



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 07:59 PM UTC

PDB ID : 3IQW / pdb_00003iqw
Title : AMPPNP complex of C. therm. Get3
Authors : Bozkurt, G.; Wild, K.; Sinning, I.
Deposited on : 2009-08-21
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 ⓘ 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)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (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

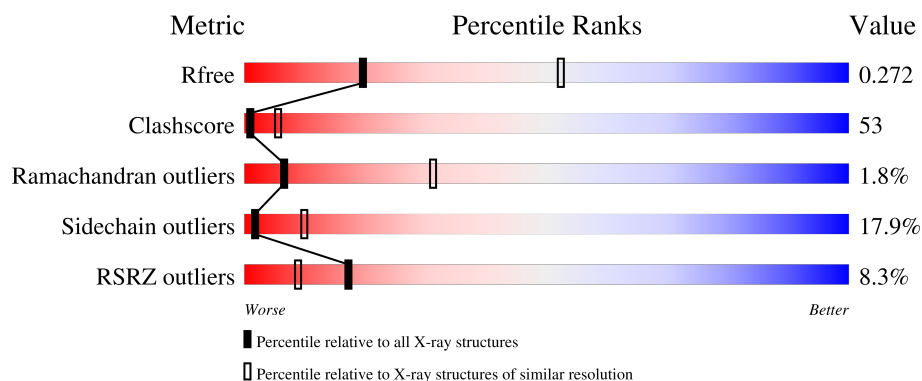
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 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}	180053	2672 (3.00-3.00)
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

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	334	<div> <div>5%</div> <div>34%</div> <div>31%</div> <div>12%</div> <div>•</div> <div>22%</div> </div>
1	B	334	<div> <div>8%</div> <div>29%</div> <div>36%</div> <div>10%</div> <div>•</div> <div>24%</div> </div>

2 Entry composition [i](#)

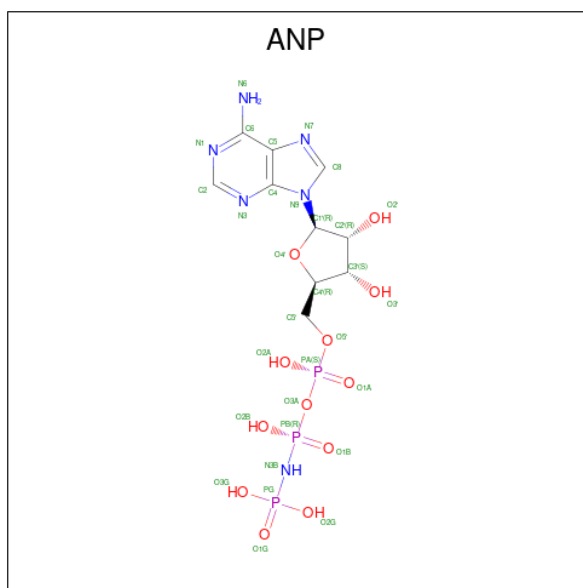
There are 5 unique types of molecules in this entry. The entry contains 4187 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Tail-anchored protein targeting factor Get3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	260	Total	C	N	O	S	0	0	0
			2075	1322	343	396	14			
1	B	255	Total	C	N	O	S	0	0	0
			2042	1301	338	389	14			

- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (CCD ID: ANP) (formula: $C_{10}H_{17}N_6O_{12}P_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
2	B	1	Total	C	N	O	P	0	0
			31	10	6	12	3		

- Molecule 3 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

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

- Molecule 4 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Zn	0	0
			1	1		

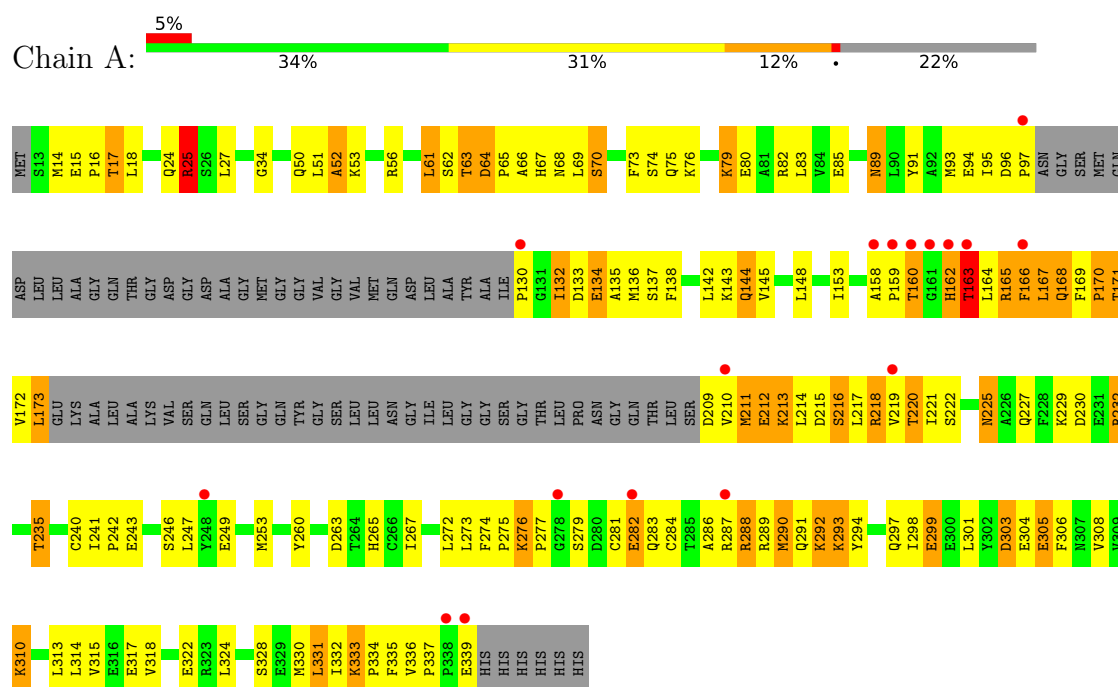
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	3	Total	O	0	0
			3	3		
5	B	2	Total	O	0	0
			2	2		

3 Residue-property plots

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: Tail-anchored protein targeting factor Get3



L295	D296	Q297	I298	E299	D303	E304	E305	F306	N307	V308	V309	K310	P311	P312	L313	L314	V315	V318	E322	R323	L324	E325	K326	F327	S328	E329	M330	L331	I332	K333	P334	F335	V336	P337	PRO	GLU	HIS	HIS	HIS	HIS	HIS	HIS
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	46.57Å 105.73Å 136.93Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	52.86 – 3.00 52.86 – 3.00	Depositor EDS
% Data completeness (in resolution range)	100.0 (52.86-3.00) 100.0 (52.86-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.08	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.48 (at 3.01Å)	Xtriage
Refinement program	REFMAC 5.5.0066	Depositor
R, R_{free}	0.228 , 0.271 0.237 , 0.272	Depositor DCC
R_{free} test set	710 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å ²)	47.3	Xtriage
Anisotropy	0.221	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.27 , 46.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	4187	wwPDB-VP
Average B, all atoms (Å ²)	57.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.08% 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

5.1 Standard geometry

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

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	1.19	2/2111 (0.1%)	1.26	17/2849 (0.6%)
1	B	0.87	2/2076 (0.1%)	1.12	15/2800 (0.5%)
All	All	1.04	4/4187 (0.1%)	1.19	32/5649 (0.6%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	333	LYS	CB-CG	-8.06	1.28	1.52
1	B	333	LYS	CA-CB	6.77	1.63	1.53
1	A	267	ILE	CA-CB	-5.56	1.47	1.54
1	B	322	GLU	CD-OE2	5.30	1.35	1.25

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	333	LYS	CB-CA-C	9.30	125.22	110.62
1	A	162	HIS	N-CA-C	8.71	120.85	111.36
1	A	333	LYS	CB-CA-C	-8.49	100.39	110.15
1	B	333	LYS	CA-C-N	7.92	128.41	119.93
1	B	333	LYS	C-N-CA	7.92	128.41	119.93
1	A	276	LYS	CA-C-N	7.85	128.14	119.90
1	A	276	LYS	C-N-CA	7.85	128.14	119.90
1	A	89	ASN	N-CA-CB	-7.60	100.90	111.00
1	B	157	THR	N-CA-C	7.42	120.73	109.23
1	A	282	GLU	CG-CD-OE1	-6.82	102.71	118.40
1	A	333	LYS	CG-CD-CE	-6.64	96.03	111.30
1	B	332	ILE	CA-C-N	-6.53	113.81	122.56
1	B	332	ILE	C-N-CA	-6.53	113.81	122.56
1	A	274	PHE	CB-CA-C	-6.47	104.62	110.44
1	A	65	PRO	N-CA-C	-6.42	105.70	113.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	52	ALA	N-CA-C	-6.14	105.50	112.87
1	A	333	LYS	CB-CG-CD	-6.13	97.19	111.30
1	A	282	GLU	CG-CD-OE2	5.97	132.12	118.40
1	B	276	LYS	CA-C-N	5.84	126.14	119.83
1	B	276	LYS	C-N-CA	5.84	126.14	119.83
1	B	235	THR	CB-CA-C	-5.61	98.15	110.67
1	B	274	PHE	CA-C-N	-5.58	114.03	119.78
1	B	274	PHE	C-N-CA	-5.58	114.03	119.78
1	B	79	LYS	N-CA-C	-5.53	106.62	113.19
1	B	281	CYS	CA-C-N	-5.49	113.40	120.65
1	B	281	CYS	C-N-CA	-5.49	113.40	120.65
1	A	232	ARG	N-CA-C	-5.43	106.16	112.89
1	A	135	ALA	N-CA-C	-5.29	105.51	111.28
1	A	317	GLU	N-CA-C	-5.27	103.18	110.35
1	A	25	ARG	N-CA-C	5.18	118.86	112.54
1	B	278	GLY	N-CA-C	-5.14	108.62	115.40
1	A	163	THR	N-CA-C	-5.11	105.62	111.14

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2075	0	2085	225	6
1	B	2042	0	2054	229	8
2	A	31	0	13	0	0
2	B	31	0	13	3	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	1	0	0	0	0
5	A	3	0	0	1	0
5	B	2	0	0	0	0
All	All	4187	0	4165	444	8

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 53.

All (444) 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:64:ASP:CG	1:A:66:ALA:HB3	1.45	1.41
1:A:130:PRO:HG2	1:A:132:ILE:CD1	1.53	1.35
1:A:64:ASP:OD1	1:A:66:ALA:HB3	1.20	1.29
1:A:130:PRO:CG	1:A:132:ILE:HD11	1.63	1.27
1:A:166:PHE:HD2	1:A:166:PHE:C	1.47	1.23
1:A:130:PRO:CG	1:A:132:ILE:CD1	2.18	1.21
1:A:64:ASP:OD1	1:A:66:ALA:CB	1.89	1.18
1:A:210:VAL:H	1:A:211:MET:CE	1.59	1.15
1:B:280:ASP:OD1	1:B:280:ASP:O	1.65	1.14
1:A:138:PHE:HD2	1:A:166:PHE:CD1	1.65	1.14
1:A:130:PRO:HB2	1:A:132:ILE:CD1	1.79	1.12
1:A:130:PRO:CB	1:A:132:ILE:CD1	2.28	1.11
1:A:166:PHE:C	1:A:166:PHE:CD2	2.23	1.10
1:A:138:PHE:CD2	1:A:166:PHE:CD1	2.39	1.09
1:B:217:LEU:O	1:B:220:THR:HG22	1.51	1.09
1:A:130:PRO:HB2	1:A:132:ILE:HD12	1.31	1.09
1:A:136:MET:HE2	1:A:217:LEU:HG	1.28	1.08
1:B:164:LEU:O	1:B:168:GLN:HG2	1.53	1.07
1:B:288:ARG:HG2	1:B:288:ARG:HH11	1.02	1.07
1:A:130:PRO:HG2	1:A:132:ILE:HD11	1.10	1.07
1:A:288:ARG:HH11	1:A:288:ARG:HG2	1.18	1.07
1:A:14:MET:HE2	1:A:305:GLU:HA	1.29	1.06
1:A:64:ASP:CG	1:A:66:ALA:CB	2.27	1.06
1:B:64:ASP:CG	1:B:66:ALA:O	1.98	1.06
1:A:211:MET:HE2	1:A:211:MET:H	0.93	1.05
1:A:166:PHE:HD2	1:A:166:PHE:O	1.38	1.04
1:B:14:MET:HE2	1:B:305:GLU:HA	1.36	1.04
1:A:211:MET:HE2	1:A:211:MET:N	1.71	1.03
1:B:138:PHE:O	1:B:141:VAL:HG13	1.58	1.03
1:B:299:GLU:O	1:B:303:ASP:HB2	1.59	1.03
1:A:138:PHE:HD2	1:A:166:PHE:CE1	1.78	1.02
1:A:299:GLU:O	1:A:303:ASP:HB2	1.59	1.02
1:A:275:PRO:HD3	1:A:288:ARG:HG3	1.41	1.00
1:B:138:PHE:O	1:B:141:VAL:CG1	2.10	0.99
1:B:275:PRO:HD3	1:B:288:ARG:HG3	1.43	0.99
1:A:138:PHE:CD2	1:A:166:PHE:HD1	1.80	0.99
1:B:159:PRO:O	1:B:161:GLY:N	1.96	0.99
1:B:308:VAL:O	1:B:310:LYS:HE3	1.63	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:173:LEU:O	1:A:173:LEU:HD23	1.61	0.99
1:A:130:PRO:HG2	1:A:132:ILE:HD13	1.40	0.98
1:B:281:CYS:HB3	1:B:284:CYS:HB2	1.41	0.98
1:A:64:ASP:OD2	1:A:66:ALA:CB	2.11	0.98
1:A:287:ARG:HH22	1:B:273:LEU:HD23	1.29	0.98
1:A:173:LEU:O	1:A:173:LEU:CD2	2.12	0.98
1:A:281:CYS:HB3	1:A:284:CYS:HB2	1.47	0.97
1:A:235:THR:HG23	1:A:263:ASP:OD1	1.64	0.97
1:A:287:ARG:NH2	1:B:313:LEU:HD23	1.79	0.96
1:A:335:PHE:CE2	1:A:337:PRO:HG3	1.99	0.96
1:A:211:MET:CE	1:A:211:MET:H	1.79	0.96
1:B:14:MET:HE2	1:B:305:GLU:CA	1.95	0.95
1:B:288:ARG:HG2	1:B:288:ARG:NH1	1.77	0.95
1:A:14:MET:HE2	1:A:305:GLU:CA	1.96	0.95
1:A:210:VAL:N	1:A:211:MET:CE	2.30	0.94
1:A:64:ASP:OD2	1:A:66:ALA:HB3	1.65	0.94
1:B:14:MET:CE	1:B:305:GLU:C	2.41	0.93
1:B:14:MET:HE3	1:B:306:PHE:N	1.82	0.92
1:A:24:GLN:HG2	1:A:27:LEU:HG	1.50	0.92
1:B:145:VAL:HA	1:B:148:LEU:HD23	1.50	0.92
1:A:14:MET:CE	1:A:305:GLU:C	2.43	0.91
1:A:130:PRO:CB	1:A:132:ILE:HD11	1.95	0.91
1:A:138:PHE:CD2	1:A:166:PHE:CE1	2.57	0.90
1:B:164:LEU:HD21	1:B:256:GLU:HG3	1.53	0.90
1:B:145:VAL:HA	1:B:148:LEU:CD2	2.01	0.90
1:B:14:MET:CE	1:B:305:GLU:HA	2.02	0.89
1:A:14:MET:CE	1:A:305:GLU:HA	2.03	0.88
1:B:281:CYS:CB	1:B:284:CYS:HB2	2.05	0.86
1:B:14:MET:CE	1:B:305:GLU:CA	2.53	0.86
1:B:290:MET:HE3	1:B:291:GLN:HG2	1.58	0.86
1:A:64:ASP:OD1	1:A:66:ALA:CA	2.23	0.85
1:A:160:THR:OG1	1:A:249:GLU:CD	2.18	0.85
1:B:169:PHE:O	1:B:173:LEU:CD1	2.24	0.85
1:A:130:PRO:CB	1:A:132:ILE:HD12	2.00	0.85
1:A:281:CYS:CB	1:A:284:CYS:HB2	2.07	0.85
1:B:62:SER:HB2	1:B:69:LEU:HD22	1.58	0.84
1:A:14:MET:HE3	1:A:306:PHE:N	1.94	0.83
1:A:287:ARG:NH2	1:B:273:LEU:HD23	1.93	0.83
1:B:219:VAL:O	1:B:222:SER:HB2	1.78	0.83
1:B:163:THR:HG22	1:B:164:LEU:N	1.93	0.83
1:B:308:VAL:O	1:B:310:LYS:CE	2.26	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:133:ASP:O	1:A:136:MET:CB	2.26	0.83
1:A:288:ARG:HG2	1:A:288:ARG:NH1	1.89	0.82
1:A:167:LEU:H	1:A:167:LEU:HD23	1.42	0.82
1:B:64:ASP:O	1:B:67:HIS:CE1	2.32	0.82
1:A:166:PHE:CD2	1:A:166:PHE:O	2.25	0.82
1:A:67:HIS:ND1	1:A:94:GLU:OE1	2.11	0.81
1:A:133:ASP:O	1:A:136:MET:N	2.12	0.81
1:B:14:MET:CE	1:B:306:PHE:N	2.44	0.81
1:A:168:GLN:HG2	1:A:260:TYR:OH	1.80	0.81
1:A:133:ASP:O	1:A:136:MET:HB3	1.80	0.81
1:B:160:THR:HG22	1:B:164:LEU:HB2	1.63	0.81
1:A:136:MET:HE2	1:A:217:LEU:CG	2.08	0.80
1:A:167:LEU:N	1:A:167:LEU:CD2	2.44	0.80
1:A:14:MET:CE	1:A:305:GLU:CA	2.59	0.80
1:B:173:LEU:N	1:B:173:LEU:HD12	1.96	0.80
1:A:287:ARG:HH22	1:B:313:LEU:HD23	1.42	0.79
1:A:209:ASP:N	1:A:211:MET:HE1	1.96	0.79
1:B:169:PHE:HB3	1:B:170:PRO:HD3	1.63	0.79
1:B:173:LEU:HD12	1:B:173:LEU:H	1.45	0.79
1:A:133:ASP:OD1	1:A:134:GLU:HG3	1.82	0.79
1:A:210:VAL:N	1:A:211:MET:HE3	1.97	0.78
1:A:308:VAL:O	1:A:310:LYS:HE3	1.82	0.78
1:B:225:ASN:HD21	1:B:229:LYS:HD2	1.49	0.78
1:A:275:PRO:CD	1:A:288:ARG:HG3	2.14	0.77
1:A:69:LEU:HB2	1:A:94:GLU:OE2	1.84	0.77
1:B:235:THR:HG23	1:B:263:ASP:OD1	1.83	0.77
1:A:136:MET:CE	1:A:217:LEU:HG	2.11	0.76
1:B:80:GLU:HB3	1:B:82:ARG:HH21	1.50	0.76
1:A:136:MET:SD	1:A:221:ILE:HD11	2.27	0.75
1:A:167:LEU:H	1:A:167:LEU:CD2	1.98	0.75
1:A:313:LEU:HD21	1:B:287:ARG:NH2	2.01	0.75
1:B:160:THR:CG2	1:B:164:LEU:HD23	2.17	0.75
1:A:313:LEU:CD2	1:B:287:ARG:NH2	2.50	0.74
1:A:132:ILE:HG22	1:A:133:ASP:N	2.01	0.74
1:A:133:ASP:O	1:A:137:SER:N	2.19	0.74
1:B:64:ASP:OD2	1:B:66:ALA:O	2.03	0.74
1:A:133:ASP:O	1:A:136:MET:CA	2.35	0.74
1:B:14:MET:HE1	1:B:305:GLU:C	2.12	0.74
1:A:61:LEU:HD23	1:A:62:SER:N	2.03	0.74
1:B:18:LEU:HD12	1:B:331:LEU:HG	1.70	0.74
1:A:287:ARG:NH2	1:B:313:LEU:CD2	2.52	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:318:VAL:HG12	1:A:324:LEU:HD23	1.69	0.73
1:B:62:SER:CB	1:B:69:LEU:HD22	2.18	0.73
1:B:75:GLN:HE22	1:B:85:GLU:H	1.34	0.72
1:B:146:ASN:HD21	1:B:227:GLN:HE21	1.34	0.72
1:B:79:LYS:O	1:B:93:MET:CE	2.37	0.72
1:A:243:GLU:OE1	2:B:1:ANP:O3'	2.04	0.71
1:B:63:THR:HG22	1:B:63:THR:O	1.89	0.71
1:A:61:LEU:HD23	1:A:61:LEU:C	2.14	0.71
1:B:169:PHE:O	1:B:173:LEU:HD12	1.89	0.71
1:B:212:GLU:O	1:B:216:SER:HB3	1.90	0.71
1:B:275:PRO:CD	1:B:288:ARG:HG3	2.21	0.71
1:A:61:LEU:C	1:A:61:LEU:CD2	2.64	0.70
1:A:133:ASP:OD1	1:A:134:GLU:N	2.23	0.70
1:A:235:THR:CG2	1:A:263:ASP:OD1	2.39	0.70
1:A:64:ASP:OD1	1:A:66:ALA:C	2.35	0.70
1:A:210:VAL:H	1:A:211:MET:HE1	1.53	0.69
1:A:336:VAL:HG23	1:A:336:VAL:O	1.91	0.69
1:B:280:ASP:OD1	1:B:280:ASP:C	2.36	0.69
1:A:290:MET:HE3	1:A:291:GLN:HG2	1.75	0.69
1:B:24:GLN:HG2	1:B:27:LEU:HG	1.73	0.69
1:A:211:MET:CE	1:A:211:MET:N	2.48	0.68
1:A:335:PHE:HE2	1:A:337:PRO:HG3	1.56	0.68
1:B:166:PHE:O	1:B:169:PHE:HB2	1.92	0.68
1:A:14:MET:CE	1:A:306:PHE:N	2.56	0.67
1:A:173:LEU:O	1:A:173:LEU:HD22	1.91	0.67
1:B:50:GLN:HG2	1:B:332:ILE:CG1	2.24	0.67
1:A:209:ASP:N	1:A:211:MET:CE	2.56	0.67
1:B:173:LEU:O	1:B:174:GLU:HB2	1.93	0.67
1:B:335:PHE:CE2	1:B:337:PRO:HG3	2.29	0.67
1:A:276:LYS:O	1:A:279:SER:HB2	1.95	0.67
1:B:288:ARG:NH1	1:B:288:ARG:CG	2.53	0.67
1:A:133:ASP:HA	1:A:136:MET:HB2	1.77	0.67
1:B:63:THR:O	1:B:63:THR:CG2	2.42	0.66
1:B:61:LEU:HD23	1:B:62:SER:N	2.10	0.66
1:A:64:ASP:CG	1:A:66:ALA:H	2.04	0.66
1:B:224:VAL:HG12	1:B:225:ASN:N	2.09	0.66
1:B:299:GLU:O	1:B:303:ASP:CB	2.40	0.66
1:A:64:ASP:OD2	1:A:66:ALA:HB2	1.96	0.66
1:A:167:LEU:N	1:A:167:LEU:HD22	2.10	0.66
1:B:308:VAL:HG12	1:B:310:LYS:HE2	1.77	0.66
1:A:164:LEU:O	1:A:165:ARG:C	2.37	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:165:ARG:HA	1:B:168:GLN:HG3	1.79	0.65
1:A:14:MET:HE1	1:A:305:GLU:C	2.21	0.65
1:A:170:PRO:O	1:A:171:THR:C	2.37	0.65
1:B:318:VAL:HG12	1:B:324:LEU:HD23	1.79	0.65
1:A:167:LEU:O	1:A:170:PRO:HD2	1.97	0.64
1:A:133:ASP:HA	1:A:136:MET:CB	2.27	0.64
1:B:218:ARG:HD3	1:B:219:VAL:H	1.62	0.64
1:B:61:LEU:C	1:B:61:LEU:CD2	2.69	0.64
1:B:83:LEU:HD13	1:B:91:TYR:CE1	2.32	0.64
1:B:167:LEU:O	1:B:169:PHE:N	2.30	0.64
1:A:70:SER:HB3	1:A:75:GLN:O	1.97	0.64
1:A:79:LYS:O	1:A:93:MET:CE	2.46	0.64
1:B:160:THR:HG21	1:B:164:LEU:HD23	1.78	0.64
1:B:286:ALA:HA	1:B:289:ARG:NH1	2.13	0.64
1:B:160:THR:HG22	1:B:164:LEU:HD23	1.81	0.63
1:B:293:LYS:O	1:B:297:GLN:HG3	1.98	0.63
1:A:75:GLN:HE22	1:A:85:GLU:H	1.46	0.63
1:A:158:ALA:HB1	1:A:159:PRO:HD2	1.79	0.63
1:B:225:ASN:ND2	1:B:229:LYS:HD2	2.12	0.63
1:B:169:PHE:HB3	1:B:170:PRO:CD	2.28	0.63
1:A:158:ALA:HB1	1:A:159:PRO:CD	2.28	0.63
1:B:211:MET:N	1:B:211:MET:CE	2.62	0.63
1:A:68:ASN:HB2	5:A:2:HOH:O	1.99	0.62
1:A:218:ARG:HD2	1:A:218:ARG:O	1.99	0.62
1:B:146:ASN:ND2	1:B:227:GLN:HE21	1.98	0.62
1:B:167:LEU:C	1:B:169:PHE:H	2.07	0.62
1:B:242:PRO:O	1:B:294:TYR:HD2	1.82	0.62
1:B:293:LYS:HE2	1:B:294:TYR:CE1	2.34	0.62
1:B:61:LEU:HD23	1:B:61:LEU:C	2.24	0.62
1:B:242:PRO:O	1:B:294:TYR:CD2	2.52	0.62
1:B:218:ARG:HD3	1:B:219:VAL:N	2.14	0.62
1:A:218:ARG:HD2	1:A:218:ARG:C	2.13	0.61
1:A:215:ASP:C	1:A:217:LEU:H	2.08	0.61
1:B:146:ASN:HD21	1:B:227:GLN:NE2	1.98	0.61
1:B:160:THR:HA	1:B:163:THR:HB	1.82	0.61
1:A:130:PRO:HB2	1:A:132:ILE:HD11	1.63	0.61
1:A:172:VAL:O	1:A:173:LEU:C	2.44	0.61
1:A:293:LYS:HE2	1:A:294:TYR:CE1	2.35	0.60
1:B:336:VAL:HG23	1:B:336:VAL:O	2.00	0.60
1:A:215:ASP:O	1:A:217:LEU:N	2.35	0.60
1:B:50:GLN:HG2	1:B:332:ILE:HG12	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:164:LEU:O	1:B:168:GLN:CG	2.40	0.60
1:B:217:LEU:HD12	1:B:220:THR:HG22	1.83	0.60
1:B:276:LYS:O	1:B:279:SER:HB2	2.02	0.59
1:A:80:GLU:HB3	1:A:82:ARG:HH21	1.65	0.59
1:A:287:ARG:O	1:A:291:GLN:HG3	2.02	0.59
1:A:216:SER:O	1:A:220:THR:HG23	2.02	0.59
1:A:299:GLU:O	1:A:303:ASP:CB	2.43	0.59
1:A:130:PRO:CG	1:A:132:ILE:HD13	2.12	0.59
1:A:308:VAL:O	1:A:310:LYS:CE	2.49	0.59
1:B:247:LEU:N	1:B:247:LEU:HD23	2.18	0.59
1:B:287:ARG:O	1:B:291:GLN:HG3	2.01	0.59
1:B:169:PHE:O	1:B:173:LEU:HD13	2.01	0.58
1:B:25:ARG:HA	1:B:55:ARG:NH1	2.19	0.58
1:A:62:SER:HB3	1:A:69:LEU:HD12	1.84	0.58
1:B:169:PHE:O	1:B:170:PRO:C	2.45	0.58
1:B:173:LEU:CD1	1:B:173:LEU:H	2.13	0.58
1:B:211:MET:N	1:B:211:MET:HE3	2.19	0.57
1:B:25:ARG:HA	1:B:55:ARG:HH12	1.70	0.57
1:A:162:HIS:NE2	1:B:162:HIS:NE2	2.46	0.57
1:B:163:THR:CG2	1:B:164:LEU:N	2.64	0.57
1:B:167:LEU:C	1:B:169:PHE:N	2.59	0.57
1:A:160:THR:HG23	1:A:253:MET:HG3	1.86	0.57
1:A:64:ASP:C	1:A:66:ALA:N	2.61	0.56
1:A:144:GLN:HA	1:A:144:GLN:NE2	2.20	0.56
1:B:167:LEU:O	1:B:170:PRO:HD2	2.05	0.56
1:B:290:MET:HG3	1:B:291:GLN:N	2.19	0.56
1:A:63:THR:CG2	1:A:63:THR:O	2.54	0.56
1:A:64:ASP:CG	1:A:66:ALA:N	2.63	0.56
1:A:211:MET:C	1:A:213:LYS:N	2.63	0.56
1:A:281:CYS:SG	1:A:284:CYS:HB2	2.45	0.56
1:A:240:CYS:HB2	1:A:246:SER:OG	2.05	0.56
1:B:41:THR:O	1:B:42:THR:C	2.46	0.56
1:A:287:ARG:NH2	1:B:273:LEU:CD2	2.68	0.56
1:A:215:ASP:C	1:A:217:LEU:N	2.64	0.56
1:A:218:ARG:C	1:A:218:ARG:CD	2.77	0.56
1:B:223:GLU:O	1:B:224:VAL:C	2.49	0.56
1:A:218:ARG:O	1:A:218:ARG:CD	2.54	0.55
1:B:64:ASP:OD2	1:B:66:ALA:C	2.49	0.55
1:A:79:LYS:HD3	1:A:79:LYS:C	2.32	0.55
1:A:286:ALA:HA	1:A:289:ARG:NH1	2.22	0.55
1:A:210:VAL:H	1:A:211:MET:HE2	1.60	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:159:PRO:C	1:B:161:GLY:N	2.59	0.55
1:B:219:VAL:HG12	1:B:220:THR:N	2.21	0.55
1:B:39:GLY:HA2	2:B:1:ANP:PA	2.47	0.54
1:B:240:CYS:HB2	1:B:246:SER:OG	2.08	0.54
1:A:34:GLY:N	1:A:253:MET:HE1	2.21	0.54
1:A:63:THR:O	1:A:63:THR:HG22	2.07	0.54
1:B:22:LEU:O	1:B:55:ARG:NH2	2.40	0.54
1:B:69:LEU:CB	1:B:94:GLU:OE2	2.56	0.54
1:A:290:MET:HG3	1:A:291:GLN:N	2.22	0.54
1:B:56:ARG:O	1:B:89:ASN:ND2	2.38	0.54
1:B:218:ARG:O	1:B:219:VAL:C	2.48	0.54
1:A:64:ASP:CG	1:A:66:ALA:CA	2.78	0.54
1:A:138:PHE:CD2	1:A:166:PHE:HE1	2.17	0.54
1:B:34:GLY:HA2	1:B:253:MET:HE1	1.90	0.53
1:B:164:LEU:HD12	1:B:168:GLN:NE2	2.24	0.53
1:A:132:ILE:O	1:A:133:ASP:C	2.52	0.53
1:B:83:LEU:CD1	1:B:91:TYR:CE1	2.92	0.53
1:A:211:MET:C	1:A:213:LYS:H	2.16	0.53
1:B:218:ARG:CD	1:B:219:VAL:N	2.72	0.53
1:A:213:LYS:O	1:A:214:LEU:C	2.52	0.53
1:A:52:ALA:O	1:A:89:ASN:OD1	2.27	0.53
1:A:281:CYS:HB3	1:A:284:CYS:CB	2.29	0.53
1:B:14:MET:HE2	1:B:304:GLU:C	2.34	0.53
1:B:52:ALA:O	1:B:89:ASN:OD1	2.27	0.53
1:A:288:ARG:NH1	1:A:288:ARG:CG	2.64	0.53
1:A:313:LEU:HD21	1:B:287:ARG:HH21	1.74	0.52
1:A:166:PHE:CD2	1:A:167:LEU:N	2.75	0.52
1:B:28:ARG:NH1	1:B:146:ASN:OD1	2.43	0.52
1:B:217:LEU:HD12	1:B:220:THR:CG2	2.40	0.52
1:A:56:ARG:O	1:A:89:ASN:ND2	2.43	0.52
1:B:293:LYS:O	1:B:293:LYS:HG2	2.09	0.52
1:B:70:SER:HB3	1:B:75:GLN:O	2.09	0.52
1:B:50:GLN:HG2	1:B:332:ILE:HG13	1.90	0.52
1:A:328:SER:O	1:A:331:LEU:HB2	2.10	0.52
1:B:63:THR:O	1:B:64:ASP:C	2.50	0.51
1:A:265:HIS:HA	1:A:306:PHE:CD1	2.45	0.51
1:B:141:VAL:HG22	1:B:142:LEU:N	2.24	0.51
1:A:50:GLN:HG2	1:A:332:ILE:CG1	2.40	0.51
1:A:293:LYS:O	1:A:297:GLN:HG3	2.10	0.51
1:B:67:HIS:CB	1:B:94:GLU:CD	2.84	0.51
1:B:159:PRO:O	1:B:160:THR:C	2.52	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:39:GLY:HA2	2:B:1:ANP:O3A	2.10	0.51
1:B:64:ASP:OD1	1:B:66:ALA:N	2.44	0.51
1:B:166:PHE:O	1:B:169:PHE:CB	2.58	0.51
1:B:328:SER:O	1:B:331:LEU:HB2	2.11	0.51
1:B:159:PRO:C	1:B:161:GLY:H	2.16	0.51
1:B:173:LEU:O	1:B:174:GLU:CB	2.57	0.50
1:A:225:ASN:O	1:A:229:LYS:HG3	2.12	0.50
1:B:318:VAL:CG1	1:B:324:LEU:HD23	2.41	0.50
1:B:146:ASN:ND2	1:B:227:GLN:NE2	2.58	0.50
1:B:138:PHE:O	1:B:141:VAL:HG12	2.05	0.50
1:A:247:LEU:HD23	1:A:247:LEU:N	2.27	0.50
1:B:335:PHE:HE2	1:B:337:PRO:HG3	1.73	0.50
1:A:293:LYS:O	1:A:293:LYS:HG2	2.10	0.50
1:A:64:ASP:OD1	1:A:66:ALA:O	2.29	0.49
1:B:217:LEU:HD12	1:B:217:LEU:C	2.37	0.49
1:B:160:THR:HG22	1:B:164:LEU:CD2	2.42	0.49
1:A:318:VAL:CG1	1:A:324:LEU:HD23	2.42	0.49
1:A:136:MET:HE2	1:A:217:LEU:CD1	2.42	0.49
1:A:241:ILE:HB	1:A:242:PRO:CD	2.43	0.49
1:B:144:GLN:HG2	1:B:145:VAL:N	2.26	0.49
1:A:173:LEU:CD1	1:A:218:ARG:HH11	2.25	0.49
1:A:83:LEU:HD13	1:A:91:TYR:CE1	2.48	0.49
1:B:133:ASP:C	1:B:135:ALA:H	2.21	0.49
1:B:326:LYS:O	1:B:327:PHE:C	2.56	0.49
1:A:63:THR:O	1:A:64:ASP:C	2.56	0.48
1:B:241:ILE:HB	1:B:242:PRO:CD	2.43	0.48
1:B:224:VAL:O	1:B:227:GLN:HB2	2.13	0.48
1:B:281:CYS:HB3	1:B:284:CYS:CB	2.28	0.48
1:B:247:LEU:HD11	1:B:294:TYR:HB3	1.95	0.48
1:A:210:VAL:HG23	1:A:211:MET:N	2.29	0.48
1:A:138:PHE:CE2	1:A:166:PHE:CE1	3.02	0.48
1:B:335:PHE:O	1:B:336:VAL:CG1	2.61	0.48
1:A:18:LEU:HD12	1:A:331:LEU:HG	1.96	0.48
1:B:67:HIS:HB2	1:B:94:GLU:CD	2.38	0.48
1:B:161:GLY:O	1:B:165:ARG:HB2	2.14	0.47
1:A:163:THR:O	1:A:167:LEU:HD23	2.15	0.47
1:A:282:GLU:H	1:A:282:GLU:HG2	1.40	0.47
1:A:173:LEU:CD2	1:A:173:LEU:C	2.83	0.47
1:B:221:ILE:O	1:B:222:SER:C	2.57	0.47
1:A:24:GLN:HG2	1:A:27:LEU:CG	2.34	0.47
1:A:25:ARG:HG2	1:A:25:ARG:HH11	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:242:PRO:HG3	1:A:272:LEU:HD23	1.97	0.47
1:B:136:MET:SD	1:B:136:MET:C	2.98	0.47
1:A:14:MET:HE2	1:A:304:GLU:O	2.13	0.47
1:A:130:PRO:C	1:A:132:ILE:HD12	2.39	0.47
1:B:82:ARG:O	1:B:91:TYR:HA	2.15	0.47
1:B:132:ILE:O	1:B:169:PHE:CZ	2.68	0.47
1:B:144:GLN:CG	1:B:145:VAL:N	2.77	0.47
1:B:211:MET:N	1:B:211:MET:HE2	2.28	0.47
1:A:159:PRO:O	1:A:160:THR:C	2.58	0.47
1:B:14:MET:HE2	1:B:305:GLU:N	2.29	0.47
1:A:160:THR:OG1	1:A:249:GLU:OE1	2.33	0.47
1:A:167:LEU:C	1:A:169:PHE:H	2.22	0.47
1:B:17:THR:HG22	1:B:334:PRO:HG3	1.98	0.46
1:B:34:GLY:N	1:B:253:MET:HE1	2.30	0.46
1:B:276:LYS:HB3	1:B:277:PRO:HD2	1.96	0.46
1:A:318:VAL:HG12	1:A:324:LEU:CD2	2.43	0.46
1:A:242:PRO:HG2	1:A:291:GLN:NE2	2.29	0.46
1:A:167:LEU:C	1:A:169:PHE:N	2.73	0.46
1:A:308:VAL:HG12	1:A:310:LYS:HE2	1.98	0.46
1:A:217:LEU:O	1:A:218:ARG:C	2.59	0.46
1:A:51:LEU:C	1:A:53:LYS:N	2.71	0.46
1:A:283:GLN:O	1:A:284:CYS:C	2.57	0.46
1:A:138:PHE:CE2	1:A:166:PHE:CD1	3.00	0.46
1:A:288:ARG:O	1:A:292:LYS:HB2	2.16	0.46
1:B:173:LEU:HD22	1:B:221:ILE:HD12	1.97	0.46
1:B:230:ASP:OD1	1:B:232:ARG:HG3	2.16	0.46
1:A:51:LEU:C	1:A:53:LYS:H	2.23	0.46
1:B:211:MET:C	1:B:213:LYS:H	2.23	0.46
1:B:265:HIS:HA	1:B:306:PHE:CD1	2.51	0.46
1:A:96:ASP:O	1:A:97:PRO:C	2.59	0.45
1:A:336:VAL:O	1:A:336:VAL:CG2	2.62	0.45
1:A:69:LEU:HD23	1:A:69:LEU:HA	1.60	0.45
1:B:242:PRO:HG3	1:B:272:LEU:HD23	1.98	0.45
1:A:212:GLU:O	1:A:212:GLU:HG2	2.15	0.45
1:A:230:ASP:OD1	1:A:232:ARG:HG3	2.15	0.45
1:A:290:MET:HG3	1:A:291:GLN:H	1.81	0.45
1:A:219:VAL:O	1:A:222:SER:HB2	2.16	0.45
1:B:34:GLY:CA	1:B:253:MET:HE1	2.46	0.45
1:B:218:ARG:HE	1:B:219:VAL:HA	1.82	0.45
1:B:288:ARG:O	1:B:292:LYS:HB2	2.17	0.45
1:A:160:THR:OG1	1:A:249:GLU:OE2	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:170:PRO:O	1:A:172:VAL:N	2.49	0.45
1:B:79:LYS:HD3	1:B:79:LYS:C	2.42	0.45
1:B:217:LEU:O	1:B:218:ARG:C	2.59	0.45
1:B:290:MET:HG3	1:B:291:GLN:H	1.80	0.45
1:B:79:LYS:O	1:B:93:MET:HE3	2.16	0.44
1:A:166:PHE:O	1:A:169:PHE:CB	2.65	0.44
1:A:14:MET:HE2	1:A:304:GLU:C	2.42	0.44
1:A:247:LEU:HD11	1:A:294:TYR:HB3	1.99	0.44
1:B:235:THR:CG2	1:B:263:ASP:OD1	2.61	0.44
1:A:17:THR:HG22	1:A:334:PRO:HG3	1.98	0.44
1:A:210:VAL:N	1:A:211:MET:HE2	2.23	0.44
1:B:145:VAL:CA	1:B:148:LEU:HD23	2.35	0.44
1:A:50:GLN:HG2	1:A:332:ILE:HG13	1.98	0.44
1:B:211:MET:C	1:B:213:LYS:N	2.75	0.44
1:A:73:PHE:O	1:A:74:SER:C	2.61	0.44
1:A:213:LYS:HE2	1:A:213:LYS:HB2	1.70	0.44
1:B:243:GLU:O	1:B:247:LEU:HG	2.18	0.44
1:A:64:ASP:C	1:A:66:ALA:H	2.26	0.43
1:A:79:LYS:O	1:A:79:LYS:HD3	2.17	0.43
1:B:295:LEU:O	1:B:296:ASP:C	2.59	0.43
1:B:170:PRO:CB	1:B:225:ASN:OD1	2.66	0.43
1:A:211:MET:O	1:A:213:LYS:N	2.51	0.43
1:B:217:LEU:O	1:B:220:THR:N	2.51	0.43
1:A:166:PHE:O	1:A:169:PHE:HB3	2.18	0.43
1:B:136:MET:SD	1:B:136:MET:O	2.76	0.43
1:A:16:PRO:C	1:A:17:THR:CG2	2.89	0.43
1:B:67:HIS:CD2	1:B:94:GLU:HB3	2.54	0.43
1:B:69:LEU:HB2	1:B:94:GLU:OE2	2.19	0.43
1:B:167:LEU:O	1:B:168:GLN:C	2.61	0.43
1:A:145:VAL:CG1	1:A:153:ILE:HD13	2.49	0.43
1:A:211:MET:HG2	1:A:212:GLU:N	2.34	0.43
1:B:78:GLY:C	1:B:80:GLU:H	2.27	0.43
1:A:133:ASP:HA	1:A:136:MET:HB3	1.98	0.43
1:A:330:MET:HE3	1:A:330:MET:HB2	1.89	0.43
1:B:217:LEU:C	1:B:220:THR:HG22	2.37	0.43
1:A:164:LEU:O	1:A:167:LEU:N	2.51	0.42
1:B:214:LEU:O	1:B:215:ASP:C	2.62	0.42
1:A:216:SER:O	1:A:220:THR:CG2	2.66	0.42
1:B:335:PHE:O	1:B:336:VAL:HG13	2.18	0.42
1:A:79:LYS:HE3	1:A:79:LYS:HB2	1.81	0.42
1:A:34:GLY:HA2	1:A:253:MET:HE1	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:14:MET:HE3	1:A:306:PHE:CA	2.50	0.42
1:B:69:LEU:HD12	1:B:69:LEU:HA	1.60	0.42
1:B:79:LYS:HE3	1:B:79:LYS:HB2	1.86	0.42
1:B:96:ASP:HA	1:B:97:PRO:HD2	1.85	0.42
1:B:241:ILE:O	1:B:247:LEU:HD21	2.18	0.42
1:B:14:MET:HE2	1:B:304:GLU:O	2.19	0.42
1:B:31:PHE:CE2	1:B:228:PHE:CE1	3.07	0.42
1:B:167:LEU:H	1:B:167:LEU:HG	1.65	0.42
1:B:14:MET:O	1:B:15:GLU:C	2.64	0.41
1:B:46:SER:HB3	1:B:331:LEU:HD22	2.02	0.41
1:B:63:THR:HB	1:B:157:THR:HG23	2.02	0.41
1:B:83:LEU:HD13	1:B:91:TYR:CZ	2.56	0.41
1:B:169:PHE:C	1:B:173:LEU:CD1	2.93	0.41
1:B:330:MET:HE3	1:B:330:MET:HB2	1.87	0.41
1:B:49:ILE:HG21	1:B:325:GLU:HG2	2.01	0.41
1:B:64:ASP:O	1:B:66:ALA:O	2.38	0.41
1:B:274:PHE:CE2	1:B:312:PRO:HB3	2.55	0.41
1:B:64:ASP:CB	1:B:66:ALA:O	2.66	0.41
1:B:318:VAL:HG12	1:B:324:LEU:CD2	2.48	0.41
1:B:69:LEU:HB3	1:B:94:GLU:OE2	2.21	0.41
1:B:83:LEU:HD21	1:B:88:ASP:HA	2.03	0.41
1:B:160:THR:CG2	1:B:164:LEU:CD2	2.95	0.41
1:B:332:ILE:HA	1:B:332:ILE:HD13	1.79	0.41
1:A:133:ASP:C	1:A:136:MET:H	2.29	0.41
1:A:276:LYS:HB3	1:A:277:PRO:HD2	2.03	0.41
1:B:19:GLN:O	1:B:22:LEU:HB2	2.20	0.41
1:B:160:THR:O	1:B:164:LEU:HB2	2.20	0.41
1:B:26:SER:HB2	1:B:232:ARG:O	2.21	0.40
1:B:141:VAL:HG13	1:B:142:LEU:H	1.87	0.40
1:B:235:THR:HG22	1:B:264:THR:HA	2.02	0.40
1:B:96:ASP:O	1:B:97:PRO:C	2.64	0.40
1:B:14:MET:HE3	1:B:306:PHE:CA	2.49	0.40
1:B:217:LEU:O	1:B:220:THR:CG2	2.43	0.40
1:B:281:CYS:SG	1:B:284:CYS:HB2	2.60	0.40
1:B:283:GLN:O	1:B:287:ARG:HB2	2.21	0.40
1:A:142:LEU:HD23	1:A:142:LEU:HA	1.91	0.40
1:B:160:THR:O	1:B:161:GLY:C	2.64	0.40

All (8) 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:A:279:SER:OG	1:B:80:GLU:CD[3_454]	1.20	1.00
1:A:279:SER:OG	1:B:80:GLU:OE2[3_454]	1.33	0.87
1:A:279:SER:CB	1:B:80:GLU:OE2[3_454]	1.67	0.53
1:A:279:SER:CA	1:B:80:GLU:OE2[3_454]	1.83	0.37
1:B:82:ARG:NH2	1:B:282:GLU:OE2[3_444]	1.98	0.22
1:A:279:SER:OG	1:B:80:GLU:CG[3_454]	2.00	0.20
1:A:279:SER:OG	1:B:80:GLU:OE1[3_454]	2.03	0.17
1:B:82:ARG:CZ	1:B:282:GLU:OE2[3_444]	2.19	0.01

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	254/334 (76%)	222 (87%)	27 (11%)	5 (2%)	6	28
1	B	249/334 (75%)	219 (88%)	26 (10%)	4 (2%)	7	34
All	All	503/668 (75%)	441 (88%)	53 (10%)	9 (2%)	6	31

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	160	THR
1	B	168	GLN
1	A	132	ILE
1	A	170	PRO
1	A	212	GLU
1	A	216	SER
1	A	303	ASP
1	B	163	THR
1	B	303	ASP

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	236/289 (82%)	191 (81%)	45 (19%)	1	8
1	B	232/289 (80%)	193 (83%)	39 (17%)	2	11
All	All	468/578 (81%)	384 (82%)	84 (18%)	2	10

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

Mol	Chain	Res	Type
1	A	15	GLU
1	A	17	THR
1	A	25	ARG
1	A	61	LEU
1	A	63	THR
1	A	64	ASP
1	A	70	SER
1	A	76	LYS
1	A	79	LYS
1	A	95	ILE
1	A	134	GLU
1	A	143	LYS
1	A	144	GLN
1	A	148	LEU
1	A	160	THR
1	A	163	THR
1	A	165	ARG
1	A	166	PHE
1	A	167	LEU
1	A	168	GLN
1	A	171	THR
1	A	173	LEU
1	A	211	MET
1	A	213	LYS
1	A	218	ARG
1	A	220	THR
1	A	225	ASN

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Mol	Chain	Res	Type
1	A	227	GLN
1	A	235	THR
1	A	273	LEU
1	A	288	ARG
1	A	290	MET
1	A	292	LYS
1	A	293	LYS
1	A	298	ILE
1	A	299	GLU
1	A	301	LEU
1	A	305	GLU
1	A	310	LYS
1	A	314	LEU
1	A	315	VAL
1	A	322	GLU
1	A	331	LEU
1	A	333	LYS
1	A	339	GLU
1	B	15	GLU
1	B	17	THR
1	B	22	LEU
1	B	26	SER
1	B	61	LEU
1	B	69	LEU
1	B	76	LYS
1	B	79	LYS
1	B	80	GLU
1	B	95	ILE
1	B	136	MET
1	B	141	VAL
1	B	145	VAL
1	B	149	SER
1	B	157	THR
1	B	160	THR
1	B	163	THR
1	B	164	LEU
1	B	211	MET
1	B	212	GLU
1	B	217	LEU
1	B	218	ARG
1	B	219	VAL
1	B	224	VAL

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Mol	Chain	Res	Type
1	B	227	GLN
1	B	231	GLU
1	B	235	THR
1	B	288	ARG
1	B	290	MET
1	B	292	LYS
1	B	293	LYS
1	B	298	ILE
1	B	299	GLU
1	B	305	GLU
1	B	310	LYS
1	B	314	LEU
1	B	315	VAL
1	B	331	LEU
1	B	333	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	50	GLN
1	A	75	GLN
1	A	89	ASN
1	A	144	GLN
1	A	168	GLN
1	A	225	ASN
1	B	75	GLN
1	B	89	ASN
1	B	144	GLN
1	B	168	GLN
1	B	227	GLN
1	B	307	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 5 ligands modelled in this entry, 3 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
2	ANP	B	1	3	33,33,33	2.65	10 (30%)	45,52,52	2.21	13 (28%)
2	ANP	A	1	3	33,33,33	2.08	8 (24%)	45,52,52	2.00	15 (33%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ANP	B	1	3	-	4/18/38/38	0/3/3/3
2	ANP	A	1	3	-	4/18/38/38	0/3/3/3

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1	ANP	PG-O1G	6.61	1.56	1.46
2	B	1	ANP	C5-C4	5.62	1.49	1.39
2	A	1	ANP	PG-O1G	5.32	1.54	1.46
2	B	1	ANP	PG-N3B	4.86	1.76	1.63
2	B	1	ANP	PB-O3A	4.69	1.64	1.59
2	B	1	ANP	PA-O3A	4.68	1.64	1.59
2	B	1	ANP	PB-N3B	4.42	1.74	1.63
2	A	1	ANP	PG-N3B	4.29	1.74	1.63
2	A	1	ANP	C5-C4	4.12	1.46	1.39
2	A	1	ANP	PB-O1B	3.95	1.52	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1	ANP	C8-N7	3.93	1.39	1.31
2	A	1	ANP	PB-N3B	3.91	1.73	1.63
2	B	1	ANP	PB-O1B	3.91	1.52	1.46
2	A	1	ANP	C8-N7	3.40	1.38	1.31
2	A	1	ANP	C5-N7	-3.04	1.33	1.39
2	B	1	ANP	C5-C6	2.79	1.48	1.41
2	A	1	ANP	C4-N9	-2.35	1.32	1.37
2	B	1	ANP	C2-N1	2.31	1.38	1.33

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1	ANP	O1G-PG-N3B	-7.92	100.11	111.77
2	A	1	ANP	O1G-PG-N3B	-5.76	103.29	111.77
2	A	1	ANP	C5-C4-N3	-4.83	120.07	126.72
2	B	1	ANP	C5-C4-N3	-4.31	120.79	126.72
2	A	1	ANP	N3-C4-N9	3.72	133.49	127.17
2	B	1	ANP	N3-C4-N9	3.59	133.28	127.17
2	B	1	ANP	O4'-C1'-N9	-3.59	101.19	108.09
2	B	1	ANP	C4-N9-C8	3.46	109.38	105.74
2	A	1	ANP	N6-C6-N1	3.45	126.06	118.38
2	B	1	ANP	N3-C2-N1	-3.25	123.66	128.58
2	A	1	ANP	O3'-C3'-C4'	-3.17	101.97	111.08
2	B	1	ANP	C2-N3-C4	3.12	119.46	111.83
2	A	1	ANP	O2B-PB-O1B	3.01	116.31	109.87
2	B	1	ANP	N9-C8-N7	-2.97	109.73	113.94
2	A	1	ANP	C2-N3-C4	2.84	118.77	111.83
2	B	1	ANP	C4-C5-N7	-2.79	107.39	110.58
2	B	1	ANP	O2B-PB-O1B	2.65	115.54	109.87
2	B	1	ANP	C5-N7-C8	2.59	107.53	103.45
2	A	1	ANP	N3-C2-N1	-2.44	124.88	128.58
2	B	1	ANP	C4-N9-C1'	-2.41	121.00	126.63
2	A	1	ANP	C4-N9-C8	2.34	108.19	105.74
2	A	1	ANP	O4'-C1'-C2'	-2.33	101.62	106.62
2	A	1	ANP	N9-C8-N7	-2.32	110.64	113.94
2	B	1	ANP	C6-C5-N7	2.21	136.35	132.09
2	A	1	ANP	C5-C6-N6	-2.10	118.08	123.29
2	A	1	ANP	O3A-PB-N3B	-2.05	100.90	106.59
2	A	1	ANP	O1B-PB-N3B	-2.02	108.80	111.77
2	A	1	ANP	PA-O5'-C5'	-2.02	109.80	121.35

There are no chirality outliers.

All (8) torsion outliers are listed below:

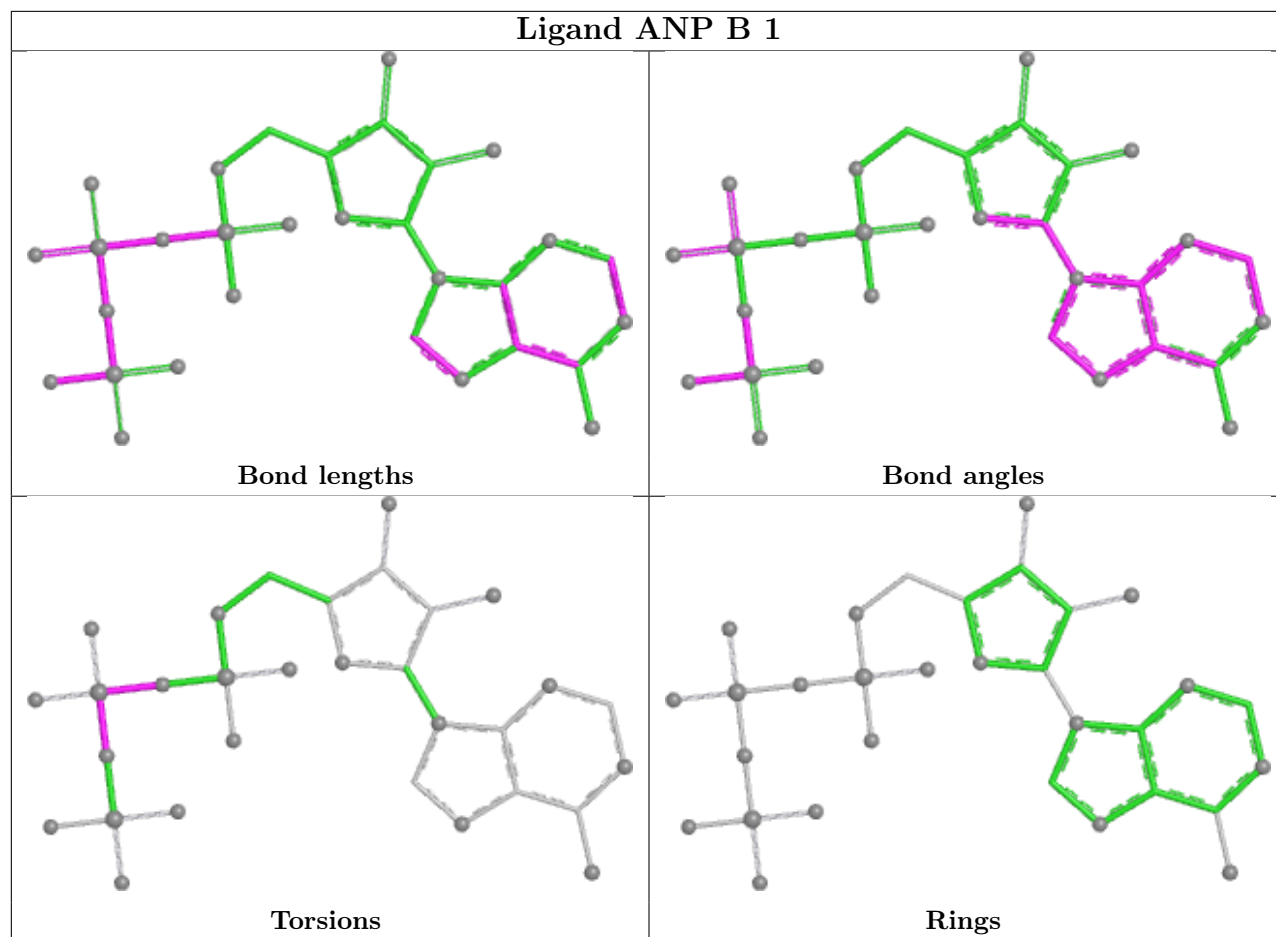
Mol	Chain	Res	Type	Atoms
2	A	1	ANP	PG-N3B-PB-O1B
2	A	1	ANP	PG-N3B-PB-O3A
2	A	1	ANP	PA-O3A-PB-O2B
2	B	1	ANP	PG-N3B-PB-O1B
2	B	1	ANP	PG-N3B-PB-O3A
2	B	1	ANP	PA-O3A-PB-O2B
2	A	1	ANP	PA-O3A-PB-O1B
2	B	1	ANP	PA-O3A-PB-O1B

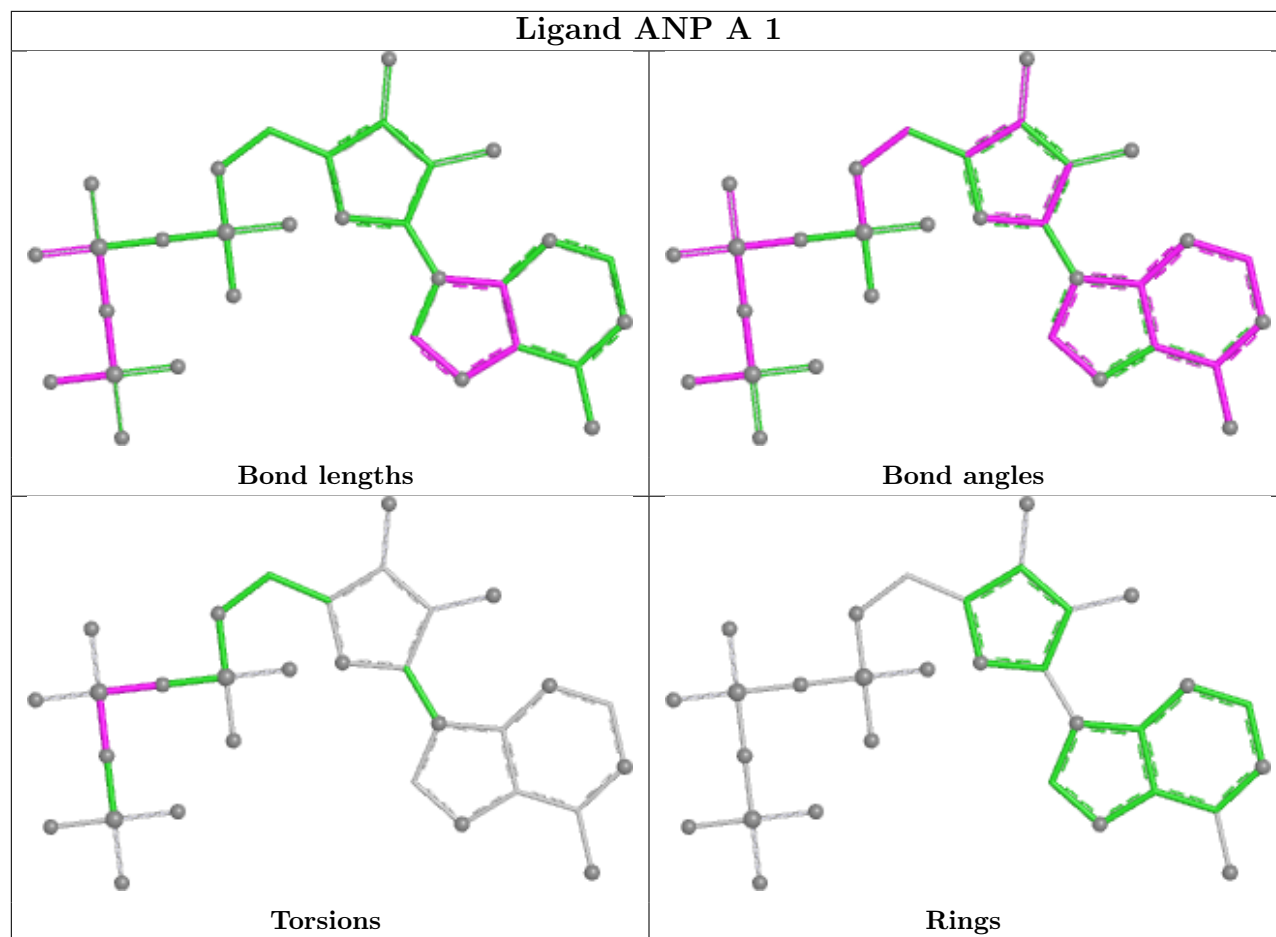
There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1	ANP	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [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	260/334 (77%)	0.18	17 (6%) 25 13	10, 34, 122, 179	0
1	B	255/334 (76%)	0.74	26 (10%) 12 6	32, 69, 117, 131	0
All	All	515/668 (77%)	0.46	43 (8%) 17 9	10, 51, 117, 179	0

All (43) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	161	GLY	6.2
1	A	160	THR	6.1
1	A	159	PRO	4.8
1	B	132	ILE	4.5
1	B	158	ALA	4.2
1	A	158	ALA	4.1
1	B	160	THR	3.6
1	B	159	PRO	3.5
1	B	138	PHE	3.5
1	A	162	HIS	3.5
1	B	279	SER	3.4
1	A	248	TYR	3.4
1	B	161	GLY	3.3
1	A	130	PRO	3.2
1	B	165	ARG	3.1
1	B	228	PHE	3.1
1	B	65	PRO	3.1
1	A	166	PHE	2.9
1	A	163	THR	2.8
1	B	76	LYS	2.7
1	A	278	GLY	2.7
1	B	81	ALA	2.7
1	A	219	VAL	2.7
1	B	166	PHE	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	88	ASP	2.6
1	B	163	THR	2.6
1	A	282	GLU	2.5
1	A	287	ARG	2.4
1	B	287	ARG	2.4
1	B	97	PRO	2.4
1	B	244	PHE	2.4
1	B	282	GLU	2.4
1	B	149	SER	2.4
1	A	338	PRO	2.3
1	A	339	GLU	2.2
1	A	210	VAL	2.2
1	B	211	MET	2.2
1	B	157	THR	2.2
1	B	164	LEU	2.2
1	B	322	GLU	2.2
1	B	168	GLN	2.1
1	A	97	PRO	2.1
1	B	172	VAL	2.1

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.

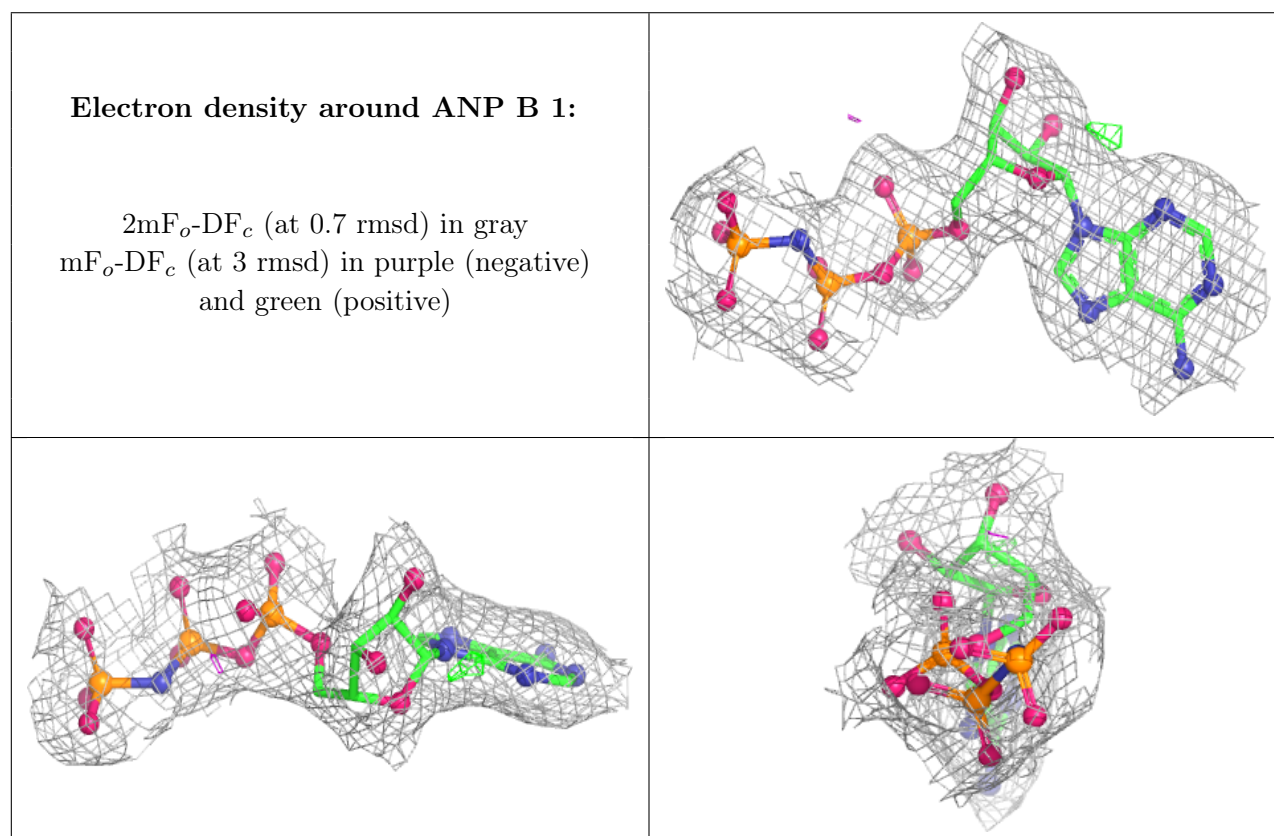
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	MG	B	2	1/1	0.93	0.12	36,36,36,36	0
2	ANP	B	1	31/31	0.97	0.06	19,24,27,27	0
2	ANP	A	1	31/31	0.98	0.06	12,14,17,18	0
3	MG	A	346	1/1	0.99	0.07	9,9,9,9	0

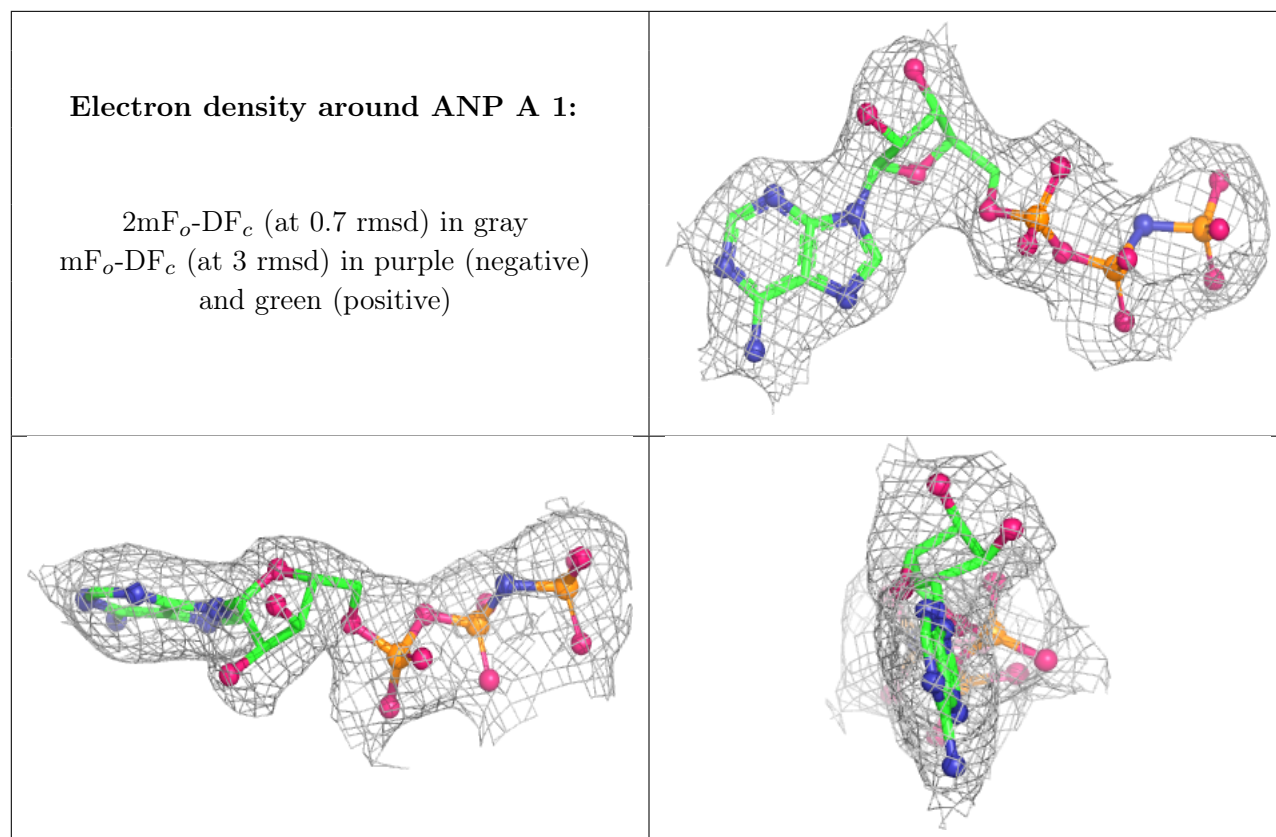
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	ZN	A	3	1/1	0.99	0.03	39,39,39,39	0

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.