



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 08:16 PM UTC

PDB ID : 3A6P / pdb_00003a6p
Title : Crystal structure of Exportin-5:RanGTP:pre-miRNA complex
Authors : Okada, C.; Yamashita, E.; Lee, S.J.; Shibata, S.; Katahira, J.; Nakagawa, A.; Yoneda, Y.; Tsukihara, T.
Deposited on : 2009-09-07
Resolution : 2.92 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

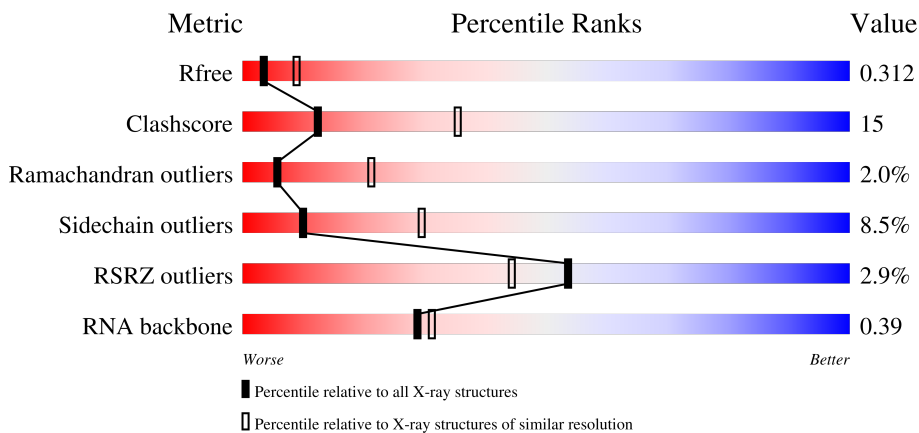
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.92 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	2995 (2.94-2.90)
Clashscore	190562	3213 (2.94-2.90)
Ramachandran outliers	187476	3128 (2.94-2.90)
Sidechain outliers	187428	3130 (2.94-2.90)
RSRZ outliers	180081	2995 (2.94-2.90)
RNA backbone	3983	1016 (3.12-2.72)

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

Mol	Chain	Length	Quality of chain
1	A	1204	 53% 29% 7% 11%
1	F	1204	 4% 57% 26% 6% 11%
2	B	13	 100%
2	G	13	 92% 8%

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Mol	Chain	Length	Quality of chain
3	C	216	
3	H	216	
4	D	24	
4	I	24	
5	E	24	
5	J	24	

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
6	GTP	C	1177	-	-	X	-

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 22052 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 Exportin-5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	1072	8570	5480	1442	1574	74	0	0	0
1	F	1072	8570	5480	1442	1574	74	0	0	0

- Molecule 2 is a protein called 13-mer peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
2	B	13	66	39	13	14	0	0	0
2	G	13	66	39	13	14	0	0	0

- Molecule 3 is a protein called GTP-binding nuclear protein Ran.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	170	1386	900	244	238	4	0	0	0
3	H	170	1386	900	244	238	4	0	0	0

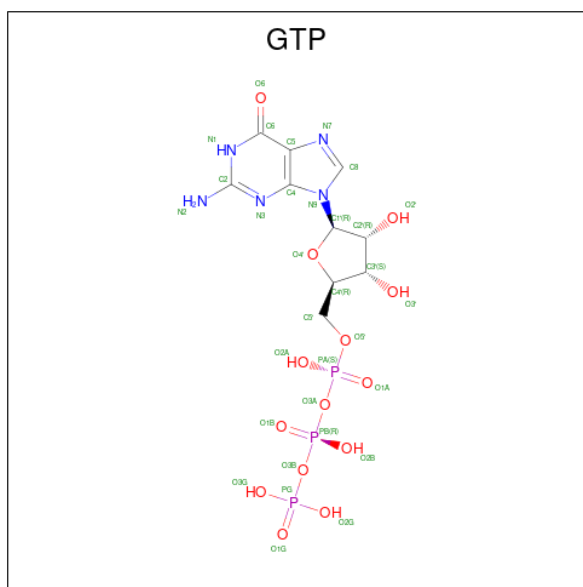
- Molecule 4 is a RNA chain called pre-microRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
4	D	22	466	211	88	147	20	0	0	0
4	I	22	466	211	88	147	20	0	0	0

- Molecule 5 is a RNA chain called pre-microRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
5	E	24	Total 505	C 226	N 84	O 172	P 23	0	0	0
5	J	24	Total 505	C 226	N 84	O 172	P 23	0	0	0

- Molecule 6 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃).



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

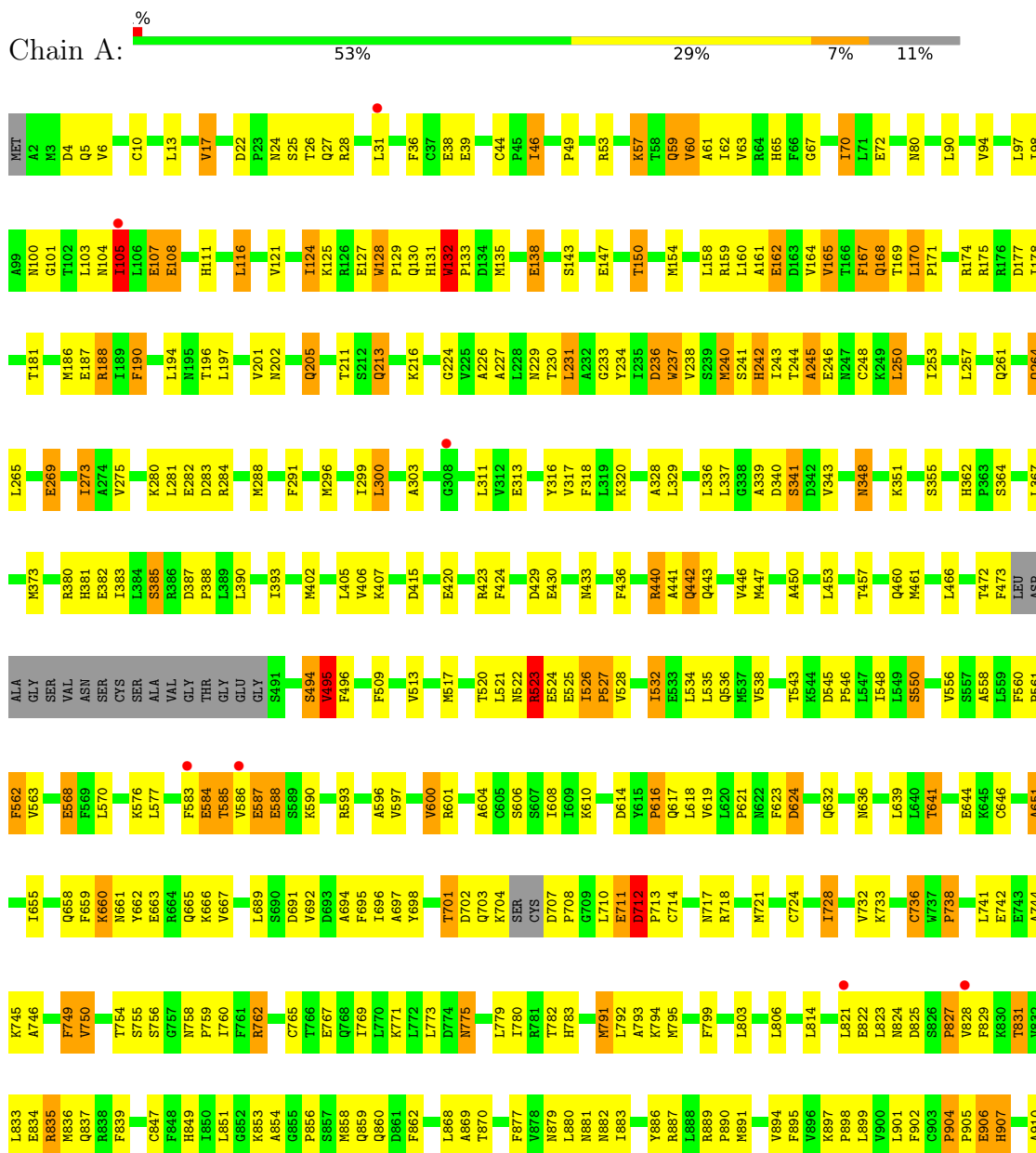
- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

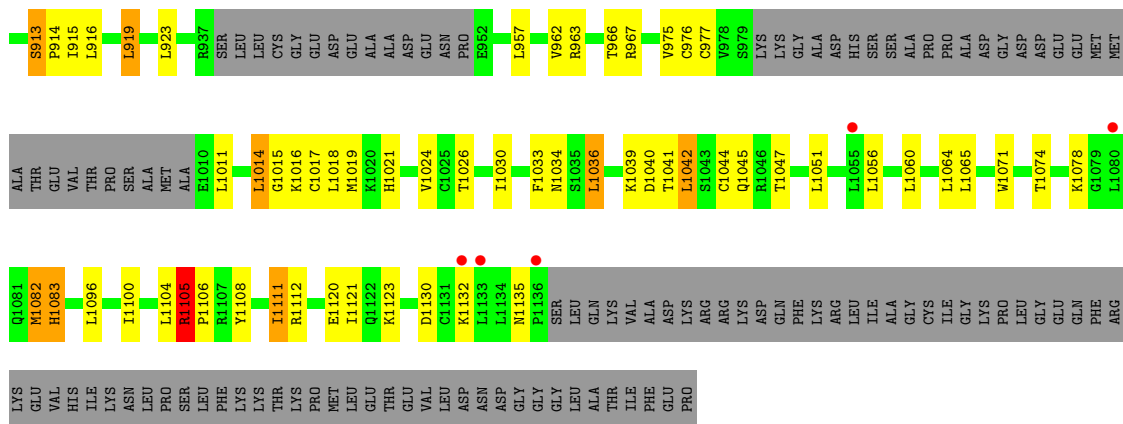
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
7	C	1	Total 1	Mg 1	0	0
7	H	1	Total 1	Mg 1	0	0

3 Residue-property plots [i](#)

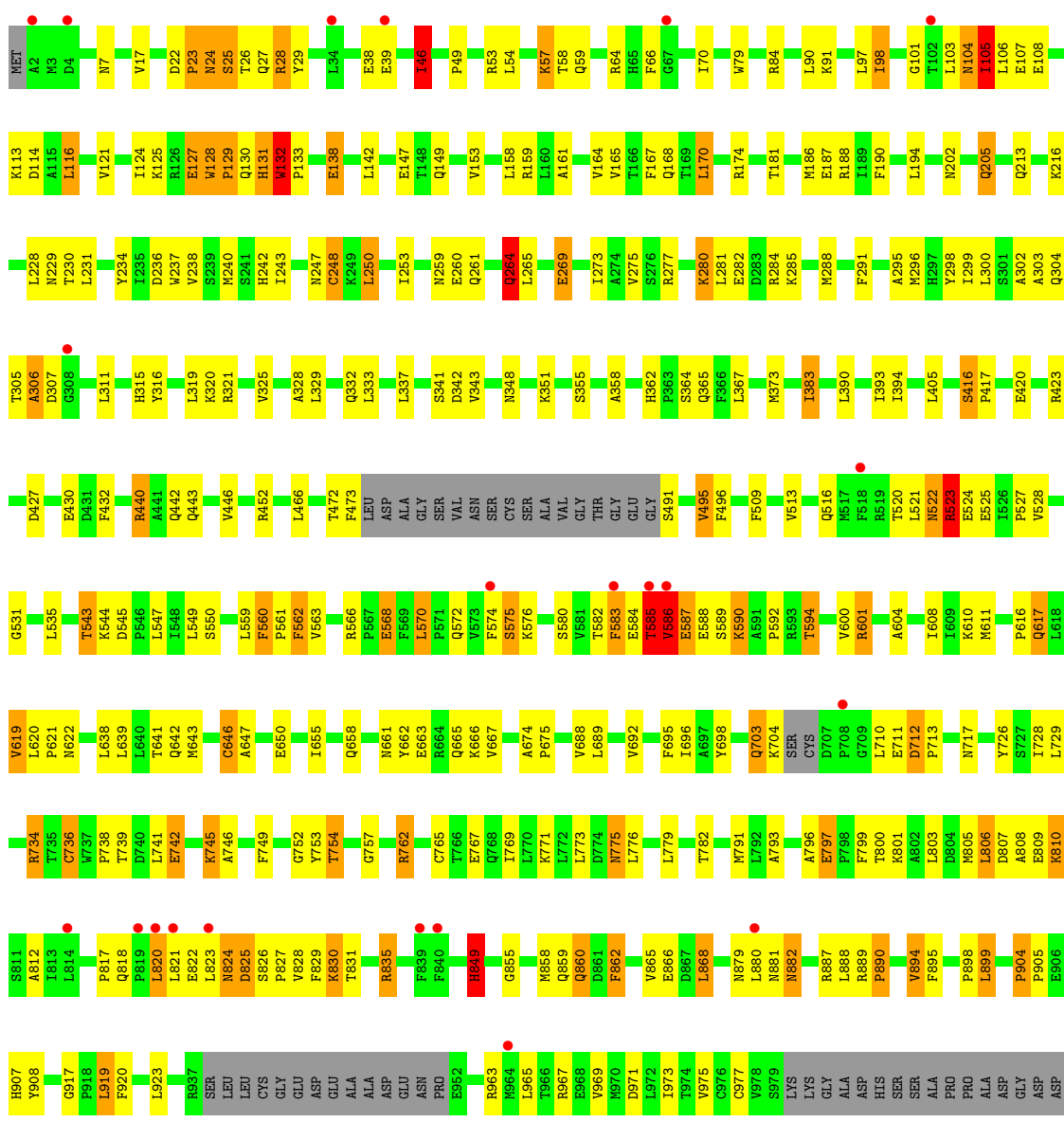
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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.

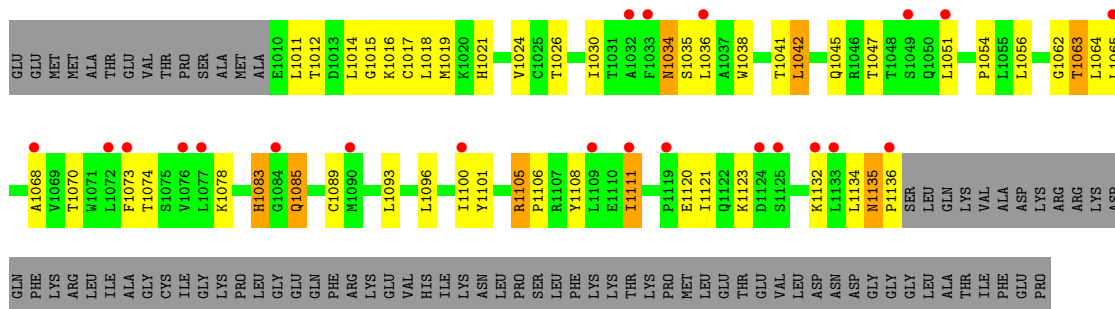
- Molecule 1: Exportin-5





• Molecule 1: Exportin-5





- Molecule 2: 13-mer peptide

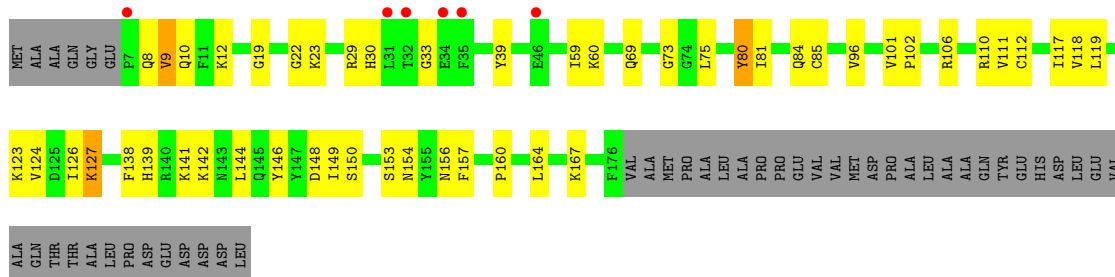


There are no outlier residues recorded for this chain.

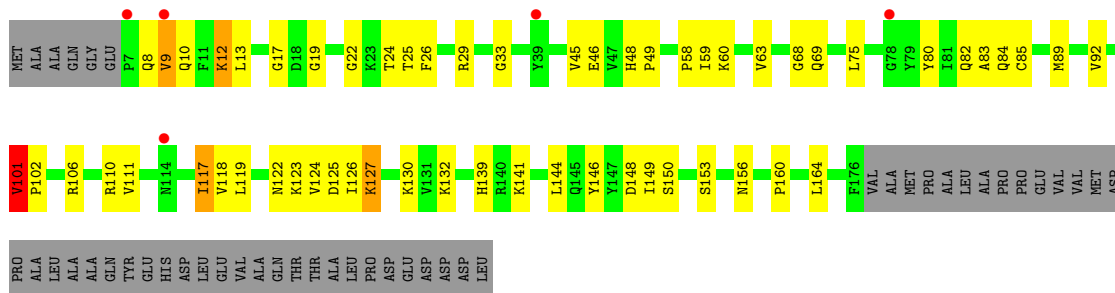
- Molecule 2: 13-mer peptide



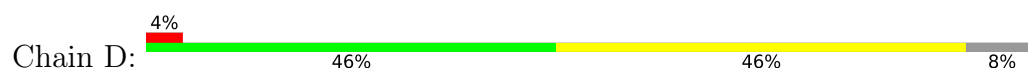
- Molecule 3: GTP-binding nuclear protein Ran



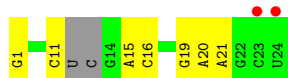
- Molecule 3: GTP-binding nuclear protein Ran



- Molecule 4: pre-microRNA



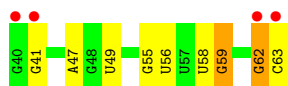
- Molecule 4: pre-microRNA



- Molecule 5: pre-microRNA



- Molecule 5: pre-microRNA



4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	71.16Å 304.67Å 89.23Å 90.00° 110.79° 90.00°	Depositor
Resolution (Å)	39.84 – 2.92 39.84 – 2.92	Depositor EDS
% Data completeness (in resolution range)	100.0 (39.84-2.92) 98.1 (39.84-2.92)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.20 (at 2.91Å)	Xtrriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.247 , 0.312 0.246 , 0.312	Depositor DCC
R_{free} test set	3827 reflections (4.44%)	wwPDB-VP
Wilson B-factor (Å ²)	69.5	Xtrriage
Anisotropy	0.745	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 65.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.031 for h,-k,-h-l	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	22052	wwPDB-VP
Average B, all atoms (Å ²)	96.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.10% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	1.29	31/8738 (0.4%)	1.35	68/11831 (0.6%)
1	F	1.08	15/8738 (0.2%)	1.17	34/11831 (0.3%)
3	C	1.07	0/1421	1.11	3/1918 (0.2%)
3	H	1.04	1/1421 (0.1%)	1.13	3/1918 (0.2%)
4	D	0.84	0/521	1.23	2/809 (0.2%)
4	I	0.81	0/521	1.15	3/809 (0.4%)
5	E	0.85	0/562	1.29	7/874 (0.8%)
5	J	0.77	0/562	1.13	2/874 (0.2%)
All	All	1.14	47/22484 (0.2%)	1.24	122/30864 (0.4%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	F	0	1

All (47) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	165	VAL	CA-CB	14.31	1.74	1.54
1	A	237	TRP	CG-CD2	13.36	1.67	1.43
1	A	190	PHE	CA-C	9.21	1.65	1.52
1	A	237	TRP	CZ3-CH2	8.31	1.61	1.40
1	A	231	LEU	CA-C	-8.31	1.42	1.52
1	F	585	THR	CA-CB	7.91	1.66	1.53
1	A	162	GLU	N-CA	7.64	1.55	1.46
1	A	240	MET	CA-C	6.97	1.62	1.52
1	F	638	LEU	CA-C	-6.91	1.43	1.52
1	A	738	PRO	CA-C	-6.88	1.44	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	105	ILE	CG1-CD1	6.77	1.78	1.51
1	A	72	GLU	CA-C	6.72	1.61	1.52
1	A	165	VAL	C-O	-6.23	1.16	1.24
1	A	70	ILE	CA-CB	6.22	1.61	1.54
1	A	328	ALA	CA-CB	-6.18	1.43	1.53
1	F	586	VAL	CA-C	6.05	1.60	1.52
1	A	556	VAL	CA-CB	-6.03	1.46	1.54
1	A	17	VAL	CA-CB	6.02	1.62	1.54
1	F	153	VAL	CA-CB	5.96	1.61	1.54
1	A	165	VAL	CA-C	-5.91	1.45	1.52
1	A	303	ALA	CA-CB	-5.86	1.43	1.53
1	F	394	ILE	CA-C	5.83	1.59	1.52
1	F	818	GLN	CA-C	5.71	1.57	1.52
1	F	904	PRO	CA-C	5.65	1.57	1.52
1	F	585	THR	N-CA	5.62	1.53	1.46
1	F	818	GLN	N-CA	5.59	1.50	1.46
1	A	59	GLN	CA-C	-5.48	1.46	1.53
1	A	188	ARG	C-O	5.40	1.30	1.24
1	F	647	ALA	CA-CB	-5.40	1.45	1.53
1	F	849	HIS	N-CA	-5.30	1.39	1.46
1	A	651	ALA	CA-CB	-5.29	1.44	1.53
1	A	162	GLU	C-O	-5.29	1.18	1.24
1	F	585	THR	CA-C	5.27	1.59	1.52
3	H	12	LYS	CA-C	-5.24	1.46	1.52
1	F	280	LYS	CE-NZ	5.24	1.65	1.49
1	A	150	THR	C-O	-5.21	1.18	1.24
1	F	1063	THR	CA-CB	5.18	1.62	1.53
1	A	558	ALA	CA-CB	-5.18	1.45	1.53
1	F	746	ALA	CA-C	5.15	1.59	1.52
1	A	750	VAL	CA-C	5.06	1.58	1.52
1	A	550	SER	C-O	-5.05	1.17	1.24
1	A	124	ILE	C-O	-5.05	1.18	1.24
1	A	494	SER	N-CA	5.04	1.52	1.45
1	A	584	GLU	CA-C	5.04	1.58	1.52
1	A	854	ALA	CA-CB	-5.04	1.45	1.53
1	A	1105	ARG	CA-C	5.02	1.59	1.52
1	A	237	TRP	CG-CD1	-5.00	1.24	1.36

All (122) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	128	TRP	CA-C-N	-15.72	100.19	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	128	TRP	C-N-CA	-15.72	100.19	119.84
3	C	9	VAL	N-CA-C	10.37	120.27	110.53
1	A	237	TRP	CE2-CD2-CE3	10.21	129.01	118.80
1	A	728	ILE	N-CA-C	-9.94	100.68	110.72
3	H	9	VAL	N-CA-C	9.67	119.51	110.42
1	A	562	PHE	N-CA-C	8.08	120.09	111.28
1	A	736	CYS	N-CA-C	8.04	121.51	108.32
1	A	859	GLN	CB-CA-C	-7.86	107.51	116.63
1	A	237	TRP	CG-CD1-NE1	-7.79	100.07	110.20
1	A	614	ASP	N-CA-C	7.74	121.20	111.69
1	A	904	PRO	CA-C-N	7.57	128.25	119.47
1	A	904	PRO	C-N-CA	7.57	128.25	119.47
1	F	416	SER	N-CA-C	7.45	116.71	108.14
1	F	544	LYS	N-CA-C	-7.43	103.78	112.92
1	F	57	LYS	N-CA-C	7.42	120.31	111.33
1	A	862	PHE	N-CA-C	-7.39	103.88	113.12
1	A	703	GLN	N-CA-C	7.37	121.41	109.40
1	A	213	GLN	N-CA-C	7.31	119.03	110.41
1	A	610	LYS	N-CA-C	-7.21	103.45	111.82
1	A	791	MET	N-CA-C	-7.21	104.11	113.12
4	D	1	G	C2'-C3'-O3'	-7.12	103.01	113.70
1	A	243	ILE	N-CA-C	-7.09	103.94	110.82
1	F	1017	CYS	N-CA-C	7.07	118.68	110.97
1	A	237	TRP	CB-CG-CD1	-7.06	116.31	126.90
1	A	385	SER	N-CA-C	-7.01	104.54	113.23
1	A	132	TRP	CA-C-N	6.98	126.80	119.05
1	A	132	TRP	C-N-CA	6.98	126.80	119.05
1	F	859	GLN	CB-CA-C	-6.95	108.57	116.63
1	A	736	CYS	CA-CB-SG	-6.94	98.44	114.40
1	A	666	LYS	N-CA-C	-6.89	103.70	111.14
1	A	170	LEU	CA-C-N	-6.86	113.31	120.38
1	A	170	LEU	C-N-CA	-6.86	113.31	120.38
1	A	646	CYS	N-CA-C	6.80	119.71	111.82
1	A	793	ALA	N-CA-C	-6.70	105.11	113.28
1	A	160	LEU	N-CA-C	-6.63	103.31	111.40
1	F	862	PHE	N-CA-C	-6.62	104.85	113.12
3	H	101	VAL	O-C-N	6.62	124.66	120.42
5	E	62	G	C4'-C3'-C2'	-6.59	96.01	102.60
1	A	887	ARG	N-CA-C	-6.57	105.89	114.04
1	F	264	GLN	N-CA-C	6.57	118.44	111.28
1	A	402	MET	N-CA-C	-6.55	104.07	111.14
1	A	264	GLN	N-CA-C	6.48	119.17	111.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	237	TRP	CH2-CZ2-CE2	-6.45	109.12	117.50
1	A	623	PHE	N-CA-C	6.38	118.03	111.14
1	A	107	GLU	N-CA-C	-6.29	100.31	110.32
1	F	666	LYS	N-CA-C	-6.28	104.53	111.82
1	A	233	GLY	N-CA-C	6.20	121.29	114.40
1	A	639	LEU	N-CA-C	6.19	117.91	111.03
4	D	2	G	C3'-C2'-O2'	6.17	119.95	110.70
1	A	494	SER	N-CA-C	6.14	118.63	108.99
1	A	80	ASN	N-CA-C	6.08	119.80	112.38
1	F	818	GLN	N-CA-C	6.04	115.09	108.14
1	F	187	GLU	N-CA-C	-6.03	104.63	112.23
5	E	61	C	C4'-C3'-O3'	-5.99	104.01	113.00
4	I	1	G	O4'-C1'-N9	5.99	117.48	108.50
1	F	776	LEU	N-CA-C	-5.96	104.13	111.40
1	A	242	HIS	N-CA-C	-5.93	106.20	113.50
1	F	562	PHE	N-CA-C	5.93	119.61	112.38
1	A	606	SER	N-CA-C	5.92	118.21	111.11
5	E	62	G	C3'-C2'-C1'	5.89	107.19	101.30
3	C	73	GLY	N-CA-C	-5.88	104.14	112.37
4	I	1	G	C3'-C2'-O2'	5.88	119.52	110.70
1	F	528	VAL	N-CA-C	5.80	116.54	110.62
1	F	736	CYS	N-CA-C	5.80	117.22	108.46
1	A	171	PRO	CA-C-N	5.77	127.05	119.84
1	A	171	PRO	C-N-CA	5.77	127.05	119.84
1	A	167	PHE	N-CA-C	-5.68	106.19	113.23
1	A	265	LEU	N-CA-C	-5.68	105.17	111.36
1	A	132	TRP	CA-CB-CG	5.66	124.36	113.60
1	A	72	GLU	N-CA-C	5.65	118.17	111.33
1	A	63	VAL	CB-CA-C	-5.59	104.70	112.02
5	J	62	G	C4'-C3'-C2'	-5.57	97.03	102.60
1	A	273	ILE	O-C-N	5.55	128.08	121.80
1	F	917	GLY	CA-C-N	5.54	125.38	119.28
1	F	917	GLY	C-N-CA	5.54	125.38	119.28
1	A	224	GLY	N-CA-C	-5.53	106.09	112.50
5	E	62	G	O4'-C1'-C2'	-5.52	102.08	107.60
1	F	610	LYS	N-CA-C	-5.50	105.39	111.71
1	F	739	THR	CB-CA-C	-5.50	101.66	110.79
5	J	59	G	C1'-C2'-O2'	5.49	116.64	108.40
1	F	580	SER	N-CA-C	5.47	119.05	112.38
1	F	560	PHE	CA-C-N	5.46	125.81	119.47
1	F	560	PHE	C-N-CA	5.46	125.81	119.47
4	I	1	G	O3'-P-O5'	5.46	112.18	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	150	THR	N-CA-C	-5.44	105.27	111.14
1	A	913	SER	O-C-N	5.43	124.02	120.27
1	A	44	CYS	CA-C-N	5.43	126.62	119.84
1	A	44	CYS	C-N-CA	5.43	126.62	119.84
1	A	783	HIS	N-CA-C	-5.42	105.37	111.28
5	E	61	C	C1'-C2'-O2'	-5.42	100.27	108.40
1	A	659	PHE	N-CA-C	-5.41	105.78	112.38
1	F	104	ASN	N-CA-C	5.40	117.84	110.55
1	F	887	ARG	N-CA-C	-5.39	106.76	113.55
1	A	237	TRP	CD1-NE1-CE2	5.37	118.56	108.90
1	F	170	LEU	N-CA-C	5.36	118.65	110.50
1	A	749	PHE	N-CA-C	-5.35	106.69	113.43
1	A	237	TRP	N-CA-C	-5.35	107.12	113.97
1	F	601	ARG	N-CA-C	-5.35	105.09	111.03
3	H	117	ILE	N-CA-C	5.35	115.56	107.75
1	A	646	CYS	CA-CB-SG	-5.33	102.13	114.40
1	F	646	CYS	CA-CB-SG	-5.26	102.30	114.40
1	A	712	ASP	CA-C-N	-5.25	114.26	119.56
1	A	712	ASP	C-N-CA	-5.25	114.26	119.56
1	A	976	CYS	N-CA-C	5.23	116.79	111.14
1	F	549	LEU	N-CA-C	-5.23	105.66	111.36
3	C	80	TYR	N-CA-C	-5.22	106.88	113.20
1	A	246	GLU	N-CA-C	5.20	117.65	107.57
1	F	586	VAL	CB-CA-C	5.18	119.79	111.29
1	F	745	LYS	N-CA-C	-5.14	105.32	111.03
1	F	98	ILE	N-CA-C	-5.14	105.40	111.00
5	E	54	U	P-O3'-C3'	-5.14	112.50	120.20
1	A	660	LYS	CB-CG-CD	-5.13	99.50	111.30
1	F	1120	GLU	N-CA-C	5.11	118.87	111.56
1	F	825	ASP	N-CA-C	5.09	117.45	108.75
1	A	460	GLN	N-CA-C	5.08	117.20	111.11
1	A	4	ASP	N-CA-C	5.06	115.99	108.60
1	A	178	ILE	N-CA-C	-5.04	106.24	111.58
1	F	728	ILE	N-CA-C	-5.03	105.59	110.42
1	A	746	ALA	N-CA-C	5.00	117.47	111.71
1	F	888	LEU	N-CA-C	-5.00	105.53	111.69
5	E	62	G	P-O3'-C3'	5.00	127.70	120.20

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	F	583	PHE	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8570	0	8664	311	0
1	F	8570	0	8664	280	0
2	B	66	0	15	0	0
2	G	66	0	15	1	0
3	C	1386	0	1408	35	0
3	H	1386	0	1408	42	0
4	D	466	0	242	2	0
4	I	466	0	242	0	0
5	E	505	0	258	5	0
5	J	505	0	258	6	0
6	C	32	0	12	9	0
6	H	32	0	12	7	0
7	C	1	0	0	0	0
7	H	1	0	0	0	0
All	All	22052	0	21198	665	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 15.

All (665) 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:105:ILE:CG1	1:A:105:ILE:CD1	1.78	1.57
1:A:543:THR:HG22	1:A:545:ASP:H	1.17	1.09
1:F:495:VAL:O	1:F:496:PHE:CD1	2.15	0.99
1:A:168:GLN:HB2	1:A:175:ARG:HD2	1.41	0.99
1:A:545:ASP:OD2	1:A:548:ILE:HG12	1.63	0.99
1:F:905:PRO:HA	1:F:908:TYR:CD1	2.02	0.95
1:A:495:VAL:HG12	1:A:496:PHE:N	1.80	0.93
1:A:697:ALA:HA	1:A:702:ASP:OD1	1.72	0.90
1:F:1035:SER:HA	1:F:1038:TRP:CD1	2.07	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:362:HIS:CD2	1:A:364:SER:H	1.90	0.89
1:A:661:ASN:H	1:A:665:GLN:HE21	1.21	0.88
1:A:405:LEU:HD23	1:A:440:ARG:HD2	1.56	0.85
1:A:288:MET:HE2	1:A:288:MET:HA	1.59	0.84
1:F:236:ASP:HA	1:F:277:ARG:HD2	1.59	0.84
1:A:104:ASN:C	1:A:105:ILE:HG13	2.02	0.84
1:A:754:THR:HG22	1:A:756:SER:H	1.41	0.83
1:F:205:GLN:HE21	1:F:205:GLN:HA	1.42	0.83
3:C:123:LYS:HG2	6:C:1177:GTP:C6	2.13	0.83
1:F:79:TRP:HZ3	1:F:90:LEU:HD23	1.42	0.83
1:F:240:MET:HA	1:F:243:ILE:HD13	1.60	0.83
1:A:593:ARG:NH1	1:A:601:ARG:NH1	2.27	0.82
1:A:495:VAL:HG12	1:A:496:PHE:H	1.40	0.82
1:F:1105:ARG:HA	1:F:1111:ILE:HG13	1.61	0.82
1:A:661:ASN:H	1:A:665:GLN:NE2	1.77	0.81
1:F:905:PRO:HA	1:F:908:TYR:CE1	2.16	0.81
1:A:733:LYS:HG3	1:A:853:LYS:HE3	1.64	0.80
1:F:584:GLU:O	1:F:586:VAL:N	2.16	0.79
1:A:205:GLN:HE21	1:A:205:GLN:HA	1.47	0.79
1:F:305:THR:O	1:F:315:HIS:NE2	2.15	0.79
1:A:168:GLN:HB2	1:A:175:ARG:CD	2.14	0.77
1:A:186:MET:CE	1:A:190:PHE:HD1	1.96	0.77
1:F:521:LEU:HD22	1:F:525:GLU:HB3	1.65	0.77
1:F:583:PHE:HD1	1:F:584:GLU:H	1.32	0.76
1:F:698:TYR:CE2	1:F:717:ASN:HB3	2.20	0.76
1:A:1039:LYS:O	1:A:1039:LYS:HG2	1.86	0.76
1:F:186:MET:CE	1:F:190:PHE:HD1	1.99	0.76
1:A:440:ARG:HG2	1:A:440:ARG:HH11	1.51	0.76
1:F:1018:LEU:HD22	1:F:1024:VAL:HG11	1.68	0.76
1:A:494:SER:HB3	1:A:545:ASP:OD1	1.85	0.75
1:F:977:CYS:HA	1:F:1012:THR:OG1	1.87	0.75
1:A:226:ALA:O	1:A:230:THR:HG22	1.86	0.74
1:A:495:VAL:CG1	1:A:496:PHE:N	2.50	0.74
1:F:281:LEU:HA	1:F:284:ARG:HG3	1.70	0.74
1:F:574:PHE:HE2	1:F:611:MET:CE	2.01	0.74
1:F:574:PHE:CE2	1:F:611:MET:HE1	2.22	0.74
1:F:105:ILE:HD12	1:F:106:LEU:H	1.52	0.73
1:F:641:THR:HG22	1:F:643:MET:H	1.52	0.73
1:A:543:THR:HG22	1:A:545:ASP:N	1.98	0.73
1:F:186:MET:HE2	1:F:190:PHE:HD1	1.53	0.73
1:A:1018:LEU:HD22	1:A:1024:VAL:HG11	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:288:MET:HE2	1:F:288:MET:HA	1.70	0.72
1:A:291:PHE:HA	1:A:296:MET:HE2	1.71	0.72
3:H:117:ILE:HB	3:H:144:LEU:HD22	1.71	0.71
1:F:560:PHE:N	1:F:561:PRO:HD2	2.05	0.71
1:F:1105:ARG:N	1:F:1106:PRO:HD2	2.06	0.71
1:F:373:MET:HE3	1:F:442:GLN:HG3	1.72	0.70
1:A:835:ARG:HE	1:A:835:ARG:HA	1.55	0.70
1:F:570:LEU:HD13	1:F:622:ASN:ND2	2.07	0.69
1:F:440:ARG:HA	1:F:443:GLN:HB3	1.74	0.69
1:A:373:MET:HE3	1:A:442:GLN:HG3	1.73	0.69
1:A:641:THR:HG22	1:A:644:GLU:H	1.57	0.69
1:F:495:VAL:HG22	1:F:824:ASN:HD21	1.58	0.69
1:A:1047:THR:HG23	1:A:1051:LEU:HD23	1.74	0.69
1:A:27:GLN:HE21	1:A:31:LEU:HD11	1.58	0.69
1:A:336:LEU:HB3	1:A:343:VAL:HG21	1.74	0.69
1:A:616:PRO:HB2	1:A:658:GLN:HG3	1.75	0.68
1:F:821:LEU:HD21	1:F:828:VAL:HG23	1.74	0.68
1:A:202:ASN:O	1:A:205:GLN:HB2	1.94	0.68
1:F:291:PHE:HA	1:F:296:MET:HE2	1.76	0.68
1:F:333:LEU:HD11	1:F:337:LEU:HG	1.76	0.67
1:F:574:PHE:CD2	1:F:611:MET:HE1	2.29	0.67
1:A:164:VAL:HG13	1:A:165:VAL:HG23	1.74	0.67
1:F:383:ILE:N	1:F:383:ILE:HD12	2.09	0.67
1:A:362:HIS:HD2	1:A:364:SER:H	1.43	0.67
1:A:596:ALA:HB2	1:A:823:LEU:HB3	1.77	0.67
1:F:560:PHE:N	1:F:561:PRO:CD	2.59	0.66
1:F:689:LEU:HD22	1:F:779:LEU:HB2	1.78	0.66
1:F:213:GLN:HG2	1:F:216:LYS:HB2	1.78	0.65
3:C:29:ARG:HG2	3:C:157:PHE:HE2	1.61	0.65
1:F:879:ASN:ND2	1:F:882:ASN:HB2	2.12	0.65
1:F:650:GLU:OE1	1:F:734:ARG:NH1	2.27	0.65
1:F:754:THR:O	1:F:757:GLY:N	2.29	0.65
3:H:123:LYS:HG2	6:H:1177:GTP:C5	2.31	0.65
1:A:62:ILE:HD12	1:A:62:ILE:H	1.60	0.65
1:A:128:TRP:O	1:A:129:PRO:C	2.34	0.65
1:A:907:HIS:HB3	1:A:910:ALA:HB3	1.79	0.65
1:A:186:MET:HE2	1:A:190:PHE:HD1	1.60	0.65
1:A:724:CYS:O	1:A:728:ILE:HG13	1.97	0.65
1:A:662:TYR:CE1	1:A:762:ARG:HG2	2.32	0.64
1:A:560:PHE:N	1:A:561:PRO:HD2	2.12	0.64
1:F:97:LEU:HD23	1:F:101:GLY:HA3	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:521:LEU:HD22	1:F:525:GLU:CB	2.27	0.64
1:F:574:PHE:CE2	1:F:611:MET:CE	2.79	0.64
1:F:129:PRO:CG	1:F:174:ARG:HH22	2.11	0.64
1:F:1047:THR:HG23	1:F:1051:LEU:HD23	1.80	0.64
3:C:29:ARG:HG2	3:C:157:PHE:CE2	2.32	0.64
1:F:762:ARG:HH11	1:F:762:ARG:HG3	1.63	0.63
1:F:247:ASN:O	1:F:248:CYS:HB2	1.96	0.63
1:A:641:THR:HB	1:A:644:GLU:CD	2.24	0.63
1:A:655:ILE:O	1:A:658:GLN:HB2	1.98	0.63
1:A:835:ARG:HH22	5:E:62:G:H5 ^{''}	1.63	0.63
1:A:698:TYR:CE2	1:A:717:ASN:HB3	2.33	0.62
1:A:701:THR:HG22	1:A:799:PHE:CB	2.29	0.62
1:F:127:GLU:HB2	1:F:131:HIS:HB2	1.81	0.62
1:A:583:PHE:CE2	1:A:588:GLU:HG3	2.34	0.62
1:F:616:PRO:HB2	1:F:658:GLN:HG3	1.80	0.62
1:F:835:ARG:HE	1:F:835:ARG:HA	1.64	0.62
1:A:689:LEU:HD22	1:A:779:LEU:HB2	1.82	0.62
1:F:108:GLU:HB3	1:F:113:LYS:HE3	1.82	0.62
1:F:585:THR:O	1:F:586:VAL:C	2.42	0.62
1:F:1074:THR:HG22	1:F:1078:LYS:HE3	1.82	0.62
1:F:164:VAL:HG13	1:F:165:VAL:HG23	1.81	0.62
1:F:619:VAL:HG23	1:F:655:ILE:HD13	1.81	0.62
1:A:707:ASP:HB3	1:A:710:LEU:HB3	1.82	0.61
3:C:117:ILE:HB	3:C:144:LEU:HD22	1.81	0.61
1:F:570:LEU:HD22	1:F:574:PHE:CZ	2.35	0.61
1:F:124:ILE:HG23	1:F:128:TRP:HB2	1.82	0.61
1:F:186:MET:HE2	1:F:190:PHE:CD1	2.34	0.61
1:A:339:ALA:O	1:A:341:SER:N	2.34	0.61
1:A:440:ARG:HA	1:A:443:GLN:HB3	1.83	0.61
1:A:906:GLU:OE1	1:A:906:GLU:N	2.31	0.61
1:A:754:THR:HB	1:A:758:ASN:H	1.66	0.61
3:C:85:CYS:HB2	3:C:164:LEU:HD22	1.83	0.61
3:C:123:LYS:HG2	6:C:1177:GTP:C5	2.36	0.60
1:A:889:ARG:HB3	1:A:890:PRO:HD3	1.82	0.60
1:F:583:PHE:HD1	1:F:584:GLU:N	2.00	0.60
1:A:701:THR:HG22	1:A:799:PHE:HB2	1.82	0.60
1:F:495:VAL:C	1:F:496:PHE:CD1	2.79	0.60
1:F:889:ARG:HB3	1:F:890:PRO:HD3	1.82	0.60
1:A:1018:LEU:HB3	1:A:1024:VAL:HG11	1.82	0.60
1:A:162:GLU:OE1	3:C:106:ARG:HD3	2.02	0.60
1:A:313:GLU:O	1:A:317:VAL:HG23	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:619:VAL:CG2	1:F:655:ILE:HD13	2.31	0.60
1:F:620:LEU:N	1:F:621:PRO:CD	2.64	0.60
3:H:149:ILE:HG22	3:H:156:ASN:HB2	1.82	0.60
1:A:186:MET:HE2	1:A:190:PHE:CD1	2.37	0.60
1:F:617:GLN:CD	1:F:617:GLN:H	2.10	0.60
1:A:313:GLU:HG3	1:A:424:PHE:CZ	2.37	0.59
1:A:550:SER:HB2	1:A:600:VAL:CG1	2.32	0.59
1:F:26:THR:HG22	1:F:28:ARG:H	1.66	0.59
1:A:593:ARG:NH1	1:A:601:ARG:HH11	1.97	0.59
1:A:754:THR:HG22	1:A:756:SER:N	2.16	0.59
1:A:186:MET:CE	1:A:190:PHE:CD1	2.84	0.59
3:H:123:LYS:HG2	6:H:1177:GTP:C6	2.37	0.59
1:A:814:LEU:HD21	1:A:957:LEU:HA	1.84	0.59
1:A:822:GLU:HG3	1:A:824:ASN:H	1.66	0.59
3:C:150:SER:HB3	3:C:153:SER:HB3	1.85	0.59
1:F:860:GLN:CD	1:F:860:GLN:H	2.09	0.59
1:A:128:TRP:CD1	1:A:128:TRP:C	2.79	0.59
1:F:1083:HIS:HB3	1:F:1089:CYS:SG	2.43	0.59
1:A:186:MET:HE3	1:A:190:PHE:HB2	1.86	0.58
1:A:385:SER:HB2	1:A:453:LEU:HD11	1.85	0.58
1:F:1105:ARG:NH1	1:F:1134:LEU:HD11	2.18	0.58
1:F:205:GLN:HA	1:F:205:GLN:NE2	2.16	0.58
3:H:22:GLY:HA2	6:H:1177:GTP:H5''	1.85	0.58
1:A:128:TRP:O	1:A:128:TRP:CD1	2.56	0.58
1:A:597:VAL:O	1:A:601:ARG:HG3	2.03	0.58
1:F:616:PRO:HB2	1:F:658:GLN:CG	2.33	0.58
1:A:711:GLU:O	1:A:713:PRO:HD2	2.04	0.57
1:A:587:GLU:OE2	1:A:590:LYS:HB2	2.04	0.57
3:C:29:ARG:HE	3:C:154:ASN:HD21	1.51	0.57
1:F:362:HIS:CD2	1:F:364:SER:H	2.21	0.57
1:F:509:PHE:O	1:F:513:VAL:HG23	2.05	0.57
1:A:593:ARG:NH1	1:A:601:ARG:HH12	2.03	0.57
1:F:754:THR:C	1:F:757:GLY:H	2.12	0.57
3:C:39:TYR:CD1	6:C:1177:GTP:H5''	2.39	0.57
1:F:738:PRO:HD3	1:F:749:PHE:CE1	2.39	0.57
1:A:619:VAL:HG23	1:A:655:ILE:HG23	1.87	0.57
1:F:260:GLU:O	1:F:264:GLN:HG3	2.04	0.57
1:A:775:ASN:HD22	1:A:775:ASN:H	1.52	0.56
3:C:9:VAL:HG21	3:C:59:ILE:HD12	1.86	0.56
1:F:765:CYS:O	1:F:769:ILE:HG12	2.04	0.56
1:F:828:VAL:HG12	1:F:830:LYS:NZ	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:9:VAL:O	3:H:10:GLN:HB3	2.04	0.56
1:A:543:THR:HG21	1:A:548:ILE:HB	1.86	0.56
3:C:80:TYR:HB2	3:C:111:VAL:HG11	1.86	0.56
1:F:749:PHE:O	1:F:762:ARG:HD3	2.04	0.56
1:A:616:PRO:HA	1:A:619:VAL:HG22	1.87	0.56
1:A:300:LEU:HG	1:A:355:SER:HB2	1.86	0.56
1:A:583:PHE:HD1	1:A:584:GLU:H	1.51	0.56
1:F:452:ARG:HG3	1:F:520:THR:HG21	1.87	0.56
1:A:316:TYR:CE2	1:A:320:LYS:HD2	2.41	0.56
1:F:642:GLN:HB2	5:J:63:C:OP2	2.05	0.56
1:A:821:LEU:HD23	1:A:827:PRO:HG2	1.87	0.56
1:F:807:ASP:OD1	1:F:807:ASP:N	2.38	0.56
1:F:495:VAL:HG22	1:F:824:ASN:ND2	2.21	0.56
1:F:543:THR:HG22	1:F:545:ASP:H	1.71	0.56
1:A:617:GLN:HE21	1:A:618:LEU:H	1.53	0.55
3:C:9:VAL:CG2	3:C:59:ILE:HD12	2.36	0.55
1:F:158:LEU:HD13	1:F:230:THR:HA	1.88	0.55
1:F:586:VAL:O	1:F:587:GLU:HB2	2.06	0.55
1:F:616:PRO:HD2	1:F:617:GLN:OE1	2.05	0.55
1:F:1035:SER:HA	1:F:1038:TRP:NE1	2.22	0.55
1:F:46:ILE:C	1:F:49:PRO:HD2	2.32	0.55
1:F:161:ALA:HB2	1:F:234:TYR:CZ	2.41	0.55
1:F:604:ALA:O	1:F:608:ILE:HG12	2.07	0.55
3:H:150:SER:HB3	3:H:153:SER:HB3	1.88	0.55
1:F:472:THR:HG22	1:F:473:PHE:H	1.69	0.55
1:A:624:ASP:N	1:A:624:ASP:OD1	2.36	0.55
1:A:701:THR:HB	1:A:795:MET:HG2	1.89	0.55
1:F:194:LEU:HD11	1:F:253:ILE:HD12	1.87	0.55
1:F:662:TYR:CE1	1:F:762:ARG:HG2	2.41	0.55
3:C:22:GLY:HA2	6:C:1177:GTP:O1A	2.07	0.55
1:F:269:GLU:HG2	1:F:321:ARG:HH11	1.72	0.55
1:F:337:LEU:CD2	1:F:343:VAL:O	2.54	0.55
1:A:236:ASP:HB3	1:A:273:ILE:CG2	2.37	0.55
1:F:333:LEU:CD1	1:F:337:LEU:HG	2.36	0.54
1:A:132:TRP:HH2	1:A:138:GLU:HG2	1.72	0.54
1:A:663:GLU:O	1:A:667:VAL:HG23	2.07	0.54
1:A:583:PHE:CZ	1:A:588:GLU:HA	2.42	0.54
1:A:791:MET:HA	1:A:794:LYS:HD3	1.90	0.54
1:A:919:LEU:HD22	1:A:923:LEU:HD11	1.90	0.54
1:A:17:VAL:HG23	3:C:75:LEU:HD21	1.90	0.54
1:A:213:GLN:HE21	1:A:216:LYS:HD3	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:616:PRO:HB2	1:A:658:GLN:CG	2.37	0.54
1:F:967:ARG:HH21	1:F:1042:LEU:HB2	1.73	0.54
1:F:661:ASN:H	1:F:665:GLN:NE2	2.06	0.54
1:A:765:CYS:O	1:A:769:ILE:HG12	2.07	0.54
1:A:177:ASP:O	1:A:181:THR:OG1	2.25	0.53
1:A:339:ALA:C	1:A:341:SER:H	2.17	0.53
1:A:523:ARG:HB3	1:A:523:ARG:HH11	1.74	0.53
1:F:742:GLU:OE2	1:F:745:LYS:HE3	2.08	0.53
1:A:897:LYS:HB3	1:A:898:PRO:HD3	1.89	0.53
1:A:407:LYS:HA	1:A:436:PHE:CZ	2.44	0.53
1:F:703:GLN:O	1:F:704:LYS:HG3	2.08	0.53
1:F:1011:LEU:HD13	1:F:1054:PRO:HB2	1.89	0.53
1:A:814:LEU:HD11	1:A:957:LEU:HB2	1.90	0.53
1:F:1018:LEU:HB3	1:F:1024:VAL:HG11	1.89	0.53
1:A:821:LEU:HD21	1:A:828:VAL:HG23	1.90	0.53
1:A:1064:LEU:HD13	1:A:1104:LEU:HD21	1.90	0.53
1:A:234:TYR:O	1:A:238:VAL:HG13	2.09	0.53
1:A:593:ARG:HD2	1:A:597:VAL:HG12	1.91	0.53
1:F:132:TRP:N	1:F:133:PRO:CD	2.72	0.53
1:A:311:LEU:HD21	1:A:424:PHE:CD1	2.44	0.53
1:A:767:GLU:O	1:A:771:LYS:HG3	2.09	0.53
3:C:119:LEU:HD23	3:C:139:HIS:HB3	1.91	0.53
1:F:572:GLN:O	1:F:575:SER:HB2	2.09	0.53
1:F:712:ASP:CB	1:F:713:PRO:CD	2.87	0.53
1:F:895:PHE:O	1:F:899:LEU:HB2	2.09	0.53
1:F:704:LYS:HD2	1:F:797:GLU:OE1	2.09	0.52
1:A:827:PRO:O	1:A:829:PHE:CD1	2.63	0.52
1:A:97:LEU:HD23	1:A:101:GLY:HA3	1.91	0.52
1:A:165:VAL:HG11	1:A:237:TRP:CD2	2.45	0.52
1:A:440:ARG:HH11	1:A:440:ARG:CG	2.20	0.52
1:F:306:ALA:HA	1:F:319:LEU:HD11	1.90	0.52
1:F:97:LEU:HA	1:F:101:GLY:HA3	1.92	0.52
1:F:416:SER:HB2	1:F:417:PRO:HD2	1.90	0.52
3:H:22:GLY:HA2	6:H:1177:GTP:C5'	2.39	0.52
1:A:584:GLU:O	1:A:586:VAL:HG22	2.09	0.52
1:F:828:VAL:HG12	1:F:830:LYS:HZ1	1.74	0.52
1:A:586:VAL:O	1:A:587:GLU:HB2	2.09	0.52
1:A:167:PHE:O	1:A:168:GLN:C	2.52	0.52
1:A:300:LEU:HD12	1:A:351:LYS:HB3	1.92	0.52
1:A:711:GLU:HG3	1:A:718:ARG:HH22	1.74	0.51
1:A:780:ILE:HD11	1:A:847:CYS:HB3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:704:LYS:O	1:A:708:PRO:HA	2.11	0.51
1:A:906:GLU:H	1:A:906:GLU:CD	2.18	0.51
1:A:1033:PHE:HA	1:A:1036:LEU:HD22	1.91	0.51
1:F:124:ILE:CG2	1:F:128:TRP:HB2	2.40	0.51
1:F:311:LEU:HD22	1:F:420:GLU:HG3	1.92	0.51
1:F:821:LEU:HD21	1:F:828:VAL:CG2	2.40	0.51
3:C:29:ARG:HE	3:C:154:ASN:ND2	2.08	0.51
1:A:46:ILE:C	1:A:49:PRO:HD2	2.34	0.51
1:F:582:THR:O	1:F:601:ARG:NH2	2.44	0.51
1:F:767:GLU:O	1:F:771:LYS:HG3	2.11	0.51
1:F:205:GLN:HE21	1:F:205:GLN:CA	2.16	0.51
1:A:472:THR:HG22	1:A:473:PHE:H	1.74	0.51
1:A:522:ASN:C	1:A:524:GLU:H	2.19	0.51
1:A:617:GLN:NE2	1:A:618:LEU:H	2.08	0.51
1:A:791:MET:O	1:A:794:LYS:HB2	2.11	0.51
1:F:495:VAL:C	1:F:496:PHE:HD1	2.18	0.51
1:A:269:GLU:O	1:A:273:ILE:HG13	2.11	0.51
1:F:440:ARG:HH11	1:F:440:ARG:HG2	1.74	0.51
1:A:577:LEU:HB3	1:A:608:ILE:HD11	1.92	0.51
1:A:618:LEU:O	1:A:621:PRO:HD2	2.11	0.50
1:A:775:ASN:N	1:A:775:ASN:ND2	2.59	0.50
1:A:494:SER:HB3	1:A:545:ASP:CG	2.36	0.50
1:A:745:LYS:HA	1:A:750:VAL:HG12	1.93	0.50
3:H:12:LYS:HD3	3:H:82:GLN:O	2.12	0.50
3:H:26:PHE:CD2	3:H:89:MET:HE1	2.47	0.50
1:F:570:LEU:CD2	1:F:574:PHE:CZ	2.94	0.50
1:F:1051:LEU:O	1:F:1054:PRO:HD2	2.10	0.50
1:A:90:LEU:O	1:A:94:VAL:HG23	2.12	0.50
1:A:236:ASP:HB3	1:A:273:ILE:HG22	1.94	0.50
3:H:119:LEU:HD23	3:H:139:HIS:HB3	1.94	0.50
1:F:240:MET:HA	1:F:243:ILE:CD1	2.36	0.50
1:F:442:GLN:O	1:F:446:VAL:HG23	2.11	0.50
1:A:694:ALA:O	1:A:697:ALA:HB3	2.12	0.50
1:F:7:ASN:HA	1:F:53:ARG:NH1	2.27	0.50
1:F:1101:TYR:O	1:F:1105:ARG:HB2	2.12	0.50
1:A:125:LYS:HB3	1:A:170:LEU:HD21	1.94	0.50
3:C:146:TYR:OH	3:C:148:ASP:HB3	2.12	0.50
1:A:161:ALA:HB2	1:A:234:TYR:CZ	2.47	0.49
1:F:104:ASN:O	1:F:105:ILE:C	2.55	0.49
1:F:919:LEU:HD22	1:F:923:LEU:HD11	1.93	0.49
3:H:146:TYR:OH	3:H:148:ASP:HB3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:164:VAL:CG1	1:A:165:VAL:HG23	2.41	0.49
1:A:67:GLY:HA2	1:A:70:ILE:HD12	1.93	0.49
1:A:121:VAL:HG21	1:A:159:ARG:HB3	1.93	0.49
1:F:383:ILE:N	1:F:383:ILE:CD1	2.75	0.49
1:A:728:ILE:O	1:A:732:VAL:HG23	2.12	0.49
1:A:1064:LEU:O	1:A:1065:LEU:C	2.54	0.49
3:H:118:VAL:HG11	3:H:160:PRO:HB3	1.93	0.49
1:A:158:LEU:HD13	1:A:230:THR:HA	1.94	0.49
1:A:1014:LEU:HA	1:A:1017:CYS:HB3	1.94	0.49
1:F:234:TYR:O	1:F:238:VAL:HG13	2.13	0.49
1:F:186:MET:HB3	1:F:242:HIS:CE1	2.48	0.49
1:F:584:GLU:C	1:F:586:VAL:H	2.21	0.49
1:F:1073:PHE:HD1	1:F:1100:ILE:HG21	1.78	0.49
1:A:382:GLU:OE1	1:A:382:GLU:HA	2.12	0.49
3:C:149:ILE:HG22	3:C:156:ASN:HB2	1.95	0.49
3:H:123:LYS:HB3	3:H:126:ILE:HD12	1.95	0.49
1:A:1033:PHE:HA	1:A:1036:LEU:CD2	2.43	0.49
1:F:321:ARG:O	1:F:325:VAL:HG23	2.13	0.49
1:F:692:VAL:O	1:F:696:ILE:HG12	2.13	0.48
1:F:194:LEU:HD13	1:F:250:LEU:HD23	1.94	0.48
1:F:570:LEU:HD22	1:F:574:PHE:HZ	1.78	0.48
1:A:550:SER:HB2	1:A:600:VAL:HG13	1.95	0.48
1:F:865:VAL:O	1:F:866:GLU:C	2.56	0.48
1:A:234:TYR:HA	1:A:237:TRP:NE1	2.29	0.48
1:F:128:TRP:O	1:F:129:PRO:C	2.56	0.48
1:F:495:VAL:O	1:F:496:PHE:HD1	1.85	0.48
1:F:583:PHE:CD1	1:F:584:GLU:N	2.78	0.48
1:F:822:GLU:HB3	1:F:825:ASP:HB2	1.95	0.48
1:F:1108:TYR:HB2	1:F:1111:ILE:HD11	1.95	0.48
1:A:127:GLU:O	1:A:132:TRP:HB2	2.14	0.48
1:A:754:THR:CG2	1:A:755:SER:N	2.76	0.48
1:F:904:PRO:HG2	1:F:907:HIS:HD2	1.79	0.48
1:F:762:ARG:HG3	1:F:762:ARG:NH1	2.27	0.48
1:A:525:GLU:OE1	1:A:525:GLU:N	2.46	0.48
1:A:534:LEU:O	1:A:538:VAL:HG23	2.14	0.48
1:F:104:ASN:HB2	1:F:107:GLU:OE1	2.14	0.48
1:F:264:GLN:NE2	1:F:265:LEU:H	2.12	0.48
1:F:269:GLU:O	1:F:273:ILE:HG13	2.12	0.48
1:F:365:GLN:HG3	1:F:432:PHE:HE1	1.79	0.48
1:F:710:LEU:HG	1:F:712:ASP:OD2	2.14	0.48
1:F:923:LEU:HD13	1:F:969:VAL:HG13	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:107:GLU:O	1:A:108:GLU:CB	2.61	0.48
1:A:919:LEU:HD22	1:A:923:LEU:CD1	2.44	0.48
1:F:22:ASP:HB3	1:F:25:SER:HB2	1.96	0.48
3:H:17:GLY:O	3:H:68:GLY:HA3	2.13	0.48
1:A:441:ALA:HB2	5:E:57:U:H1'	1.96	0.48
1:A:806:LEU:HA	1:A:837:GLN:HE21	1.78	0.48
1:F:142:LEU:O	1:F:149:GLN:HB3	2.13	0.48
1:F:202:ASN:O	1:F:205:GLN:HB2	2.13	0.48
1:F:1015:GLY:O	1:F:1016:LYS:C	2.56	0.48
3:H:19:GLY:HA2	6:H:1177:GTP:O1G	2.14	0.48
1:F:1026:THR:HG22	1:F:1030:ILE:HD11	1.96	0.47
1:A:10:CYS:SG	1:A:53:ARG:HD2	2.53	0.47
3:C:12:LYS:HE2	3:C:81:ILE:O	2.14	0.47
3:C:29:ARG:O	3:C:33:GLY:N	2.47	0.47
1:F:522:ASN:O	1:F:523:ARG:C	2.57	0.47
1:F:754:THR:O	1:F:757:GLY:HA2	2.14	0.47
1:A:1105:ARG:N	1:A:1106:PRO:HD2	2.29	0.47
1:F:806:LEU:O	1:F:810:LYS:HG3	2.15	0.47
1:A:689:LEU:O	1:A:782:THR:OG1	2.30	0.47
1:A:775:ASN:H	1:A:775:ASN:ND2	2.12	0.47
1:A:1108:TYR:HB2	1:A:1111:ILE:HD11	1.95	0.47
3:C:39:TYR:HD1	6:C:1177:GTP:H5''	1.78	0.47
1:F:305:THR:O	1:F:307:ASP:N	2.47	0.47
1:F:522:ASN:O	1:F:524:GLU:N	2.48	0.47
3:H:13:LEU:HD23	3:H:63:VAL:HG22	1.96	0.47
1:A:280:LYS:HE2	1:A:282:GLU:OE2	2.14	0.47
1:A:362:HIS:CD2	1:A:364:SER:N	2.72	0.47
1:A:523:ARG:HB3	1:A:523:ARG:NH1	2.29	0.47
1:A:526:ILE:HA	1:A:527:PRO:HD2	1.54	0.47
1:A:1019:MET:C	1:A:1021:HIS:H	2.23	0.47
1:A:1044:CYS:HB3	1:A:1083:HIS:NE2	2.29	0.47
3:C:123:LYS:HB3	3:C:126:ILE:HD12	1.97	0.47
1:F:98:ILE:HG12	1:F:116:LEU:HD11	1.96	0.47
1:F:849:HIS:HA	1:F:894:VAL:HG13	1.96	0.47
3:H:132:LYS:HE2	5:J:49:U:P	2.55	0.47
1:A:891:MET:O	1:A:895:PHE:HB3	2.15	0.47
1:F:550:SER:HB2	1:F:600:VAL:HG12	1.97	0.47
1:F:865:VAL:HB	1:F:868:LEU:HG	1.97	0.47
1:A:62:ILE:H	1:A:62:ILE:CD1	2.26	0.47
1:A:695:PHE:CE1	1:A:721:MET:HE1	2.49	0.47
1:A:381:HIS:CD2	1:A:383:ILE:H	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:904:PRO:HA	1:A:905:PRO:HD3	1.69	0.46
1:F:228:LEU:O	1:F:229:ASN:C	2.57	0.46
1:F:1105:ARG:N	1:F:1106:PRO:CD	2.77	0.46
3:H:126:ILE:O	3:H:127:LYS:C	2.58	0.46
1:A:244:THR:O	1:A:245:ALA:C	2.58	0.46
1:A:738:PRO:HD2	1:A:749:PHE:CD1	2.50	0.46
1:A:967:ARG:HH21	1:A:1042:LEU:HB2	1.81	0.46
1:F:904:PRO:HG2	1:F:907:HIS:CD2	2.50	0.46
3:H:25:THR:OG1	6:H:1177:GTP:H5'	2.14	0.46
1:A:831:THR:HB	1:A:834:GLU:HB2	1.97	0.46
3:C:124:VAL:HG11	3:C:148:ASP:HB2	1.98	0.46
1:A:532:ILE:O	1:A:536:GLN:HG3	2.15	0.46
1:A:1082:MET:HE2	1:A:1082:MET:HA	1.97	0.46
1:F:563:VAL:HG11	1:F:570:LEU:HG	1.97	0.46
1:F:568:GLU:H	1:F:568:GLU:HG3	1.27	0.46
1:F:663:GLU:O	1:F:667:VAL:HG23	2.16	0.46
1:A:264:GLN:HB2	1:A:318:PHE:CE1	2.50	0.46
1:A:691:ASP:HB3	1:A:694:ALA:HB3	1.98	0.46
1:A:977:CYS:HB3	1:A:1015:GLY:HA2	1.98	0.46
1:A:977:CYS:O	1:A:1011:LEU:HA	2.14	0.46
1:F:619:VAL:HG21	1:F:655:ILE:CD1	2.45	0.46
1:F:754:THR:O	1:F:757:GLY:CA	2.62	0.46
1:F:1101:TYR:CE2	1:F:1105:ARG:HG3	2.51	0.46
1:A:98:ILE:HG12	1:A:116:LEU:HD11	1.97	0.46
1:F:364:SER:HB3	1:F:367:LEU:HB2	1.97	0.46
3:H:132:LYS:HE2	5:J:49:U:OP1	2.15	0.46
1:A:835:ARG:HH12	5:E:62:G:H5''	1.81	0.46
1:F:348:ASN:HD22	1:F:351:LYS:HD3	1.80	0.46
1:F:1062:GLY:O	1:F:1063:THR:C	2.59	0.46
1:A:143:SER:OG	1:A:150:THR:HG23	2.16	0.46
1:A:390:LEU:O	1:A:393:ILE:HG22	2.16	0.46
1:A:632:GLN:HG2	1:F:639:LEU:CD1	2.46	0.46
1:A:835:ARG:NH2	5:E:62:G:H5''	2.31	0.46
1:A:522:ASN:O	1:A:524:GLU:N	2.49	0.46
1:A:543:THR:CG2	1:A:545:ASP:HB3	2.45	0.46
1:F:165:VAL:HG11	1:F:237:TRP:CE2	2.51	0.46
3:H:48:HIS:HA	3:H:49:PRO:HD3	1.79	0.46
1:F:362:HIS:HD2	1:F:364:SER:H	1.63	0.46
1:F:559:LEU:C	1:F:561:PRO:HD2	2.40	0.46
1:F:711:GLU:CD	1:F:711:GLU:C	2.84	0.46
1:F:809:GLU:O	1:F:812:ALA:HB3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:828:VAL:O	1:F:830:LYS:NZ	2.48	0.46
1:F:889:ARG:HH11	1:F:889:ARG:HG2	1.79	0.46
5:J:55:G:H2'	5:J:56:U:C6	2.51	0.46
1:A:187:GLU:HA	1:A:242:HIS:HD2	1.81	0.45
1:A:754:THR:HG22	1:A:755:SER:N	2.32	0.45
3:C:23:LYS:NZ	6:C:1177:GTP:O2G	2.44	0.45
3:H:80:TYR:N	3:H:80:TYR:CD1	2.84	0.45
1:A:495:VAL:HG13	1:A:496:PHE:HD1	1.81	0.45
1:A:593:ARG:HH12	1:A:601:ARG:NH1	2.07	0.45
1:A:593:ARG:HH12	1:A:601:ARG:HH12	1.64	0.45
1:A:94:VAL:O	1:A:97:LEU:HB2	2.16	0.45
1:A:568:GLU:H	1:A:568:GLU:HG3	1.17	0.45
1:F:825:ASP:C	1:F:827:PRO:HD3	2.42	0.45
1:F:1026:THR:HG22	1:F:1030:ILE:CD1	2.47	0.45
1:F:1085:GLN:HE22	3:H:130:LYS:HE2	1.82	0.45
1:A:205:GLN:HE21	1:A:205:GLN:CA	2.19	0.45
1:A:244:THR:HA	1:A:248:CYS:SG	2.56	0.45
1:A:563:VAL:HG11	1:A:570:LEU:HG	1.97	0.45
3:C:118:VAL:HG11	3:C:160:PRO:HB3	1.97	0.45
1:A:154:MET:HE2	1:A:196:THR:HG21	1.97	0.45
3:C:19:GLY:HA2	6:C:1177:GTP:O2G	2.17	0.45
1:F:736:CYS:O	1:F:736:CYS:SG	2.75	0.45
3:H:8:GLN:HB3	3:H:58:PRO:O	2.16	0.45
1:A:194:LEU:HD11	1:A:253:ILE:HD12	1.97	0.45
1:A:509:PHE:O	1:A:513:VAL:HG23	2.17	0.45
1:F:620:LEU:N	1:F:621:PRO:HD2	2.32	0.45
1:F:1065:LEU:O	1:F:1068:ALA:HB3	2.16	0.45
1:A:103:LEU:HB2	1:A:108:GLU:HB2	1.98	0.45
1:A:129:PRO:HD2	1:A:174:ARG:HH22	1.82	0.45
1:A:457:THR:O	1:A:461:MET:HG3	2.16	0.45
1:A:526:ILE:HG22	1:A:562:PHE:HE2	1.82	0.45
3:C:22:GLY:HA2	6:C:1177:GTP:PA	2.57	0.45
1:A:420:GLU:O	1:A:423:ARG:HB2	2.17	0.45
1:A:495:VAL:HG23	1:A:824:ASN:ND2	2.32	0.45
1:F:295:ALA:O	1:F:299:ILE:HG12	2.17	0.45
1:F:390:LEU:O	1:F:393:ILE:HG22	2.17	0.45
1:F:186:MET:CE	1:F:190:PHE:CD1	2.90	0.45
1:F:264:GLN:HG3	1:F:264:GLN:H	1.52	0.45
1:F:547:LEU:HD21	1:F:823:LEU:HD13	1.98	0.45
3:H:124:VAL:HG11	3:H:148:ASP:HB2	1.98	0.45
5:J:58:U:H2'	5:J:59:G:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129:PRO:CD	1:A:174:ARG:HH22	2.30	0.44
1:A:560:PHE:N	1:A:561:PRO:CD	2.79	0.44
1:F:965:LEU:O	1:F:969:VAL:HG23	2.17	0.44
1:A:593:ARG:HD2	1:A:597:VAL:CG1	2.46	0.44
1:F:54:LEU:O	1:F:64:ARG:HA	2.17	0.44
1:F:129:PRO:HG2	1:F:174:ARG:HH22	1.79	0.44
1:F:1036:LEU:HD22	1:F:1093:LEU:HD21	1.98	0.44
3:H:101:VAL:N	3:H:102:PRO:CD	2.80	0.44
1:A:281:LEU:HD12	1:A:281:LEU:HA	1.82	0.44
1:A:618:LEU:HD12	1:A:618:LEU:HA	1.82	0.44
1:A:744:ALA:O	1:A:749:PHE:HB2	2.17	0.44
1:F:125:LYS:HD2	1:F:170:LEU:HD21	1.98	0.44
1:A:658:GLN:C	1:A:660:LYS:H	2.25	0.44
1:A:1074:THR:HG22	1:A:1078:LYS:HE3	1.98	0.44
1:F:303:ALA:O	1:F:306:ALA:HB3	2.17	0.44
1:F:430:GLU:OE1	1:F:430:GLU:N	2.50	0.44
1:A:194:LEU:HD13	1:A:250:LEU:HD23	1.99	0.44
1:A:521:LEU:HD22	1:A:525:GLU:CB	2.47	0.44
1:A:869:ALA:HA	1:A:915:ILE:HD11	2.00	0.44
1:F:84:ARG:HE	1:F:84:ARG:HB3	1.53	0.44
1:F:588:GLU:HB2	1:F:589:SER:H	1.50	0.44
5:J:58:U:C2	5:J:59:G:C8	3.06	0.44
1:F:186:MET:O	1:F:190:PHE:HB2	2.18	0.44
1:F:855:GLY:HA2	1:F:862:PHE:HD2	1.82	0.44
1:F:895:PHE:C	1:F:898:PRO:HD2	2.43	0.44
1:F:291:PHE:HA	1:F:296:MET:CE	2.47	0.44
1:A:916:LEU:HD23	1:A:916:LEU:HA	1.87	0.44
1:F:167:PHE:O	1:F:168:GLN:C	2.61	0.44
1:F:858:MET:HB2	1:F:862:PHE:HB2	2.00	0.44
1:F:1070:THR:O	1:F:1074:THR:OG1	2.34	0.44
1:A:105:ILE:CD1	1:A:105:ILE:CB	2.86	0.43
1:A:442:GLN:O	1:A:446:VAL:HG23	2.18	0.43
1:A:651:ALA:O	1:A:655:ILE:HG13	2.18	0.43
1:A:658:GLN:C	1:A:660:LYS:N	2.73	0.43
1:F:91:LYS:HE3	1:F:132:TRP:CH2	2.53	0.43
1:F:592:PRO:HG3	1:F:829:PHE:HE1	1.83	0.43
1:F:889:ARG:HB3	1:F:890:PRO:CD	2.45	0.43
1:A:526:ILE:O	1:A:528:VAL:N	2.50	0.43
1:A:795:MET:HE1	1:A:803:LEU:HD22	2.00	0.43
3:H:150:SER:CB	3:H:153:SER:HB3	2.48	0.43
1:A:632:GLN:HG2	1:F:639:LEU:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1056:LEU:HA	1:A:1056:LEU:HD23	1.74	0.43
1:F:1105:ARG:HG2	1:F:1111:ILE:HG13	2.00	0.43
3:H:85:CYS:HB2	3:H:164:LEU:HD22	2.00	0.43
1:A:913:SER:HB3	1:A:914:PRO:CD	2.48	0.43
1:F:775:ASN:HD22	1:F:775:ASN:H	1.65	0.43
1:F:1108:TYR:O	1:F:1111:ILE:HG12	2.18	0.43
1:A:313:GLU:HG3	1:A:424:PHE:HZ	1.80	0.43
1:A:430:GLU:OE1	1:A:430:GLU:N	2.50	0.43
1:A:550:SER:HB2	1:A:600:VAL:HG12	1.99	0.43
1:A:563:VAL:CG1	1:A:570:LEU:HG	2.49	0.43
1:F:259:ASN:ND2	1:F:298:TYR:HD2	2.17	0.43
3:C:30:HIS:CE1	3:C:157:PHE:O	2.71	0.43
1:F:362:HIS:CD2	1:F:367:LEU:HD12	2.54	0.43
1:F:452:ARG:HG3	1:F:520:THR:CG2	2.48	0.43
1:F:1030:ILE:O	1:F:1034:ASN:HB2	2.19	0.43
1:A:596:ALA:HB2	1:A:823:LEU:CB	2.46	0.43
3:C:110:ARG:HD3	3:C:110:ARG:HA	1.85	0.43
3:H:29:ARG:O	3:H:33:GLY:HA2	2.19	0.43
1:A:162:GLU:HB3	1:A:167:PHE:CE1	2.54	0.43
1:A:387:ASP:HA	1:A:388:PRO:HD3	1.84	0.43
1:F:1105:ARG:HH11	1:F:1134:LEU:HD11	1.82	0.43
3:H:80:TYR:HB2	3:H:111:VAL:HG11	1.99	0.43
1:A:447:MET:O	1:A:450:ALA:HB3	2.18	0.43
1:F:566:ARG:HE	1:F:568:GLU:CD	2.27	0.43
1:F:570:LEU:HD13	1:F:622:ASN:HD21	1.83	0.43
1:F:807:ASP:HA	1:F:810:LYS:HD3	2.00	0.43
1:A:186:MET:O	1:A:190:PHE:HB2	2.19	0.43
1:A:429:ASP:OD2	1:A:429:ASP:N	2.49	0.43
1:F:121:VAL:HG21	1:F:159:ARG:HB3	2.01	0.43
1:F:1135:ASN:HB2	1:F:1136:PRO:HD3	2.01	0.43
1:A:856:PRO:HB3	1:A:902:PHE:CD2	2.53	0.42
1:F:661:ASN:H	1:F:665:GLN:HE21	1.65	0.42
1:F:1101:TYR:CZ	1:F:1105:ARG:HG3	2.54	0.42
1:A:373:MET:HE1	4:D:8:A:H4'	2.02	0.42
1:F:17:VAL:HG23	3:H:75:LEU:HD21	1.99	0.42
1:F:920:PHE:CE2	1:F:973:ILE:HG12	2.55	0.42
3:H:24:THR:N	6:H:1177:GTP:O1A	2.52	0.42
3:H:148:ASP:C	3:H:149:ILE:HG23	2.44	0.42
1:F:689:LEU:O	1:F:782:THR:OG1	2.30	0.42
1:A:27:GLN:HE21	1:A:31:LEU:CD1	2.30	0.42
1:A:1112:ARG:HD2	1:A:1130:ASP:OD2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:587:GLU:HG2	1:F:590:LYS:HB2	2.01	0.42
1:F:821:LEU:HD11	1:F:828:VAL:CG2	2.50	0.42
1:A:1100:ILE:O	1:A:1104:LEU:HB2	2.20	0.42
1:F:452:ARG:HB2	1:F:516:GLN:NE2	2.34	0.42
3:H:45:VAL:HG22	3:H:46:GLU:N	2.34	0.42
1:A:22:ASP:HB3	1:A:25:SER:HB3	2.02	0.42
1:A:236:ASP:HB3	1:A:273:ILE:HG21	2.01	0.42
1:A:710:LEU:HG	1:A:712:ASP:OD2	2.19	0.42
1:F:585:THR:O	1:F:587:GLU:N	2.53	0.42
1:F:703:GLN:H	1:F:796:ALA:HB3	1.85	0.42
1:F:1036:LEU:O	1:F:1083:HIS:NE2	2.52	0.42
3:H:106:ARG:O	3:H:110:ARG:HB2	2.20	0.42
1:A:165:VAL:HG21	1:A:237:TRP:CH2	2.54	0.42
1:F:22:ASP:O	1:F:23:PRO:C	2.63	0.42
1:F:799:PHE:C	1:F:801:LYS:H	2.27	0.42
1:A:104:ASN:C	1:A:105:ILE:CG1	2.83	0.42
1:A:821:LEU:HD21	1:A:828:VAL:CG2	2.50	0.42
1:F:355:SER:O	1:F:358:ALA:HB3	2.20	0.42
3:H:92:VAL:HG22	3:H:122:ASN:O	2.20	0.42
1:A:405:LEU:CD2	1:A:440:ARG:HD2	2.40	0.42
1:A:741:LEU:HD11	1:A:759:PRO:HG3	2.02	0.42
1:F:132:TRP:HH2	1:F:138:GLU:HG2	1.85	0.42
1:F:316:TYR:CE2	1:F:320:LYS:HD2	2.54	0.42
1:F:752:GLY:C	1:F:753:TYR:CD1	2.98	0.42
1:F:835:ARG:HA	1:F:835:ARG:NE	2.33	0.42
1:A:197:LEU:HD13	1:A:227:ALA:HB3	2.01	0.42
1:F:646:CYS:SG	1:F:726:TYR:HB3	2.60	0.42
1:F:729:LEU:HD23	1:F:729:LEU:O	2.19	0.42
1:F:796:ALA:O	1:F:797:GLU:C	2.63	0.42
1:A:13:LEU:HD23	1:A:36:PHE:HE2	1.84	0.41
1:A:132:TRP:N	1:A:133:PRO:CD	2.83	0.41
1:A:472:THR:HG22	1:A:473:PHE:N	2.34	0.41
1:A:962:VAL:O	1:A:966:THR:OG1	2.34	0.41
1:F:791:MET:C	1:F:793:ALA:H	2.28	0.41
3:H:12:LYS:HD3	3:H:83:ALA:HA	2.02	0.41
1:A:65:HIS:CD2	1:A:111:HIS:HD2	2.37	0.41
1:A:517:MET:HE2	1:A:517:MET:HB3	1.91	0.41
1:A:665:GLN:H	1:A:665:GLN:HG3	1.66	0.41
1:A:695:PHE:O	1:A:696:ILE:C	2.59	0.41
1:A:835:ARG:HA	1:A:835:ARG:NE	2.28	0.41
1:A:1030:ILE:HA	1:A:1071:TRP:HH2	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:302:ALA:O	1:F:305:THR:OG1	2.38	0.41
1:A:522:ASN:C	1:A:524:GLU:N	2.76	0.41
1:A:563:VAL:H	1:A:563:VAL:HG23	1.63	0.41
1:A:745:LYS:HA	1:A:750:VAL:CG1	2.50	0.41
1:A:901:LEU:HD21	1:A:975:VAL:HG12	2.02	0.41
3:C:39:TYR:HE1	6:C:1177:GTP:O3B	2.02	0.41
1:F:164:VAL:CG1	1:F:165:VAL:HG23	2.48	0.41
1:F:303:ALA:O	1:F:306:ALA:CB	2.68	0.41
3:C:126:ILE:O	3:C:127:LYS:C	2.63	0.41
1:F:806:LEU:HD12	1:F:808:ALA:HB3	2.02	0.41
1:A:57:LYS:H	1:A:57:LYS:HG2	1.58	0.41
1:A:127:GLU:HB2	1:A:131:HIS:HB2	2.02	0.41
1:A:545:ASP:HA	1:A:546:PRO:HD3	1.87	0.41
1:A:738:PRO:CD	1:A:749:PHE:CE1	3.03	0.41
3:C:138:PHE:CZ	3:C:142:LYS:HG3	2.55	0.41
5:E:40:G:N3	5:E:40:G:H2'	2.36	0.41
1:F:328:ALA:O	1:F:332:GLN:HG2	2.21	0.41
1:F:1111:ILE:HG12	1:F:1111:ILE:H	1.62	0.41
3:H:9:VAL:CG2	3:H:59:ILE:HD12	2.51	0.41
3:H:125:ASP:HB3	3:H:153:SER:HB2	2.01	0.41
1:A:604:ALA:O	1:A:608:ILE:HG12	2.21	0.41
1:A:710:LEU:HG	1:A:712:ASP:CG	2.46	0.41
1:A:711:GLU:HG2	1:A:714:CYS:HB2	2.02	0.41
1:A:877:PHE:HB3	1:A:880:LEU:HD11	2.02	0.41
1:A:913:SER:HB3	1:A:914:PRO:HD3	2.02	0.41
1:F:66:PHE:CE2	1:F:70:ILE:HD11	2.56	0.41
1:F:165:VAL:HG11	1:F:237:TRP:CD2	2.55	0.41
3:H:9:VAL:HG21	3:H:59:ILE:HD12	2.02	0.41
3:H:110:ARG:HA	3:H:110:ARG:HD3	1.83	0.41
1:A:280:LYS:HB3	1:A:283:ASP:OD1	2.21	0.41
1:A:584:GLU:C	1:A:586:VAL:H	2.28	0.41
1:A:836:MET:O	1:A:839:PHE:HB3	2.21	0.41
1:F:282:GLU:HA	1:F:285:LYS:HE3	2.02	0.41
1:F:674:ALA:N	1:F:675:PRO:CD	2.83	0.41
1:A:135:MET:HE3	1:A:135:MET:HB3	1.98	0.41
1:A:799:PHE:HA	1:A:833:LEU:HD13	2.03	0.41
1:A:60:VAL:O	1:A:61:ALA:C	2.64	0.41
1:A:201:VAL:O	1:A:205:GLN:HG2	2.21	0.41
1:A:240:MET:HB2	1:A:240:MET:HE2	1.86	0.41
1:A:291:PHE:HA	1:A:296:MET:CE	2.45	0.41
1:A:291:PHE:O	1:A:348:ASN:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:337:LEU:HA	1:A:337:LEU:HD12	1.83	0.41
1:A:339:ALA:C	1:A:341:SER:N	2.79	0.41
1:A:362:HIS:CD2	1:A:367:LEU:HD12	2.56	0.41
1:A:584:GLU:O	1:A:586:VAL:N	2.54	0.41
1:A:698:TYR:CD2	1:A:717:ASN:HB3	2.56	0.41
1:F:114:ASP:OD1	1:F:159:ARG:NH1	2.53	0.41
1:F:236:ASP:OD1	1:F:236:ASP:N	2.52	0.41
1:F:616:PRO:CB	1:F:658:GLN:HG3	2.47	0.41
1:F:688:VAL:O	1:F:695:PHE:HB2	2.21	0.41
1:F:1026:THR:O	1:F:1030:ILE:HG13	2.21	0.41
1:A:5:GLN:HG2	1:A:6:VAL:N	2.35	0.41
1:A:380:ARG:CZ	4:D:9:U:H4'	2.50	0.41
1:A:877:PHE:CZ	1:A:895:PHE:HE2	2.39	0.41
1:F:26:THR:HB	1:F:29:TYR:CD1	2.56	0.41
1:F:655:ILE:HD13	1:F:655:ILE:HG21	1.76	0.41
1:F:1019:MET:C	1:F:1021:HIS:H	2.28	0.41
1:A:190:PHE:HE1	1:A:234:TYR:HB3	1.87	0.40
1:A:313:GLU:OE2	3:C:167:LYS:NZ	2.54	0.40
1:A:851:LEU:HD23	1:A:851:LEU:HA	1.91	0.40
1:F:550:SER:HB2	1:F:600:VAL:CG1	2.51	0.40
1:A:168:GLN:O	1:A:168:GLN:HG3	2.21	0.40
1:A:205:GLN:HA	1:A:205:GLN:NE2	2.26	0.40
1:A:897:LYS:HB3	1:A:898:PRO:CD	2.51	0.40
1:A:1018:LEU:HB3	1:A:1024:VAL:CG1	2.51	0.40
1:F:1121:ILE:HD12	2:G:1315:UNK:O	2.21	0.40
1:A:741:LEU:O	1:A:742:GLU:C	2.64	0.40
1:F:24:ASN:OD1	1:F:24:ASN:N	2.53	0.40
1:F:304:GLN:C	1:F:306:ALA:N	2.78	0.40
1:A:1026:THR:HG22	1:A:1030:ILE:HD11	2.02	0.40
3:C:101:VAL:N	3:C:102:PRO:CD	2.84	0.40
1:F:7:ASN:HA	1:F:53:ARG:HH12	1.86	0.40
1:F:128:TRP:O	1:F:130:GLN:N	2.55	0.40
1:F:971:ASP:O	1:F:975:VAL:HG23	2.21	0.40
1:A:97:LEU:HD23	1:A:97:LEU:HA	1.81	0.40
1:A:124:ILE:HD13	1:A:124:ILE:HG21	1.91	0.40
1:A:517:MET:CG	1:A:521:LEU:HD12	2.50	0.40
1:A:879:ASN:OD1	1:A:882:ASN:ND2	2.53	0.40
1:F:337:LEU:HD21	1:F:343:VAL:O	2.21	0.40
1:F:531:GLY:HA3	1:F:562:PHE:CE2	2.57	0.40
1:F:1056:LEU:HD23	1:F:1056:LEU:HA	1.82	0.40
1:F:1064:LEU:HB2	1:F:1108:TYR:OH	2.21	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	1062/1204 (88%)	965 (91%)	73 (7%)	24 (2%)	5	18
1	F	1062/1204 (88%)	948 (89%)	92 (9%)	22 (2%)	5	20
3	C	168/216 (78%)	154 (92%)	11 (6%)	3 (2%)	6	23
3	H	168/216 (78%)	152 (90%)	15 (9%)	1 (1%)	21	50
All	All	2460/2840 (87%)	2219 (90%)	191 (8%)	50 (2%)	6	21

All (50) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	108	GLU
1	A	211	THR
1	A	245	ALA
1	A	340	ASP
1	A	712	ASP
3	C	127	LYS
1	F	128	TRP
1	F	306	ALA
1	F	523	ARG
1	F	585	THR
1	F	712	ASP
3	H	127	LYS
1	A	100	ASN
1	A	168	GLN
1	A	495	VAL
1	A	523	ARG
1	A	527	PRO
1	A	587	GLU
1	A	1060	LEU
1	A	1120	GLU

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Mol	Chain	Res	Type
1	F	103	LEU
1	F	805	MET
1	F	1083	HIS
1	A	585	THR
1	A	616	PRO
1	A	831	THR
1	A	886	TYR
1	A	1083	HIS
3	C	10	GLN
1	F	248	CYS
1	F	586	VAL
1	F	587	GLU
1	F	594	THR
1	F	820	LEU
1	F	1135	ASN
1	A	348	ASN
1	A	588	GLU
1	A	1135	ASN
3	C	8	GLN
1	F	105	ILE
1	A	105	ILE
1	A	241	SER
1	F	132	TRP
1	A	827	PRO
1	F	23	PRO
1	F	46	ILE
1	F	129	PRO
1	F	527	PRO
1	F	817	PRO
1	F	495	VAL

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	967/1073 (90%)	878 (91%)	89 (9%)	8 26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	F	967/1073 (90%)	876 (91%)	91 (9%)	8	25
3	C	150/185 (81%)	144 (96%)	6 (4%)	28	61
3	H	150/185 (81%)	145 (97%)	5 (3%)	33	65
All	All	2234/2516 (89%)	2043 (92%)	191 (8%)	10	29

All (191) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	ASN
1	A	26	THR
1	A	28	ARG
1	A	38	GLU
1	A	39	GLU
1	A	46	ILE
1	A	57	LYS
1	A	59	GLN
1	A	60	VAL
1	A	105	ILE
1	A	116	LEU
1	A	130	GLN
1	A	132	TRP
1	A	138	GLU
1	A	147	GLU
1	A	169	THR
1	A	188	ARG
1	A	205	GLN
1	A	229	ASN
1	A	231	LEU
1	A	236	ASP
1	A	250	LEU
1	A	257	LEU
1	A	261	GLN
1	A	269	GLU
1	A	275	VAL
1	A	284	ARG
1	A	299	ILE
1	A	300	LEU
1	A	329	LEU
1	A	341	SER
1	A	406	VAL
1	A	415	ASP

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Mol	Chain	Res	Type
1	A	433	ASN
1	A	440	ARG
1	A	442	GLN
1	A	466	LEU
1	A	495	VAL
1	A	520	THR
1	A	523	ARG
1	A	526	ILE
1	A	532	ILE
1	A	535	LEU
1	A	568	GLU
1	A	576	LYS
1	A	585	THR
1	A	600	VAL
1	A	624	ASP
1	A	636	ASN
1	A	641	THR
1	A	692	VAL
1	A	701	THR
1	A	711	GLU
1	A	736	CYS
1	A	760	ILE
1	A	762	ARG
1	A	773	LEU
1	A	775	ASN
1	A	792	LEU
1	A	825	ASP
1	A	835	ARG
1	A	849	HIS
1	A	858	MET
1	A	860	GLN
1	A	868	LEU
1	A	870	THR
1	A	881	ASN
1	A	883	ILE
1	A	894	VAL
1	A	899	LEU
1	A	906	GLU
1	A	907	HIS
1	A	919	LEU
1	A	963	ARG
1	A	1014	LEU

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Mol	Chain	Res	Type
1	A	1016	LYS
1	A	1034	ASN
1	A	1036	LEU
1	A	1040	ASP
1	A	1041	THR
1	A	1042	LEU
1	A	1045	GLN
1	A	1082	MET
1	A	1096	LEU
1	A	1105	ARG
1	A	1111	ILE
1	A	1121	ILE
1	A	1123	LYS
1	A	1132	LYS
3	C	60	LYS
3	C	69	GLN
3	C	84	GLN
3	C	96	VAL
3	C	112	CYS
3	C	141	LYS
1	F	24	ASN
1	F	25	SER
1	F	27	GLN
1	F	28	ARG
1	F	38	GLU
1	F	39	GLU
1	F	46	ILE
1	F	57	LYS
1	F	58	THR
1	F	59	GLN
1	F	105	ILE
1	F	116	LEU
1	F	127	GLU
1	F	131	HIS
1	F	132	TRP
1	F	138	GLU
1	F	147	GLU
1	F	181	THR
1	F	188	ARG
1	F	205	GLN
1	F	231	LEU
1	F	250	LEU

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Mol	Chain	Res	Type
1	F	261	GLN
1	F	264	GLN
1	F	269	GLU
1	F	275	VAL
1	F	280	LYS
1	F	300	LEU
1	F	329	LEU
1	F	341	SER
1	F	342	ASP
1	F	383	ILE
1	F	405	LEU
1	F	423	ARG
1	F	427	ASP
1	F	440	ARG
1	F	466	LEU
1	F	491	SER
1	F	522	ASN
1	F	523	ARG
1	F	535	LEU
1	F	543	THR
1	F	568	GLU
1	F	570	LEU
1	F	575	SER
1	F	576	LYS
1	F	590	LYS
1	F	594	THR
1	F	617	GLN
1	F	619	VAL
1	F	703	GLN
1	F	734	ARG
1	F	741	LEU
1	F	742	GLU
1	F	754	THR
1	F	762	ARG
1	F	773	LEU
1	F	775	ASN
1	F	797	GLU
1	F	800	THR
1	F	803	LEU
1	F	806	LEU
1	F	810	LYS
1	F	820	LEU

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Mol	Chain	Res	Type
1	F	824	ASN
1	F	826	SER
1	F	830	LYS
1	F	831	THR
1	F	835	ARG
1	F	849	HIS
1	F	860	GLN
1	F	868	LEU
1	F	880	LEU
1	F	881	ASN
1	F	882	ASN
1	F	890	PRO
1	F	894	VAL
1	F	899	LEU
1	F	919	LEU
1	F	963	ARG
1	F	1014	LEU
1	F	1034	ASN
1	F	1041	THR
1	F	1042	LEU
1	F	1045	GLN
1	F	1085	GLN
1	F	1096	LEU
1	F	1105	ARG
1	F	1111	ILE
1	F	1123	LYS
1	F	1132	LYS
3	H	60	LYS
3	H	69	GLN
3	H	84	GLN
3	H	101	VAL
3	H	141	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (91) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	24	ASN
1	A	27	GLN
1	A	65	HIS
1	A	69	GLN
1	A	73	HIS
1	A	80	ASN

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Mol	Chain	Res	Type
1	A	111	HIS
1	A	130	GLN
1	A	145	GLN
1	A	149	GLN
1	A	168	GLN
1	A	173	GLN
1	A	179	GLN
1	A	202	ASN
1	A	205	GLN
1	A	213	GLN
1	A	242	HIS
1	A	264	GLN
1	A	348	ASN
1	A	362	HIS
1	A	381	HIS
1	A	442	GLN
1	A	540	ASN
1	A	572	GLN
1	A	617	GLN
1	A	628	ASN
1	A	629	HIS
1	A	657	ASN
1	A	665	GLN
1	A	703	GLN
1	A	775	ASN
1	A	784	ASN
1	A	837	GLN
1	A	849	HIS
1	A	879	ASN
1	A	882	ASN
1	A	907	HIS
1	A	935	ASN
1	A	1021	HIS
1	A	1058	GLN
1	A	1135	ASN
3	C	8	GLN
3	C	10	GLN
3	C	30	HIS
3	C	48	HIS
3	C	114	ASN
3	C	143	ASN
3	C	156	ASN

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Mol	Chain	Res	Type
3	C	173	ASN
1	F	65	HIS
1	F	111	HIS
1	F	145	GLN
1	F	149	GLN
1	F	173	GLN
1	F	179	GLN
1	F	185	ASN
1	F	200	ASN
1	F	202	ASN
1	F	205	GLN
1	F	213	GLN
1	F	242	HIS
1	F	247	ASN
1	F	261	GLN
1	F	264	GLN
1	F	362	HIS
1	F	372	GLN
1	F	442	GLN
1	F	443	GLN
1	F	516	GLN
1	F	622	ASN
1	F	628	ASN
1	F	632	GLN
1	F	636	ASN
1	F	657	ASN
1	F	665	GLN
1	F	775	ASN
1	F	784	ASN
1	F	837	GLN
1	F	860	GLN
1	F	879	ASN
1	F	882	ASN
1	F	907	HIS
1	F	935	ASN
1	F	1045	GLN
1	F	1058	GLN
1	F	1085	GLN
3	H	8	GLN
3	H	10	GLN
3	H	103	ASN
3	H	143	ASN

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Mol	Chain	Res	Type
3	H	156	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	D	20/24 (83%)	7 (35%)	0
4	I	20/24 (83%)	6 (30%)	0
5	E	23/24 (95%)	4 (17%)	0
5	J	23/24 (95%)	3 (13%)	0
All	All	86/96 (89%)	20 (23%)	0

All (20) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	D	6	A
4	D	11	C
4	D	15	A
4	D	16	C
4	D	19	G
4	D	20	A
4	D	21	A
5	E	41	G
5	E	44	U
5	E	47	A
5	E	62	G
4	I	11	C
4	I	15	A
4	I	16	C
4	I	19	G
4	I	20	A
4	I	21	A
5	J	41	G
5	J	47	A
5	J	62	G

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 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
6	GTP	C	1177	7	33,34,34	0.90	1 (3%)	50,54,54	1.64	10 (20%)
6	GTP	H	1177	7	33,34,34	1.06	1 (3%)	50,54,54	1.90	15 (30%)

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
6	GTP	C	1177	7	-	1/22/38/38	0/3/3/3
6	GTP	H	1177	7	-	2/22/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	H	1177	GTP	PB-O3B	3.38	1.63	1.59
6	C	1177	GTP	C2-N3	2.97	1.40	1.33

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	H	1177	GTP	C5-C4-N3	-4.96	120.49	128.39
6	C	1177	GTP	C5-C4-N3	-4.67	120.96	128.39
6	H	1177	GTP	O2G-PG-O3B	4.46	119.59	104.64
6	C	1177	GTP	C2-N3-C4	4.38	119.85	112.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	H	1177	GTP	C2-N3-C4	4.04	119.26	112.30
6	H	1177	GTP	O4'-C1'-N9	3.14	115.47	108.36
6	H	1177	GTP	O2A-PA-O3A	3.12	115.69	107.27
6	C	1177	GTP	O3G-PG-O2G	3.03	119.17	107.80
6	H	1177	GTP	N9-C4-N3	2.92	131.80	125.95
6	C	1177	GTP	N9-C4-N3	2.82	131.58	125.95
6	H	1177	GTP	C5'-C4'-C3'	-2.57	105.96	115.21
6	H	1177	GTP	C2'-C1'-N9	-2.51	106.26	113.25
6	C	1177	GTP	C2-N1-C6	-2.48	120.62	125.11
6	C	1177	GTP	C8-N7-C5	2.43	108.58	104.26
6	H	1177	GTP	C8-N7-C5	2.41	108.55	104.26
6	C	1177	GTP	N9-C8-N7	-2.38	108.98	113.40
6	H	1177	GTP	C2-N1-C6	-2.35	120.85	125.11
6	C	1177	GTP	O3'-C3'-C4'	-2.30	104.47	111.08
6	C	1177	GTP	C5-C6-N1	2.22	118.90	113.25
6	H	1177	GTP	O3B-PG-O1G	-2.21	99.42	111.04
6	H	1177	GTP	O3G-PG-O1G	2.16	119.26	110.83
6	H	1177	GTP	C5-C6-N1	2.11	118.63	113.25
6	H	1177	GTP	C3'-C2'-C1'	2.06	105.36	101.46
6	C	1177	GTP	C4-C5-N7	-2.03	107.46	110.67
6	H	1177	GTP	N9-C8-N7	-2.00	109.69	113.40

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	H	1177	GTP	C3'-C4'-C5'-O5'
6	H	1177	GTP	O4'-C4'-C5'-O5'
6	C	1177	GTP	PA-O3A-PB-O1B

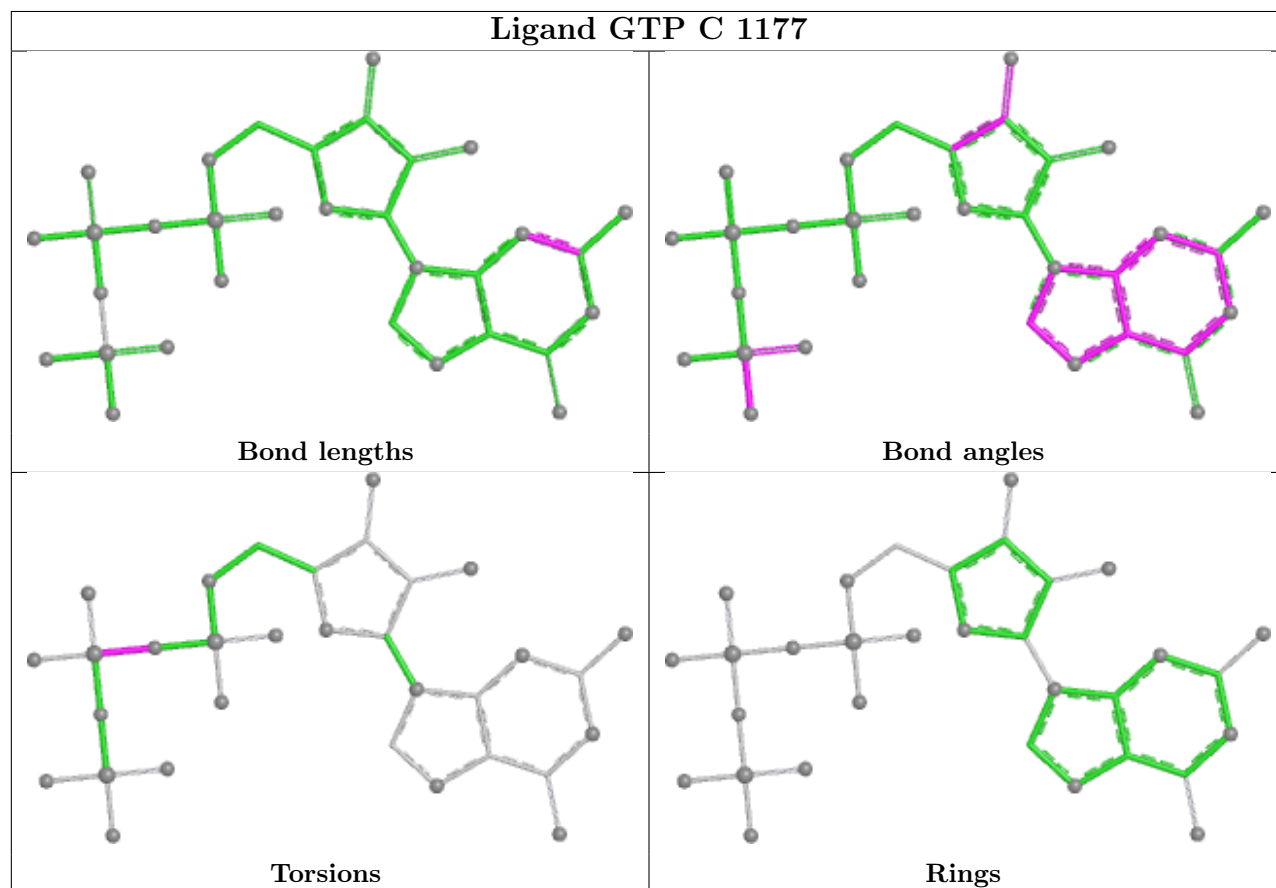
There are no ring outliers.

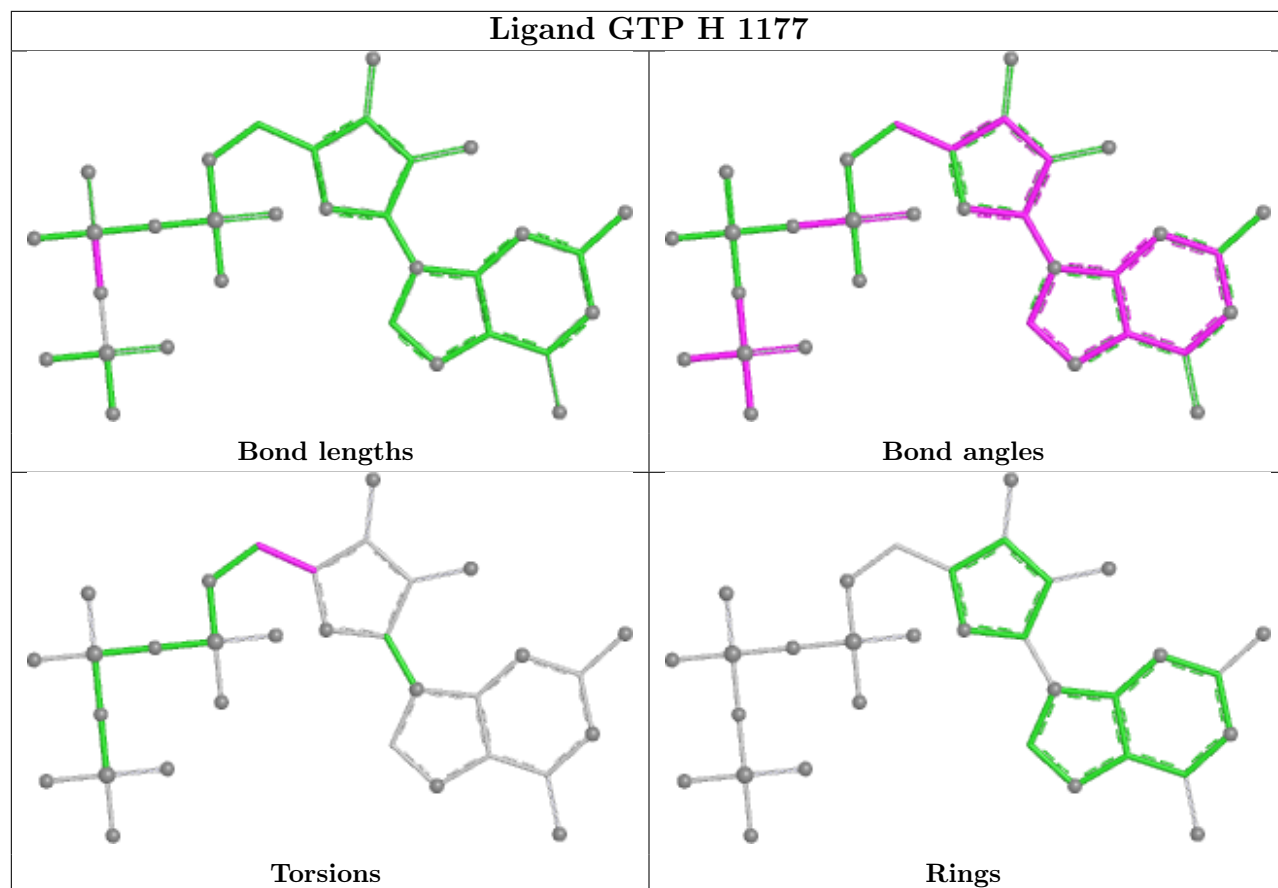
2 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	C	1177	GTP	9	0
6	H	1177	GTP	7	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

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





5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [\(i\)](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	1072/1204 (89%)	0.12	12 (1%) 78 71	32, 76, 127, 156	0
1	F	1072/1204 (89%)	0.38	44 (4%) 41 33	59, 94, 143, 162	0
2	B	0/13	-	-	-	-
2	G	0/13	-	-	-	-
3	C	170/216 (78%)	0.52	6 (3%) 47 38	59, 90, 115, 127	0
3	H	170/216 (78%)	0.48	5 (2%) 53 44	64, 88, 111, 122	0
4	D	22/24 (91%)	0.18	1 (4%) 38 30	62, 126, 220, 227	0
4	I	22/24 (91%)	0.98	2 (9%) 15 12	71, 191, 259, 263	0
5	E	24/24 (100%)	0.35	0 100 100	78, 118, 205, 210	0
5	J	24/24 (100%)	1.05	4 (16%) 4 3	121, 170, 256, 271	0
All	All	2576/2962 (86%)	0.30	74 (2%) 53 44	32, 86, 141, 271	0

All (74) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	823	LEU	5.0
3	H	7	PRO	4.6
3	C	7	PRO	3.4
1	F	1073	PHE	3.3
1	F	1072	LEU	3.3
1	F	819	PRO	3.2
1	F	585	THR	3.2
1	F	820	LEU	3.2
1	F	1065	LEU	3.0
3	C	35	PHE	3.0
1	F	4	ASP	3.0
1	F	586	VAL	3.0
4	D	14	G	2.9
1	F	1032	ALA	2.9

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Mol	Chain	Res	Type	RSRZ
1	F	1033	PHE	2.9
1	F	1049	SER	2.8
1	A	828	VAL	2.7
1	F	1077	LEU	2.7
1	A	1136	PRO	2.7
3	H	78	GLY	2.7
3	C	34	GLU	2.7
1	F	821	LEU	2.6
1	A	1132	LYS	2.6
5	J	62	G	2.6
1	F	708	PRO	2.6
1	F	1076	VAL	2.5
1	F	1125	SER	2.5
1	A	821	LEU	2.5
1	F	1100	ILE	2.5
1	F	39	GLU	2.5
1	F	574	PHE	2.5
1	F	308	GLY	2.4
3	C	32	THR	2.4
1	F	1084	GLY	2.4
1	F	1132	LYS	2.4
4	I	24	U	2.4
1	F	102	THR	2.4
1	A	586	VAL	2.4
1	A	583	PHE	2.4
1	F	1090	MET	2.4
1	A	308	GLY	2.3
1	F	839	PHE	2.3
1	F	1133	LEU	2.3
1	A	105	ILE	2.3
4	I	23	C	2.3
1	F	518	PHE	2.3
1	F	1036	LEU	2.3
1	F	1136	PRO	2.2
1	F	583	PHE	2.2
3	C	31	LEU	2.2
1	F	840	PHE	2.2
1	F	1068	ALA	2.2
5	J	41	G	2.2
1	F	1124	ASP	2.2
5	J	40	G	2.2
1	F	1119	PRO	2.1

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Mol	Chain	Res	Type	RSRZ
1	F	67	GLY	2.1
1	A	31	LEU	2.1
1	A	1133	LEU	2.1
1	F	814	LEU	2.1
1	F	1051	LEU	2.1
1	A	1055	LEU	2.1
3	H	39	TYR	2.1
3	C	46	GLU	2.1
1	F	964	MET	2.1
3	H	114	ASN	2.1
1	F	880	LEU	2.1
3	H	9	VAL	2.1
1	F	1111	ILE	2.1
1	F	1109	LEU	2.0
1	A	1080	LEU	2.0
1	F	34	LEU	2.0
5	J	63	C	2.0
1	F	2	ALA	2.0

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

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

6.3 Carbohydrates [i](#)

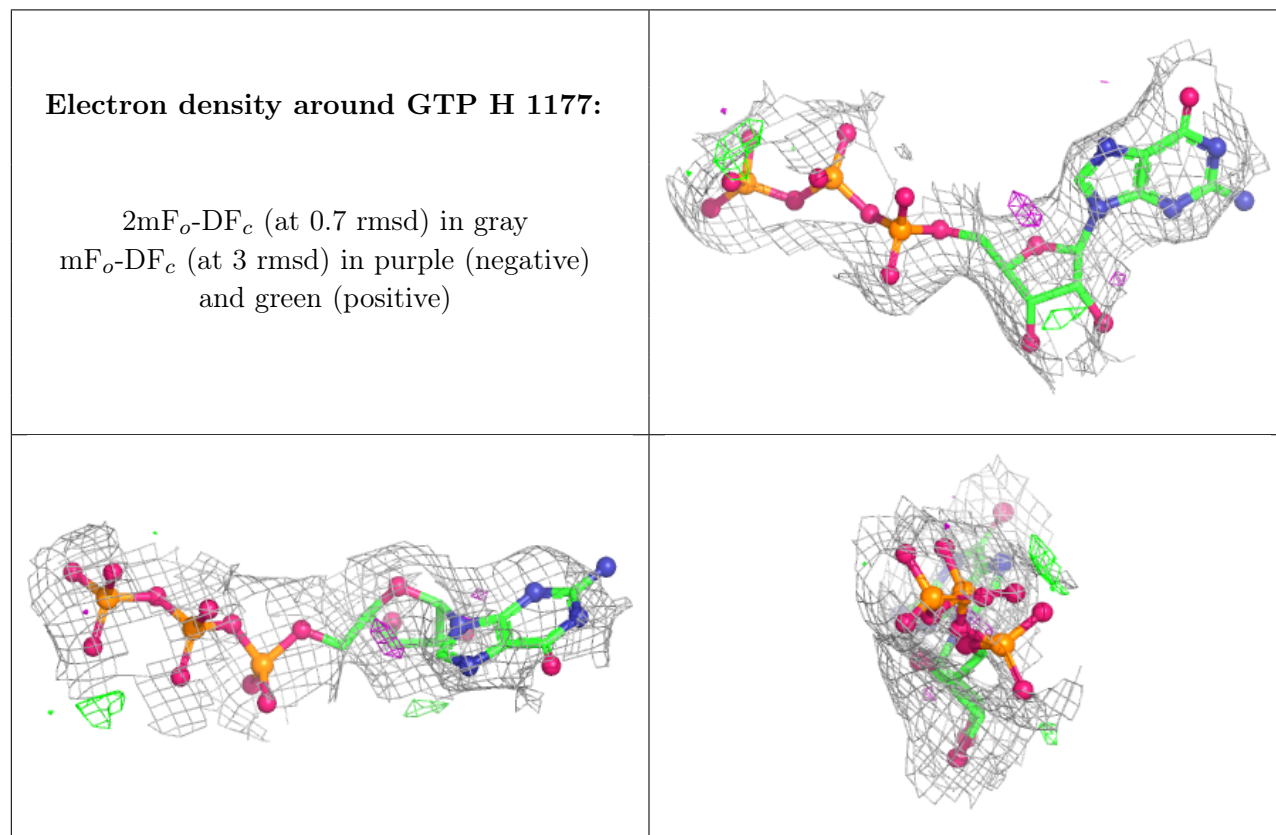
There are no oligosaccharides in this entry.

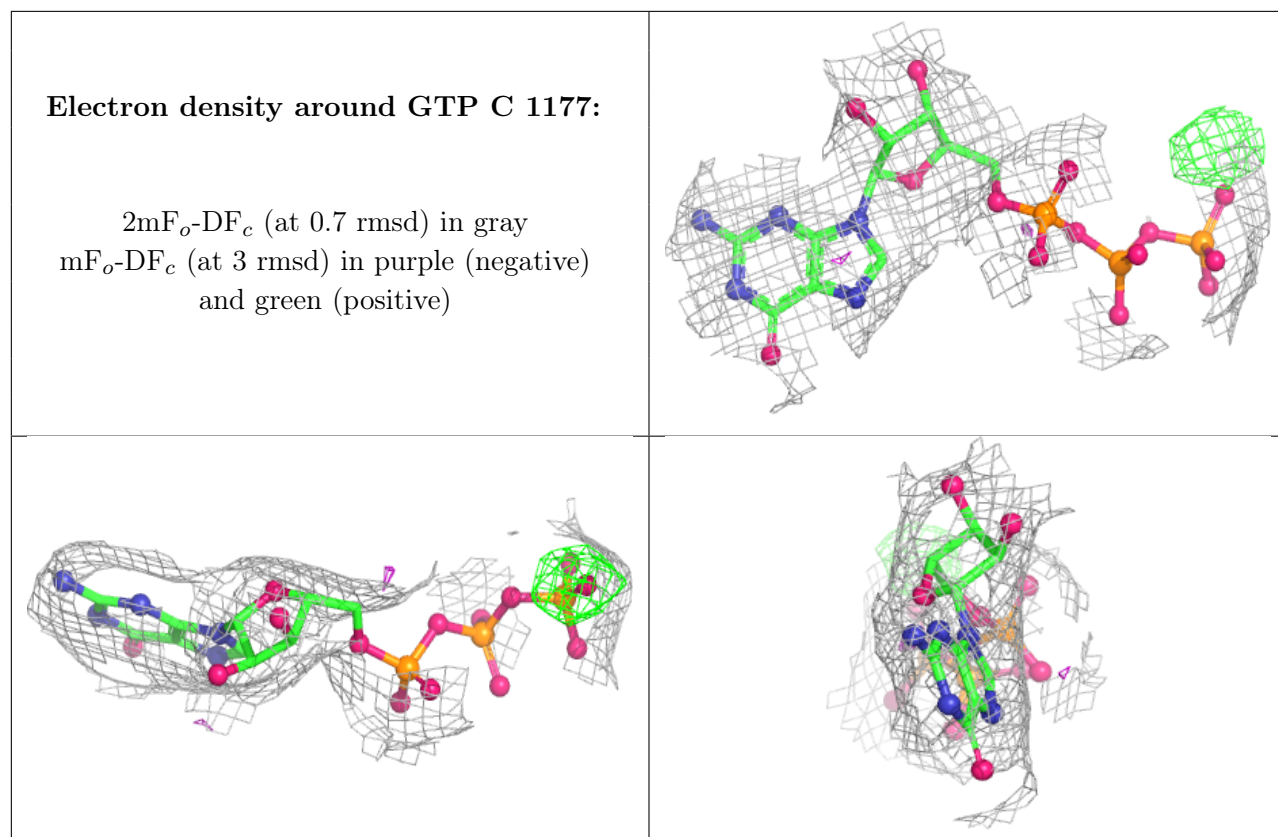
6.4 Ligands [i](#)

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(\AA^2)	Q<0.9
6	GTP	H	1177	32/32	0.90	0.09	92,100,112,115	0
6	GTP	C	1177	32/32	0.91	0.08	96,101,105,106	0
7	MG	H	1178	1/1	0.94	0.11	74,74,74,74	0
7	MG	C	1178	1/1	0.95	0.08	85,85,85,85	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.





6.5 Other polymers [i](#)

There are no such residues in this entry.