Full wwPDB X-ray Structure Validation Report ⓘ

Aug 15, 2023 – 03:02 PM EDT

PDB ID	:	1XJG
Title	:	Structural mechanism of allosteric substrate specificity in a ribonucleotide reductase: dATP-UDP complex
Authors	:	Larsson, K.-M.; Jordan, A.; Eliasson, R.; Reichard, P.; Logan, D.T.; Nordlund, P.
Deposited on	:	2004-09-23
Resolution	:	2.50 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
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.

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

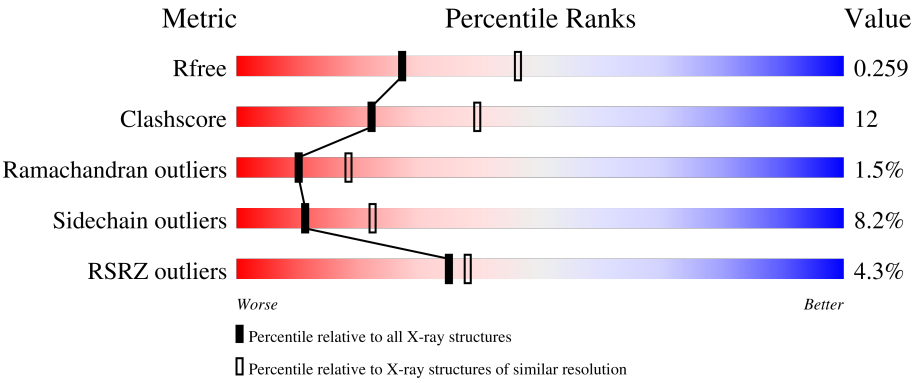
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 2.50 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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

Mol	Chain	Length	Quality of chain
1	A	644	6% 67% 24% • 5%
1	B	644	3% 70% 21% • 5%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 10209 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 ribonucleotide reductase, B12-dependent.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	615	Total	C	N	O	S	0	0	0
			4942	3173	837	912	20			
1	B	610	Total	C	N	O	S	0	0	0
			4907	3150	832	905	20			

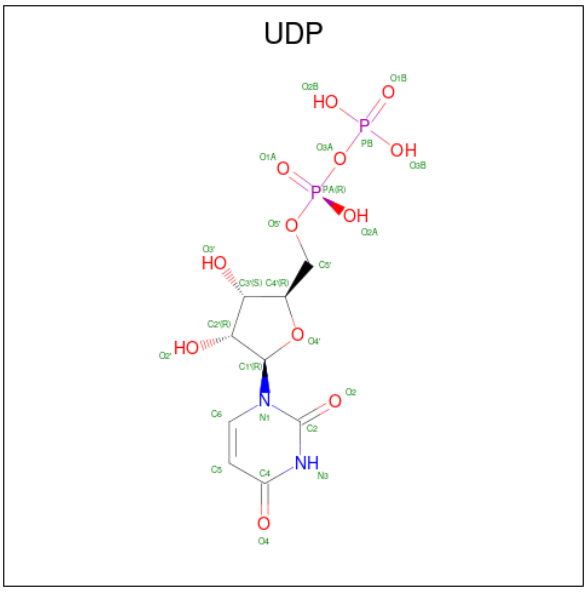
There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	205	SER	TYR	SEE REMARK 999	UNP O33839
B	205	SER	TYR	SEE REMARK 999	UNP O33839

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

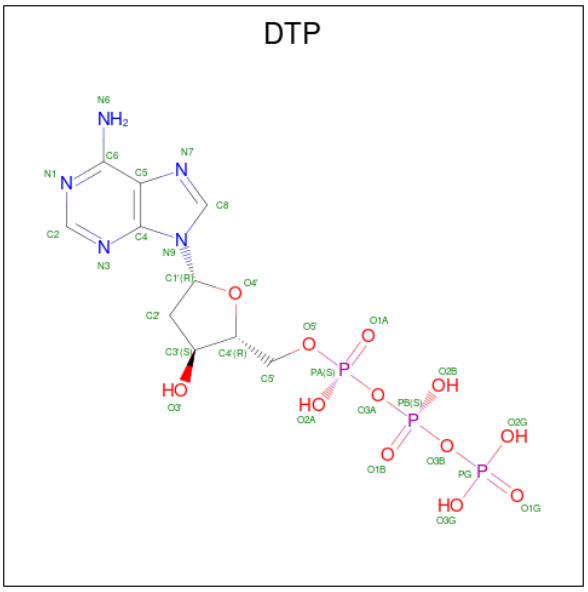
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Mg	0	0
			1	1		
2	B	1	Total	Mg	0	0
			1	1		

- Molecule 3 is URIDINE-5'-DIPHOSPHATE (three-letter code: UDP) (formula: $C_9H_{14}N_2O_{12}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			25	9	2	12	2		
3	B	1	Total	C	N	O	P	0	0
			25	9	2	12	2		

- Molecule 4 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
4	A	1	Total	C	N	O	P	0	0
			30	10	5	12	3		

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

- Molecule 5 is water.

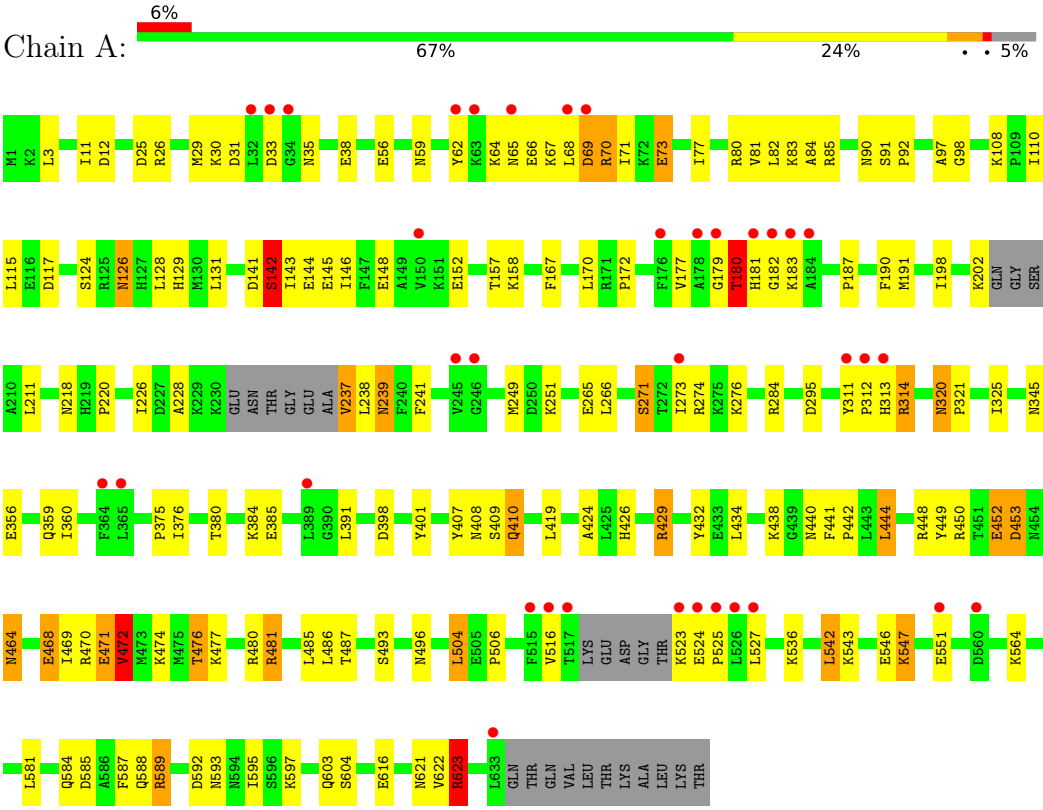
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	109	Total	O	0	0
			109	109		
5	B	139	Total	O	0	0
			139	139		

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.

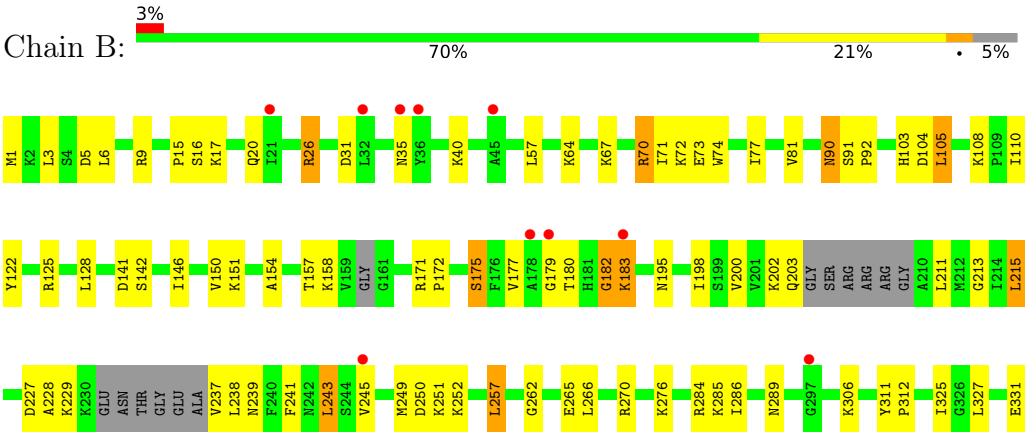
• Molecule 1: ribonucleotide reductase, B12-dependent

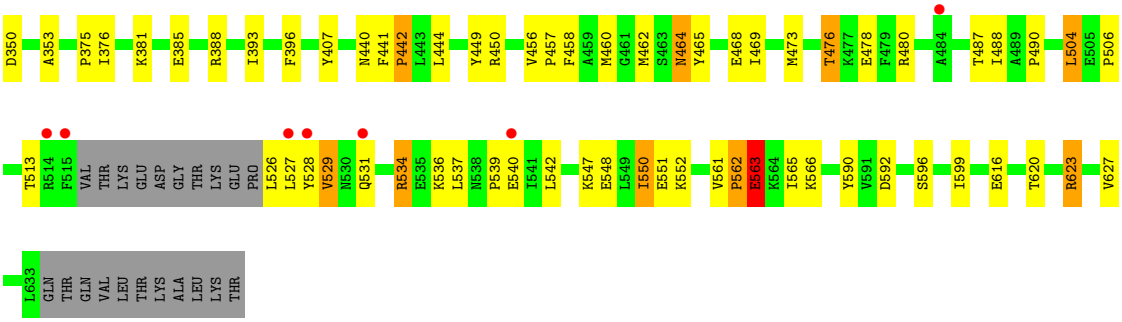
Chain A:



• Molecule 1: ribonucleotide reductase, B12-dependent

Chain B:




D350 A353 P375 I376 K381 E385 R388 I393 F396 Y407 N440 F441 P442 L443 L444 Y449 R450 V456 P457 F458 A459 M460 G461 M462 S463 N464 Y465 E468 I469 M473 T476 K477 E478 F479 R480 A484 T487 I488 A489 P490 L504 E505 P506
T513 R514 F515 VAL THR LYS GLU ASP GLY THR LYS GLU PRO L526 L527 Y528 V529 N530 Q531 R534 E535 K536 L537 N538 P539 E540 I541 L542 K547 E548 L549 I550 E551 K552 V561 P562 E563 K564 I565 K566 Y590 V591 D592 S596 I599 E616 T620 R623 V627
L633 GLN THR GLN VAL LEU THR LYS ALA LEU LYS THR

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	118.54Å 123.51Å 105.89Å 90.00° 102.60° 90.00°	Depositor
Resolution (Å)	24.87 – 2.50 24.87 – 2.50	Depositor EDS
% Data completeness (in resolution range)	100.0 (24.87-2.50) 100.0 (24.87-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
$< I/\sigma(I) >$ [1]	4.07 (at 2.50Å)	Xtriage
Refinement program	REFMAC 5.1.24	Depositor
R, R_{free}	0.195 , 0.264 0.193 , 0.259	Depositor DCC
R_{free} test set	2628 reflections (5.11%)	wwPDB-VP
Wilson B-factor (Å^2)	41.9	Xtriage
Anisotropy	0.636	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 45.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	10209	wwPDB-VP
Average B, all atoms (Å^2)	49.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.06% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: DTP, UDP, MG

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	0.86	0/5040	0.89	6/6804 (0.1%)
1	B	0.95	3/5001 (0.1%)	0.91	4/6749 (0.1%)
All	All	0.91	3/10041 (0.0%)	0.90	10/13553 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	468	GLU	CD-OE1	5.37	1.31	1.25
1	B	465	TYR	CE1-CZ	5.27	1.45	1.38
1	B	81	VAL	CB-CG1	-5.10	1.42	1.52

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	589	ARG	NE-CZ-NH2	-8.08	116.26	120.30
1	B	462	MET	CG-SD-CE	7.02	111.44	100.20
1	A	82	LEU	CB-CG-CD1	-5.90	100.97	111.00
1	B	623	ARG	NE-CZ-NH2	-5.56	117.52	120.30
1	A	142	SER	N-CA-C	5.47	125.78	111.00
1	B	388	ARG	NE-CZ-NH2	-5.43	117.58	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	623	ARG	NE-CZ-NH1	5.42	123.01	120.30
1	A	589	ARG	NE-CZ-NH1	5.36	122.98	120.30
1	B	215	LEU	CA-CB-CG	5.23	127.32	115.30
1	A	82	LEU	CA-CB-CG	5.12	127.08	115.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	241	PHE	Peptide
1	B	562	PRO	Peptide

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	4942	0	5003	137	0
1	B	4907	0	4963	103	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	25	0	11	0	0
3	B	25	0	11	2	0
4	A	30	0	12	5	0
4	B	30	0	12	1	0
5	A	109	0	0	15	0
5	B	139	0	0	11	0
All	All	10209	0	10012	234	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 12.

All (234) 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:A:128:LEU:HD13	1:B:179:GLY:O	1.50	1.09

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:471:GLU:O	1:A:472:VAL:HB	1.48	1.06
1:A:126:ASN:HD22	1:A:128:LEU:H	1.13	0.95
1:B:457:PRO:HD3	5:B:1141:HOH:O	1.68	0.93
1:A:440:ASN:ND2	1:A:444:LEU:HD23	1.86	0.90
1:A:441:PHE:HB3	1:A:481:ARG:O	1.72	0.88
1:A:148:GLU:O	1:A:152:GLU:HG3	1.74	0.88
1:A:424:ALA:HA	1:A:486:LEU:HD11	1.55	0.88
1:B:456:VAL:HA	5:B:1141:HOH:O	1.74	0.87
1:A:452:GLU:O	1:A:453:ASP:HB2	1.75	0.87
1:A:295:ASP:HB2	5:A:1107:HOH:O	1.75	0.87
1:B:70:ARG:NH2	5:B:1105:HOH:O	2.07	0.87
1:B:528:TYR:O	1:B:529:VAL:HG23	1.75	0.87
1:B:73:GLU:OE2	1:B:73:GLU:CG	2.26	0.83
1:A:126:ASN:ND2	1:A:128:LEU:H	1.78	0.81
1:A:271:SER:OG	1:A:273:ILE:HD12	1.81	0.80
1:A:438:LYS:HD3	1:A:481:ARG:HH21	1.47	0.79
1:A:438:LYS:HD3	1:A:481:ARG:NH2	1.98	0.79
1:B:73:GLU:HB2	5:B:1125:HOH:O	1.82	0.79
1:B:563:GLU:OE1	1:B:563:GLU:HA	1.83	0.78
1:A:542:LEU:O	1:A:546:GLU:HG3	1.84	0.78
1:A:455:PHE:CE2	5:A:1113:HOH:O	2.37	0.78
1:A:536:LYS:HB3	5:A:1105:HOH:O	1.83	0.77
1:B:473:MET:HG3	5:B:1141:HOH:O	1.84	0.76
4:A:1004:DTP:O5'	4:A:1004:DTP:H8	1.85	0.76
1:B:67:LYS:O	1:B:71:ILE:HG13	1.86	0.75
1:A:450:ARG:NH1	1:A:477:LYS:O	2.20	0.74
1:A:128:LEU:CD1	1:B:179:GLY:O	2.35	0.73
1:B:381:LYS:O	1:B:385:GLU:HG3	1.87	0.73
1:B:195:ASN:HD21	1:B:239:ASN:ND2	1.88	0.72
1:B:141:ASP:O	4:B:1003:DTP:H5'2	1.89	0.72
1:A:448:ARG:O	1:A:452:GLU:HB2	1.88	0.71
1:A:472:VAL:O	1:A:476:THR:HB	1.90	0.71
1:B:473:MET:O	1:B:476:THR:HG22	1.90	0.71
1:A:64:LYS:O	1:A:65:ASN:HB2	1.91	0.70
1:B:146:ILE:O	1:B:150:VAL:HG23	1.92	0.70
1:A:464:ASN:HA	5:A:1044:HOH:O	1.91	0.69
1:B:229:LYS:HD2	1:B:243:LEU:HD22	1.75	0.69
1:A:468:GLU:O	1:A:471:GLU:O	2.11	0.67
1:A:587:PHE:HB3	1:A:595:ILE:HD11	1.77	0.67
1:A:455:PHE:CD2	5:A:1113:HOH:O	2.47	0.66
1:A:320:ASN:HB2	1:A:321:PRO:HD2	1.75	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:195:ASN:HD21	1:B:239:ASN:HD21	1.43	0.66
1:A:265:GLU:OE1	1:A:276:LYS:HG2	1.96	0.66
1:A:251:LYS:NZ	1:A:622:VAL:O	2.28	0.65
1:A:438:LYS:CD	1:A:481:ARG:HH21	2.09	0.65
1:B:241:PHE:HB3	1:B:243:LEU:HD13	1.77	0.65
1:A:190:PHE:CD1	1:B:200:VAL:HG11	2.32	0.65
1:A:265:GLU:O	5:A:1097:HOH:O	2.15	0.64
1:B:1:MET:HB3	1:B:350:ASP:OD2	1.98	0.64
1:A:471:GLU:O	1:A:472:VAL:CB	2.33	0.64
1:B:449:TYR:OH	1:B:457:PRO:HG3	1.98	0.64
1:A:128:LEU:HD11	1:B:179:GLY:HA2	1.80	0.64
1:A:182:GLY:O	1:A:183:LYS:HB2	1.98	0.63
1:B:531:GLN:HG3	1:B:534:ARG:HH12	1.64	0.62
1:B:460:MET:HG2	1:B:590:TYR:CE1	2.34	0.62
1:A:98:GLY:H	1:A:129:HIS:CD2	2.18	0.62
1:B:182:GLY:O	1:B:183:LYS:HB2	2.00	0.61
1:A:126:ASN:HD22	1:A:126:ASN:C	2.04	0.61
1:A:239:ASN:H	1:A:239:ASN:HD22	1.48	0.61
1:A:143:ILE:H	1:A:146:ILE:HG13	1.66	0.61
1:A:408:ASN:HB3	1:A:575:ILE:HG23	1.82	0.61
1:A:190:PHE:CE1	1:B:200:VAL:CG1	2.84	0.60
1:A:69:ASP:O	1:A:70:ARG:HB2	2.02	0.60
1:A:449:TYR:CE1	5:A:1113:HOH:O	2.54	0.60
1:A:470:ARG:HG2	5:A:1073:HOH:O	2.00	0.60
1:A:218:ASN:O	1:A:266:LEU:HA	2.00	0.60
1:B:592:ASP:O	1:B:623:ARG:NH2	2.34	0.60
1:A:320:ASN:H	1:A:320:ASN:HD22	1.48	0.60
1:B:476:THR:CG2	1:B:480:ARG:HE	2.15	0.59
1:B:198:ILE:HG13	1:B:211:LEU:HD11	1.83	0.59
1:B:464:ASN:H	1:B:464:ASN:ND2	1.99	0.59
1:B:623:ARG:HD2	5:B:1011:HOH:O	2.02	0.59
1:B:537:LEU:HD23	1:B:542:LEU:HB2	1.85	0.59
1:A:180:THR:HG22	1:A:182:GLY:N	2.17	0.59
1:A:265:GLU:OE2	1:A:274:ARG:HD2	2.03	0.59
1:A:585:ASP:OD1	1:A:589:ARG:HD2	2.03	0.58
1:B:306:LYS:HA	5:B:1118:HOH:O	2.02	0.58
1:B:227:ASP:OD2	1:B:285:LYS:NZ	2.31	0.58
1:A:449:TYR:CZ	5:A:1113:HOH:O	2.51	0.58
1:B:177:VAL:HG22	1:B:183:LYS:H	1.69	0.57
1:B:487:THR:O	1:B:488:ILE:HD13	2.04	0.57
1:A:142:SER:O	1:A:143:ILE:HB	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:547:LYS:O	1:B:550:ILE:HG22	2.05	0.57
1:A:429:ARG:O	1:A:432:TYR:HB3	2.04	0.57
1:A:73:GLU:O	1:A:77:ILE:HG13	2.05	0.57
1:A:142:SER:HB3	1:A:145:GLU:OE2	2.04	0.56
1:A:59:ASN:ND2	1:A:62:TYR:CE1	2.72	0.56
1:A:440:ASN:HD22	1:A:444:LEU:HD23	1.66	0.56
1:A:190:PHE:CD1	1:B:200:VAL:CG1	2.89	0.56
1:B:476:THR:HG21	1:B:480:ARG:HH21	1.70	0.55
1:B:460:MET:HG2	1:B:590:TYR:HE1	1.71	0.55
1:A:66:GLU:HG2	1:A:70:ARG:HD3	1.88	0.54
1:A:31:ASP:OD1	1:A:35:ASN:HB2	2.07	0.54
1:A:547:LYS:H	1:A:547:LYS:HD2	1.73	0.54
1:A:98:GLY:N	1:A:129:HIS:CD2	2.77	0.54
1:B:103:HIS:C	1:B:105:LEU:H	2.10	0.54
1:B:1:MET:HG3	1:B:5:ASP:HB2	1.90	0.53
1:A:592:ASP:O	1:A:623:ARG:NH2	2.41	0.53
1:B:513:THR:HG23	1:B:526:LEU:HA	1.90	0.53
1:A:587:PHE:HB3	1:A:595:ILE:CD1	2.37	0.53
1:B:527:LEU:HD23	1:B:528:TYR:O	2.08	0.53
1:B:488:ILE:HG21	1:B:504:LEU:HG	1.90	0.53
1:A:144:GLU:OE2	1:B:151:LYS:CE	2.56	0.53
1:B:616:GLU:O	1:B:620:THR:HG23	2.09	0.53
1:B:599:ILE:HB	1:B:627:VAL:HG12	1.90	0.52
1:A:295:ASP:N	5:A:1107:HOH:O	2.38	0.52
1:B:142:SER:O	1:B:146:ILE:HG13	2.09	0.52
1:A:448:ARG:HG2	1:A:452:GLU:HG3	1.90	0.52
1:A:157:THR:O	1:A:158:LYS:C	2.47	0.52
1:A:356:GLU:O	1:A:359:GLN:HB2	2.09	0.52
1:A:476:THR:CG2	1:A:480:ARG:HE	2.23	0.52
1:B:490:PRO:HD2	3:B:1002:UDP:H5'1	1.90	0.51
1:A:126:ASN:HD22	1:A:128:LEU:N	1.95	0.51
1:A:128:LEU:HD21	1:A:158:LYS:HE2	1.92	0.51
1:A:407:TYR:CZ	1:A:506:PRO:HD3	2.45	0.51
1:A:320:ASN:HB2	1:A:321:PRO:CD	2.40	0.51
1:B:407:TYR:CZ	1:B:506:PRO:HD3	2.45	0.51
1:B:250:ASP:OD1	1:B:252:LYS:HB2	2.10	0.51
1:A:584:GLN:HB2	1:A:597:LYS:HG2	1.93	0.50
4:A:1004:DTP:O2B	4:A:1004:DTP:O1A	2.30	0.50
1:A:576:ASP:C	1:A:576:ASP:OD1	2.50	0.50
1:A:239:ASN:H	1:A:239:ASN:ND2	2.10	0.50
1:B:473:MET:CG	5:B:1141:HOH:O	2.50	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:444:LEU:HD12	1:A:444:LEU:O	2.13	0.49
1:B:551:GLU:HG2	1:B:552:LYS:N	2.27	0.49
1:A:311:TYR:CD1	1:A:312:PRO:HA	2.46	0.49
1:B:257:LEU:HD22	1:B:262:GLY:HA3	1.93	0.49
1:A:380:THR:O	1:A:384:LYS:HG3	2.13	0.49
1:A:398:ASP:O	1:A:401:TYR:HB2	2.12	0.49
1:A:623:ARG:HD2	5:A:1024:HOH:O	2.13	0.49
1:A:320:ASN:ND2	1:A:325:ILE:H	2.11	0.49
1:B:375:PRO:O	1:B:376:ILE:HG13	2.13	0.49
1:B:122:TYR:O	1:B:125:ARG:HD3	2.13	0.49
1:A:56:GLU:HB2	1:A:71:ILE:HG12	1.95	0.49
1:B:31:ASP:OD1	1:B:31:ASP:C	2.52	0.48
1:B:171:ARG:HH21	1:B:270:ARG:HD2	1.77	0.48
1:A:11:ILE:HG12	1:A:83:LYS:HD3	1.95	0.48
1:A:320:ASN:HD21	1:A:325:ILE:H	1.62	0.48
1:A:409:SER:O	1:A:410:GLN:CB	2.62	0.47
1:B:441:PHE:O	1:B:442:PRO:C	2.52	0.47
1:B:457:PRO:CD	5:B:1141:HOH:O	2.42	0.47
1:A:126:ASN:ND2	1:A:126:ASN:C	2.67	0.47
1:B:311:TYR:CD1	1:B:312:PRO:HA	2.49	0.47
1:A:198:ILE:HG13	1:A:211:LEU:HD21	1.96	0.47
1:A:452:GLU:O	1:A:453:ASP:CB	2.53	0.47
1:B:91:SER:OG	3:B:1002:UDP:O1B	2.23	0.47
1:A:141:ASP:O	4:A:1004:DTP:H5'2	2.13	0.47
1:A:313:HIS:HB2	5:A:1099:HOH:O	2.15	0.47
1:B:327:LEU:HD22	1:B:331:GLU:HB3	1.97	0.47
1:A:97:ALA:HA	1:A:131:LEU:HD21	1.96	0.47
1:A:455:PHE:HE2	5:A:1113:HOH:O	1.83	0.47
1:A:487:THR:HG23	5:A:1045:HOH:O	2.15	0.47
1:B:563:GLU:H	1:B:566:LYS:HB2	1.79	0.46
1:A:179:GLY:O	1:B:128:LEU:HD22	2.15	0.46
1:B:91:SER:HB2	1:B:92:PRO:HD3	1.98	0.46
1:A:29:MET:N	1:A:38:GLU:OE1	2.45	0.46
1:B:151:LYS:O	1:B:154:ALA:HB3	2.16	0.46
1:A:62:TYR:HB3	1:A:67:LYS:HG2	1.97	0.46
1:A:474:LYS:C	1:A:476:THR:H	2.17	0.46
1:B:70:ARG:HA	1:B:70:ARG:HD2	1.67	0.46
1:A:167:PHE:CE2	1:A:191:MET:HG2	2.51	0.46
1:B:6:LEU:HD23	1:B:353:ALA:HB1	1.97	0.46
1:B:172:PRO:O	1:B:175:SER:HB2	2.16	0.46
1:A:11:ILE:HG23	1:A:12:ASP:OD1	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:616:GLU:HA	1:A:616:GLU:OE1	2.16	0.45
1:A:444:LEU:HD12	1:A:444:LEU:C	2.37	0.45
1:A:66:GLU:O	1:A:70:ARG:HB2	2.15	0.45
1:B:90:ASN:HB3	1:B:335:LEU:HB2	1.99	0.45
1:B:528:TYR:O	1:B:529:VAL:CG2	2.57	0.45
1:A:542:LEU:HD13	1:A:546:GLU:OE2	2.17	0.45
1:B:440:ASN:ND2	1:B:444:LEU:HD23	2.32	0.45
1:A:114:THR:O	1:A:117:ASP:HB2	2.17	0.45
1:A:493:SER:O	1:A:496:ASN:HB2	2.17	0.44
1:A:355:GLN:HG3	1:A:426:HIS:ND1	2.32	0.44
1:A:170:LEU:HD12	1:A:187:PRO:HA	1.98	0.44
1:B:539:PRO:O	1:B:540:GLU:HB2	2.17	0.44
1:A:375:PRO:HG2	1:A:376:ILE:HG13	1.99	0.44
1:A:486:LEU:O	1:A:593:ASN:ND2	2.48	0.44
1:A:177:VAL:HG12	1:A:179:GLY:HA3	2.00	0.43
1:B:31:ASP:CG	1:B:35:ASN:HB2	2.38	0.43
1:B:177:VAL:C	1:B:179:GLY:N	2.71	0.43
1:B:325:ILE:HG22	1:B:327:LEU:HG	1.99	0.43
1:B:393:ILE:HD12	1:B:396:PHE:HB2	2.00	0.43
1:B:469:ILE:O	1:B:473:MET:HG2	2.19	0.43
1:A:449:TYR:CD1	1:A:476:THR:CG2	3.01	0.43
1:A:449:TYR:CD1	1:A:476:THR:HG21	2.54	0.43
1:A:581:LEU:HD12	1:A:622:VAL:HG11	2.01	0.43
1:A:588:GLN:HG2	1:A:621:ASN:O	2.18	0.43
1:B:15:PRO:HB2	1:B:20:GLN:HG2	1.99	0.43
1:B:265:GLU:OE1	1:B:276:LYS:HG3	2.18	0.43
1:A:143:ILE:HG12	4:A:1004:DTP:H2'2	1.99	0.43
1:A:144:GLU:OE2	1:B:151:LYS:HE2	2.18	0.43
1:A:527:LEU:O	1:A:527:LEU:HD23	2.19	0.43
4:A:1004:DTP:O2B	4:A:1004:DTP:O2G	2.36	0.42
1:B:213:GLY:O	1:B:243:LEU:HA	2.19	0.42
1:A:237:VAL:HB	1:A:238:LEU:H	1.48	0.42
1:B:285:LYS:O	1:B:286:ILE:C	2.56	0.42
1:A:30:LYS:HA	1:A:35:ASN:O	2.19	0.42
1:A:523:LYS:HB3	1:A:523:LYS:HE3	1.86	0.42
1:A:585:ASP:O	1:A:589:ARG:HG3	2.20	0.42
1:B:218:ASN:HD22	1:B:218:ASN:H	1.67	0.42
1:B:251:LYS:HG3	5:B:1102:HOH:O	2.19	0.42
1:A:91:SER:HB2	1:A:92:PRO:HD3	2.02	0.42
1:B:306:LYS:HE3	5:B:1107:HOH:O	2.18	0.42
1:A:115:LEU:HD13	1:A:115:LEU:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:172:PRO:HG3	1:A:220:PRO:HD2	2.01	0.42
1:B:531:GLN:HG3	1:B:534:ARG:NH1	2.30	0.42
1:B:562:PRO:O	1:B:565:ILE:HB	2.19	0.42
1:A:313:HIS:CE1	1:A:314:ARG:HH12	2.37	0.42
1:B:217:ILE:HD13	1:B:245:VAL:HG11	2.02	0.42
1:A:77:ILE:CG2	1:A:360:ILE:HD13	2.50	0.42
1:A:504:LEU:HD13	1:A:597:LYS:HD3	2.02	0.42
1:B:74:TRP:HA	1:B:77:ILE:HG22	2.02	0.42
1:A:355:GLN:O	1:A:356:GLU:C	2.56	0.41
1:A:476:THR:HG23	1:A:480:ARG:HE	1.85	0.41
1:A:84:ALA:O	1:A:85:ARG:HB2	2.20	0.41
1:A:320:ASN:H	1:A:320:ASN:ND2	2.16	0.41
1:A:167:PHE:CZ	1:A:191:MET:HG2	2.56	0.41
1:A:110:ILE:O	1:A:113:MET:HB2	2.20	0.41
1:B:72:LYS:O	1:B:110:ILE:HD11	2.21	0.41
1:B:476:THR:HG21	1:B:480:ARG:HE	1.83	0.41
1:B:527:LEU:CD2	1:B:528:TYR:O	2.69	0.41
1:A:59:ASN:HB3	1:A:62:TYR:HD1	1.85	0.41
1:B:16:SER:O	1:B:20:GLN:HG3	2.22	0.40
1:B:563:GLU:N	1:B:566:LYS:HB2	2.36	0.40
1:A:516:VAL:HG22	1:A:524:GLU:N	2.37	0.40
1:B:157:THR:O	1:B:203:GLN:HA	2.22	0.40
1:A:91:SER:O	1:A:92:PRO:C	2.56	0.40
1:B:26:ARG:HG3	1:B:26:ARG:HH11	1.87	0.40
1:B:237:VAL:HB	1:B:238:LEU:H	1.45	0.40
1:A:604:SER:HB3	5:A:1104:HOH:O	2.21	0.40
1:B:26:ARG:HG3	1:B:26:ARG:NH1	2.37	0.40
1:B:220:PRO:HA	1:B:266:LEU:HB3	2.03	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	607/644 (94%)	528 (87%)	68 (11%)	11 (2%)	8 14
1	B	600/644 (93%)	558 (93%)	35 (6%)	7 (1%)	13 24
All	All	1207/1288 (94%)	1086 (90%)	103 (8%)	18 (2%)	10 18

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	70	ARG
1	A	410	GLN
1	A	453	ASP
1	A	472	VAL
1	B	529	VAL
1	B	104	ASP
1	B	228	ALA
1	A	180	THR
1	A	564	LYS
1	A	68	LEU
1	B	183	LYS
1	B	563	GLU
1	A	69	ASP
1	A	228	ALA
1	A	525	PRO
1	B	182	GLY
1	A	226	ILE
1	B	442	PRO

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	543/566 (96%)	493 (91%)	50 (9%)	9 18
1	B	538/566 (95%)	499 (93%)	39 (7%)	14 28
All	All	1081/1132 (96%)	992 (92%)	89 (8%)	11 22

All (89) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	LEU
1	A	25	ASP
1	A	26	ARG
1	A	33	ASP
1	A	73	GLU
1	A	80	ARG
1	A	81	VAL
1	A	90	ASN
1	A	108	LYS
1	A	111	ASP
1	A	124	SER
1	A	126	ASN
1	A	142	SER
1	A	180	THR
1	A	181	HIS
1	A	202	LYS
1	A	237	VAL
1	A	239	ASN
1	A	249	MET
1	A	271	SER
1	A	284	ARG
1	A	314	ARG
1	A	320	ASN
1	A	345	ASN
1	A	349	VAL
1	A	385	GLU
1	A	391	LEU
1	A	419	LEU
1	A	429	ARG
1	A	434	LEU
1	A	442	PRO
1	A	444	LEU
1	A	452	GLU
1	A	458	PHE
1	A	464	ASN
1	A	468	GLU
1	A	469	ILE
1	A	471	GLU
1	A	472	VAL
1	A	476	THR
1	A	481	ARG
1	A	485	LEU
1	A	504	LEU

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Mol	Chain	Res	Type
1	A	542	LEU
1	A	543	LYS
1	A	547	LYS
1	A	551	GLU
1	A	578	MET
1	A	603	GLN
1	A	623	ARG
1	B	3	LEU
1	B	9	ARG
1	B	17	LYS
1	B	26	ARG
1	B	40	LYS
1	B	57	LEU
1	B	64	LYS
1	B	70	ARG
1	B	90	ASN
1	B	105	LEU
1	B	108	LYS
1	B	111	ASP
1	B	112	GLN
1	B	119	GLU
1	B	158	LYS
1	B	175	SER
1	B	180	THR
1	B	202	LYS
1	B	215	LEU
1	B	218	ASN
1	B	243	LEU
1	B	249	MET
1	B	257	LEU
1	B	284	ARG
1	B	289	ASN
1	B	345	ASN
1	B	450	ARG
1	B	458	PHE
1	B	464	ASN
1	B	476	THR
1	B	478	GLU
1	B	504	LEU
1	B	534	ARG
1	B	536	LYS
1	B	548	GLU

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Mol	Chain	Res	Type
1	B	550	ILE
1	B	561	VAL
1	B	563	GLU
1	B	596	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	35	ASN
1	A	126	ASN
1	A	239	ASN
1	A	320	ASN
1	A	345	ASN
1	A	355	GLN
1	A	359	GLN
1	A	464	ASN
1	A	496	ASN
1	A	531	GLN
1	B	203	GLN
1	B	218	ASN
1	B	239	ASN
1	B	345	ASN
1	B	359	GLN
1	B	426	HIS
1	B	464	ASN
1	B	496	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 6 ligands modelled in this entry, 2 are monoatomic - leaving 4 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	UDP	B	1002	-	24,26,26	1.85	5 (20%)	37,40,40	1.67	5 (13%)
4	DTP	B	1003	2	26,32,32	1.22	3 (11%)	30,50,50	1.66	5 (16%)
4	DTP	A	1004	2	26,32,32	1.21	2 (7%)	30,50,50	1.72	5 (16%)
3	UDP	A	1001	-	24,26,26	1.45	5 (20%)	37,40,40	1.77	5 (13%)

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	UDP	B	1002	-	-	3/16/32/32	0/2/2/2
4	DTP	B	1003	2	-	7/18/34/34	0/3/3/3
4	DTP	A	1004	2	-	9/18/34/34	0/3/3/3
3	UDP	A	1001	-	-	0/16/32/32	0/2/2/2

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1002	UDP	PB-O3B	4.65	1.72	1.54
3	B	1002	UDP	O4'-C1'	3.49	1.50	1.42
3	A	1001	UDP	O4'-C1'	3.09	1.49	1.42
3	B	1002	UDP	C2-N1	3.07	1.43	1.38
3	A	1001	UDP	PB-O3B	3.04	1.66	1.54
3	A	1001	UDP	PB-O2B	2.60	1.64	1.54
3	A	1001	UDP	C2-N1	2.32	1.42	1.38
4	B	1003	DTP	C5-N7	-2.23	1.31	1.39
3	B	1002	UDP	C6-N1	2.22	1.43	1.38
3	A	1001	UDP	C4-N3	2.17	1.42	1.38
4	A	1004	DTP	C5-N7	-2.12	1.32	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	1004	DTP	PG-O2G	-2.11	1.46	1.54
3	B	1002	UDP	C2-N3	2.07	1.41	1.38
4	B	1003	DTP	C4-N3	-2.01	1.32	1.35
4	B	1003	DTP	PG-O2G	-2.01	1.47	1.54

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	1001	UDP	C4-N3-C2	-6.20	118.40	126.58
3	B	1002	UDP	C4-N3-C2	-5.42	119.43	126.58
3	B	1002	UDP	C5-C4-N3	4.83	122.07	114.84
4	B	1003	DTP	PA-O3A-PB	-4.36	117.86	132.83
4	B	1003	DTP	N3-C2-N1	-4.31	121.94	128.68
3	A	1001	UDP	N3-C2-N1	4.23	120.51	114.89
4	A	1004	DTP	N3-C2-N1	-4.23	122.07	128.68
4	A	1004	DTP	C2'-C1'-N9	-4.12	104.77	114.27
3	A	1001	UDP	C5-C4-N3	4.10	120.97	114.84
4	B	1003	DTP	PB-O3B-PG	-4.01	119.08	132.83
4	A	1004	DTP	PB-O3B-PG	-3.86	119.59	132.83
4	A	1004	DTP	PA-O3A-PB	-3.47	120.91	132.83
3	A	1001	UDP	O4-C4-C5	-3.27	119.41	125.16
3	B	1002	UDP	O4-C4-C5	-2.98	119.92	125.16
3	B	1002	UDP	N3-C2-N1	2.93	118.78	114.89
4	B	1003	DTP	C2'-C1'-N9	-2.83	107.73	114.27
3	B	1002	UDP	O4'-C4'-C5'	-2.78	100.23	109.37
4	B	1003	DTP	O2G-PG-O1G	2.59	120.83	110.68
4	A	1004	DTP	O2G-PG-O1G	2.46	120.31	110.68
3	A	1001	UDP	O3B-PB-O2B	2.04	115.44	107.64

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	1002	UDP	C5'-O5'-PA-O1A
4	A	1004	DTP	PB-O3B-PG-O2G
4	A	1004	DTP	C5'-O5'-PA-O1A
4	B	1003	DTP	PB-O3B-PG-O3G
4	B	1003	DTP	C5'-O5'-PA-O1A
4	B	1003	DTP	C3'-C4'-C5'-O5'
4	B	1003	DTP	O4'-C4'-C5'-O5'
4	A	1004	DTP	C5'-O5'-PA-O3A
4	B	1003	DTP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
3	B	1002	UDP	C5'-O5'-PA-O2A
4	A	1004	DTP	C5'-O5'-PA-O2A
4	A	1004	DTP	O4'-C4'-C5'-O5'
4	A	1004	DTP	C3'-C4'-C5'-O5'
4	A	1004	DTP	PG-O3B-PB-O1B
4	B	1003	DTP	PB-O3B-PG-O1G
3	B	1002	UDP	C5'-O5'-PA-O3A
4	A	1004	DTP	PG-O3B-PB-O2B
4	A	1004	DTP	PA-O3A-PB-O1B
4	B	1003	DTP	C5'-O5'-PA-O2A

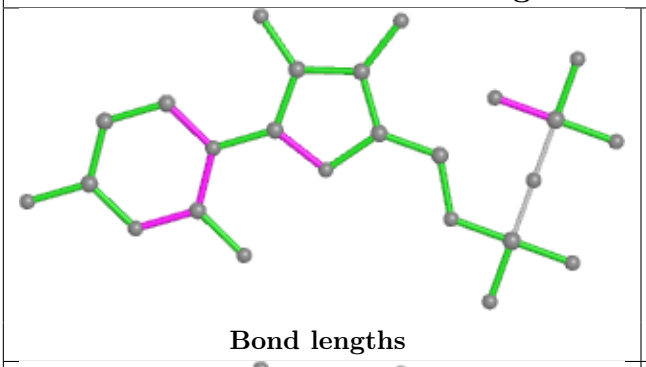
There are no ring outliers.

3 monomers are involved in 8 short contacts:

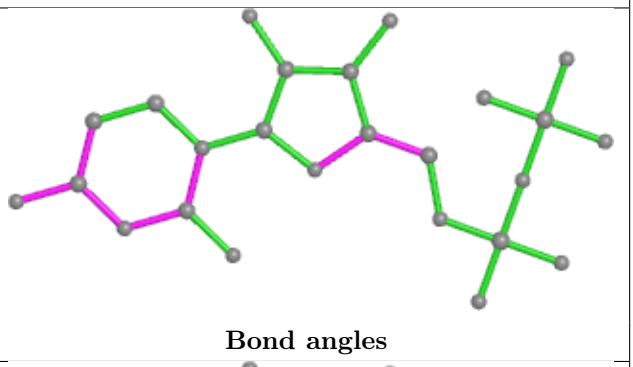
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	1002	UDP	2	0
4	B	1003	DTP	1	0
4	A	1004	DTP	5	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

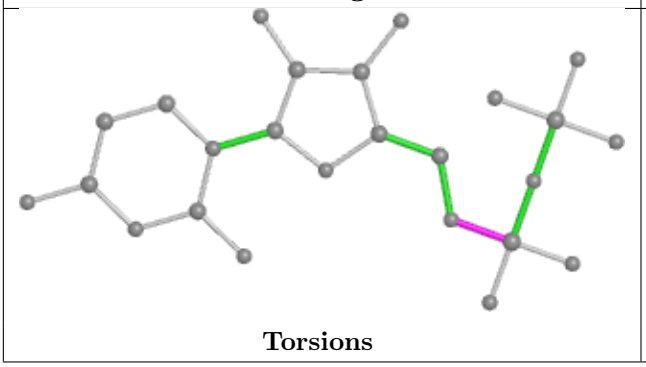
Ligand UDP B 1002



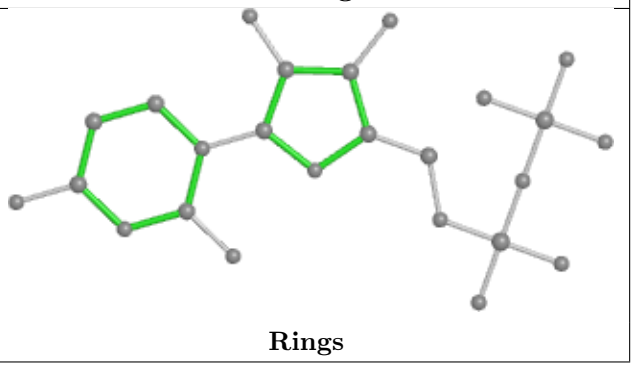
Bond lengths



Bond angles

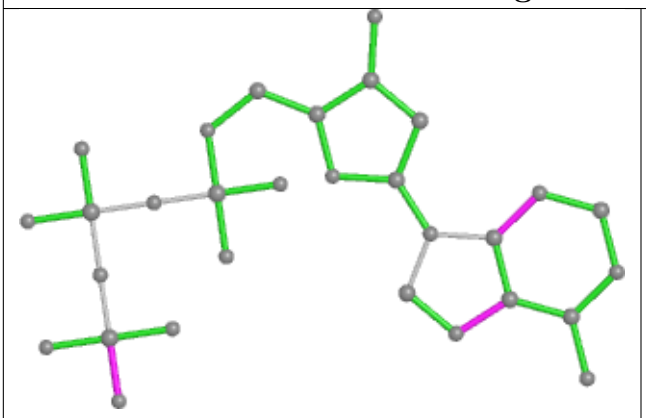


Torsions

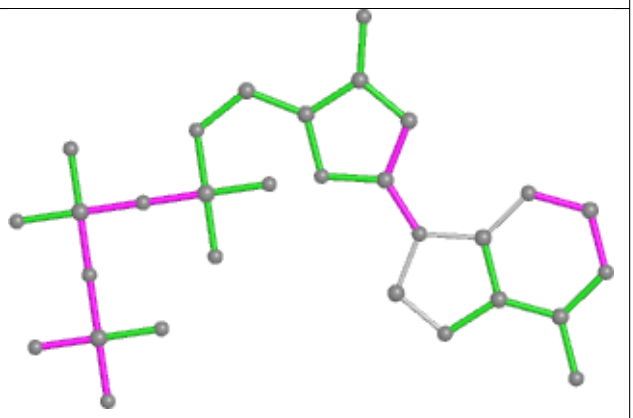


Rings

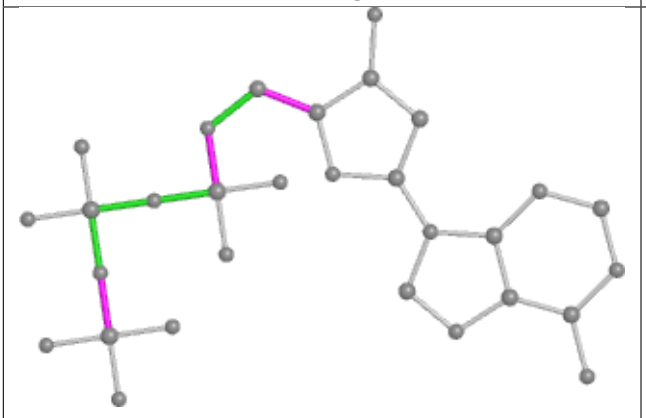
Ligand DTP B 1003



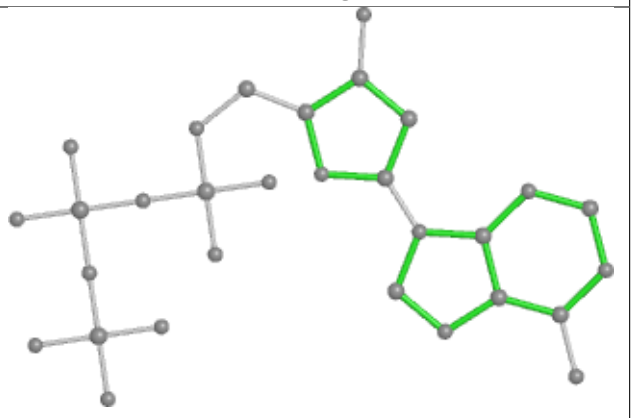
Bond lengths



Bond angles

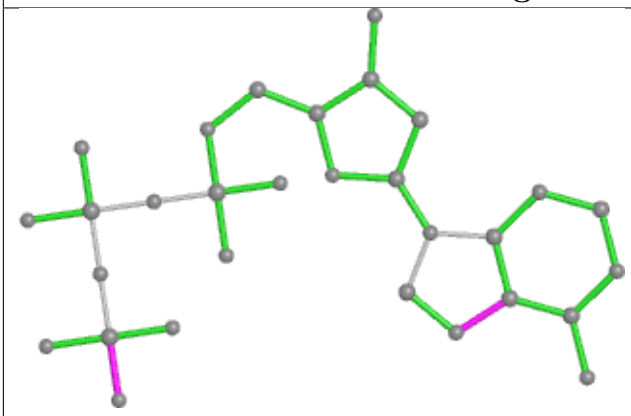


Torsions

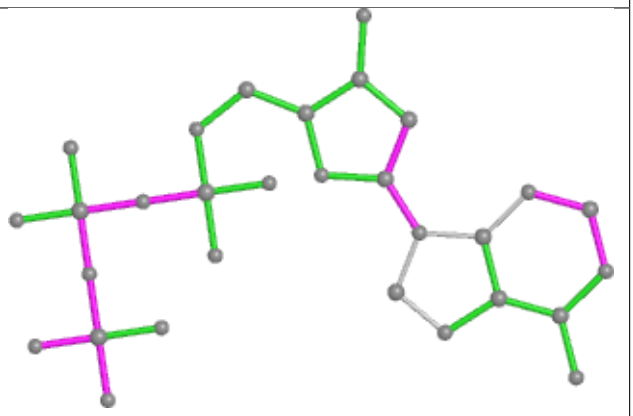


Rings

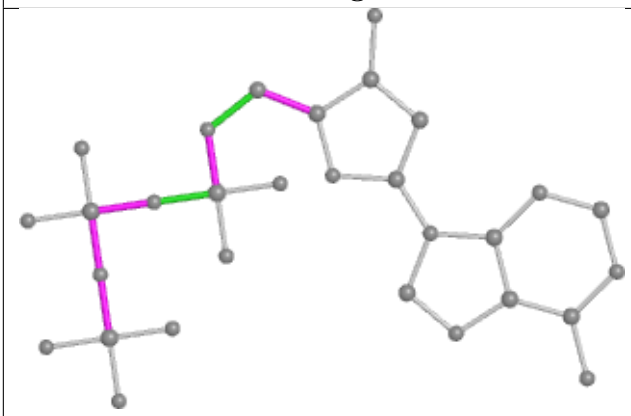
Ligand DTP A 1004



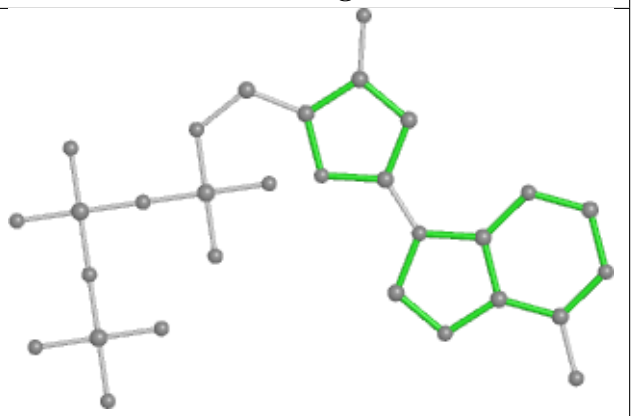
Bond lengths



Bond angles

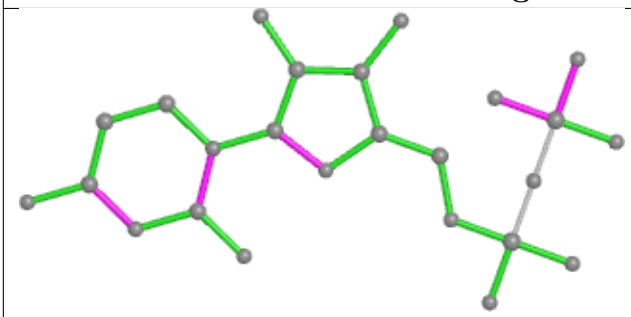


Torsions

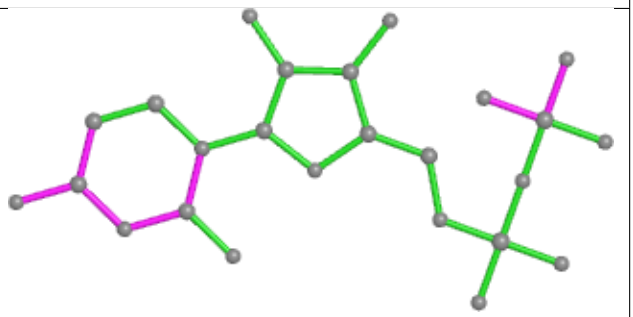


Rings

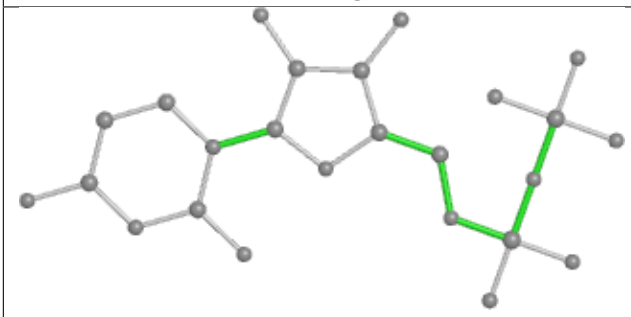
Ligand UDP A 1001



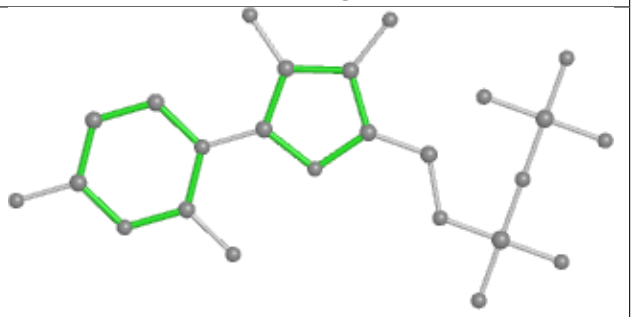
Bond lengths



Bond angles



Torsions



Rings

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, 95^{th} 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	615/644 (95%)	0.13	36 (5%)	22	23	31, 49, 76, 97	0
1	B	610/644 (94%)	0.04	17 (2%)	53	56	23, 42, 72, 86	0
All	All	1225/1288 (95%)	0.09	53 (4%)	35	38	23, 46, 75, 97	0

All (53) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	516	VAL	6.1
1	A	65	ASN	5.6
1	B	515	PHE	5.3
1	B	179	GLY	5.2
1	A	517	THR	4.8
1	A	515	PHE	4.6
1	B	527	LEU	4.3
1	A	179	GLY	4.3
1	A	34	GLY	4.0
1	B	514	ARG	4.0
1	A	182	GLY	3.9
1	A	32	LEU	3.7
1	A	526	LEU	3.6
1	A	525	PRO	3.6
1	B	178	ALA	3.6
1	A	523	LYS	3.5
1	A	524	GLU	3.4
1	A	63	LYS	3.1
1	A	527	LEU	3.0
1	B	540	GLU	3.0
1	A	33	ASP	2.8
1	A	245	VAL	2.7
1	A	184	ALA	2.7
1	A	312	PRO	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	273	ILE	2.7
1	A	62	TYR	2.6
1	A	150	VAL	2.6
1	B	528	TYR	2.5
1	A	69	ASP	2.5
1	A	176	PHE	2.5
1	A	68	LEU	2.5
1	A	246	GLY	2.5
1	B	45	ALA	2.5
1	B	183	LYS	2.4
1	A	560	ASP	2.4
1	A	364	PHE	2.4
1	A	183	LYS	2.4
1	B	245	VAL	2.3
1	B	531	GLN	2.3
1	B	484	ALA	2.3
1	B	21	ILE	2.3
1	A	311	TYR	2.3
1	A	633	LEU	2.3
1	A	551	GLU	2.2
1	B	32	LEU	2.2
1	B	297	GLY	2.2
1	B	35	ASN	2.2
1	A	365	LEU	2.2
1	A	178	ALA	2.1
1	B	36	TYR	2.1
1	A	181	HIS	2.1
1	A	313	HIS	2.0
1	A	389	LEU	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)

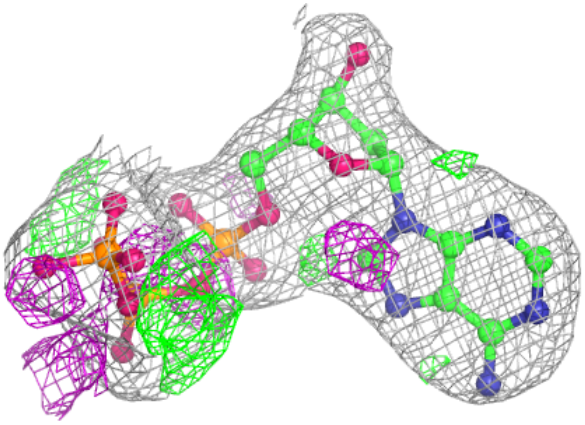
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

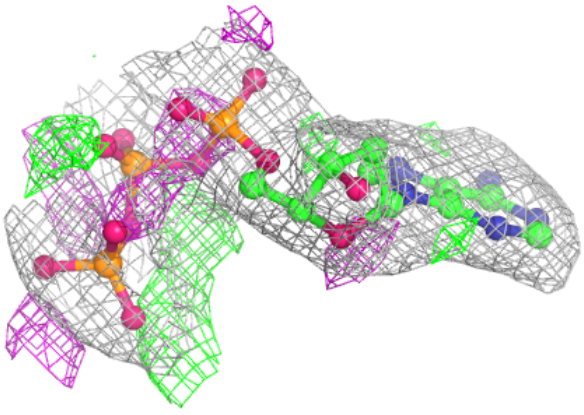
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	MG	A	1006	1/1	0.87	0.11	58,58,58,58	0
4	DTP	A	1004	30/30	0.91	0.13	48,56,58,58	0
3	UDP	A	1001	25/25	0.94	0.19	48,70,76,76	0
4	DTP	B	1003	30/30	0.94	0.11	40,48,66,68	0
2	MG	B	1005	1/1	0.96	0.09	71,71,71,71	0
3	UDP	B	1002	25/25	0.96	0.19	31,52,58,59	0

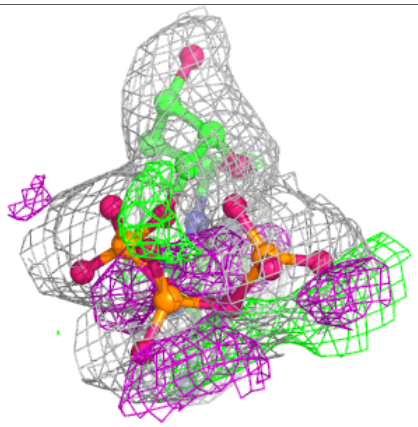
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around DTP A 1004:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

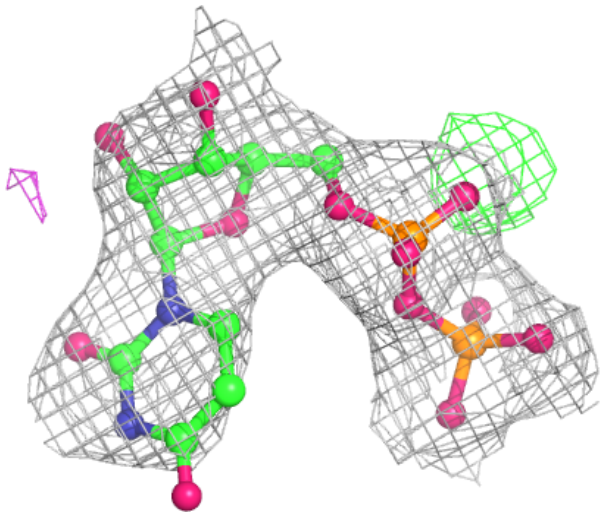


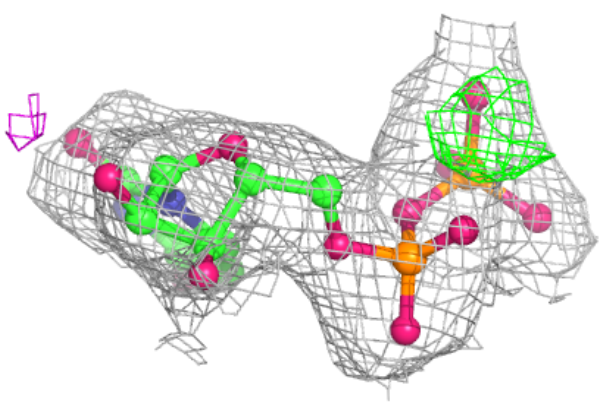


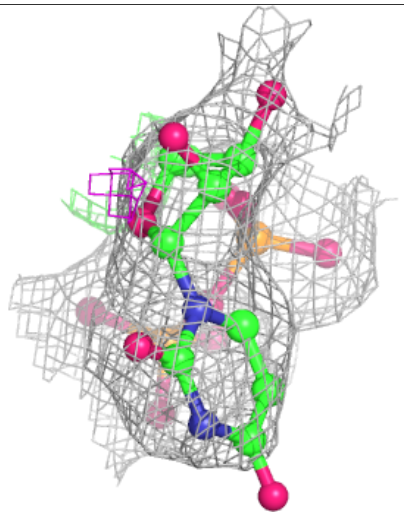


Electron density around UDP A 1001:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

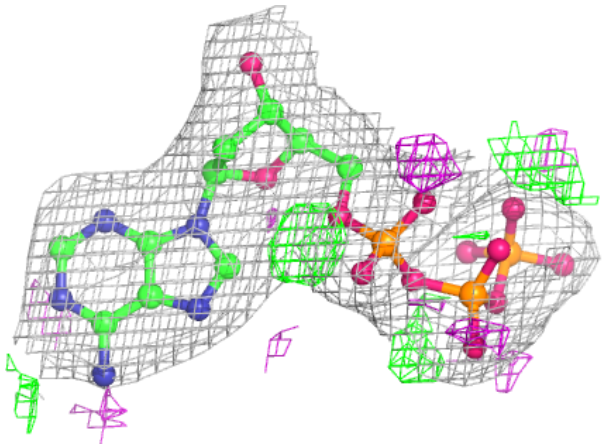


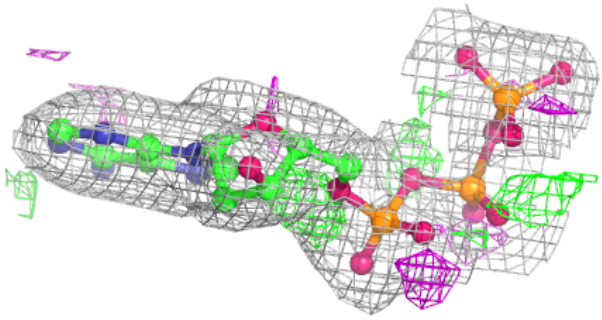


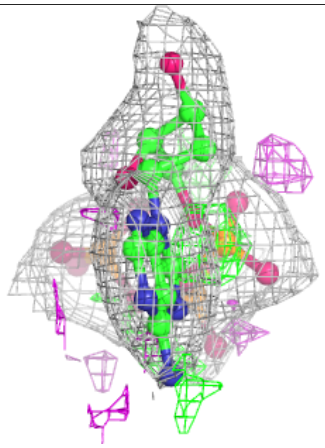


Electron density around DTP B 1003:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

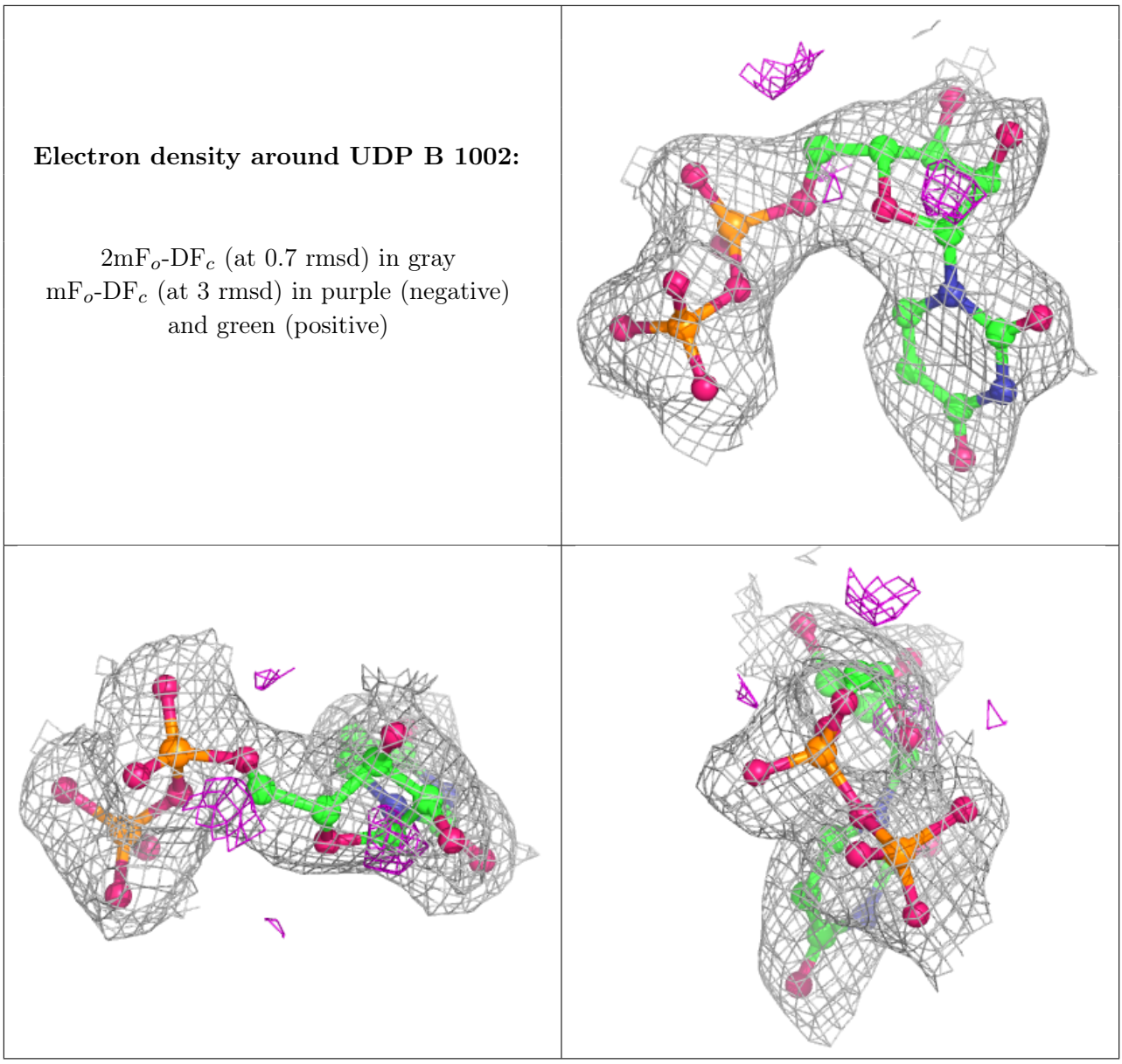






Electron density around UDP B 1002:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.