Full wwPDB X-ray Structure Validation Report (i)

Dec 8, 2023 – 06:08 am GMT

PDB ID	:	1UVN
Title	:	The structural basis for RNA specificity and Ca2 inhibition of an RNA-dependent RNA polymerase phi6p2 ca2+ inhibition complex
Authors	:	Salgado, P.S.; Makeyev, E.V.; Butcher, S.; Bamford, D.; Stuart, D.I.; Grimes, J.M.
Deposited on	:	2004-01-21
Resolution	:	3.00 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:

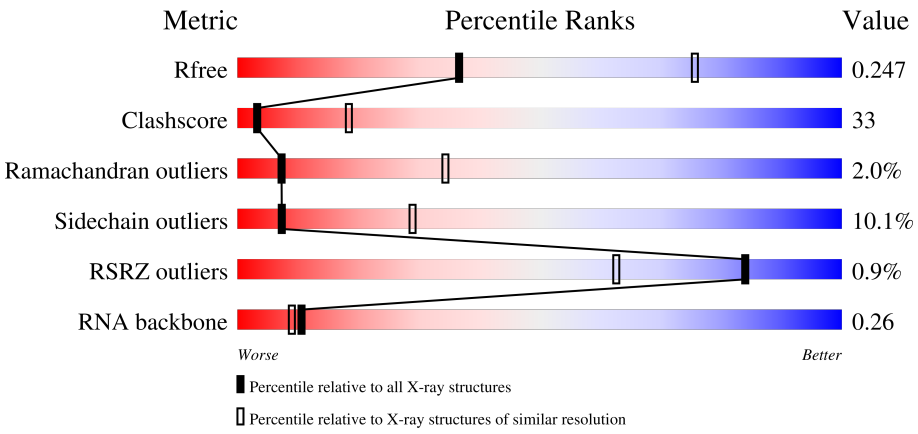
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
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 3.00 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	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)
RNA backbone	3102	1173 (3.30-2.70)

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	664	.% 45% 48% 6%
1	C	664	.% 46% 47% 6%
1	E	664	2% 46% 48% 6%

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Mol	Chain	Length	Quality of chain
2	B	6	50% 17% 33%
2	D	6	50% 17% 33%
2	F	6	50% 17% 33%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	GTP	C	1665	-	-	-	X
4	CA	C	1667	-	-	-	X

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 16380 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 RNA-directed RNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	664	5265	3342	914	977	32	0	0	0
1	C	664	5265	3342	914	977	32	0	0	0
1	E	664	5265	3342	914	977	32	0	0	0

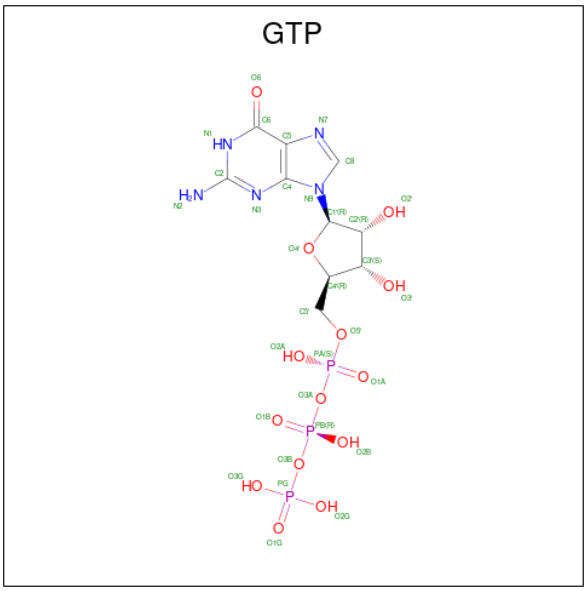
There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	456	MET	ILE	conflict	UNP P11124
C	456	MET	ILE	conflict	UNP P11124
E	456	MET	ILE	conflict	UNP P11124

- Molecule 2 is a RNA chain called 5'-R(*UP*UP*UP*UP*CP*CP)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	B	4	77	36	10	28	3	0	0	0
2	D	4	77	36	10	28	3	0	0	0
2	F	4	77	36	10	28	3	0	0	0

- Molecule 3 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



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

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	2	Total	Ca	0	0
			2	2		
4	C	2	Total	Ca	0	0
			2	2		
4	E	2	Total	Ca	0	0
			2	2		

- Molecule 5 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mn		
5	A	1	1	1	0	0
5	C	1	1	1	0	0
5	E	1	1	1	0	0

- Molecule 6 is water.

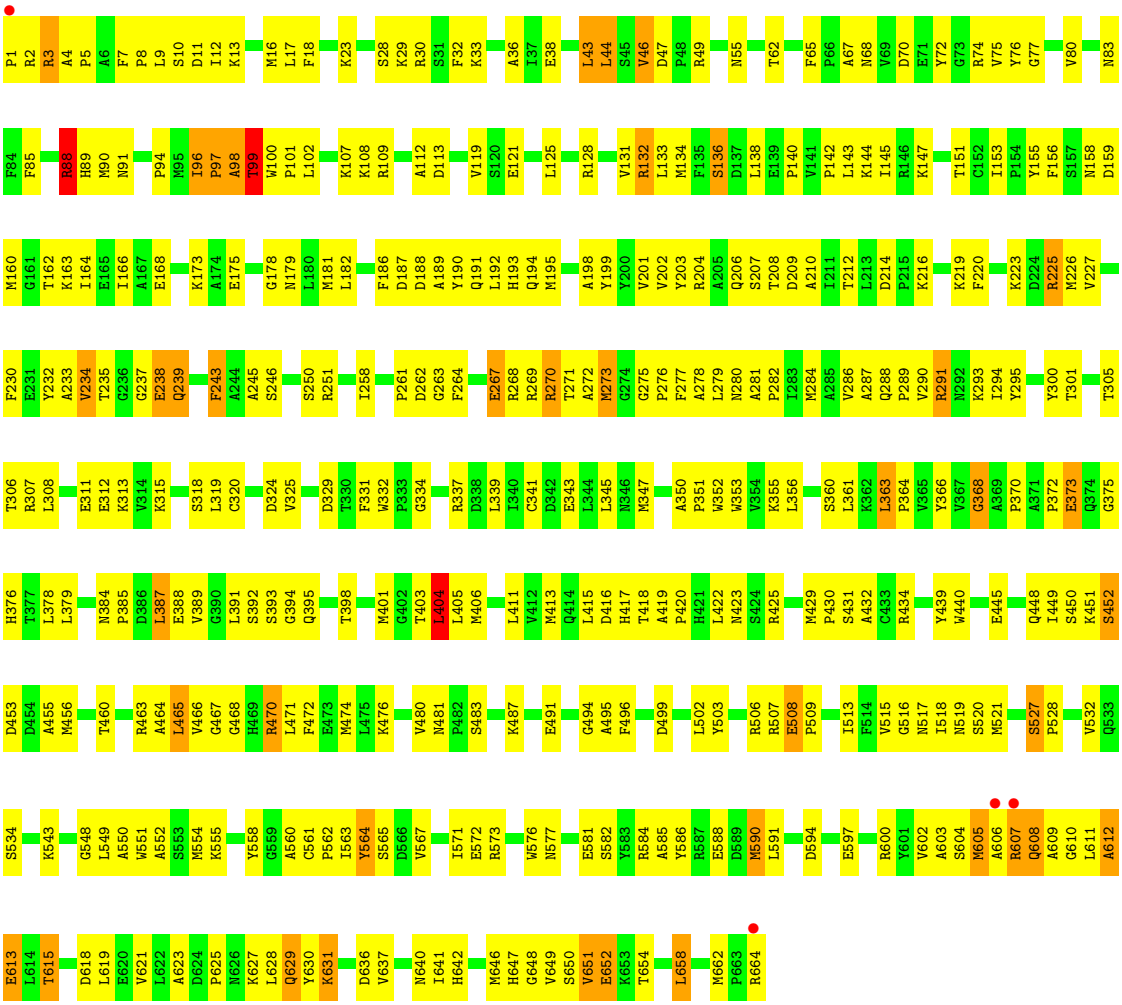
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
6	A	52	52	52	0	0
6	C	50	50	50	0	0
6	E	51	51	51	0	0

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.

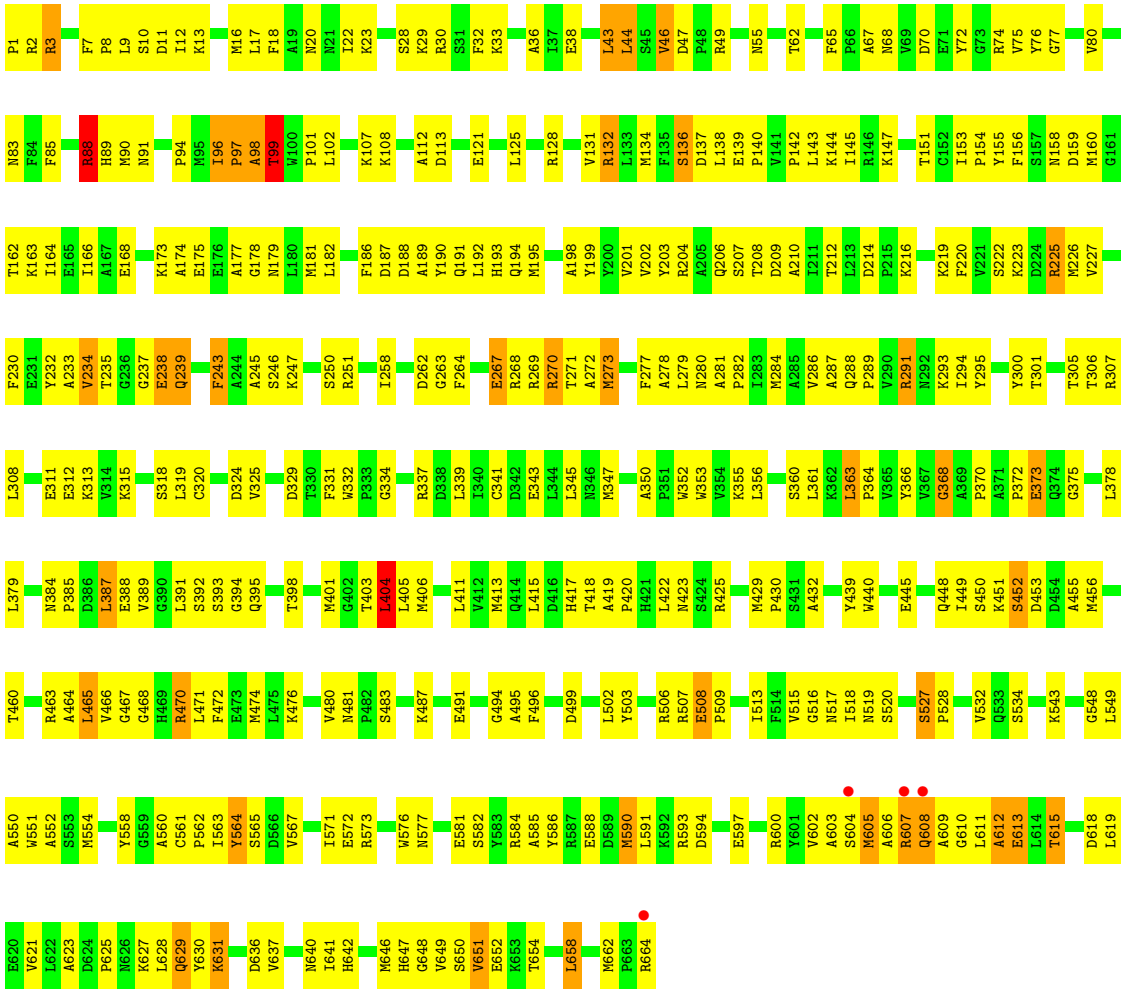
• Molecule 1: RNA-directed RNA polymerase

Chain A:



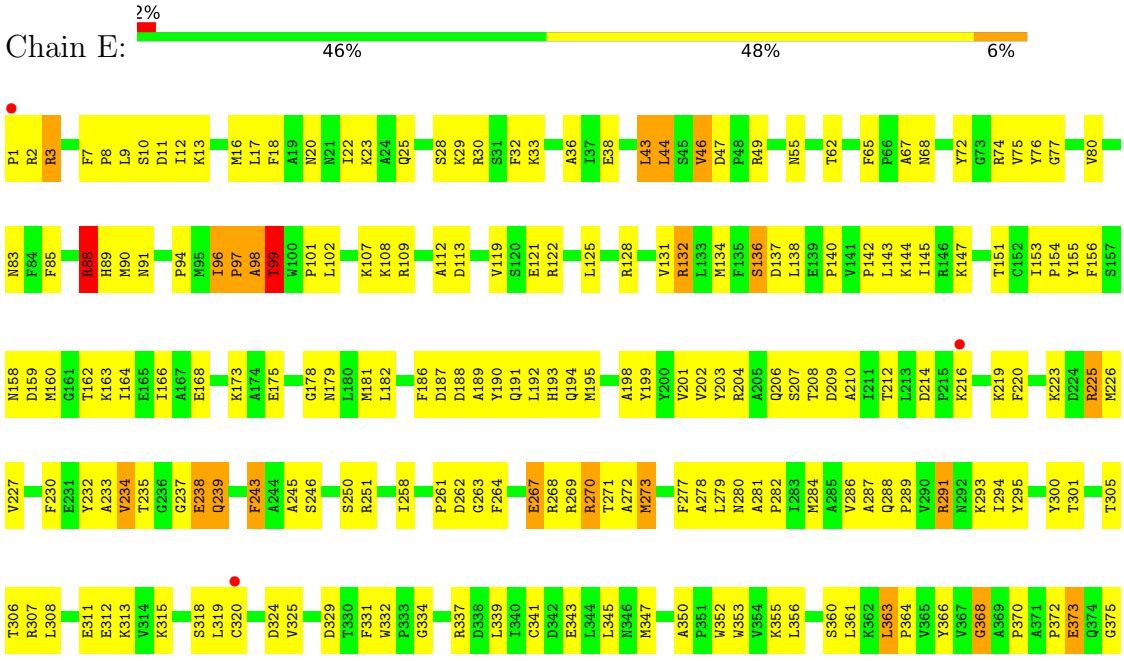
• Molecule 1: RNA-directed RNA polymerase

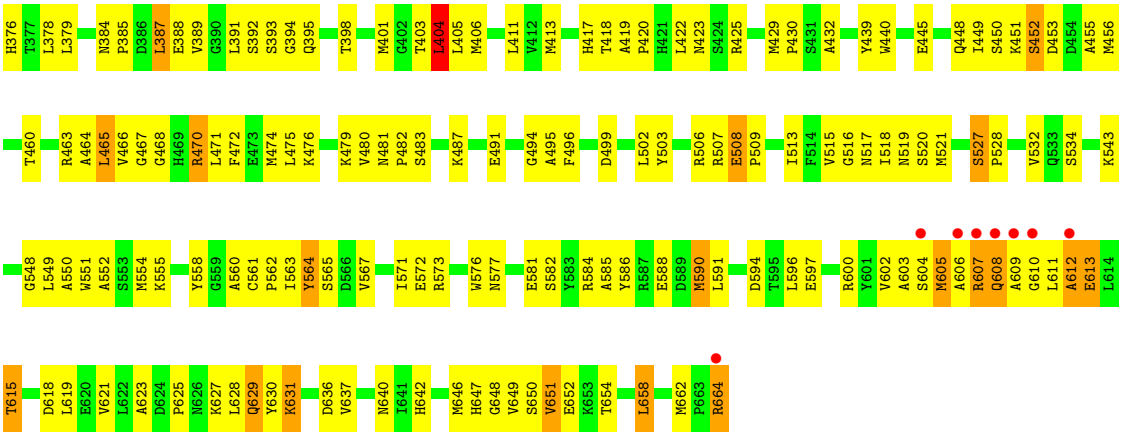
Chain C:



• Molecule 1: RNA-directed RNA polymerase

Chain E:





- Molecule 2: 5'-R(*UP*UP*UP*UP*CP*CP)-3'

Chain B:

- Molecule 2: 5'-R(*UP*UP*UP*UP*CP*CP)-3'

Chain D:

- Molecule 2: 5'-R(*UP*UP*UP*UP*CP*CP)-3'

Chain F:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	105.50Å 92.13Å 140.75Å 90.00° 101.01° 90.00°	Depositor
Resolution (Å)	19.93 – 3.00 19.93 – 3.00	Depositor EDS
% Data completeness (in resolution range)	96.7 (19.93-3.00) 96.8 (19.93-3.00)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.90 (at 2.98Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.234 , 0.257 0.220 , 0.247	Depositor DCC
R_{free} test set	2575 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å^2)	62.2	Xtriage
Anisotropy	0.799	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 73.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	16380	wwPDB-VP
Average B, all atoms (Å^2)	62.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.19% 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 (i)

5.1 Standard geometry (i)

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

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	0.60	0/5396	0.82	3/7297 (0.0%)
1	C	0.60	0/5396	0.82	3/7297 (0.0%)
1	E	0.60	0/5396	0.82	3/7297 (0.0%)
2	B	0.47	0/84	0.74	0/128
2	D	0.48	0/84	0.74	0/128
2	F	0.47	0/84	0.75	0/128
All	All	0.60	0/16440	0.82	9/22275 (0.0%)

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	96	ILE	C-N-CA	-5.97	96.94	122.00
1	C	96	ILE	C-N-CA	-5.97	96.94	122.00
1	E	96	ILE	C-N-CA	-5.97	96.94	122.00
1	C	99	THR	N-CA-C	5.61	126.15	111.00
1	A	99	THR	N-CA-C	5.60	126.13	111.00
1	E	99	THR	N-CA-C	5.60	126.11	111.00
1	C	404	LEU	CA-CB-CG	5.04	126.90	115.30
1	A	404	LEU	CA-CB-CG	5.04	126.89	115.30
1	E	404	LEU	CA-CB-CG	5.04	126.88	115.30

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	5265	0	5165	360	5
1	C	5265	0	5165	345	1
1	E	5265	0	5165	346	19
2	B	77	0	44	9	0
2	D	77	0	44	8	0
2	F	77	0	44	8	0
3	A	64	0	22	5	0
3	C	64	0	22	5	0
3	E	64	0	22	5	0
4	A	2	0	0	0	0
4	C	2	0	0	0	0
4	E	2	0	0	0	0
5	A	1	0	0	0	0
5	C	1	0	0	0	0
5	E	1	0	0	0	0
6	A	52	0	0	9	0
6	C	50	0	0	9	0
6	E	51	0	0	9	0
All	All	16380	0	15693	1057	19

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 33.

All (1057) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:608:GLN:HE22	1:C:593:ARG:NH1	1.44	1.14
1:A:209:ASP:OD2	1:A:225:ARG:NH1	1.94	1.01
1:E:209:ASP:OD2	1:E:225:ARG:NH1	1.94	1.00
1:E:318:SER:HB2	1:E:465:LEU:HD21	1.44	0.99
1:C:209:ASP:OD2	1:C:225:ARG:NH1	1.94	0.99
1:C:318:SER:HB2	1:C:465:LEU:HD21	1.44	0.97
1:E:419:ALA:HB1	1:E:422:LEU:HD12	1.46	0.97
1:A:419:ALA:HB1	1:A:422:LEU:HD12	1.46	0.96
1:A:429:MET:HB3	1:A:430:PRO:HD3	1.47	0.96
1:A:318:SER:HB2	1:A:465:LEU:HD21	1.44	0.96
1:C:419:ALA:HB1	1:C:422:LEU:HD12	1.46	0.95
1:E:502:LEU:HB3	1:E:513:ILE:HD12	1.47	0.94
1:C:429:MET:HB3	1:C:430:PRO:HD3	1.47	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:502:LEU:HB3	1:A:513:ILE:HD12	1.47	0.94
1:C:502:LEU:HB3	1:C:513:ILE:HD12	1.47	0.93
1:E:429:MET:HB3	1:E:430:PRO:HD3	1.47	0.93
1:C:629:GLN:HA	1:C:629:GLN:HE21	1.36	0.90
1:A:629:GLN:HE21	1:A:629:GLN:HA	1.36	0.88
1:A:364:PRO:HA	1:A:387:LEU:HD22	1.56	0.88
1:E:629:GLN:HE21	1:E:629:GLN:HA	1.36	0.88
1:C:364:PRO:HA	1:C:387:LEU:HD22	1.56	0.88
1:E:364:PRO:HA	1:E:387:LEU:HD22	1.56	0.87
1:C:225:ARG:CZ	1:C:268:ARG:HH11	1.89	0.86
1:E:225:ARG:CZ	1:E:268:ARG:HH11	1.89	0.86
1:C:363:LEU:HD12	6:C:2026:HOH:O	1.75	0.86
1:E:219:LYS:HD3	1:E:220:PHE:H	1.41	0.86
1:A:97:PRO:HD2	1:A:246:SER:H	1.40	0.86
1:E:561:CYS:HB2	6:E:2038:HOH:O	1.76	0.85
1:A:225:ARG:CZ	1:A:268:ARG:HH11	1.89	0.85
1:A:561:CYS:HB2	6:A:2038:HOH:O	1.76	0.85
1:C:219:LYS:HD3	1:C:220:PHE:H	1.41	0.85
1:C:561:CYS:HB2	6:C:2039:HOH:O	1.76	0.85
1:A:363:LEU:HD12	6:A:2026:HOH:O	1.75	0.85
1:A:219:LYS:HD3	1:A:220:PHE:H	1.41	0.85
1:E:363:LEU:HD12	6:E:2026:HOH:O	1.75	0.85
1:E:97:PRO:HD2	1:E:246:SER:H	1.40	0.85
1:C:97:PRO:HD2	1:C:246:SER:H	1.40	0.84
1:E:280:ASN:O	1:E:284:MET:HG3	1.78	0.83
1:C:280:ASN:O	1:C:284:MET:HG3	1.78	0.83
1:A:280:ASN:O	1:A:284:MET:HG3	1.79	0.83
1:C:363:LEU:HG	1:C:364:PRO:HD2	1.61	0.82
1:A:363:LEU:HG	1:A:364:PRO:HD2	1.62	0.82
1:E:136:SER:HB2	1:E:293:LYS:NZ	1.95	0.82
1:C:136:SER:HB2	1:C:293:LYS:NZ	1.95	0.82
1:C:389:VAL:HG22	6:C:2027:HOH:O	1.79	0.82
1:E:389:VAL:HG22	6:E:2027:HOH:O	1.79	0.82
1:A:136:SER:HB2	1:A:293:LYS:NZ	1.95	0.82
1:E:363:LEU:HG	1:E:364:PRO:HD2	1.61	0.81
2:F:4:U:H4'	2:F:5:U:C5	2.15	0.81
2:B:4:U:H4'	2:B:5:U:C5	2.15	0.80
2:D:4:U:H4'	2:D:5:U:C5	2.15	0.80
1:C:214:ASP:OD1	1:C:216:LYS:HB3	1.82	0.80
1:E:214:ASP:OD1	1:E:216:LYS:HB3	1.82	0.80
1:A:389:VAL:HG22	6:A:2027:HOH:O	1.79	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:353:TRP:HA	1:E:356:LEU:HD12	1.64	0.79
1:A:214:ASP:OD1	1:A:216:LYS:HB3	1.82	0.79
1:A:136:SER:HB2	1:A:293:LYS:HZ3	1.47	0.79
1:C:219:LYS:HE2	1:C:263:GLY:N	1.98	0.79
1:A:353:TRP:HA	1:A:356:LEU:HD12	1.64	0.78
1:C:353:TRP:HA	1:C:356:LEU:HD12	1.64	0.78
1:E:128:ARG:HG3	1:E:339:LEU:HD21	1.64	0.78
1:E:281:ALA:HB3	1:E:282:PRO:HD3	1.66	0.78
1:A:128:ARG:HG3	1:A:339:LEU:HD21	1.64	0.78
1:E:658:LEU:HG	1:E:662:MET:CE	2.14	0.78
1:A:279:LEU:O	1:A:282:PRO:HD2	1.84	0.78
1:C:615:THR:HG23	1:C:618:ASP:CG	2.05	0.78
1:C:658:LEU:HG	1:C:662:MET:CE	2.14	0.78
1:A:281:ALA:HB3	1:A:282:PRO:HD3	1.66	0.78
1:C:128:ARG:HG3	1:C:339:LEU:HD21	1.64	0.78
1:E:219:LYS:HE2	1:E:263:GLY:N	1.98	0.78
1:E:615:THR:HG23	1:E:618:ASP:CG	2.04	0.77
1:A:615:THR:HG23	1:A:618:ASP:CG	2.04	0.77
1:A:219:LYS:HE2	1:A:263:GLY:N	1.98	0.77
1:C:279:LEU:O	1:C:282:PRO:HD2	1.84	0.77
1:A:658:LEU:HG	1:A:662:MET:CE	2.14	0.77
1:E:121:GLU:O	1:E:125:LEU:HD12	1.85	0.77
1:C:121:GLU:O	1:C:125:LEU:HD12	1.85	0.77
1:E:279:LEU:O	1:E:282:PRO:HD2	1.84	0.77
1:A:121:GLU:O	1:A:125:LEU:HD12	1.85	0.77
1:A:181:MET:HE1	1:A:356:LEU:HD23	1.67	0.77
1:C:658:LEU:HG	1:C:662:MET:HE2	1.65	0.77
1:C:281:ALA:HB3	1:C:282:PRO:HD3	1.66	0.76
1:A:210:ALA:HB3	1:A:223:LYS:HB2	1.68	0.76
1:E:324:ASP:HA	6:E:2031:HOH:O	1.86	0.76
1:E:181:MET:HE1	1:E:356:LEU:HD23	1.68	0.76
1:C:136:SER:HB2	1:C:293:LYS:HZ3	1.51	0.75
1:C:181:MET:HE1	1:C:356:LEU:HD23	1.68	0.75
1:C:210:ALA:HB3	1:C:223:LYS:HB2	1.68	0.75
1:E:284:MET:CE	2:F:7:C:H5"	2.16	0.75
1:A:284:MET:CE	2:B:7:C:H5"	2.16	0.75
1:C:198:ALA:HA	1:C:363:LEU:CD2	2.17	0.75
1:A:363:LEU:HG	1:A:364:PRO:CD	2.17	0.75
1:C:613:GLU:CD	1:C:613:GLU:H	1.91	0.74
1:E:363:LEU:HG	1:E:364:PRO:CD	2.17	0.74
1:A:324:ASP:HA	6:A:2031:HOH:O	1.86	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:284:MET:CE	2:D:7:C:H5"	2.16	0.74
1:E:198:ALA:HA	1:E:363:LEU:CD2	2.17	0.74
1:E:613:GLU:CD	1:E:613:GLU:H	1.91	0.73
1:C:324:ASP:HA	6:C:2031:HOH:O	1.86	0.73
1:C:363:LEU:HG	1:C:364:PRO:CD	2.17	0.73
1:E:210:ALA:HB3	1:E:223:LYS:HB2	1.68	0.73
1:A:613:GLU:CD	1:A:613:GLU:H	1.91	0.73
1:A:198:ALA:HA	1:A:363:LEU:CD2	2.17	0.73
1:E:17:LEU:HD22	1:E:153:ILE:HD13	1.70	0.73
1:E:629:GLN:HA	1:E:629:GLN:NE2	2.03	0.73
1:A:385:PRO:HB3	6:A:2026:HOH:O	1.89	0.73
1:E:502:LEU:HB3	1:E:513:ILE:CD1	2.19	0.72
1:C:629:GLN:HA	1:C:629:GLN:NE2	2.03	0.72
1:A:629:GLN:HA	1:A:629:GLN:NE2	2.03	0.72
1:C:17:LEU:HD22	1:C:153:ILE:HD13	1.70	0.72
1:A:199:TYR:HB3	1:A:273:MET:HG3	1.71	0.72
1:C:385:PRO:HB3	6:C:2026:HOH:O	1.89	0.72
1:C:502:LEU:HB3	1:C:513:ILE:CD1	2.19	0.72
1:C:219:LYS:CD	1:C:220:PHE:H	2.03	0.72
1:E:219:LYS:CD	1:E:220:PHE:H	2.03	0.72
1:A:219:LYS:CD	1:A:220:PHE:H	2.03	0.71
1:C:199:TYR:HB3	1:C:273:MET:HG3	1.71	0.71
1:A:17:LEU:HD22	1:A:153:ILE:HD13	1.70	0.71
1:E:199:TYR:HB3	1:E:273:MET:HG3	1.71	0.71
1:C:225:ARG:NE	1:C:268:ARG:HH11	1.89	0.71
1:A:181:MET:CE	1:A:356:LEU:HD23	2.21	0.71
1:A:502:LEU:HB3	1:A:513:ILE:CD1	2.19	0.71
1:C:576:TRP:HA	1:C:581:GLU:O	1.91	0.71
1:E:181:MET:CE	1:E:356:LEU:HD23	2.21	0.70
1:E:385:PRO:HB3	6:E:2026:HOH:O	1.89	0.70
1:E:225:ARG:NE	1:E:268:ARG:HH11	1.89	0.70
1:C:173:LYS:HB3	1:C:193:HIS:CD2	2.27	0.70
1:E:450:SER:HB3	1:E:455:ALA:HB2	1.74	0.70
1:A:608:GLN:NE2	1:C:593:ARG:NH1	2.29	0.70
1:A:173:LYS:HB3	1:A:193:HIS:CD2	2.27	0.70
1:A:576:TRP:HA	1:A:581:GLU:O	1.91	0.70
1:E:175:GLU:HA	1:E:352:TRP:CE3	2.27	0.70
1:C:181:MET:CE	1:C:356:LEU:HD23	2.21	0.69
1:E:576:TRP:HA	1:E:581:GLU:O	1.91	0.69
1:C:97:PRO:CD	1:C:246:SER:H	2.06	0.69
1:A:225:ARG:NE	1:A:268:ARG:HH11	1.89	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:602:VAL:HB	1:E:605:MET:HB2	1.75	0.69
1:E:173:LYS:HB3	1:E:193:HIS:CD2	2.27	0.69
1:C:175:GLU:HA	1:C:352:TRP:CE3	2.27	0.69
1:C:363:LEU:HA	6:C:2026:HOH:O	1.93	0.69
1:A:419:ALA:CB	1:A:422:LEU:HD12	2.23	0.69
1:A:450:SER:HB3	1:A:455:ALA:HB2	1.74	0.69
1:A:606:ALA:HB3	1:A:609:ALA:HB2	1.75	0.69
1:C:606:ALA:HB3	1:C:609:ALA:HB2	1.75	0.69
1:E:97:PRO:CD	1:E:246:SER:H	2.06	0.69
1:E:419:ALA:CB	1:E:422:LEU:HD12	2.23	0.69
1:A:97:PRO:CD	1:A:246:SER:H	2.06	0.69
1:C:450:SER:HB3	1:C:455:ALA:HB2	1.74	0.69
1:C:602:VAL:HB	1:C:605:MET:HB2	1.75	0.69
1:A:175:GLU:HA	1:A:352:TRP:CE3	2.27	0.68
1:E:658:LEU:HG	1:E:662:MET:HE1	1.74	0.68
1:A:209:ASP:CG	1:A:225:ARG:HH12	1.97	0.68
1:A:602:VAL:HB	1:A:605:MET:HB2	1.75	0.68
1:C:209:ASP:CG	1:C:225:ARG:HH12	1.97	0.68
1:A:658:LEU:HG	1:A:662:MET:HE2	1.74	0.68
1:E:136:SER:HB2	1:E:293:LYS:HZ1	1.57	0.68
1:C:97:PRO:HD2	1:C:246:SER:N	2.10	0.67
1:C:55:ASN:OD1	1:C:88:ARG:NH2	2.28	0.67
1:E:76:TYR:HA	1:E:502:LEU:HD12	1.76	0.67
1:E:325:VAL:HG21	1:E:406:MET:CE	2.24	0.67
1:A:608:GLN:OE1	1:C:593:ARG:HD2	1.95	0.67
1:A:325:VAL:HG21	1:A:406:MET:CE	2.24	0.67
1:E:363:LEU:HA	6:E:2026:HOH:O	1.93	0.67
1:C:76:TYR:HA	1:C:502:LEU:HD12	1.76	0.66
1:C:325:VAL:HG21	1:C:406:MET:CE	2.24	0.66
1:E:606:ALA:HB3	1:E:609:ALA:HB2	1.75	0.66
1:A:307:ARG:NH2	1:A:560:ALA:HB2	2.10	0.66
1:A:363:LEU:HA	6:A:2026:HOH:O	1.93	0.66
1:C:491:GLU:OE1	1:C:494:GLY:HA2	1.96	0.66
1:E:55:ASN:OD1	1:E:88:ARG:NH2	2.28	0.66
1:E:209:ASP:CG	1:E:225:ARG:HH12	1.97	0.66
1:E:307:ARG:NH2	1:E:560:ALA:HB2	2.11	0.66
1:E:606:ALA:O	1:E:608:GLN:N	2.28	0.66
1:A:55:ASN:OD1	1:A:88:ARG:NH2	2.28	0.66
1:E:491:GLU:OE1	1:E:494:GLY:HA2	1.96	0.66
1:C:393:SER:O	1:C:398:THR:HG21	1.96	0.66
1:A:491:GLU:OE1	1:A:494:GLY:HA2	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:419:ALA:CB	1:C:422:LEU:HD12	2.23	0.65
1:C:198:ALA:HA	1:C:363:LEU:HD21	1.78	0.65
1:E:429:MET:HB3	1:E:430:PRO:CD	2.25	0.65
1:A:393:SER:O	1:A:398:THR:HG21	1.96	0.65
1:C:307:ARG:NH2	1:C:560:ALA:HB2	2.11	0.65
1:A:76:TYR:HA	1:A:502:LEU:HD12	1.76	0.65
1:E:97:PRO:HD2	1:E:246:SER:N	2.09	0.65
1:A:450:SER:CB	1:A:455:ALA:HB2	2.26	0.65
1:A:97:PRO:HD2	1:A:246:SER:N	2.10	0.64
1:E:225:ARG:HD2	1:E:268:ARG:HD2	1.79	0.64
1:E:393:SER:O	1:E:398:THR:HG21	1.96	0.64
1:E:450:SER:CB	1:E:455:ALA:HB2	2.27	0.64
1:C:429:MET:HB3	1:C:430:PRO:CD	2.25	0.64
1:C:450:SER:CB	1:C:455:ALA:HB2	2.26	0.64
1:A:198:ALA:HA	1:A:363:LEU:HD21	1.78	0.64
1:E:198:ALA:HA	1:E:363:LEU:HD21	1.78	0.64
1:E:194:GLN:O	1:E:278:ALA:HB3	1.99	0.63
1:E:284:MET:HE1	2:F:7:C:H5"	1.79	0.63
1:C:225:ARG:HD2	1:C:268:ARG:HD2	1.80	0.63
1:A:329:ASP:OD1	3:A:1666:GTP:H3'	1.99	0.63
1:C:199:TYR:CD1	1:C:273:MET:HB3	2.34	0.63
1:E:329:ASP:OD1	3:E:1666:GTP:H3'	1.99	0.63
1:C:230:PHE:O	1:C:234:VAL:HG22	1.99	0.63
1:C:284:MET:HE3	2:D:7:C:H5"	1.80	0.63
1:A:194:GLN:O	1:A:278:ALA:HB3	1.99	0.63
1:A:199:TYR:CD1	1:A:273:MET:HB3	2.34	0.63
1:A:230:PHE:O	1:A:234:VAL:HG22	1.99	0.63
1:A:606:ALA:O	1:A:608:GLN:N	2.28	0.63
1:C:329:ASP:OD1	3:C:1666:GTP:H3'	1.99	0.63
1:C:194:GLN:O	1:C:278:ALA:HB3	1.99	0.62
1:A:160:MET:O	1:A:164:ILE:HG12	1.99	0.62
1:E:160:MET:O	1:E:164:ILE:HG12	1.99	0.62
1:E:230:PHE:O	1:E:234:VAL:HG22	1.99	0.62
1:C:160:MET:O	1:C:164:ILE:HG12	1.99	0.62
1:C:325:VAL:HG21	1:C:406:MET:HE2	1.81	0.62
1:A:225:ARG:HD2	1:A:268:ARG:HD2	1.80	0.62
1:E:199:TYR:CD1	1:E:273:MET:HB3	2.34	0.62
1:A:658:LEU:HG	1:A:662:MET:HE1	1.80	0.62
1:E:658:LEU:HG	1:E:662:MET:HE2	1.80	0.62
1:A:243:PHE:CD1	1:A:243:PHE:N	2.68	0.62
1:E:136:SER:HB2	1:E:293:LYS:HZ3	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:564:TYR:HD1	1:E:565:SER:N	1.98	0.62
1:A:2:ARG:O	1:A:3:ARG:HB3	2.00	0.62
1:E:243:PHE:N	1:E:243:PHE:CD1	2.68	0.62
1:A:143:LEU:C	1:A:143:LEU:HD23	2.21	0.61
1:A:195:MET:CE	1:A:282:PRO:HG2	2.30	0.61
1:A:291:ARG:HG2	1:A:295:TYR:CE2	2.35	0.61
1:C:564:TYR:HD1	1:C:565:SER:N	1.98	0.61
1:E:132:ARG:HG3	1:E:132:ARG:HH11	1.65	0.61
1:E:143:LEU:HD23	1:E:143:LEU:C	2.20	0.61
1:E:273:MET:HG2	1:E:392:SER:HB3	1.82	0.61
1:A:134:MET:HG2	1:A:294:ILE:CG2	2.30	0.61
1:C:143:LEU:HD23	1:C:143:LEU:C	2.20	0.61
1:E:195:MET:CE	1:E:282:PRO:HG2	2.30	0.61
1:A:564:TYR:HD1	1:A:565:SER:N	1.98	0.61
1:C:134:MET:HG2	1:C:294:ILE:CG2	2.30	0.61
1:C:301:THR:HG22	1:C:448:GLN:O	2.00	0.61
1:E:291:ARG:HG2	1:E:295:TYR:CE2	2.35	0.61
1:C:132:ARG:HG3	1:C:132:ARG:HH11	1.65	0.61
1:E:2:ARG:O	1:E:3:ARG:HB3	2.00	0.61
1:E:301:THR:HG22	1:E:448:GLN:O	2.00	0.61
1:A:65:PHE:HD1	1:A:563:ILE:HG21	1.66	0.61
1:A:301:THR:HG22	1:A:448:GLN:O	2.00	0.61
1:C:291:ARG:HG2	1:C:295:TYR:CE2	2.35	0.61
1:E:134:MET:HG2	1:E:294:ILE:CG2	2.30	0.61
1:E:65:PHE:HD1	1:E:563:ILE:HG21	1.66	0.60
1:A:134:MET:HE1	1:A:404:LEU:HA	1.83	0.60
1:C:65:PHE:HD1	1:C:563:ILE:HG21	1.66	0.60
1:C:273:MET:HG2	1:C:392:SER:HB3	1.82	0.60
1:E:419:ALA:N	1:E:420:PRO:HD3	2.17	0.60
1:C:203:TYR:HE1	1:C:271:THR:HG22	1.67	0.60
1:A:199:TYR:CB	1:A:273:MET:HG3	2.32	0.60
1:C:195:MET:CE	1:C:282:PRO:HG2	2.30	0.60
1:A:132:ARG:HH11	1:A:132:ARG:HG3	1.65	0.60
1:A:273:MET:HG2	1:A:392:SER:HB3	1.82	0.60
1:A:318:SER:CB	1:A:465:LEU:HD21	2.26	0.60
1:C:419:ALA:N	1:C:420:PRO:HD3	2.17	0.60
1:C:2:ARG:O	1:C:3:ARG:HB3	2.00	0.60
1:A:642:HIS:CE1	1:A:646:MET:HG3	2.37	0.60
1:C:243:PHE:CD1	1:C:243:PHE:N	2.68	0.60
1:C:393:SER:HA	1:C:398:THR:HG21	1.83	0.60
1:A:142:PRO:HG3	1:A:651:VAL:HG22	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:65:PHE:CD1	1:C:563:ILE:HG21	2.37	0.59
1:A:419:ALA:N	1:A:420:PRO:HD3	2.16	0.59
1:C:449:ILE:O	1:C:449:ILE:HG13	2.02	0.59
1:E:142:PRO:HG3	1:E:651:VAL:HG22	1.84	0.59
1:E:393:SER:HA	1:E:398:THR:HG21	1.83	0.59
1:C:134:MET:HE1	1:C:404:LEU:HA	1.83	0.59
1:C:642:HIS:CE1	1:C:646:MET:HG3	2.37	0.59
1:A:203:TYR:HE1	1:A:271:THR:HG22	1.67	0.59
1:A:429:MET:HB3	1:A:430:PRO:CD	2.25	0.59
1:E:449:ILE:O	1:E:449:ILE:HG13	2.03	0.59
1:A:416:ASP:CG	1:E:20:ASN:HD22	2.05	0.59
1:C:199:TYR:CB	1:C:273:MET:HG3	2.32	0.59
1:E:65:PHE:CD1	1:E:563:ILE:HG21	2.37	0.59
1:E:642:HIS:CE1	1:E:646:MET:HG3	2.37	0.59
1:A:65:PHE:CD1	1:A:563:ILE:HG21	2.37	0.59
1:C:606:ALA:O	1:C:608:GLN:N	2.28	0.59
1:E:134:MET:HE1	1:E:404:LEU:HA	1.85	0.59
1:E:199:TYR:CB	1:E:273:MET:HG3	2.32	0.59
1:A:284:MET:HE1	2:B:7:C:H5"	1.85	0.59
1:A:449:ILE:HG13	1:A:449:ILE:O	2.02	0.59
1:C:481:ASN:ND2	1:C:483:SER:O	2.36	0.59
1:E:43:LEU:HD22	1:E:44:LEU:N	2.18	0.59
1:A:393:SER:HA	1:A:398:THR:HG21	1.83	0.59
1:C:288:GLN:HB3	1:C:289:PRO:HD3	1.85	0.59
1:C:558:TYR:O	1:C:564:TYR:HD2	1.86	0.59
1:E:198:ALA:CA	1:E:363:LEU:HD21	2.33	0.59
1:E:307:ARG:HG3	1:E:308:LEU:HD22	1.85	0.59
1:A:134:MET:HG2	1:A:294:ILE:HG21	1.85	0.58
1:A:558:TYR:O	1:A:564:TYR:HD2	1.86	0.58
1:C:134:MET:HG2	1:C:294:ILE:HG21	1.85	0.58
1:C:155:TYR:O	1:C:156:PHE:HB2	2.03	0.58
1:E:134:MET:HG2	1:E:294:ILE:HG21	1.85	0.58
1:E:203:TYR:HE1	1:E:271:THR:HG22	1.66	0.58
1:A:155:TYR:O	1:A:156:PHE:HB2	2.03	0.58
1:A:307:ARG:HG3	1:A:308:LEU:HD22	1.85	0.58
1:A:325:VAL:HG21	1:A:406:MET:HE2	1.85	0.58
1:C:307:ARG:HG3	1:C:308:LEU:HD22	1.85	0.58
1:E:481:ASN:ND2	1:E:483:SER:O	2.36	0.58
1:A:481:ASN:ND2	1:A:483:SER:O	2.36	0.58
1:C:43:LEU:HD22	1:C:44:LEU:N	2.18	0.58
1:E:32:PHE:O	1:E:33:LYS:HG3	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:198:ALA:HA	1:E:363:LEU:HD23	1.86	0.58
1:A:606:ALA:C	1:A:608:GLN:H	2.07	0.58
1:E:101:PRO:O	1:E:233:ALA:HB1	2.04	0.58
1:A:43:LEU:HD22	1:A:44:LEU:N	2.18	0.58
1:A:198:ALA:CA	1:A:363:LEU:HD21	2.33	0.58
1:E:99:THR:HA	6:E:2016:HOH:O	2.04	0.58
1:A:99:THR:HA	6:A:2016:HOH:O	2.04	0.58
1:A:198:ALA:HA	1:A:363:LEU:HD23	1.86	0.58
1:A:288:GLN:HB3	1:A:289:PRO:HD3	1.85	0.58
1:C:162:THR:O	1:C:166:ILE:HG13	2.04	0.58
1:A:101:PRO:O	1:A:233:ALA:HB1	2.04	0.57
1:C:32:PHE:O	1:C:33:LYS:HG3	2.04	0.57
1:C:99:THR:HA	6:C:2016:HOH:O	2.04	0.57
1:C:142:PRO:HG3	1:C:651:VAL:HG22	1.84	0.57
1:C:606:ALA:C	1:C:608:GLN:H	2.07	0.57
1:E:2:ARG:HG2	1:E:2:ARG:HH11	1.70	0.57
1:A:32:PHE:O	1:A:33:LYS:HG3	2.04	0.57
1:C:198:ALA:CA	1:C:363:LEU:HD21	2.33	0.57
1:A:429:MET:O	1:A:432:ALA:HB3	2.04	0.57
1:C:36:ALA:HB2	1:C:46:VAL:HG21	1.87	0.57
1:C:198:ALA:HA	1:C:363:LEU:HD23	1.86	0.57
1:E:97:PRO:HD2	1:E:245:ALA:HA	1.87	0.57
1:E:606:ALA:C	1:E:608:GLN:H	2.07	0.57
1:A:2:ARG:HH11	1:A:2:ARG:HG2	1.70	0.57
1:A:119:VAL:O	1:E:25:GLN:HG3	2.05	0.57
1:C:318:SER:CB	1:C:465:LEU:HD21	2.26	0.57
1:E:155:TYR:O	1:E:156:PHE:HB2	2.03	0.57
1:E:162:THR:O	1:E:166:ILE:HG13	2.04	0.57
1:A:411:LEU:HB2	1:A:439:TYR:CE1	2.40	0.57
1:E:558:TYR:O	1:E:564:TYR:HD2	1.86	0.57
1:A:329:ASP:OD1	3:A:1666:GTP:H5'	2.05	0.57
1:C:329:ASP:OD1	3:C:1666:GTP:H5'	2.05	0.57
1:E:204:ARG:HH11	1:E:270:ARG:HH11	1.53	0.57
1:E:429:MET:O	1:E:432:ALA:HB3	2.04	0.57
1:C:143:LEU:H	1:C:654:THR:HG21	1.70	0.57
1:C:420:PRO:HA	1:C:423:ASN:ND2	2.20	0.57
1:E:288:GLN:HB3	1:E:289:PRO:HD3	1.85	0.57
1:A:36:ALA:HB2	1:A:46:VAL:HG21	1.87	0.57
1:C:101:PRO:O	1:C:233:ALA:HB1	2.04	0.57
1:C:429:MET:O	1:C:432:ALA:HB3	2.04	0.57
1:E:411:LEU:HB2	1:E:439:TYR:CE1	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:143:LEU:H	1:A:654:THR:HG21	1.70	0.56
1:A:610:GLY:C	1:A:612:ALA:H	2.08	0.56
1:E:36:ALA:HB2	1:E:46:VAL:HG21	1.87	0.56
1:A:204:ARG:HH11	1:A:270:ARG:HH11	1.53	0.56
1:A:420:PRO:HA	1:A:423:ASN:ND2	2.20	0.56
1:A:470:ARG:HG3	1:A:470:ARG:HH11	1.71	0.56
1:C:72:TYR:CE1	1:C:476:LYS:HD3	2.40	0.56
1:E:72:TYR:CE1	1:E:476:LYS:HD3	2.40	0.56
1:E:329:ASP:OD1	3:E:1666:GTP:H5'	2.04	0.56
1:E:607:ARG:O	1:E:608:GLN:HG3	2.05	0.56
1:A:72:TYR:CE1	1:A:476:LYS:HD3	2.40	0.56
1:A:607:ARG:O	1:A:608:GLN:HG3	2.05	0.56
1:C:204:ARG:HH11	1:C:270:ARG:HH11	1.53	0.56
1:E:420:PRO:HA	1:E:423:ASN:ND2	2.20	0.56
1:C:107:LYS:HD2	1:C:238:GLU:OE2	2.06	0.56
1:A:97:PRO:HD2	1:A:245:ALA:HA	1.87	0.56
1:C:607:ARG:O	1:C:608:GLN:HG3	2.05	0.56
2:F:4:U:H4'	2:F:5:U:H5	1.70	0.56
1:C:67:ALA:HA	1:C:80:VAL:O	2.06	0.56
1:C:2:ARG:HG2	1:C:2:ARG:HH11	1.70	0.56
1:C:97:PRO:HD2	1:C:245:ALA:HA	1.87	0.56
1:C:470:ARG:HG3	1:C:470:ARG:HH11	1.71	0.56
1:E:225:ARG:CZ	1:E:268:ARG:NH1	2.65	0.56
1:E:629:GLN:HE21	1:E:629:GLN:CA	2.11	0.56
1:A:627:LYS:HA	1:A:630:TYR:CE1	2.41	0.56
1:E:182:LEU:HD21	1:E:355:LYS:HB2	1.87	0.56
1:E:294:ILE:HD12	1:E:295:TYR:N	2.21	0.56
1:E:627:LYS:HA	1:E:630:TYR:CE1	2.41	0.56
1:C:411:LEU:HB2	1:C:439:TYR:CE1	2.40	0.55
1:A:182:LEU:HD21	1:A:355:LYS:HB2	1.87	0.55
1:A:294:ILE:HD12	1:A:295:TYR:N	2.21	0.55
1:E:107:LYS:HD2	1:E:238:GLU:OE2	2.06	0.55
1:E:470:ARG:HG3	1:E:470:ARG:HH11	1.71	0.55
1:A:107:LYS:HD2	1:A:238:GLU:OE2	2.06	0.55
1:E:143:LEU:C	1:E:143:LEU:CD2	2.75	0.55
1:A:162:THR:O	1:A:166:ILE:HG13	2.04	0.55
1:C:143:LEU:C	1:C:143:LEU:CD2	2.75	0.55
1:C:334:GLY:O	1:C:337:ARG:HB3	2.07	0.55
1:E:67:ALA:HA	1:E:80:VAL:O	2.06	0.55
1:E:318:SER:CB	1:E:465:LEU:HD21	2.26	0.55
1:C:182:LEU:HD21	1:C:355:LYS:HB2	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:294:ILE:HD12	1:C:295:TYR:N	2.21	0.55
1:C:627:LYS:HA	1:C:630:TYR:CE1	2.41	0.55
1:E:143:LEU:H	1:E:654:THR:HG21	1.70	0.55
1:E:219:LYS:HE2	1:E:263:GLY:H	1.70	0.55
1:A:334:GLY:O	1:A:337:ARG:HB3	2.07	0.55
1:C:140:PRO:HA	1:C:658:LEU:HD23	1.89	0.55
1:C:658:LEU:HG	1:C:662:MET:HE1	1.89	0.55
1:E:102:LEU:N	1:E:102:LEU:HD12	2.22	0.55
1:C:610:GLY:C	1:C:612:ALA:H	2.08	0.55
1:E:8:PRO:HD2	1:E:11:ASP:HB2	1.89	0.55
1:E:289:PRO:HG2	1:E:658:LEU:HD21	1.88	0.55
1:A:143:LEU:C	1:A:143:LEU:CD2	2.75	0.55
1:E:325:VAL:HG21	1:E:406:MET:HE1	1.88	0.55
1:E:334:GLY:O	1:E:337:ARG:HB3	2.07	0.55
1:A:301:THR:HG23	1:A:440:TRP:O	2.07	0.55
1:A:289:PRO:HG2	1:A:658:LEU:HD21	1.88	0.54
1:C:102:LEU:HD12	1:C:102:LEU:N	2.22	0.54
1:C:225:ARG:CZ	1:C:268:ARG:NH1	2.65	0.54
1:E:140:PRO:HA	1:E:658:LEU:HD23	1.89	0.54
2:B:4:U:H4'	2:B:5:U:H5	1.70	0.54
1:C:204:ARG:NH1	1:C:270:ARG:NH1	2.56	0.54
1:C:301:THR:HG23	1:C:440:TRP:O	2.07	0.54
2:D:4:U:H4'	2:D:5:U:H5	1.70	0.54
1:E:204:ARG:NH1	1:E:270:ARG:NH1	2.56	0.54
1:E:495:ALA:HB1	1:E:499:ASP:O	2.08	0.54
1:A:178:GLY:O	1:A:182:LEU:HG	2.07	0.54
1:C:289:PRO:HG2	1:C:658:LEU:HD21	1.88	0.54
1:E:610:GLY:C	1:E:612:ALA:H	2.08	0.54
1:A:67:ALA:HA	1:A:80:VAL:O	2.06	0.54
1:C:178:GLY:O	1:C:182:LEU:HG	2.07	0.54
1:E:201:VAL:HG23	1:E:366:TYR:O	2.07	0.54
1:A:8:PRO:HD2	1:A:11:ASP:HB2	1.89	0.54
1:A:74:ARG:HG2	1:A:503:TYR:CE2	2.43	0.54
1:A:173:LYS:CB	1:A:193:HIS:CD2	2.91	0.54
1:A:204:ARG:NH1	1:A:270:ARG:NH1	2.56	0.54
1:E:429:MET:CB	1:E:430:PRO:HD3	2.32	0.54
1:A:102:LEU:HD12	1:A:102:LEU:N	2.22	0.54
1:A:495:ALA:HB1	1:A:499:ASP:O	2.08	0.54
1:E:173:LYS:CB	1:E:193:HIS:CD2	2.91	0.54
1:A:140:PRO:HA	1:A:658:LEU:HD23	1.89	0.54
1:E:301:THR:HG23	1:E:440:TRP:O	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:201:VAL:HG23	1:C:366:TYR:O	2.08	0.54
1:E:108:LYS:HE3	1:E:331:PHE:CZ	2.43	0.54
1:A:38:GLU:HB3	1:A:532:VAL:HG22	1.90	0.54
1:A:273:MET:O	1:A:394:GLY:HA3	2.08	0.54
1:C:74:ARG:HG2	1:C:503:TYR:CE2	2.43	0.54
1:C:76:TYR:HA	1:C:502:LEU:CD1	2.38	0.54
1:C:495:ALA:HB1	1:C:499:ASP:O	2.08	0.54
1:E:121:GLU:HG3	1:E:125:LEU:HD11	1.90	0.54
1:E:178:GLY:O	1:E:182:LEU:HG	2.07	0.54
1:A:108:LYS:HE3	1:A:331:PHE:CZ	2.43	0.53
1:A:190:TYR:O	1:A:194:GLN:HA	2.08	0.53
1:A:450:SER:HB3	1:A:455:ALA:CB	2.39	0.53
1:C:8:PRO:HD2	1:C:11:ASP:HB2	1.89	0.53
1:A:187:ASP:O	1:A:188:ASP:C	2.47	0.53
1:A:307:ARG:HG3	1:A:307:ARG:HH11	1.73	0.53
1:E:74:ARG:HG2	1:E:503:TYR:CE2	2.43	0.53
1:E:76:TYR:HA	1:E:502:LEU:CD1	2.38	0.53
1:A:201:VAL:HG23	1:A:366:TYR:O	2.07	0.53
1:C:173:LYS:CB	1:C:193:HIS:CD2	2.91	0.53
1:C:476:LYS:HE2	6:C:2003:HOH:O	2.08	0.53
1:E:112:ALA:HB1	1:E:487:LYS:HE2	1.90	0.53
1:E:190:TYR:O	1:E:194:GLN:HA	2.08	0.53
1:C:187:ASP:O	1:C:188:ASP:C	2.46	0.53
1:E:38:GLU:HB3	1:E:532:VAL:HG22	1.90	0.53
1:E:238:GLU:OE2	1:E:238:GLU:HA	2.09	0.53
1:A:225:ARG:CZ	1:A:268:ARG:NH1	2.65	0.53
1:E:476:LYS:HE2	6:E:2003:HOH:O	2.08	0.53
1:A:476:LYS:HE2	6:A:2003:HOH:O	2.08	0.53
1:C:273:MET:O	1:C:394:GLY:HA3	2.08	0.53
1:C:38:GLU:HB3	1:C:532:VAL:HG22	1.91	0.53
1:C:219:LYS:HE2	1:C:263:GLY:H	1.70	0.53
1:C:450:SER:HB3	1:C:455:ALA:CB	2.39	0.53
1:A:210:ALA:HB3	1:A:223:LYS:CB	2.39	0.53
1:C:112:ALA:HB1	1:C:487:LYS:HE2	1.90	0.53
1:C:190:TYR:O	1:C:194:GLN:HA	2.09	0.53
1:E:273:MET:O	1:E:394:GLY:HA3	2.08	0.53
1:C:307:ARG:HG3	1:C:307:ARG:HH11	1.73	0.52
1:E:74:ARG:NH1	1:E:507:ARG:HB3	2.25	0.52
1:E:564:TYR:CD1	1:E:565:SER:N	2.77	0.52
1:A:76:TYR:HA	1:A:502:LEU:CD1	2.38	0.52
1:A:112:ALA:HB1	1:A:487:LYS:HE2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:121:GLU:HG3	1:C:125:LEU:HD11	1.90	0.52
1:C:108:LYS:HE3	1:C:331:PHE:CZ	2.43	0.52
1:C:74:ARG:NH1	1:C:507:ARG:HB3	2.25	0.52
1:C:548:GLY:HA2	1:C:590:MET:HG2	1.92	0.52
1:E:68:ASN:HB2	1:E:76:TYR:O	2.10	0.52
1:E:325:VAL:HG21	1:E:406:MET:HE2	1.91	0.52
1:A:219:LYS:HE2	1:A:263:GLY:H	1.70	0.52
1:A:238:GLU:OE2	1:A:238:GLU:HA	2.09	0.52
1:C:238:GLU:OE2	1:C:238:GLU:HA	2.09	0.52
1:C:341:CYS:O	1:C:345:LEU:HD12	2.09	0.52
1:A:68:ASN:HB2	1:A:76:TYR:O	2.10	0.52
1:A:74:ARG:HB3	1:A:503:TYR:CD2	2.45	0.52
1:A:74:ARG:NH1	1:A:507:ARG:HB3	2.25	0.52
1:C:136:SER:HB2	1:C:293:LYS:HZ1	1.71	0.52
1:E:187:ASP:O	1:E:188:ASP:C	2.47	0.52
1:A:286:VAL:O	1:A:289:PRO:HD2	2.10	0.52
1:C:564:TYR:CD1	1:C:565:SER:N	2.77	0.52
1:A:121:GLU:HG3	1:A:125:LEU:HD11	1.90	0.52
1:E:286:VAL:O	1:E:289:PRO:HD2	2.10	0.52
1:A:341:CYS:O	1:A:345:LEU:HD12	2.09	0.52
1:C:286:VAL:O	1:C:289:PRO:HD2	2.10	0.52
1:E:307:ARG:HG3	1:E:307:ARG:HH11	1.74	0.52
1:A:17:LEU:O	1:A:153:ILE:HG23	2.11	0.51
1:C:145:ILE:C	1:C:646:MET:HE3	2.30	0.51
1:C:219:LYS:HE3	1:C:262:ASP:HB3	1.92	0.51
1:C:286:VAL:C	1:C:289:PRO:HD2	2.31	0.51
1:E:286:VAL:C	1:E:289:PRO:HD2	2.31	0.51
1:E:341:CYS:O	1:E:345:LEU:HD12	2.09	0.51
1:A:608:GLN:HE22	1:C:593:ARG:HH11	1.51	0.51
1:C:23:LYS:NZ	1:C:158:ASN:HB2	2.25	0.51
1:E:17:LEU:O	1:E:153:ILE:HG23	2.11	0.51
1:A:46:VAL:HG11	1:A:258:ILE:HG21	1.93	0.51
1:A:629:GLN:HE21	1:A:629:GLN:CA	2.11	0.51
1:C:74:ARG:HB3	1:C:503:TYR:CD2	2.45	0.51
1:E:46:VAL:HG11	1:E:258:ILE:HG21	1.93	0.51
1:A:564:TYR:CD1	1:A:565:SER:N	2.77	0.51
1:C:68:ASN:HB2	1:C:76:TYR:O	2.10	0.51
1:E:74:ARG:HB3	1:E:503:TYR:CD2	2.45	0.51
1:E:85:PHE:O	1:E:88:ARG:HG3	2.11	0.51
1:E:273:MET:HB2	1:E:394:GLY:H	1.76	0.51
1:A:311:GLU:OE1	1:A:513:ILE:HA	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:210:ALA:HB3	1:C:223:LYS:CB	2.39	0.51
1:E:203:TYR:CE1	1:E:271:THR:HG22	2.46	0.51
1:A:393:SER:C	1:A:398:THR:HG21	2.31	0.51
1:C:138:LEU:HB2	1:C:662:MET:SD	2.51	0.51
1:A:23:LYS:NZ	1:A:158:ASN:HB2	2.25	0.51
1:A:203:TYR:CE1	1:A:271:THR:HG22	2.46	0.51
1:A:273:MET:HB2	1:A:394:GLY:H	1.76	0.51
1:A:548:GLY:HA2	1:A:590:MET:HG2	1.92	0.51
1:C:132:ARG:HE	1:C:347:MET:HG2	1.76	0.51
1:C:629:GLN:HE21	1:C:629:GLN:CA	2.11	0.51
1:E:23:LYS:NZ	1:E:158:ASN:HB2	2.25	0.51
1:E:132:ARG:HE	1:E:347:MET:HG2	1.76	0.51
1:E:138:LEU:HB2	1:E:662:MET:SD	2.51	0.51
1:E:393:SER:C	1:E:398:THR:HG21	2.31	0.51
1:E:417:HIS:N	1:E:417:HIS:CD2	2.79	0.51
1:A:36:ALA:HB2	1:A:46:VAL:CG2	2.41	0.51
1:A:474:MET:CE	1:A:480:VAL:HG12	2.41	0.51
1:C:311:GLU:OE1	1:C:513:ILE:HA	2.11	0.51
1:E:311:GLU:OE1	1:E:513:ILE:HA	2.11	0.51
1:A:417:HIS:N	1:A:417:HIS:CD2	2.79	0.50
1:E:548:GLY:HA2	1:E:590:MET:HG2	1.92	0.50
1:A:85:PHE:O	1:A:88:ARG:HG3	2.11	0.50
1:A:286:VAL:C	1:A:289:PRO:HD2	2.31	0.50
1:E:311:GLU:CD	1:E:513:ILE:HG22	2.32	0.50
1:C:17:LEU:O	1:C:153:ILE:HG23	2.11	0.50
1:C:517:ASN:HB3	1:C:520:SER:OG	2.12	0.50
1:E:517:ASN:HB3	1:E:520:SER:OG	2.12	0.50
1:A:219:LYS:HE3	1:A:262:ASP:HB3	1.92	0.50
1:A:311:GLU:CD	1:A:513:ILE:HG22	2.32	0.50
1:C:311:GLU:CD	1:C:513:ILE:HG22	2.32	0.50
1:C:417:HIS:N	1:C:417:HIS:CD2	2.79	0.50
1:E:474:MET:CE	1:E:480:VAL:HG12	2.41	0.50
1:E:98:ALA:HB3	1:E:370:PRO:O	2.12	0.50
1:E:160:MET:SD	1:E:647:HIS:HB3	2.52	0.50
1:A:517:ASN:HB3	1:A:520:SER:OG	2.12	0.50
1:A:606:ALA:HB3	1:A:609:ALA:CB	2.40	0.50
1:C:393:SER:C	1:C:398:THR:HG21	2.31	0.50
1:C:606:ALA:HB3	1:C:609:ALA:CB	2.40	0.50
1:E:137:ASP:H	1:E:293:LYS:HZ3	1.60	0.50
1:E:219:LYS:HE3	1:E:262:ASP:HB3	1.92	0.50
1:A:132:ARG:HE	1:A:347:MET:HG2	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:230:PHE:O	1:A:234:VAL:CG2	2.61	0.49
1:A:238:GLU:OE2	1:A:238:GLU:CA	2.60	0.49
1:A:621:VAL:CG1	1:A:628:LEU:HD13	2.42	0.49
1:C:232:TYR:CE2	1:C:237:GLY:HA2	2.47	0.49
1:C:460:THR:O	1:C:465:LEU:HD23	2.12	0.49
1:C:474:MET:CE	1:C:480:VAL:HG12	2.41	0.49
1:E:325:VAL:CG2	1:E:406:MET:HE1	2.42	0.49
1:E:418:THR:O	1:E:464:ALA:HA	2.12	0.49
1:E:450:SER:HB3	1:E:455:ALA:CB	2.39	0.49
1:E:606:ALA:HB3	1:E:609:ALA:CB	2.40	0.49
1:C:621:VAL:CG1	1:C:628:LEU:HD13	2.42	0.49
1:E:145:ILE:C	1:E:646:MET:HE3	2.33	0.49
1:E:238:GLU:OE2	1:E:238:GLU:CA	2.60	0.49
1:A:564:TYR:CD1	1:A:564:TYR:C	2.85	0.49
1:C:160:MET:SD	1:C:647:HIS:HB3	2.52	0.49
1:E:62:THR:HG21	1:E:85:PHE:CZ	2.48	0.49
1:E:621:VAL:CG1	1:E:628:LEU:HD13	2.42	0.49
1:A:138:LEU:HB2	1:A:662:MET:SD	2.51	0.49
1:C:36:ALA:HB2	1:C:46:VAL:CG2	2.41	0.49
1:C:46:VAL:HG11	1:C:258:ILE:HG21	1.93	0.49
1:E:36:ALA:HB2	1:E:46:VAL:CG2	2.41	0.49
1:A:418:THR:O	1:A:464:ALA:HA	2.12	0.49
1:A:460:THR:O	1:A:465:LEU:HD23	2.12	0.49
1:C:98:ALA:HB3	1:C:370:PRO:O	2.12	0.49
1:C:419:ALA:O	1:C:422:LEU:HB2	2.13	0.49
1:C:543:LYS:O	1:C:625:PRO:HD2	2.13	0.49
1:A:311:GLU:OE1	1:A:513:ILE:HG22	2.13	0.49
1:C:429:MET:CB	1:C:430:PRO:HD3	2.32	0.49
1:C:564:TYR:CD1	1:C:564:TYR:C	2.85	0.49
1:E:204:ARG:NH1	1:E:270:ARG:HH11	2.11	0.49
1:A:543:LYS:O	1:A:625:PRO:HD2	2.13	0.49
1:C:85:PHE:O	1:C:88:ARG:HG3	2.11	0.49
1:A:98:ALA:HB3	1:A:370:PRO:O	2.12	0.49
1:C:273:MET:HB2	1:C:394:GLY:H	1.76	0.49
1:E:210:ALA:HB3	1:E:223:LYS:CB	2.39	0.49
1:A:160:MET:SD	1:A:647:HIS:HB3	2.52	0.49
1:A:204:ARG:NH1	1:A:270:ARG:HH11	2.11	0.49
1:C:62:THR:HG21	1:C:85:PHE:CZ	2.48	0.49
1:C:551:TRP:HD1	1:C:591:LEU:HD12	1.78	0.49
1:E:3:ARG:O	1:E:3:ARG:HG3	2.13	0.49
1:E:232:TYR:CE2	1:E:237:GLY:HA2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:460:THR:O	1:E:465:LEU:HD23	2.12	0.49
1:A:136:SER:HB2	1:A:293:LYS:HZ1	1.75	0.49
3:C:1666:GTP:N2	2:D:7:C:C2	2.81	0.49
1:A:62:THR:HG21	1:A:85:PHE:CZ	2.48	0.48
1:A:610:GLY:C	1:A:612:ALA:N	2.67	0.48
1:C:238:GLU:OE2	1:C:238:GLU:CA	2.60	0.48
1:C:332:TRP:CZ2	1:C:401:MET:HB3	2.48	0.48
1:E:543:LYS:O	1:E:625:PRO:HD2	2.13	0.48
1:E:551:TRP:HD1	1:E:591:LEU:HD12	1.78	0.48
1:E:564:TYR:CD1	1:E:564:TYR:C	2.85	0.48
1:E:610:GLY:C	1:E:612:ALA:N	2.67	0.48
1:E:311:GLU:OE1	1:E:513:ILE:HG22	2.13	0.48
3:A:1666:GTP:N2	2:B:7:C:C2	2.81	0.48
1:C:350:ALA:HB1	1:C:352:TRP:NE1	2.28	0.48
1:A:332:TRP:CZ2	1:A:401:MET:HB3	2.48	0.48
1:C:506:ARG:HB3	1:C:508:GLU:HG3	1.95	0.48
1:E:235:THR:HG21	1:E:239:GLN:HG3	1.95	0.48
3:E:1666:GTP:N2	2:F:7:C:C2	2.81	0.48
1:A:416:ASP:OD1	1:E:20:ASN:ND2	2.41	0.48
1:A:506:ARG:HB3	1:A:508:GLU:HG3	1.95	0.48
1:C:230:PHE:O	1:C:234:VAL:CG2	2.61	0.48
1:C:311:GLU:OE1	1:C:513:ILE:HG22	2.13	0.48
1:C:334:GLY:HA3	1:C:388:GLU:OE1	2.14	0.48
1:A:615:THR:HG23	1:A:618:ASP:OD1	2.14	0.48
1:C:3:ARG:O	1:C:3:ARG:HG3	2.13	0.48
1:C:572:GLU:OE1	1:C:584:ARG:HB2	2.14	0.48
1:E:350:ALA:HB1	1:E:352:TRP:NE1	2.28	0.48
1:A:204:ARG:HH11	1:A:270:ARG:NH1	2.11	0.48
1:A:419:ALA:O	1:A:422:LEU:HB2	2.13	0.48
1:C:418:THR:O	1:C:464:ALA:HA	2.12	0.48
1:E:419:ALA:O	1:E:422:LEU:HB2	2.13	0.48
1:A:628:LEU:HD11	1:A:637:VAL:HG21	1.96	0.48
2:B:4:U:O2	2:B:4:U:H3'	2.14	0.48
1:C:203:TYR:CE1	1:C:271:THR:HG22	2.46	0.48
1:E:230:PHE:O	1:E:234:VAL:CG2	2.61	0.48
1:E:334:GLY:HA3	1:E:388:GLU:OE1	2.14	0.48
1:A:232:TYR:CE2	1:A:237:GLY:HA2	2.47	0.48
1:A:350:ALA:HB1	1:A:352:TRP:NE1	2.28	0.48
1:A:368:GLY:O	1:A:375:GLY:HA3	2.14	0.48
2:D:4:U:H3'	2:D:4:U:O2	2.14	0.48
1:A:202:VAL:HG22	1:A:272:ALA:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:235:THR:HG21	1:A:239:GLN:HG3	1.95	0.48
1:A:551:TRP:HD1	1:A:591:LEU:HD12	1.78	0.48
1:C:23:LYS:HZ2	1:C:158:ASN:HB2	1.77	0.48
1:C:235:THR:HG21	1:C:239:GLN:HG3	1.95	0.48
1:C:548:GLY:HA2	1:C:590:MET:CG	2.43	0.48
1:C:628:LEU:HD11	1:C:637:VAL:HG21	1.96	0.48
1:E:202:VAL:HG22	1:E:272:ALA:O	2.14	0.48
1:E:548:GLY:HA2	1:E:590:MET:CG	2.43	0.48
1:E:615:THR:HG23	1:E:618:ASP:OD1	2.14	0.48
1:A:207:SER:O	1:A:208:THR:HG23	2.14	0.47
1:C:204:ARG:NH1	1:C:270:ARG:HH11	2.11	0.47
1:E:332:TRP:CZ2	1:E:401:MET:HB3	2.48	0.47
1:E:506:ARG:HB3	1:E:508:GLU:HG3	1.96	0.47
1:A:319:LEU:HD12	1:A:320:CYS:H	1.79	0.47
1:A:548:GLY:HA2	1:A:590:MET:CG	2.43	0.47
1:A:572:GLU:OE1	1:A:584:ARG:HB2	2.14	0.47
1:C:615:THR:HG23	1:C:618:ASP:OD1	2.14	0.47
2:D:5:U:C2'	2:D:6:C:OP2	2.62	0.47
1:C:610:GLY:C	1:C:612:ALA:N	2.67	0.47
1:E:418:THR:HG22	1:E:467:GLY:C	2.35	0.47
2:F:4:U:H3'	2:F:4:U:O2	2.14	0.47
1:A:32:PHE:CD2	1:A:372:PRO:HG3	2.49	0.47
1:A:190:TYR:O	1:A:194:GLN:N	2.47	0.47
1:A:418:THR:HG22	1:A:467:GLY:C	2.35	0.47
1:C:132:ARG:HH11	1:C:132:ARG:CG	2.27	0.47
1:C:319:LEU:HD12	1:C:320:CYS:H	1.79	0.47
1:E:572:GLU:OE1	1:E:584:ARG:HB2	2.14	0.47
1:A:311:GLU:O	1:A:315:LYS:HG2	2.15	0.47
1:C:190:TYR:O	1:C:194:GLN:N	2.47	0.47
1:C:207:SER:O	1:C:208:THR:HG23	2.14	0.47
1:C:364:PRO:HA	1:C:387:LEU:CD2	2.36	0.47
1:C:615:THR:HG23	1:C:618:ASP:OD2	2.15	0.47
1:E:32:PHE:CD2	1:E:372:PRO:HG3	2.49	0.47
1:E:207:SER:O	1:E:208:THR:HG23	2.14	0.47
1:E:368:GLY:O	1:E:375:GLY:HA3	2.14	0.47
1:E:615:THR:HG23	1:E:618:ASP:OD2	2.14	0.47
1:A:3:ARG:O	1:A:3:ARG:HG3	2.13	0.47
1:A:145:ILE:C	1:A:646:MET:HE3	2.35	0.47
2:B:5:U:C2'	2:B:6:C:OP2	2.62	0.47
1:C:418:THR:HG22	1:C:467:GLY:C	2.35	0.47
1:C:605:MET:O	1:C:606:ALA:C	2.53	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:552:ALA:HB3	1:E:619:LEU:HD13	1.96	0.47
1:A:203:TYR:HB3	1:A:269:ARG:HG2	1.97	0.47
2:F:5:U:C2'	2:F:6:C:OP2	2.62	0.47
1:C:202:VAL:HG22	1:C:272:ALA:O	2.14	0.47
1:C:368:GLY:O	1:C:375:GLY:HA3	2.14	0.47
1:E:7:PHE:CE2	1:E:13:LYS:HD2	2.50	0.47
1:A:18:PHE:CE1	1:A:28:SER:HB2	2.49	0.46
1:A:334:GLY:HA3	1:A:388:GLU:OE1	2.14	0.46
1:C:32:PHE:CD2	1:C:372:PRO:HG3	2.49	0.46
1:C:502:LEU:HD23	1:C:513:ILE:HD11	1.98	0.46
1:E:18:PHE:CE1	1:E:28:SER:HB2	2.50	0.46
1:C:18:PHE:CE1	1:C:28:SER:HB2	2.50	0.46
1:A:564:TYR:O	1:A:565:SER:C	2.54	0.46
1:A:615:THR:HG23	1:A:618:ASP:OD2	2.14	0.46
1:E:311:GLU:O	1:E:315:LYS:HG2	2.15	0.46
1:A:502:LEU:HD23	1:A:513:ILE:HD11	1.97	0.46
1:C:96:ILE:HG22	1:C:97:PRO:CD	2.45	0.46
1:C:311:GLU:O	1:C:315:LYS:HG2	2.15	0.46
1:C:552:ALA:HB3	1:C:619:LEU:HD13	1.97	0.46
1:E:605:MET:O	1:E:606:ALA:C	2.53	0.46
1:A:7:PHE:CZ	1:A:13:LYS:HD2	2.50	0.46
1:A:7:PHE:CE2	1:A:13:LYS:HD2	2.50	0.46
1:A:452:SER:HB3	1:A:453:ASP:H	1.59	0.46
1:C:7:PHE:CZ	1:C:13:LYS:HD2	2.50	0.46
1:C:204:ARG:HH11	1:C:270:ARG:NH1	2.11	0.46
1:E:190:TYR:O	1:E:194:GLN:N	2.47	0.46
1:E:203:TYR:HB3	1:E:269:ARG:HG2	1.97	0.46
1:E:319:LEU:HD12	1:E:320:CYS:H	1.79	0.46
1:E:628:LEU:HD11	1:E:637:VAL:HG21	1.96	0.46
1:A:548:GLY:N	1:A:594:ASP:OD1	2.45	0.46
1:C:219:LYS:HD3	1:C:220:PHE:N	2.21	0.46
1:C:291:ARG:HG2	1:C:295:TYR:HE2	1.80	0.46
1:C:325:VAL:HG21	1:C:406:MET:HE1	1.97	0.46
1:E:502:LEU:HD23	1:E:513:ILE:HD11	1.97	0.46
1:A:96:ILE:HG22	1:A:97:PRO:CD	2.45	0.46
1:A:364:PRO:HA	1:A:387:LEU:CD2	2.36	0.46
1:A:552:ALA:HB3	1:A:619:LEU:HD13	1.97	0.46
1:C:7:PHE:CE2	1:C:13:LYS:HD2	2.50	0.46
1:E:564:TYR:O	1:E:565:SER:C	2.54	0.46
1:A:195:MET:HE2	1:A:282:PRO:HG2	1.97	0.46
1:E:7:PHE:CZ	1:E:13:LYS:HD2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:74:ARG:HG2	1:E:503:TYR:HE2	1.81	0.46
1:E:153:ILE:HA	1:E:154:PRO:HA	1.61	0.46
1:E:204:ARG:HH11	1:E:270:ARG:NH1	2.11	0.46
1:E:273:MET:O	2:F:6:C:H1'	2.16	0.46
1:A:219:LYS:HD3	1:A:220:PHE:N	2.21	0.46
1:A:186:PHE:O	1:A:189:ALA:HB3	2.16	0.45
1:C:300:TYR:HA	1:C:313:LYS:HE2	1.98	0.45
1:C:649:VAL:HG12	1:C:650:SER:N	2.31	0.45
1:E:96:ILE:HG22	1:E:97:PRO:CD	2.45	0.45
1:E:315:LYS:HA	1:E:509:PRO:O	2.16	0.45
1:A:291:ARG:HG2	1:A:295:TYR:HE2	1.80	0.45
1:A:422:LEU:O	1:A:425:ARG:HB2	2.16	0.45
1:C:405:LEU:HG	1:C:406:MET:N	2.31	0.45
1:C:422:LEU:O	1:C:425:ARG:HB2	2.16	0.45
1:E:405:LEU:HG	1:E:406:MET:N	2.31	0.45
1:E:422:LEU:O	1:E:425:ARG:HB2	2.16	0.45
1:E:649:VAL:HG12	1:E:650:SER:N	2.31	0.45
1:A:273:MET:O	2:B:6:C:H1'	2.16	0.45
1:A:325:VAL:HG21	1:A:406:MET:HE1	1.94	0.45
1:A:520:SER:HB3	3:A:1665:GTP:O3G	2.17	0.45
1:C:186:PHE:O	1:C:189:ALA:HB3	2.16	0.45
1:C:564:TYR:O	1:C:565:SER:C	2.54	0.45
1:A:549:LEU:HB3	1:A:619:LEU:HD22	1.99	0.45
1:C:307:ARG:HG3	1:C:307:ARG:NH1	2.32	0.45
1:E:97:PRO:HB2	1:E:227:VAL:HG21	1.98	0.45
1:E:520:SER:HB3	3:E:1665:GTP:O3G	2.17	0.45
1:A:300:TYR:HA	1:A:313:LYS:HE2	1.98	0.45
1:A:429:MET:CB	1:A:430:PRO:HD3	2.32	0.45
1:C:97:PRO:HB2	1:C:227:VAL:HG21	1.98	0.45
1:C:315:LYS:HA	1:C:509:PRO:O	2.17	0.45
1:A:164:ILE:O	1:A:168:GLU:HG3	2.17	0.45
1:E:291:ARG:HG2	1:E:295:TYR:HE2	1.80	0.45
1:E:621:VAL:HG11	1:E:628:LEU:HD13	1.99	0.45
1:A:91:ASN:HA	1:A:267:GLU:OE1	2.17	0.45
1:A:97:PRO:HB2	1:A:227:VAL:HG21	1.98	0.45
1:A:403:THR:O	1:A:404:LEU:C	2.55	0.45
1:C:203:TYR:HB3	1:C:269:ARG:HG2	1.97	0.45
1:C:273:MET:O	2:D:6:C:H1'	2.16	0.45
1:C:418:THR:HG21	1:C:468:GLY:HA2	1.99	0.45
1:E:250:SER:O	1:E:251:ARG:C	2.54	0.45
1:E:393:SER:CA	1:E:398:THR:HG21	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:401:MET:CE	1:E:401:MET:HA	2.46	0.45
1:E:463:ARG:O	1:E:466:VAL:HG12	2.17	0.45
1:A:284:MET:HE3	2:B:7:C:H5"	1.96	0.45
1:A:621:VAL:HG11	1:A:628:LEU:HD13	1.99	0.45
1:C:393:SER:CA	1:C:398:THR:HG21	2.47	0.45
1:C:520:SER:HB3	3:C:1665:GTP:O3G	2.17	0.45
1:C:630:TYR:HB3	3:C:1665:GTP:C4	2.51	0.45
1:A:605:MET:O	1:A:606:ALA:C	2.53	0.45
1:C:139:GLU:HA	1:C:140:PRO:HD3	1.71	0.45
1:C:250:SER:O	1:C:251:ARG:C	2.54	0.45
1:C:361:LEU:HD23	1:C:361:LEU:HA	1.68	0.45
1:E:232:TYR:CZ	1:E:237:GLY:HA2	2.52	0.45
1:A:307:ARG:HG3	1:A:307:ARG:NH1	2.32	0.45
1:E:186:PHE:O	1:E:189:ALA:HB3	2.16	0.45
1:E:563:ILE:O	1:E:567:VAL:HG23	2.17	0.45
1:E:630:TYR:HB3	3:E:1665:GTP:C4	2.51	0.45
1:A:585:ALA:O	1:A:586:TYR:C	2.56	0.44
1:C:159:ASP:O	1:C:163:LYS:HG3	2.17	0.44
1:E:147:LYS:HA	1:E:160:MET:CE	2.47	0.44
1:A:209:ASP:CG	1:A:225:ARG:NH1	2.59	0.44
1:A:418:THR:HG21	1:A:468:GLY:HA2	1.99	0.44
1:A:630:TYR:HB3	3:A:1665:GTP:C4	2.51	0.44
1:A:451:LYS:O	1:A:452:SER:C	2.55	0.44
1:A:563:ILE:O	1:A:567:VAL:HG23	2.17	0.44
1:C:372:PRO:O	1:C:373:GLU:HB2	2.17	0.44
1:E:128:ARG:CG	1:E:339:LEU:HD21	2.41	0.44
1:E:164:ILE:O	1:E:168:GLU:HG3	2.17	0.44
1:C:91:ASN:HA	1:C:267:GLU:OE1	2.17	0.44
1:C:563:ILE:O	1:C:567:VAL:HG23	2.17	0.44
1:E:209:ASP:CG	1:E:225:ARG:NH1	2.59	0.44
1:E:307:ARG:HG3	1:E:307:ARG:NH1	2.32	0.44
1:A:147:LYS:HA	1:A:160:MET:CE	2.47	0.44
1:A:325:VAL:CG2	1:A:406:MET:HE1	2.48	0.44
1:A:405:LEU:HG	1:A:406:MET:N	2.31	0.44
1:C:97:PRO:HD2	1:C:245:ALA:CA	2.47	0.44
1:C:403:THR:O	1:C:404:LEU:C	2.55	0.44
1:C:621:VAL:HG11	1:C:628:LEU:HD13	1.99	0.44
1:E:91:ASN:HA	1:E:267:GLU:OE1	2.17	0.44
1:E:300:TYR:HA	1:E:313:LYS:HE2	1.98	0.44
1:A:401:MET:HA	1:A:401:MET:CE	2.46	0.44
1:E:325:VAL:CG2	1:E:406:MET:CE	2.95	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:403:THR:O	1:E:404:LEU:C	2.55	0.44
1:E:418:THR:HG21	1:E:468:GLY:HA2	1.99	0.44
1:A:97:PRO:HD2	1:A:245:ALA:CA	2.47	0.44
1:A:232:TYR:CZ	1:A:237:GLY:HA2	2.52	0.44
1:C:74:ARG:HG2	1:C:503:TYR:HE2	1.81	0.44
1:C:164:ILE:O	1:C:168:GLU:HG3	2.17	0.44
1:C:551:TRP:CH2	1:C:554:MET:HE1	2.52	0.44
1:A:225:ARG:HH11	1:A:225:ARG:CG	2.31	0.44
1:A:463:ARG:O	1:A:466:VAL:HG12	2.17	0.44
1:C:143:LEU:HD23	1:C:144:LYS:N	2.33	0.44
1:C:463:ARG:O	1:C:466:VAL:HG12	2.17	0.44
1:E:159:ASP:O	1:E:163:LYS:HG3	2.17	0.44
1:E:361:LEU:HD23	1:E:361:LEU:HA	1.68	0.44
1:A:608:GLN:OE1	1:C:593:ARG:CD	2.63	0.44
1:C:147:LYS:HA	1:C:160:MET:CE	2.48	0.44
1:C:209:ASP:CG	1:C:225:ARG:NH1	2.59	0.44
1:C:401:MET:CE	1:C:401:MET:HA	2.46	0.44
1:C:549:LEU:HB3	1:C:619:LEU:HD22	1.99	0.44
1:C:585:ALA:O	1:C:586:TYR:C	2.56	0.44
1:E:451:LYS:O	1:E:452:SER:C	2.55	0.44
1:A:159:ASP:O	1:A:163:LYS:HG3	2.17	0.43
1:C:591:LEU:HD21	1:C:611:LEU:HD11	2.00	0.43
1:E:219:LYS:CD	1:E:220:PHE:N	2.78	0.43
1:E:585:ALA:O	1:E:586:TYR:C	2.56	0.43
1:E:591:LEU:HD21	1:E:611:LEU:HD11	2.00	0.43
1:A:74:ARG:HG2	1:A:503:TYR:HE2	1.81	0.43
1:A:372:PRO:O	1:A:373:GLU:HB2	2.17	0.43
1:C:451:LYS:O	1:C:452:SER:C	2.55	0.43
1:C:471:LEU:O	1:C:474:MET:HB3	2.18	0.43
1:A:132:ARG:NE	1:A:347:MET:HG2	2.33	0.43
1:A:315:LYS:HA	1:A:509:PRO:O	2.17	0.43
1:A:551:TRP:CH2	1:A:554:MET:HE1	2.54	0.43
1:C:68:ASN:OD1	1:C:77:GLY:HA3	2.18	0.43
1:C:144:LYS:HA	1:C:648:GLY:HA2	2.00	0.43
1:C:518:ILE:HB	1:C:561:CYS:SG	2.59	0.43
1:E:68:ASN:OD1	1:E:77:GLY:HA3	2.19	0.43
1:E:102:LEU:N	1:E:102:LEU:CD1	2.81	0.43
1:A:68:ASN:OD1	1:A:77:GLY:HA3	2.18	0.43
1:A:226:MET:HA	1:A:243:PHE:O	2.18	0.43
1:A:277:PHE:O	1:A:278:ALA:C	2.57	0.43
1:C:364:PRO:HB3	1:C:379:LEU:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:225:ARG:HH11	1:E:225:ARG:CG	2.31	0.43
1:E:549:LEU:HB3	1:E:619:LEU:HD22	1.99	0.43
1:A:250:SER:O	1:A:251:ARG:C	2.54	0.43
1:A:649:VAL:HG12	1:A:650:SER:N	2.31	0.43
1:C:102:LEU:N	1:C:102:LEU:CD1	2.81	0.43
1:C:325:VAL:CG2	1:C:406:MET:CE	2.95	0.43
1:E:132:ARG:CZ	1:E:343:GLU:OE2	2.66	0.43
1:E:364:PRO:HB3	1:E:379:LEU:O	2.18	0.43
1:A:456:MET:HG3	1:A:496:PHE:HB2	2.01	0.43
1:C:232:TYR:CZ	1:C:237:GLY:HA2	2.52	0.43
1:E:143:LEU:HD23	1:E:144:LYS:N	2.33	0.43
1:E:195:MET:HE2	1:E:282:PRO:HG2	2.01	0.43
1:A:102:LEU:N	1:A:102:LEU:CD1	2.81	0.43
1:A:143:LEU:HD23	1:A:144:LYS:N	2.33	0.43
1:C:132:ARG:CZ	1:C:343:GLU:OE2	2.66	0.43
1:E:372:PRO:O	1:E:373:GLU:HB2	2.18	0.43
1:E:518:ILE:HB	1:E:561:CYS:SG	2.58	0.43
1:A:144:LYS:HA	1:A:648:GLY:HA2	2.00	0.43
1:A:364:PRO:HB3	1:A:379:LEU:O	2.18	0.43
1:A:393:SER:CA	1:A:398:THR:HG21	2.46	0.43
1:E:1:PRO:HG3	1:E:238:GLU:OE1	2.19	0.43
1:E:89:HIS:CE1	1:E:209:ASP:H	2.37	0.43
1:A:44:LEU:HD12	1:A:44:LEU:HA	1.86	0.43
1:A:591:LEU:HD21	1:A:611:LEU:HD11	2.00	0.43
1:C:29:LYS:O	1:C:30:ARG:C	2.58	0.43
1:C:132:ARG:NE	1:C:347:MET:HG2	2.33	0.43
1:C:225:ARG:HH11	1:C:225:ARG:CG	2.31	0.43
1:C:548:GLY:N	1:C:594:ASP:OD1	2.45	0.43
1:E:97:PRO:HD2	1:E:245:ALA:CA	2.47	0.43
1:E:132:ARG:NE	1:E:347:MET:HG2	2.33	0.43
1:E:144:LYS:HA	1:E:648:GLY:HA2	2.00	0.43
1:E:226:MET:HA	1:E:243:PHE:O	2.18	0.43
1:E:331:PHE:O	1:E:332:TRP:C	2.57	0.43
1:A:181:MET:HB3	1:A:186:PHE:CE2	2.54	0.43
1:C:615:THR:O	1:C:618:ASP:HB2	2.19	0.43
1:E:551:TRP:CH2	1:E:554:MET:HE1	2.54	0.43
1:A:7:PHE:HA	1:A:8:PRO:HD3	1.87	0.42
1:A:136:SER:CB	1:A:293:LYS:HZ3	2.27	0.42
1:A:202:VAL:O	1:A:202:VAL:HG23	2.19	0.42
1:C:1:PRO:HG3	1:C:238:GLU:OE1	2.19	0.42
1:C:611:LEU:O	1:C:612:ALA:C	2.58	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:ARG:CZ	1:A:343:GLU:OE2	2.66	0.42
1:E:132:ARG:HH11	1:E:132:ARG:CG	2.27	0.42
1:E:168:GLU:HG2	1:E:649:VAL:CG1	2.49	0.42
1:E:277:PHE:O	1:E:278:ALA:C	2.57	0.42
1:E:548:GLY:N	1:E:594:ASP:OD1	2.45	0.42
1:A:89:HIS:CE1	1:A:209:ASP:H	2.37	0.42
1:C:88:ARG:O	1:C:264:PHE:HA	2.20	0.42
1:E:611:LEU:O	1:E:612:ALA:C	2.58	0.42
1:A:275:GLY:HA2	1:A:276:PRO:HD3	1.91	0.42
1:A:331:PHE:O	1:A:332:TRP:C	2.57	0.42
1:C:219:LYS:CD	1:C:220:PHE:N	2.78	0.42
1:E:287:ALA:HB1	1:E:291:ARG:HH21	1.85	0.42
1:E:471:LEU:O	1:E:474:MET:HB3	2.18	0.42
1:E:491:GLU:OE1	1:E:495:ALA:N	2.46	0.42
1:A:62:THR:HG23	1:A:83:ASN:HB2	2.02	0.42
1:A:375:GLY:O	1:A:376:HIS:C	2.58	0.42
1:C:226:MET:HA	1:C:243:PHE:O	2.18	0.42
1:C:277:PHE:O	1:C:278:ALA:C	2.57	0.42
1:C:641:ILE:HD13	1:C:641:ILE:HA	1.76	0.42
1:E:9:LEU:HD12	1:E:9:LEU:O	2.19	0.42
1:E:181:MET:HB3	1:E:186:PHE:CE2	2.54	0.42
1:C:137:ASP:H	1:C:293:LYS:HZ3	1.67	0.42
1:E:179:ASN:HA	1:E:182:LEU:HD12	2.01	0.42
1:A:9:LEU:O	1:A:9:LEU:HD12	2.19	0.42
1:A:305:THR:OG1	1:A:306:THR:N	2.53	0.42
1:A:518:ILE:HB	1:A:561:CYS:SG	2.59	0.42
1:A:602:VAL:CG1	1:A:640:ASN:HD22	2.33	0.42
1:A:615:THR:O	1:A:618:ASP:HB2	2.19	0.42
1:C:62:THR:HG23	1:C:83:ASN:HB2	2.02	0.42
1:E:339:LEU:HD23	1:E:339:LEU:C	2.40	0.42
1:E:413:MET:HA	6:E:2034:HOH:O	2.20	0.42
1:C:9:LEU:O	1:C:9:LEU:HD12	2.19	0.42
1:C:12:ILE:O	1:C:16:MET:HG2	2.19	0.42
1:C:22:ILE:HD13	1:C:22:ILE:HA	1.87	0.42
1:C:97:PRO:O	1:C:98:ALA:C	2.58	0.42
1:C:131:VAL:HG11	1:C:343:GLU:HB3	2.02	0.42
1:C:153:ILE:HA	1:C:154:PRO:HA	1.61	0.42
1:C:195:MET:HE1	1:C:282:PRO:HG2	1.99	0.42
1:C:413:MET:HA	6:C:2034:HOH:O	2.20	0.42
1:E:12:ILE:O	1:E:16:MET:HG2	2.19	0.42
1:A:1:PRO:HG3	1:A:238:GLU:OE1	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:17:LEU:HD11	1:A:378:LEU:HD22	2.02	0.42
1:A:131:VAL:HG11	1:A:343:GLU:HB3	2.02	0.42
1:A:168:GLU:HG2	1:A:649:VAL:CG1	2.49	0.42
1:A:325:VAL:CG2	1:A:406:MET:CE	2.95	0.42
1:A:471:LEU:O	1:A:474:MET:HB3	2.18	0.42
1:C:287:ALA:HB1	1:C:291:ARG:HH21	1.84	0.42
1:E:29:LYS:O	1:E:30:ARG:C	2.58	0.42
1:E:88:ARG:O	1:E:264:PHE:HA	2.20	0.42
1:E:305:THR:OG1	1:E:306:THR:N	2.53	0.42
1:E:596:LEU:HD23	1:E:596:LEU:HA	1.90	0.42
1:A:29:LYS:O	1:A:30:ARG:C	2.58	0.42
1:A:179:ASN:HA	1:A:182:LEU:HD12	2.01	0.42
1:A:207:SER:O	1:A:208:THR:CG2	2.68	0.42
1:A:207:SER:C	1:A:208:THR:HG23	2.40	0.42
1:C:89:HIS:CE1	1:C:209:ASP:H	2.37	0.42
1:C:181:MET:HB3	1:C:186:PHE:CE2	2.54	0.42
1:C:452:SER:HB3	1:C:453:ASP:H	1.59	0.42
1:C:456:MET:HG3	1:C:496:PHE:HB2	2.01	0.42
1:E:122:ARG:HE	1:E:122:ARG:HB3	1.68	0.42
1:A:350:ALA:HA	1:A:351:PRO:HD3	1.90	0.41
1:A:515:VAL:O	1:A:516:GLY:C	2.58	0.41
1:A:658:LEU:HD12	1:A:658:LEU:HA	1.74	0.41
1:E:207:SER:O	1:E:208:THR:CG2	2.68	0.41
1:A:12:ILE:O	1:A:16:MET:HG2	2.19	0.41
1:A:413:MET:HA	6:A:2034:HOH:O	2.20	0.41
1:C:331:PHE:O	1:C:332:TRP:C	2.58	0.41
1:E:23:LYS:HZ2	1:E:158:ASN:HB2	1.85	0.41
1:E:90:MET:HA	1:E:90:MET:CE	2.50	0.41
1:A:88:ARG:O	1:A:264:PHE:HA	2.20	0.41
1:A:90:MET:HA	1:A:90:MET:CE	2.50	0.41
1:A:132:ARG:HH11	1:A:132:ARG:CG	2.27	0.41
1:A:132:ARG:CG	1:A:132:ARG:NH1	2.84	0.41
1:A:339:LEU:C	1:A:339:LEU:HD23	2.40	0.41
1:E:22:ILE:HD13	1:E:22:ILE:HA	1.87	0.41
1:E:527:SER:N	1:E:528:PRO:HD3	2.36	0.41
1:E:597:GLU:O	1:E:600:ARG:HB3	2.21	0.41
1:E:615:THR:O	1:E:618:ASP:HB2	2.19	0.41
1:A:17:LEU:HA	1:A:190:TYR:OH	2.21	0.41
1:A:97:PRO:O	1:A:98:ALA:C	2.58	0.41
1:A:571:ILE:O	1:A:572:GLU:C	2.59	0.41
1:C:70:ASP:C	1:C:72:TYR:H	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:168:GLU:HG2	1:C:649:VAL:CG1	2.49	0.41
1:C:179:ASN:HA	1:C:182:LEU:HD12	2.01	0.41
1:C:207:SER:C	1:C:208:THR:HG23	2.40	0.41
1:C:305:THR:OG1	1:C:306:THR:N	2.53	0.41
1:C:597:GLU:O	1:C:600:ARG:HB3	2.21	0.41
1:E:17:LEU:HA	1:E:190:TYR:OH	2.21	0.41
1:E:202:VAL:HG23	1:E:202:VAL:O	2.19	0.41
1:E:207:SER:C	1:E:208:THR:HG23	2.40	0.41
1:E:364:PRO:HA	1:E:387:LEU:CD2	2.36	0.41
1:E:515:VAL:O	1:E:516:GLY:C	2.58	0.41
1:A:225:ARG:NH2	1:A:268:ARG:NH1	2.69	0.41
1:C:602:VAL:CG1	1:C:640:ASN:HD22	2.33	0.41
1:E:62:THR:HG23	1:E:83:ASN:HB2	2.02	0.41
1:E:456:MET:HG3	1:E:496:PHE:HB2	2.01	0.41
1:A:287:ALA:HB1	1:A:291:ARG:HH21	1.84	0.41
1:A:431:SER:HA	1:A:434:ARG:NH1	2.36	0.41
1:A:597:GLU:O	1:A:600:ARG:HB3	2.21	0.41
1:C:192:LEU:HB2	1:C:193:HIS:ND1	2.35	0.41
1:C:202:VAL:O	1:C:202:VAL:HG23	2.19	0.41
1:C:225:ARG:NH2	1:C:268:ARG:NH1	2.69	0.41
1:C:527:SER:N	1:C:528:PRO:HD3	2.35	0.41
1:E:17:LEU:HD11	1:E:378:LEU:HD22	2.02	0.41
1:E:175:GLU:HG3	1:E:352:TRP:CE2	2.55	0.41
1:E:604:SER:O	1:E:606:ALA:N	2.54	0.41
1:A:70:ASP:C	1:A:72:TYR:H	2.24	0.41
1:A:604:SER:O	1:A:606:ALA:N	2.54	0.41
1:C:96:ILE:HD13	1:C:96:ILE:HA	1.80	0.41
1:C:515:VAL:O	1:C:516:GLY:C	2.58	0.41
1:E:74:ARG:HB3	1:E:503:TYR:HD2	1.85	0.41
1:E:375:GLY:O	1:E:376:HIS:C	2.58	0.41
1:E:452:SER:HB3	1:E:453:ASP:H	1.59	0.41
1:E:571:ILE:O	1:E:572:GLU:C	2.59	0.41
1:A:449:ILE:HD11	1:A:456:MET:HB2	2.02	0.41
1:C:17:LEU:HD11	1:C:378:LEU:HD22	2.02	0.41
1:C:90:MET:HA	1:C:90:MET:CE	2.50	0.41
1:C:132:ARG:CG	1:C:132:ARG:NH1	2.84	0.41
1:C:415:LEU:HD23	1:C:415:LEU:HA	1.86	0.41
1:E:44:LEU:HD12	1:E:44:LEU:HA	1.86	0.41
1:E:225:ARG:NH2	1:E:268:ARG:NH1	2.69	0.41
1:E:555:LYS:HA	1:E:564:TYR:OH	2.21	0.41
1:E:602:VAL:CG1	1:E:640:ASN:HD22	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:TYR:HD2	1:A:74:ARG:NH2	2.19	0.41
1:A:74:ARG:HB3	1:A:503:TYR:HD2	1.85	0.41
1:A:192:LEU:HB2	1:A:193:HIS:ND1	2.35	0.41
1:A:555:LYS:HA	1:A:564:TYR:OH	2.21	0.41
1:A:611:LEU:O	1:A:612:ALA:C	2.58	0.41
1:C:175:GLU:HG3	1:C:352:TRP:CE2	2.56	0.41
1:C:207:SER:O	1:C:208:THR:CG2	2.68	0.41
1:C:325:VAL:CG2	1:C:406:MET:HE1	2.51	0.41
1:C:339:LEU:C	1:C:339:LEU:HD23	2.40	0.41
1:C:449:ILE:HD11	1:C:456:MET:HB2	2.02	0.41
1:C:571:ILE:O	1:C:572:GLU:C	2.59	0.41
1:E:192:LEU:HB2	1:E:193:HIS:ND1	2.35	0.41
1:E:219:LYS:HD3	1:E:220:PHE:N	2.21	0.41
1:E:420:PRO:HA	1:E:423:ASN:HD21	1.86	0.41
1:E:613:GLU:CD	1:E:613:GLU:N	2.67	0.41
1:A:550:ALA:HB2	1:A:623:ALA:CB	2.51	0.41
1:E:97:PRO:O	1:E:98:ALA:C	2.58	0.41
1:E:475:LEU:HD21	1:E:482:PRO:HG3	2.03	0.41
1:E:550:ALA:HB2	1:E:623:ALA:CB	2.51	0.41
1:E:658:LEU:HD12	1:E:658:LEU:HA	1.74	0.41
1:A:133:LEU:HA	1:A:133:LEU:HD23	1.86	0.40
1:A:361:LEU:HA	1:A:361:LEU:HD23	1.68	0.40
1:A:521:MET:HB2	1:A:558:TYR:CD2	2.56	0.40
1:C:17:LEU:HA	1:C:190:TYR:OH	2.21	0.40
1:C:90:MET:HA	1:C:90:MET:HE2	2.03	0.40
1:C:174:ALA:O	1:C:177:ALA:O	2.40	0.40
1:C:550:ALA:HB2	1:C:623:ALA:CB	2.51	0.40
1:E:109:ARG:NH1	1:E:109:ARG:HG2	2.36	0.40
1:E:173:LYS:HD2	1:E:193:HIS:NE2	2.37	0.40
1:E:401:MET:HA	1:E:401:MET:HE2	2.03	0.40
1:A:47:ASP:OD2	1:A:49:ARG:HB2	2.21	0.40
1:A:175:GLU:HG3	1:A:352:TRP:CE2	2.55	0.40
1:A:232:TYR:C	1:A:232:TYR:CD2	2.95	0.40
1:A:318:SER:HB2	1:A:465:LEU:CD2	2.31	0.40
1:A:527:SER:N	1:A:528:PRO:HD3	2.35	0.40
1:A:597:GLU:OE2	1:C:49:ARG:NH2	2.54	0.40
1:C:47:ASP:OD2	1:C:49:ARG:HB2	2.21	0.40
1:C:222:SER:HB2	1:C:247:LYS:HD2	2.03	0.40
1:C:232:TYR:C	1:C:232:TYR:CD2	2.95	0.40
1:E:261:PRO:HB2	1:E:264:PHE:CD1	2.57	0.40
1:E:300:TYR:O	1:E:313:LYS:HE2	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:128:ARG:CG	1:A:339:LEU:HD21	2.42	0.40
1:A:261:PRO:HB2	1:A:264:PHE:CD1	2.57	0.40
1:A:415:LEU:HD23	1:A:415:LEU:HA	1.86	0.40
1:A:517:ASN:O	1:A:520:SER:HB2	2.22	0.40
1:A:613:GLU:CD	1:A:613:GLU:N	2.67	0.40
1:E:47:ASP:OD2	1:E:49:ARG:HB2	2.22	0.40
1:E:521:MET:HB2	1:E:558:TYR:CD2	2.56	0.40
1:A:100:TRP:HA	1:A:101:PRO:HD3	1.89	0.40
1:A:109:ARG:HH11	1:A:109:ARG:HG2	1.86	0.40
1:C:173:LYS:HD2	1:C:193:HIS:NE2	2.36	0.40
1:C:604:SER:O	1:C:606:ALA:N	2.54	0.40
1:A:4:ALA:HA	1:A:5:PRO:HD3	1.91	0.40
1:A:138:LEU:HD22	1:A:290:VAL:HA	2.04	0.40
1:A:420:PRO:HA	1:A:423:ASN:HD21	1.86	0.40
1:A:420:PRO:C	1:A:422:LEU:H	2.25	0.40
1:A:641:ILE:HA	1:A:641:ILE:HD13	1.76	0.40
1:C:72:TYR:HD2	1:C:74:ARG:NH2	2.19	0.40
1:C:195:MET:HE2	1:C:278:ALA:O	2.20	0.40
1:E:131:VAL:HG11	1:E:343:GLU:HB3	2.02	0.40

All (19) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:479:LYS:CE	1:E:608:GLN:CA[2_445]	0.56	1.64
1:E:479:LYS:CD	1:E:608:GLN:CB[2_445]	1.01	1.19
1:A:651:VAL:O	1:E:664:ARG:NH1[2_545]	1.48	0.72
1:E:479:LYS:CE	1:E:608:GLN:C[2_445]	1.53	0.67
1:A:651:VAL:C	1:E:664:ARG:NH1[2_545]	1.57	0.63
1:E:479:LYS:CD	1:E:608:GLN:CA[2_445]	1.61	0.59
1:E:479:LYS:CE	1:E:608:GLN:CB[2_445]	1.71	0.49
1:E:479:LYS:NZ	1:E:608:GLN:CA[2_445]	1.78	0.42
1:A:651:VAL:CB	1:E:664:ARG:NH2[2_545]	1.81	0.39
1:E:479:LYS:CG	1:E:608:GLN:C[2_445]	1.87	0.33
1:E:479:LYS:CG	1:E:608:GLN:O[2_445]	1.90	0.30
1:E:479:LYS:CE	1:E:608:GLN:N[2_445]	1.94	0.26
1:E:479:LYS:CD	1:E:608:GLN:C[2_445]	1.99	0.21
1:A:651:VAL:CB	1:E:664:ARG:CZ[2_545]	2.03	0.17
1:A:652:GLU:N	1:E:664:ARG:NH2[2_545]	2.06	0.14
1:C:20:ASN:OD1	1:E:119:VAL:CG2[2_555]	2.08	0.12

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:479:LYS:CD	1:E:608:GLN:CG[2_445]	2.09	0.11
1:E:479:LYS:CD	1:E:608:GLN:O[2_445]	2.14	0.06
1:E:479:LYS:CE	1:E:608:GLN:O[2_445]	2.15	0.05

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	662/664 (100%)	562 (85%)	87 (13%)	13 (2%)	7 34
1	C	662/664 (100%)	562 (85%)	87 (13%)	13 (2%)	7 34
1	E	662/664 (100%)	562 (85%)	87 (13%)	13 (2%)	7 34
All	All	1986/1992 (100%)	1686 (85%)	261 (13%)	39 (2%)	7 34

All (39) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	98	ALA
1	A	607	ARG
1	A	608	GLN
1	A	612	ALA
1	C	98	ALA
1	C	607	ARG
1	C	608	GLN
1	C	612	ALA
1	E	98	ALA
1	E	607	ARG
1	E	608	GLN
1	E	612	ALA
1	A	99	THR
1	A	564	TYR
1	C	99	THR
1	C	564	TYR

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Mol	Chain	Res	Type
1	E	99	THR
1	E	564	TYR
1	A	88	ARG
1	C	88	ARG
1	E	88	ARG
1	A	136	SER
1	A	573	ARG
1	A	603	ALA
1	C	136	SER
1	C	573	ARG
1	C	603	ALA
1	E	136	SER
1	E	603	ALA
1	A	368	GLY
1	C	368	GLY
1	E	368	GLY
1	E	573	ARG
1	A	631	LYS
1	C	631	LYS
1	E	631	LYS
1	A	562	PRO
1	C	562	PRO
1	E	562	PRO

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	557/557 (100%)	501 (90%)	56 (10%)	7	29
1	C	557/557 (100%)	501 (90%)	56 (10%)	7	29
1	E	557/557 (100%)	501 (90%)	56 (10%)	7	29
All	All	1671/1671 (100%)	1503 (90%)	168 (10%)	7	29

All (168) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ARG
1	A	10	SER
1	A	43	LEU
1	A	44	LEU
1	A	46	VAL
1	A	75	VAL
1	A	88	ARG
1	A	94	PRO
1	A	97	PRO
1	A	113	ASP
1	A	132	ARG
1	A	151	THR
1	A	191	GLN
1	A	206	GLN
1	A	212	THR
1	A	225	ARG
1	A	234	VAL
1	A	238	GLU
1	A	239	GLN
1	A	243	PHE
1	A	267	GLU
1	A	270	ARG
1	A	273	MET
1	A	291	ARG
1	A	312	GLU
1	A	360	SER
1	A	363	LEU
1	A	373	GLU
1	A	384	ASN
1	A	387	LEU
1	A	391	LEU
1	A	395	GLN
1	A	404	LEU
1	A	445	GLU
1	A	452	SER
1	A	465	LEU
1	A	470	ARG
1	A	472	PHE
1	A	508	GLU
1	A	519	ASN
1	A	527	SER
1	A	534	SER
1	A	577	ASN

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Mol	Chain	Res	Type
1	A	582	SER
1	A	588	GLU
1	A	590	MET
1	A	605	MET
1	A	613	GLU
1	A	615	THR
1	A	629	GLN
1	A	631	LYS
1	A	636	ASP
1	A	651	VAL
1	A	652	GLU
1	A	658	LEU
1	A	664	ARG
1	C	3	ARG
1	C	10	SER
1	C	43	LEU
1	C	44	LEU
1	C	46	VAL
1	C	75	VAL
1	C	88	ARG
1	C	94	PRO
1	C	97	PRO
1	C	113	ASP
1	C	132	ARG
1	C	151	THR
1	C	191	GLN
1	C	206	GLN
1	C	212	THR
1	C	225	ARG
1	C	234	VAL
1	C	238	GLU
1	C	239	GLN
1	C	243	PHE
1	C	267	GLU
1	C	270	ARG
1	C	273	MET
1	C	291	ARG
1	C	312	GLU
1	C	360	SER
1	C	363	LEU
1	C	373	GLU
1	C	384	ASN

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Mol	Chain	Res	Type
1	C	387	LEU
1	C	391	LEU
1	C	395	GLN
1	C	404	LEU
1	C	445	GLU
1	C	452	SER
1	C	465	LEU
1	C	470	ARG
1	C	472	PHE
1	C	508	GLU
1	C	519	ASN
1	C	527	SER
1	C	534	SER
1	C	577	ASN
1	C	582	SER
1	C	588	GLU
1	C	590	MET
1	C	605	MET
1	C	613	GLU
1	C	615	THR
1	C	629	GLN
1	C	631	LYS
1	C	636	ASP
1	C	651	VAL
1	C	652	GLU
1	C	658	LEU
1	C	664	ARG
1	E	3	ARG
1	E	10	SER
1	E	43	LEU
1	E	44	LEU
1	E	46	VAL
1	E	75	VAL
1	E	88	ARG
1	E	94	PRO
1	E	97	PRO
1	E	113	ASP
1	E	132	ARG
1	E	151	THR
1	E	191	GLN
1	E	206	GLN
1	E	212	THR

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Mol	Chain	Res	Type
1	E	225	ARG
1	E	234	VAL
1	E	238	GLU
1	E	239	GLN
1	E	243	PHE
1	E	267	GLU
1	E	270	ARG
1	E	273	MET
1	E	291	ARG
1	E	312	GLU
1	E	360	SER
1	E	363	LEU
1	E	373	GLU
1	E	384	ASN
1	E	387	LEU
1	E	391	LEU
1	E	395	GLN
1	E	404	LEU
1	E	445	GLU
1	E	452	SER
1	E	465	LEU
1	E	470	ARG
1	E	472	PHE
1	E	508	GLU
1	E	519	ASN
1	E	527	SER
1	E	534	SER
1	E	577	ASN
1	E	582	SER
1	E	588	GLU
1	E	590	MET
1	E	605	MET
1	E	613	GLU
1	E	615	THR
1	E	629	GLN
1	E	631	LYS
1	E	636	ASP
1	E	651	VAL
1	E	652	GLU
1	E	658	LEU
1	E	664	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15)

such sidechains are listed below:

Mol	Chain	Res	Type
1	A	26	GLN
1	A	417	HIS
1	A	524	ASN
1	A	629	GLN
1	A	642	HIS
1	C	26	GLN
1	C	417	HIS
1	C	524	ASN
1	C	629	GLN
1	C	642	HIS
1	E	26	GLN
1	E	417	HIS
1	E	524	ASN
1	E	629	GLN
1	E	642	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	3/6 (50%)	1 (33%)	0
2	D	3/6 (50%)	1 (33%)	0
2	F	3/6 (50%)	1 (33%)	0
All	All	9/18 (50%)	3 (33%)	0

All (3) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	B	5	U
2	D	5	U
2	F	5	U

There are no RNA pucker outliers to report.

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 15 ligands modelled in this entry, 9 are monoatomic - leaving 6 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	GTP	C	1665	4	26,34,34	4.24	13 (50%)	32,54,54	3.26	8 (25%)
3	GTP	A	1666	4	26,34,34	4.12	11 (42%)	32,54,54	3.21	9 (28%)
3	GTP	C	1666	4	26,34,34	4.11	11 (42%)	32,54,54	3.21	9 (28%)
3	GTP	A	1665	4	26,34,34	4.23	13 (50%)	32,54,54	3.26	8 (25%)
3	GTP	E	1666	4	26,34,34	4.13	11 (42%)	32,54,54	3.22	9 (28%)
3	GTP	E	1665	4	26,34,34	4.25	13 (50%)	32,54,54	3.27	8 (25%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GTP	C	1665	4	-	1/18/38/38	0/3/3/3
3	GTP	A	1666	4	-	7/18/38/38	0/3/3/3
3	GTP	C	1666	4	-	7/18/38/38	0/3/3/3
3	GTP	A	1665	4	-	1/18/38/38	0/3/3/3
3	GTP	E	1666	4	-	7/18/38/38	0/3/3/3
3	GTP	E	1665	4	-	1/18/38/38	0/3/3/3

All (72) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	1665	GTP	C6-N1	12.25	1.56	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1665	GTP	C6-N1	12.17	1.56	1.37
3	C	1665	GTP	C6-N1	12.16	1.56	1.37
3	E	1666	GTP	C2'-C1'	11.15	1.70	1.53
3	A	1666	GTP	C2'-C1'	11.11	1.70	1.53
3	C	1666	GTP	C2'-C1'	11.07	1.70	1.53
3	E	1666	GTP	C6-N1	10.67	1.53	1.37
3	A	1666	GTP	C6-N1	10.63	1.53	1.37
3	C	1666	GTP	C6-N1	10.59	1.53	1.37
3	C	1665	GTP	C2'-C1'	10.28	1.69	1.53
3	E	1665	GTP	C2'-C1'	10.26	1.69	1.53
3	A	1665	GTP	C2'-C1'	10.21	1.69	1.53
3	E	1665	GTP	C5-C6	-9.18	1.28	1.47
3	A	1665	GTP	C5-C6	-9.16	1.28	1.47
3	C	1665	GTP	C5-C6	-9.16	1.28	1.47
3	C	1666	GTP	C5-C6	-9.14	1.28	1.47
3	A	1666	GTP	C5-C6	-9.13	1.28	1.47
3	E	1666	GTP	C5-C6	-9.13	1.28	1.47
3	E	1665	GTP	C2-N2	6.81	1.50	1.34
3	A	1665	GTP	C2-N2	6.77	1.50	1.34
3	C	1665	GTP	C2-N2	6.77	1.50	1.34
3	E	1666	GTP	C2-N2	6.34	1.49	1.34
3	A	1666	GTP	C2-N2	6.33	1.49	1.34
3	C	1666	GTP	C2-N2	6.31	1.49	1.34
3	C	1665	GTP	O2'-C2'	-4.26	1.32	1.43
3	E	1665	GTP	O2'-C2'	-4.25	1.33	1.43
3	A	1665	GTP	O2'-C2'	-4.23	1.33	1.43
3	A	1666	GTP	O2'-C2'	-3.79	1.34	1.43
3	E	1666	GTP	O2'-C2'	-3.79	1.34	1.43
3	C	1666	GTP	O2'-C2'	-3.77	1.34	1.43
3	E	1665	GTP	C5'-C4'	3.56	1.62	1.51
3	A	1665	GTP	C5'-C4'	3.54	1.62	1.51
3	C	1665	GTP	C5'-C4'	3.54	1.62	1.51
3	C	1665	GTP	C5-C4	-3.21	1.34	1.43
3	A	1665	GTP	C5-C4	-3.19	1.34	1.43
3	E	1665	GTP	C5-C4	-3.18	1.35	1.43
3	E	1666	GTP	C5-C4	-3.14	1.35	1.43
3	C	1666	GTP	C5-C4	-3.12	1.35	1.43
3	A	1666	GTP	C5-C4	-3.12	1.35	1.43
3	E	1666	GTP	C3'-C4'	-3.00	1.45	1.53
3	A	1666	GTP	C3'-C4'	-2.98	1.45	1.53
3	C	1666	GTP	C3'-C4'	-2.97	1.45	1.53
3	A	1666	GTP	C2-N1	-2.97	1.30	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	1666	GTP	C2-N1	-2.96	1.30	1.37
3	C	1666	GTP	C2-N1	-2.93	1.30	1.37
3	A	1666	GTP	C5'-C4'	2.85	1.60	1.51
3	E	1666	GTP	C5'-C4'	2.84	1.60	1.51
3	C	1666	GTP	C5'-C4'	2.83	1.60	1.51
3	C	1665	GTP	PG-O3G	-2.59	1.44	1.54
3	E	1665	GTP	PG-O3G	-2.57	1.44	1.54
3	A	1665	GTP	PG-O3G	-2.57	1.44	1.54
3	E	1665	GTP	C2-N1	-2.53	1.31	1.37
3	A	1665	GTP	O6-C6	2.51	1.28	1.23
3	A	1665	GTP	C2-N1	-2.50	1.31	1.37
3	C	1665	GTP	C2-N1	-2.50	1.31	1.37
3	C	1665	GTP	O6-C6	2.50	1.28	1.23
3	E	1665	GTP	O6-C6	2.49	1.28	1.23
3	C	1666	GTP	PA-O5'	2.39	1.69	1.59
3	E	1666	GTP	PA-O5'	2.39	1.69	1.59
3	A	1666	GTP	PA-O5'	2.38	1.68	1.59
3	A	1665	GTP	O4'-C1'	2.13	1.44	1.41
3	C	1666	GTP	O6-C6	2.12	1.27	1.23
3	E	1665	GTP	O4'-C1'	2.12	1.44	1.41
3	E	1665	GTP	PA-O5'	2.10	1.67	1.59
3	A	1665	GTP	PA-O5'	2.09	1.67	1.59
3	C	1665	GTP	O4'-C1'	2.09	1.44	1.41
3	C	1665	GTP	PA-O5'	2.09	1.67	1.59
3	A	1666	GTP	O6-C6	2.08	1.27	1.23
3	E	1666	GTP	O6-C6	2.05	1.27	1.23
3	C	1665	GTP	C3'-C4'	-2.04	1.47	1.53
3	A	1665	GTP	C3'-C4'	-2.03	1.47	1.53
3	E	1665	GTP	C3'-C4'	-2.02	1.47	1.53

All (51) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	1665	GTP	O6-C6-N1	-9.90	108.96	120.65
3	C	1665	GTP	O6-C6-N1	-9.89	108.97	120.65
3	A	1665	GTP	O6-C6-N1	-9.87	108.99	120.65
3	C	1666	GTP	O6-C6-N1	-9.87	109.00	120.65
3	E	1666	GTP	O6-C6-N1	-9.84	109.03	120.65
3	A	1666	GTP	O6-C6-N1	-9.82	109.05	120.65
3	E	1665	GTP	O6-C6-C5	8.13	140.26	124.37
3	C	1665	GTP	O6-C6-C5	8.12	140.23	124.37
3	A	1665	GTP	O6-C6-C5	8.11	140.22	124.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	1666	GTP	O6-C6-C5	7.80	139.61	124.37
3	C	1666	GTP	O6-C6-C5	7.78	139.57	124.37
3	A	1666	GTP	O6-C6-C5	7.77	139.55	124.37
3	C	1666	GTP	C8-N7-C5	7.01	116.35	102.99
3	A	1666	GTP	C8-N7-C5	7.01	116.34	102.99
3	E	1666	GTP	C8-N7-C5	6.99	116.30	102.99
3	C	1665	GTP	C8-N7-C5	6.82	115.97	102.99
3	E	1665	GTP	C8-N7-C5	6.81	115.97	102.99
3	A	1665	GTP	C8-N7-C5	6.81	115.96	102.99
3	E	1666	GTP	N1-C2-N3	5.44	133.48	123.32
3	A	1666	GTP	N1-C2-N3	5.42	133.44	123.32
3	C	1666	GTP	N1-C2-N3	5.39	133.39	123.32
3	E	1666	GTP	C2-N1-C6	-5.22	115.48	125.10
3	E	1665	GTP	N1-C2-N3	5.22	133.07	123.32
3	A	1666	GTP	C2-N1-C6	-5.21	115.51	125.10
3	C	1666	GTP	C2-N1-C6	-5.21	115.51	125.10
3	A	1665	GTP	N1-C2-N3	5.19	133.01	123.32
3	C	1665	GTP	N1-C2-N3	5.19	133.01	123.32
3	E	1665	GTP	C2-N1-C6	-5.18	115.57	125.10
3	A	1665	GTP	C2-N1-C6	-5.16	115.61	125.10
3	C	1665	GTP	C2-N1-C6	-5.15	115.61	125.10
3	E	1666	GTP	C2'-C3'-C4'	4.85	112.07	102.64
3	A	1666	GTP	C2'-C3'-C4'	4.84	112.04	102.64
3	C	1666	GTP	C2'-C3'-C4'	4.83	112.03	102.64
3	C	1665	GTP	C2'-C3'-C4'	4.46	111.30	102.64
3	A	1665	GTP	C2'-C3'-C4'	4.44	111.27	102.64
3	E	1665	GTP	C2'-C3'-C4'	4.43	111.26	102.64
3	E	1665	GTP	N2-C2-N3	-4.28	111.42	119.74
3	C	1665	GTP	N2-C2-N3	-4.27	111.43	119.74
3	A	1665	GTP	N2-C2-N3	-4.26	111.45	119.74
3	E	1666	GTP	N2-C2-N3	-3.88	112.19	119.74
3	A	1666	GTP	N2-C2-N3	-3.87	112.20	119.74
3	C	1666	GTP	N2-C2-N3	-3.84	112.26	119.74
3	A	1665	GTP	O5'-C5'-C4'	-3.33	97.54	108.99
3	E	1665	GTP	O5'-C5'-C4'	-3.33	97.55	108.99
3	C	1665	GTP	O5'-C5'-C4'	-3.32	97.55	108.99
3	C	1666	GTP	O5'-C5'-C4'	-2.59	100.09	108.99
3	A	1666	GTP	O5'-C5'-C4'	-2.59	100.09	108.99
3	E	1666	GTP	O5'-C5'-C4'	-2.57	100.15	108.99
3	A	1666	GTP	O4'-C1'-C2'	-2.39	103.44	106.93
3	E	1666	GTP	O4'-C1'-C2'	-2.38	103.45	106.93
3	C	1666	GTP	O4'-C1'-C2'	-2.37	103.46	106.93

There are no chirality outliers.

All (24) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1666	GTP	C3'-C4'-C5'-O5'
3	C	1666	GTP	C3'-C4'-C5'-O5'
3	E	1666	GTP	C3'-C4'-C5'-O5'
3	A	1666	GTP	O4'-C4'-C5'-O5'
3	C	1666	GTP	O4'-C4'-C5'-O5'
3	E	1666	GTP	O4'-C4'-C5'-O5'
3	A	1666	GTP	PB-O3A-PA-O5'
3	C	1666	GTP	PB-O3A-PA-O5'
3	E	1666	GTP	PB-O3A-PA-O5'
3	A	1665	GTP	PA-O3A-PB-O2B
3	A	1666	GTP	PA-O3A-PB-O2B
3	C	1665	GTP	PA-O3A-PB-O2B
3	C	1666	GTP	PA-O3A-PB-O2B
3	E	1665	GTP	PA-O3A-PB-O2B
3	E	1666	GTP	PA-O3A-PB-O2B
3	A	1666	GTP	PG-O3B-PB-O3A
3	C	1666	GTP	PG-O3B-PB-O3A
3	E	1666	GTP	PG-O3B-PB-O3A
3	A	1666	GTP	PG-O3B-PB-O2B
3	A	1666	GTP	PA-O3A-PB-O1B
3	C	1666	GTP	PG-O3B-PB-O2B
3	C	1666	GTP	PA-O3A-PB-O1B
3	E	1666	GTP	PG-O3B-PB-O2B
3	E	1666	GTP	PA-O3A-PB-O1B

There are no ring outliers.

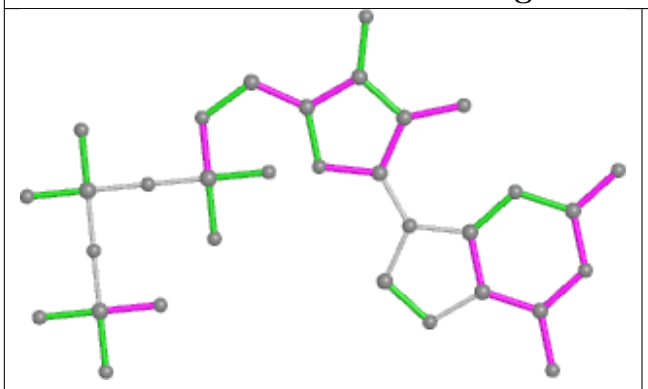
6 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	1665	GTP	2	0
3	A	1666	GTP	3	0
3	C	1666	GTP	3	0
3	A	1665	GTP	2	0
3	E	1666	GTP	3	0
3	E	1665	GTP	2	0

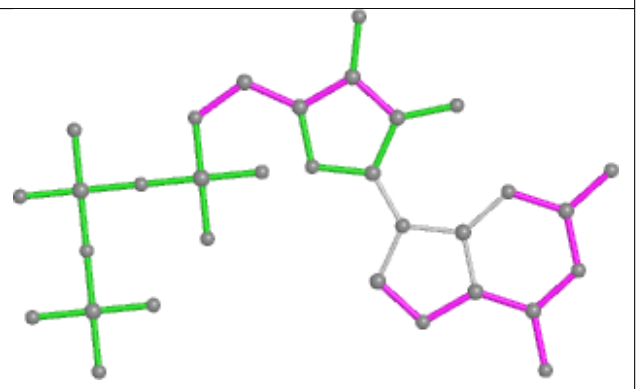
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

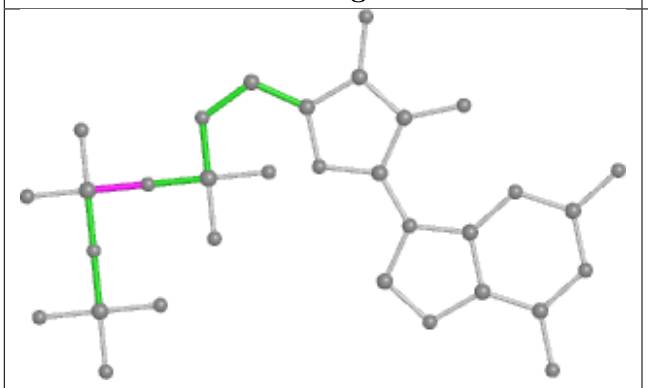
Ligand GTP C 1665



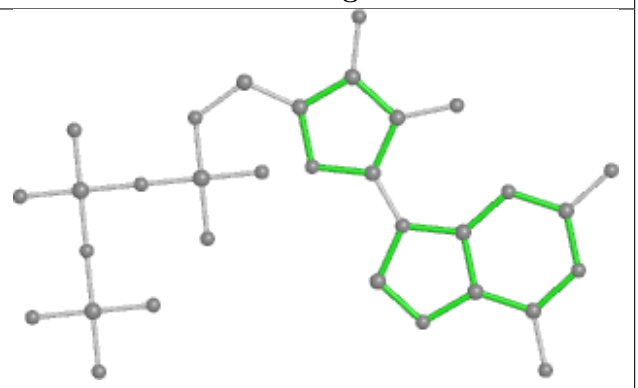
Bond lengths



Bond angles

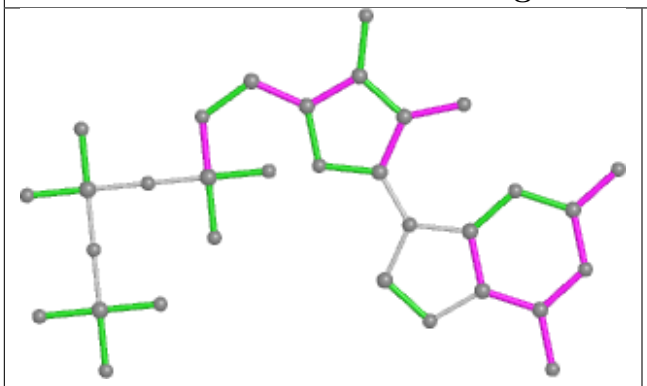


Torsions

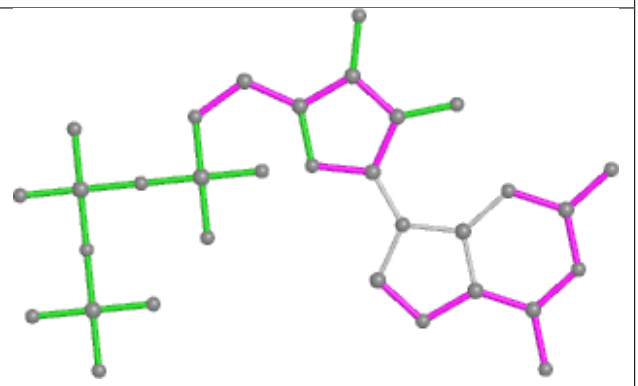


Rings

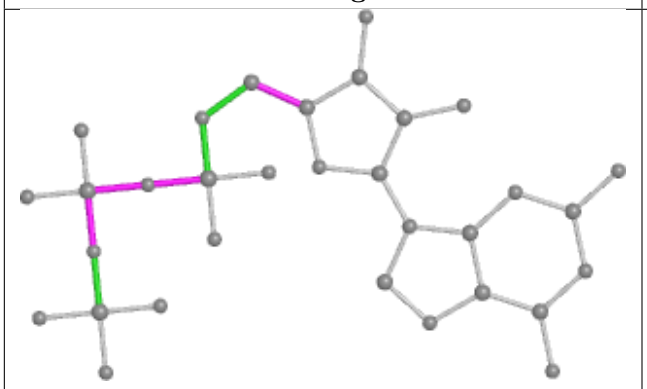
Ligand GTP A 1666



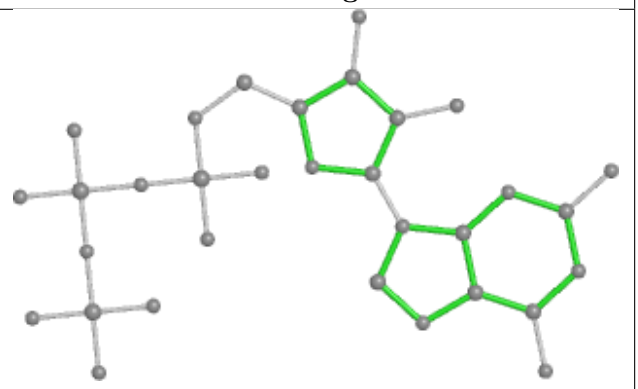
Bond lengths



Bond angles

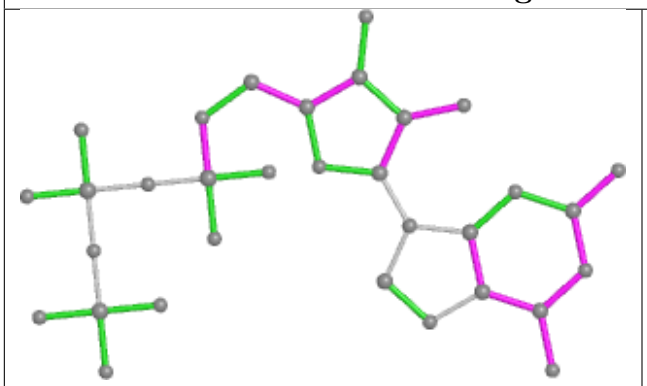


Torsions

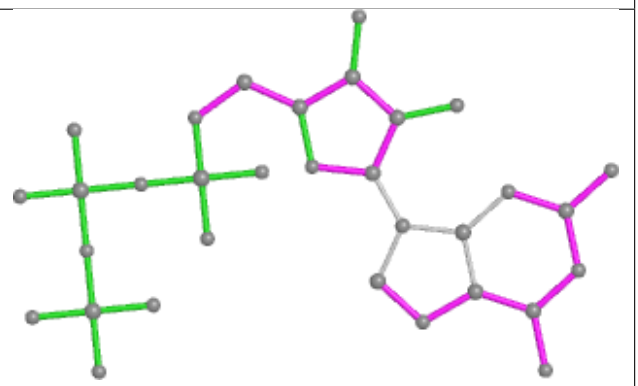


Rings

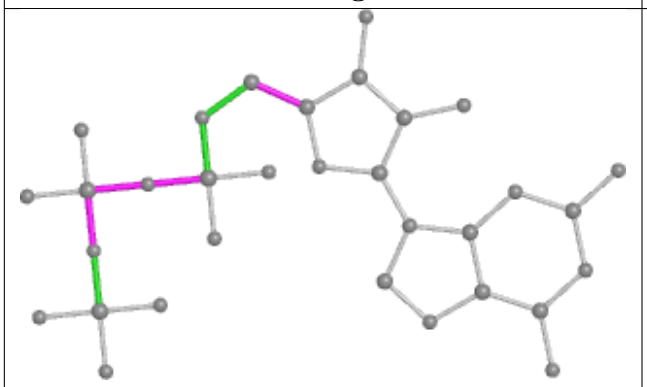
Ligand GTP C 1666



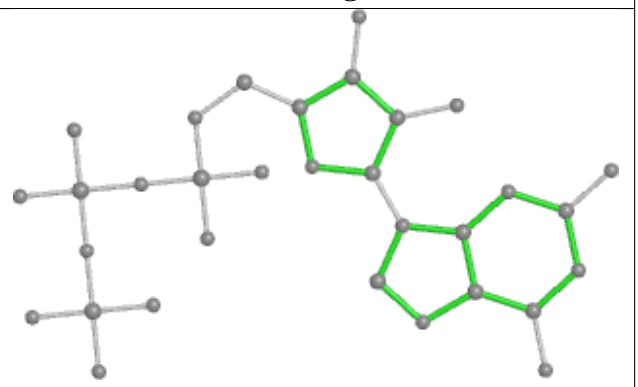
Bond lengths



Bond angles

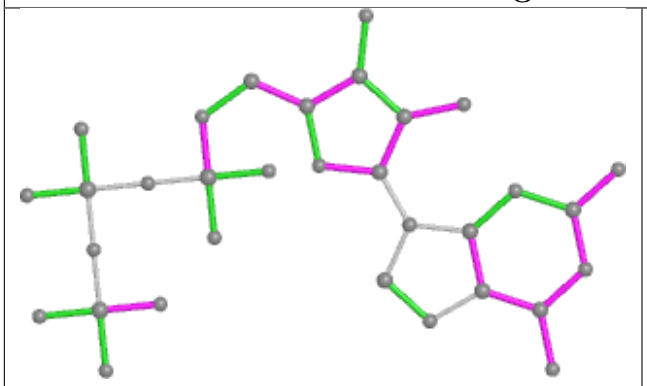


Torsions

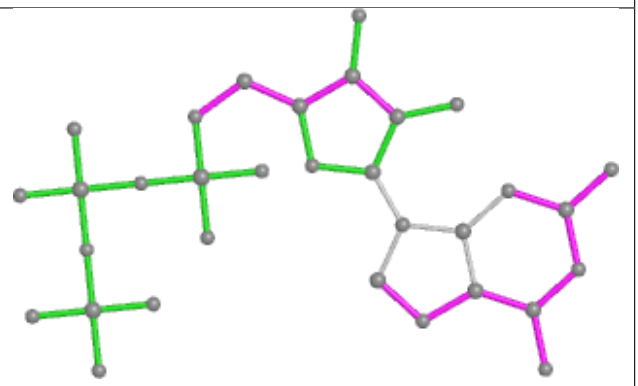


Rings

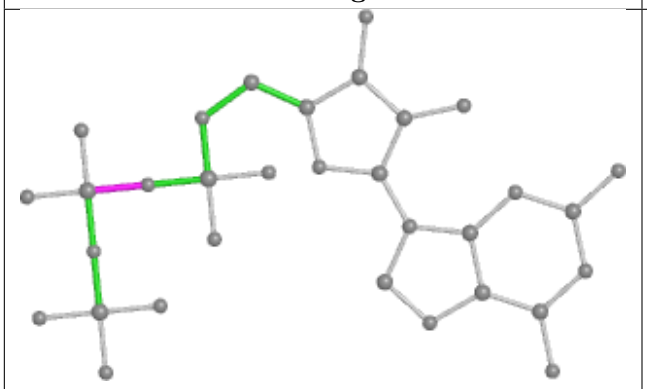
Ligand GTP A 1665



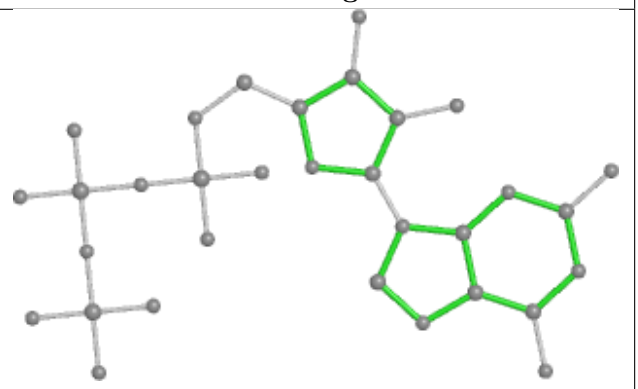
Bond lengths



Bond angles

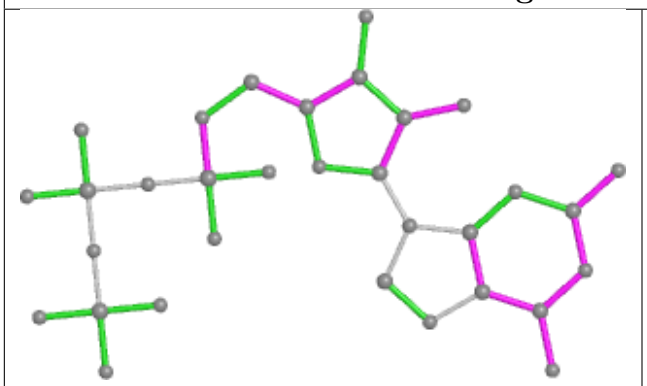


Torsions

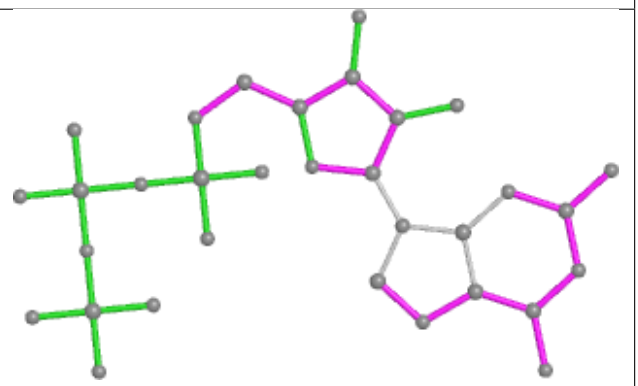


Rings

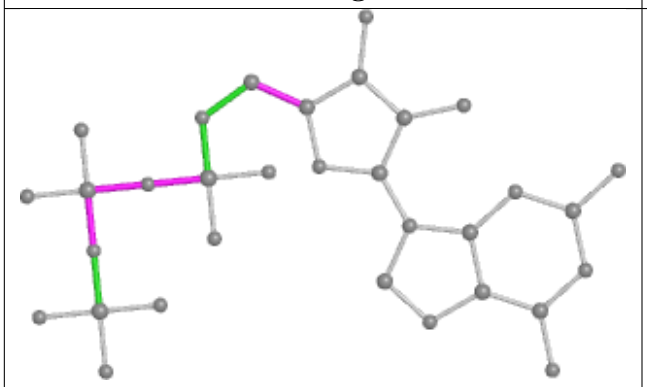
Ligand GTP E 1666



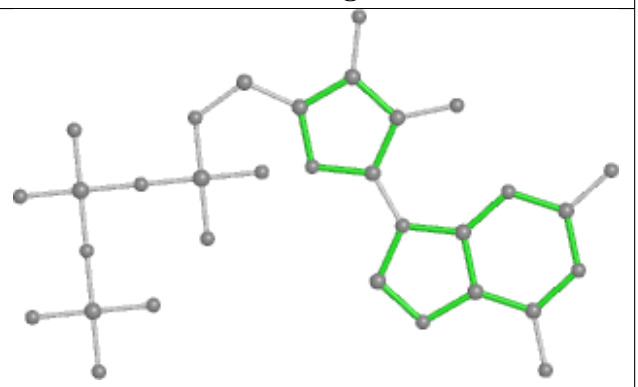
Bond lengths



Bond angles

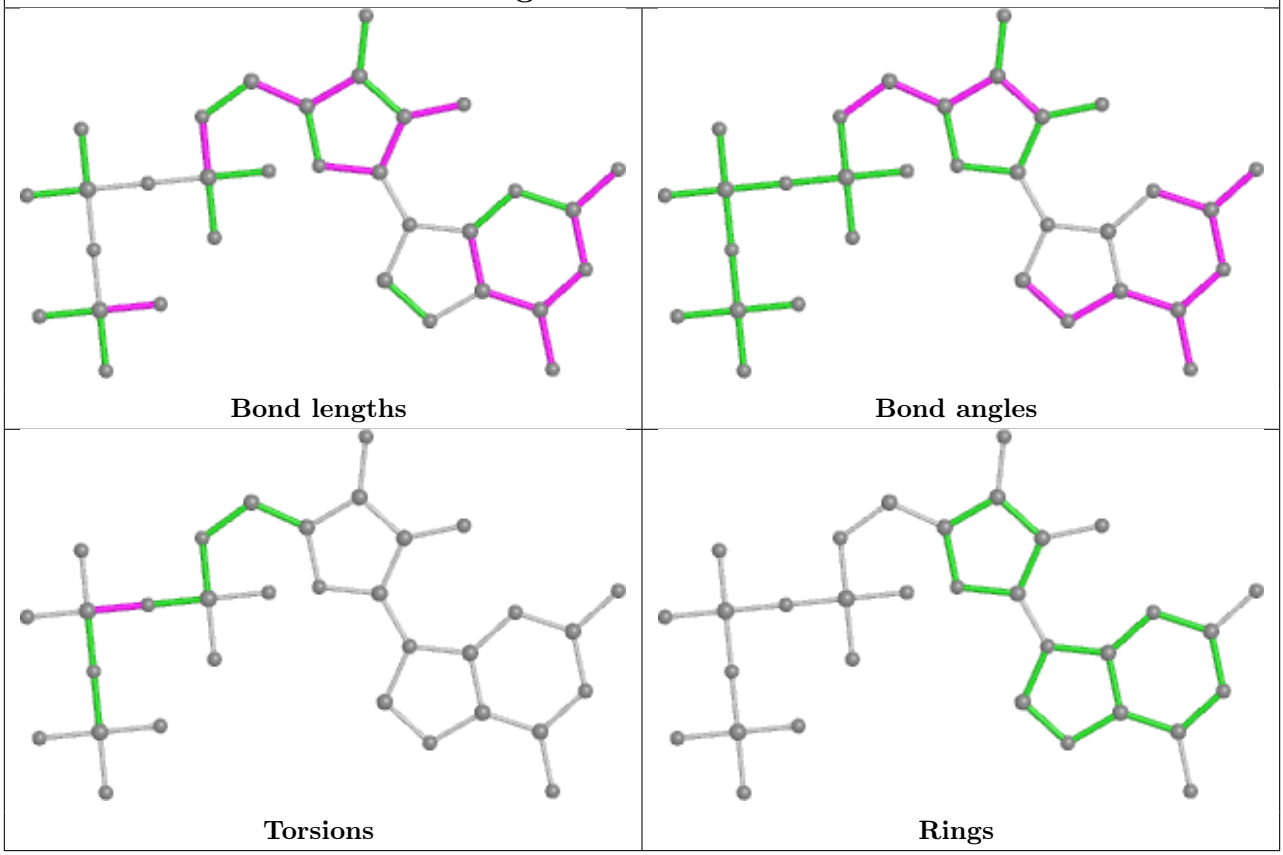


Torsions



Rings

Ligand GTP E 1665



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data (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	664/664 (100%)	-0.44	4 (0%)	89	72	32, 59, 88, 121	0
1	C	664/664 (100%)	-0.41	4 (0%)	89	72	32, 59, 88, 121	0
1	E	664/664 (100%)	-0.34	11 (1%)	70	41	32, 59, 88, 121	0
2	B	4/6 (66%)	0.71	0	100	100	75, 78, 102, 112	0
2	D	4/6 (66%)	0.73	0	100	100	75, 78, 102, 112	0
2	F	4/6 (66%)	0.28	0	100	100	75, 78, 102, 112	0
All	All	2004/2010 (99%)	-0.39	19 (0%)	84	63	32, 59, 89, 121	0

All (19) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	607	ARG	4.4
1	E	606	ALA	4.3
1	E	604	SER	4.2
1	C	608	GLN	4.1
1	E	608	GLN	3.9
1	E	216	LYS	3.5
1	A	664	ARG	3.4
1	E	1	PRO	3.3
1	A	607	ARG	3.0
1	E	612	ALA	2.7
1	A	1	PRO	2.4
1	C	607	ARG	2.4
1	E	320	CYS	2.4
1	E	609	ALA	2.3
1	A	606	ALA	2.2
1	E	664	ARG	2.2
1	C	604	SER	2.1
1	E	610	GLY	2.1
1	C	664	ARG	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)

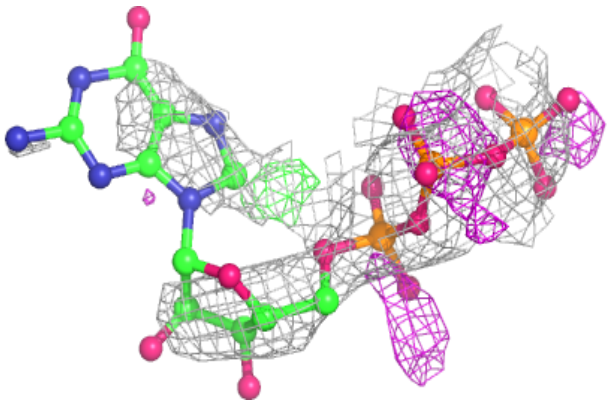
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

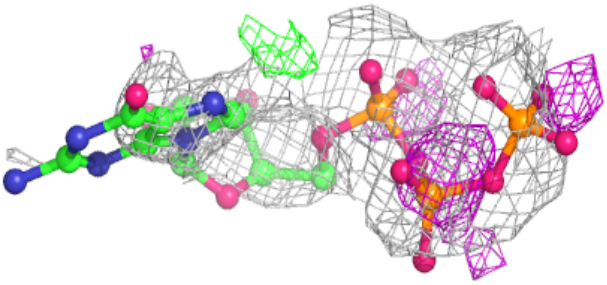
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	CA	C	1667	1/1	0.63	0.45	104,104,104,104	0
3	GTP	C	1665	32/32	0.73	0.46	114,121,121,121	0
4	CA	A	1667	1/1	0.77	0.20	104,104,104,104	0
4	CA	A	1668	1/1	0.82	0.09	62,62,62,62	0
3	GTP	A	1665	32/32	0.84	0.29	114,121,121,121	0
3	GTP	E	1665	32/32	0.86	0.25	114,121,121,121	0
4	CA	E	1668	1/1	0.86	0.08	62,62,62,62	0
4	CA	E	1667	1/1	0.87	0.20	104,104,104,104	0
3	GTP	C	1666	32/32	0.88	0.32	92,100,104,109	0
5	MN	E	1669	1/1	0.89	0.11	71,71,71,71	0
3	GTP	E	1666	32/32	0.91	0.24	92,100,104,109	0
3	GTP	A	1666	32/32	0.91	0.22	92,100,104,109	0
4	CA	C	1668	1/1	0.91	0.17	62,62,62,62	0
5	MN	C	1669	1/1	0.95	0.07	71,71,71,71	0
5	MN	A	1669	1/1	0.96	0.09	71,71,71,71	0

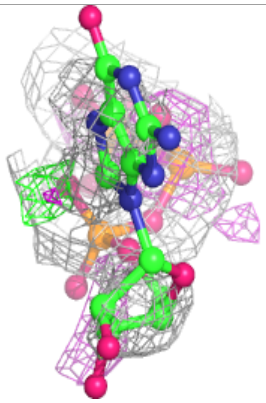
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around GTP C 1665:

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

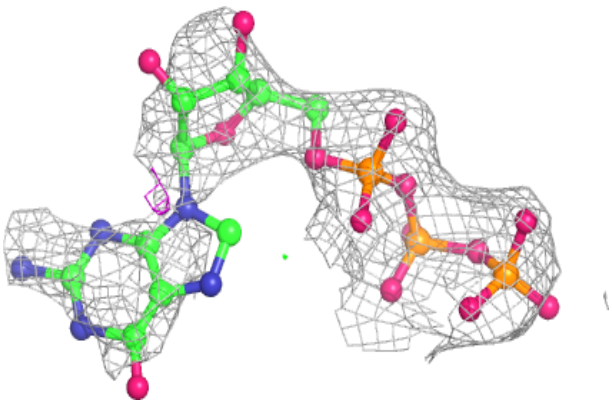


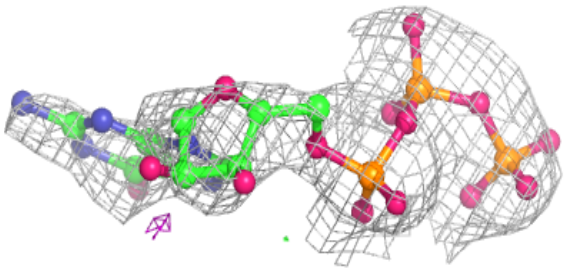


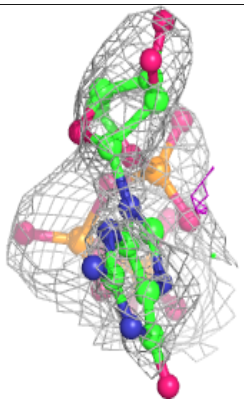


Electron density around GTP A 1665:

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

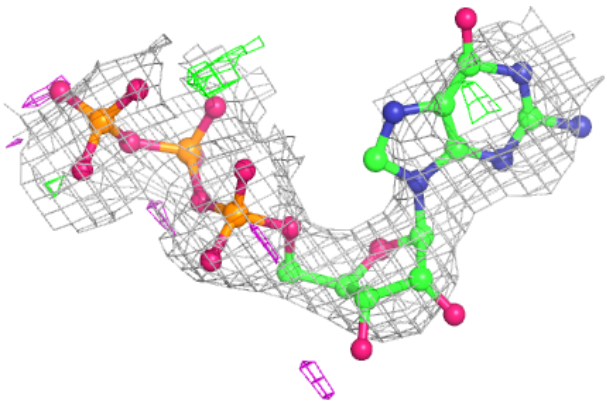


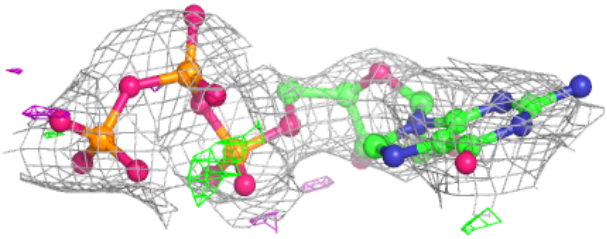


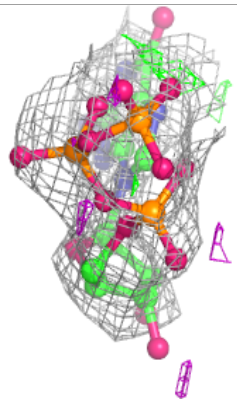


Electron density around GTP E 1665:

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

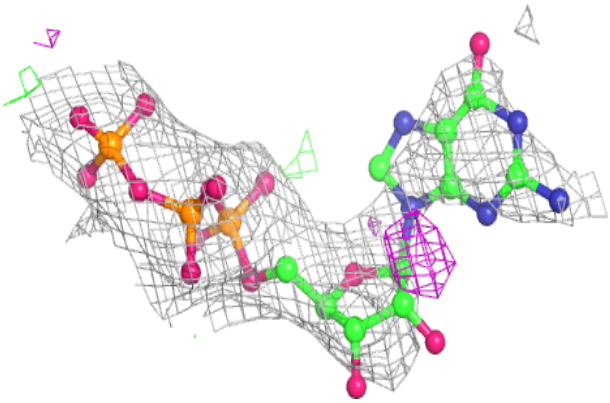


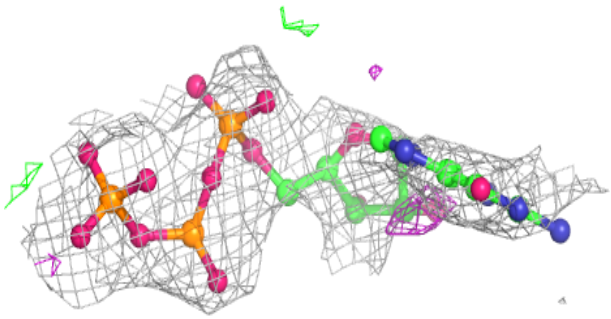


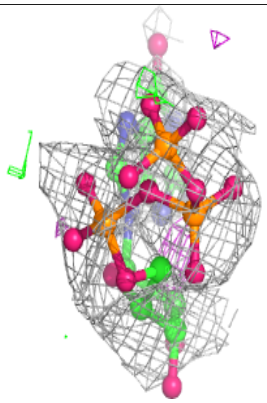


Electron density around GTP C 1666:

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

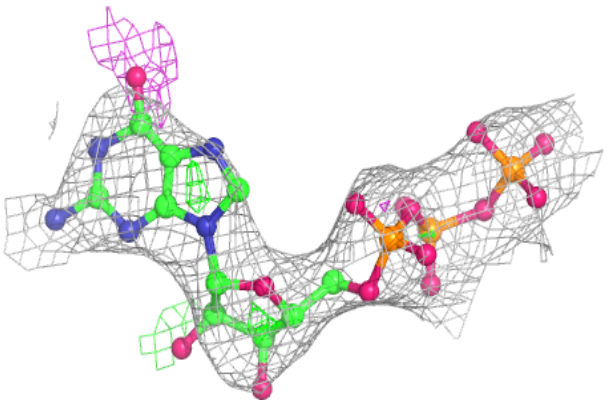


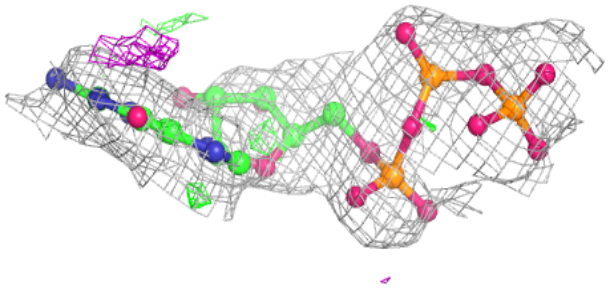


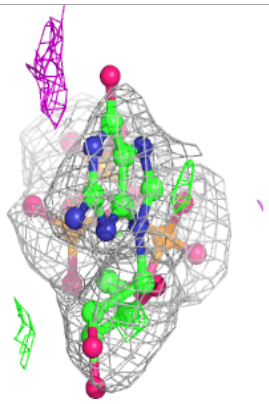


Electron density around GTP E 1666:

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

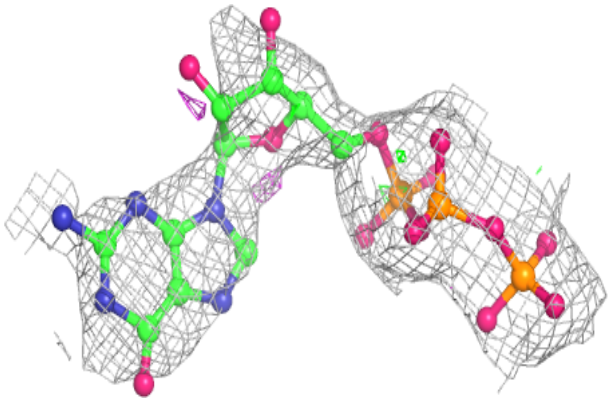


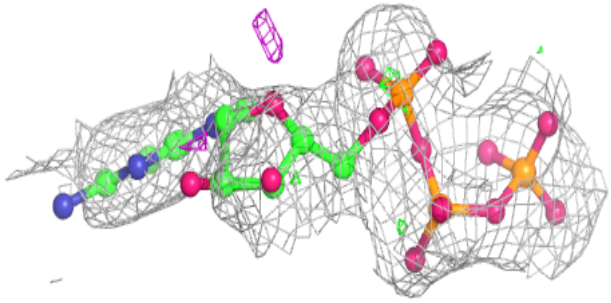


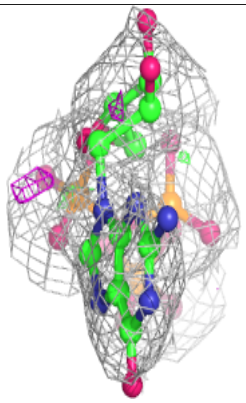


Electron density around GTP A 1666:

$2mF_o$-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.