



Full wwPDB X-ray Structure Validation Report ⓘ

Jul 20, 2026 – 09:15 PM JST

PDB ID : 9VZ1 / pdb_00009vz1
Title : Crystal structure of T2R-TTL-Tz16 complex
Authors : Tan, L.; Wang, Y.X.
Deposited on : 2025-07-21
Resolution : 2.38 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	:	4-5-2 with Phenix2.0
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

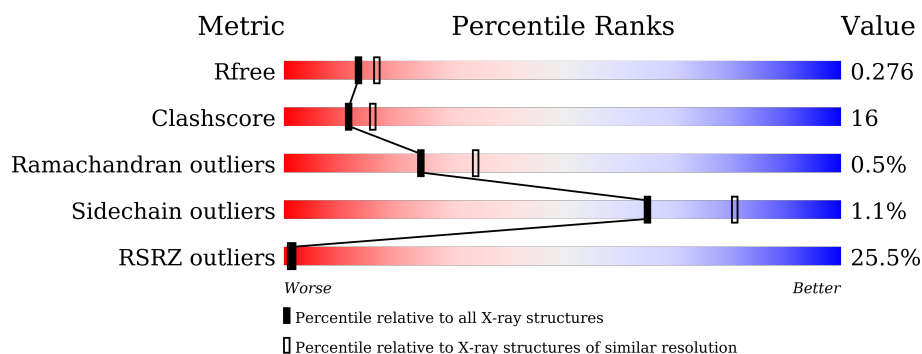
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.38 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}	180053	7164 (2.40-2.36)
Clashscore	190562	7722 (2.40-2.36)
Ramachandran outliers	187476	7626 (2.40-2.36)
Sidechain outliers	187428	7627 (2.40-2.36)
RSRZ outliers	180081	7170 (2.40-2.36)

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 $\leq 5\%$. 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	440	9% 74% 25% .
1	C	440	6% 78% 21% .
2	B	431	11% 71% 27% ..
2	D	431	56% 62% 35% ..
3	E	136	26% 60% 29% . 11%
4	F	380	43% 54% 32% . 13%

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
10	A1EU2	B	505	-	X	-	-

2 Entry composition

There are 11 unique types of molecules in this entry. The entry contains 17437 atoms, of which 32 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 Detyrosinated tubulin alpha-1B chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	437	Total	C	N	O	S	0	0	0
			3405	2154	580	649	22			
1	C	440	Total	C	N	O	S	0	0	0
			3433	2172	583	656	22			

- Molecule 2 is a protein called Tubulin beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	427	Total	C	N	O	S	0	0	0
			3351	2104	572	649	26			
2	D	421	Total	C	N	O	S	0	0	0
			3300	2076	559	638	27			

- Molecule 3 is a protein called Stathmin-4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	121	Total	C	N	O	S	0	0	0
			1000	617	181	197	5			

- Molecule 4 is a protein called Tubulin-tyrosine ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	F	332	Total	C	N	O	S	0	0	0
			2713	1740	466	493	14			

There are 35 discrepancies between the modelled and reference sequences:

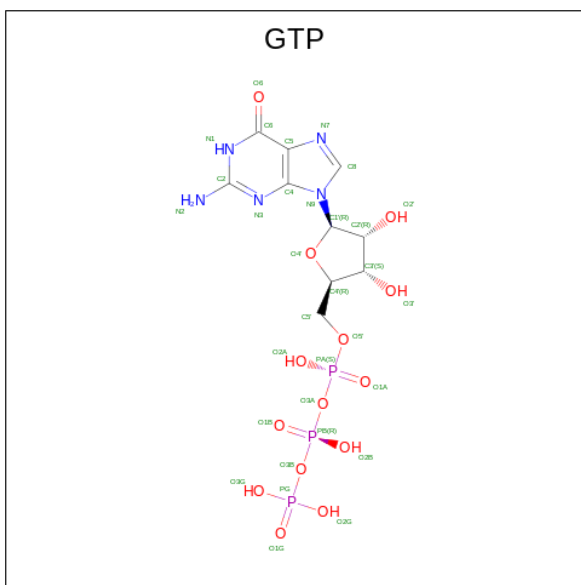
Chain	Residue	Modelled	Actual	Comment	Reference
F	?	-	ALA	deletion	UNP A0A8V0Z8P0
F	?	-	GLU	deletion	UNP A0A8V0Z8P0
F	?	-	MET	deletion	UNP A0A8V0Z8P0
F	?	-	GLN	deletion	UNP A0A8V0Z8P0

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Chain	Residue	Modelled	Actual	Comment	Reference
F	?	-	GLN	deletion	UNP A0A8V0Z8P0
F	?	-	GLN	deletion	UNP A0A8V0Z8P0
F	?	-	LEU	deletion	UNP A0A8V0Z8P0
F	?	-	LEU	deletion	UNP A0A8V0Z8P0
F	?	-	GLU	deletion	UNP A0A8V0Z8P0
F	?	-	GLY	deletion	UNP A0A8V0Z8P0
F	?	-	ASP	deletion	UNP A0A8V0Z8P0
F	?	-	GLN	deletion	UNP A0A8V0Z8P0
F	?	-	THR	deletion	UNP A0A8V0Z8P0
F	?	-	LEU	deletion	UNP A0A8V0Z8P0
F	?	-	VAL	deletion	UNP A0A8V0Z8P0
F	?	-	LEU	deletion	UNP A0A8V0Z8P0
F	?	-	ALA	deletion	UNP A0A8V0Z8P0
F	?	-	SER	deletion	UNP A0A8V0Z8P0
F	?	-	SER	deletion	UNP A0A8V0Z8P0
F	?	-	THR	deletion	UNP A0A8V0Z8P0
F	?	-	HIS	deletion	UNP A0A8V0Z8P0
F	?	-	PRO	deletion	UNP A0A8V0Z8P0
F	?	-	GLU	deletion	UNP A0A8V0Z8P0
F	?	-	SER	deletion	UNP A0A8V0Z8P0
F	?	-	VAL	deletion	UNP A0A8V0Z8P0
F	?	-	ASP	deletion	UNP A0A8V0Z8P0
F	?	-	SER	deletion	UNP A0A8V0Z8P0
F	?	-	ASP	deletion	UNP A0A8V0Z8P0
F	?	-	LYS	deletion	UNP A0A8V0Z8P0
F	?	-	ASN	deletion	UNP A0A8V0Z8P0
F	?	-	HIS	deletion	UNP A0A8V0Z8P0
F	?	-	GLY	deletion	UNP A0A8V0Z8P0
F	?	-	PHE	deletion	UNP A0A8V0Z8P0
F	379	HIS	-	expression tag	UNP A0A8V0Z8P0
F	380	HIS	-	expression tag	UNP A0A8V0Z8P0

- Molecule 5 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



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

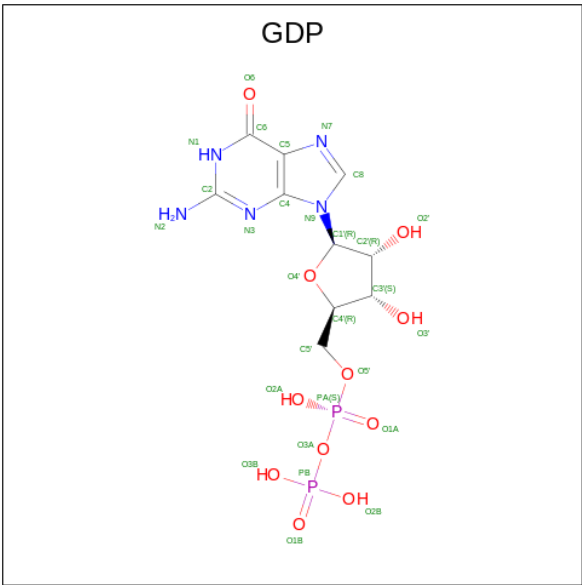
- Molecule 6 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total Ca 1 1	1	0
6	C	1	Total Ca 1 1	1	0

- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

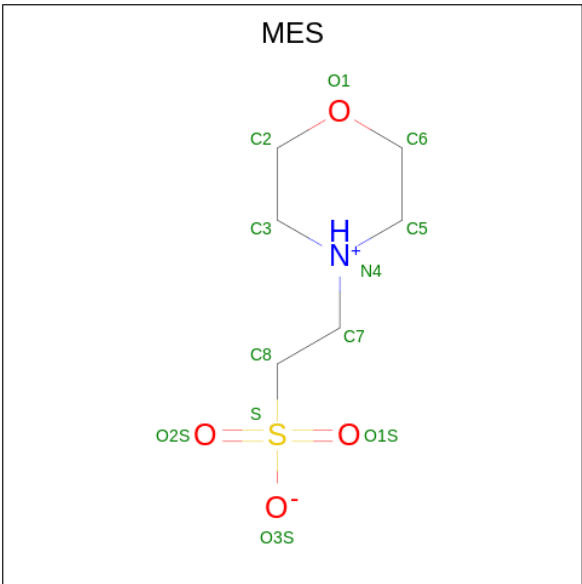
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total Mg 1 1	1	0
7	B	1	Total Mg 1 1	1	0
7	C	1	Total Mg 1 1	1	0

- Molecule 8 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
8	B	1	Total	C	N	O	P	28	0
			28	10	5	11	2		
8	D	1	Total	C	N	O	P	28	0
			28	10	5	11	2		

- Molecule 9 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (CCD ID: MES) (formula: C₆H₁₃NO₄S).



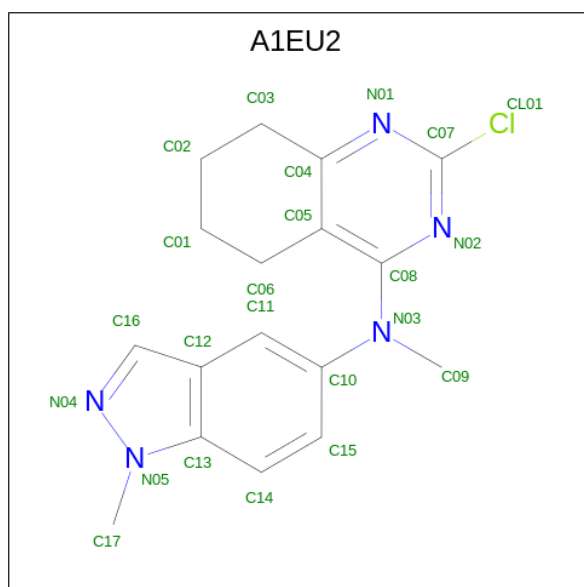
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
9	B	1	Total	C	N	O	S	12	0
			12	6	1	4	1		

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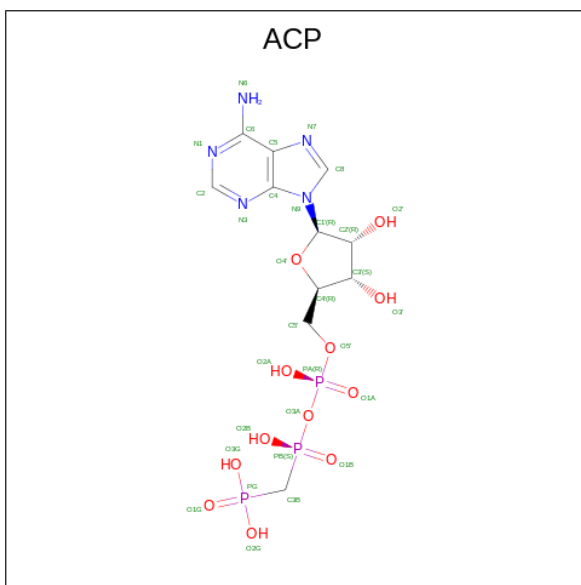
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
9	B	1	Total	C	N	O	S	12	0
			12	6	1	4	1		

- Molecule 10 is 2-chloranyl- {N}-methyl- {N}-(1-methylindazol-5-yl)-5,6,7,8-tetrahydroquinazolin-4-amine (CCD ID: A1EU2) (formula: C₁₇H₁₈ClN₅) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
10	B	1	Total	C	Cl	H	N	0	0
			41	17	1	18	5		

- Molecule 11 is PHOSPHOMETHYLPHOSPHONIC ACID ADENYLATE ESTER (CCD ID: ACP) (formula: C₁₁H₁₈N₅O₁₂P₃).

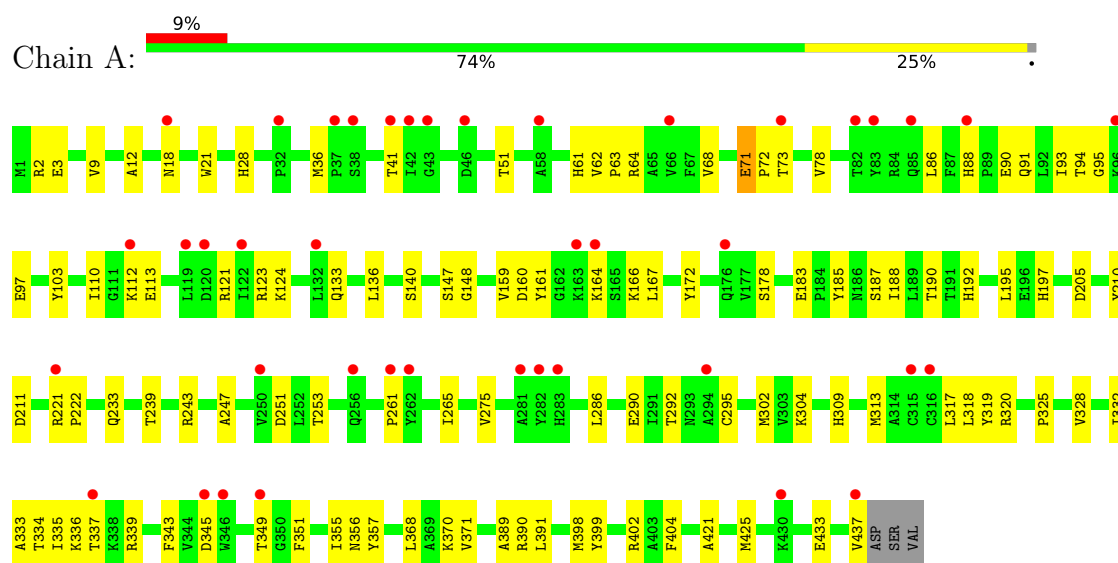


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
11	F	1	Total	C	H	N	O	P	45	0
			45	11	14	5	12	3		

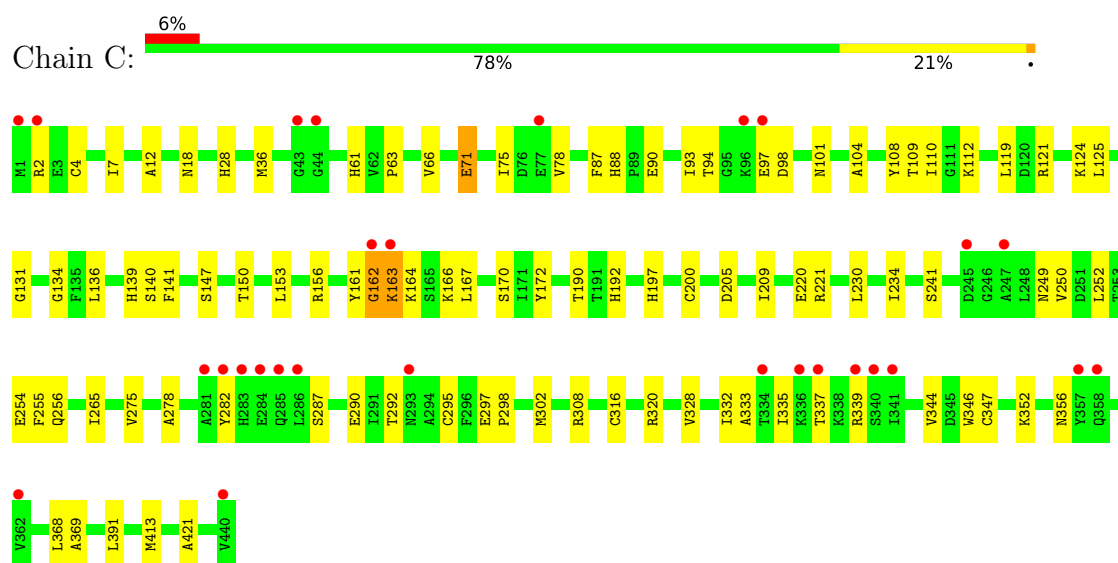
3 Residue-property plots [i](#)

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.

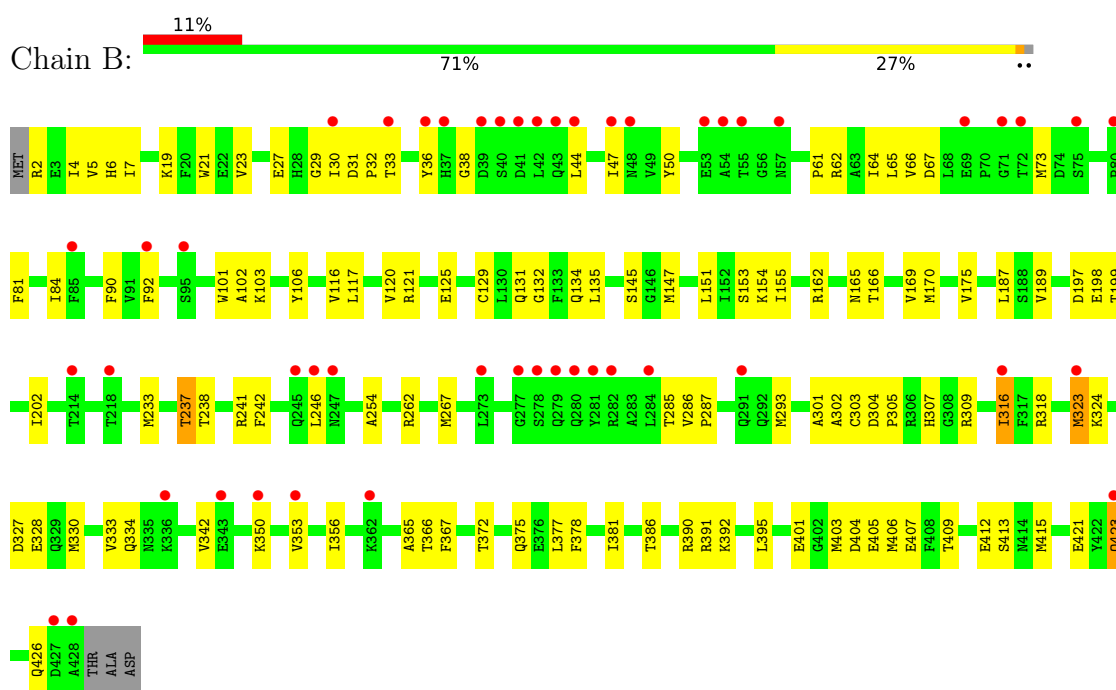
- Molecule 1: Detyrosinated tubulin alpha-1B chain



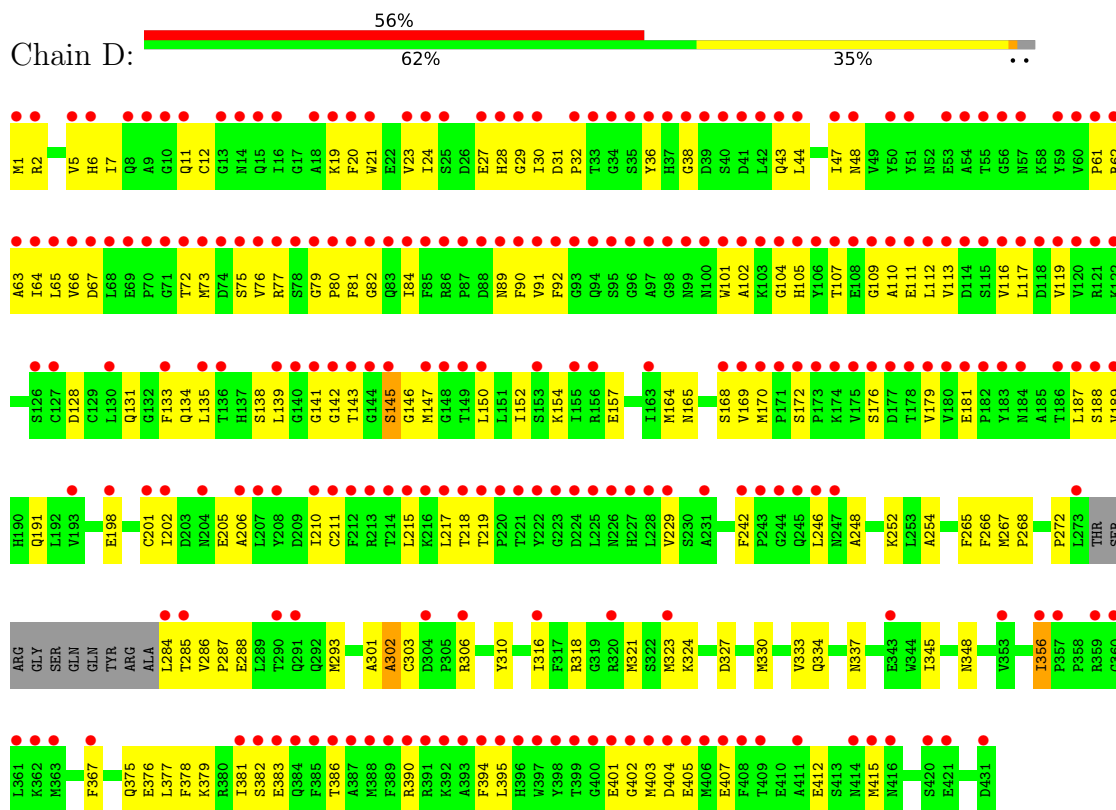
- Molecule 1: Detyrosinated tubulin alpha-1B chain



- Molecule 2: Tubulin beta chain

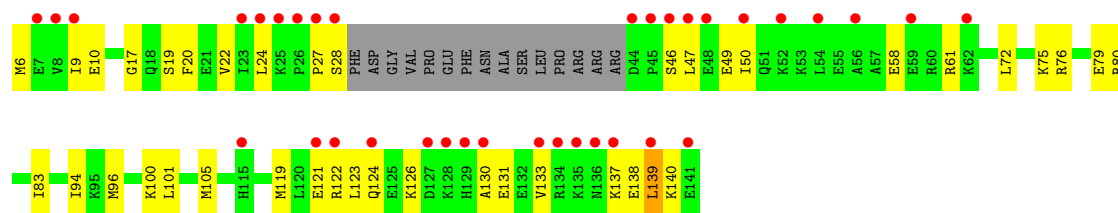


• Molecule 2: Tubulin beta chain

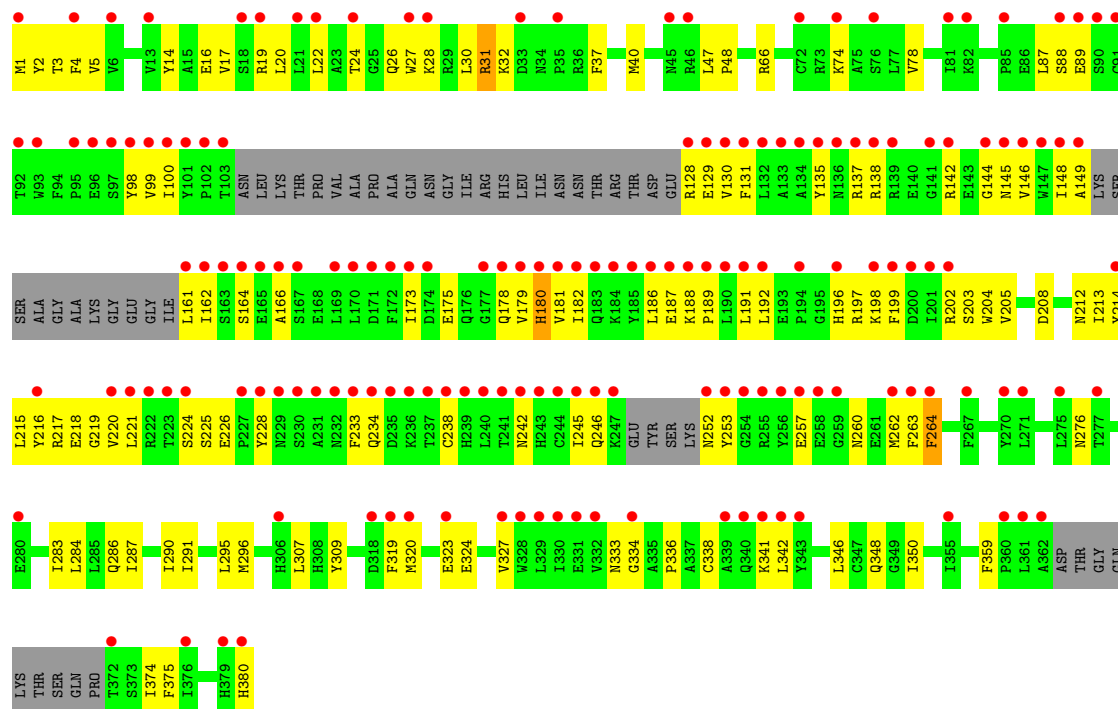
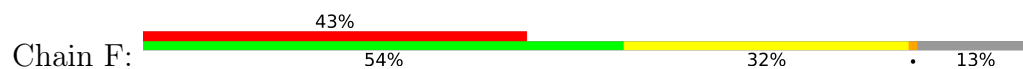


• Molecule 3: Stathmin-4





● Molecule 4: Tubulin-tyrosine ligase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	105.41Å 157.82Å 180.64Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	59.63 – 2.38 59.63 – 2.38	Depositor EDS
% Data completeness (in resolution range)	97.6 (59.63-2.38) 97.6 (59.63-2.38)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.73 (at 2.37Å)	Xtriage
Refinement program	PHENIX (???)	Depositor
R, R_{free}	0.252 , 0.275 0.253 , 0.276	Depositor DCC
R_{free} test set	5891 reflections (4.86%)	wwPDB-VP
Wilson B-factor (Å ²)	52.4	Xtriage
Anisotropy	0.129	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 34.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	17437	wwPDB-VP
Average B, all atoms (Å ²)	62.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.70% 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, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, A1EU2, GDP, GTP, MES, ACP, CA

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	0.28	0/3482	0.41	0/4728
1	C	0.30	0/3511	0.41	0/4768
2	B	0.27	0/3426	0.39	0/4643
2	D	0.21	0/3373	0.37	0/4570
3	E	0.23	0/1008	0.34	0/1337
4	F	0.18	0/2775	0.31	0/3752
All	All	0.25	0/17575	0.38	0/23798

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3405	0	3312	93	0
1	C	3433	0	3337	66	1
2	B	3351	0	3216	106	1
2	D	3300	0	3176	151	1
3	E	1000	0	1018	43	0
4	F	2713	0	2659	115	1
5	A	32	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	C	32	0	12	0	0
6	A	1	0	0	0	0
6	C	1	0	0	0	0
7	A	1	0	0	0	0
7	B	1	0	0	0	0
7	C	1	0	0	0	0
8	B	28	0	12	0	0
8	D	28	0	12	0	0
9	B	24	0	26	0	0
10	B	23	18	0	4	0
11	F	31	14	14	0	0
All	All	17405	32	16806	544	2

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 16.

All (544) 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)
2:B:170:MET:HE2	2:B:377:LEU:HD21	1.45	0.98
4:F:221:LEU:HD22	4:F:262:MET:HE3	1.46	0.98
1:A:399:TYR:O	1:A:402:ARG:NH1	1.98	0.97
2:D:395:LEU:HD21	2:D:405:GLU:HG2	1.50	0.94
2:B:309:ARG:HH21	2:B:342:VAL:HA	1.34	0.91
1:A:90:GLU:OE1	1:A:124:LYS:NZ	2.04	0.91
1:A:72:PRO:HB3	1:A:94:THR:HG21	1.53	0.89
2:B:323:MET:HE3	2:B:353:VAL:HG11	1.55	0.89
2:B:392:LYS:HE3	2:B:405:GLU:OE2	1.74	0.87
1:A:112:LYS:NZ	1:A:113:GLU:OE2	2.07	0.87
2:D:141:GLY:O	2:D:143:THR:N	2.07	0.87
2:D:272:PRO:HB3	2:D:284:LEU:HD21	1.58	0.83
1:A:239:THR:OG1	1:A:243:ARG:NH1	2.11	0.83
4:F:138:ARG:NH1	4:F:144:GLY:O	2.12	0.82
1:A:166:LYS:NZ	1:A:197:HIS:O	2.12	0.81
2:D:176:SER:OG	2:D:181:GLU:OE1	1.97	0.81
2:D:134:GLN:HA	2:D:165:ASN:O	1.80	0.81
4:F:137:ARG:O	4:F:137:ARG:NH1	2.12	0.80
2:D:66:VAL:HG12	2:D:147:MET:HE1	1.62	0.80
2:B:66:VAL:HG12	2:B:147:MET:HE1	1.62	0.80
4:F:242:ASN:HB2	4:F:245:ILE:HB	1.62	0.80
2:D:401:GLU:HA	3:E:137:LYS:HD2	1.62	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:145:SER:OG	2:D:188:SER:OG	1.88	0.79
2:B:262:ARG:NH1	2:B:421:GLU:OE1	2.16	0.79
4:F:186:LEU:HD12	4:F:320:MET:HG2	1.66	0.78
2:D:145:SER:HG	2:D:188:SER:HG	1.07	0.78
3:E:6:MET:HE2	3:E:24:LEU:HD22	1.65	0.77
2:D:73:MET:HE3	2:D:90:PHE:HD2	1.48	0.76
1:C:254:GLU:HG2	1:C:352:LYS:HE2	1.68	0.75
2:D:80:PRO:O	2:D:81:PHE:HB2	1.84	0.75
4:F:192:LEU:HD21	4:F:262:MET:HE1	1.68	0.75
2:B:378:PHE:HD1	2:B:415:MET:HE2	1.53	0.74
2:B:406:MET:HE3	2:B:409:THR:HB	1.68	0.74
2:D:44:LEU:HA	2:D:47:ILE:HB	1.68	0.74
2:D:1:MET:HE3	2:D:128:ASP:HB2	1.70	0.73
2:B:323:MET:HE3	2:B:353:VAL:CG1	2.18	0.73
2:D:285:THR:HG23	2:D:288:GLU:H	1.54	0.73
1:A:88:HIS:N	1:A:91:GLN:OE1	2.20	0.72
2:B:238:THR:HG21	2:B:316:ILE:HD11	1.71	0.72
4:F:186:LEU:HD12	4:F:320:MET:CG	2.20	0.71
4:F:19:ARG:CD	4:F:20:LEU:HD12	2.20	0.70
1:A:343:PHE:HB2	1:A:349:THR:HG22	1.71	0.70
2:B:81:PHE:O	2:B:84:ILE:HG22	1.92	0.70
2:D:65:LEU:HD23	2:D:76:VAL:HG11	1.73	0.69
2:B:233:MET:O	2:B:237:THR:OG1	2.11	0.69
2:D:21:TRP:CZ3	2:D:61:PRO:HB3	2.28	0.69
2:D:272:PRO:HB3	2:D:284:LEU:CD2	2.23	0.69
3:E:96:MET:O	3:E:100:LYS:HD3	1.93	0.68
4:F:135:TYR:OH	4:F:164:SER:O	2.10	0.68
1:A:161:TYR:HB3	1:A:164:LYS:CG	2.22	0.68
1:C:97:GLU:O	1:C:110:ILE:HG21	1.94	0.68
2:B:134:GLN:HA	2:B:165:ASN:O	1.94	0.68
2:B:170:MET:HG3	2:B:377:LEU:HD11	1.75	0.68
4:F:100:ILE:HD12	4:F:128:ARG:N	2.09	0.67
1:C:93:ILE:HD11	1:C:121:ARG:HG3	1.76	0.67
4:F:225:SER:HB3	4:F:252:ASN:HB3	1.76	0.67
2:D:6:HIS:CD2	2:D:21:TRP:HE1	2.13	0.67
1:C:250:VAL:HG11	1:C:352:LYS:HE3	1.77	0.67
1:A:221:ARG:HH21	2:B:323:MET:HE2	1.58	0.66
1:A:161:TYR:HB3	1:A:164:LYS:HG2	1.77	0.66
1:A:233:GLN:HG3	1:A:368:LEU:CD1	2.24	0.66
2:B:189:VAL:HG11	2:B:415:MET:HE3	1.76	0.66
3:E:101:LEU:O	3:E:105:MET:HG2	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:166:LYS:HE2	1:C:197:HIS:O	1.96	0.66
4:F:144:GLY:HA3	4:F:187:GLU:OE1	1.95	0.66
1:A:63:PRO:HD3	1:A:86:LEU:HG	1.79	0.65
2:D:73:MET:HE3	2:D:90:PHE:CD2	2.30	0.65
4:F:138:ARG:HB3	4:F:145:ASN:OD1	1.95	0.65
1:A:265:ILE:HG21	1:A:313:MET:HE1	1.79	0.65
4:F:5:VAL:HG12	4:F:30:LEU:HB2	1.79	0.65
1:C:221:ARG:HD2	2:D:327:ASP:OD2	1.97	0.65
2:B:189:VAL:CB	2:B:415:MET:HE3	2.26	0.65
3:E:121:GLU:O	3:E:124:GLN:HG3	1.96	0.65
3:E:58:GLU:HG3	3:E:61:ARG:NH2	2.11	0.65
4:F:31:ARG:NH2	4:F:32:LYS:HG3	2.11	0.65
2:D:66:VAL:CG1	2:D:147:MET:HE1	2.27	0.64
2:D:20:PHE:CZ	2:D:24:ILE:HD13	2.31	0.64
2:D:395:LEU:HD21	2:D:405:GLU:CG	2.24	0.64
1:A:97:GLU:O	1:A:110:ILE:HD13	1.98	0.64
1:A:333:ALA:O	1:A:337:THR:HG23	1.98	0.64
1:C:221:ARG:NE	2:D:323:MET:HB3	2.12	0.64
1:A:172:TYR:HB3	1:A:205:ASP:HA	1.79	0.64
2:B:189:VAL:HG21	2:B:415:MET:CE	2.28	0.64
2:B:378:PHE:CD1	2:B:415:MET:HE2	2.32	0.64
4:F:221:LEU:HD22	4:F:262:MET:CE	2.25	0.64
3:E:46:SER:O	3:E:50:ILE:HG12	1.97	0.64
1:A:123:ARG:HH22	1:A:160:ASP:HB3	1.63	0.63
3:E:130:ALA:O	3:E:133:VAL:HG12	1.97	0.63
4:F:74:LYS:HB3	4:F:181:VAL:HG11	1.80	0.63
4:F:188:LYS:HD3	4:F:323:GLU:OE1	1.97	0.63
2:B:66:VAL:CG1	2:B:147:MET:HE1	2.28	0.63
1:C:333:ALA:O	1:C:337:THR:HG23	1.99	0.63
1:A:133:GLN:OE1	1:A:251:ASP:HA	1.99	0.63
2:B:21:TRP:CZ3	2:B:61:PRO:HB3	2.34	0.62
2:B:350:LYS:HB2	10:B:505:A1EU2:C16	2.29	0.62
1:A:71:GLU:HG2	1:A:72:PRO:N	2.12	0.62
2:D:189:VAL:HG11	2:D:415:MET:HE3	1.81	0.62
2:D:107:THR:O	2:D:111:GLU:HG3	1.98	0.62
1:A:210:TYR:OH	1:A:221:ARG:HG3	1.99	0.62
1:C:28:HIS:O	1:C:36:MET:HE3	1.99	0.62
4:F:214:TYR:HB3	4:F:375:PHE:HB3	1.81	0.62
2:B:395:LEU:HD21	2:B:405:GLU:HG2	1.82	0.61
2:D:1:MET:HE3	2:D:128:ASP:CB	2.30	0.61
1:A:345:ASP:HB2	3:E:28:SER:HB2	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:213:ILE:CD1	4:F:296:MET:HE2	2.31	0.61
2:D:285:THR:HG22	2:D:288:GLU:CG	2.29	0.61
1:C:241:SER:HA	1:C:249:ASN:OD1	2.00	0.61
2:B:2:ARG:HB3	2:B:131:GLN:CG	2.30	0.61
1:C:278:ALA:HA	1:C:369:ALA:HB2	1.83	0.61
3:E:46:SER:HB3	3:E:49:GLU:HG3	1.82	0.61
2:B:330:MET:O	2:B:334:GLN:HG3	2.00	0.61
1:A:370:LYS:HD3	1:A:371:VAL:N	2.15	0.61
4:F:19:ARG:HD3	4:F:20:LEU:HD12	1.82	0.61
2:D:301:ALA:O	2:D:303:CYS:N	2.34	0.61
4:F:19:ARG:HD2	4:F:20:LEU:HD12	1.83	0.61
2:D:73:MET:CE	2:D:90:PHE:HB3	2.31	0.60
2:D:77:ARG:O	2:D:82:GLY:HA3	2.01	0.60
2:D:293:MET:CG	2:D:367:PHE:HB2	2.31	0.60
4:F:192:LEU:HD21	4:F:262:MET:CE	2.31	0.60
2:D:63:ALA:O	2:D:64:ILE:HD13	2.02	0.60
4:F:135:TYR:CD2	4:F:166:ALA:HB2	2.37	0.60
4:F:31:ARG:NH1	4:F:31:ARG:HA	2.17	0.60
2:B:386:THR:HG22	2:B:412:GLU:OE2	2.01	0.60
4:F:4:PHE:HB3	4:F:27:TRP:CZ3	2.37	0.60
1:C:249:ASN:OD1	1:C:356:ASN:ND2	2.30	0.60
1:A:97:GLU:HG3	2:B:2:ARG:NH1	2.18	0.59
4:F:3:THR:HG22	4:F:28:LYS:HG3	1.85	0.59
2:B:117:LEU:HD11	2:B:154:LYS:HD3	1.83	0.59
2:D:172:SER:OG	2:D:205:GLU:HB2	2.03	0.59
2:B:285:THR:HB	2:B:287:PRO:HD2	1.83	0.59
1:C:101:ASN:ND2	2:D:252:LYS:HE2	2.18	0.59
2:D:102:ALA:HB2	2:D:403:MET:SD	2.42	0.59
2:D:170:MET:HE2	2:D:377:LEU:HD21	1.84	0.59
3:E:58:GLU:HG3	3:E:61:ARG:HH21	1.68	0.59
1:A:112:LYS:HE2	3:E:61:ARG:HH22	1.68	0.59
2:B:189:VAL:CG1	2:B:415:MET:HE3	2.32	0.58
2:D:20:PHE:CE1	2:D:24:ILE:HG21	2.38	0.58
2:D:211:CYS:HA	2:D:215:LEU:HB2	1.86	0.58
4:F:197:ARG:HH22	4:F:257:GLU:CD	2.11	0.58
2:D:1:MET:HG3	2:D:128:ASP:HB3	1.86	0.58
2:D:65:LEU:CD2	2:D:76:VAL:HG11	2.33	0.58
2:B:6:HIS:CD2	2:B:21:TRP:HE1	2.21	0.57
2:B:73:MET:HE3	2:B:90:PHE:HD2	1.68	0.57
2:B:166:THR:OG1	2:B:199:THR:HG22	2.03	0.57
2:D:91:VAL:HG11	2:D:116:VAL:HG22	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:330:MET:O	2:D:334:GLN:HG3	2.04	0.57
4:F:31:ARG:HH21	4:F:32:LYS:HG3	1.69	0.57
4:F:208:ASP:OD2	4:F:212:ASN:HB2	2.04	0.57
4:F:37:PHE:CZ	4:F:40:MET:HE3	2.39	0.57
4:F:224:SER:OG	4:F:238:CYS:HA	2.05	0.57
4:F:135:TYR:CE1	4:F:145:ASN:HB3	2.40	0.57
2:D:67:ASP:O	2:D:92:PHE:HA	2.05	0.56
2:B:67:ASP:O	2:B:92:PHE:HA	2.05	0.56
1:A:433:GLU:O	1:A:437:VAL:HG23	2.06	0.56
4:F:20:LEU:O	4:F:24:THR:HG23	2.06	0.56
4:F:205:VAL:HG21	4:F:291:ILE:HD13	1.88	0.56
2:B:293:MET:HE2	2:B:367:PHE:HB2	1.86	0.56
2:D:404:ASP:OD1	2:D:405:GLU:N	2.39	0.56
1:A:211:ASP:OD2	1:A:304:LYS:NZ	2.29	0.56
2:B:350:LYS:HB2	10:B:505:A1EU2:N04	2.21	0.56
4:F:286:GLN:O	4:F:290:ILE:HG13	2.05	0.56
1:A:93:ILE:HD11	1:A:121:ARG:HG3	1.87	0.56
1:C:108:TYR:O	1:C:112:LYS:HG2	2.05	0.56
2:D:21:TRP:CH2	2:D:61:PRO:HB3	2.40	0.56
4:F:135:TYR:HE1	4:F:145:ASN:HB3	1.70	0.56
2:D:105:HIS:O	2:D:150:LEU:HD22	2.06	0.56
2:B:316:ILE:HG23	2:B:366:THR:HB	1.87	0.56
1:A:21:TRP:CZ3	1:A:63:PRO:HB3	2.40	0.55
1:A:302:MET:N	1:A:302:MET:HE2	2.21	0.55
3:E:6:MET:HG3	3:E:24:LEU:CD2	2.37	0.55
1:A:221:ARG:HD2	2:B:327:ASP:OD2	2.06	0.55
2:D:29:GLY:C	2:D:30:ILE:HD12	2.31	0.55
1:A:247:ALA:HB3	3:E:19:SER:OG	2.07	0.55
1:A:187:SER:HB3	1:A:391:LEU:HD21	1.87	0.55
1:C:141:PHE:CE1	1:C:170:SER:HB3	2.41	0.55
2:D:7:ILE:O	2:D:135:LEU:HD12	2.06	0.55
1:C:252:LEU:O	1:C:256:GLN:HG3	2.06	0.55
2:D:72:THR:O	2:D:76:VAL:HG23	2.07	0.55
4:F:213:ILE:HD11	4:F:296:MET:HE2	1.89	0.55
4:F:98:TYR:O	4:F:181:VAL:HG23	2.06	0.55
1:C:88:HIS:CE1	1:C:90:GLU:HG3	2.42	0.55
1:C:298:PRO:HG2	1:C:308:ARG:NH2	2.21	0.55
1:A:36:MET:HB3	1:A:61:HIS:CE1	2.42	0.54
1:A:88:HIS:CE1	1:A:90:GLU:HG3	2.42	0.54
1:A:221:ARG:NE	2:B:323:MET:HB3	2.22	0.54
2:D:267:MET:HG2	2:D:301:ALA:HB3	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:187:SER:CB	1:A:391:LEU:HD21	2.37	0.54
2:B:64:ILE:HD12	2:B:120:VAL:HG22	1.89	0.54
2:B:189:VAL:HB	2:B:415:MET:HE3	1.89	0.54
1:C:66:VAL:HG23	1:C:125:LEU:HD12	1.89	0.54
1:C:335:ILE:HG23	1:C:339:ARG:HG3	1.89	0.54
4:F:99:VAL:O	4:F:100:ILE:HD13	2.08	0.54
1:A:161:TYR:HB3	1:A:164:LYS:HG3	1.89	0.54
2:B:330:MET:O	2:B:333:VAL:HG12	2.07	0.54
1:C:71:GLU:HG2	1:C:98:ASP:HB3	1.89	0.54
4:F:3:THR:HB	4:F:30:LEU:HD11	1.90	0.54
1:A:112:LYS:HE2	3:E:61:ARG:NH2	2.23	0.53
1:A:2:ARG:O	1:A:51:THR:HG22	2.09	0.53
1:C:162:GLY:HA2	3:E:94:ILE:HD11	1.90	0.53
1:C:109:THR:HG22	1:C:110:ILE:HD13	1.89	0.53
4:F:283:ILE:HG23	4:F:327:VAL:HG22	1.91	0.53
2:D:386:THR:HG22	2:D:412:GLU:OE2	2.07	0.53
2:B:309:ARG:NH2	2:B:342:VAL:HA	2.15	0.53
1:C:88:HIS:HE1	1:C:90:GLU:HG3	1.74	0.53
4:F:1:MET:HG2	4:F:26:GLN:HA	1.90	0.53
4:F:197:ARG:HB3	4:F:224:SER:O	2.09	0.53
1:A:103:TYR:CE1	1:A:148:GLY:HA2	2.44	0.53
2:B:301:ALA:O	2:B:303:CYS:N	2.42	0.53
2:D:206:ALA:O	2:D:210:ILE:HG13	2.08	0.53
2:D:285:THR:HG22	2:D:288:GLU:HG3	1.89	0.53
3:E:22:VAL:HG13	3:E:22:VAL:O	2.09	0.53
1:A:147:SER:HB2	1:A:190:THR:HB	1.91	0.53
1:A:335:ILE:HG23	1:A:339:ARG:HG3	1.90	0.53
2:D:101:TRP:NE1	2:D:146:GLY:HA2	2.24	0.52
3:E:72:LEU:O	3:E:76:ARG:HG2	2.09	0.52
4:F:2:TYR:CZ	4:F:359:PHE:HB3	2.45	0.52
1:A:398:MET:HE3	1:A:404:PHE:HD2	1.72	0.52
1:A:88:HIS:HE1	1:A:90:GLU:HG3	1.74	0.52
2:B:121:ARG:O	2:B:125:GLU:HG3	2.10	0.52
1:A:328:VAL:O	1:A:332:ILE:HG13	2.10	0.52
2:D:201:CYS:SG	2:D:265:PHE:HB3	2.49	0.52
3:E:138:GLU:C	3:E:140:LYS:H	2.18	0.52
4:F:226:GLU:CD	4:F:252:ASN:HD22	2.18	0.52
2:B:238:THR:OG1	2:B:318:ARG:HD2	2.10	0.52
4:F:128:ARG:N	4:F:128:ARG:HD2	2.24	0.52
2:D:285:THR:CG2	2:D:288:GLU:H	2.23	0.52
1:A:185:TYR:CZ	1:A:398:MET:HE2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:275:VAL:HG13	1:C:368:LEU:HD21	1.92	0.52
2:D:12:CYS:SG	2:D:169:VAL:HG21	2.49	0.52
1:A:357:TYR:CE2	3:E:17:GLY:HA2	2.45	0.51
2:B:323:MET:CE	2:B:353:VAL:HG11	2.33	0.51
2:D:110:ALA:O	2:D:113:VAL:HG12	2.10	0.51
2:D:172:SER:OG	2:D:205:GLU:OE1	2.28	0.51
2:D:246:LEU:HD12	2:D:246:LEU:O	2.10	0.51
4:F:216:TYR:CZ	4:F:218:GLU:HB2	2.46	0.51
1:A:63:PRO:CD	1:A:86:LEU:HG	2.40	0.51
2:B:103:LYS:HE2	2:B:401:GLU:OE2	2.11	0.51
2:D:189:VAL:HG21	2:D:415:MET:CE	2.40	0.51
1:C:221:ARG:CZ	2:D:323:MET:HB3	2.41	0.51
1:C:287:SER:OG	1:C:290:GLU:HG3	2.10	0.51
2:B:29:GLY:C	2:B:30:ILE:HD12	2.36	0.51
1:C:18:ASN:OD1	1:C:78:VAL:HG22	2.11	0.51
4:F:148:ILE:O	4:F:182:ILE:HA	2.11	0.51
4:F:191:LEU:HD23	4:F:196:HIS:C	2.35	0.51
1:C:230:LEU:O	1:C:234:ILE:HD12	2.10	0.51
2:D:32:PRO:O	2:D:84:ILE:HB	2.11	0.51
1:A:275:VAL:HG13	1:A:368:LEU:HD21	1.93	0.51
2:B:19:LYS:O	2:B:23:VAL:HG23	2.10	0.51
2:B:73:MET:HE3	2:B:90:PHE:CD2	2.46	0.51
2:D:65:LEU:N	2:D:65:LEU:HD12	2.26	0.51
2:D:1:MET:CE	2:D:128:ASP:HB2	2.40	0.51
2:D:81:PHE:O	2:D:84:ILE:HG22	2.10	0.51
2:D:316:ILE:N	2:D:316:ILE:HD12	2.26	0.51
4:F:191:LEU:HD23	4:F:196:HIS:O	2.10	0.50
2:D:377:LEU:C	2:D:377:LEU:HD23	2.36	0.50
1:C:63:PRO:HG2	1:C:87:PHE:CE1	2.47	0.50
1:C:265:ILE:N	1:C:265:ILE:HD12	2.26	0.50
2:D:1:MET:HE3	2:D:128:ASP:CG	2.36	0.50
2:D:73:MET:HE3	2:D:90:PHE:HB3	1.92	0.50
2:D:246:LEU:HD13	2:D:248:ALA:HB2	1.93	0.50
4:F:216:TYR:CE2	4:F:218:GLU:HB2	2.47	0.50
2:B:324:LYS:O	2:B:328:GLU:HG3	2.12	0.50
2:D:64:ILE:HD12	2:D:119:VAL:HG12	1.94	0.50
2:D:386:THR:O	2:D:390:ARG:HG2	2.12	0.50
4:F:87:LEU:O	4:F:88:SER:OG	2.18	0.50
2:B:189:VAL:HG11	2:B:415:MET:CE	2.42	0.50
2:D:21:TRP:CE3	2:D:61:PRO:HB3	2.47	0.50
2:D:36:TYR:CE1	2:D:38:GLY:HA3	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:178:GLN:N	4:F:178:GLN:OE1	2.45	0.50
2:B:23:VAL:O	2:B:27:GLU:HG3	2.11	0.50
1:C:119:LEU:HD11	1:C:156:ARG:HB3	1.94	0.50
2:D:23:VAL:O	2:D:27:GLU:HG3	2.11	0.50
4:F:219:GLY:HA3	4:F:264:PHE:CZ	2.46	0.50
2:B:169:VAL:HA	2:B:202:ILE:O	2.12	0.50
2:D:73:MET:HE1	2:D:90:PHE:HB3	1.94	0.50
2:B:36:TYR:CE2	2:B:44:LEU:HD11	2.46	0.49
2:D:63:ALA:O	2:D:89:ASN:ND2	2.40	0.49
2:B:7:ILE:O	2:B:135:LEU:HA	2.12	0.49
2:D:5:VAL:HB	2:D:133:PHE:CD1	2.47	0.49
2:D:266:PHE:O	2:D:268:PRO:HD3	2.12	0.49
1:A:265:ILE:HD12	1:A:265:ILE:N	2.27	0.49
2:B:65:LEU:HD22	2:B:90:PHE:CE2	2.48	0.49
4:F:346:LEU:O	4:F:350:ILE:HG13	2.13	0.49
1:A:71:GLU:HG2	1:A:72:PRO:CD	2.42	0.49
4:F:47:LEU:HD23	4:F:48:PRO:HD2	1.94	0.49
4:F:148:ILE:HD13	4:F:162:ILE:HG12	1.94	0.49
1:A:210:TYR:CE1	1:A:222:PRO:HD2	2.48	0.49
1:A:345:ASP:O	3:E:28:SER:N	2.45	0.49
2:D:152:ILE:HG23	2:D:164:MET:HG2	1.95	0.49
2:D:330:MET:O	2:D:333:VAL:HG12	2.13	0.49
4:F:283:ILE:HG23	4:F:327:VAL:CG2	2.42	0.49
4:F:198:LYS:HG2	4:F:199:PHE:H	1.78	0.49
2:D:91:VAL:HG12	2:D:112:LEU:HD21	1.95	0.49
2:D:310:TYR:CE1	2:D:367:PHE:HZ	2.31	0.49
4:F:130:VAL:HG12	4:F:130:VAL:O	2.12	0.49
1:C:104:ALA:HB2	1:C:413:MET:SD	2.52	0.49
1:C:320:ARG:HA	1:C:356:ASN:O	2.13	0.49
2:D:48:ASN:H	2:D:48:ASN:ND2	2.11	0.49
4:F:135:TYR:CE2	4:F:166:ALA:HB2	2.48	0.49
2:B:21:TRP:CE3	2:B:61:PRO:HB3	2.48	0.48
1:C:139:HIS:CD2	1:C:150:THR:HG21	2.47	0.48
2:D:286:VAL:HB	2:D:287:PRO:HD3	1.94	0.48
1:A:136:LEU:HD23	1:A:167:LEU:HB2	1.95	0.48
2:B:304:ASP:HB3	2:B:307:HIS:ND1	2.28	0.48
2:D:32:PRO:HB3	2:D:81:PHE:HA	1.95	0.48
2:D:378:PHE:HD1	2:D:415:MET:HE2	1.78	0.48
1:A:351:PHE:O	3:E:22:VAL:HG12	2.13	0.48
2:B:350:LYS:HG3	10:B:505:A1EU2:C01	2.43	0.48
1:C:292:THR:HG22	1:C:335:ILE:CD1	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:199:PHE:CD2	4:F:221:LEU:HD23	2.49	0.48
1:A:94:THR:HG22	1:A:95:GLY:O	2.13	0.48
2:D:31:ASP:HB2	2:D:32:PRO:HD2	1.95	0.48
2:D:65:LEU:HD22	2:D:90:PHE:CE2	2.49	0.48
2:D:101:TRP:CE3	2:D:187:LEU:HD13	2.48	0.48
2:D:117:LEU:HD11	2:D:154:LYS:HB3	1.95	0.48
2:D:189:VAL:CG1	2:D:415:MET:HE3	2.43	0.48
4:F:191:LEU:HD22	4:F:196:HIS:CD2	2.48	0.48
2:B:61:PRO:HD3	2:B:84:ILE:HG12	1.96	0.48
1:C:167:LEU:HG	1:C:200:CYS:HB3	1.95	0.48
1:C:93:ILE:CD1	1:C:121:ARG:HG3	2.43	0.48
2:D:7:ILE:O	2:D:135:LEU:HA	2.14	0.48
2:D:104:GLY:O	2:D:109:GLY:HA3	2.14	0.48
3:E:139:LEU:O	3:E:139:LEU:HG	2.14	0.48
4:F:78:VAL:HG21	4:F:181:VAL:HG21	1.96	0.48
4:F:148:ILE:HD13	4:F:162:ILE:CG1	2.43	0.48
4:F:138:ARG:HB3	4:F:145:ASN:CG	2.39	0.48
4:F:296:MET:HE3	4:F:380:HIS:CG	2.49	0.48
1:A:71:GLU:OE2	1:A:73:THR:HB	2.14	0.48
2:B:375:GLN:OE1	2:B:423:GLN:HG2	2.14	0.48
3:E:130:ALA:HA	3:E:133:VAL:HG12	1.96	0.47
1:C:7:ILE:HG21	1:C:153:LEU:HD21	1.95	0.47
2:D:242:PHE:CZ	2:D:356:ILE:HD13	2.49	0.47
2:B:238:THR:HG21	2:B:316:ILE:CD1	2.42	0.47
3:E:6:MET:HE2	3:E:24:LEU:CD2	2.39	0.47
3:E:80:ARG:HA	3:E:83:ILE:HG22	1.96	0.47
1:C:97:GLU:HG3	2:D:2:ARG:NH1	2.29	0.47
4:F:131:PHE:CG	4:F:182:ILE:HD11	2.49	0.47
4:F:173:ILE:HG22	4:F:180:HIS:CD2	2.50	0.47
4:F:213:ILE:HD12	4:F:296:MET:HE2	1.95	0.47
1:A:71:GLU:HG2	1:A:72:PRO:HD2	1.96	0.47
1:A:123:ARG:NH2	1:A:160:ASP:HB3	2.27	0.47
4:F:202:ARG:HB3	4:F:220:VAL:HG12	1.97	0.47
4:F:338:CYS:SG	4:F:342:LEU:HB2	2.53	0.47
1:A:21:TRP:CH2	1:A:63:PRO:HB3	2.49	0.47
2:B:377:LEU:C	2:B:377:LEU:HD23	2.39	0.47
2:D:246:LEU:CD1	2:D:248:ALA:HB2	2.45	0.47
2:D:345:ILE:HG22	2:D:348:ASN:HB3	1.97	0.47
4:F:198:LYS:HG2	4:F:199:PHE:N	2.29	0.47
2:B:198:GLU:OE2	2:B:254:ALA:N	2.48	0.47
4:F:197:ARG:NH2	4:F:257:GLU:OE2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:263:PHE:CE2	4:F:341:LYS:HD3	2.49	0.47
2:B:350:LYS:CB	10:B:505:A1EU2:C16	2.93	0.47
1:C:172:TYR:HB3	1:C:205:ASP:HA	1.97	0.47
2:D:211:CYS:O	2:D:215:LEU:HB2	2.14	0.47
2:B:31:ASP:HB2	2:B:32:PRO:HD2	1.97	0.47
2:D:19:LYS:O	2:D:23:VAL:HG23	2.16	0.47
2:D:66:VAL:HA	2:D:91:VAL:O	2.15	0.47
4:F:2:TYR:CE1	4:F:359:PHE:HB3	2.50	0.47
1:A:398:MET:HE3	1:A:404:PHE:CD2	2.50	0.46
2:B:65:LEU:N	2:B:65:LEU:HD12	2.30	0.46
2:D:2:ARG:O	2:D:131:GLN:NE2	2.38	0.46
4:F:287:ILE:HG23	4:F:319:PHE:CZ	2.49	0.46
4:F:20:LEU:HD23	4:F:348:GLN:OE1	2.15	0.46
4:F:287:ILE:HG23	4:F:319:PHE:CE2	2.51	0.46
2:D:189:VAL:CB	2:D:415:MET:HE3	2.45	0.46
4:F:148:ILE:HG13	4:F:149:ALA:N	2.31	0.46
2:B:404:ASP:OD1	2:B:405:GLU:N	2.48	0.46
2:B:267:MET:HE1	2:B:305:PRO:HG3	1.97	0.46
2:D:272:PRO:HG3	2:D:284:LEU:HD13	1.97	0.46
1:A:370:LYS:HD3	1:A:370:LYS:C	2.40	0.46
1:C:66:VAL:HG23	1:C:125:LEU:CD1	2.46	0.46
2:B:102:ALA:HB2	2:B:403:MET:SD	2.56	0.46
2:B:237:THR:HB	2:B:241:ARG:HE	1.80	0.46
2:D:330:MET:HA	2:D:333:VAL:HG12	1.98	0.46
1:A:210:TYR:CZ	1:A:222:PRO:HD2	2.51	0.46
1:A:221:ARG:HE	2:B:323:MET:HB3	1.81	0.46
1:A:286:LEU:HA	1:A:290:GLU:OE1	2.16	0.46
2:B:44:LEU:HA	2:B:47:ILE:HB	1.97	0.46
1:C:221:ARG:NE	2:D:323:MET:CB	2.78	0.46
1:C:344:VAL:HG21	1:C:346:TRP:CE2	2.51	0.46
1:A:28:HIS:O	1:A:36:MET:HE3	2.16	0.45
1:A:192:HIS:CG	1:A:421:ALA:HA	2.51	0.45
1:A:159:VAL:HG12	1:A:160:ASP:OD1	2.16	0.45
1:A:188:ILE:HG13	1:A:425:MET:HG3	1.99	0.45
4:F:142:ARG:O	4:F:142:ARG:HG2	2.15	0.45
1:A:18:ASN:OD1	1:A:78:VAL:HG22	2.17	0.45
2:B:4:ILE:O	2:B:62:ARG:HD2	2.16	0.45
2:B:31:ASP:CG	2:B:33:THR:HG22	2.41	0.45
2:D:31:ASP:HB2	2:D:32:PRO:CD	2.45	0.45
3:E:9:ILE:HG13	3:E:10:GLU:HG3	1.98	0.45
2:D:11:GLN:HA	2:D:72:THR:HG21	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:6:HIS:HD1	2:D:134:GLN:HE21	1.65	0.45
2:D:198:GLU:OE2	2:D:254:ALA:N	2.50	0.45
2:D:285:THR:CG2	2:D:288:GLU:HG3	2.47	0.45
3:E:131:GLU:OE1	3:E:131:GLU:HA	2.17	0.45
2:B:116:VAL:CG1	2:B:151:LEU:HD21	2.47	0.45
2:D:101:TRP:CD1	2:D:146:GLY:HA2	2.53	0.44
2:D:191:GLN:HE22	3:E:126:LYS:HE2	1.81	0.44
1:A:9:VAL:HG22	1:A:68:VAL:CG1	2.47	0.44
1:C:71:GLU:HB3	1:C:98:ASP:HB3	1.98	0.44
3:E:6:MET:HG3	3:E:24:LEU:HD23	2.00	0.44
3:E:75:LYS:O	3:E:79:GLU:HG3	2.17	0.44
2:D:28:HIS:HA	2:D:43:GLN:HB3	2.00	0.44
2:B:116:VAL:HG11	2:B:151:LEU:HD21	2.00	0.44
4:F:173:ILE:HG22	4:F:180:HIS:HD2	1.83	0.44
2:B:293:MET:CE	2:B:365:ALA:HB1	2.48	0.44
1:A:286:LEU:HD23	1:A:290:GLU:HB3	1.99	0.44
2:B:390:ARG:HG3	2:B:391:ARG:HG2	2.00	0.44
4:F:334:GLY:C	4:F:336:PRO:HD3	2.43	0.44
1:C:36:MET:HB3	1:C:61:HIS:CE1	2.53	0.44
1:A:261:PRO:HG3	1:A:313:MET:HB3	1.99	0.44
2:B:242:PHE:CE1	2:B:356:ILE:HD12	2.53	0.44
4:F:189:PRO:O	4:F:191:LEU:HD12	2.17	0.44
4:F:192:LEU:CD2	4:F:262:MET:HE1	2.42	0.44
2:B:2:ARG:HA	2:B:129:CYS:O	2.18	0.43
2:B:304:ASP:HB3	2:B:307:HIS:CG	2.53	0.43
1:C:292:THR:HG22	1:C:335:ILE:HD12	1.98	0.43
2:D:206:ALA:HB2	2:D:302:ALA:N	2.33	0.43
2:D:318:ARG:HH21	2:D:356:ILE:HG12	1.83	0.43
3:E:96:MET:CE	3:E:100:LYS:HE2	2.47	0.43
2:B:132:GLY:HA2	2:B:162:ARG:HB3	2.00	0.43
4:F:191:LEU:HD21	4:F:228:TYR:HB3	2.00	0.43
4:F:217:ARG:NH1	4:F:374:ILE:HA	2.33	0.43
1:A:12:ALA:HB3	1:A:140:SER:HB3	1.99	0.43
1:C:75:ILE:HD12	1:C:94:THR:HG22	1.99	0.43
2:D:202:ILE:HG21	2:D:229:VAL:HG22	2.00	0.43
4:F:135:TYR:HD2	4:F:166:ALA:HB2	1.83	0.43
4:F:225:SER:CB	4:F:252:ASN:HB3	2.47	0.43
1:C:255:PHE:CD1	1:C:316:CYS:HB3	2.53	0.43
4:F:14:TYR:HA	4:F:17:VAL:HB	1.99	0.43
4:F:16:GLU:O	4:F:20:LEU:HD13	2.18	0.43
1:A:320:ARG:HA	1:A:356:ASN:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:328:VAL:O	1:C:332:ILE:HG13	2.17	0.43
2:D:176:SER:HG	2:D:181:GLU:CD	2.10	0.43
2:D:285:THR:HG22	2:D:288:GLU:CB	2.48	0.43
4:F:146:VAL:HG21	4:F:233:PHE:CZ	2.53	0.43
4:F:324:GLU:OE1	4:F:324:GLU:HA	2.18	0.43
2:B:101:TRP:HD1	2:B:145:SER:OG	2.01	0.43
2:D:285:THR:HG22	2:D:288:GLU:HB2	1.99	0.43
4:F:4:PHE:HB3	4:F:27:TRP:HZ3	1.82	0.43
4:F:307:LEU:HD13	4:F:309:TYR:CE1	2.53	0.43
1:A:62:VAL:HG13	1:A:86:LEU:O	2.19	0.43
2:B:151:LEU:O	2:B:155:ILE:HG13	2.18	0.43
1:C:124:LYS:HE2	1:C:124:LYS:HB3	1.84	0.43
1:C:192:HIS:CG	1:C:421:ALA:HA	2.54	0.43
2:D:1:MET:HE3	2:D:128:ASP:OD2	2.18	0.43
2:D:179:VAL:HG21	2:D:394:PHE:CZ	2.54	0.43
2:D:403:MET:HE3	2:D:407:GLU:CD	2.44	0.43
3:E:119:MET:O	3:E:122:ARG:HG2	2.19	0.43
1:A:336:LYS:HG2	3:E:24:LEU:HD13	2.01	0.43
2:B:241:ARG:HH22	2:B:318:ARG:HH12	1.65	0.43
2:D:2:ARG:HB3	2:D:131:GLN:CG	2.48	0.43
2:D:138:SER:HA	2:D:169:VAL:HB	2.01	0.43
1:A:3:GLU:HG2	1:A:64:ARG:CZ	2.48	0.42
1:A:309:HIS:ND1	4:F:66:ARG:HD3	2.34	0.42
2:B:101:TRP:CE3	2:B:187:LEU:HD13	2.54	0.42
2:B:153:SER:HB3	3:E:76:ARG:HH22	1.83	0.42
2:D:5:VAL:HG22	2:D:62:ARG:HD3	2.00	0.42
2:D:211:CYS:HB3	2:D:217:LEU:HD12	2.00	0.42
4:F:22:LEU:HD23	4:F:27:TRP:O	2.19	0.42
2:B:5:VAL:HG22	2:B:62:ARG:HD3	2.01	0.42
2:B:36:TYR:CD2	2:B:44:LEU:HD11	2.54	0.42
1:C:134:GLY:HA2	1:C:164:LYS:HG3	2.01	0.42
1:C:161:TYR:O	1:C:162:GLY:C	2.60	0.42
1:C:163:LYS:HA	1:C:163:LYS:HD3	1.47	0.42
1:C:292:THR:O	1:C:295:CYS:HB2	2.19	0.42
4:F:203:SER:HB3	4:F:215:LEU:HD11	2.01	0.42
2:B:267:MET:HG2	2:B:301:ALA:HB3	2.00	0.42
3:E:137:LYS:O	3:E:140:LYS:HB3	2.20	0.42
4:F:31:ARG:HA	4:F:31:ARG:HH11	1.85	0.42
1:A:292:THR:O	1:A:295:CYS:HB2	2.20	0.42
2:B:406:MET:CE	2:B:409:THR:HB	2.43	0.42
2:D:401:GLU:C	3:E:137:LYS:HB2	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:101:LEU:HD12	3:E:101:LEU:HA	1.84	0.42
4:F:192:LEU:HD12	4:F:192:LEU:N	2.34	0.42
4:F:263:PHE:CZ	4:F:341:LYS:HB3	2.54	0.42
1:A:133:GLN:OE1	1:A:251:ASP:CA	2.67	0.42
2:B:293:MET:HE3	2:B:365:ALA:HB1	2.01	0.42
1:C:163:LYS:O	1:C:164:LYS:C	2.63	0.42
1:C:220:GLU:HB3	2:D:324:LYS:HD2	2.02	0.42
2:D:157:GLU:CA	3:E:123:LEU:HD13	2.49	0.42
4:F:32:LYS:HB3	4:F:32:LYS:HE2	1.79	0.42
4:F:226:GLU:HB2	4:F:238:CYS:HB3	2.02	0.42
4:F:284:LEU:HA	4:F:284:LEU:HD12	1.82	0.42
1:A:178:SER:HB2	1:A:183:GLU:OE2	2.20	0.42
1:A:319:TYR:HB2	1:A:355:ILE:HG12	2.01	0.42
4:F:191:LEU:HA	4:F:197:ARG:O	2.20	0.42
4:F:202:ARG:HD3	4:F:204:TRP:NE1	2.35	0.42
2:B:106:TYR:OH	2:B:407:GLU:OE2	2.25	0.42
2:D:63:ALA:C	2:D:64:ILE:HD13	2.45	0.42
2:B:197:ASP:C	2:B:198:GLU:HG3	2.44	0.42
2:D:218:THR:HG23	2:D:219:THR:N	2.34	0.42
1:A:389:ALA:O	1:A:390:ARG:C	2.62	0.41
2:B:31:ASP:HB2	2:B:32:PRO:CD	2.50	0.41
1:C:147:SER:HB2	1:C:190:THR:HB	2.00	0.41
4:F:246:GLN:OE1	4:F:260:ASN:ND2	2.53	0.41
1:A:317:LEU:C	1:A:318:LEU:HD12	2.46	0.41
1:C:4:CYS:HB3	1:C:136:LEU:CD1	2.50	0.41
2:B:170:MET:HE3	2:B:381:ILE:HD11	2.02	0.41
1:C:302:MET:N	1:C:302:MET:HE2	2.35	0.41
2:D:267:MET:HE2	2:D:267:MET:HB3	1.87	0.41
2:B:372:THR:CB	2:B:426:GLN:HB2	2.51	0.41
1:C:209:ILE:HG23	1:C:230:LEU:HD23	2.01	0.41
2:D:32:PRO:HA	2:D:81:PHE:CD2	2.56	0.41
2:D:375:GLN:OE1	2:D:379:LYS:HE3	2.20	0.41
2:D:172:SER:CB	2:D:205:GLU:HB2	2.50	0.41
2:D:306:ARG:NH2	2:D:337:ASN:OD1	2.53	0.41
2:B:2:ARG:HB3	2:B:131:GLN:HG2	2.00	0.41
2:B:30:ILE:HD12	2:B:30:ILE:N	2.36	0.41
2:B:50:TYR:OH	2:B:237:THR:CG2	2.69	0.41
1:C:2:ARG:HA	1:C:131:GLY:O	2.21	0.41
1:A:357:TYR:CZ	3:E:17:GLY:HA2	2.56	0.41
2:B:36:TYR:CE1	2:B:38:GLY:HA3	2.56	0.41
1:C:265:ILE:HG22	1:C:265:ILE:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:391:LEU:HD23	1:C:391:LEU:HA	1.88	0.41
1:A:195:LEU:HD12	1:A:195:LEU:HA	1.94	0.41
2:B:406:MET:HE3	2:B:406:MET:HA	2.03	0.41
2:D:139:LEU:HD21	2:D:168:SER:HB3	2.03	0.41
2:D:272:PRO:HG3	2:D:284:LEU:CD1	2.50	0.41
4:F:149:ALA:HB3	4:F:161:LEU:HD23	2.02	0.41
1:A:265:ILE:CG2	1:A:313:MET:HE1	2.49	0.41
2:D:211:CYS:HA	2:D:215:LEU:HD12	2.03	0.41
2:D:321:MET:O	2:D:323:MET:HE2	2.21	0.41
2:D:402:GLY:C	3:E:133:VAL:HG23	2.45	0.41
4:F:175:GLU:HG2	4:F:175:GLU:O	2.21	0.41
2:D:381:ILE:O	2:D:382:SER:C	2.63	0.41
3:E:47:LEU:O	3:E:47:LEU:HD12	2.21	0.41
1:A:325:PRO:HB3	3:E:20:PHE:CE1	2.56	0.40
2:D:105:HIS:ND1	2:D:150:LEU:HB2	2.35	0.40
4:F:199:PHE:CE2	4:F:221:LEU:HD23	2.56	0.40
4:F:213:ILE:HD13	4:F:295:LEU:HD12	2.03	0.40
1:A:334:THR:O	1:A:337:THR:OG1	2.35	0.40
2:D:36:TYR:CZ	2:D:38:GLY:HA3	2.57	0.40
1:A:265:ILE:O	1:A:265:ILE:HG22	2.20	0.40
2:B:286:VAL:N	2:B:287:PRO:CD	2.84	0.40
2:D:75:SER:O	2:D:79:GLY:N	2.53	0.40
2:D:189:VAL:HG11	2:D:415:MET:CE	2.51	0.40
2:D:375:GLN:O	2:D:376:GLU:C	2.64	0.40
4:F:228:TYR:HA	4:F:238:CYS:SG	2.61	0.40
2:D:112:LEU:O	2:D:116:VAL:HG23	2.21	0.40
4:F:307:LEU:HD23	4:F:307:LEU:HA	1.86	0.40
1:A:124:LYS:HE2	1:A:124:LYS:HB3	1.76	0.40
1:C:12:ALA:HB3	1:C:140:SER:HB3	2.02	0.40
4:F:205:VAL:CG2	4:F:291:ILE:HD13	2.52	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:401:GLU:OE1	1:C:282:TYR:OH[4_545]	2.19	0.01
2:D:383:GLU:OE2	4:F:276:ASN:ND2[3_554]	2.19	0.01

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	435/440 (99%)	423 (97%)	12 (3%)	0	100	100
1	C	438/440 (100%)	426 (97%)	11 (2%)	1 (0%)	43	56
2	B	425/431 (99%)	410 (96%)	13 (3%)	2 (0%)	24	34
2	D	417/431 (97%)	402 (96%)	12 (3%)	3 (1%)	18	26
3	E	117/136 (86%)	113 (97%)	2 (2%)	2 (2%)	7	9
4	F	322/380 (85%)	303 (94%)	17 (5%)	2 (1%)	21	30
All	All	2154/2258 (95%)	2077 (96%)	67 (3%)	10 (0%)	24	34

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	142	GLY
2	D	302	ALA
4	F	129	GLU
2	B	302	ALA
1	C	162	GLY
4	F	253	TYR
3	E	27	PRO
2	D	145	SER
3	E	139	LEU
2	B	175	VAL

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	366/371 (99%)	363 (99%)	3 (1%)	73	85
1	C	370/371 (100%)	366 (99%)	4 (1%)	65	81
2	B	367/372 (99%)	361 (98%)	6 (2%)	55	74
2	D	362/372 (97%)	361 (100%)	1 (0%)	86	93
3	E	109/122 (89%)	109 (100%)	0	100	100
4	F	295/338 (87%)	288 (98%)	7 (2%)	43	63
All	All	1869/1946 (96%)	1848 (99%)	21 (1%)	65	81

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	41	THR
1	A	71	GLU
1	A	253	THR
2	B	237	THR
2	B	246	LEU
2	B	316	ILE
2	B	323	MET
2	B	413	SER
2	B	423	GLN
1	C	71	GLU
1	C	163	LYS
1	C	297	GLU
1	C	347	CYS
2	D	356	ILE
4	F	31	ARG
4	F	89	GLU
4	F	179	VAL
4	F	180	HIS
4	F	234	GLN
4	F	264	PHE
4	F	333	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	133	GLN
2	D	6	HIS
2	D	8	GLN
2	D	134	GLN

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Mol	Chain	Res	Type
3	E	129	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 13 ligands modelled in this entry, 5 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	$\# Z > 2$
9	MES	B	503	-	12,12,12	1.08	1 (8%)	14,16,16	0.91	0
10	A1EU2	B	505	-	26,26,26	4.33	16 (61%)	35,38,38	6.97	19 (54%)
5	GTP	C	501	7	30,34,34	0.82	1 (3%)	46,54,54	1.79	10 (21%)
11	ACP	F	401	-	30,33,33	2.04	2 (6%)	45,52,52	1.04	3 (6%)
8	GDP	D	501	-	28,30,30	1.15	3 (10%)	44,47,47	1.85	9 (20%)
8	GDP	B	501	7	28,30,30	1.14	3 (10%)	44,47,47	1.84	8 (18%)
5	GTP	A	501	7	30,34,34	0.82	1 (3%)	46,54,54	1.78	11 (23%)
9	MES	B	502	-	12,12,12	1.11	1 (8%)	14,16,16	0.91	1 (7%)

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
9	MES	B	503	-	-	2/6/14/14	0/1/1/1
10	A1EU2	B	505	-	-	0/8/15/15	0/4/4/4
5	GTP	C	501	7	-	4/22/38/38	0/3/3/3
11	ACP	F	401	-	-	3/19/38/38	0/3/3/3
8	GDP	D	501	-	-	4/16/32/32	0/3/3/3
8	GDP	B	501	7	-	3/16/32/32	0/3/3/3
5	GTP	A	501	7	-	7/22/38/38	0/3/3/3
9	MES	B	502	-	-	5/6/14/14	0/1/1/1

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	B	505	A1EU2	N05-N04	-12.36	1.30	1.37
10	B	505	A1EU2	C05-C08	11.02	1.61	1.41
11	F	401	ACP	PB-O3A	10.22	1.69	1.58
10	B	505	A1EU2	C06-C05	5.74	1.60	1.51
10	B	505	A1EU2	C04-N01	5.33	1.43	1.34
10	B	505	A1EU2	C07-N02	-5.23	1.23	1.32
10	B	505	A1EU2	C07-N01	-4.92	1.23	1.32
10	B	505	A1EU2	C12-C13	4.02	1.47	1.41
10	B	505	A1EU2	C12-C16	3.57	1.46	1.42
10	B	505	A1EU2	C16-N04	-3.49	1.28	1.32
8	B	501	GDP	C5-C4	3.18	1.47	1.38
8	D	501	GDP	C5-C4	3.11	1.47	1.38
9	B	502	MES	C8-S	2.98	1.81	1.77
10	B	505	A1EU2	C13-N05	2.95	1.43	1.36
9	B	503	MES	C8-S	2.81	1.81	1.77
10	B	505	A1EU2	C08-N02	-2.65	1.30	1.34
10	B	505	A1EU2	C05-C04	2.60	1.44	1.40
10	B	505	A1EU2	C08-N03	2.56	1.44	1.39
8	D	501	GDP	C6-N1	-2.51	1.34	1.38
10	B	505	A1EU2	C01-C06	2.46	1.60	1.51
8	B	501	GDP	C6-N1	-2.43	1.34	1.38
11	F	401	ACP	PB-O2B	-2.28	1.51	1.56
10	B	505	A1EU2	C11-C10	2.25	1.43	1.39
5	C	501	GTP	C2-N3	2.24	1.38	1.33
10	B	505	A1EU2	C15-C10	2.23	1.43	1.39
5	A	501	GTP	C2-N3	2.20	1.38	1.33
8	D	501	GDP	C5-N7	-2.11	1.35	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	B	501	GDP	C5-N7	-2.09	1.35	1.39

All (61) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	B	505	A1EU2	C12-C13-N05	-21.82	98.78	106.68
10	B	505	A1EU2	C13-N05-N04	20.04	122.61	111.62
10	B	505	A1EU2	C12-C16-N04	11.32	120.64	112.06
10	B	505	A1EU2	C05-C04-N01	-11.17	114.06	123.49
10	B	505	A1EU2	C16-N04-N05	-10.63	97.82	106.42
10	B	505	A1EU2	C03-C04-N01	9.77	128.90	115.85
10	B	505	A1EU2	C17-N05-C13	-7.98	118.16	128.39
10	B	505	A1EU2	N02-C08-N03	7.41	123.86	116.12
10	B	505	A1EU2	C13-C12-C16	-7.20	100.15	104.48
8	B	501	GDP	C5-C4-N3	-6.11	118.55	128.46
8	D	501	GDP	C5-C4-N3	-6.06	118.63	128.46
10	B	505	A1EU2	C02-C03-C04	5.99	123.37	113.53
5	C	501	GTP	C5-C4-N3	-5.07	120.23	128.46
5	A	501	GTP	C5-C4-N3	-4.98	120.38	128.46
8	B	501	GDP	C2-N3-C4	4.89	121.01	112.30
10	B	505	A1EU2	C14-C13-N05	4.81	138.57	132.07
8	D	501	GDP	C2-N3-C4	4.77	120.79	112.30
8	D	501	GDP	N9-C4-N3	4.64	135.26	125.94
8	B	501	GDP	N9-C4-N3	4.59	135.15	125.94
5	C	501	GTP	C2-N3-C4	4.50	120.32	112.30
5	A	501	GTP	C2-N3-C4	4.43	120.19	112.30
10	B	505	A1EU2	C01-C06-C05	4.38	121.83	112.84
10	B	505	A1EU2	C03-C04-C05	-4.33	117.02	121.49
10	B	505	A1EU2	C07-N02-C08	4.32	123.16	110.86
10	B	505	A1EU2	C11-C12-C16	3.97	141.97	135.50
11	F	401	ACP	PB-O3A-PA	-3.91	120.17	132.56
8	D	501	GDP	PA-O3A-PB	-3.73	120.02	132.83
5	A	501	GTP	PA-O3A-PB	-3.70	120.12	132.83
10	B	505	A1EU2	C08-C05-C04	-3.69	113.94	115.80
10	B	505	A1EU2	C05-C08-N02	-3.66	116.96	122.61
5	A	501	GTP	PB-O3B-PG	-3.65	120.31	132.83
5	C	501	GTP	PA-O3A-PB	-3.64	120.35	132.83
5	C	501	GTP	PB-O3B-PG	-3.61	120.44	132.83
8	B	501	GDP	PA-O3A-PB	-3.38	121.23	132.83
5	C	501	GTP	N9-C4-N3	3.27	132.51	125.94
5	A	501	GTP	N9-C4-N3	3.21	132.38	125.94
8	B	501	GDP	C6-C5-N7	3.14	136.10	130.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	D	501	GDP	C6-C5-N7	3.08	135.97	130.25
11	F	401	ACP	O2B-PB-O1B	3.00	120.08	110.07
5	C	501	GTP	C2-N1-C6	-2.91	119.80	125.10
5	A	501	GTP	C2-N1-C6	-2.90	119.80	125.10
10	B	505	A1EU2	C06-C05-C04	-2.85	118.42	121.08
5	A	501	GTP	N9-C8-N7	-2.65	108.39	113.39
11	F	401	ACP	O1G-PG-C3B	-2.64	105.56	111.24
5	C	501	GTP	N9-C8-N7	-2.62	108.45	113.39
10	B	505	A1EU2	C01-C02-C03	2.60	124.08	112.55
8	B	501	GDP	C4-C5-N7	-2.59	106.63	110.72
5	A	501	GTP	C8-N7-C5	2.57	108.89	104.24
5	C	501	GTP	C8-N7-C5	2.56	108.87	104.24
5	C	501	GTP	C5-C6-N1	2.54	119.63	113.19
8	D	501	GDP	C4-C5-N7	-2.52	106.73	110.72
5	A	501	GTP	C5-C6-N1	2.52	119.59	113.19
8	B	501	GDP	C3'-C2'-C1'	2.47	106.12	101.43
5	C	501	GTP	O6-C6-C5	-2.42	120.18	126.60
5	A	501	GTP	O6-C6-C5	-2.42	120.19	126.60
8	B	501	GDP	O6-C6-C5	-2.12	120.98	126.60
8	D	501	GDP	O6-C6-C5	-2.12	120.98	126.60
8	D	501	GDP	C3'-C2'-C1'	2.10	105.42	101.43
8	D	501	GDP	C2'-C3'-C4'	2.05	106.62	102.64
9	B	502	MES	O2S-S-C8	-2.02	104.49	106.92
5	A	501	GTP	C3'-C2'-C1'	2.00	105.23	101.43

There are no chirality outliers.

All (28) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	501	GTP	PB-O3B-PG-O2G
5	A	501	GTP	C5'-O5'-PA-O1A
5	A	501	GTP	C5'-O5'-PA-O2A
5	C	501	GTP	C5'-O5'-PA-O1A
5	C	501	GTP	C5'-O5'-PA-O2A
8	B	501	GDP	C5'-O5'-PA-O2A
8	D	501	GDP	PA-O3A-PB-O3B
8	D	501	GDP	C5'-O5'-PA-O3A
8	D	501	GDP	C5'-O5'-PA-O1A
9	B	502	MES	C8-C7-N4-C3
9	B	502	MES	C8-C7-N4-C5
9	B	502	MES	C7-C8-S-O1S
9	B	502	MES	C7-C8-S-O3S

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Mol	Chain	Res	Type	Atoms
9	B	503	MES	C8-C7-N4-C3
5	A	501	GTP	PB-O3B-PG-O3G
5	A	501	GTP	C5'-O5'-PA-O3A
5	C	501	GTP	C5'-O5'-PA-O3A
8	B	501	GDP	C5'-O5'-PA-O1A
11	F	401	ACP	C5'-O5'-PA-O2A
9	B	502	MES	C7-C8-S-O2S
5	C	501	GTP	C4'-C5'-O5'-PA
5	A	501	GTP	C4'-C5'-O5'-PA
9	B	503	MES	C8-C7-N4-C5
5	A	501	GTP	PB-O3B-PG-O1G
11	F	401	ACP	O4'-C4'-C5'-O5'
8	B	501	GDP	C5'-O5'-PA-O3A
11	F	401	ACP	C5'-O5'-PA-O3A
8	D	501	GDP	PA-O3A-PB-O1B

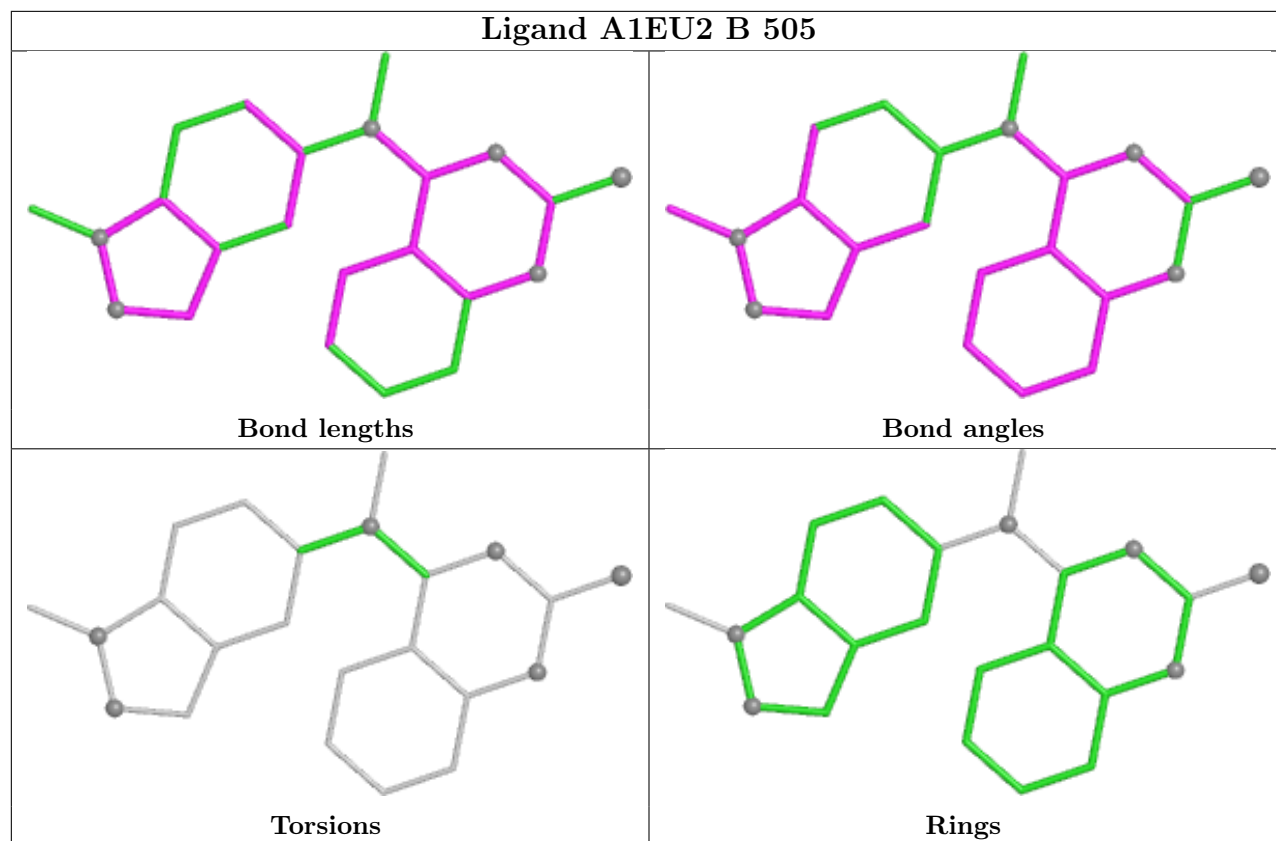
There are no ring outliers.

1 monomer is involved in 4 short contacts:

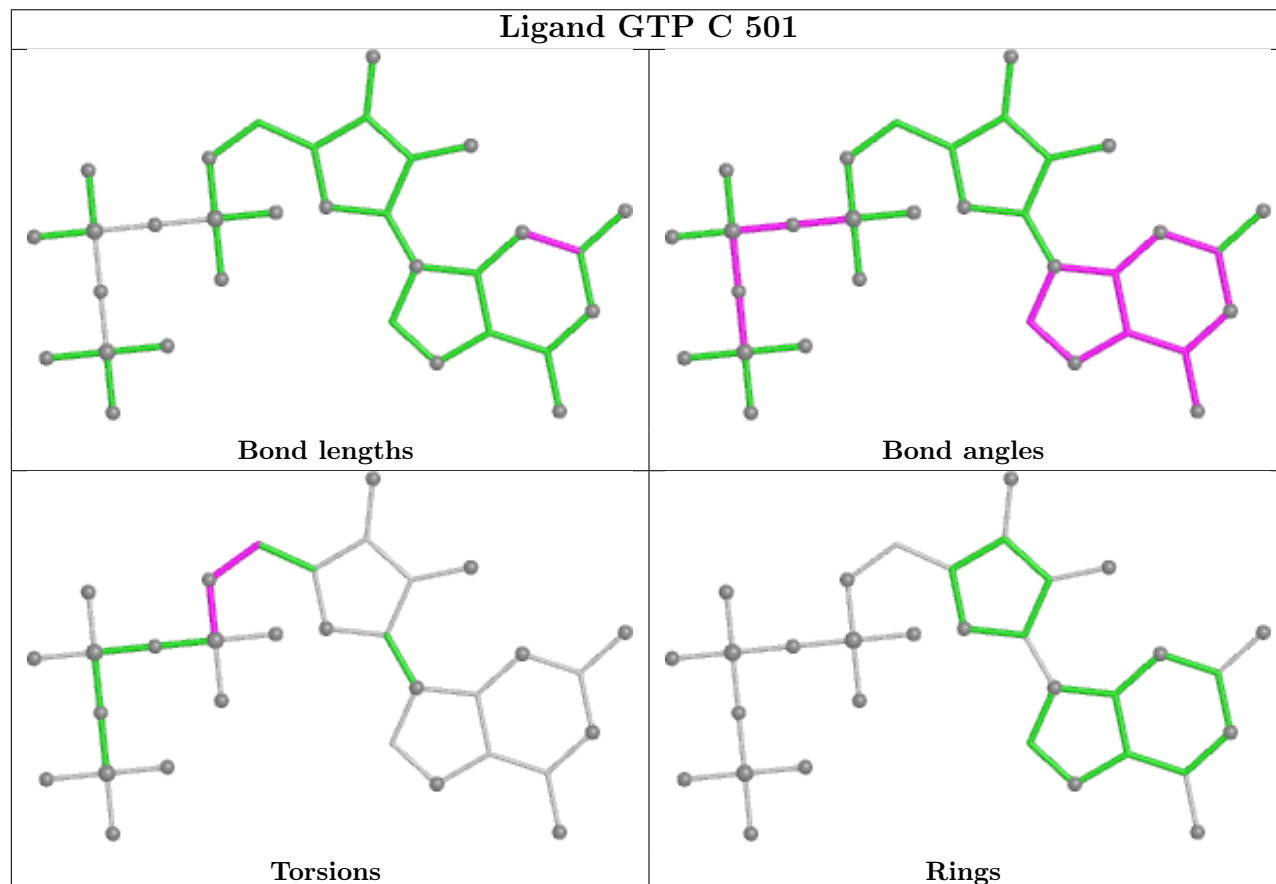
Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	B	505	A1EU2	4	0

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 than 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.

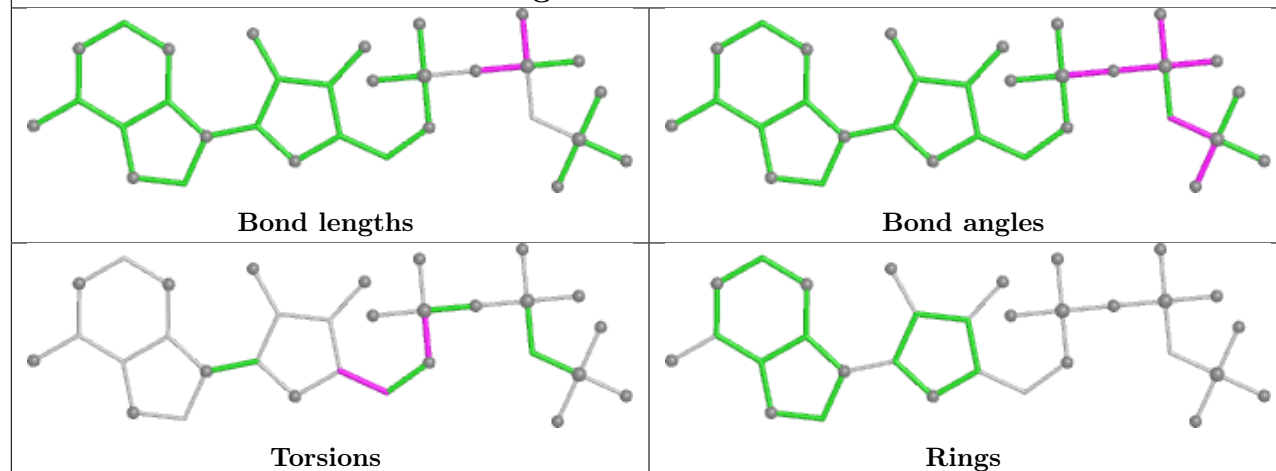
Ligand A1EU2 B 505



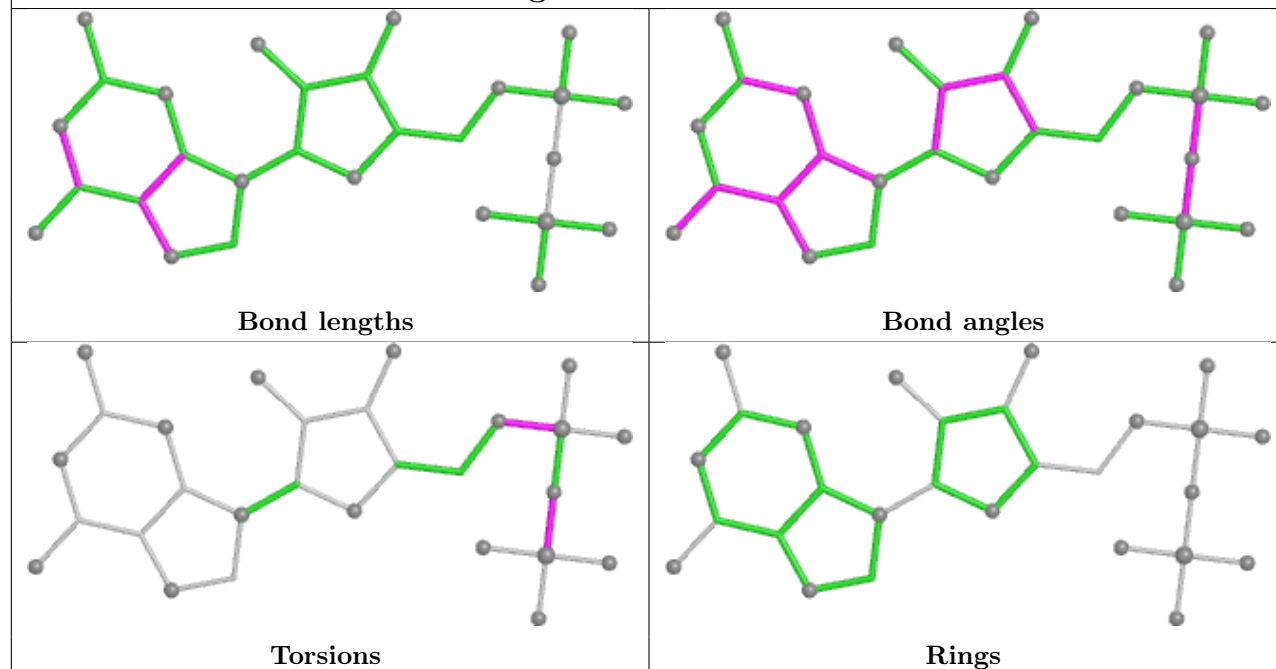
Ligand GTP C 501

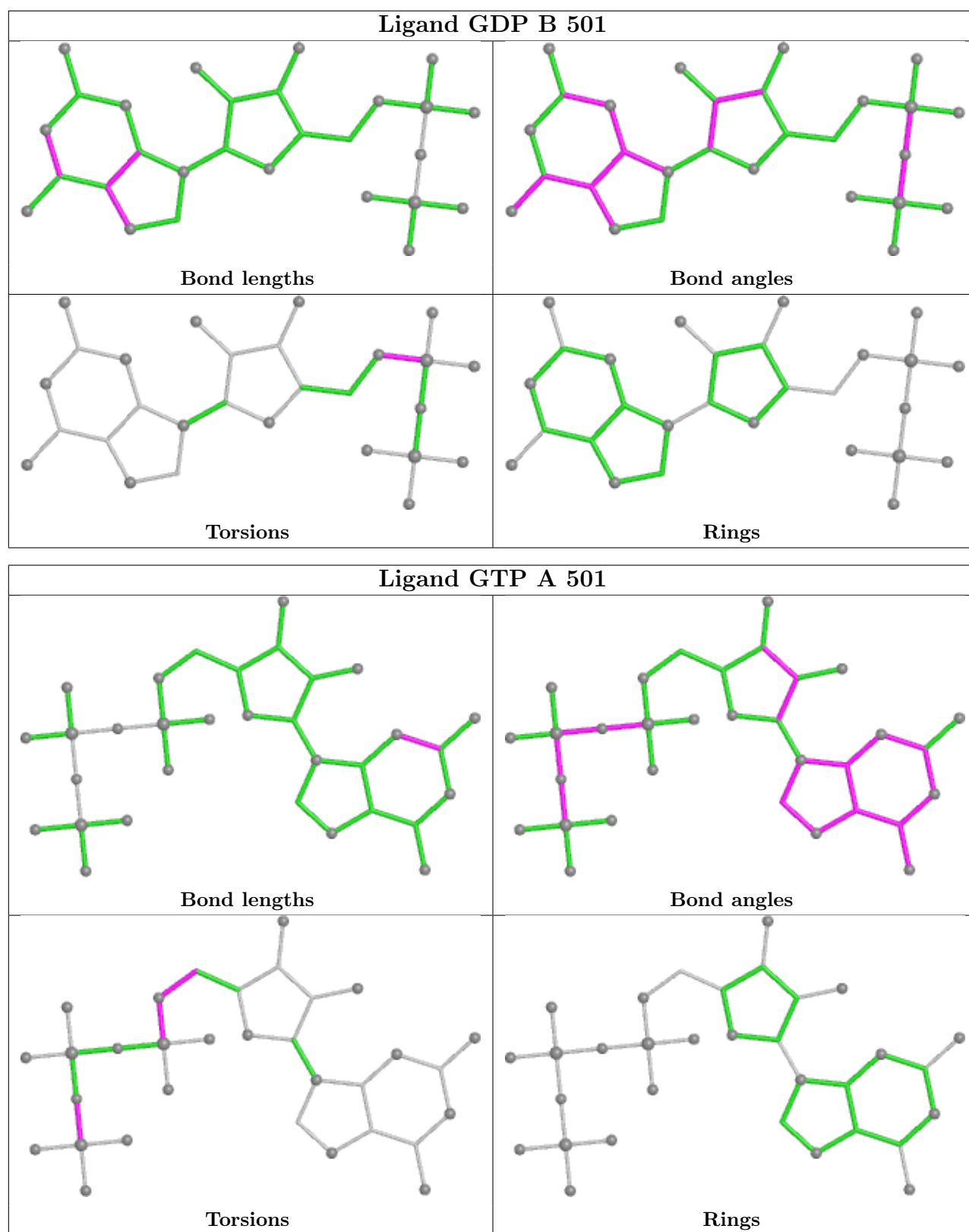


Ligand ACP F 401



Ligand GDP D 501





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	437/440 (99%)	0.84	41 (9%) 14 13	37, 53, 75, 84	0
1	C	440/440 (100%)	0.43	28 (6%) 25 24	29, 44, 63, 84	0
2	B	427/431 (99%)	0.89	48 (11%) 10 9	34, 51, 80, 110	0
2	D	421/431 (97%)	2.43	242 (57%) 0 0	39, 76, 108, 120	0
3	E	121/136 (88%)	1.46	35 (28%) 1 1	44, 63, 100, 110	0
4	F	332/380 (87%)	2.16	162 (48%) 0 0	45, 76, 136, 150	0
All	All	2178/2258 (96%)	1.31	556 (25%) 1 1	29, 57, 106, 150	0

All (556) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	D	247	ASN	8.2
4	F	162	ILE	7.7
2	D	395	LEU	7.7
4	F	148	ILE	7.5
4	F	134	ALA	7.3
4	F	149	ALA	7.3
2	D	91	VAL	7.0
4	F	161	LEU	7.0
2	D	397	TRP	6.9
4	F	146	VAL	6.8
2	D	179	VAL	6.7
4	F	130	VAL	6.6
2	D	389	PHE	6.3
4	F	186	LEU	6.2
2	D	85	PHE	6.1
2	D	92	PHE	6.1
4	F	253	TYR	6.1
4	F	132	LEU	6.0
4	F	233	PHE	6.0

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Mol	Chain	Res	Type	RSRZ
2	D	391	ARG	5.9
2	D	406	MET	5.9
4	F	98	TYR	5.9
2	D	68	LEU	5.8
4	F	245	ILE	5.8
2	D	116	VAL	5.7
2	D	178	THR	5.6
2	D	1	MET	5.6
4	F	135	TYR	5.6
2	D	394	PHE	5.5
4	F	173	ILE	5.4
2	D	212	PHE	5.4
2	D	217	LEU	5.4
2	D	99	ASN	5.4
4	F	103	THR	5.4
4	F	131	PHE	5.4
2	D	80	PRO	5.3
4	F	170	LEU	5.3
2	D	393	ALA	5.1
1	A	437	VAL	5.1
2	D	98	GLY	5.1
2	D	246	LEU	5.0
4	F	166	ALA	5.0
2	D	117	LEU	5.0
2	D	223	GLY	5.0
2	D	180	VAL	4.9
2	D	90	PHE	4.9
2	D	32	PRO	4.9
2	D	219	THR	4.8
4	F	172	PHE	4.8
2	D	93	GLY	4.8
4	F	147	TRP	4.8
2	B	428	ALA	4.8
2	D	144	GLY	4.8
2	D	81	PHE	4.7
2	D	208	TYR	4.7
4	F	99	VAL	4.7
2	D	42	LEU	4.7
2	D	71	GLY	4.7
2	D	96	GLY	4.7
2	D	83	GLN	4.6
2	D	398	TYR	4.6

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Mol	Chain	Res	Type	RSRZ
2	D	216	LYS	4.6
2	D	284	LEU	4.6
2	D	73	MET	4.6
2	D	101	TRP	4.5
4	F	133	ALA	4.5
2	D	55	THR	4.5
2	D	245	GLN	4.5
4	F	263	PHE	4.5
2	D	143	THR	4.5
2	D	76	VAL	4.5
4	F	187	GLU	4.4
2	D	220	PRO	4.4
4	F	182	ILE	4.4
2	D	170	MET	4.4
2	D	107	THR	4.4
4	F	194	PRO	4.4
4	F	179	VAL	4.4
2	D	110	ALA	4.3
4	F	198	LYS	4.3
2	D	183	TYR	4.3
4	F	101	TYR	4.3
2	D	72	THR	4.3
2	D	109	GLY	4.3
2	D	115	SER	4.3
4	F	163	SER	4.3
4	F	228	TYR	4.3
2	B	247	ASN	4.3
2	B	218	THR	4.2
2	D	140	GLY	4.2
2	D	176	SER	4.2
2	D	102	ALA	4.2
2	D	120	VAL	4.2
4	F	231	ALA	4.2
4	F	199	PHE	4.2
2	B	42	LEU	4.2
2	D	141	GLY	4.2
4	F	185	TYR	4.2
4	F	184	LYS	4.2
2	D	408	PHE	4.2
2	D	44	LEU	4.2
4	F	362	ALA	4.1
2	D	16	ILE	4.1

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Mol	Chain	Res	Type	RSRZ
2	D	222	TYR	4.1
2	D	84	ILE	4.1
2	D	106	TYR	4.1
2	D	175	VAL	4.1
1	C	340	SER	4.0
1	C	440	VAL	4.0
1	C	357	TYR	4.0
4	F	33	ASP	4.0
4	F	138	ARG	4.0
2	D	404	ASP	4.0
2	D	64	ILE	4.0
2	D	5	VAL	3.9
2	D	63	ALA	3.9
4	F	237	THR	3.9
4	F	240	LEU	3.9
4	F	180	HIS	3.9
2	D	112	LEU	3.9
2	D	142	GLY	3.9
2	D	244	GLY	3.9
4	F	92	THR	3.8
2	D	65	LEU	3.8
3	E	139	LEU	3.8
4	F	339	ALA	3.8
2	D	11	GLN	3.8
3	E	59	GLU	3.8
2	D	36	TYR	3.8
2	D	69	GLU	3.8
2	D	67	ASP	3.7
4	F	247	LYS	3.7
1	C	339	ARG	3.7
2	B	278	SER	3.7
4	F	230	SER	3.7
2	D	54	ALA	3.7
2	D	356	ILE	3.7
2	D	215	LEU	3.7
4	F	254	GLY	3.7
2	D	2	ARG	3.6
2	D	82	GLY	3.6
2	D	39	ASP	3.6
2	D	362	LYS	3.6
4	F	331	GLU	3.6
2	D	94	GLN	3.6

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Mol	Chain	Res	Type	RSRZ
2	D	385	PHE	3.6
2	D	225	LEU	3.6
3	E	141	GLU	3.6
4	F	239	HIS	3.6
2	D	70	PRO	3.6
2	B	57	ASN	3.5
2	D	56	GLY	3.5
2	D	14	ASN	3.5
2	D	226	ASN	3.5
2	B	55	THR	3.5
4	F	227	PRO	3.5
4	F	181	VAL	3.5
3	E	28	SER	3.5
1	A	120	ASP	3.5
2	D	396	HIS	3.5
2	D	77	ARG	3.5
2	D	387	ALA	3.4
2	D	37	HIS	3.4
2	D	381	ILE	3.4
1	A	282	TYR	3.4
2	D	228	LEU	3.4
2	D	9	ALA	3.4
2	D	34	GLY	3.4
2	D	30	ILE	3.4
4	F	169	LEU	3.4
4	F	183	GLN	3.4
4	F	190	LEU	3.4
2	D	61	PRO	3.4
4	F	74	LYS	3.4
2	B	40	SER	3.4
2	B	245	GLN	3.4
2	D	79	GLY	3.4
2	D	221	THR	3.3
4	F	256	TYR	3.3
1	C	97	GLU	3.3
4	F	164	SER	3.3
2	D	392	LYS	3.3
2	D	218	THR	3.3
2	B	281	TYR	3.3
2	D	100	ASN	3.3
4	F	90	SER	3.3
1	C	1	MET	3.3

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Mol	Chain	Res	Type	RSRZ
4	F	380	HIS	3.3
2	D	411	ALA	3.2
2	D	57	ASN	3.2
4	F	191	LEU	3.2
2	D	113	VAL	3.2
2	D	119	VAL	3.2
4	F	136	ASN	3.2
3	E	7	GLU	3.2
2	B	280	GLN	3.2
2	D	149	THR	3.2
2	D	95	SER	3.2
4	F	28	LYS	3.2
4	F	177	GLY	3.2
2	D	273	LEU	3.2
2	D	171	PRO	3.2
2	B	350	LYS	3.2
3	E	133	VAL	3.2
2	D	182	PRO	3.2
2	D	409	THR	3.2
2	D	86	ARG	3.1
2	D	405	GLU	3.1
4	F	89	GLU	3.1
3	E	115	HIS	3.1
1	C	282	TYR	3.1
2	D	87	PRO	3.1
3	E	135	LYS	3.1
4	F	229	ASN	3.1
4	F	259	GLY	3.1
2	D	66	VAL	3.1
2	D	8	GLN	3.1
2	D	15	GLN	3.1
2	D	173	PRO	3.1
2	B	282	ARG	3.1
4	F	330	ILE	3.1
2	B	72	THR	3.1
2	D	227	HIS	3.1
2	B	71	GLY	3.1
2	D	10	GLY	3.1
2	D	400	GLY	3.1
4	F	232	ASN	3.1
3	E	45	PRO	3.1
4	F	361	LEU	3.1

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Mol	Chain	Res	Type	RSRZ
4	F	236	LYS	3.1
2	D	24	ILE	3.1
2	D	421	GLU	3.1
2	D	360	GLY	3.1
4	F	275	LEU	3.1
2	D	214	THR	3.0
2	D	189	VAL	3.0
2	D	210	ILE	3.0
1	A	82	THR	3.0
4	F	372	THR	3.0
1	A	221	ARG	3.0
2	D	122	LYS	3.0
3	E	134	ARG	3.0
2	B	47	ILE	3.0
1	A	349	THR	3.0
1	C	336	LYS	3.0
3	E	128	LYS	3.0
2	D	35	SER	3.0
2	B	277	GLY	3.0
2	D	114	ASP	3.0
2	D	148	GLY	3.0
2	D	431	ASP	3.0
2	D	43	GLN	3.0
4	F	100	ILE	3.0
2	D	386	THR	3.0
2	D	399	THR	3.0
2	D	104	GLY	3.0
4	F	320	MET	3.0
2	D	150	LEU	2.9
2	D	6	HIS	2.9
2	D	211	CYS	2.9
2	D	33	THR	2.9
2	D	290	THR	2.9
2	D	59	TYR	2.9
4	F	167	SER	2.9
2	B	69	GLU	2.9
4	F	145	ASN	2.9
2	D	130	LEU	2.9
1	C	77	GLU	2.9
2	B	48	ASN	2.9
2	D	40	SER	2.9
4	F	85	PRO	2.9

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Mol	Chain	Res	Type	RSRZ
4	F	306	HIS	2.9
1	C	281	ALA	2.9
2	D	97	ALA	2.9
2	D	231	ALA	2.9
4	F	22	LEU	2.9
4	F	93	TRP	2.9
3	E	8	VAL	2.9
2	D	323	MET	2.9
4	F	243	HIS	2.9
4	F	244	CYS	2.9
2	B	33	THR	2.9
4	F	141	GLY	2.8
2	D	105	HIS	2.8
1	A	132	LEU	2.8
4	F	129	GLU	2.8
1	A	42	ILE	2.8
4	F	91	CYS	2.8
4	F	238	CYS	2.8
2	D	78	SER	2.8
4	F	97	SER	2.8
1	A	283	HIS	2.8
1	A	176	GLN	2.8
2	B	279	GLN	2.8
2	D	50	TYR	2.8
3	E	47	LEU	2.8
2	D	21	TRP	2.8
1	C	2	ARG	2.8
2	D	202	ILE	2.8
4	F	216	TYR	2.8
3	E	121	GLU	2.8
3	E	25	LYS	2.8
2	D	229	VAL	2.8
4	F	24	THR	2.8
2	D	89	ASN	2.8
2	D	145	SER	2.8
3	E	46	SER	2.8
1	A	281	ALA	2.8
2	D	403	MET	2.8
2	D	60	VAL	2.8
4	F	171	ASP	2.7
1	C	163	LYS	2.7
4	F	188	LYS	2.7

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Mol	Chain	Res	Type	RSRZ
3	E	130	ALA	2.7
2	D	177	ASP	2.7
2	D	416	ASN	2.7
4	F	241	THR	2.7
1	A	37	PRO	2.7
4	F	95	PRO	2.7
1	A	164	LYS	2.7
2	D	19	LYS	2.7
2	D	187	LEU	2.7
4	F	139	ARG	2.7
4	F	192	LEU	2.7
4	F	222	ARG	2.7
2	B	37	HIS	2.7
4	F	178	GLN	2.7
2	D	41	ASP	2.7
2	D	136	THR	2.7
2	D	204	ASN	2.7
2	D	224	ASP	2.7
3	E	136	ASN	2.7
2	B	336	LYS	2.7
2	D	139	LEU	2.7
1	A	46	ASP	2.7
4	F	252	ASN	2.7
4	F	332	VAL	2.7
3	E	62	LYS	2.7
2	B	316	ILE	2.7
2	D	243	PRO	2.7
2	D	359	ARG	2.7
1	A	96	LYS	2.6
2	D	169	VAL	2.6
4	F	6	VAL	2.6
4	F	234	GLN	2.6
1	C	284	GLU	2.6
4	F	142	ARG	2.6
4	F	220	VAL	2.6
2	D	357	PRO	2.6
2	D	18	ALA	2.6
4	F	128	ARG	2.6
4	F	267	PHE	2.6
2	B	323	MET	2.6
2	D	75	SER	2.6
2	D	153	SER	2.6

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Mol	Chain	Res	Type	RSRZ
4	F	246	GLN	2.6
4	F	334	GLY	2.6
1	A	112	LYS	2.6
4	F	257	GLU	2.5
4	F	323	GLU	2.5
2	B	54	ALA	2.5
2	D	188	SER	2.5
2	D	353	VAL	2.5
4	F	341	LYS	2.5
4	F	96	GLU	2.5
2	D	213	ARG	2.5
2	B	427	ASP	2.5
2	D	29	GLY	2.5
4	F	196	HIS	2.5
2	D	367	PHE	2.5
2	D	51	TYR	2.5
4	F	214	TYR	2.5
3	E	54	LEU	2.5
1	A	58	ALA	2.5
4	F	144	GLY	2.5
2	D	291	GLN	2.5
1	A	250	VAL	2.5
1	A	346	TRP	2.5
2	D	343	GLU	2.5
2	D	401	GLU	2.5
1	C	245	ASP	2.5
3	E	44	ASP	2.5
4	F	189	PRO	2.5
1	C	334	THR	2.4
2	B	343	GLU	2.4
2	D	306	ARG	2.4
2	D	390	ARG	2.4
2	D	363	MET	2.4
4	F	262	MET	2.4
3	E	127	ASP	2.4
4	F	200	ASP	2.4
1	A	256	GLN	2.4
4	F	340	GLN	2.4
2	D	181	GLU	2.4
4	F	202	ARG	2.4
1	C	337	THR	2.4
2	D	186	THR	2.4

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Mol	Chain	Res	Type	RSRZ
4	F	277	THR	2.4
1	A	316	CYS	2.4
4	F	224	SER	2.4
2	B	353	VAL	2.4
2	D	242	PHE	2.4
4	F	264	PHE	2.4
4	F	327	VAL	2.4
3	E	137	LYS	2.4
1	A	119	LEU	2.4
1	A	262	TYR	2.4
1	A	345	ASP	2.4
2	D	74	ASP	2.4
4	F	255	ARG	2.4
2	B	80	PRO	2.4
2	B	362	LYS	2.4
2	D	304	ASP	2.4
1	A	41	THR	2.4
2	D	156	ARG	2.4
4	F	137	ARG	2.4
2	B	284	LEU	2.3
2	D	361	LEU	2.3
2	B	39	ASP	2.3
2	D	88	ASP	2.3
1	A	163	LYS	2.3
4	F	27	TRP	2.3
4	F	81	ILE	2.3
4	F	201	ILE	2.3
4	F	379	HIS	2.3
1	C	285	GLN	2.3
2	D	53	GLU	2.3
4	F	258	GLU	2.3
2	D	184	ASN	2.3
1	A	32	PRO	2.3
2	B	75	SER	2.3
2	D	25	SER	2.3
2	D	172	SER	2.3
2	D	320	ARG	2.3
3	E	122	ARG	2.3
2	B	43	GLN	2.3
2	D	108	GLU	2.3
1	A	66	VAL	2.3
2	D	20	PHE	2.3

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Mol	Chain	Res	Type	RSRZ
2	D	414	ASN	2.3
4	F	35	PRO	2.3
1	A	43	GLY	2.3
2	D	147	MET	2.3
4	F	46	ARG	2.3
2	B	95	SER	2.3
2	D	163	ILE	2.3
1	C	286	LEU	2.2
2	D	135	LEU	2.2
2	D	207	LEU	2.2
4	F	4	PHE	2.2
4	F	329	LEU	2.2
3	E	27	PRO	2.2
2	D	402	GLY	2.2
4	F	1	MET	2.2
2	D	285	THR	2.2
2	D	383	GLU	2.2
3	E	129	HIS	2.2
2	B	291	GLN	2.2
4	F	82	LYS	2.2
2	B	44	LEU	2.2
2	B	92	PHE	2.2
4	F	318	ASP	2.2
2	D	388	MET	2.2
2	D	13	GLY	2.2
1	C	283	HIS	2.2
2	D	27	GLU	2.2
4	F	280	GLU	2.2
2	B	214	THR	2.2
2	B	36	TYR	2.2
4	F	355	ILE	2.2
4	F	376	ILE	2.2
4	F	342	LEU	2.2
2	D	193	VAL	2.2
2	D	121	ARG	2.2
4	F	174	ASP	2.2
2	D	201	CYS	2.2
4	F	72	CYS	2.2
2	D	103	LYS	2.2
3	E	124	GLN	2.2
1	A	294	ALA	2.2
4	F	223	THR	2.2

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Mol	Chain	Res	Type	RSRZ
4	F	328	TRP	2.2
4	F	221	LEU	2.2
2	D	118	ASP	2.2
2	D	133	PHE	2.2
4	F	235	ASP	2.2
2	D	174	LYS	2.2
1	A	85	GLN	2.2
1	A	88	HIS	2.2
1	A	315	CYS	2.2
1	A	38	SER	2.2
2	D	420	SER	2.2
3	E	56	ALA	2.2
4	F	76	SER	2.2
2	B	273	LEU	2.1
2	D	47	ILE	2.1
2	D	155	ILE	2.1
2	D	316	ILE	2.1
3	E	50	ILE	2.1
4	F	13	VAL	2.1
2	D	127	CYS	2.1
2	D	126	SER	2.1
4	F	18	SER	2.1
1	A	83	TYR	2.1
1	C	341	ILE	2.1
3	E	24	LEU	2.1
4	F	21	LEU	2.1
2	D	48	ASN	2.1
4	F	45	ASN	2.1
4	F	165	GLU	2.1
1	C	362	VAL	2.1
1	C	358	GLN	2.1
2	B	85	PHE	2.1
1	C	162	GLY	2.1
1	C	247	ALA	2.1
2	D	206	ALA	2.1
2	D	382	SER	2.1
2	D	415	MET	2.1
2	B	53	GLU	2.1
2	B	246	LEU	2.1
2	D	111	GLU	2.1
2	D	198	GLU	2.1
1	A	18	ASN	2.1

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Mol	Chain	Res	Type	RSRZ
4	F	242	ASN	2.1
4	F	319	PHE	2.1
1	C	44	GLY	2.1
1	A	337	THR	2.1
1	A	430	LYS	2.1
2	D	407	GLU	2.1
1	C	293	ASN	2.1
2	B	41	ASP	2.1
2	B	423	GLN	2.1
2	D	384	GLN	2.1
3	E	9	ILE	2.1
1	A	261	PRO	2.1
4	F	270	TYR	2.1
2	D	38	GLY	2.1
2	D	62	ARG	2.1
4	F	19	ARG	2.1
1	C	96	LYS	2.0
3	E	52	LYS	2.0
1	A	73	THR	2.0
2	D	168	SER	2.0
2	D	28	HIS	2.0
1	A	122	ILE	2.0
3	E	23	ILE	2.0
4	F	102	PRO	2.0
4	F	360	PRO	2.0
4	F	343	TYR	2.0
2	D	23	VAL	2.0
1	C	43	GLY	2.0
3	E	48	GLU	2.0
4	F	88	SER	2.0
4	F	271	LEU	2.0
2	B	30	ILE	2.0
3	E	26	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 oligosaccharides in this entry.

6.4 Ligands

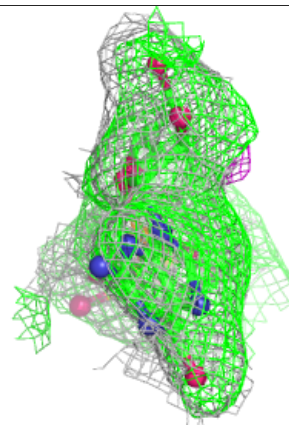
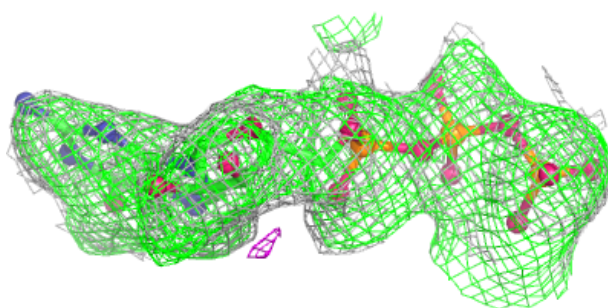
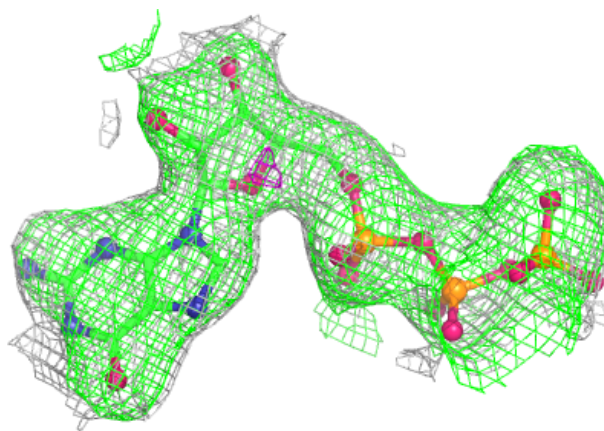
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	GTP	A	501	32/32	-	-	41,43,44,46	32
5	GTP	C	501	32/32	-	-	35,37,39,40	32
6	CA	A	502	1/1	-	-	73,73,73,73	1
6	CA	C	502	1/1	-	-	59,59,59,59	1
7	MG	A	503	1/1	-	-	47,47,47,47	1
7	MG	B	504	1/1	-	-	52,52,52,52	1
7	MG	C	503	1/1	-	-	41,41,41,41	1
8	GDP	B	501	28/28	-	-	37,44,45,47	28
8	GDP	D	501	28/28	-	-	76,80,84,85	28
9	MES	B	502	12/12	-	-	42,44,47,47	12
9	MES	B	503	12/12	-	-	58,60,61,61	12
10	A1EU2	B	505	23/23	0.88	0.15	39,48,58,102	0
11	ACP	F	401	31/31	-	-	84,96,116,118	45

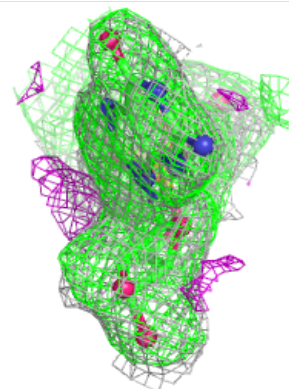
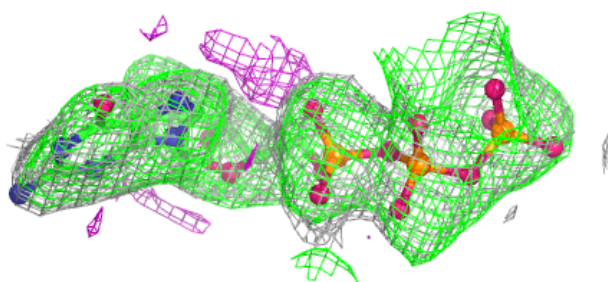
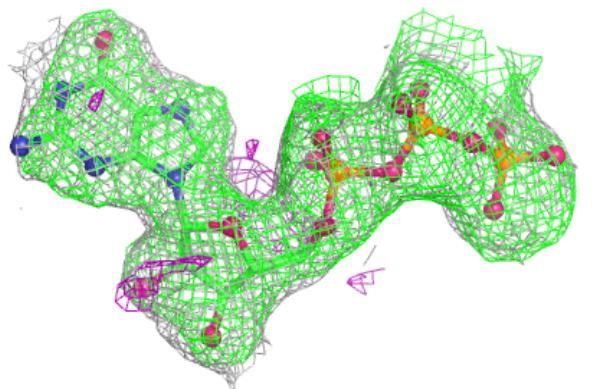
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around GTP A 501:

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

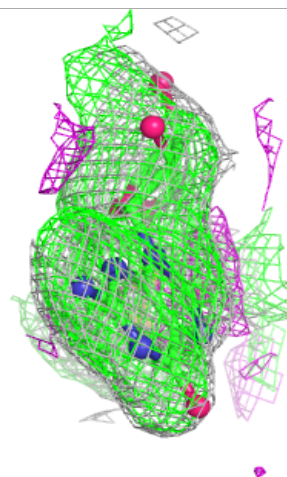
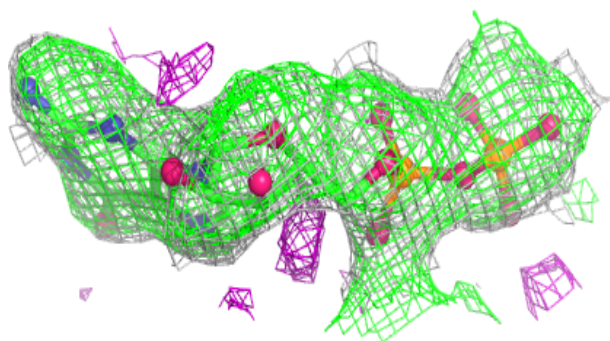
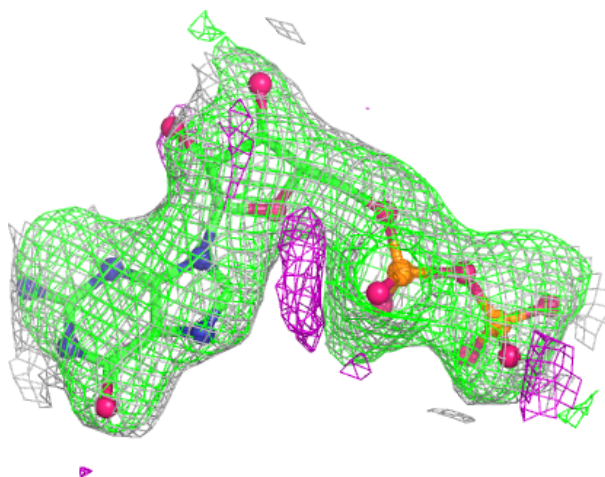
**Electron density around GTP C 501:**

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



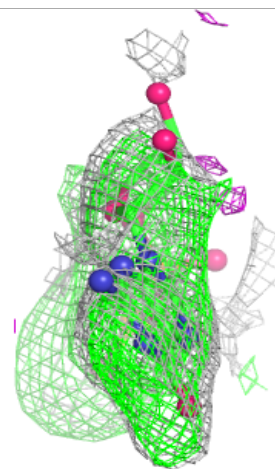
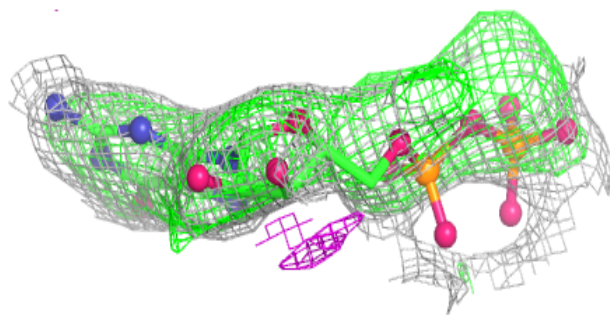
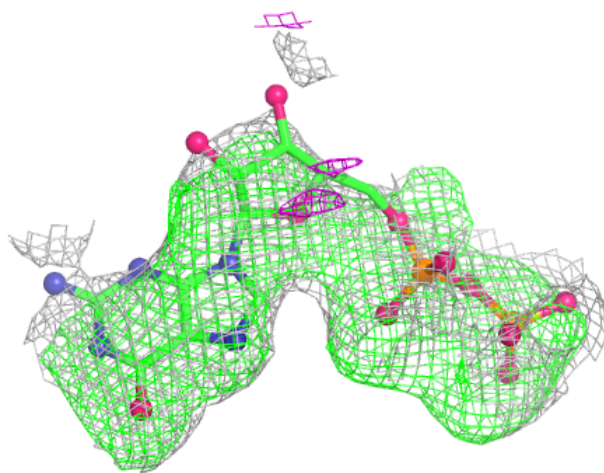
Electron density around GDP B 501:

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



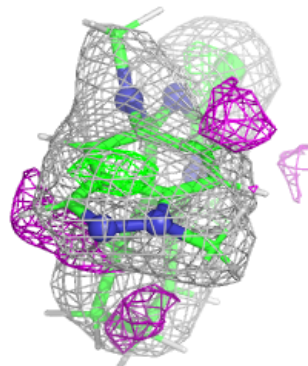
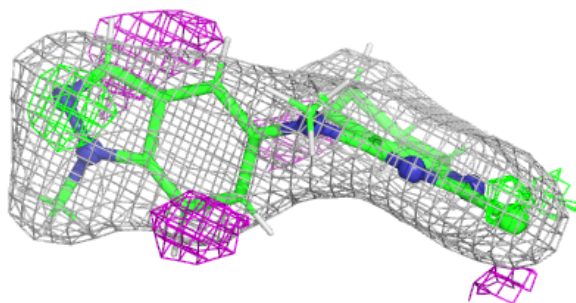
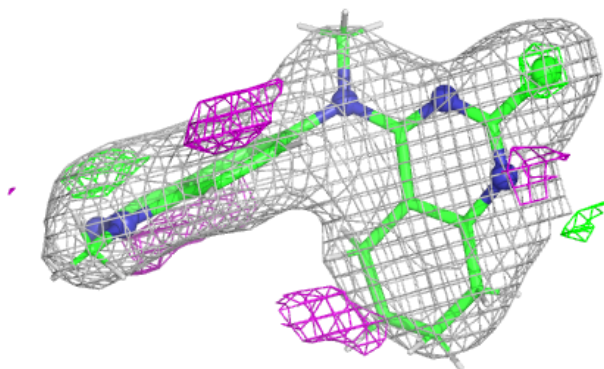
Electron density around GDP D 501:

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

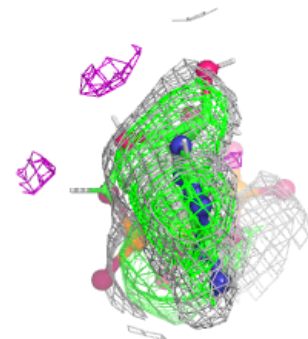
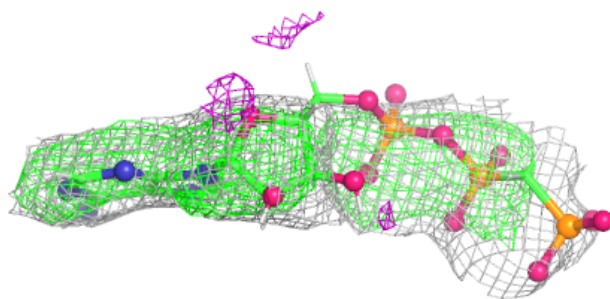
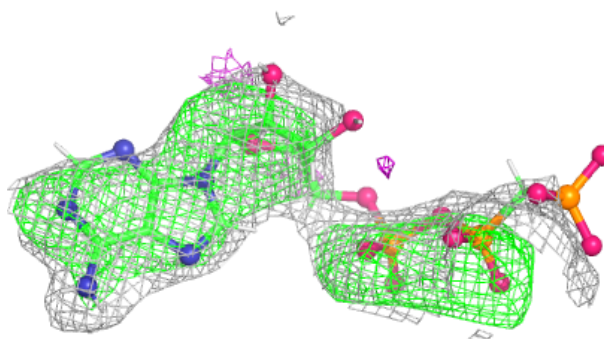


Electron density around A1EU2 B 505:

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

**Electron density around ACP F 401:**

$2mF_o-DF_c$ (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.