



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 22, 2023 – 10:43 PM JST

PDB ID : 7XQY
Title : Crystal structure of T2R-TTL-15 complex
Authors : Lun, T.; ChengYong, W.
Deposited on : 2022-05-09
Resolution : 2.35 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 : 2.36
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) : 2.36

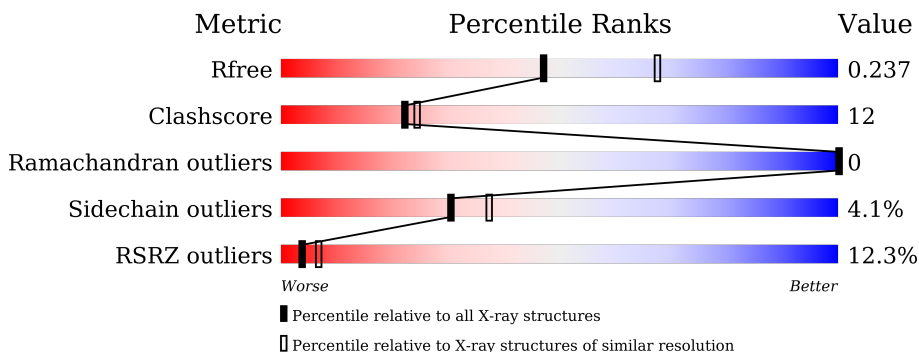
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.35 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	1164 (2.36-2.36)
Clashscore	141614	1232 (2.36-2.36)
Ramachandran outliers	138981	1211 (2.36-2.36)
Sidechain outliers	138945	1212 (2.36-2.36)
RSRZ outliers	127900	1150 (2.36-2.36)

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	450	
1	C	450	
2	B	445	
2	D	445	
3	E	143	
4	F	384	

2 Entry composition [i](#)

There are 12 unique types of molecules in this entry. The entry contains 17991 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 Tubulin alpha-1B chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	437	Total	C	N	O	S	0	4	0
			3427	2170	580	653	24			
1	C	440	Total	C	N	O	S	0	9	0
			3468	2195	585	663	25			

- Molecule 2 is a protein called Tubulin beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	424	Total	C	N	O	S	0	3	0
			3356	2111	572	647	26			
2	D	420	Total	C	N	O	S	0	1	0
			3295	2072	558	639	26			

- Molecule 3 is a protein called Stathmin-4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	E	123	Total	C	N	O	S	0	2	0
			1026	633	186	202	5			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	3	MET	-	initiating methionine	UNP P63042
E	4	ALA	-	expression tag	UNP P63042

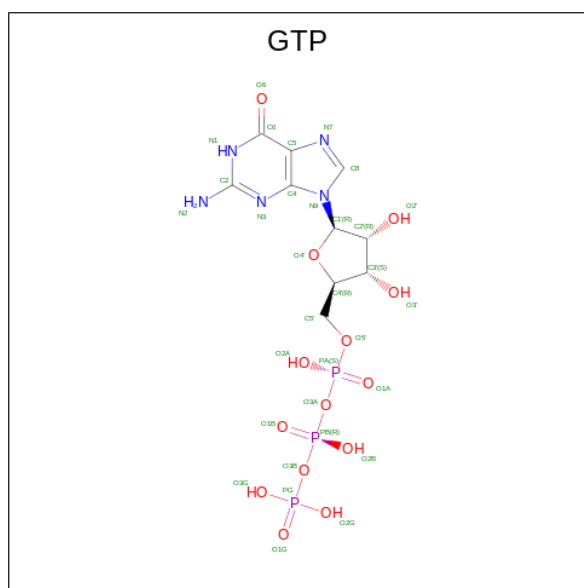
- Molecule 4 is a protein called TTL.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	F	346	Total	C	N	O	S	0	4	0
			2851	1830	487	519	15			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	379	HIS	-	expression tag	UNP E1BQ43
F	380	HIS	-	expression tag	UNP E1BQ43
F	381	HIS	-	expression tag	UNP E1BQ43
F	382	HIS	-	expression tag	UNP E1BQ43
F	383	HIS	-	expression tag	UNP E1BQ43
F	384	HIS	-	expression tag	UNP E1BQ43

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



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

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

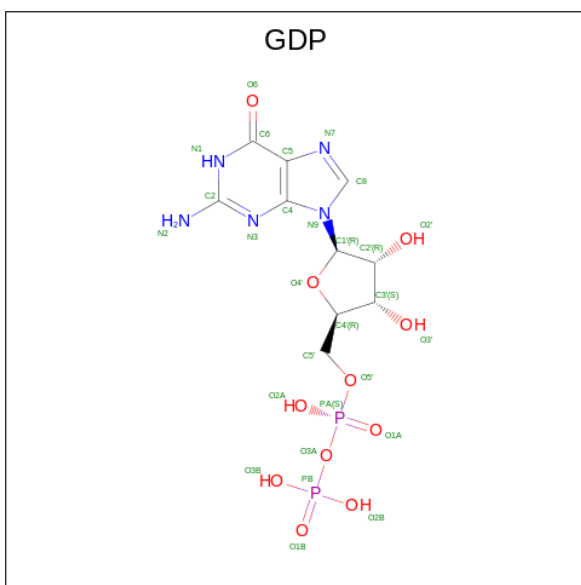
- Molecule 7 is CALCIUM ION (three-letter code: CA) (formula: Ca).

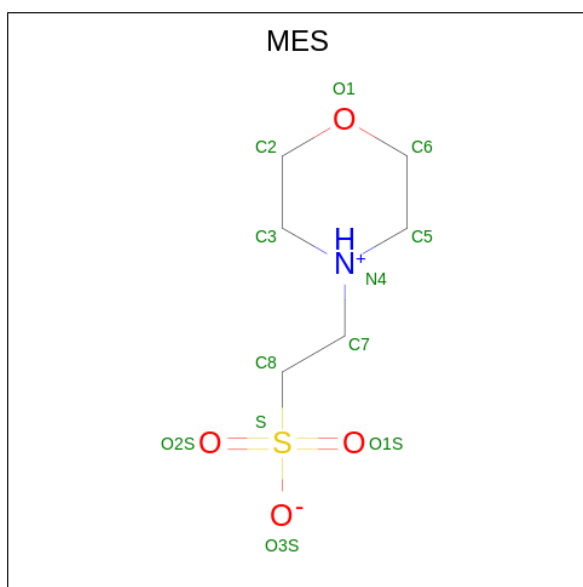
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total Ca 1 1	0	0
7	C	1	Total Ca 1 1	0	0

- Molecule 8 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	1	Total Cl 1 1	0	0

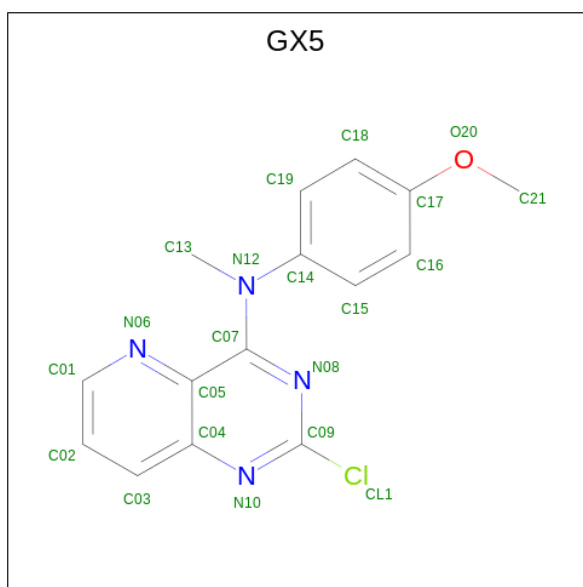
- Molecule 9 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: C₁₀H₁₅N₅O₁₁P₂).





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

- Molecule 11 is 2-chloranyl-N-(4-methoxyphenyl)-N-methyl-pyrido[3,2-d]pyrimidin-4-a mine (three-letter code: GX5) (formula: C₁₅H₁₃ClN₄O) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	Cl	N	O			
11	B	1	Total	21	15	1	4	1	0	0

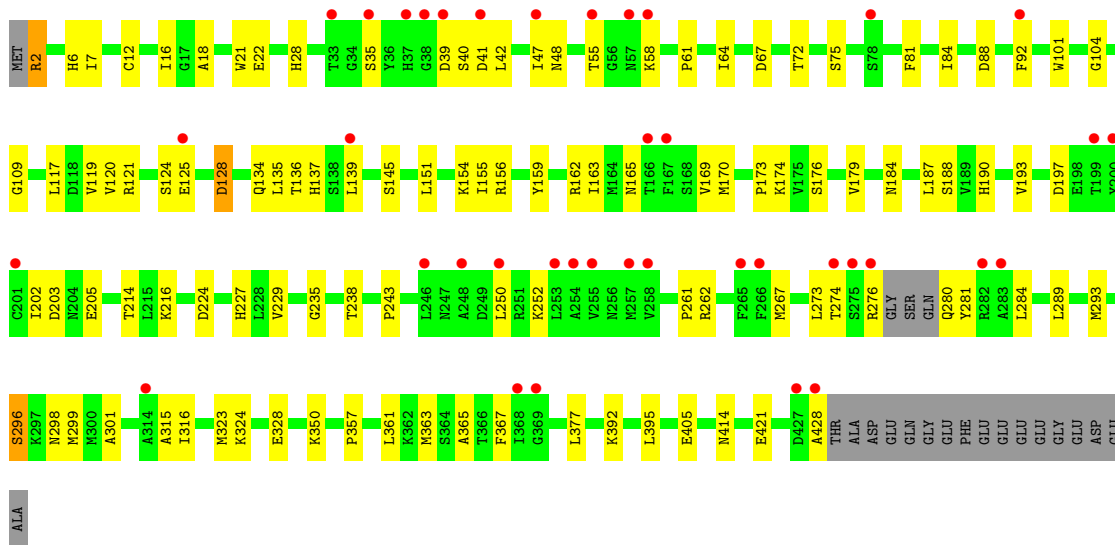
Continued on next page...

Continued from previous page...

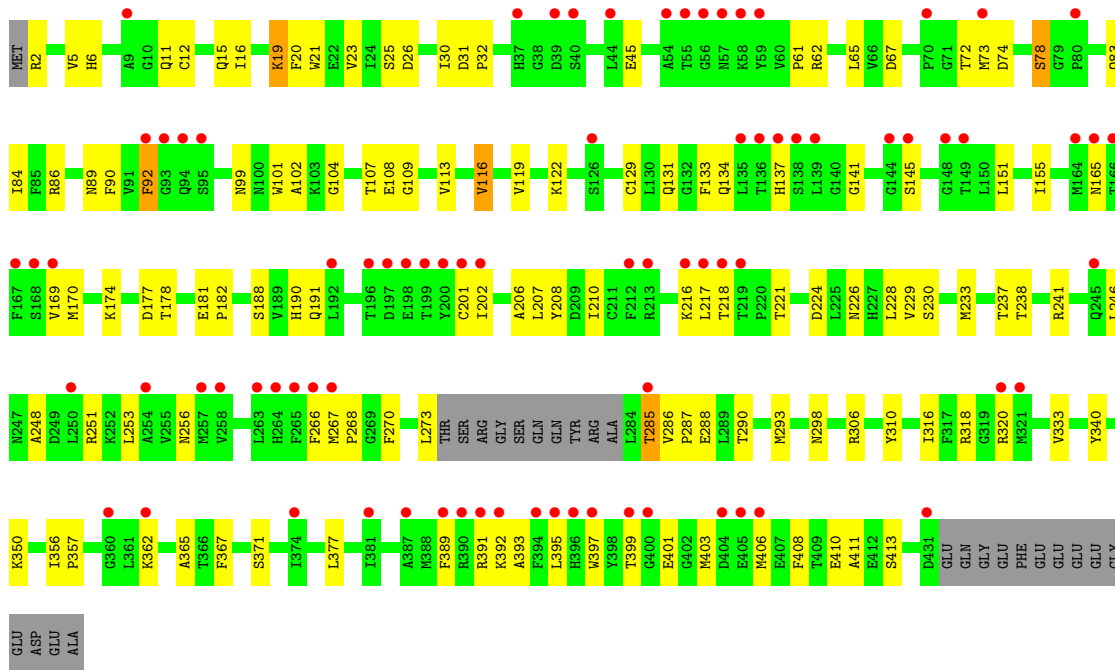
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
			Total	C	Cl	N			O
11	D	1	21	15	1	4	1	0	0

- Molecule 12 is water.

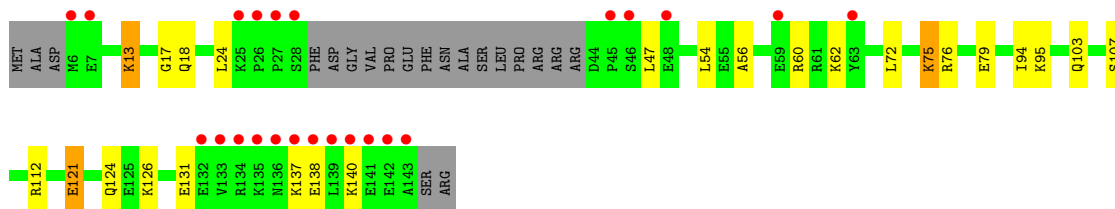
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
12	A	76	Total 76	O 76	0	0
12	B	59	Total 59	O 59	0	0
12	C	163	Total 163	O 163	0	0
12	D	28	Total 28	O 28	0	0
12	E	17	Total 17	O 17	0	0
12	F	33	Total 33	O 33	0	0



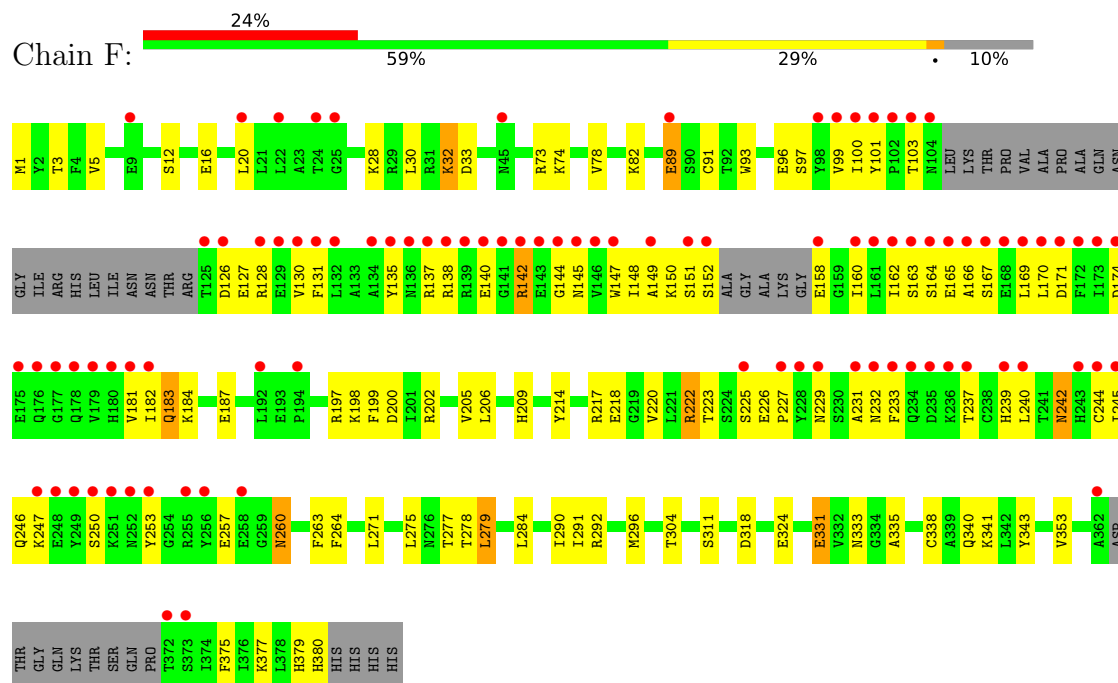
• Molecule 2: Tubulin beta chain



• Molecule 3: Stathmin-4



- Molecule 4: TTL



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	105.42Å 158.33Å 180.98Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	41.58 – 2.35 41.58 – 2.35	Depositor EDS
% Data completeness (in resolution range)	99.9 (41.58-2.35) 99.9 (41.58-2.35)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.67 (at 2.34Å)	Xtrriage
Refinement program	PHENIX 1.19_4092	Depositor
R, R_{free}	0.199 , 0.236 0.201 , 0.237	Depositor DCC
R_{free} test set	2000 reflections (1.58%)	wwPDB-VP
Wilson B-factor (Å ²)	49.6	Xtrriage
Anisotropy	0.169	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 43.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	17991	wwPDB-VP
Average B, all atoms (Å ²)	60.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.51% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 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: GX5, GDP, GTP, MES, CA, MG, CL

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	0.44	0/3517	0.62	0/4776
1	C	0.53	1/3570 (0.0%)	0.66	0/4847
2	B	0.49	0/3436	0.65	1/4653 (0.0%)
2	D	0.42	0/3368	0.60	0/4564
3	E	0.47	0/1041	0.62	0/1382
4	F	0.41	1/2927 (0.0%)	0.63	1/3955 (0.0%)
All	All	0.46	2/17859 (0.0%)	0.63	2/24177 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	295	CYS	CB-SG	-5.46	1.73	1.81
4	F	331	GLU	CG-CD	5.31	1.59	1.51

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	F	227	PRO	CA-N-CD	-6.68	102.15	111.50
2	B	299	MET	CA-CB-CG	-6.47	102.30	113.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3427	0	3341	69	0
1	C	3468	0	3388	55	0
2	B	3356	0	3238	85	0
2	D	3295	0	3166	101	0
3	E	1026	0	1042	19	0
4	F	2851	0	2826	91	0
5	A	32	0	12	0	0
5	C	32	0	12	0	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
6	C	1	0	0	0	0
7	A	1	0	0	0	0
7	C	1	0	0	0	0
8	A	1	0	0	0	0
9	B	28	0	12	1	0
9	D	28	0	11	3	0
10	B	24	0	25	4	0
11	B	21	0	0	0	0
11	D	21	0	0	3	0
12	A	76	0	0	0	0
12	B	59	0	0	3	0
12	C	163	0	0	1	0
12	D	28	0	0	0	0
12	E	17	0	0	1	0
12	F	33	0	0	2	0
All	All	17991	0	17073	404	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 (404) 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:D:102:ALA:HB2	2:D:403:MET:HE3	1.40	1.04
2:B:235:GLY:O	2:B:238:THR:HG22	1.68	0.93
1:A:31:GLN:HG3	1:A:32:PRO:HD2	1.56	0.88
4:F:82:LYS:NZ	4:F:97:SER:O	2.07	0.87
2:D:226:ASN:ND2	9:D:501:GDP:O6	2.09	0.85
1:A:262:TYR:HE1	1:A:346:TRP:CZ2	1.96	0.84
4:F:135:TYR:OH	4:F:165:GLU:HA	1.77	0.84
2:D:102:ALA:HB2	2:D:403:MET:CE	2.09	0.82
1:C:241:SER:HA	1:C:249:ASN:HD21	1.45	0.81

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:13:LYS:HB2	3:E:18:GLN:HB3	1.61	0.81
2:B:121:ARG:O	2:B:125:GLU:HG2	1.81	0.80
1:C:209:ILE:HD11	1:C:302:MET:SD	2.24	0.78
1:A:71:GLU:HG2	1:A:98:ASP:HB3	1.66	0.77
2:D:221:THR:HG22	2:D:224:ASP:OD2	1.85	0.77
2:B:238:THR:HG21	2:B:316:ILE:HG21	1.66	0.76
2:D:20:PHE:HB2	2:D:233:MET:HE2	1.67	0.76
2:D:285:THR:HG23	2:D:287:PRO:HD2	1.67	0.76
1:A:31:GLN:HG3	1:A:32:PRO:CD	2.16	0.76
2:B:280:GLN:HG2	2:B:281:TYR:H	1.50	0.75
1:A:36:MET:HE1	1:A:49:PHE:CE1	2.21	0.74
1:C:4[A]:CYS:SG	1:C:136:LEU:HG	2.27	0.74
4:F:131:PHE:CE2	4:F:182:ILE:HD11	2.22	0.74
4:F:205:VAL:HG21	4:F:291:ILE:HD13	1.69	0.74
2:D:191:GLN:HE22	3:E:126:LYS:HE2	1.53	0.73
2:D:113:VAL:O	2:D:116:VAL:HG13	1.91	0.71
1:A:166:LYS:HE2	1:A:197:HIS:O	1.91	0.70
1:C:250:VAL:HG22	1:C:255:PHE:CE2	2.26	0.70
2:D:392:LYS:C	2:D:395:LEU:HD13	2.11	0.70
4:F:170:LEU:H	4:F:170:LEU:HD12	1.55	0.70
4:F:226:GLU:CG	4:F:237:THR:HG22	2.21	0.70
2:D:293:MET:HG2	2:D:367:PHE:HB2	1.74	0.69
2:B:238:THR:CG2	2:B:316:ILE:HG21	2.21	0.69
1:C:234:ILE:HD13	1:C:302:MET:SD	2.32	0.69
4:F:226:GLU:HG3	4:F:237:THR:HG22	1.75	0.69
3:E:47:LEU:HD12	3:E:47:LEU:O	1.93	0.69
4:F:16:GLU:O	4:F:20:LEU:HG	1.94	0.68
4:F:144:GLY:HA3	4:F:187:GLU:OE1	1.92	0.68
4:F:223:THR:HG21	4:F:257:GLU:OE1	1.92	0.68
2:D:67:ASP:OD2	2:D:72:THR:HG21	1.94	0.67
2:B:35:SER:HB3	2:B:58:LYS:HE2	1.76	0.67
2:B:81:PHE:O	2:B:84:ILE:HG22	1.93	0.67
2:D:12:CYS:SG	2:D:16:ILE:HD12	2.35	0.67
2:D:11:GLN:HG3	2:D:15:GLN:HE22	1.59	0.67
2:D:107:THR:HG22	2:D:108:GLU:N	2.11	0.66
2:D:170:MET:HE1	2:D:201:CYS:HB3	1.78	0.66
1:A:220:GLU:HG2	2:B:324:LYS:HD2	1.77	0.65
1:A:357:TYR:CE2	3:E:17:GLY:HA2	2.32	0.65
2:D:191:GLN:HE22	3:E:126:LYS:CE	2.09	0.65
2:D:246:LEU:HD12	2:D:248:ALA:HB2	1.79	0.64
2:B:392:LYS:HE3	2:B:405:GLU:OE2	1.98	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:149:ALA:CB	4:F:182:ILE:HG22	2.28	0.64
1:A:45:GLY:O	1:A:50:ASN:ND2	2.29	0.64
2:D:5:VAL:HG12	2:D:62:ARG:HD3	1.80	0.64
4:F:198:LYS:HG2	4:F:199:PHE:H	1.63	0.64
2:D:11:GLN:HG3	2:D:15:GLN:NE2	2.13	0.63
2:D:21:TRP:CZ3	2:D:61:PRO:HB3	2.33	0.63
4:F:131:PHE:CD2	4:F:182:ILE:HD11	2.33	0.63
2:D:238:THR:HG21	2:D:318:ARG:HD2	1.79	0.63
4:F:101:TYR:N	4:F:126:ASP:OD2	2.30	0.63
2:B:316:ILE:N	2:B:316:ILE:HD12	2.14	0.62
4:F:277:THR:HG22	4:F:278:THR:H	1.64	0.62
4:F:202:ARG:HB3	4:F:220[B]:VAL:HG12	1.82	0.62
1:C:162:GLY:HA2	3:E:94:ILE:HD11	1.81	0.62
4:F:226:GLU:HG3	4:F:237:THR:CG2	2.30	0.62
2:D:116:VAL:HG21	2:D:151:LEU:HD21	1.82	0.62
2:D:20:PHE:HB2	2:D:233:MET:CE	2.30	0.61
2:D:73:MET:HG2	2:D:90:PHE:CD1	2.35	0.61
2:D:229:VAL:O	2:D:233:MET:HG3	2.00	0.61
2:B:2:ARG:NE	2:B:48:ASN:OD1	2.31	0.61
1:A:209:ILE:HD11	1:A:302:MET:SD	2.40	0.61
4:F:150:LYS:HG2	4:F:151:SER:N	2.16	0.61
4:F:217:ARG:HG3	4:F:218:GLU:HG2	1.83	0.61
3:E:131:GLU:OE1	3:E:131:GLU:HA	2.00	0.61
1:A:262:TYR:CE1	1:A:346:TRP:CZ2	2.85	0.60
4:F:277:THR:HG22	4:F:278:THR:N	2.15	0.60
1:C:211[A]:ASP:OD2	1:C:304:LYS:NZ	2.35	0.59
2:B:284:LEU:O	2:B:363:MET:CE	2.50	0.59
4:F:96:GLU:O	4:F:183:GLN:HB2	2.03	0.59
4:F:200:ASP:OD1	4:F:222:ARG:HB2	2.02	0.59
1:A:147:SER:HB2	1:A:190:THR:HB	1.85	0.59
2:D:141:GLY:HA3	9:D:501:GDP:O3A	2.03	0.59
2:D:391:ARG:HD2	2:D:393:ALA:HB2	1.85	0.58
2:B:293:MET:HE2	2:B:367:PHE:HB2	1.83	0.58
4:F:150:LYS:HG2	4:F:151:SER:H	1.69	0.58
1:C:440:VAL:HG12	1:C:440:VAL:O	2.02	0.58
2:B:48:ASN:H	2:B:48:ASN:ND2	2.02	0.58
2:B:280:GLN:CG	2:B:281:TYR:H	2.17	0.58
1:A:55:GLU:HG2	1:A:61:HIS:CD2	2.38	0.58
2:B:280:GLN:HG2	2:B:281:TYR:N	2.17	0.57
2:D:362:LYS:HD3	2:D:362:LYS:N	2.19	0.57
4:F:225:SER:H	4:F:246:GLN:HE22	1.49	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:226:GLU:HG2	4:F:237:THR:HG22	1.87	0.57
1:A:88:HIS:CE1	1:A:90:GLU:HG2	2.40	0.57
2:D:216:LYS:O	2:D:217:LEU:HD23	2.05	0.57
1:A:27:GLU:OE1	1:A:243:ARG:NH2	2.35	0.56
4:F:127:GLU:O	4:F:130:VAL:HG22	2.06	0.56
2:B:39:ASP:OD1	2:B:40:SER:N	2.38	0.56
2:D:74:ASP:O	2:D:78:SER:OG	2.23	0.56
2:B:296:SER:N	10:B:504:MES:O1S	2.29	0.55
2:B:104:GLY:O	2:B:109:GLY:HA3	2.07	0.55
2:D:356:ILE:HD12	2:D:357:PRO:HD2	1.88	0.55
2:D:285:THR:HG23	2:D:287:PRO:CD	2.36	0.55
1:A:262:TYR:HE1	1:A:346:TRP:CH2	2.25	0.55
2:D:65:LEU:N	2:D:65:LEU:HD12	2.21	0.55
1:A:36:MET:HE3	1:A:39:ASP:HB2	1.89	0.55
3:E:112:ARG:NH2	12:E:201:HOH:O	2.38	0.55
1:A:265:ILE:O	1:A:265:ILE:HG22	2.06	0.55
1:A:336:LYS:HD3	3:E:24:LEU:HD13	1.89	0.55
4:F:145:ASN:OD1	4:F:147:TRP:NE1	2.40	0.55
1:C:71:GLU:HG2	1:C:98:ASP:HB3	1.88	0.54
2:B:273:LEU:HD11	2:B:298:ASN:HA	1.88	0.54
4:F:1:MET:CE	4:F:28:LYS:HB3	2.38	0.54
1:C:241:SER:HA	1:C:249:ASN:ND2	2.20	0.54
4:F:5:VAL:HG13	4:F:32:LYS:HA	1.88	0.54
2:D:5:VAL:HG12	2:D:62:ARG:CD	2.37	0.54
1:A:112:LYS:HD2	3:E:54:LEU:HB3	1.89	0.53
2:B:190:HIS:O	2:B:193:VAL:HG12	2.07	0.53
4:F:138:ARG:NH1	4:F:184:LYS:HE3	2.22	0.53
2:B:58:LYS:NZ	12:B:603:HOH:O	2.40	0.53
1:C:250:VAL:HG22	1:C:255:PHE:CZ	2.43	0.53
2:B:261:PRO:HD2	12:B:631:HOH:O	2.09	0.53
2:B:284:LEU:O	2:B:363:MET:HE3	2.08	0.53
4:F:135:TYR:HH	4:F:165:GLU:HA	1.72	0.53
2:D:5:VAL:CG2	2:D:133:PHE:CD2	2.91	0.53
1:A:331:ALA:O	1:A:335:ILE:HG13	2.08	0.53
1:A:336:LYS:HE2	1:A:341:ILE:HB	1.89	0.53
1:A:90:GLU:O	1:A:121:ARG:HD2	2.08	0.53
1:A:401:LYS:NZ	2:B:428:ALA:HB1	2.23	0.53
2:D:25:SER:HB3	2:D:30:ILE:HG22	1.90	0.53
2:D:206:ALA:O	2:D:210:ILE:HG13	2.09	0.53
1:A:21:TRP:CZ3	1:A:63:PRO:HB3	2.45	0.52
2:D:6:HIS:CD2	2:D:21:TRP:HE1	2.27	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:88:HIS:ND1	1:A:90:GLU:HG2	2.24	0.52
1:A:159:VAL:HG12	1:A:160:ASP:OD1	2.09	0.52
2:D:21:TRP:CE3	2:D:61:PRO:HB3	2.43	0.52
4:F:246:GLN:O	4:F:250:SER:HB2	2.09	0.52
2:D:99:ASN:HD22	2:D:178:THR:HG21	1.74	0.52
4:F:264:PHE:HB2	12:F:410:HOH:O	2.09	0.52
1:C:36:MET:HE3	1:C:61:HIS:CD2	2.45	0.52
2:D:221:THR:HG23	2:D:224:ASP:H	1.75	0.52
1:A:60:LYS:NZ	1:A:85:GLN:O	2.42	0.52
1:A:75:ILE:O	1:A:79:ARG:HG3	2.09	0.52
3:E:72:LEU:O	3:E:76:ARG:HG2	2.09	0.51
1:A:209:ILE:HG22	1:A:227:LEU:HD22	1.91	0.51
1:C:66:VAL:HG23	1:C:125:LEU:CD1	2.40	0.51
4:F:78:VAL:HG21	4:F:181:VAL:HG21	1.92	0.51
2:B:224:ASP:OD1	2:B:276:ARG:NH1	2.43	0.51
2:D:285:THR:CG2	2:D:287:PRO:HD2	2.39	0.51
2:B:145:SER:HB2	2:B:188:SER:OG	2.11	0.51
4:F:205:VAL:CG2	4:F:291:ILE:HD13	2.39	0.51
1:A:34:GLY:O	1:A:61:HIS:N	2.32	0.51
2:B:203:ASP:HB2	2:B:301:ALA:HA	1.92	0.51
2:D:392:LYS:O	2:D:395:LEU:HD13	2.11	0.51
1:C:174:ALA:O	1:C:178:SER:HB3	2.11	0.51
2:D:5:VAL:HG22	2:D:133:PHE:CD2	2.46	0.51
4:F:3:THR:HB	4:F:30:LEU:HD11	1.93	0.51
2:D:290:THR:HG22	2:D:333:VAL:HG21	1.92	0.51
4:F:131:PHE:CE2	4:F:182:ILE:CD1	2.92	0.50
4:F:377:LYS:HG2	4:F:379:HIS:ND1	2.26	0.50
2:D:102:ALA:CB	2:D:403:MET:HE3	2.27	0.50
4:F:99:VAL:C	4:F:100:ILE:HD13	2.32	0.50
1:A:36:MET:HB3	1:A:61:HIS:CE1	2.46	0.50
2:D:202:ILE:HG21	2:D:229:VAL:HG22	1.94	0.50
4:F:73:ARG:HG2	4:F:73:ARG:HH11	1.77	0.50
4:F:126:ASP:OD1	4:F:128:ARG:HG2	2.11	0.50
1:A:260:VAL:HG11	1:A:266:HIS:HB3	1.94	0.50
2:B:169:VAL:HA	2:B:202:ILE:O	2.12	0.49
2:D:141:GLY:O	2:D:145[A]:SER:OG	2.27	0.49
4:F:99:VAL:O	4:F:100:ILE:HD13	2.12	0.49
2:B:170:MET:HE2	2:B:377:LEU:HD21	1.93	0.49
1:C:245:ASP:OD1	1:C:245:ASP:N	2.44	0.49
2:D:169:VAL:HA	2:D:202:ILE:O	2.13	0.49
4:F:148:ILE:HG13	4:F:162:ILE:HG12	1.93	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:63:PRO:HG2	1:C:87:PHE:CE1	2.48	0.49
2:D:226:ASN:ND2	9:D:501:GDP:C6	2.80	0.49
1:C:104:ALA:HB2	1:C:413:MET:SD	2.52	0.49
1:C:292:THR:HG22	1:C:335:ILE:CD1	2.43	0.49
4:F:198:LYS:HG2	4:F:199:PHE:N	2.28	0.49
4:F:32:LYS:HE3	4:F:33:ASP:OD1	2.13	0.49
1:A:221:ARG:HG3	2:B:323:MET:CG	2.43	0.48
2:B:28:HIS:ND1	2:B:47:ILE:HD13	2.28	0.48
2:B:267:MET:HG3	2:B:301:ALA:HB3	1.93	0.48
1:C:361:THR:HG22	1:C:362:VAL:N	2.28	0.48
2:D:293:MET:SD	2:D:365:ALA:HB1	2.52	0.48
4:F:263:PHE:CE2	4:F:341:LYS:HD3	2.48	0.48
4:F:333:ASN:ND2	4:F:335:ALA:H	2.11	0.48
2:B:2:ARG:NH1	2:B:128:ASP:OD2	2.47	0.48
2:D:246:LEU:CD1	2:D:248:ALA:HB2	2.41	0.48
4:F:89:GLU:CD	4:F:89:GLU:H	2.16	0.48
1:A:293:ASN:HA	1:A:335:ILE:HD13	1.95	0.48
2:B:67:ASP:O	2:B:92:PHE:HA	2.14	0.48
1:C:320:ARG:HA	1:C:356:ASN:O	2.12	0.48
4:F:284:LEU:HD12	4:F:284:LEU:HA	1.63	0.48
1:A:344:VAL:HG21	1:A:346:TRP:CZ2	2.48	0.48
1:C:36:MET:HE3	1:C:49:PHE:CE1	2.48	0.48
2:D:181:GLU:HB2	2:D:182:PRO:HD3	1.94	0.48
1:A:221:ARG:HG3	2:B:323:MET:HG3	1.94	0.48
4:F:1:MET:HE2	4:F:28:LYS:HB3	1.94	0.48
4:F:279:LEU:HD13	4:F:284:LEU:HD22	1.95	0.48
4:F:99:VAL:HG12	4:F:127:GLU:OE1	2.14	0.48
4:F:223:THR:HG22	4:F:260:ASN:O	2.13	0.48
2:B:197:ASP:OD1	10:B:503:MES:H72	2.13	0.48
2:B:284:LEU:O	2:B:363:MET:HE1	2.13	0.48
2:D:389:PHE:CE1	2:D:408:PHE:HB3	2.48	0.48
4:F:318:ASP:OD2	4:F:331:GLU:HG2	2.14	0.47
2:D:207:LEU:HD22	2:D:228:LEU:HB2	1.97	0.47
4:F:225:SER:OG	4:F:260:ASN:OD1	2.33	0.47
1:C:293[A]:ASN:CG	1:C:339:ARG:HH21	2.17	0.47
2:B:61:PRO:CD	2:B:84:ILE:HG12	2.45	0.47
2:B:315:ALA:C	2:B:316:ILE:HD12	2.33	0.47
1:C:48:SER:HB3	1:C:243:ARG:O	2.14	0.47
2:D:2:ARG:HD2	2:D:2:ARG:HA	1.47	0.47
2:B:7:ILE:O	2:B:135:LEU:HA	2.14	0.47
2:B:139:LEU:HA	2:B:145:SER:HB3	1.96	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:333:ALA:O	1:C:337:THR:HG23	2.15	0.47
4:F:338:CYS:HB3	4:F:343:TYR:CE1	2.50	0.47
2:B:227:HIS:NE2	2:B:274:THR:HG23	2.30	0.47
2:D:266:PHE:O	2:D:268:PRO:HD3	2.15	0.47
4:F:214:TYR:HB3	4:F:375:PHE:HB3	1.97	0.47
1:A:103:TYR:CE1	1:A:148:GLY:HA2	2.49	0.47
2:B:16[B]:ILE:HD13	2:B:229:VAL:HG11	1.97	0.47
4:F:128:ARG:HD3	4:F:170:LEU:HD23	1.98	0.47
2:B:159:TYR:HB3	2:B:162:ARG:HG2	1.97	0.46
2:D:73:MET:HG2	2:D:90:PHE:CE1	2.50	0.46
4:F:206:LEU:HD23	4:F:353:VAL:CG2	2.45	0.46
1:C:210:TYR:CZ	1:C:222:PRO:HD2	2.50	0.46
2:D:2:ARG:N	2:D:131:GLN:HG3	2.30	0.46
2:D:67:ASP:O	2:D:92:PHE:HA	2.16	0.46
2:D:101:TRP:HD1	2:D:145[A]:SER:HB2	1.81	0.46
2:D:238:THR:OG1	2:D:316:ILE:HG21	2.15	0.46
2:D:395:LEU:O	2:D:399:THR:HG22	2.14	0.46
1:A:210:TYR:CZ	1:A:222:PRO:HD2	2.50	0.46
1:C:248:LEU:CD1	1:C:357:TYR:OH	2.64	0.46
1:C:430:LYS:O	1:C:434:GLU:HG3	2.15	0.46
2:B:40:SER:OG	2:B:41:ASP:N	2.48	0.46
1:A:414:GLU:OE2	3:E:60:ARG:CZ	2.64	0.46
2:B:2:ARG:CB	2:B:2:ARG:HH11	2.29	0.46
2:B:21:TRP:CZ3	2:B:61:PRO:HB3	2.51	0.46
2:B:357:PRO:HB2	2:B:361:LEU:O	2.16	0.46
4:F:103:THR:HG22	4:F:174:ASP:HB3	1.98	0.46
4:F:233:PHE:HE1	4:F:239:HIS:CE1	2.34	0.46
1:A:262:TYR:CE1	1:A:346:TRP:CH2	3.03	0.46
3:E:56:ALA:HB1	3:E:60:ARG:HH12	1.81	0.46
4:F:91:CYS:SG	4:F:93:TRP:CE2	3.08	0.46
2:B:6:HIS:CD2	2:B:21:TRP:HE1	2.33	0.45
2:D:89:ASN:HA	2:D:119:VAL:HG11	1.98	0.45
2:D:174:LYS:HG2	2:D:208:TYR:CD1	2.51	0.45
2:D:395:LEU:HD12	2:D:395:LEU:N	2.31	0.45
2:B:117:LEU:HD11	2:B:154:LYS:HB3	1.99	0.45
2:D:134:GLN:HA	2:D:165:ASN:O	2.16	0.45
2:D:391:ARG:CD	2:D:393:ALA:HB2	2.47	0.45
1:A:88:HIS:ND1	1:A:90:GLU:CG	2.80	0.45
2:B:101:TRP:CE3	2:B:187:LEU:HD13	2.52	0.45
1:A:119:LEU:HD11	1:A:156:ARG:HB3	1.98	0.45
2:B:173:PRO:HA	2:B:176:SER:HB2	1.99	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:69:ASP:O	1:C:94:THR:HA	2.17	0.45
4:F:167:SER:O	4:F:171:ASP:HB2	2.16	0.45
2:D:19:LYS:HA	2:D:19:LYS:HD3	1.81	0.45
2:D:73:MET:HG2	2:D:90:PHE:HD1	1.79	0.45
1:A:30:ILE:HG12	1:A:36:MET:HB2	1.99	0.45
1:A:293:ASN:HA	1:A:335:ILE:CD1	2.47	0.45
1:A:346:TRP:CZ3	1:A:347:CYS:SG	3.09	0.45
2:B:2:ARG:HH11	2:B:2:ARG:CG	2.30	0.45
2:B:216:LYS:HA	2:B:216:LYS:HD3	1.67	0.45
1:C:147:SER:HB2	1:C:190:THR:HB	1.99	0.45
1:C:229:ARG:CD	1:C:363:VAL:HG21	2.47	0.45
2:B:324:LYS:HE3	2:B:328:GLU:OE2	2.17	0.45
1:C:204:VAL:HG13	1:C:302:MET:HG3	1.98	0.45
4:F:74:LYS:NZ	4:F:150:LYS:HD3	2.32	0.45
2:D:104:GLY:O	2:D:109:GLY:HA3	2.16	0.44
2:D:293:MET:CG	2:D:367:PHE:HB2	2.46	0.44
1:A:3:GLU:HG2	1:A:64:ARG:CZ	2.47	0.44
2:D:210:ILE:HD13	2:D:273:LEU:CD1	2.48	0.44
2:D:306:ARG:HG2	2:D:340:TYR:CZ	2.52	0.44
2:D:12:CYS:SG	2:D:16:ILE:CD1	3.05	0.44
2:D:23:VAL:HG21	2:D:230:SER:OG	2.16	0.44
2:D:31:ASP:HB2	2:D:32:PRO:CD	2.47	0.44
4:F:163:SER:OG	4:F:164:SER:N	2.50	0.44
4:F:197:ARG:NH2	4:F:257:GLU:OE2	2.46	0.44
3:E:60:ARG:HG3	3:E:60:ARG:HH11	1.82	0.44
4:F:340:GLN:NE2	12:F:401:HOH:O	2.24	0.44
2:D:285:THR:CG2	2:D:288:GLU:H	2.31	0.44
4:F:160:ILE:HD12	4:F:160:ILE:N	2.33	0.44
2:B:289:LEU:HG	2:B:365:ALA:HB2	2.00	0.44
4:F:304:THR:HG21	4:F:311:SER:HB2	1.99	0.44
1:A:21:TRP:CH2	1:A:63:PRO:HB3	2.52	0.44
1:A:36:MET:HE3	1:A:36:MET:HB3	1.90	0.44
2:B:151:LEU:O	2:B:155:ILE:HG13	2.18	0.44
1:C:66:VAL:HG23	1:C:125:LEU:HD12	2.00	0.44
1:C:81:GLY:O	1:C:84:ARG:NH1	2.47	0.44
1:C:328:VAL:O	1:C:332:ILE:HG13	2.17	0.44
1:C:209:ILE:HG23	1:C:230:LEU:HD23	1.99	0.43
1:A:123:ARG:HG3	1:A:123:ARG:HH11	1.83	0.43
2:B:64:ILE:HG12	2:B:119:VAL:HG12	2.00	0.43
2:B:273:LEU:HD23	2:B:273:LEU:HA	1.66	0.43
2:D:286:VAL:HB	2:D:287:PRO:HD3	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:233:GLN:HG3	1:C:368:LEU:HD22	2.00	0.43
1:A:33:ASP:O	1:A:60:LYS:HD2	2.18	0.43
1:A:100:ALA:HA	2:B:252:LYS:HG3	1.99	0.43
1:A:187:SER:HB3	1:A:391:LEU:HD21	2.01	0.43
2:B:134:GLN:HA	2:B:165:ASN:O	2.19	0.43
4:F:100:ILE:HD12	4:F:128:ARG:HB3	2.00	0.43
4:F:292:ARG:NH1	4:F:380:HIS:HB3	2.34	0.43
1:A:210:TYR:CE1	1:A:222:PRO:HD2	2.53	0.43
2:B:174:LYS:HD2	2:B:205:GLU:HG3	2.00	0.43
2:B:170:MET:HE2	2:B:170:MET:HB3	1.63	0.43
2:B:179:VAL:HG12	1:C:348:PRO:HG2	2.01	0.43
2:B:262:ARG:NH2	2:B:421[A]:GLU:OE2	2.51	0.43
2:D:253:LEU:HD13	11:D:502:GX5:C09	2.49	0.43
2:D:397:TRP:CD1	2:D:397:TRP:N	2.87	0.43
1:C:135:PHE:O	1:C:136:LEU:HD23	2.18	0.43
1:A:385:ALA:HB2	1:A:432:TYR:CG	2.54	0.43
1:C:30:ILE:HD11	1:C:36:MET:HE1	2.01	0.43
2:D:190:HIS:ND1	2:D:411:ALA:HA	2.34	0.43
2:D:237:THR:O	2:D:241:ARG:HG3	2.19	0.43
4:F:198:LYS:HE3	4:F:239:HIS:O	2.19	0.43
4:F:247:LYS:NZ	4:F:253:TYR:OH	2.52	0.43
1:A:274:PRO:HB3	1:A:286:LEU:HD12	2.01	0.42
1:A:328:VAL:O	1:A:332:ILE:HG13	2.19	0.42
2:B:162:ARG:O	10:B:503:MES:H52	2.19	0.42
2:D:238:THR:HG21	2:D:318:ARG:CD	2.48	0.42
1:A:209:ILE:HG23	1:A:230:LEU:HD23	2.01	0.42
2:D:350:LYS:HG2	11:D:502:GX5:C21	2.50	0.42
3:E:75:LYS:O	3:E:79:GLU:HG3	2.19	0.42
1:C:156:ARG:NH1	12:C:617:HOH:O	2.49	0.42
2:D:151:LEU:O	2:D:155:ILE:HG13	2.20	0.42
2:D:270:PHE:O	2:D:298:ASN:HB3	2.19	0.42
4:F:140:GLU:C	4:F:142:ARG:H	2.23	0.42
1:C:164:LYS:HE2	1:C:164:LYS:HB2	1.83	0.42
2:D:256:ASN:HB3	11:D:502:GX5:C17	2.49	0.42
3:E:47:LEU:HD12	3:E:47:LEU:C	2.40	0.42
1:C:67:PHE:HB2	1:C:92:LEU:HD23	2.00	0.42
4:F:209:HIS:HA	4:F:311:SER:O	2.19	0.42
1:A:215:ARG:NH2	1:A:299:ALA:HB1	2.35	0.42
2:D:5:VAL:CG2	2:D:133:PHE:HD2	2.31	0.42
2:D:191:GLN:HE22	3:E:126:LYS:NZ	2.17	0.42
1:A:237:SER:OG	1:A:376:CYS:HB3	2.19	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:392:ASP:OD2	1:C:429:GLU:OE2	2.37	0.42
4:F:244:CYS:SG	4:F:245:ILE:N	2.92	0.42
1:C:192:HIS:CG	1:C:421:ALA:HA	2.55	0.42
2:B:28:HIS:HD1	2:B:47:ILE:HD13	1.84	0.42
4:F:271:LEU:CD2	4:F:275[B]:LEU:HD12	2.49	0.42
2:B:48:ASN:H	2:B:48:ASN:HD22	1.64	0.41
2:D:207:LEU:HD11	2:D:229:VAL:CG2	2.50	0.41
3:E:121:GLU:HA	3:E:124:GLN:OE1	2.19	0.41
4:F:149:ALA:HB1	4:F:182:ILE:HG22	1.99	0.41
4:F:158:GLU:C	4:F:160:ILE:HD12	2.40	0.41
1:A:401:LYS:HZ1	2:B:428:ALA:HB1	1.83	0.41
2:B:2:ARG:NH1	2:B:2:ARG:CG	2.83	0.41
2:B:316:ILE:N	2:B:316:ILE:CD1	2.83	0.41
2:B:395:LEU:HD23	2:B:395:LEU:HA	1.87	0.41
1:C:36:MET:CE	1:C:61:HIS:CD2	3.04	0.41
4:F:197:ARG:NH1	4:F:257:GLU:OE2	2.51	0.41
2:D:401:GLU:O	3:E:137:LYS:HB2	2.21	0.41
2:B:163:ILE:HG21	2:B:250:LEU:HB3	2.02	0.41
2:B:395:LEU:HD13	2:B:405:GLU:HG2	2.03	0.41
1:C:88:HIS:HE1	1:C:90:GLU:HG3	1.84	0.41
1:C:254:GLU:HG2	1:C:352:LYS:HE2	2.02	0.41
2:D:310:TYR:CD1	2:D:371:SER:HB2	2.55	0.41
2:D:320:ARG:HH11	2:D:320:ARG:HG3	1.86	0.41
1:A:263:PRO:O	1:A:266:HIS:HD2	2.04	0.41
2:B:12:CYS:HB2	9:B:501:GDP:C8	2.56	0.41
4:F:73:ARG:HH11	4:F:73:ARG:CG	2.33	0.41
4:F:166:ALA:O	4:F:170:LEU:HD12	2.20	0.41
1:A:69:ASP:O	1:A:94:THR:HA	2.21	0.41
1:A:434:GLU:HG3	1:A:435:VAL:N	2.35	0.41
2:B:16[A]:ILE:HD11	2:B:136:THR:HB	2.02	0.41
2:B:156:ARG:HD2	10:B:503:MES:O1	2.20	0.41
2:D:393:ALA:O	2:D:395:LEU:HD12	2.20	0.41
4:F:271:LEU:HD23	4:F:275[B]:LEU:HD12	2.03	0.41
2:B:42:LEU:HD23	2:B:243:PRO:HG2	2.02	0.41
2:B:101:TRP:HB2	2:B:184:ASN:OD1	2.21	0.41
2:B:61:PRO:HD3	2:B:84:ILE:HG12	2.03	0.41
2:B:190:HIS:CE1	2:B:414:ASN:HD22	2.38	0.41
2:D:2:ARG:HB2	2:D:129:CYS:O	2.20	0.41
2:D:170:MET:HE3	2:D:170:MET:HB2	1.73	0.41
2:D:285:THR:HG22	2:D:288:GLU:CD	2.41	0.41
4:F:198:LYS:HE3	4:F:239:HIS:HA	2.02	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:333:ASN:HD21	4:F:335:ALA:C	2.24	0.41
1:A:31:GLN:HB3	1:A:33:ASP:OD1	2.21	0.41
1:A:125:LEU:HD23	1:A:125:LEU:HA	1.82	0.41
2:B:64:ILE:HD13	2:B:120:VAL:HG22	2.03	0.41
1:C:7:ILE:HG21	1:C:153:LEU:HD21	2.03	0.41
1:C:266:HIS:CD2	1:C:266:HIS:O	2.74	0.41
1:C:270:ALA:O	1:C:302:MET:HB2	2.21	0.41
4:F:93:TRP:CD2	4:F:290:ILE:HG12	2.56	0.41
2:B:72:THR:N	12:B:602:HOH:O	2.54	0.41
1:C:36:MET:HB3	1:C:61:HIS:CE1	2.56	0.41
2:D:170:MET:HG2	2:D:377:LEU:HD21	2.03	0.41
4:F:149:ALA:HB2	4:F:182:ILE:HG22	2.00	0.41
4:F:242:ASN:OD1	4:F:242:ASN:N	2.54	0.41
1:C:248:LEU:HD11	1:C:357:TYR:OH	2.22	0.40
4:F:166:ALA:HA	4:F:169:LEU:HD12	2.03	0.40
1:A:71:GLU:OE1	1:A:73:THR:OG1	2.36	0.40
1:A:138:PHE:CD1	1:A:138:PHE:N	2.89	0.40
2:B:18:ALA:O	2:B:22:GLU:HG3	2.21	0.40
2:D:406:MET:O	2:D:410:GLU:HG3	2.22	0.40
4:F:217:ARG:HG3	4:F:218:GLU:N	2.36	0.40
1:C:210:TYR:CE1	1:C:222:PRO:HD2	2.56	0.40
1:C:250:VAL:CG2	1:C:255:PHE:CE2	3.02	0.40
2:D:170:MET:HE1	2:D:201:CYS:CB	2.49	0.40
4:F:229:ASN:OD1	4:F:231:ALA:HB3	2.21	0.40
1:C:351:PHE:N	1:C:351:PHE:CD1	2.88	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	439/450 (98%)	424 (97%)	15 (3%)	0	100 100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	C	446/450 (99%)	431 (97%)	15 (3%)	0	100	100
2	B	423/445 (95%)	412 (97%)	11 (3%)	0	100	100
2	D	416/445 (94%)	395 (95%)	21 (5%)	0	100	100
3	E	121/143 (85%)	120 (99%)	1 (1%)	0	100	100
4	F	342/384 (89%)	322 (94%)	20 (6%)	0	100	100
All	All	2187/2317 (94%)	2104 (96%)	83 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	371/378 (98%)	358 (96%)	13 (4%)	36	44
1	C	379/378 (100%)	361 (95%)	18 (5%)	26	31
2	B	369/383 (96%)	359 (97%)	10 (3%)	44	55
2	D	362/383 (94%)	344 (95%)	18 (5%)	24	28
3	E	112/127 (88%)	103 (92%)	9 (8%)	12	12
4	F	314/342 (92%)	298 (95%)	16 (5%)	24	27
All	All	1907/1991 (96%)	1823 (96%)	84 (4%)	30	34

All (84) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	36	MET
1	A	47	ASP
1	A	120[A]	ASP
1	A	120[B]	ASP
1	A	177	VAL
1	A	193[A]	THR
1	A	193[B]	THR
1	A	221	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	280	LYS
1	A	336	LYS
1	A	342	GLN
1	A	381	THR
1	A	401	LYS
2	B	2	ARG
2	B	55	THR
2	B	75	SER
2	B	88	ASP
2	B	124	SER
2	B	128	ASP
2	B	137	HIS
2	B	214	THR
2	B	296	SER
2	B	350	LYS
1	C	71	GLU
1	C	151[A]	SER
1	C	151[B]	SER
1	C	163	LYS
1	C	165[A]	SER
1	C	165[B]	SER
1	C	221	ARG
1	C	241	SER
1	C	250	VAL
1	C	251	ASP
1	C	315[A]	CYS
1	C	315[B]	CYS
1	C	336	LYS
1	C	338	LYS
1	C	347[A]	CYS
1	C	347[B]	CYS
1	C	358	GLN
1	C	381	THR
2	D	19	LYS
2	D	26	ASP
2	D	45	GLU
2	D	78	SER
2	D	83	GLN
2	D	84	ILE
2	D	86	ARG
2	D	92	PHE
2	D	116	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	D	122	LYS
2	D	137	HIS
2	D	177	ASP
2	D	188	SER
2	D	218	THR
2	D	251	ARG
2	D	267	MET
2	D	285	THR
2	D	413	SER
3	E	13	LYS
3	E	62	LYS
3	E	75	LYS
3	E	95	LYS
3	E	103	GLN
3	E	107	SER
3	E	121	GLU
3	E	138	GLU
3	E	140	LYS
4	F	12	SER
4	F	32	LYS
4	F	89	GLU
4	F	137	ARG
4	F	142	ARG
4	F	152	SER
4	F	183	GLN
4	F	222	ARG
4	F	232	ASN
4	F	240	LEU
4	F	242	ASN
4	F	260	ASN
4	F	279	LEU
4	F	296[A]	MET
4	F	296[B]	MET
4	F	324	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	133	GLN
1	C	249	ASN
1	C	256	GLN
1	C	356	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	D	15	GLN
2	D	94	GLN
2	D	99	ASN
2	D	335	ASN
4	F	246	GLN
4	F	252	ASN
4	F	260	ASN
4	F	269	GLN
4	F	310	GLN
4	F	333	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 14 ligands modelled in this entry, 6 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
11	GX5	D	502	-	22,23,23	1.42	4 (18%)	28,32,32	2.54	8 (28%)
11	GX5	B	505	-	22,23,23	1.37	3 (13%)	28,32,32	2.12	8 (28%)
9	GDP	B	501	6	24,30,30	1.08	2 (8%)	30,47,47	1.19	3 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
10	MES	B	503	-	12,12,12	2.01	1 (8%)	14,16,16	2.28	4 (28%)
5	GTP	C	501	6	26,34,34	1.11	2 (7%)	32,54,54	1.32	4 (12%)
10	MES	B	504	-	12,12,12	2.78	1 (8%)	14,16,16	1.61	3 (21%)
5	GTP	A	501	6	26,34,34	1.06	2 (7%)	32,54,54	1.30	5 (15%)
9	GDP	D	501	-	24,30,30	0.86	1 (4%)	30,47,47	2.10	6 (20%)

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
11	GX5	D	502	-	-	2/9/10/10	0/3/3/3
11	GX5	B	505	-	-	2/9/10/10	0/3/3/3
9	GDP	B	501	6	-	5/12/32/32	0/3/3/3
10	MES	B	503	-	-	5/6/14/14	0/1/1/1
5	GTP	C	501	6	-	9/18/38/38	0/3/3/3
10	MES	B	504	-	-	4/6/14/14	0/1/1/1
5	GTP	A	501	6	-	8/18/38/38	0/3/3/3
9	GDP	D	501	-	-	3/12/32/32	0/3/3/3

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	B	504	MES	C8-S	-9.44	1.64	1.77
10	B	503	MES	C8-S	-6.63	1.68	1.77
11	D	502	GX5	C09-N10	3.77	1.33	1.30
5	C	501	GTP	C5-C6	-3.57	1.40	1.47
11	B	505	GX5	C09-N10	3.39	1.33	1.30
5	A	501	GTP	C5-C6	-3.34	1.40	1.47
11	B	505	GX5	C05-C04	-2.99	1.38	1.42
9	B	501	GDP	C2'-C1'	-2.70	1.49	1.53
11	D	502	GX5	C07-N12	2.68	1.45	1.39
11	B	505	GX5	C07-N12	2.56	1.44	1.39
9	B	501	GDP	C6-N1	-2.47	1.34	1.37
9	D	501	GDP	C2-N3	2.20	1.38	1.33
11	D	502	GX5	C05-C04	-2.18	1.39	1.42
11	D	502	GX5	C14-N12	2.12	1.47	1.42
5	C	501	GTP	C2-N3	2.03	1.38	1.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	501	GTP	C2-N3	2.01	1.38	1.33

All (41) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	D	502	GX5	N10-C09-N08	-9.74	120.81	130.62
11	B	505	GX5	N10-C09-N08	-8.00	122.56	130.62
9	D	501	GDP	C2-N1-C6	-5.99	114.07	125.10
10	B	503	MES	C5-N4-C3	5.94	122.20	108.83
11	D	502	GX5	CL1-C09-N10	4.89	119.88	115.70
9	D	501	GDP	O6-C6-C5	-4.66	115.27	124.37
9	D	501	GDP	C5-C6-N1	4.66	122.18	113.95
11	D	502	GX5	C09-N08-C07	3.83	122.40	111.04
10	B	503	MES	O3S-S-C8	3.80	111.91	105.77
5	C	501	GTP	C8-N7-C5	3.73	110.09	102.99
9	D	501	GDP	O4'-C1'-C2'	-3.65	101.60	106.93
11	B	505	GX5	CL1-C09-N10	3.43	118.63	115.70
11	B	505	GX5	C09-N08-C07	3.31	120.86	111.04
9	B	501	GDP	O2B-PB-O3A	3.29	115.67	104.64
5	A	501	GTP	C8-N7-C5	3.09	108.88	102.99
9	D	501	GDP	C8-N7-C5	2.96	108.63	102.99
11	D	502	GX5	C01-N06-C05	2.92	120.94	117.30
11	D	502	GX5	CL1-C09-N08	2.92	119.32	115.15
11	B	505	GX5	C01-N06-C05	2.75	120.72	117.30
10	B	503	MES	C7-N4-C5	2.75	118.26	111.23
5	A	501	GTP	PA-O3A-PB	-2.71	123.53	132.83
10	B	504	MES	C5-N4-C3	2.69	114.89	108.83
5	C	501	GTP	PA-O3A-PB	-2.65	123.73	132.83
11	B	505	GX5	CL1-C09-N08	2.56	118.81	115.15
5	C	501	GTP	C2-N1-C6	-2.55	120.40	125.10
5	A	501	GTP	C5-C6-N1	2.48	118.32	113.95
9	D	501	GDP	N2-C2-N3	-2.43	115.00	119.74
5	C	501	GTP	C5-C6-N1	2.41	118.21	113.95
11	B	505	GX5	C02-C03-C04	-2.32	116.74	120.08
11	D	502	GX5	N08-C07-N12	2.30	118.50	116.09
10	B	503	MES	C7-N4-C3	2.29	117.09	111.23
5	A	501	GTP	N2-C2-N1	2.27	121.55	116.71
11	B	505	GX5	N08-C07-N12	2.24	118.44	116.09
9	B	501	GDP	PA-O3A-PB	-2.24	125.13	132.83
11	D	502	GX5	C02-C03-C04	-2.21	116.91	120.08
5	A	501	GTP	C2-N1-C6	-2.20	121.05	125.10
9	B	501	GDP	C8-N7-C5	2.17	107.12	102.99

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	B	504	MES	O3S-S-C8	2.15	109.25	105.77
10	B	504	MES	C7-N4-C5	-2.11	105.85	111.23
11	D	502	GX5	C02-C01-N06	-2.10	120.72	123.94
11	B	505	GX5	C02-C01-N06	-2.02	120.85	123.94

There are no chirality outliers.

All (38) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
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
9	B	501	GDP	C5'-O5'-PA-O1A
9	B	501	GDP	C5'-O5'-PA-O2A
9	D	501	GDP	C5'-O5'-PA-O1A
9	D	501	GDP	C5'-O5'-PA-O2A
10	B	503	MES	C8-C7-N4-C5
10	B	503	MES	C7-C8-S-O1S
10	B	503	MES	C7-C8-S-O2S
10	B	503	MES	C7-C8-S-O3S
11	D	502	GX5	C16-C17-O20-C21
11	D	502	GX5	C18-C17-O20-C21
11	B	505	GX5	C18-C17-O20-C21
11	B	505	GX5	C16-C17-O20-C21
10	B	503	MES	C8-C7-N4-C3
10	B	504	MES	C8-C7-N4-C3
10	B	504	MES	C8-C7-N4-C5
5	A	501	GTP	PB-O3B-PG-O1G
9	B	501	GDP	PB-O3A-PA-O2A
5	C	501	GTP	C4'-C5'-O5'-PA
10	B	504	MES	C7-C8-S-O3S
5	C	501	GTP	PB-O3B-PG-O1G
5	A	501	GTP	PB-O3B-PG-O2G
5	A	501	GTP	PB-O3B-PG-O3G
5	C	501	GTP	PB-O3B-PG-O2G
5	C	501	GTP	PB-O3B-PG-O3G
5	A	501	GTP	C5'-O5'-PA-O3A
5	C	501	GTP	C5'-O5'-PA-O3A
9	B	501	GDP	C5'-O5'-PA-O3A
9	D	501	GDP	C5'-O5'-PA-O3A
5	A	501	GTP	PB-O3A-PA-O2A

Continued on next page...

Continued from previous page...

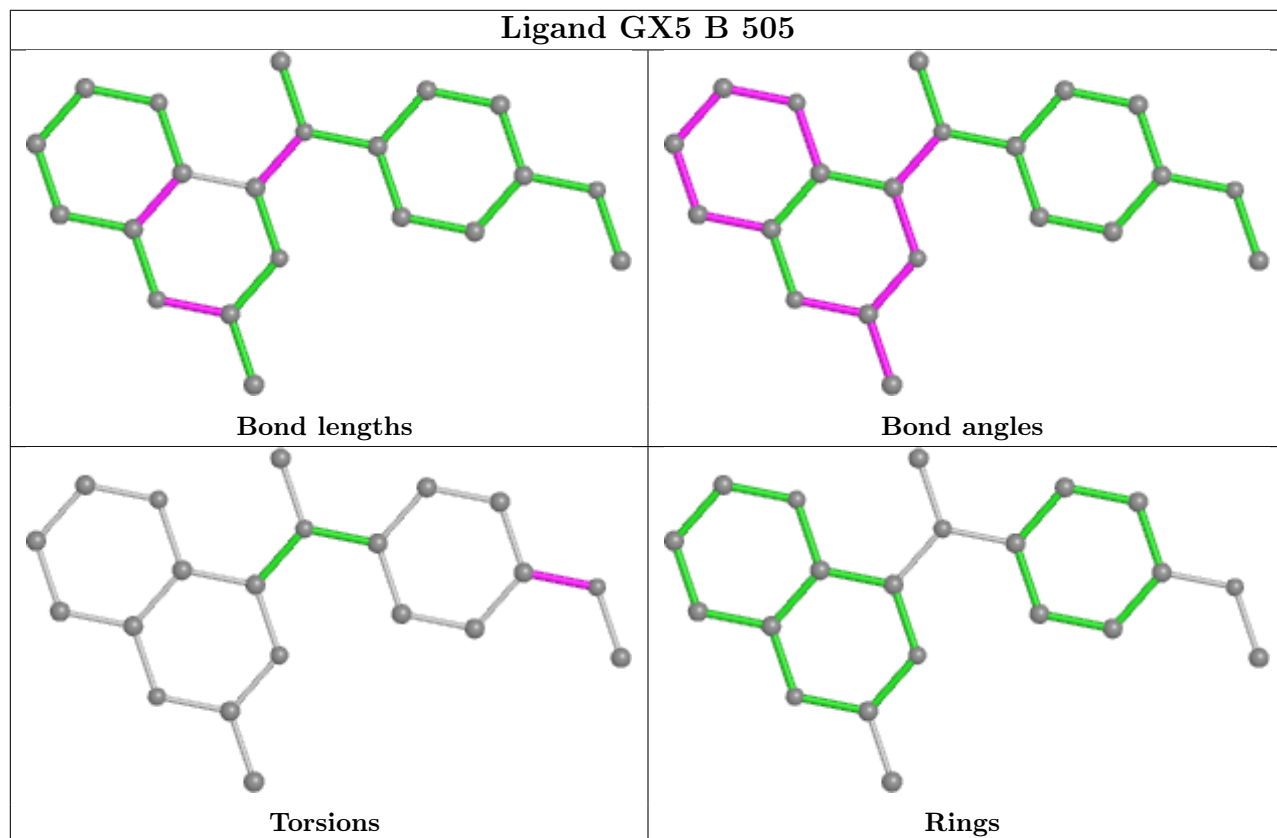
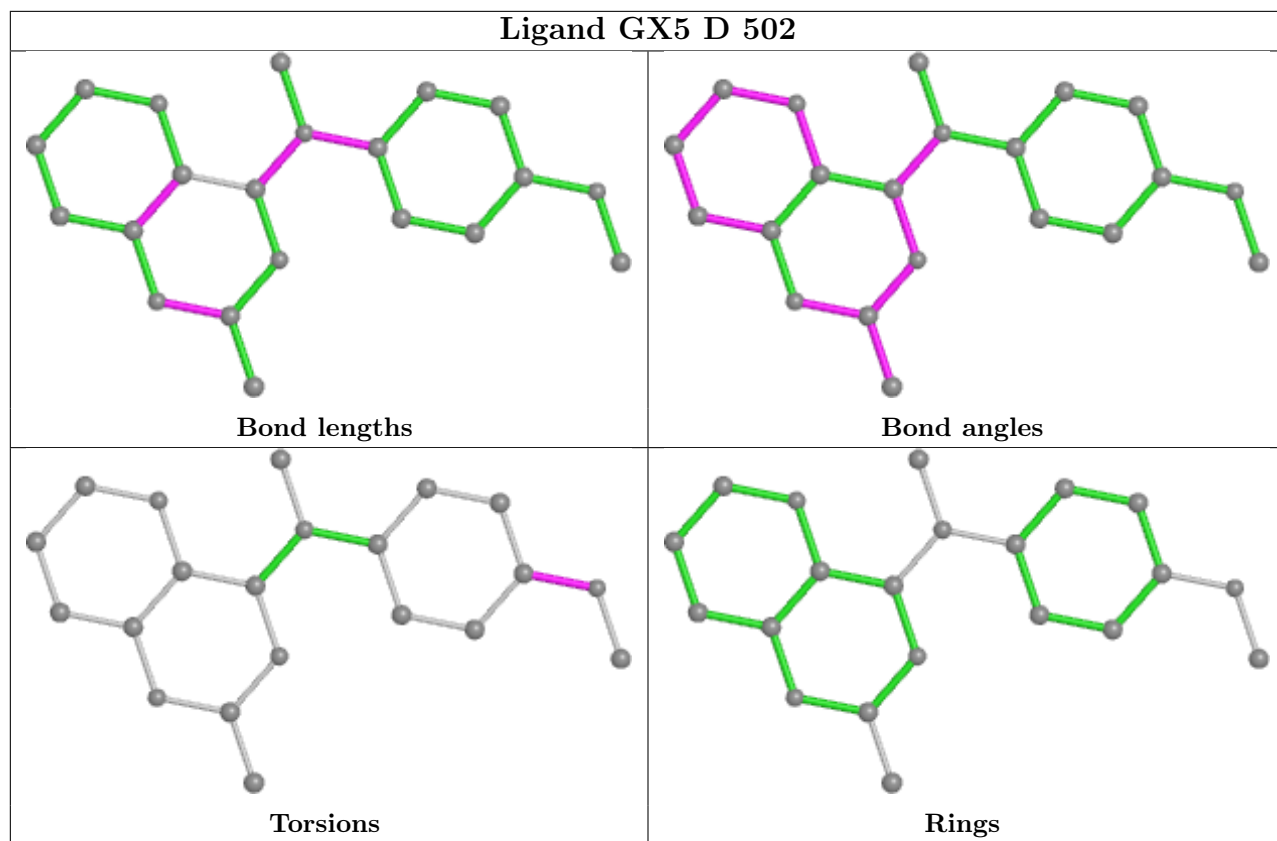
Mol	Chain	Res	Type	Atoms
5	C	501	GTP	PB-O3A-PA-O1A
5	C	501	GTP	PB-O3A-PA-O2A
9	B	501	GDP	PB-O3A-PA-O1A
5	A	501	GTP	C4'-C5'-O5'-PA
10	B	504	MES	C7-C8-S-O1S

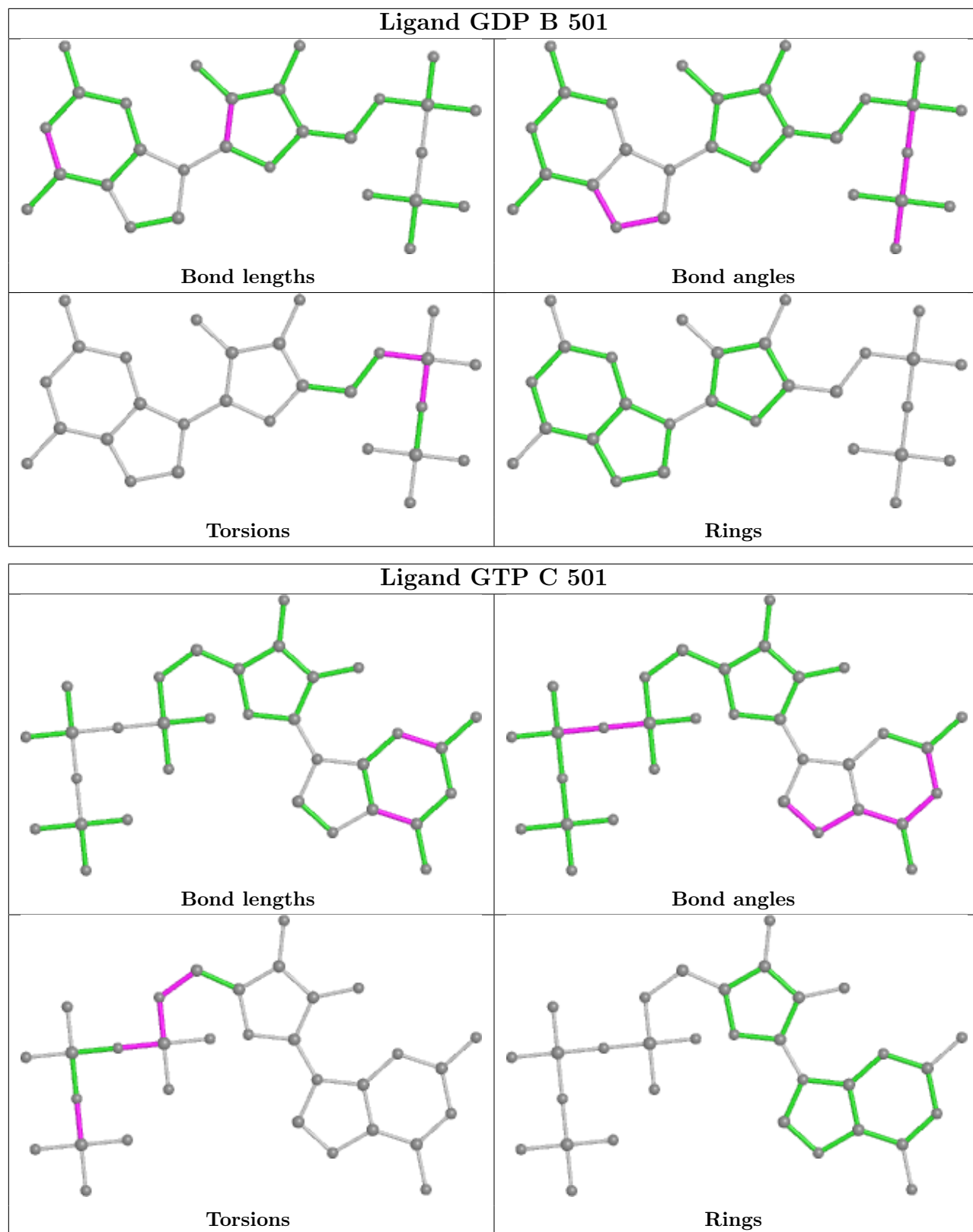
There are no ring outliers.

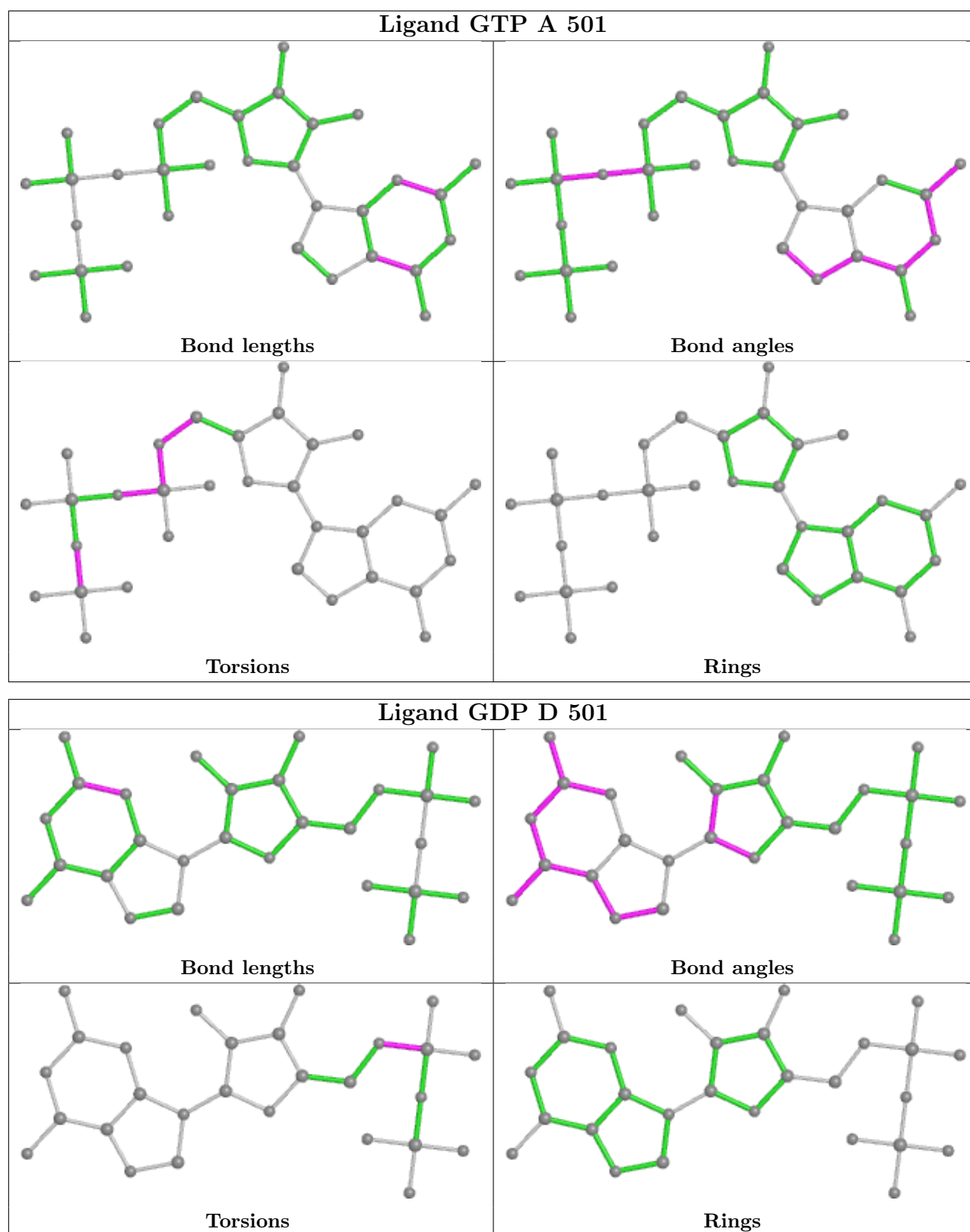
5 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	D	502	GX5	3	0
9	B	501	GDP	1	0
10	B	503	MES	3	0
10	B	504	MES	1	0
9	D	501	GDP	3	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.







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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	437/450 (97%)	0.34	23 (5%) 26 38	35, 52, 75, 89	0
1	C	440/450 (97%)	0.15	11 (2%) 57 67	30, 43, 63, 79	0
2	B	424/445 (95%)	0.53	39 (9%) 9 14	34, 51, 81, 114	0
2	D	420/445 (94%)	0.97	80 (19%) 1 2	37, 69, 97, 115	2 (0%)
3	E	123/143 (86%)	0.90	23 (18%) 1 2	44, 65, 100, 126	0
4	F	346/384 (90%)	1.36	93 (26%) 0 0	44, 73, 137, 156	0
All	All	2190/2317 (94%)	0.65	269 (12%) 4 7	30, 56, 101, 156	2 (0%)

All (269) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	F	248	GLU	9.4
4	F	169	LEU	8.8
4	F	104	ASN	8.8
4	F	177	GLY	8.4
2	B	55	THR	8.4
4	F	135	TYR	7.9
4	F	132	LEU	7.5
2	B	428	ALA	7.4
4	F	103	THR	7.3
4	F	102	PRO	7.2
4	F	251	LYS	7.1
2	D	390	ARG	7.0
4	F	136	ASN	7.0
3	E	139	LEU	6.9
4	F	172	PHE	6.9
2	D	55	THR	6.9
4	F	161	LEU	6.7
4	F	247	LYS	6.7
4	F	176	GLN	6.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	F	139	ARG	6.5
4	F	253	TYR	6.4
4	F	160	ILE	6.3
4	F	234	GLN	6.1
2	B	282	ARG	5.9
4	F	372	THR	5.8
4	F	173	ILE	5.7
4	F	249	TYR	5.7
2	D	218	THR	5.6
4	F	99	VAL	5.5
4	F	142	ARG	5.5
4	F	244	CYS	5.5
4	F	232	ASN	5.4
4	F	100	ILE	5.4
4	F	165	GLU	5.4
4	F	182	ILE	5.3
4	F	167	SER	5.2
4	F	236	LYS	5.2
2	D	219	THR	5.1
4	F	255[A]	ARG	5.1
4	F	250	SER	5.0
4	F	101	TYR	5.0
4	F	231	ALA	4.9
4	F	151	SER	4.8
2	D	217	LEU	4.8
4	F	138	ARG	4.8
3	E	143	ALA	4.7
4	F	245	ILE	4.7
4	F	171	ASP	4.6
4	F	225	SER	4.5
2	D	54	ALA	4.5
4	F	131	PHE	4.5
4	F	229	ASN	4.5
4	F	233	PHE	4.5
4	F	178	GLN	4.5
2	D	200	TYR	4.5
1	C	440	VAL	4.4
2	D	168	SER	4.4
3	E	142	GLU	4.4
4	F	168	GLU	4.4
3	E	26	PRO	4.4
2	D	167	PHE	4.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	F	175	GLU	4.3
2	D	192	LEU	4.1
4	F	128	ARG	4.1
1	A	282	TYR	4.1
2	D	126	SER	4.1
2	D	37	HIS	4.0
4	F	140	GLU	4.0
4	F	98	TYR	3.9
2	B	253	LEU	3.9
3	E	48	GLU	3.9
2	D	135	LEU	3.9
2	B	427	ASP	3.9
3	E	7	GLU	3.8
2	D	395	LEU	3.8
2	D	399	THR	3.7
4	F	179	VAL	3.7
2	D	400	GLY	3.7
2	B	275	SER	3.7
2	D	265	PHE	3.6
2	D	165	ASN	3.6
3	E	138	GLU	3.6
2	B	57	ASN	3.6
4	F	141	GLY	3.6
4	F	252	ASN	3.6
2	B	37	HIS	3.5
4	F	130	VAL	3.5
3	E	136	ASN	3.5
4	F	20	LEU	3.5
2	D	405	GLU	3.5
2	D	196	THR	3.5
4	F	145	ASN	3.5
2	D	404	ASP	3.5
1	A	262	TYR	3.5
2	D	136	THR	3.5
2	D	391	ARG	3.5
2	D	216	LYS	3.4
2	B	39	ASP	3.4
2	D	389	PHE	3.4
4	F	194	PRO	3.4
1	A	430	LYS	3.4
1	A	41	THR	3.4
3	E	28	SER	3.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
3	E	140	LYS	3.4
2	D	95	SER	3.3
4	F	134	ALA	3.3
1	A	346	TRP	3.3
2	D	166	THR	3.3
3	E	6	MET	3.3
4	F	25	GLY	3.3
4	F	256	TYR	3.3
2	D	58	LYS	3.3
2	B	276	ARG	3.3
2	D	199	THR	3.3
4	F	24	THR	3.3
2	D	137	HIS	3.2
2	B	266	PHE	3.2
4	F	125	THR	3.2
2	D	145[A]	SER	3.2
4	F	89	GLU	3.1
4	F	174	ASP	3.1
4	F	152	SER	3.1
4	F	149	ALA	3.1
4	F	162	ILE	3.1
1	C	201	ALA	3.1
2	D	362	LYS	3.0
2	D	92	PHE	3.0
2	D	258	VAL	3.0
2	B	200	TYR	3.0
2	B	368	ILE	3.0
3	E	132	GLU	3.0
2	D	266	PHE	3.0
3	E	45	PRO	3.0
1	A	88	HIS	3.0
2	D	406	MET	2.9
3	E	141	GLU	2.9
4	F	163	SER	2.9
2	B	78	SER	2.9
3	E	135	LYS	2.9
2	D	431	ASP	2.9
4	F	129	GLU	2.9
1	A	201	ALA	2.9
2	B	274	THR	2.9
2	D	56	GLY	2.9
2	D	164	MET	2.9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
4	F	147	TRP	2.9
4	F	362	ALA	2.9
2	D	39	ASP	2.9
2	D	94	GLN	2.9
2	D	139	LEU	2.9
4	F	126	ASP	2.9
4	F	235	ASP	2.9
4	F	180	HIS	2.9
2	B	58	LYS	2.8
2	D	201	CYS	2.8
4	F	170	LEU	2.8
2	D	394	PHE	2.8
4	F	146	VAL	2.8
2	D	57	ASN	2.8
2	B	166	THR	2.8
4	F	237	THR	2.8
2	B	258	VAL	2.8
2	B	257	MET	2.7
4	F	22	LEU	2.7
2	D	392	LYS	2.7
1	C	202	PHE	2.7
4	F	158	GLU	2.7
2	B	35	SER	2.7
1	A	180	ALA	2.7
2	D	169	VAL	2.7
2	B	248	ALA	2.7
2	D	213	ARG	2.6
2	B	254	ALA	2.6
1	C	248	LEU	2.6
4	F	181	VAL	2.6
2	D	397	TRP	2.6
2	B	201	CYS	2.6
1	C	137	VAL	2.6
2	B	250	LEU	2.6
2	D	321	MET	2.6
3	E	59	GLU	2.6
4	F	228	TYR	2.6
4	F	243	HIS	2.6
1	A	57	GLY	2.6
3	E	46	SER	2.5
1	A	202	PHE	2.5
1	C	357	TYR	2.5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	281	ALA	2.5
1	C	340	SER	2.5
2	B	38	GLY	2.5
2	D	59	TYR	2.5
4	F	137	ARG	2.5
2	D	198	GLU	2.5
2	D	44	LEU	2.5
3	E	133	VAL	2.5
4	F	239	HIS	2.5
2	D	70	PRO	2.4
3	E	63	TYR	2.4
1	A	218	ASP	2.4
4	F	258	GLU	2.4
1	A	365	GLY	2.4
2	D	197	ASP	2.4
4	F	240	LEU	2.4
1	C	169	PHE	2.4
2	D	264	HIS	2.4
2	D	202	ILE	2.4
2	D	396	HIS	2.4
2	B	199	THR	2.4
2	D	40	SER	2.4
3	E	27	PRO	2.4
4	F	143	GLU	2.4
4	F	192	LEU	2.4
2	B	125	GLU	2.4
2	D	387	ALA	2.3
1	A	364	PRO	2.3
4	F	373	SER	2.3
1	C	138	PHE	2.3
2	B	41	ASP	2.3
1	C	171	ILE	2.3
2	B	246	LEU	2.3
1	A	59	GLY	2.3
2	B	265	PHE	2.3
4	F	227	PRO	2.3
4	F	166	ALA	2.3
2	D	267	MET	2.3
1	A	137	VAL	2.3
2	B	283	ALA	2.3
1	C	136	LEU	2.2
2	D	245	GLN	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
2	B	167	PHE	2.2
1	A	179	THR	2.2
4	F	144	GLY	2.2
2	D	320	ARG	2.2
1	A	9	VAL	2.2
1	A	238	ILE	2.2
1	A	138	PHE	2.2
1	A	239	THR	2.2
2	D	9	ALA	2.2
2	D	212	PHE	2.1
2	D	138	SER	2.1
2	B	255	VAL	2.1
2	D	263	LEU	2.1
2	B	369	GLY	2.1
4	F	45	ASN	2.1
4	F	9	GLU	2.1
2	D	148	GLY	2.1
3	E	25	LYS	2.1
2	D	285	THR	2.1
2	D	80	PRO	2.1
2	D	144	GLY	2.1
2	B	47	ILE	2.1
2	D	374	ILE	2.1
2	B	33	THR	2.1
2	D	360	GLY	2.1
2	D	250	LEU	2.1
3	E	134	ARG	2.1
2	D	149	THR	2.1
1	A	170	SER	2.1
2	D	93	GLY	2.1
4	F	164	SER	2.1
2	B	139	LEU	2.0
3	E	137	LYS	2.0
2	B	92	PHE	2.0
2	D	381	ILE	2.0
2	B	314	ALA	2.0
1	A	20	CYS	2.0
2	D	73	MET	2.0
2	D	257	MET	2.0
2	D	254	ALA	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](#)

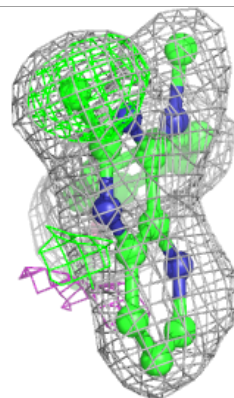
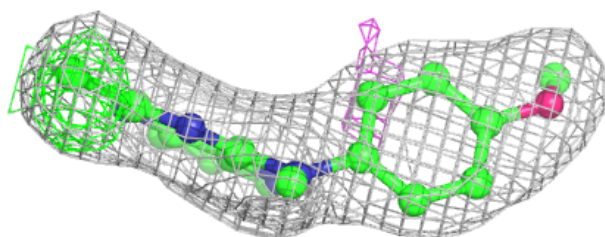
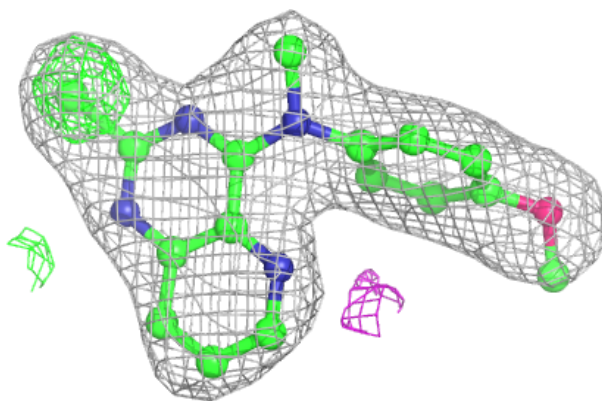
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
11	GX5	D	502	21/21	0.86	0.21	39,51,64,124	0
10	MES	B	504	12/12	0.90	0.20	71,72,84,97	0
8	CL	A	504	1/1	0.90	0.17	87,87,87,87	0
7	CA	A	503	1/1	0.92	0.04	75,75,75,75	0
6	MG	B	502	1/1	0.93	0.13	42,42,42,42	0
9	GDP	D	501	28/28	0.93	0.14	57,65,77,80	0
6	MG	A	502	1/1	0.94	0.19	41,41,41,41	0
10	MES	B	503	12/12	0.94	0.14	47,61,74,74	0
11	GX5	B	505	21/21	0.95	0.24	37,40,46,70	0
6	MG	C	502	1/1	0.96	0.21	40,40,40,40	0
9	GDP	B	501	28/28	0.98	0.14	36,41,44,45	0
7	CA	C	503	1/1	0.98	0.04	52,52,52,52	0
5	GTP	A	501	32/32	0.98	0.18	36,42,47,48	0
5	GTP	C	501	32/32	0.99	0.18	32,37,42,42	0

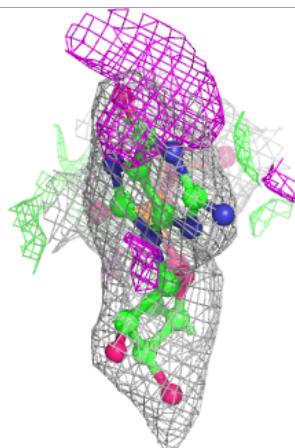
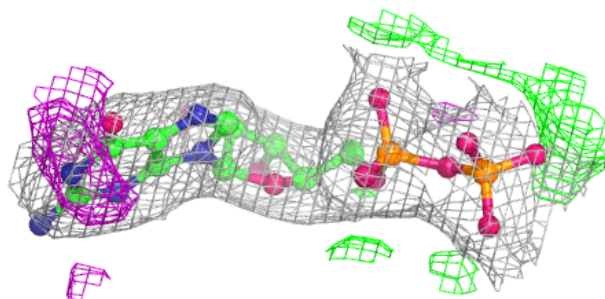
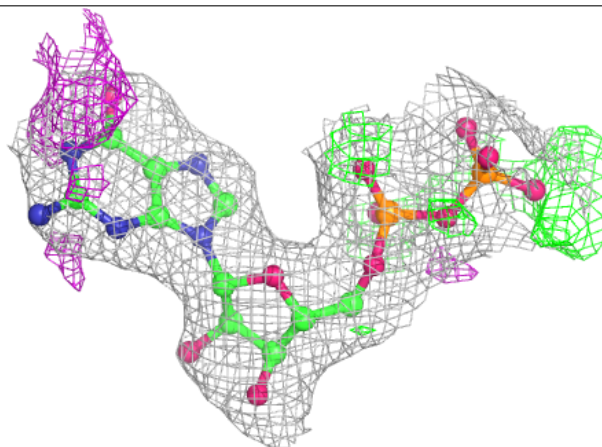
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around GX5 D 502:

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

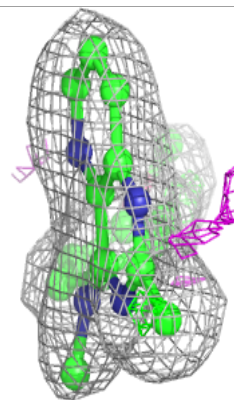
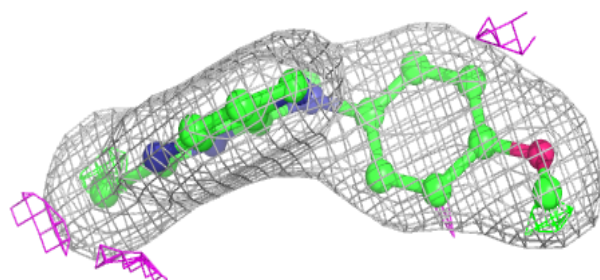
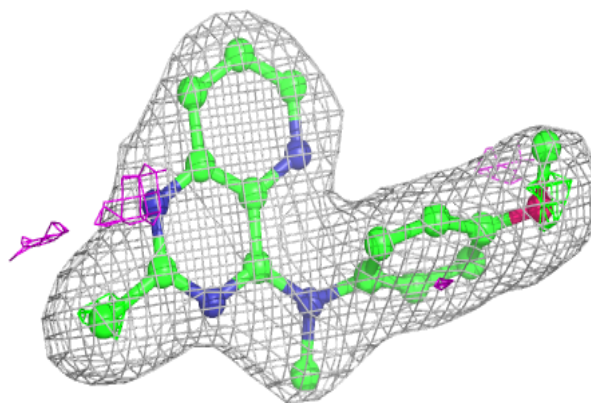
**Electron density around GDP D 501:**

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



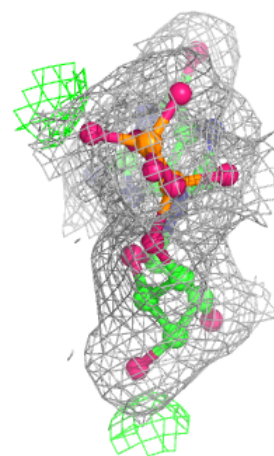
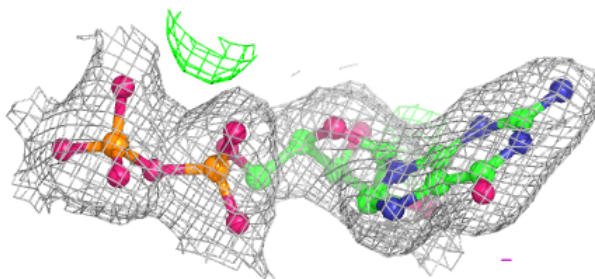
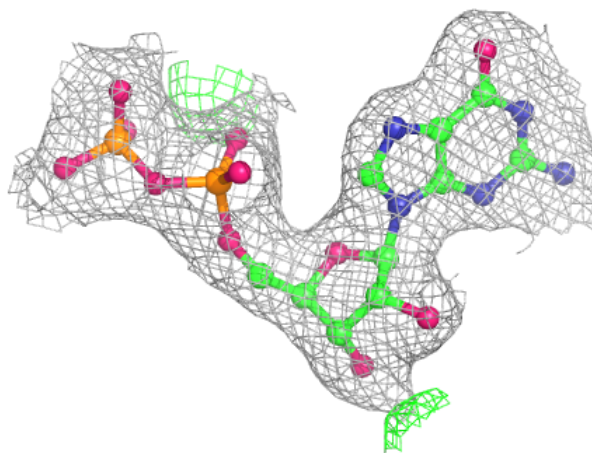
Electron density around GX5 B 505:

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



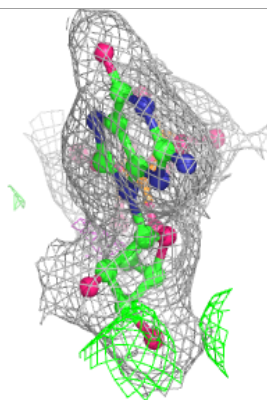
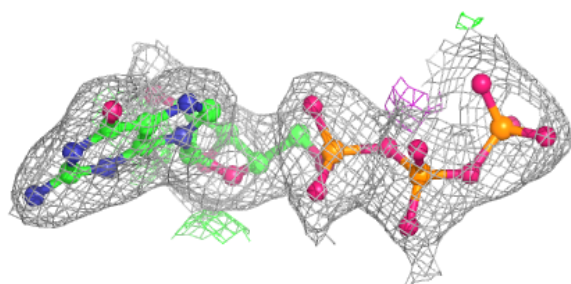
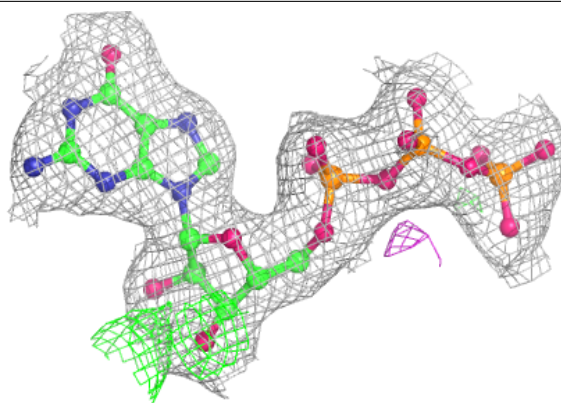
Electron density around GDP B 501:

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

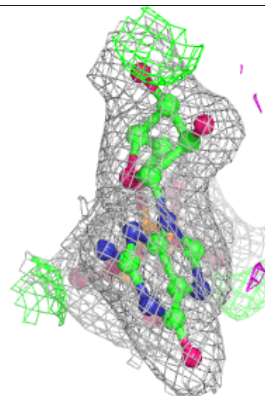
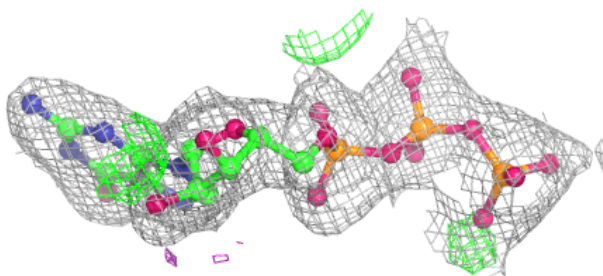
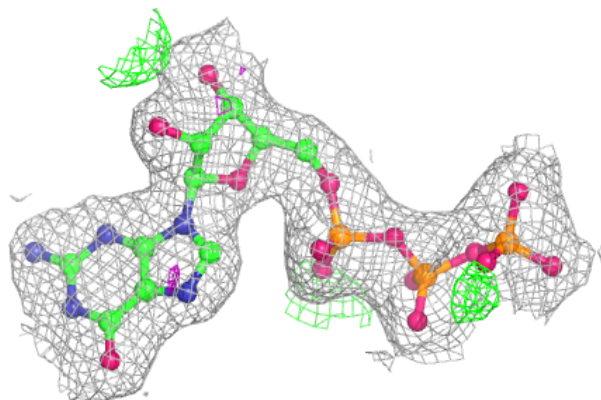


Electron density around GTP A 501:

$2mF_o-DF_c$ (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)



6.5 Other polymers [i](#)

There are no such residues in this entry.