29
3	B	604	ATP	PA-O3A-PB	-2.70	125.14	132.73
3	A	803	ATP	C2'-C1'-N9	-2.49	110.49	114.29
3	B	604	ATP	C2'-C1'-N9	-2.42	110.59	114.29
3	A	802	ATP	O3A-PA-O5'	2.09	108.48	102.94
3	C	602	ATP	O3A-PA-O5'	2.11	108.53	102.94
3	B	604	ATP	O3A-PA-O5'	2.36	109.21	102.94

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	604	ATP	2	0
3	C	603	ATP	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	492/524 (93%)	0.34	34 (6%)	20 12	24, 44, 109, 151	0
1	B	488/524 (93%)	0.33	30 (6%)	25 16	25, 45, 99, 141	0
1	C	488/524 (93%)	0.36	23 (4%)	35 25	23, 51, 106, 143	0
All	All	1468/1572 (93%)	0.34	87 (5%)	26 17	23, 47, 107, 151	0

All (87) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	155	TYR	11.6
1	A	15	SER	9.0
1	A	503	THR	8.5
1	C	15	SER	8.2
1	C	500	ASP	8.2
1	B	124	LEU	7.4
1	B	155	TYR	7.1
1	A	504	GLU	7.0
1	C	250	GLY	6.6
1	C	498	SER	6.4
1	A	154	GLN	6.4
1	A	250	GLY	6.3
1	C	13	GLU	6.3
1	A	114	ASP	6.2
1	B	15	SER	6.0
1	B	500	ASP	5.9
1	A	14	GLN	5.5
1	B	498	SER	5.4
1	B	123	ASP	5.4
1	B	14	GLN	5.4
1	C	499	VAL	5.3
1	A	153	GLN	5.3
1	B	117	GLU	5.1

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Mol	Chain	Res	Type	RSRZ
1	A	502	LYS	5.1
1	C	11	PRO	5.1
1	B	13	GLU	5.1
1	A	12	THR	4.9
1	A	501	GLU	4.8
1	B	501	GLU	4.7
1	B	252	MET	4.6
1	B	499	VAL	4.6
1	B	12	THR	4.6
1	A	249	LEU	4.6
1	A	11	PRO	4.5
1	A	13	GLU	4.4
1	B	16	SER	4.3
1	A	17	ALA	4.3
1	A	203	ASP	4.2
1	C	278	PHE	4.2
1	C	14	GLN	4.1
1	C	251	ALA	4.1
1	B	115	GLY	4.1
1	C	12	THR	3.9
1	A	121	ASP	3.8
1	B	122	PHE	3.6
1	A	500	ASP	3.6
1	C	155	TYR	3.6
1	A	16	SER	3.5
1	C	249	LEU	3.3
1	C	255	THR	3.3
1	A	499	VAL	3.3
1	C	17	ALA	3.3
1	B	118	VAL	3.3
1	C	115	GLY	3.2
1	C	123	ASP	3.2
1	B	156	ASP	3.2
1	A	117	GLU	3.1
1	A	156	ASP	3.0
1	B	114	ASP	3.0
1	A	127	LEU	3.0
1	C	119	ALA	2.9
1	A	498	SER	2.9
1	C	16	SER	2.8
1	A	115	GLY	2.8
1	C	256	GLN	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	120	GLY	2.8
1	A	152	PHE	2.8
1	C	122	PHE	2.8
1	B	152	PHE	2.6
1	A	163	ARG	2.5
1	B	249	LEU	2.5
1	B	127	LEU	2.5
1	A	251	ALA	2.5
1	A	248	PRO	2.5
1	B	275	GLY	2.4
1	B	203	ASP	2.4
1	C	156	ASP	2.4
1	B	125	SER	2.3
1	C	118	VAL	2.3
1	B	278	PHE	2.3
1	A	119	ALA	2.3
1	A	252	MET	2.1
1	B	250	GLY	2.1
1	A	93	TRP	2.1
1	B	154	GLN	2.1
1	A	116	GLN	2.1
1	B	119	ALA	2.0

6.2 Non-standard residues in protein, DNA, RNA chains

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
1	TPO	C	432	11/12	0.87	0.25	-	59,67,78,85	0
1	SEP	C	431	10/11	0.83	0.22	-	56,60,78,92	0
1	SEP	A	431	10/11	0.92	0.18	-	47,54,67,76	0
1	TPO	B	432	11/12	0.94	0.17	-	44,47,64,69	0
1	SEP	B	431	10/11	0.88	0.22	-	43,50,79,90	0
1	TPO	A	432	11/12	0.95	0.15	-	51,53,65,66	0

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
2	MG	A	801	1/1	0.90	0.27	2.39	32,32,32,32	0
2	MG	B	603	1/1	0.90	0.26	1.78	41,41,41,41	0
3	ATP	C	602	31/31	0.94	0.21	0.24	31,36,58,77	0
3	ATP	B	604	31/31	0.92	0.20	0.09	28,37,61,67	0
3	ATP	C	603	31/31	0.94	0.18	-0.05	26,37,59,68	0
3	ATP	B	602	31/31	0.94	0.19	-0.09	32,41,63,75	0
3	ATP	A	803	31/31	0.93	0.19	-0.59	24,32,63,74	0
3	ATP	A	802	31/31	0.95	0.16	-0.83	26,33,47,65	0
2	MG	C	601	1/1	0.91	0.27	-	44,44,44,44	0
2	MG	A	804	1/1	0.25	0.47	-	64,64,64,64	0
2	MG	C	604	1/1	0.71	0.13	-	45,45,45,45	0
2	MG	B	601	1/1	0.82	0.17	-	47,47,47,47	0

6.5 Other polymers [i](#)

There are no such residues in this entry.