Full wwPDB X-ray Structure Validation Report (i)

Nov 14, 2023 – 08:29 PM JST

PDB ID	:	6A8P
Title	:	Transglutaminase 2 mutant G224V in complex with GTP
Authors	:	Park, H.H.; Ha, H.J.; Kwon, S.
Deposited on	:	2018-07-09
Resolution	:	2.54 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 (i) 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 (i)) were used in the production of this report:

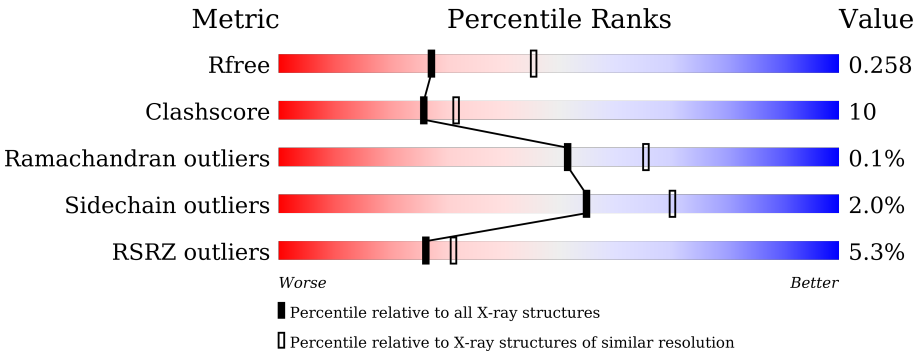
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.54 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	1284 (2.56-2.52)
Clashscore	141614	1332 (2.56-2.52)
Ramachandran outliers	138981	1315 (2.56-2.52)
Sidechain outliers	138945	1315 (2.56-2.52)
RSRZ outliers	127900	1272 (2.56-2.52)

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

Mol	Chain	Length	Quality of chain
1	A	695	4% 79% 19%
1	B	695	6% 75% 20%
1	C	695	6% 74% 22%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 16026 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 Protein-glutamine gamma-glutamyltransferase 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	681	Total	C	N	O	S	0	0	0
			5354	3385	920	1018	31			
1	B	666	Total	C	N	O	S	0	0	0
			5251	3321	911	989	30			
1	C	680	Total	C	N	O	S	0	0	0
			5325	3364	917	1013	31			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	688	LEU	-	expression tag	UNP P21980
A	689	GLU	-	expression tag	UNP P21980
A	690	HIS	-	expression tag	UNP P21980
A	691	HIS	-	expression tag	UNP P21980
A	692	HIS	-	expression tag	UNP P21980
A	693	HIS	-	expression tag	UNP P21980
A	694	HIS	-	expression tag	UNP P21980
A	695	HIS	-	expression tag	UNP P21980
B	688	LEU	-	expression tag	UNP P21980
B	689	GLU	-	expression tag	UNP P21980
B	690	HIS	-	expression tag	UNP P21980
B	691	HIS	-	expression tag	UNP P21980
B	692	HIS	-	expression tag	UNP P21980
B	693	HIS	-	expression tag	UNP P21980
B	694	HIS	-	expression tag	UNP P21980
B	695	HIS	-	expression tag	UNP P21980
C	688	LEU	-	expression tag	UNP P21980
C	689	GLU	-	expression tag	UNP P21980
C	690	HIS	-	expression tag	UNP P21980
C	691	HIS	-	expression tag	UNP P21980
C	692	HIS	-	expression tag	UNP P21980
C	693	HIS	-	expression tag	UNP P21980
C	694	HIS	-	expression tag	UNP P21980

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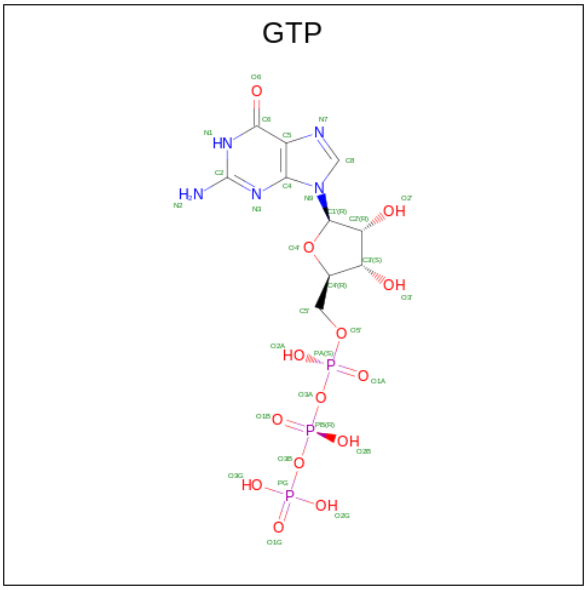
Chain	Residue	Modelled	Actual	Comment	Reference
C	695	HIS	-	expression tag	UNP P21980

- Molecule 2 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



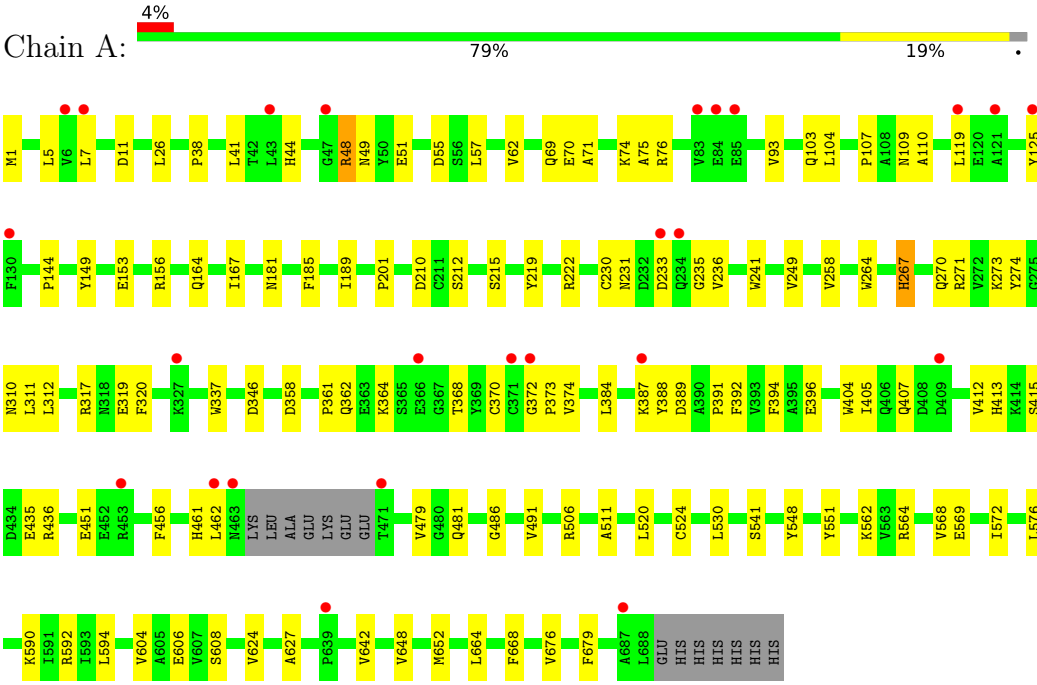
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	B	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	C	1	Total	C	N	O	P	0	0
			32	10	5	14	3		

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.

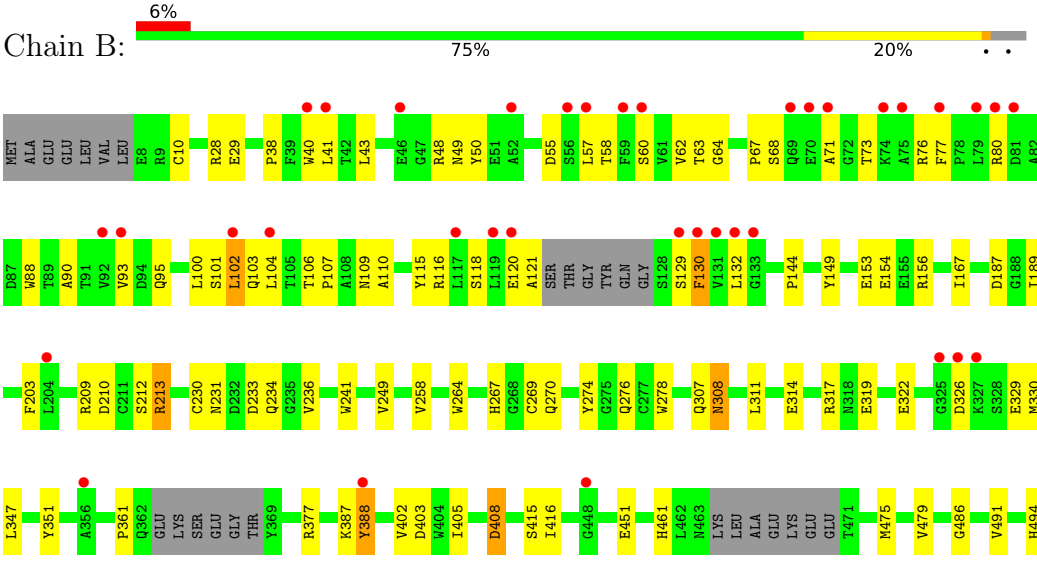
• Molecule 1: Protein-glutamine gamma-glutamyltransferase 2

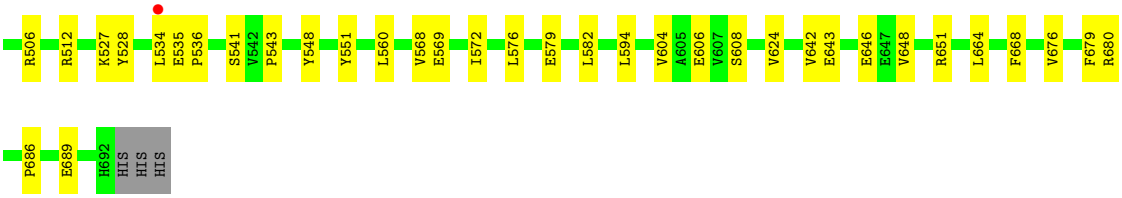
Chain A:



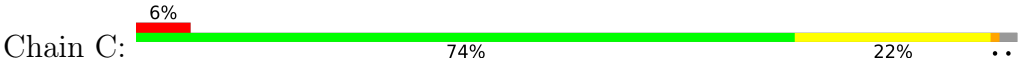
• Molecule 1: Protein-glutamine gamma-glutamyltransferase 2

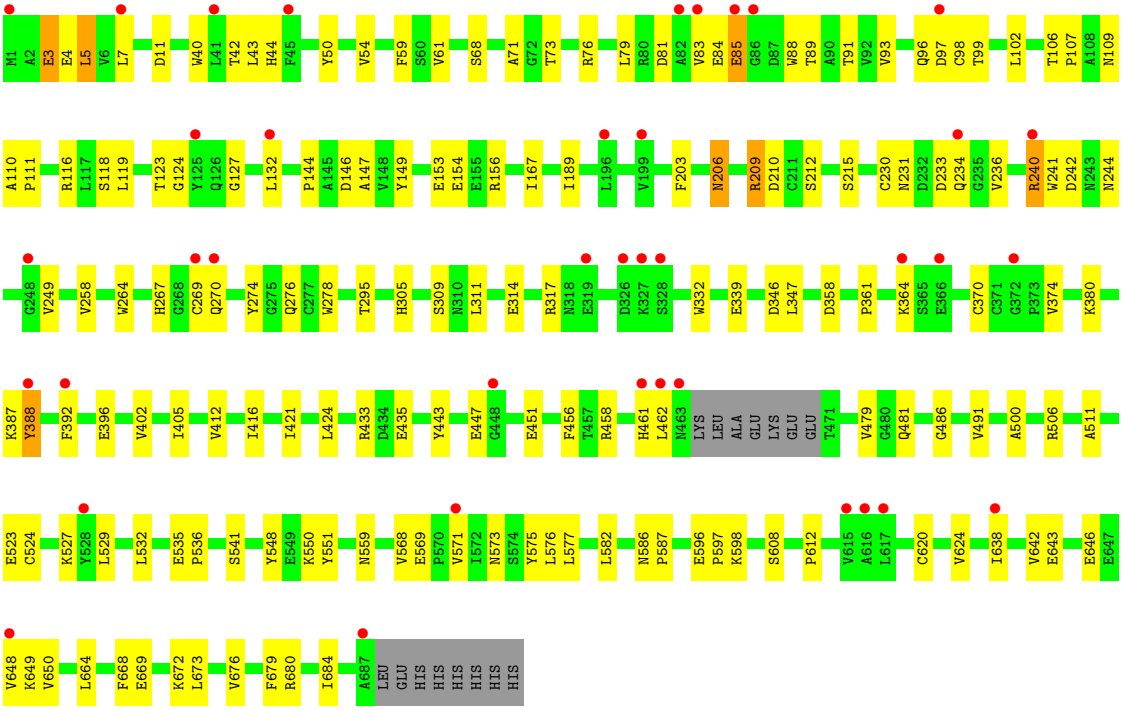
Chain B:





• Molecule 1: Protein-glutamine gamma-glutamyltransferase 2





4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	133.19Å 216.31Å 166.04Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.27 – 2.54 49.27 – 2.54	Depositor EDS
% Data completeness (in resolution range)	98.3 (49.27-2.54) 98.3 (49.27-2.54)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.82 (at 2.54Å)	Xtriage
Refinement program	PHENIX (1.12_2829)	Depositor
R, R_{free}	0.236 , 0.258 0.236 , 0.258	Depositor DCC
R_{free} test set	4144 reflections (5.32%)	wwPDB-VP
Wilson B-factor (Å^2)	52.5	Xtriage
Anisotropy	0.379	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 32.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	16026	wwPDB-VP
Average B, all atoms (Å^2)	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.12% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GTP

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	0.32	0/5471	0.56	0/7432
1	B	0.35	0/5367	0.61	0/7288
1	C	0.37	0/5440	0.61	0/7392
All	All	0.35	0/16278	0.59	0/22112

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5354	0	5224	90	0
1	B	5251	0	5122	118	0
1	C	5325	0	5184	128	0
2	A	32	0	12	4	0
2	B	32	0	12	1	0
2	C	32	0	12	1	0
All	All	16026	0	15566	330	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 10.

All (330) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:506:ARG:HG3	1:C:568:VAL:CG1	1.61	1.29
1:B:100:LEU:HG	1:B:102:LEU:CD1	1.77	1.15
1:C:506:ARG:CG	1:C:568:VAL:HG13	1.77	1.14
1:B:120:GLU:HG2	1:B:129:SER:HB3	1.26	1.11
1:C:506:ARG:HG3	1:C:568:VAL:HG13	1.33	1.03
1:B:100:LEU:HG	1:B:102:LEU:HD11	1.03	1.01
1:B:100:LEU:CG	1:B:102:LEU:HD11	1.92	1.00
1:C:119:LEU:HB2	1:C:132:LEU:HD11	1.40	0.99
1:B:58:THR:CG2	1:B:76:ARG:HD3	1.93	0.98
1:B:213:ARG:HH21	1:B:213:ARG:HG3	1.29	0.95
1:C:506:ARG:CG	1:C:568:VAL:CG1	2.38	0.95
1:C:119:LEU:CB	1:C:132:LEU:HD11	1.97	0.93
1:B:209:ARG:HH21	1:B:209:ARG:HG3	1.32	0.93
1:B:58:THR:HG21	1:B:76:ARG:CD	2.00	0.91
1:B:58:THR:HG21	1:B:76:ARG:HD3	1.52	0.90
1:B:58:THR:CG2	1:B:76:ARG:CD	2.51	0.88
1:C:83:VAL:HG22	1:C:91:THR:HG21	1.56	0.85
1:B:28:ARG:C	1:B:29:GLU:HG3	1.96	0.84
1:C:506:ARG:HG2	1:C:568:VAL:HG13	1.57	0.83
1:B:120:GLU:HG2	1:B:129:SER:CB	2.08	0.81
1:B:416:ILE:HB	1:B:576:LEU:HD12	1.63	0.80
1:C:506:ARG:HG3	1:C:568:VAL:HG12	1.62	0.79
1:C:267:HIS:O	1:C:270:GLN:HG3	1.83	0.78
1:B:58:THR:HG22	1:B:76:ARG:HD3	1.64	0.78
1:B:60:SER:HB3	1:B:118:SER:OG	1.84	0.77
1:C:206:ASN:O	1:C:206:ASN:ND2	2.14	0.77
1:C:506:ARG:NE	1:C:568:VAL:HG11	2.00	0.76
1:C:85:GLU:HB2	1:C:89:THR:HG22	1.68	0.76
1:C:491:VAL:HG11	1:C:582:LEU:HD21	1.65	0.76
1:B:213:ARG:HG3	1:B:213:ARG:NH2	1.95	0.74
1:B:344:ARG:HB3	1:B:347:LEU:HD13	1.70	0.74
1:C:4:GLU:O	1:C:5:LEU:HB2	1.86	0.74
1:B:606:GLU:OE1	1:B:651:ARG:NH1	2.21	0.73
1:C:643:GLU:HB2	1:C:646:GLU:CG	2.19	0.73
1:A:267:HIS:O	1:A:270:GLN:HG3	1.88	0.73
1:B:408:ASP:OD2	1:B:408:ASP:N	2.17	0.73
1:B:209:ARG:HG3	1:B:209:ARG:NH2	2.00	0.72
1:B:62:VAL:HG11	1:B:116:ARG:HH11	1.54	0.72
1:B:329:GLU:HG3	1:B:330:MET:N	2.04	0.72
1:C:314:GLU:HG2	1:C:402:VAL:HG13	1.69	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:97:ASP:OD2	1:C:98:CYS:N	2.24	0.71
1:C:107:PRO:HG2	1:C:110:ALA:HB2	1.74	0.70
1:A:153:GLU:OE1	1:A:156:ARG:NH1	2.28	0.67
1:B:491:VAL:HG11	1:B:582:LEU:HD11	1.76	0.67
1:A:320:PHE:O	1:A:564:ARG:NH1	2.26	0.67
1:A:624:VAL:HB	1:A:652:MET:SD	2.35	0.66
1:C:668:PHE:HB3	1:C:676:VAL:HB	1.78	0.65
1:A:26:LEU:HD21	1:A:185:PHE:HD1	1.61	0.65
1:C:643:GLU:HB2	1:C:646:GLU:HG2	1.79	0.65
1:B:686:PRO:HG2	1:B:689:GLU:HG2	1.79	0.65
1:C:416:ILE:HB	1:C:576:LEU:HD12	1.79	0.65
1:B:58:THR:CG2	1:B:76:ARG:HD2	2.27	0.64
1:B:213:ARG:HH21	1:B:213:ARG:CG	2.09	0.63
1:A:456:PHE:HB3	1:A:462:LEU:HD22	1.80	0.63
1:A:491:VAL:HG11	1:A:582:LEU:HD11	1.81	0.63
1:C:240:ARG:NH2	1:C:244:ASN:HB3	2.13	0.63
1:B:62:VAL:HG11	1:B:116:ARG:NH1	2.13	0.63
1:B:405:ILE:HD13	1:B:415:SER:HB3	1.80	0.63
1:C:206:ASN:HD22	1:C:206:ASN:C	2.03	0.62
1:B:624:VAL:HG13	1:B:664:LEU:HD11	1.82	0.62
1:B:267:HIS:O	1:B:270:GLN:HG3	2.00	0.62
1:A:384:LEU:HD22	1:A:391:PRO:HA	1.82	0.62
1:B:314:GLU:HG2	1:B:402:VAL:CG1	2.29	0.62
1:C:347:LEU:HD21	1:C:387:LYS:HB3	1.82	0.61
1:C:405:ILE:HD12	1:C:575:TYR:CG	2.35	0.61
1:A:48:ARG:HH11	1:A:51:GLU:HG2	1.64	0.61
1:A:405:ILE:HD13	1:A:415:SER:HB3	1.82	0.61
1:A:236:VAL:HA	1:A:264:TRP:CD1	2.35	0.61
1:B:107:PRO:HG2	1:B:110:ALA:HB2	1.82	0.61
1:C:71:ALA:HB1	1:C:212:SER:HB2	1.83	0.61
1:C:83:VAL:CG2	1:C:91:THR:HG21	2.29	0.61
1:B:642:VAL:HG21	1:B:648:VAL:HG22	1.83	0.61
1:C:83:VAL:HG12	1:C:83:VAL:O	2.02	0.60
1:C:462:LEU:O	1:C:462:LEU:HD23	2.02	0.60
1:C:3:GLU:OE1	1:C:3:GLU:HA	2.01	0.59
1:B:58:THR:HG22	1:B:76:ARG:CD	2.28	0.59
1:C:447:GLU:HG3	1:C:447:GLU:O	2.02	0.59
1:A:71:ALA:HB1	1:A:212:SER:HB2	1.84	0.59
1:A:624:VAL:CG2	1:A:652:MET:SD	2.91	0.59
1:A:642:VAL:HG11	1:A:648:VAL:HG22	1.85	0.59
1:B:317:ARG:NH2	1:B:579:GLU:OE1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:317:ARG:NH1	1:B:403:ASP:OD1	2.35	0.59
1:A:479:VAL:HG21	2:A:701:GTP:C8	2.38	0.58
1:B:236:VAL:HA	1:B:264:TRP:CD1	2.38	0.58
1:C:189:ILE:HD11	1:C:258:VAL:HG13	1.86	0.58
1:C:240:ARG:HH21	1:C:244:ASN:HB3	1.68	0.58
1:A:57:LEU:HD22	1:A:119:LEU:HD11	1.85	0.58
1:C:119:LEU:HB3	1:C:132:LEU:HD11	1.83	0.58
1:C:506:ARG:CZ	1:C:568:VAL:HG11	2.33	0.57
1:B:479:VAL:O	2:B:701:GTP:O2B	2.21	0.57
1:C:314:GLU:HG2	1:C:402:VAL:CG1	2.33	0.57
1:A:48:ARG:NH1	1:A:55:ASP:OD2	2.31	0.57
1:A:107:PRO:HG2	1:A:110:ALA:HB2	1.85	0.57
1:B:346:ASP:OD1	1:B:346:ASP:N	2.36	0.57
1:A:479:VAL:O	2:A:701:GTP:O1B	2.22	0.57
1:C:231:ASN:OD1	1:C:234:GLN:N	2.24	0.57
1:C:638:ILE:HD11	1:C:650:VAL:HG11	1.87	0.57
1:C:43:LEU:HD21	1:C:132:LEU:HD23	1.85	0.57
1:A:624:VAL:HG13	1:A:664:LEU:HD11	1.87	0.56
1:B:501:GLU:OE1	1:B:501:GLU:N	2.36	0.56
1:B:314:GLU:HG2	1:B:402:VAL:HG13	1.87	0.56
1:C:203:PHE:HB2	1:C:210:ASP:OD2	2.04	0.56
1:C:643:GLU:HB2	1:C:646:GLU:HG3	1.86	0.56
1:A:479:VAL:CG2	2:A:701:GTP:H5'	2.36	0.56
1:B:93:VAL:HG21	1:B:103:GLN:HG3	1.88	0.56
1:B:130:PHE:N	1:B:130:PHE:CD2	2.72	0.56
1:C:364:LYS:HB2	1:C:392:PHE:CZ	2.41	0.55
1:C:236:VAL:HA	1:C:264:TRP:CD1	2.43	0.54
1:B:234:GLN:HA	1:B:269:CYS:O	2.08	0.54
1:C:68:SER:H	1:C:73:THR:HB	1.72	0.54
1:B:668:PHE:HB3	1:B:676:VAL:HB	1.89	0.54
1:B:38:PRO:HA	1:B:104:LEU:O	2.07	0.54
1:B:153:GLU:OE1	1:B:156:ARG:NH1	2.40	0.54
1:C:54:VAL:O	1:C:123:THR:HA	2.07	0.54
1:C:596:GLU:HB2	1:C:598:LYS:HE2	1.90	0.54
1:A:407:GLN:OE1	1:A:413:HIS:HB2	2.07	0.54
1:B:680:ARG:NH2	1:C:154:GLU:OE1	2.36	0.54
1:C:40:TRP:HZ3	1:C:93:VAL:HG11	1.72	0.54
1:A:530:LEU:N	1:B:319:GLU:OE1	2.23	0.53
1:A:608:SER:HA	1:A:648:VAL:O	2.08	0.53
1:B:43:LEU:HD12	1:B:100:LEU:HD23	1.90	0.53
1:A:451:GLU:OE1	1:A:451:GLU:N	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:322:GLU:OE1	1:B:512:ARG:NH1	2.42	0.53
1:B:548:TYR:HA	1:B:551:TYR:CE2	2.43	0.53
1:B:569:GLU:OE1	1:B:572:ILE:HG12	2.08	0.53
1:A:48:ARG:NH1	1:A:51:GLU:HG2	2.23	0.53
1:B:48:ARG:NH2	1:B:55:ASP:OD2	2.33	0.53
1:A:346:ASP:OD1	1:A:346:ASP:N	2.41	0.53
1:A:26:LEU:HD21	1:A:185:PHE:CD1	2.42	0.53
1:C:511:ALA:O	1:C:524:CYS:N	2.41	0.53
1:B:102:LEU:CD1	1:B:102:LEU:N	2.73	0.52
1:C:548:TYR:HA	1:C:551:TYR:CE2	2.45	0.52
1:C:4:GLU:OE1	1:C:127:GLY:HA2	2.09	0.52
1:C:500:ALA:O	1:C:536:PRO:HB3	2.10	0.52
1:A:164:GLN:HE22	1:A:627:ALA:HB3	1.75	0.52
1:A:594:LEU:HB2	1:A:604:VAL:HB	1.92	0.52
1:B:495:ILE:HG21	1:B:534:LEU:HD13	1.92	0.51
1:B:535:GLU:HG3	1:C:535:GLU:HB3	1.92	0.51
1:C:380:LYS:HA	1:C:443:TYR:O	2.10	0.51
1:A:5:LEU:HD22	1:A:55:ASP:OD2	2.09	0.51
1:A:456:PHE:CB	1:A:462:LEU:HD22	2.41	0.51
1:B:71:ALA:HB1	1:B:212:SER:HB2	1.91	0.51
1:B:307:GLN:NE2	1:B:329:GLU:O	2.41	0.51
1:B:329:GLU:HG3	1:B:330:MET:H	1.73	0.51
1:B:527:LYS:NZ	1:B:543:PRO:O	2.29	0.51
1:A:48:ARG:HG3	1:A:49:ASN:O	2.10	0.51
1:B:28:ARG:NH2	1:B:187:ASP:OD2	2.44	0.51
1:B:154:GLU:OE1	1:C:680:ARG:NH2	2.43	0.51
1:B:608:SER:HA	1:B:648:VAL:O	2.10	0.51
1:C:608:SER:HA	1:C:648:VAL:O	2.11	0.50
1:A:384:LEU:HD21	1:A:394:PHE:CB	2.41	0.50
1:A:235:GLY:O	1:A:271:ARG:HG2	2.10	0.50
1:C:43:LEU:HD21	1:C:132:LEU:CD2	2.42	0.50
1:C:61:VAL:HG21	1:C:88:TRP:CZ3	2.47	0.50
1:B:198:ASP:O	1:B:203:PHE:CD1	2.65	0.50
1:B:80:ARG:HE	1:B:84:GLU:CB	2.25	0.49
1:C:231:ASN:OD1	1:C:233:ASP:N	2.45	0.49
1:C:241:TRP:CE3	1:C:276:GLN:HG2	2.47	0.49
1:C:624:VAL:HG13	1:C:664:LEU:HD11	1.95	0.49
1:B:500:ALA:O	1:B:536:PRO:HB3	2.12	0.49
1:C:405:ILE:HD12	1:C:575:TYR:CB	2.41	0.49
1:A:374:VAL:HB	1:A:388:TYR:O	2.13	0.49
1:B:308:ASN:O	1:B:308:ASN:ND2	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:479:VAL:O	2:C:701:GTP:O1B	2.31	0.49
1:C:506:ARG:NE	1:C:568:VAL:CG1	2.74	0.48
1:A:479:VAL:HG23	2:A:701:GTP:H5'	1.95	0.48
1:A:642:VAL:HG21	1:A:648:VAL:HG22	1.96	0.48
1:C:309:SER:HB3	1:C:392:PHE:CD2	2.48	0.48
1:C:364:LYS:HB2	1:C:392:PHE:CE1	2.49	0.48
1:A:210:ASP:OD1	1:A:219:TYR:OH	2.23	0.48
1:A:548:TYR:HA	1:A:551:TYR:CE2	2.48	0.48
1:B:506:ARG:HB2	1:B:568:VAL:HG13	1.96	0.48
1:A:93:VAL:HG21	1:A:103:GLN:HG3	1.95	0.48
1:C:346:ASP:OD1	1:C:346:ASP:N	2.47	0.48
1:B:486:GLY:HA2	1:B:548:TYR:CD1	2.49	0.48
1:A:569:GLU:OE1	1:A:572:ILE:HG12	2.14	0.47
1:C:85:GLU:OE2	1:C:89:THR:HA	2.13	0.47
1:A:222:ARG:NH1	1:A:372:GLY:HA3	2.29	0.47
1:B:64:GLY:H	1:B:73:THR:HG22	1.79	0.47
1:A:249:VAL:O	1:A:274:TYR:HB2	2.14	0.47
1:A:624:VAL:CB	1:A:652:MET:SD	3.02	0.47
1:B:249:VAL:O	1:B:274:TYR:HB2	2.14	0.47
1:C:230:CYS:SG	1:C:361:PRO:HG3	2.54	0.47
1:C:79:LEU:HD11	1:C:102:LEU:HD22	1.97	0.47
1:C:83:VAL:HG22	1:C:91:THR:CG2	2.36	0.47
1:B:68:SER:H	1:B:73:THR:HB	1.79	0.47
1:C:123:THR:OG1	1:C:124:GLY:N	2.45	0.47
1:C:374:VAL:HB	1:C:388:TYR:O	2.14	0.47
1:A:74:LYS:HG2	1:A:75:ALA:N	2.29	0.47
1:A:317:ARG:NH2	1:A:579:GLU:OE2	2.47	0.47
1:C:11:ASP:HB3	1:C:42:THR:HB	1.96	0.47
1:C:311:LEU:HD13	1:C:461:HIS:ND1	2.29	0.47
1:C:387:LYS:HG3	1:C:388:TYR:CD1	2.50	0.47
1:C:664:LEU:O	1:C:679:PHE:HA	2.14	0.47
1:A:481:GLN:OE1	1:A:481:GLN:N	2.48	0.47
1:A:486:GLY:HA2	1:A:548:TYR:CD1	2.49	0.47
1:B:387:LYS:O	1:B:388:TYR:HB2	2.14	0.47
1:C:527:LYS:HD3	1:C:529:LEU:HD21	1.96	0.47
1:A:241:TRP:CZ3	1:A:276:GLN:HG2	2.50	0.46
1:A:358:ASP:O	1:A:370:CYS:HB2	2.15	0.46
1:C:249:VAL:O	1:C:274:TYR:HB2	2.15	0.46
1:C:387:LYS:HG3	1:C:388:TYR:CG	2.50	0.46
1:A:38:PRO:HA	1:A:104:LEU:O	2.16	0.46
1:A:62:VAL:HG12	1:A:74:LYS:HG3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:109:ASN:O	1:C:215:SER:HB2	2.15	0.46
1:C:119:LEU:CB	1:C:132:LEU:CD1	2.84	0.46
1:A:233:ASP:H	1:A:271:ARG:HH12	1.64	0.46
1:B:130:PHE:N	1:B:130:PHE:HD2	2.14	0.46
1:B:274:TYR:N	1:B:274:TYR:CD2	2.79	0.46
1:B:230:CYS:SG	1:B:361:PRO:HG3	2.55	0.46
1:B:594:LEU:HB2	1:B:604:VAL:HB	1.97	0.46
1:A:337:TRP:CZ3	1:A:396:GLU:HG2	2.51	0.46
1:A:592:ARG:HB2	1:A:606:GLU:HB3	1.98	0.46
1:B:664:LEU:O	1:B:679:PHE:HA	2.16	0.46
1:B:41:LEU:HD12	1:B:41:LEU:HA	1.82	0.45
1:A:144:PRO:HA	1:A:149:TYR:CG	2.51	0.45
1:C:240:ARG:NH2	1:C:244:ASN:O	2.50	0.45
1:A:70:GLU:OE1	1:A:70:GLU:HA	2.17	0.45
1:A:241:TRP:CE3	1:A:276:GLN:HG2	2.52	0.45
1:B:642:VAL:HG21	1:B:648:VAL:CG2	2.46	0.45
1:A:189:ILE:HD11	1:A:258:VAL:HG13	1.97	0.45
1:C:40:TRP:CZ3	1:C:93:VAL:HG11	2.51	0.45
1:C:620:CYS:HA	1:C:669:GLU:O	2.17	0.45
1:A:310:ASN:ND2	1:A:312:LEU:O	2.49	0.45
1:B:57:LEU:HD23	1:B:121:ALA:HA	1.98	0.45
1:C:43:LEU:O	1:C:99:THR:HA	2.17	0.45
1:A:311:LEU:HB3	1:A:461:HIS:CE1	2.51	0.45
1:B:560:LEU:HA	1:B:582:LEU:O	2.17	0.45
1:A:427:SER:HB3	1:A:436:ARG:HD2	1.98	0.45
1:A:511:ALA:O	1:A:524:CYS:N	2.46	0.45
1:C:421:ILE:HB	1:C:424:LEU:HD11	1.97	0.45
1:B:49:ASN:ND2	1:B:95:GLN:HG2	2.32	0.45
1:B:189:ILE:HD11	1:B:258:VAL:HG13	1.98	0.45
1:C:305:HIS:ND1	1:C:396:GLU:OE2	2.46	0.45
1:A:433:ARG:HB3	1:A:435:GLU:OE1	2.18	0.44
1:B:144:PRO:HA	1:B:149:TYR:CG	2.52	0.44
1:B:351:TYR:HD1	1:B:351:TYR:HA	1.67	0.44
1:C:309:SER:HB3	1:C:392:PHE:CE2	2.52	0.44
1:A:624:VAL:HG21	1:A:652:MET:SD	2.57	0.44
1:B:120:GLU:CG	1:B:129:SER:CB	2.90	0.44
1:C:144:PRO:HA	1:C:149:TYR:CG	2.52	0.44
1:C:405:ILE:HD12	1:C:575:TYR:HB3	2.00	0.44
1:C:559:ASN:ND2	1:C:586:ASN:OD1	2.49	0.44
1:B:311:LEU:HB3	1:B:461:HIS:CE1	2.51	0.44
1:A:364:LYS:HG2	1:A:392:PHE:CZ	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:384:LEU:HD21	1:A:394:PHE:HB2	2.00	0.44
1:B:199:VAL:HG12	1:B:199:VAL:O	2.18	0.44
1:C:456:PHE:HB3	1:C:461:HIS:HB3	2.00	0.44
1:C:451:GLU:OE1	1:C:451:GLU:N	2.38	0.44
1:A:7:LEU:HD12	1:A:44:HIS:O	2.18	0.44
1:A:668:PHE:HB3	1:A:676:VAL:HB	2.00	0.44
1:B:10:CYS:HB2	1:B:132:LEU:HD22	2.00	0.44
1:C:59:PHE:O	1:C:76:ARG:HA	2.18	0.44
1:C:264:TRP:O	1:C:269:CYS:HA	2.17	0.44
1:A:164:GLN:NE2	1:A:181:ASN:OD1	2.39	0.43
1:A:319:GLU:HB2	1:B:528:TYR:CZ	2.53	0.43
1:C:646:GLU:OE1	1:C:646:GLU:HA	2.19	0.43
1:C:206:ASN:CG	1:C:209:ARG:HB2	2.39	0.43
1:C:241:TRP:CZ3	1:C:276:GLN:HG2	2.53	0.43
1:C:608:SER:HB3	1:C:649:LYS:HB2	1.99	0.43
1:B:308:ASN:HD22	1:B:308:ASN:C	2.22	0.43
1:B:642:VAL:HG11	1:B:648:VAL:HG22	2.00	0.43
1:C:241:TRP:CD1	1:C:241:TRP:N	2.86	0.43
1:C:167:ILE:HG21	1:C:278:TRP:HB2	2.00	0.43
1:A:664:LEU:O	1:A:679:PHE:HA	2.19	0.43
1:B:451:GLU:OE1	1:B:451:GLU:N	2.33	0.43
1:C:569:GLU:OE2	1:C:571:VAL:HG12	2.19	0.43
1:B:60:SER:CB	1:B:118:SER:OG	2.61	0.43
1:B:76:ARG:NH1	1:B:120:GLU:OE2	2.52	0.43
1:B:241:TRP:CD1	1:B:241:TRP:N	2.87	0.43
1:B:329:GLU:CG	1:B:330:MET:N	2.77	0.43
1:C:111:PRO:HA	1:C:215:SER:HA	2.00	0.43
1:A:230:CYS:SG	1:A:361:PRO:HB3	2.59	0.43
1:B:624:VAL:CG1	1:B:664:LEU:HD11	2.48	0.42
1:C:96:GLN:O	1:C:99:THR:OG1	2.26	0.42
1:C:317:ARG:CZ	1:C:577:LEU:HD21	2.49	0.42
1:C:358:ASP:O	1:C:370:CYS:HB3	2.19	0.42
1:C:587:PRO:HG3	1:C:673:LEU:HD21	2.00	0.42
1:C:597:PRO:HB2	1:C:684:ILE:HD13	2.00	0.42
1:C:638:ILE:HD12	1:C:638:ILE:N	2.34	0.42
1:B:643:GLU:HB2	1:B:646:GLU:HG2	2.01	0.42
1:C:153:GLU:OE1	1:C:156:ARG:NH1	2.48	0.42
1:C:506:ARG:HG3	1:C:568:VAL:HG11	1.80	0.42
1:C:642:VAL:HG21	1:C:648:VAL:HG22	1.99	0.42
1:A:11:ASP:O	1:A:41:LEU:HD12	2.19	0.42
1:C:295:THR:HA	1:C:339:GLU:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:109:ASN:O	1:A:215:SER:HB2	2.19	0.42
1:B:40:TRP:CH2	1:B:93:VAL:HG11	2.55	0.42
1:C:550:LYS:HD3	1:C:550:LYS:HA	1.65	0.42
1:A:372:GLY:N	1:A:389:ASP:OD2	2.48	0.42
1:B:101:SER:C	1:B:102:LEU:HD12	2.39	0.42
1:A:201:PRO:HG3	1:A:231:ASN:ND2	2.34	0.42
1:A:373:PRO:O	1:A:388:TYR:HB2	2.20	0.42
1:B:102:LEU:N	1:B:102:LEU:HD12	2.34	0.42
1:B:167:ILE:HG21	1:B:278:TRP:HB2	2.02	0.42
1:B:28:ARG:O	1:B:29:GLU:HG3	2.17	0.42
1:B:62:VAL:HG22	1:B:67:PRO:CB	2.50	0.42
1:C:146:ASP:OD1	1:C:147:ALA:N	2.53	0.42
1:A:362:GLN:O	1:A:368:THR:HA	2.19	0.42
1:B:88:TRP:CZ3	1:B:106:THR:HG22	2.55	0.42
1:C:240:ARG:HD3	1:C:242:ASP:OD1	2.20	0.42
1:C:532:LEU:HD12	1:C:532:LEU:HA	1.77	0.41
1:C:569:GLU:OE1	1:C:571:VAL:HG12	2.20	0.41
1:B:77:PHE:HE1	1:B:90:ALA:HB2	1.84	0.41
1:B:203:PHE:HB2	1:B:210:ASP:OD2	2.21	0.41
1:A:233:ASP:H	1:A:271:ARG:NH1	2.18	0.41
1:B:62:VAL:HG12	1:B:116:ARG:HB3	2.02	0.41
1:C:7:LEU:HD12	1:C:44:HIS:O	2.20	0.41
1:C:88:TRP:CZ3	1:C:106:THR:HG22	2.55	0.41
1:A:167:ILE:HG21	1:A:278:TRP:HB2	2.03	0.41
1:A:404:TRP:HB3	1:A:412:VAL:HB	2.02	0.41
1:B:475:MET:HA	1:B:494:HIS:O	2.20	0.41
1:A:506:ARG:HB2	1:A:568:VAL:HB	2.01	0.41
1:A:530:LEU:HD23	1:B:319:GLU:OE1	2.20	0.41
1:C:486:GLY:HA2	1:C:548:TYR:CD1	2.55	0.41
1:C:587:PRO:HD3	1:C:612:PRO:HG3	2.02	0.41
1:A:241:TRP:CD1	1:A:241:TRP:N	2.88	0.41
1:B:62:VAL:HG22	1:B:67:PRO:HB3	2.03	0.41
1:B:231:ASN:ND2	1:B:233:ASP:O	2.53	0.41
1:C:405:ILE:O	1:C:412:VAL:HA	2.21	0.41
1:C:642:VAL:HG21	1:C:648:VAL:CG2	2.51	0.41
1:A:387:LYS:HD3	1:A:387:LYS:HA	1.90	0.41
1:B:107:PRO:HB2	1:B:109:ASN:OD1	2.21	0.41
1:A:576:LEU:HD23	1:A:576:LEU:HA	1.89	0.40
1:B:241:TRP:CZ3	1:B:276:GLN:HG2	2.56	0.40
1:C:305:HIS:HD2	1:C:332:TRP:CZ2	2.39	0.40
1:A:520:LEU:HD21	1:A:562:LYS:HD2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:69:GLN:HA	1:A:74:LYS:O	2.21	0.40
1:B:63:THR:HB	1:B:115:TYR:CD2	2.57	0.40
1:C:433:ARG:HB3	1:C:435:GLU:OE1	2.22	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	677/695 (97%)	657 (97%)	20 (3%)	0	100	100
1	B	658/695 (95%)	643 (98%)	14 (2%)	1 (0%)	47	60
1	C	676/695 (97%)	651 (96%)	23 (3%)	2 (0%)	41	51
All	All	2011/2085 (96%)	1951 (97%)	57 (3%)	3 (0%)	51	65

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	5	LEU
1	B	388	TYR
1	C	388	TYR

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	584/605 (96%)	576 (99%)	8 (1%)	67	79
1	B	573/605 (95%)	563 (98%)	10 (2%)	60	75
1	C	578/605 (96%)	562 (97%)	16 (3%)	43	58
All	All	1735/1815 (96%)	1701 (98%)	34 (2%)	55	70

All (34) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	48	ARG
1	A	76	ARG
1	A	125	TYR
1	A	267	HIS
1	A	273	LYS
1	A	541	SER
1	A	590	LYS
1	B	50	TYR
1	B	102	LEU
1	B	130	PHE
1	B	200	ASN
1	B	213	ARG
1	B	308	ASN
1	B	326	ASP
1	B	377	ARG
1	B	408	ASP
1	B	541	SER
1	C	3	GLU
1	C	50	TYR
1	C	81	ASP
1	C	84	GLU
1	C	85	GLU
1	C	116	ARG
1	C	118	SER
1	C	206	ASN
1	C	209	ARG
1	C	240	ARG
1	C	458	ARG
1	C	481	GLN
1	C	523	GLU
1	C	541	SER
1	C	573	ASN
1	C	672	LYS

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

Mol	Chain	Res	Type
1	A	69	GLN
1	C	407	GLN
1	C	413	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

3 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	GTP	B	701	-	26,34,34	1.30	1 (3%)	32,54,54	1.41	6 (18%)
2	GTP	C	701	-	26,34,34	1.30	1 (3%)	32,54,54	1.41	6 (18%)
2	GTP	A	701	-	26,34,34	1.30	1 (3%)	32,54,54	1.40	6 (18%)

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

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

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	701	GTP	C6-N1	-3.60	1.32	1.37
2	A	701	GTP	C6-N1	-3.57	1.32	1.37
2	C	701	GTP	C6-N1	-3.55	1.32	1.37

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	701	GTP	PA-O3A-PB	-3.36	121.31	132.83
2	A	701	GTP	PA-O3A-PB	-3.35	121.31	132.83
2	C	701	GTP	PA-O3A-PB	-3.34	121.36	132.83
2	B	701	GTP	PB-O3B-PG	-2.82	123.16	132.83
2	C	701	GTP	PB-O3B-PG	-2.81	123.17	132.83
2	A	701	GTP	PB-O3B-PG	-2.81	123.19	132.83
2	B	701	GTP	O3G-PG-O2G	2.60	117.58	107.64
2	C	701	GTP	C5-C6-N1	2.35	118.11	113.95
2	A	701	GTP	C5-C6-N1	2.35	118.10	113.95
2	A	701	GTP	O3B-PG-O1G	-2.35	98.16	111.19
2	C	701	GTP	O3B-PG-O1G	-2.35	98.16	111.19
2	B	701	GTP	C5-C6-N1	2.33	118.06	113.95
2	C	701	GTP	C8-N7-C5	2.31	107.39	102.99
2	A	701	GTP	C8-N7-C5	2.27	107.32	102.99
2	B	701	GTP	C8-N7-C5	2.26	107.30	102.99
2	B	701	GTP	O4'-C4'-C5'	-2.10	102.47	109.37
2	C	701	GTP	O4'-C4'-C5'	-2.09	102.48	109.37
2	A	701	GTP	O4'-C4'-C5'	-2.09	102.50	109.37

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	701	GTP	O4'-C4'-C5'-O5'
2	B	701	GTP	O4'-C4'-C5'-O5'
2	C	701	GTP	O4'-C4'-C5'-O5'
2	A	701	GTP	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	B	701	GTP	C3'-C4'-C5'-O5'
2	C	701	GTP	C3'-C4'-C5'-O5'
2	B	701	GTP	PB-O3A-PA-O1A
2	B	701	GTP	PB-O3A-PA-O2A

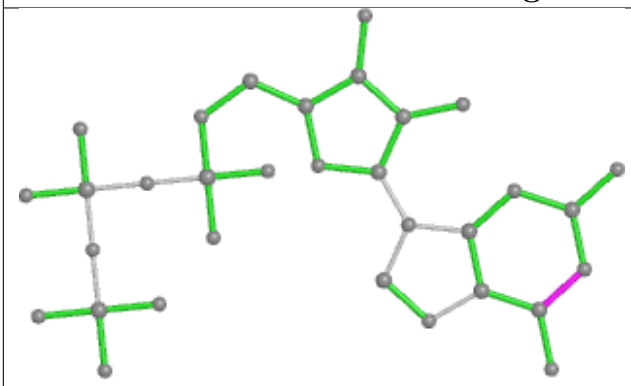
There are no ring outliers.

3 monomers are involved in 6 short contacts:

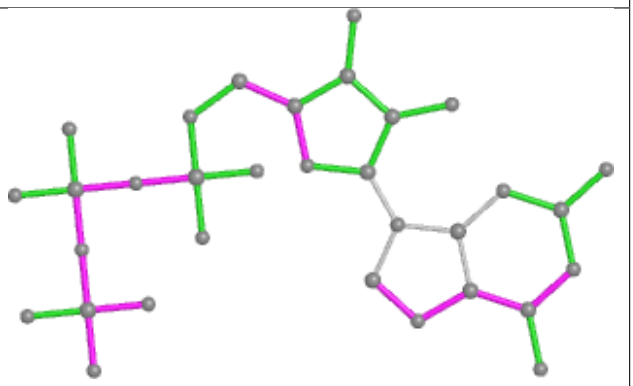
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	701	GTP	1	0
2	C	701	GTP	1	0
2	A	701	GTP	4	0

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 then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

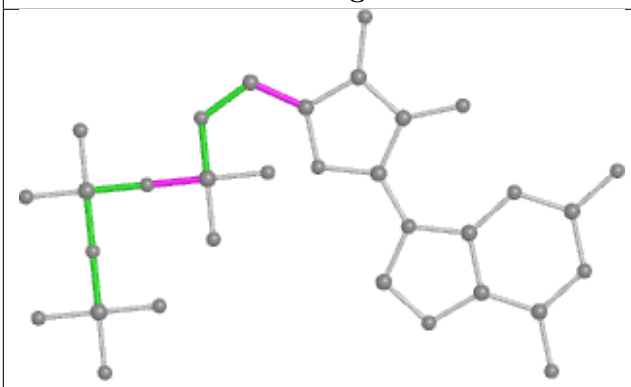
Ligand GTP B 701



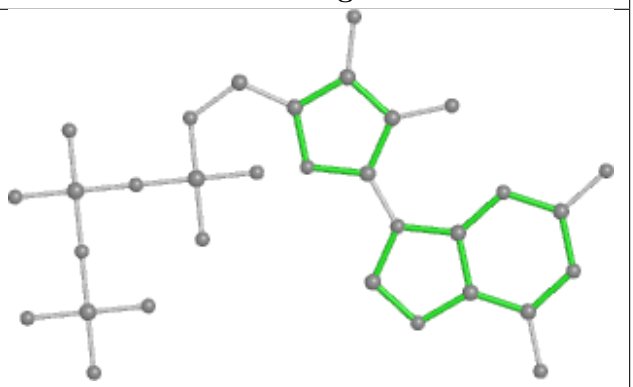
Bond lengths



Bond angles

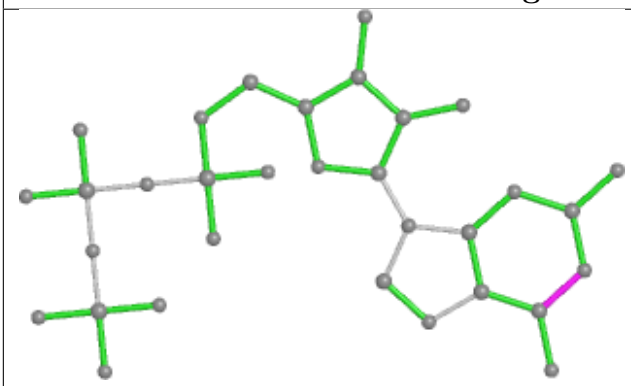


Torsions

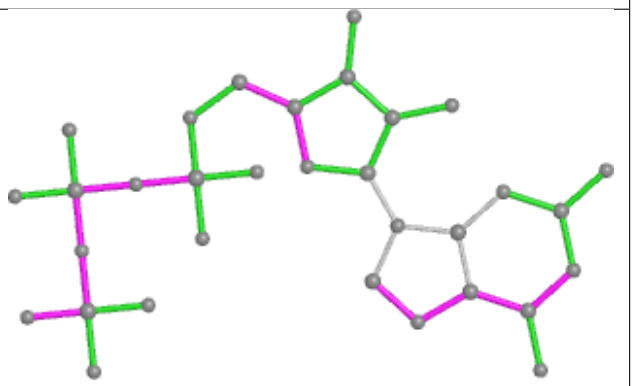


Rings

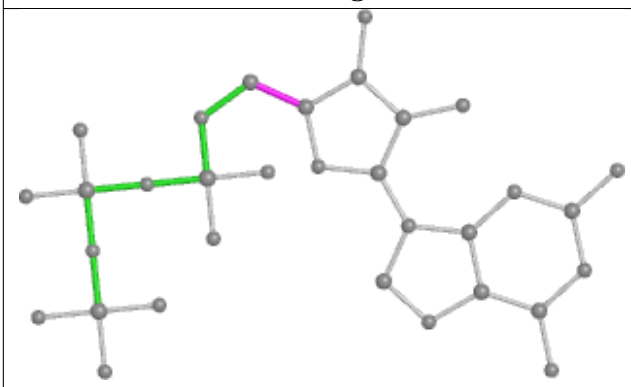
Ligand GTP C 701



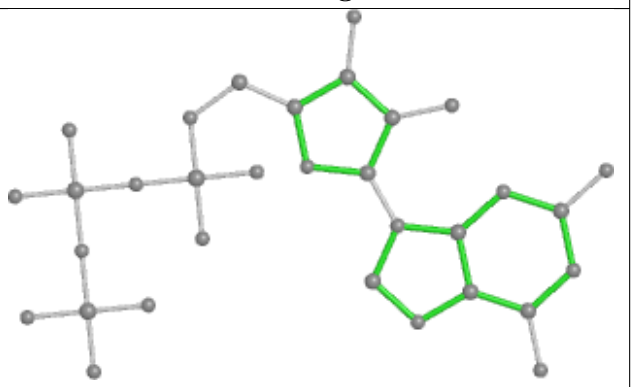
Bond lengths



Bond angles

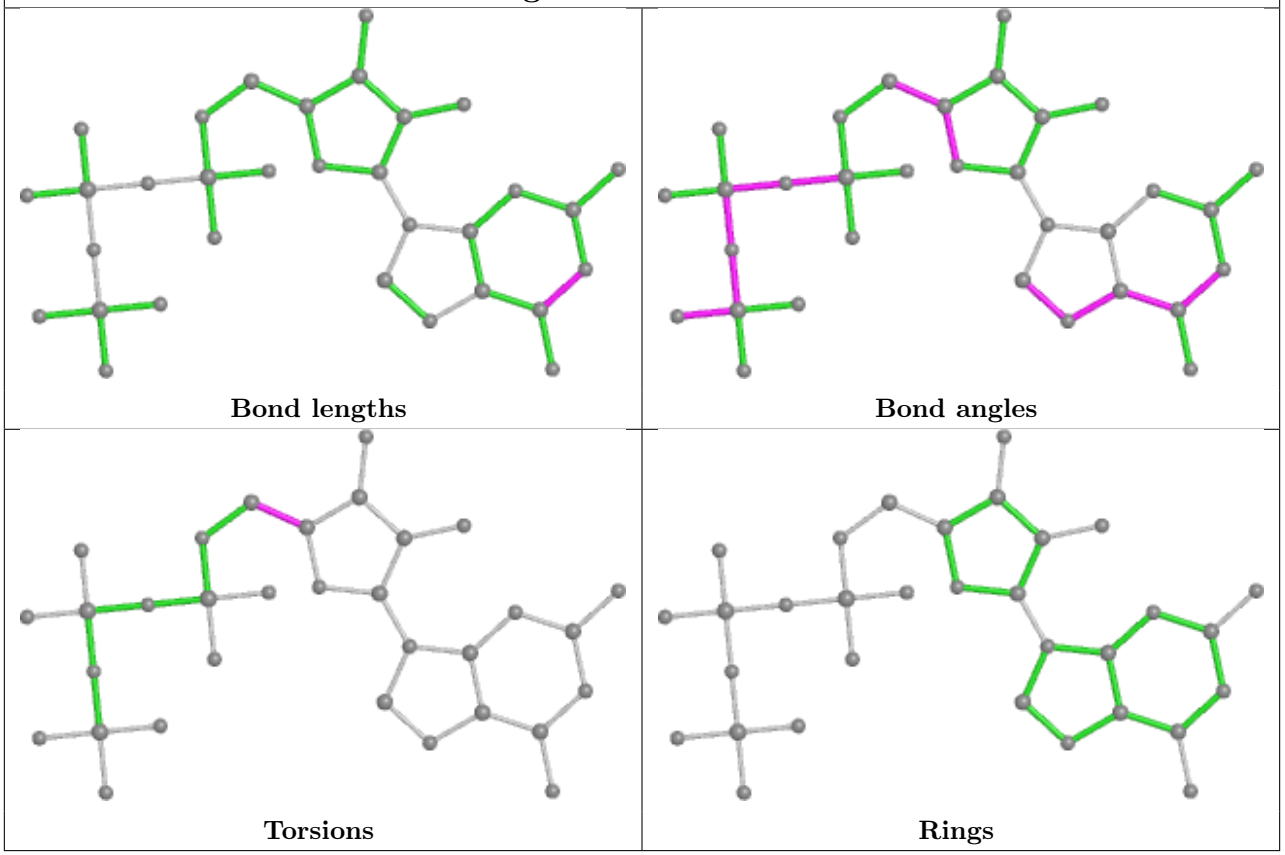


Torsions



Rings

Ligand GTP A 701



5.7 Other polymers

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, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	681/695 (97%)	0.34	28 (4%)	37	44	28, 45, 79, 120	0
1	B	666/695 (95%)	0.49	40 (6%)	21	25	29, 51, 81, 100	0
1	C	680/695 (97%)	0.49	39 (5%)	23	28	31, 55, 82, 106	0
All	All	2027/2085 (97%)	0.44	107 (5%)	26	31	28, 51, 81, 120	0

All (107) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	125	TYR	6.7
1	C	327	LYS	5.8
1	C	86	GLY	4.9
1	B	69	GLN	4.4
1	C	328	SER	4.4
1	B	86	GLY	4.4
1	B	327	LYS	4.3
1	A	84	GLU	4.2
1	A	463	ASN	4.1
1	B	132	LEU	4.0
1	C	83	VAL	3.9
1	B	130	PHE	3.8
1	B	119	LEU	3.8
1	C	132	LEU	3.7
1	B	56	SER	3.7
1	A	85	GLU	3.6
1	A	121	ALA	3.6
1	C	85	GLU	3.6
1	B	102	LEU	3.5
1	B	79	LEU	3.5
1	A	130	PHE	3.4
1	A	409	ASP	3.3
1	B	41	LEU	3.3

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Mol	Chain	Res	Type	RSRZ
1	A	119	LEU	3.2
1	B	83	VAL	3.2
1	A	234	GLN	3.1
1	B	71	ALA	3.1
1	C	270	GLN	3.1
1	B	133	GLY	3.0
1	B	129	SER	3.0
1	A	471	THR	3.0
1	C	82	ALA	3.0
1	B	57	LEU	3.0
1	C	372	GLY	3.0
1	B	59	PHE	3.0
1	B	46	GLU	3.0
1	B	81	ASP	2.9
1	B	131	VAL	2.9
1	C	45	PHE	2.9
1	B	52	ALA	2.8
1	C	125	TYR	2.8
1	C	571	VAL	2.8
1	C	326	ASP	2.8
1	C	648	VAL	2.8
1	C	615	VAL	2.7
1	C	461	HIS	2.7
1	A	47	GLY	2.7
1	C	196	LEU	2.7
1	A	6	VAL	2.6
1	C	638	ILE	2.6
1	C	366	GLU	2.6
1	A	7	LEU	2.6
1	C	1	MET	2.6
1	A	639	PRO	2.5
1	B	92	VAL	2.5
1	B	104	LEU	2.5
1	C	448	GLY	2.5
1	A	233	ASP	2.5
1	C	616	ALA	2.5
1	B	326	ASP	2.5
1	B	534	LEU	2.5
1	B	80	ARG	2.5
1	B	40	TRP	2.5
1	C	364	LYS	2.5
1	A	83	VAL	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	75	ALA	2.4
1	B	204	LEU	2.4
1	B	70	GLU	2.4
1	C	319	GLU	2.4
1	A	462	LEU	2.4
1	C	97	ASP	2.4
1	B	77	PHE	2.4
1	B	356	ALA	2.4
1	A	366	GLU	2.4
1	C	248	GLY	2.3
1	C	392	PHE	2.3
1	A	687	ALA	2.3
1	A	372	GLY	2.3
1	B	325	GLY	2.3
1	A	43	LEU	2.3
1	C	7	LEU	2.3
1	C	234	GLN	2.3
1	A	129	SER	2.3
1	B	388	TYR	2.3
1	A	327	LYS	2.2
1	C	388	TYR	2.2
1	B	85	GLU	2.2
1	B	448	GLY	2.2
1	A	453	ARG	2.2
1	C	199	VAL	2.2
1	B	117	LEU	2.2
1	C	528	TYR	2.1
1	C	687	ALA	2.1
1	C	617	LEU	2.1
1	C	240	ARG	2.1
1	B	120	GLU	2.1
1	B	93	VAL	2.1
1	B	74	LYS	2.1
1	C	463	ASN	2.1
1	A	387	LYS	2.1
1	C	462	LEU	2.1
1	B	60	SER	2.0
1	A	127	GLY	2.0
1	A	371	CYS	2.0
1	C	269	CYS	2.0
1	A	128	SER	2.0
1	C	41	LEU	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

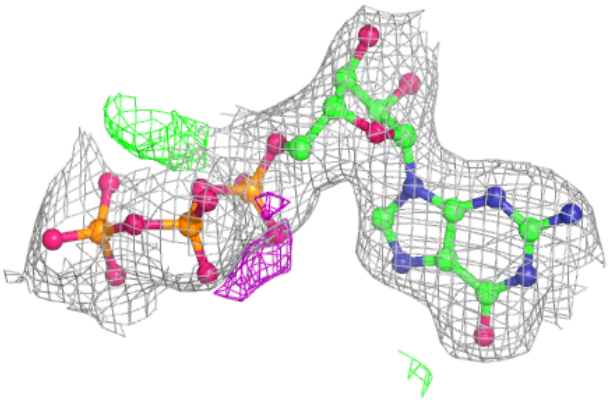
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

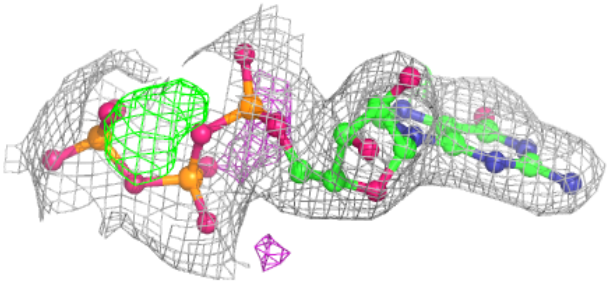
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	GTP	B	701	32/32	0.93	0.14	36,45,69,72	0
2	GTP	C	701	32/32	0.94	0.13	36,45,69,72	0
2	GTP	A	701	32/32	0.95	0.14	36,45,69,72	0

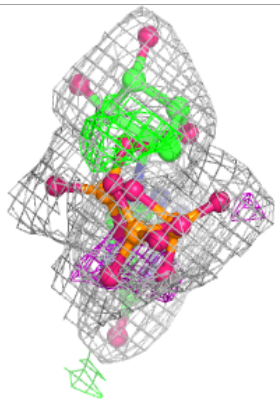
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around GTP B 701:

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

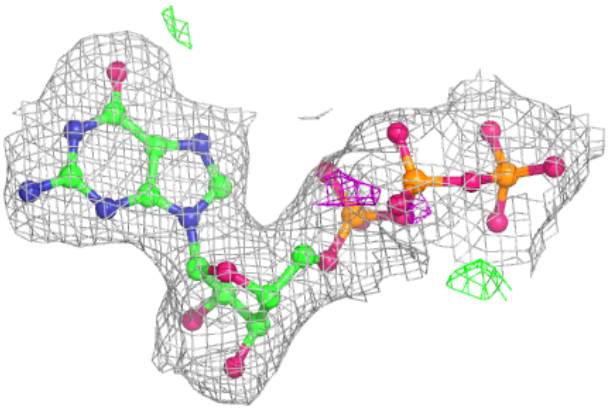


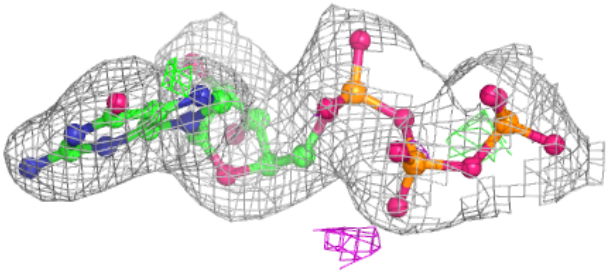


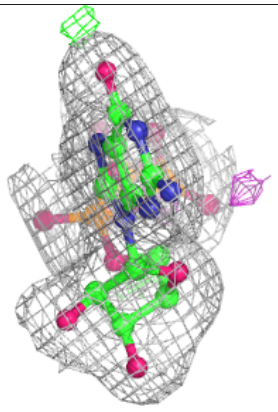


Electron density around GTP C 701:

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

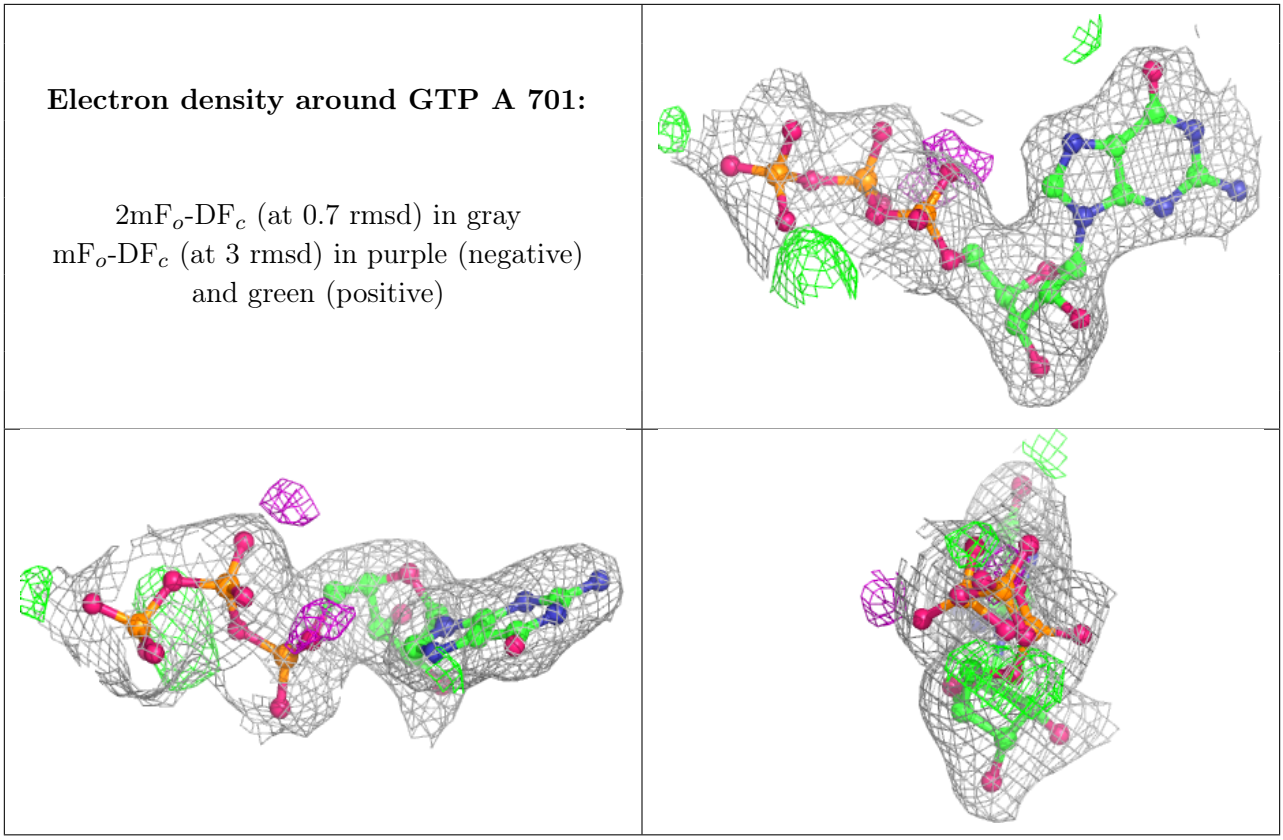






Electron density around GTP A 701:

$2mF_o$-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.