Full wwPDB X-ray Structure Validation Report (i)

Dec 12, 2023 – 03:05 pm GMT

PDB ID	:	3ZM7
Title	:	CRYSTAL STRUCTURE OF THE ATPASE REGION OF Mycobacterium tuberculosis GyrB WITH AMPPCP
Authors	:	Agrawal, A.; Roue, M.; Spitzfaden, C.; Petrella, S.; Aubry, A.; Volker, C.; Mossakowska, D.; Hann, M.; Bax, B.; Mayer, C.
Deposited on	:	2013-02-05
Resolution	:	3.30 Å(reported)

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

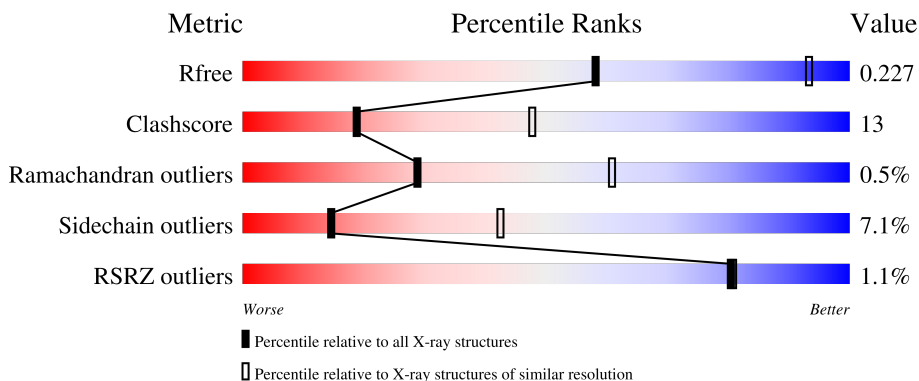|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1   Overall quality at a glance   ⓘ

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

The reported resolution of this entry is 3.30 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	Percentile Ranks	Value
Rfree		0.227
Clashscore		13
Ramachandran outliers		0.5%
Sidechain outliers		7.1%
RSRZ outliers		1.1%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)

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

Mol	Chain	Length	Quality of chain
1	A	442	.% 58% 20% • 19%
1	B	442	.% 62% 17% • 19%
1	C	442	.% 58% 18% • 22%
1	D	442	.% 56% 22% • 19%

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	E	442	2% ▮ 61% 15% • 23%
1	F	442	60% 19% • 19%

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
2	ACP	F	525	-	-	X	-

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 16295 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 DNA GYRASE SUBUNIT B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	359	Total	C	N	O	S	0	0	0
			2714	1699	479	530	6			
1	B	356	Total	C	N	O	S	0	0	0
			2680	1679	472	523	6			
1	C	346	Total	C	N	O	S	0	0	0
			2622	1639	464	513	6			
1	D	357	Total	C	N	O	S	0	0	0
			2684	1677	469	532	6			
1	E	342	Total	C	N	O	S	0	0	0
			2609	1635	459	509	6			
1	F	357	Total	C	N	O	S	0	0	0
			2703	1690	476	531	6			

There are 84 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-13	MET	-	expression tag	UNP I6WX66
A	-12	ALA	-	expression tag	UNP I6WX66
A	-11	HIS	-	expression tag	UNP I6WX66
A	-10	HIS	-	expression tag	UNP I6WX66
A	-9	HIS	-	expression tag	UNP I6WX66
A	-8	HIS	-	expression tag	UNP I6WX66
A	-7	HIS	-	expression tag	UNP I6WX66
A	-6	HIS	-	expression tag	UNP I6WX66
A	-5	VAL	-	expression tag	UNP I6WX66
A	-4	ASP	-	expression tag	UNP I6WX66
A	-3	ASP	-	expression tag	UNP I6WX66
A	-2	ASP	-	expression tag	UNP I6WX66
A	-1	ASP	-	expression tag	UNP I6WX66
A	0	LYS	-	expression tag	UNP I6WX66
B	-13	MET	-	expression tag	UNP I6WX66
B	-12	ALA	-	expression tag	UNP I6WX66
B	-11	HIS	-	expression tag	UNP I6WX66

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	-10	HIS	-	expression tag	UNP I6WX66
B	-9	HIS	-	expression tag	UNP I6WX66
B	-8	HIS	-	expression tag	UNP I6WX66
B	-7	HIS	-	expression tag	UNP I6WX66
B	-6	HIS	-	expression tag	UNP I6WX66
B	-5	VAL	-	expression tag	UNP I6WX66
B	-4	ASP	-	expression tag	UNP I6WX66
B	-3	ASP	-	expression tag	UNP I6WX66
B	-2	ASP	-	expression tag	UNP I6WX66
B	-1	ASP	-	expression tag	UNP I6WX66
B	0	LYS	-	expression tag	UNP I6WX66
C	-13	MET	-	expression tag	UNP I6WX66
C	-12	ALA	-	expression tag	UNP I6WX66
C	-11	HIS	-	expression tag	UNP I6WX66
C	-10	HIS	-	expression tag	UNP I6WX66
C	-9	HIS	-	expression tag	UNP I6WX66
C	-8	HIS	-	expression tag	UNP I6WX66
C	-7	HIS	-	expression tag	UNP I6WX66
C	-6	HIS	-	expression tag	UNP I6WX66
C	-5	VAL	-	expression tag	UNP I6WX66
C	-4	ASP	-	expression tag	UNP I6WX66
C	-3	ASP	-	expression tag	UNP I6WX66
C	-2	ASP	-	expression tag	UNP I6WX66
C	-1	ASP	-	expression tag	UNP I6WX66
C	0	LYS	-	expression tag	UNP I6WX66
D	-13	MET	-	expression tag	UNP I6WX66
D	-12	ALA	-	expression tag	UNP I6WX66
D	-11	HIS	-	expression tag	UNP I6WX66
D	-10	HIS	-	expression tag	UNP I6WX66
D	-9	HIS	-	expression tag	UNP I6WX66
D	-8	HIS	-	expression tag	UNP I6WX66
D	-7	HIS	-	expression tag	UNP I6WX66
D	-6	HIS	-	expression tag	UNP I6WX66
D	-5	VAL	-	expression tag	UNP I6WX66
D	-4	ASP	-	expression tag	UNP I6WX66
D	-3	ASP	-	expression tag	UNP I6WX66
D	-2	ASP	-	expression tag	UNP I6WX66
D	-1	ASP	-	expression tag	UNP I6WX66
D	0	LYS	-	expression tag	UNP I6WX66
E	-13	MET	-	expression tag	UNP I6WX66
E	-12	ALA	-	expression tag	UNP I6WX66
E	-11	HIS	-	expression tag	UNP I6WX66

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
E	-10	HIS	-	expression tag	UNP I6WX66
E	-9	HIS	-	expression tag	UNP I6WX66
E	-8	HIS	-	expression tag	UNP I6WX66
E	-7	HIS	-	expression tag	UNP I6WX66
E	-6	HIS	-	expression tag	UNP I6WX66
E	-5	VAL	-	expression tag	UNP I6WX66
E	-4	ASP	-	expression tag	UNP I6WX66
E	-3	ASP	-	expression tag	UNP I6WX66
E	-2	ASP	-	expression tag	UNP I6WX66
E	-1	ASP	-	expression tag	UNP I6WX66
E	0	LYS	-	expression tag	UNP I6WX66
F	-13	MET	-	expression tag	UNP I6WX66
F	-12	ALA	-	expression tag	UNP I6WX66
F	-11	HIS	-	expression tag	UNP I6WX66
F	-10	HIS	-	expression tag	UNP I6WX66
F	-9	HIS	-	expression tag	UNP I6WX66
F	-8	HIS	-	expression tag	UNP I6WX66
F	-7	HIS	-	expression tag	UNP I6WX66
F	-6	HIS	-	expression tag	UNP I6WX66
F	-5	VAL	-	expression tag	UNP I6WX66
F	-4	ASP	-	expression tag	UNP I6WX66
F	-3	ASP	-	expression tag	UNP I6WX66
F	-2	ASP	-	expression tag	UNP I6WX66
F	-1	ASP	-	expression tag	UNP I6WX66
F	0	LYS	-	expression tag	UNP I6WX66

- Molecule 2 is PHOSPHOMETHYLPHOSPHONIC ACID ADENYLATE ESTER (three-letter code: ACP) (formula: $C_{11}H_{18}N_5O_{12}P_3$).
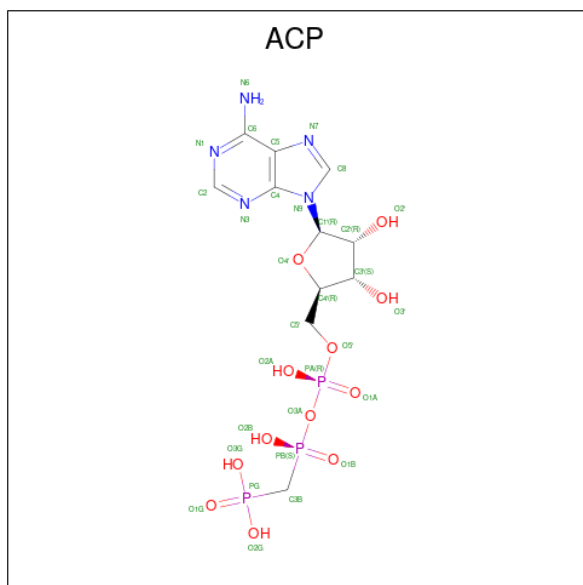
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	B	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	C	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	D	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	E	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	F	1	Total	C	N	O	P	0	0
			31	11	5	12	3		

- Molecule 3 is MAGNESIUM ION (three-letter code: 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		
3	C	1	Total	Mg	0	0
			1	1		
3	D	1	Total	Mg	0	0
			1	1		
3	E	1	Total	Mg	0	0
			1	1		
3	F	1	Total	Mg	0	0
			1	1		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	16	Total O 16 16	0	0
4	B	20	Total O 20 20	0	0
4	C	13	Total O 13 13	0	0
4	D	14	Total O 14 14	0	0
4	E	14	Total O 14 14	0	0
4	F	14	Total O 14 14	0	0

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: DNA GYRASE SUBUNIT B

- Molecule 1: DNA GYRASE SUBUNIT B

- Molecule 1: DNA GYRASE SUBUNIT B

Chain C:

• Molecule 1: DNA GYRASE SUBUNIT B

Chain D:

• Molecule 1: DNA GYRASE SUBUNIT B

Chain E:

V190 A191 R192 R193 L194 L204 T205 I206 N207 L208 T209 R212 VAL THR GLN ASP GLU VAL VAL ASP GLU VAL VAL SER ASP VAL ALA GLU PRO LYS SER ALA SER GLU ARG ALA ALA GLU SER THR ALA PRO HIS LYS VAL K247 L257 F260 I271 V276 S279

M291 A295 G296 Y297 T303 E312 H316 E317 F320 V327 K330 Y331 R335 L338 LYS ASP LYS D342 L345 T346 D349 E352 I358 E368 GLY GLN T371 K372 T373 C388 L392 W395 D402 V406 K409 S412 S413 R417

A423 ARG GLU LEU VAL ARG

● Molecule 1: DNA GYRASE SUBUNIT B

Chain F:

MET ALA HIS HIS HIS HIS HIS HIS VAL ASP ASP ASP ASP LYS VAL ALA ALA GLN LYS LYS LYS ALA GLN ASP GLU TYR GLY ALA ALA S16 S36 L42 H43 H44 W47 E56 A57 M58 G81 R82 G83 I84 P85 H89 A90 I93 P94 T95 V99 H104 ALA

GLY GLY LYS PHE ASP SER ALA TYR ALA ILE SER GLY GLY LEU HIS G122 V123 G124 V125 V128 N129 A130 L131 E136 V137 E138 I139 K140 R141 D142 G143 Y144 E145 W146 S153 K159 Q160 G161 A162 T167 G168 S169 T170 V171 V179 F180 T183 E184 Y185 D186 F187 E188

T189 V190 L194 L208 T209 D210 E211 R212 V213 THR GLN ASP GLU VAL VAL ASP GLU VAL VAL SER ASP VAL ALA GLU PRO LYS SER ALA SER GLU ARG ALA ALA GLU SER THR ALA PRO HIS K245 L257 F260 I271 S274 I275 V276 A290 M291 N294 Y297

S298 E299 T307 T310 H311 E312 T315 H316 Y331 D334 K339 ASP LYS D342 L345 T346 G347 D348 D349 E352 G353 L354 V357 E368 GLY GLN T371 K372 T373 K374 L375 G376 N377 T378 K381 C388 L392 D402 K409 S412 S413 R424 GLU

LEU VAL ARG

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	78.61Å 171.92Å 109.23Å 90.00° 110.22° 90.00°	Depositor
Resolution (Å)	25.00 – 3.30 24.92 – 3.30	Depositor EDS
% Data completeness (in resolution range)	99.7 (25.00-3.30) 99.7 (24.92-3.30)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.32 (at 3.30Å)	Xtriage
Refinement program	BUSTER 2.11.4	Depositor
R, R_{free}	0.196 , 0.223 0.197 , 0.227	Depositor DCC
R_{free} test set	2055 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	106.2	Xtriage
Anisotropy	0.255	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 87.4	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.100 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	16295	wwPDB-VP
Average B, all atoms (Å^2)	113.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.99% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[1]Intensities estimated from amplitudes.

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

5 Model quality (i)

5.1 Standard geometry (i)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	A	0.56	2/2762 (0.1%)	0.69	2/3751 (0.1%)
1	B	0.48	0/2726	0.65	1/3702 (0.0%)
1	C	0.44	0/2667	0.63	0/3619
1	D	0.51	1/2730 (0.0%)	0.66	0/3711
1	E	0.52	1/2655 (0.0%)	0.66	0/3601
1	F	0.53	0/2748	0.67	0/3727
All	All	0.51	4/16288 (0.0%)	0.66	3/22111 (0.0%)

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	C	0	1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	23	LEU	N-CA	-7.20	1.31	1.46
1	E	297	TYR	CE1-CZ	-5.61	1.31	1.38
1	A	85	PRO	N-CD	5.60	1.55	1.47
1	A	30	PRO	N-CD	5.03	1.54	1.47

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	334	ASP	C-N-CA	-5.80	107.19	121.70
1	A	29	ARG	C-N-CD	5.63	140.22	128.40
1	A	84	ILE	C-N-CD	5.42	139.78	128.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	123	VAL	Peptide

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	2714	0	2620	79	0
1	B	2680	0	2580	61	0
1	C	2622	0	2517	68	0
1	D	2684	0	2557	89	0
1	E	2609	0	2532	46	0
1	F	2703	0	2604	87	0
2	A	31	0	14	1	0
2	B	31	0	14	1	0
2	C	31	0	14	3	0
2	D	31	0	14	2	0
2	E	31	0	14	8	0
2	F	31	0	14	16	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
4	A	16	0	0	0	0
4	B	20	0	0	0	0
4	C	13	0	0	0	0
4	D	14	0	0	0	0
4	E	14	0	0	1	0
4	F	14	0	0	0	0
All	All	16295	0	15494	414	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 13.

All (414) close contacts within the same asymmetric unit are listed below, sorted by their clash

magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:34:ILE:HD11	1:C:41:GLY:O	1.17	1.26
1:F:352:GLU:OE1	1:F:413:SER:HB2	1.09	1.24
1:F:352:GLU:OE1	1:F:413:SER:CB	1.90	1.20
1:D:210:ASP:OD1	1:D:212:ARG:HG3	1.46	1.15
1:C:34:ILE:HD11	1:C:41:GLY:C	1.70	1.10
1:F:99:VAL:HG13	2:F:525:ACP:H5'2	1.28	1.08
1:F:99:VAL:CG1	2:F:525:ACP:H5'2	1.85	1.07
1:E:352:GLU:OE1	1:F:159:LYS:NZ	1.87	1.06
1:D:185:TYR:O	1:D:212:ARG:NH2	1.88	1.05
1:D:352:GLU:OE1	1:E:159:LYS:NZ	1.87	1.05
1:C:34:ILE:CD1	1:C:41:GLY:O	2.04	1.04
1:D:138:GLU:OE1	1:D:172:ARG:NH2	1.93	1.00
1:B:346:THR:HB	1:B:349:ASP:OD2	1.62	1.00
1:D:76:GLU:OE1	1:D:172:ARG:NH1	1.94	1.00
1:A:164:THR:HG22	1:A:166:LYS:H	1.28	0.99
1:B:346:THR:CB	1:B:349:ASP:OD2	2.11	0.98
1:A:76:GLU:OE1	1:A:172:ARG:NH1	1.99	0.96
1:B:403:ALA:O	1:B:407:VAL:HG23	1.66	0.96
1:F:312:GLU:HG3	1:F:373:THR:HG23	1.46	0.95
1:F:312:GLU:HG3	1:F:373:THR:CG2	2.00	0.92
1:E:125:VAL:HG12	2:E:525:ACP:O1A	1.70	0.91
1:F:210:ASP:OD1	1:F:212:ARG:HG3	1.69	0.91
1:C:349:ASP:OD1	1:C:413:SER:OG	1.89	0.91
1:F:294:ASN:OD1	1:F:353:GLY:O	1.91	0.88
1:B:347:GLY:HA2	1:B:350:ILE:HD12	1.55	0.88
1:E:349:ASP:OD1	1:E:413:SER:OG	1.91	0.88
2:C:525:ACP:O2B	2:C:525:ACP:H5'1	1.73	0.87
1:E:125:VAL:HG12	2:E:525:ACP:PA	2.15	0.87
1:C:128:VAL:O	1:C:132:SER:OG	1.93	0.86
1:C:75:VAL:HB	1:C:173:PHE:CE1	2.11	0.85
1:D:26:VAL:HG11	1:D:127:VAL:HG13	1.58	0.85
1:A:84:ILE:HD12	1:A:169:SER:HB3	1.59	0.84
1:D:36:SER:O	1:D:41:GLY:HA3	1.77	0.84
1:F:99:VAL:HG13	2:F:525:ACP:C5'	2.06	0.84
2:D:525:ACP:H5'1	2:D:525:ACP:O1B	1.78	0.82
1:D:184:GLU:HG3	1:F:189:THR:HG22	1.63	0.81
1:F:346:THR:HB	1:F:349:ASP:OD2	1.81	0.80
1:D:184:GLU:CG	1:F:189:THR:HG22	2.10	0.80
1:C:48:GLU:O	1:C:52:ASN:ND2	2.16	0.79
1:C:24:GLU:OE1	1:C:27:ARG:NH1	2.14	0.79
1:A:164:THR:HG22	1:A:166:LYS:N	1.99	0.78

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:22:GLY:O	1:D:103:LEU:HD12	1.84	0.77
1:F:375:LEU:HD12	1:F:376:GLY:H	1.49	0.77
1:B:135:LEU:HD12	1:B:173:PHE:HB3	1.67	0.77
1:B:324:LEU:HD12	1:B:324:LEU:O	1.82	0.77
1:D:184:GLU:HG3	1:F:189:THR:CG2	2.15	0.77
1:D:408:ASN:HA	1:D:411:VAL:HG22	1.66	0.76
1:D:99:VAL:CG1	1:D:125:VAL:HG11	2.15	0.76
1:E:312:GLU:HB2	1:E:373:THR:O	1.85	0.76
1:C:70:LEU:HD12	1:C:74:GLY:C	2.06	0.75
1:C:276:VAL:HB	1:C:291:MET:HG2	1.68	0.75
1:D:63:THR:HG22	1:D:80:ASP:OD2	1.86	0.74
1:D:334:ASP:HB2	1:D:335:ARG:HH21	1.53	0.74
1:B:134:ARG:NH1	1:B:136:GLU:OE2	2.20	0.73
1:E:189:THR:HG22	1:F:184:GLU:HG3	1.71	0.73
1:C:371:THR:OG1	1:C:372:LYS:N	2.20	0.73
1:A:403:ALA:O	1:A:407:VAL:HG23	1.89	0.73
1:C:34:ILE:HD11	1:C:41:GLY:CA	2.17	0.73
1:D:334:ASP:CB	1:D:335:ARG:HH21	2.02	0.73
1:A:86:VAL:HG12	1:A:158:LEU:HD21	1.72	0.72
1:C:352:GLU:HG2	1:C:409:LYS:HE3	1.69	0.72
2:C:525:ACP:H5'1	2:C:525:ACP:PB	2.29	0.72
1:F:312:GLU:CG	1:F:373:THR:HG23	2.20	0.71
1:D:99:VAL:HG12	1:D:125:VAL:HG11	1.71	0.71
1:A:164:THR:CG2	1:A:166:LYS:H	2.03	0.69
1:F:375:LEU:HD11	1:F:377:ASN:OD1	1.92	0.69
1:C:63:THR:HG22	1:C:80:ASP:OD2	1.93	0.69
1:E:131:LEU:HD22	1:E:179:VAL:HG11	1.74	0.69
1:F:276:VAL:HB	1:F:291:MET:HG2	1.74	0.68
1:A:63:THR:HG22	1:A:80:ASP:OD2	1.94	0.68
1:B:63:THR:HG22	1:B:80:ASP:OD2	1.92	0.68
1:E:327:VAL:HA	1:E:330:LYS:HE2	1.76	0.68
1:F:388:CYS:O	1:F:392:LEU:HB2	1.94	0.68
1:D:277:ASP:OD1	1:D:278:PHE:N	2.27	0.67
1:A:210:ASP:OD1	1:A:212:ARG:HG3	1.94	0.67
1:A:164:THR:CG2	1:A:166:LYS:HB2	2.25	0.67
1:E:63:THR:HG22	1:E:80:ASP:OD2	1.95	0.67
1:D:306:ASN:O	1:D:308:ILE:CD1	2.42	0.67
1:D:31:GLY:O	1:D:35:GLY:N	2.27	0.67
1:F:124:GLY:N	2:F:525:ACP:O3G	2.27	0.67
1:B:276:VAL:HB	1:B:291:MET:HG2	1.75	0.66
1:A:164:THR:HG21	1:A:166:LYS:HB2	1.76	0.66

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:345:LEU:HD13	1:B:410:ALA:CB	2.25	0.66
1:D:34:ILE:HG22	1:D:34:ILE:O	1.93	0.66
1:F:144:TYR:CG	1:F:160:GLN:NE2	2.64	0.66
2:B:525:ACP:O2B	2:B:525:ACP:O3'	2.03	0.65
1:D:306:ASN:O	1:D:308:ILE:HD12	1.96	0.65
1:C:26:VAL:HA	1:C:33:TYR:CE2	2.32	0.65
1:B:330:LYS:O	1:B:334:ASP:HB3	1.97	0.65
1:A:313:GLY:O	1:A:374:LYS:HG3	1.97	0.64
1:C:265:ASN:OD1	1:C:294:ASN:ND2	2.27	0.64
1:D:123:VAL:CB	1:D:127:VAL:HG21	2.29	0.63
1:E:276:VAL:HB	1:E:291:MET:HG2	1.80	0.63
1:F:124:GLY:HA3	2:F:525:ACP:O2A	1.98	0.63
1:B:325:THR:HG23	1:B:350:ILE:CD1	2.29	0.63
1:B:325:THR:HG23	1:B:350:ILE:HD13	1.81	0.63
1:A:84:ILE:CD1	1:A:169:SER:HB3	2.28	0.63
1:A:276:VAL:HB	1:A:291:MET:HG2	1.80	0.63
1:B:324:LEU:HD12	1:B:328:VAL:HG23	1.80	0.63
1:C:70:LEU:HD12	1:C:74:GLY:CA	2.29	0.62
1:A:36:SER:O	1:A:41:GLY:HA3	2.00	0.62
1:F:124:GLY:CA	2:F:525:ACP:O2A	2.47	0.62
1:A:39:GLU:OE2	1:C:184:GLU:HG3	1.99	0.61
1:D:276:VAL:HB	1:D:291:MET:HG2	1.82	0.61
1:B:347:GLY:CA	1:B:350:ILE:HD12	2.27	0.61
1:E:48:GLU:HG3	4:E:2003:HOH:O	1.99	0.61
1:F:183:THR:O	1:F:183:THR:HG22	2.00	0.61
1:D:308:ILE:HD12	1:D:308:ILE:N	2.15	0.61
1:F:352:GLU:OE1	1:F:413:SER:CA	2.49	0.61
1:C:47:TRP:HH2	1:C:190:VAL:HA	1.66	0.60
1:C:312:GLU:HB2	1:C:373:THR:O	2.01	0.60
1:B:144:TYR:CD2	1:B:160:GLN:NE2	2.70	0.60
1:A:371:THR:HB	1:A:373:THR:OG1	2.01	0.60
1:A:29:ARG:NH1	1:A:29:ARG:HG2	2.15	0.60
1:A:352:GLU:OE1	1:A:413:SER:OG	2.16	0.60
1:F:402:ASP:OD1	1:F:402:ASP:N	2.34	0.60
1:D:39:GLU:OE1	1:D:40:ARG:N	2.34	0.60
1:D:276:VAL:HG22	1:D:395:TRP:CE2	2.36	0.60
1:B:345:LEU:HD13	1:B:410:ALA:HB1	1.83	0.60
1:D:335:ARG:N	1:D:335:ARG:HE	1.98	0.60
1:B:140:LYS:O	1:B:167:THR:HA	2.02	0.59
1:F:83:GLY:HA2	1:F:169:SER:OG	2.02	0.59
1:F:348:ASP:OD1	1:F:348:ASP:N	2.34	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:124:GLY:HA2	2:F:525:ACP:O3G	2.01	0.59
1:B:23:LEU:CD1	1:B:153:SER:HB3	2.33	0.59
1:B:346:THR:OG1	1:B:349:ASP:OD2	2.20	0.59
1:D:312:GLU:HB2	1:D:373:THR:OG1	2.02	0.59
1:C:134:ARG:NH1	1:C:136:GLU:OE2	2.36	0.59
1:A:29:ARG:HG2	1:A:29:ARG:HH11	1.68	0.58
1:E:44:HIS:NE2	1:E:48:GLU:OE1	2.35	0.58
1:C:49:VAL:HA	1:C:52:ASN:HD22	1.67	0.58
1:D:46:ILE:HD11	1:D:185:TYR:CD1	2.39	0.58
1:F:140:LYS:O	1:F:167:THR:HA	2.03	0.58
1:F:375:LEU:HD12	1:F:376:GLY:N	2.17	0.58
1:D:313:GLY:O	1:D:374:LYS:HA	2.04	0.58
1:E:125:VAL:CG1	2:E:525:ACP:O1A	2.50	0.58
1:F:99:VAL:HG11	2:F:525:ACP:H5'2	1.82	0.58
1:E:371:THR:HG22	1:E:371:THR:O	2.03	0.58
1:D:184:GLU:HG2	1:F:189:THR:HG22	1.82	0.57
1:E:164:THR:HG22	1:E:166:LYS:H	1.69	0.57
1:F:185:TYR:O	1:F:212:ARG:NH2	2.25	0.57
1:E:125:VAL:CG1	2:E:525:ACP:PA	2.92	0.56
1:F:371:THR:O	1:F:372:LYS:HB2	2.04	0.56
1:A:47:TRP:HH2	1:A:190:VAL:HA	1.69	0.56
1:B:396:PHE:CD1	1:B:403:ALA:HB1	2.40	0.56
1:C:24:GLU:CD	1:C:27:ARG:NH1	2.58	0.56
1:E:47:TRP:HH2	1:E:190:VAL:HA	1.70	0.56
1:F:124:GLY:CA	2:F:525:ACP:O3G	2.54	0.56
1:C:271:ILE:HD13	1:C:409:LYS:HG3	1.88	0.56
1:E:99:VAL:HG13	2:E:525:ACP:H5'1	1.87	0.56
1:F:81:GLY:O	1:F:83:GLY:N	2.39	0.56
1:B:396:PHE:HD1	1:B:403:ALA:HB1	1.70	0.56
1:C:26:VAL:HA	1:C:33:TYR:CD2	2.41	0.56
1:B:93:ILE:HG12	1:B:94:PRO:HD2	1.87	0.55
1:D:348:ASP:OD1	1:D:348:ASP:N	2.38	0.55
1:A:316:HIS:ND1	1:A:375:LEU:HD23	2.22	0.55
1:F:371:THR:OG1	1:F:372:LYS:N	2.39	0.55
1:B:48:GLU:OE1	1:B:124:GLY:N	2.38	0.55
1:B:97:ASP:OD1	1:B:148:GLN:NE2	2.39	0.55
1:D:205:THR:HG23	1:D:252:HIS:HB2	1.88	0.55
1:F:144:TYR:CD2	1:F:160:GLN:NE2	2.74	0.55
1:C:24:GLU:CD	1:C:27:ARG:HH12	2.09	0.55
1:A:213:VAL:HA	1:B:249:ARG:HH22	1.71	0.55
1:A:323:ALA:O	1:A:327:VAL:HG23	2.07	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:271:ILE:HD13	1:E:409:LYS:HG3	1.88	0.55
1:D:375:LEU:HD12	1:D:376:GLY:H	1.71	0.54
1:D:371:THR:OG1	1:D:373:THR:HG23	2.07	0.54
1:E:194:LEU:HB3	1:E:206:ILE:HG21	1.89	0.54
2:F:525:ACP:O1B	2:F:525:ACP:O2G	2.26	0.54
1:D:93:ILE:HG12	1:D:94:PRO:HD2	1.88	0.54
1:A:33:TYR:N	1:A:33:TYR:CD1	2.76	0.54
1:A:93:ILE:HG12	1:A:94:PRO:HD2	1.89	0.54
1:C:140:LYS:O	1:C:167:THR:HA	2.07	0.54
1:A:34:ILE:HD13	1:A:131:LEU:CD1	2.37	0.54
1:A:287:VAL:HG23	1:A:360:VAL:HG12	1.90	0.54
2:E:525:ACP:O3'	2:E:525:ACP:O2B	2.22	0.54
1:C:70:LEU:HD12	1:C:74:GLY:HA3	1.88	0.53
1:A:30:PRO:O	1:A:34:ILE:HG12	2.08	0.53
2:C:525:ACP:PB	2:C:525:ACP:C5'	2.96	0.53
1:A:247:LYS:O	1:A:247:LYS:HG3	2.07	0.53
1:E:140:LYS:O	1:E:167:THR:HA	2.07	0.53
1:B:323:ALA:O	1:B:327:VAL:HG23	2.09	0.53
1:B:345:LEU:HD13	1:B:410:ALA:HB3	1.90	0.53
1:C:173:PHE:CD1	1:C:173:PHE:N	2.76	0.53
1:D:26:VAL:CG1	1:D:127:VAL:HG13	2.34	0.53
1:F:274:SER:HB3	1:F:402:ASP:OD2	2.09	0.53
1:B:352:GLU:HG2	1:B:409:LYS:HE3	1.90	0.52
1:D:52:ASN:O	1:D:55:ASP:HB2	2.09	0.52
1:E:189:THR:CG2	1:F:184:GLU:HG3	2.38	0.52
1:B:23:LEU:HD12	1:B:153:SER:HB3	1.90	0.52
1:F:312:GLU:HG3	1:F:373:THR:HG21	1.86	0.52
1:C:188:GLU:HG3	1:C:192:ARG:HH21	1.74	0.52
1:A:47:TRP:CZ3	1:A:193:ARG:HG2	2.45	0.52
1:E:129:ASN:OD1	1:E:153:SER:HA	2.09	0.52
1:A:276:VAL:O	1:A:290:ALA:HA	2.10	0.52
1:B:324:LEU:HD12	1:B:324:LEU:C	2.29	0.52
1:C:351:ARG:O	1:C:354:LEU:HB3	2.09	0.52
1:D:276:VAL:HG22	1:D:395:TRP:CD2	2.44	0.52
1:B:277:ASP:O	1:B:278:PHE:HB3	2.10	0.52
1:C:265:ASN:HA	1:C:268:LYS:HG3	1.92	0.52
1:A:34:ILE:HG22	1:A:44:HIS:ND1	2.25	0.52
1:C:93:ILE:HG12	1:C:94:PRO:HD2	1.92	0.51
1:B:266:ARG:HG3	1:B:267:THR:N	2.24	0.51
1:D:22:GLY:O	1:D:103:LEU:CD1	2.57	0.51
1:C:34:ILE:CD1	1:C:41:GLY:CA	2.88	0.51

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:293:TRP:HA	1:C:353:GLY:O	2.10	0.51
1:F:375:LEU:CD1	1:F:377:ASN:OD1	2.58	0.51
1:D:140:LYS:O	1:D:167:THR:HA	2.11	0.51
1:F:81:GLY:O	1:F:168:GLY:HA2	2.10	0.51
1:D:294:ASN:O	1:D:296:GLY:N	2.42	0.51
1:D:159:LYS:NZ	1:F:352:GLU:HG3	2.26	0.50
1:A:29:ARG:HH11	1:A:29:ARG:CG	2.24	0.50
1:A:213:VAL:HA	1:B:249:ARG:NH2	2.25	0.50
1:B:276:VAL:HG22	1:B:395:TRP:CE2	2.46	0.50
1:B:135:LEU:HD12	1:B:173:PHE:CB	2.39	0.50
1:B:187:PHE:CD2	1:B:210:ASP:HB2	2.46	0.50
1:D:289:ILE:HD12	1:D:388:CYS:SG	2.52	0.50
1:C:277:ASP:OD1	1:C:278:PHE:N	2.44	0.50
1:D:21:GLU:O	1:D:24:GLU:HG3	2.11	0.50
1:A:345:LEU:HD22	1:A:410:ALA:HB1	1.94	0.50
1:C:271:ILE:CD1	1:C:409:LYS:HG3	2.42	0.50
1:D:184:GLU:HG3	1:F:189:THR:HG23	1.92	0.50
1:D:294:ASN:C	1:D:296:GLY:H	2.14	0.50
1:A:184:GLU:HG2	1:B:189:THR:HG22	1.93	0.50
1:D:85:PRO:HB2	1:D:95:THR:HG21	1.94	0.50
1:A:303:THR:HG21	1:A:317:GLU:HB2	1.93	0.49
1:D:44:HIS:HA	1:D:47:TRP:CD1	2.46	0.49
1:D:99:VAL:HG12	1:D:125:VAL:CG1	2.39	0.49
1:D:335:ARG:HE	1:D:335:ARG:CA	2.25	0.49
1:D:375:LEU:HD11	1:D:377:ASN:OD1	2.12	0.49
1:E:68:VAL:HG22	1:E:209:THR:HG23	1.94	0.49
1:A:181:GLU:OE2	1:B:36:SER:OG	2.29	0.49
1:E:93:ILE:HG12	1:E:94:PRO:HD2	1.95	0.49
1:F:271:ILE:HD13	1:F:409:LYS:HG3	1.95	0.49
1:F:99:VAL:CG1	2:F:525:ACP:C5'	2.73	0.49
1:F:331:TYR:CD1	1:F:331:TYR:C	2.86	0.49
1:B:85:PRO:HB2	1:B:95:THR:HG21	1.95	0.49
1:C:134:ARG:O	1:C:174:TRP:HE3	1.96	0.49
1:D:134:ARG:NH1	1:F:299:GLU:O	2.36	0.49
1:F:129:ASN:OD1	1:F:153:SER:HA	2.12	0.49
1:C:34:ILE:HG12	1:C:35:GLY:N	2.28	0.49
1:D:181:GLU:OE2	1:F:36:SER:OG	2.28	0.49
1:A:97:ASP:OD1	1:A:148:GLN:NE2	2.41	0.49
1:A:276:VAL:HG22	1:A:395:TRP:CE2	2.48	0.49
1:A:388:CYS:O	1:A:392:LEU:HB2	2.13	0.49
1:D:84:ILE:HG21	1:D:96:VAL:HG13	1.95	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:334:ASP:HB3	1:D:335:ARG:HH21	1.76	0.48
1:F:146:TRP:CH2	1:F:160:GLN:HG3	2.47	0.48
1:E:40:ARG:NH1	1:F:180:PHE:O	2.45	0.48
1:B:347:GLY:HA2	1:B:350:ILE:CD1	2.35	0.48
1:D:99:VAL:CG1	1:D:125:VAL:CG1	2.91	0.48
1:A:68:VAL:HG22	1:A:209:THR:HG23	1.95	0.48
1:A:84:ILE:CD1	1:A:169:SER:CB	2.91	0.48
1:D:337:LEU:HD13	1:D:407:VAL:CG1	2.44	0.48
1:F:138:GLU:O	1:F:138:GLU:HG3	2.14	0.48
1:F:276:VAL:O	1:F:290:ALA:HA	2.14	0.48
1:B:207:ASN:OD1	1:B:250:THR:HG23	2.14	0.47
1:C:194:LEU:HD12	1:C:208:LEU:HG	1.96	0.47
1:C:173:PHE:N	1:C:173:PHE:HD1	2.12	0.47
1:F:89:HIS:CG	1:F:90:ALA:N	2.83	0.47
1:A:184:GLU:CG	1:B:189:THR:HG22	2.45	0.47
1:D:271:ILE:HD13	1:D:409:LYS:HG3	1.96	0.47
1:A:337:LEU:CD1	1:A:407:VAL:HG11	2.44	0.47
1:A:368:GLU:O	1:A:374:LYS:HB3	2.14	0.47
1:C:388:CYS:O	1:C:392:LEU:HB2	2.15	0.47
1:F:56:GLU:OE2	2:F:525:ACP:C2	2.62	0.47
1:F:194:LEU:HD12	1:F:208:LEU:HG	1.97	0.47
1:A:294:ASN:C	1:A:296:GLY:H	2.17	0.47
1:A:40:ARG:NH2	1:C:180:PHE:O	2.45	0.47
1:A:123:VAL:HB	1:A:124:GLY:H	1.34	0.47
1:D:34:ILE:O	1:D:34:ILE:CG2	2.60	0.47
1:D:310:THR:HB	1:D:373:THR:O	2.15	0.47
2:E:525:ACP:HO3'	2:E:525:ACP:PB	2.38	0.47
1:F:131:LEU:HD22	1:F:179:VAL:HG11	1.95	0.47
1:B:345:LEU:HD22	1:B:349:ASP:HB2	1.96	0.47
1:E:137:VAL:HG12	1:E:139:ILE:HG13	1.96	0.47
1:F:93:ILE:HG12	1:F:94:PRO:HD2	1.96	0.47
1:B:325:THR:HG23	1:B:347:GLY:HA2	1.95	0.47
1:D:246:VAL:HG12	1:D:247:LYS:N	2.29	0.47
1:F:47:TRP:HH2	1:F:190:VAL:HA	1.80	0.47
1:F:125:VAL:O	1:F:128:VAL:N	2.47	0.46
1:B:346:THR:O	1:B:350:ILE:HD12	2.14	0.46
1:B:85:PRO:HB2	1:B:95:THR:CG2	2.45	0.46
1:D:194:LEU:HD22	1:D:206:ILE:HG21	1.97	0.46
1:E:276:VAL:HG22	1:E:395:TRP:CE2	2.49	0.46
1:E:388:CYS:O	1:E:392:LEU:HB2	2.16	0.46
1:B:294:ASN:C	1:B:296:GLY:H	2.18	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:277:ASP:O	1:D:278:PHE:HB3	2.16	0.46
1:F:124:GLY:HA2	2:F:525:ACP:O2A	2.16	0.46
1:B:331:TYR:CD2	1:B:396:PHE:HB3	2.51	0.46
1:C:194:LEU:HB3	1:C:206:ILE:HG21	1.96	0.46
1:A:258:VAL:HG12	1:A:262:LYS:HE3	1.98	0.46
1:E:331:TYR:CD1	1:E:331:TYR:C	2.88	0.46
1:C:44:HIS:CE1	1:C:48:GLU:HG2	2.50	0.46
1:A:257:LEU:O	1:A:261:VAL:HG23	2.15	0.46
1:C:85:PRO:HB2	1:C:95:THR:HG21	1.98	0.46
1:C:277:ASP:O	1:C:278:PHE:HB3	2.15	0.46
2:D:525:ACP:H5'1	2:D:525:ACP:PB	2.56	0.46
1:A:337:LEU:HD13	1:A:407:VAL:HG11	1.97	0.45
1:D:308:ILE:CD1	1:D:308:ILE:N	2.79	0.45
1:D:346:THR:HG22	1:D:348:ASP:H	1.81	0.45
1:E:335:ARG:HA	1:E:335:ARG:HD3	1.78	0.45
1:C:44:HIS:HE1	1:C:48:GLU:HG2	1.80	0.45
1:A:182:THR:HG23	1:A:184:GLU:H	1.81	0.45
1:C:331:TYR:C	1:C:331:TYR:CD1	2.89	0.45
1:D:367:PHE:N	1:D:367:PHE:CD1	2.84	0.45
1:D:408:ASN:CA	1:D:411:VAL:HG22	2.43	0.45
1:F:297:TYR:O	1:F:352:GLU:HG2	2.16	0.45
1:A:82:ARG:O	1:A:141:ARG:HD2	2.17	0.45
1:A:210:ASP:HB3	1:A:247:LYS:HG2	1.99	0.45
1:C:68:VAL:HG22	1:C:209:THR:HG23	1.98	0.45
1:F:294:ASN:OD1	1:F:353:GLY:C	2.54	0.45
1:B:184:GLU:HG3	1:C:189:THR:CG2	2.46	0.45
1:D:28:LYS:C	1:D:30:PRO:HD3	2.36	0.45
1:D:375:LEU:HD12	1:D:376:GLY:N	2.32	0.45
1:A:327:VAL:HG12	1:A:396:PHE:CD2	2.52	0.45
1:D:352:GLU:HG2	1:D:409:LYS:HE3	1.99	0.45
1:C:266:ARG:NH2	1:C:267:THR:HG23	2.32	0.45
1:B:324:LEU:CD1	1:B:328:VAL:HG23	2.47	0.44
1:B:184:GLU:CG	1:C:189:THR:HG22	2.48	0.44
1:A:352:GLU:OE1	1:A:413:SER:CB	2.65	0.44
1:B:103:LEU:HD23	1:B:126:SER:OG	2.17	0.44
1:C:315:THR:HB	1:C:381:LYS:HB2	2.00	0.44
1:D:192:ARG:NH1	1:E:184:GLU:OE2	2.50	0.44
1:E:44:HIS:O	1:E:44:HIS:CD2	2.70	0.44
1:F:85:PRO:HB2	1:F:95:THR:HG21	2.00	0.44
1:C:85:PRO:O	1:C:95:THR:HB	2.17	0.44
1:D:187:PHE:CZ	1:D:208:LEU:HD13	2.53	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:79:ASP:OD1	1:C:79:ASP:N	2.51	0.44
2:F:525:ACP:H5'1	2:F:525:ACP:H8	2.00	0.44
1:D:47:TRP:HH2	1:D:190:VAL:HA	1.82	0.43
1:D:297:TYR:CD2	1:E:147:SER:HB3	2.53	0.43
1:F:291:MET:HB2	1:F:354:LEU:HD11	1.99	0.43
1:E:352:GLU:HG2	1:E:409:LYS:HE3	2.00	0.43
1:B:187:PHE:CZ	1:B:208:LEU:HD13	2.53	0.43
1:B:388:CYS:O	1:B:392:LEU:HB2	2.18	0.43
1:E:85:PRO:O	1:E:95:THR:HB	2.18	0.43
1:F:312:GLU:OE1	1:F:371:THR:HB	2.18	0.43
1:F:368:GLU:N	1:F:374:LYS:O	2.40	0.43
1:D:137:VAL:HG12	1:D:139:ILE:HG13	1.99	0.43
1:E:312:GLU:CB	1:E:373:THR:O	2.62	0.43
1:C:386:LYS:HA	1:C:386:LYS:HD2	1.85	0.43
1:D:184:GLU:OE1	1:D:212:ARG:NH1	2.52	0.43
1:D:344:ASN:HD22	1:D:344:ASN:HA	1.58	0.43
1:D:345:LEU:HD13	1:D:410:ALA:HB1	2.00	0.43
1:F:145:GLU:HG3	1:F:162:ALA:O	2.18	0.43
1:F:257:LEU:HD13	1:F:357:VAL:HB	2.00	0.43
1:A:86:VAL:HG12	1:A:158:LEU:CD2	2.46	0.43
1:A:200:LEU:HD13	1:A:307:THR:HA	2.01	0.43
1:D:34:ILE:HD11	1:D:127:VAL:HG11	1.99	0.43
1:E:297:TYR:CD1	1:E:297:TYR:C	2.92	0.43
1:A:47:TRP:CE3	1:A:47:TRP:HA	2.53	0.42
1:A:47:TRP:HA	1:A:47:TRP:HE3	1.83	0.42
1:F:84:ILE:CG1	2:F:525:ACP:C5	2.97	0.42
1:A:141:ARG:HD2	1:A:141:ARG:HH11	1.73	0.42
1:C:246:VAL:HA	1:C:247:LYS:HA	1.67	0.42
1:E:138:GLU:HB3	1:E:170:THR:HB	2.01	0.42
1:A:352:GLU:CD	1:A:413:SER:HB2	2.40	0.42
1:D:187:PHE:CE1	1:D:208:LEU:HD13	2.55	0.42
1:D:75:VAL:O	1:D:172:ARG:HA	2.19	0.42
1:A:265:ASN:OD1	1:A:294:ASN:ND2	2.53	0.42
1:C:47:TRP:CH2	1:C:190:VAL:HA	2.52	0.42
1:A:26:VAL:HG11	1:A:127:VAL:HG13	2.01	0.42
1:D:134:ARG:NE	1:D:151:GLU:OE1	2.50	0.42
1:A:303:THR:HB	1:A:316:HIS:CD2	2.54	0.42
1:E:84:ILE:HD11	2:E:525:ACP:N7	2.35	0.42
1:F:315:THR:HB	1:F:381:LYS:HB2	2.02	0.42
1:A:45:LEU:HD22	1:A:128:VAL:HA	2.01	0.42
1:A:407:VAL:O	1:A:410:ALA:HB3	2.20	0.42

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:276:VAL:O	1:C:290:ALA:HA	2.20	0.42
1:E:271:ILE:CD1	1:E:409:LYS:HG3	2.49	0.42
1:E:303:THR:HG21	1:E:317:GLU:HB2	2.01	0.41
1:E:320:PHE:CD2	1:E:358:ILE:HD11	2.55	0.41
1:D:315:THR:HB	1:D:381:LYS:HB2	2.02	0.41
1:F:42:LEU:HG	1:F:185:TYR:CE1	2.55	0.41
1:F:187:PHE:CD2	1:F:210:ASP:HB2	2.55	0.41
1:C:200:LEU:HD23	1:C:257:LEU:HD21	2.02	0.41
1:C:328:VAL:HG11	1:C:350:ILE:HG12	2.02	0.41
1:F:310:THR:HB	1:F:373:THR:O	2.21	0.41
1:B:246:VAL:HG22	1:B:247:LYS:N	2.36	0.41
1:C:247:LYS:O	1:C:247:LYS:HG3	2.20	0.41
1:A:187:PHE:CD2	1:A:210:ASP:HB2	2.56	0.41
1:A:194:LEU:HD12	1:A:208:LEU:HG	2.02	0.41
1:B:36:SER:O	1:B:41:GLY:HA3	2.20	0.41
1:C:49:VAL:HA	1:C:52:ASN:ND2	2.32	0.41
1:D:46:ILE:CD1	1:D:185:TYR:CD1	3.03	0.41
1:F:89:HIS:CG	1:F:90:ALA:H	2.39	0.41
1:A:86:VAL:CG1	1:A:158:LEU:HD21	2.45	0.41
1:F:81:GLY:C	1:F:83:GLY:H	2.24	0.41
1:A:85:PRO:HB2	1:A:95:THR:HG21	2.03	0.41
1:F:141:ARG:HG2	1:F:142:ASP:N	2.36	0.41
1:F:271:ILE:CD1	1:F:409:LYS:HG3	2.50	0.41
1:A:140:LYS:O	1:A:167:THR:HA	2.20	0.41
1:F:58:MET:CE	1:F:307:THR:OG1	2.69	0.41
1:A:58:MET:HG2	1:A:361:LYS:HE2	2.02	0.41
1:B:276:VAL:HG22	1:B:395:TRP:CD2	2.55	0.41
1:E:44:HIS:HA	1:E:47:TRP:CD1	2.55	0.41
1:F:44:HIS:HA	1:F:47:TRP:CD1	2.56	0.41
1:F:187:PHE:CZ	1:F:208:LEU:HD13	2.56	0.41
1:A:149:VAL:HG21	1:B:298:SER:HB3	2.02	0.41
1:D:408:ASN:HA	1:D:411:VAL:CG2	2.42	0.41
1:C:30:PRO:O	1:C:34:ILE:HG22	2.21	0.40
1:F:137:VAL:HG13	1:F:171:VAL:HG22	2.03	0.40
1:C:85:PRO:HB2	1:C:95:THR:CG2	2.51	0.40
1:C:335:ARG:HA	1:C:335:ARG:HD3	1.73	0.40
1:D:36:SER:CB	1:E:181:GLU:HG2	2.50	0.40
1:A:303:THR:HG22	1:A:358:ILE:HD12	2.03	0.40
1:F:84:ILE:HG13	2:F:525:ACP:C5	2.51	0.40
1:A:56:GLU:OE1	2:A:525:ACP:C2	2.69	0.40
1:B:276:VAL:O	1:B:290:ALA:HA	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:345:LEU:HD23	1:D:345:LEU:HA	1.86	0.40
1:A:339:LYS:O	1:A:342:ASP:N	2.55	0.40
1:B:158:LEU:HD12	1:B:159:LYS:H	1.85	0.40
1:C:127:VAL:HG23	1:C:128:VAL:N	2.36	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	353/442 (80%)	339 (96%)	12 (3%)	2 (1%)	25	57
1	B	346/442 (78%)	331 (96%)	13 (4%)	2 (1%)	25	57
1	C	336/442 (76%)	319 (95%)	16 (5%)	1 (0%)	41	71
1	D	349/442 (79%)	336 (96%)	11 (3%)	2 (1%)	25	57
1	E	332/442 (75%)	318 (96%)	13 (4%)	1 (0%)	41	71
1	F	347/442 (78%)	329 (95%)	15 (4%)	3 (1%)	17	48
All	All	2063/2652 (78%)	1972 (96%)	80 (4%)	11 (0%)	29	61

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	343	PRO
1	D	295	ALA
1	F	82	ARG
1	F	123	VAL
1	A	295	ALA
1	B	295	ALA
1	D	343	PRO
1	E	295	ALA

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	F	352	GLU
1	B	83	GLY
1	A	365	PRO

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	283/361 (78%)	265 (94%)	18 (6%)	17	46
1	B	278/361 (77%)	260 (94%)	18 (6%)	17	46
1	C	273/361 (76%)	252 (92%)	21 (8%)	13	38
1	D	278/361 (77%)	255 (92%)	23 (8%)	11	36
1	E	275/361 (76%)	255 (93%)	20 (7%)	14	41
1	F	282/361 (78%)	264 (94%)	18 (6%)	17	46
All	All	1669/2166 (77%)	1551 (93%)	118 (7%)	14	42

All (118) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	32	MET
1	A	39	GLU
1	A	56	GLU
1	A	86	VAL
1	A	123	VAL
1	A	125	VAL
1	A	144	TYR
1	A	147	SER
1	A	169	SER
1	A	182	THR
1	A	208	LEU
1	A	209	THR
1	A	248	SER
1	A	260	PHE
1	A	344	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	371	THR
1	A	392	LEU
1	A	412	SER
1	B	82	ARG
1	B	86	VAL
1	B	147	SER
1	B	169	SER
1	B	208	LEU
1	B	260	PHE
1	B	266	ARG
1	B	271	ILE
1	B	279	SER
1	B	288	GLU
1	B	316	HIS
1	B	324	LEU
1	B	325	THR
1	B	334	ASP
1	B	346	THR
1	B	349	ASP
1	B	373	THR
1	B	412	SER
1	C	34	ILE
1	C	56	GLU
1	C	70	LEU
1	C	103	LEU
1	C	126	SER
1	C	132	SER
1	C	134	ARG
1	C	147	SER
1	C	153	SER
1	C	169	SER
1	C	173	PHE
1	C	208	LEU
1	C	209	THR
1	C	260	PHE
1	C	266	ARG
1	C	268	LYS
1	C	288	GLU
1	C	316	HIS
1	C	335	ARG
1	C	373	THR
1	C	406	VAL

Continued from previous page...

Mol	Chain	Res	Type
1	D	16	SER
1	D	23	LEU
1	D	24	GLU
1	D	39	GLU
1	D	88	THR
1	D	126	SER
1	D	138	GLU
1	D	147	SER
1	D	153	SER
1	D	169	SER
1	D	208	LEU
1	D	209	THR
1	D	212	ARG
1	D	260	PHE
1	D	279	SER
1	D	312	GLU
1	D	316	HIS
1	D	335	ARG
1	D	337	LEU
1	D	344	ASN
1	D	348	ASP
1	D	352	GLU
1	D	412	SER
1	E	88	THR
1	E	125	VAL
1	E	153	SER
1	E	169	SER
1	E	192	ARG
1	E	208	LEU
1	E	209	THR
1	E	257	LEU
1	E	260	PHE
1	E	279	SER
1	E	316	HIS
1	E	335	ARG
1	E	345	LEU
1	E	346	THR
1	E	372	LYS
1	E	373	THR
1	E	402	ASP
1	E	406	VAL
1	E	412	SER

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	417	ARG
1	F	136	GLU
1	F	137	VAL
1	F	138	GLU
1	F	153	SER
1	F	169	SER
1	F	208	LEU
1	F	209	THR
1	F	257	LEU
1	F	260	PHE
1	F	316	HIS
1	F	334	ASP
1	F	345	LEU
1	F	348	ASP
1	F	349	ASP
1	F	373	THR
1	F	378	THR
1	F	402	ASP
1	F	412	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	344	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 ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 12 ligands modelled in this entry, 6 are monoatomic - leaving 6 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z|$ > 2	Counts	RMSZ	#$|Z|$ > 2
2	ACP	E	525	3	27,33,33	1.48	2 (7%)	32,52,52	1.51	4 (12%)
2	ACP	C	525	3	27,33,33	1.06	1 (3%)	32,52,52	0.85	0
2	ACP	D	525	3	27,33,33	1.31	2 (7%)	32,52,52	1.05	1 (3%)
2	ACP	B	525	3	27,33,33	1.50	2 (7%)	32,52,52	1.27	2 (6%)
2	ACP	F	525	3	27,33,33	1.99	3 (11%)	32,52,52	1.05	2 (6%)
2	ACP	A	525	3	27,33,33	0.74	0	32,52,52	1.19	2 (6%)

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	ACP	E	525	3	-	3/15/38/38	0/3/3/3
2	ACP	C	525	3	-	5/15/38/38	0/3/3/3
2	ACP	D	525	3	-	2/15/38/38	0/3/3/3
2	ACP	B	525	3	-	4/15/38/38	0/3/3/3
2	ACP	F	525	3	-	9/15/38/38	0/3/3/3
2	ACP	A	525	3	-	3/15/38/38	0/3/3/3

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	525	ACP	PB-O3A	-7.49	1.50	1.58
2	B	525	ACP	PB-O3A	-5.78	1.51	1.58
2	E	525	ACP	PB-O3A	-5.06	1.52	1.58
2	D	525	ACP	PB-O3A	-4.78	1.53	1.58
2	F	525	ACP	PB-O1B	4.61	1.62	1.51

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	525	ACP	PB-O1B	4.12	1.61	1.51
2	F	525	ACP	PG-O2G	3.75	1.63	1.54
2	C	525	ACP	PB-O3A	-3.14	1.54	1.58
2	B	525	ACP	PB-O1B	2.94	1.58	1.51
2	D	525	ACP	PG-O2G	2.72	1.61	1.54

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	525	ACP	PB-O3A-PA	6.11	151.94	132.56
2	B	525	ACP	O1G-PG-C3B	-4.89	100.70	111.24
2	D	525	ACP	O1G-PG-C3B	-3.55	103.58	111.24
2	A	525	ACP	O1G-PG-C3B	-3.19	104.37	111.24
2	E	525	ACP	O1G-PG-C3B	-3.16	104.43	111.24
2	F	525	ACP	O2B-PB-O1B	3.11	120.47	110.07
2	A	525	ACP	O2B-PB-O1B	3.00	120.09	110.07
2	E	525	ACP	O2B-PB-O1B	2.58	118.67	110.07
2	F	525	ACP	O1B-PB-C3B	2.46	115.56	109.07
2	B	525	ACP	O2B-PB-O1B	2.40	118.09	110.07
2	E	525	ACP	C5-C6-N6	2.12	123.58	120.35

There are no chirality outliers.

All (26) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	525	ACP	C3'-C4'-C5'-O5'
2	B	525	ACP	PB-O3A-PA-O5'
2	C	525	ACP	PB-C3B-PG-O1G
2	C	525	ACP	PB-C3B-PG-O2G
2	C	525	ACP	C5'-O5'-PA-O1A
2	D	525	ACP	C3'-C4'-C5'-O5'
2	F	525	ACP	PB-C3B-PG-O1G
2	F	525	ACP	PB-C3B-PG-O2G
2	F	525	ACP	PG-C3B-PB-O1B
2	F	525	ACP	C5'-O5'-PA-O1A
2	A	525	ACP	O4'-C4'-C5'-O5'
2	B	525	ACP	O4'-C4'-C5'-O5'
2	D	525	ACP	O4'-C4'-C5'-O5'
2	E	525	ACP	O4'-C4'-C5'-O5'
2	E	525	ACP	C3'-C4'-C5'-O5'
2	E	525	ACP	PB-O3A-PA-O1A
2	B	525	ACP	C3'-C4'-C5'-O5'

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	C	525	ACP	C5'-O5'-PA-O3A
2	F	525	ACP	C5'-O5'-PA-O2A
2	C	525	ACP	PB-C3B-PG-O3G
2	F	525	ACP	PB-C3B-PG-O3G
2	F	525	ACP	C4'-C5'-O5'-PA
2	F	525	ACP	O4'-C4'-C5'-O5'
2	A	525	ACP	PB-C3B-PG-O1G
2	B	525	ACP	PB-C3B-PG-O1G
2	F	525	ACP	C5'-O5'-PA-O3A

There are no ring outliers.

6 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	525	ACP	8	0
2	C	525	ACP	3	0
2	D	525	ACP	2	0
2	B	525	ACP	1	0
2	F	525	ACP	16	0
2	A	525	ACP	1	0

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

Ligand ACP E 525

Bond lengths

Bond angles

Torsions

Rings

Ligand ACP C 525

Bond lengths

Bond angles

Torsions

Rings

Ligand ACP D 525

Bond lengths

Bond angles

Torsions

Rings

Ligand ACP B 525

Bond lengths

Bond angles

Torsions

Rings

Ligand ACP F 525

Bond lengths

Bond angles

Torsions

Rings

Ligand ACP A 525

Bond lengths

Bond angles

Torsions

Rings
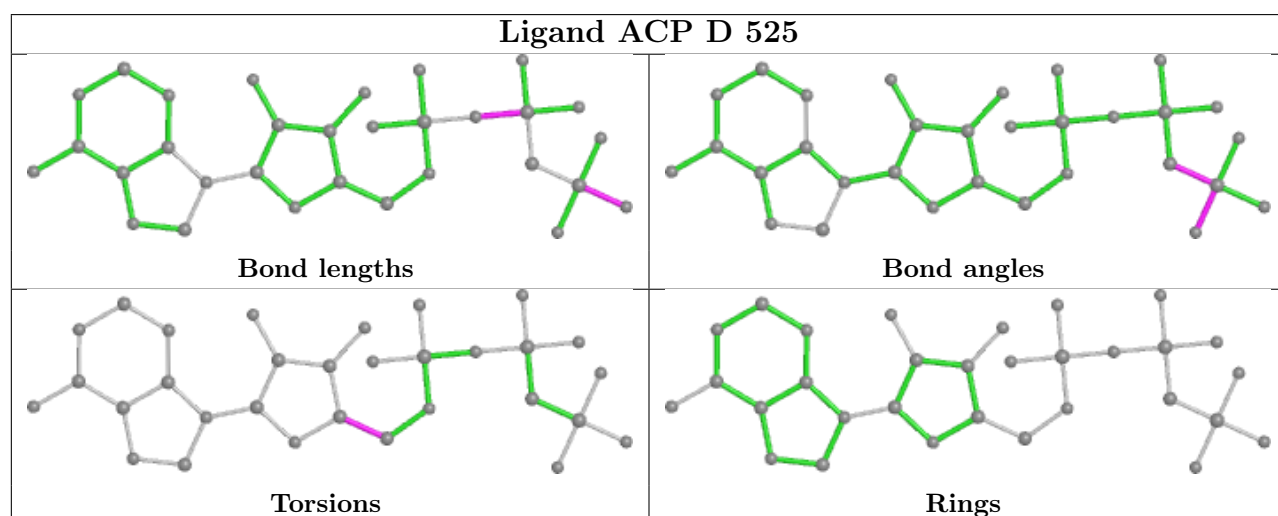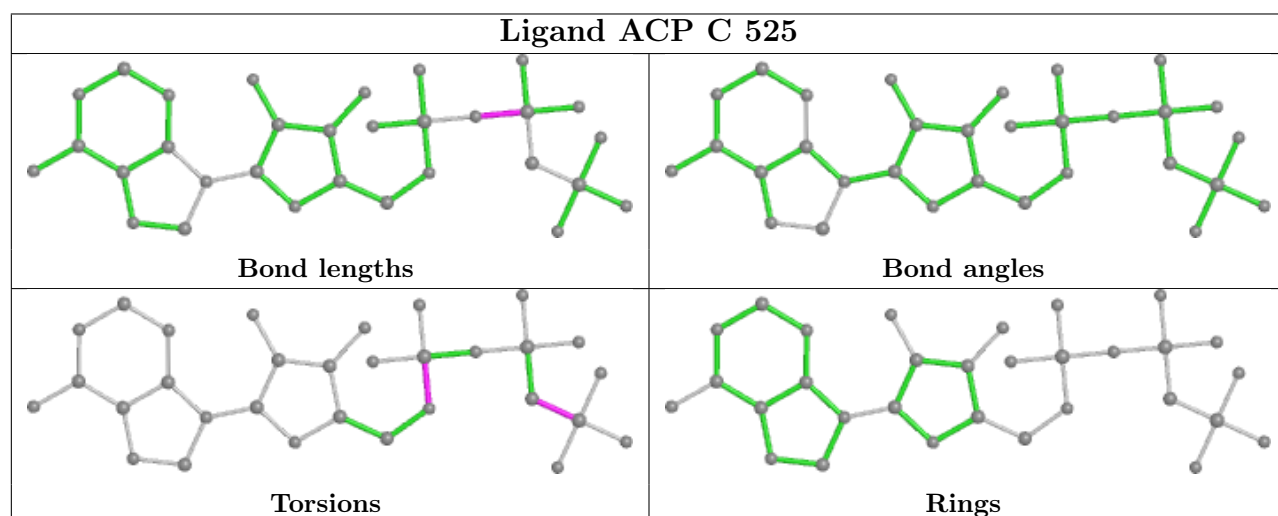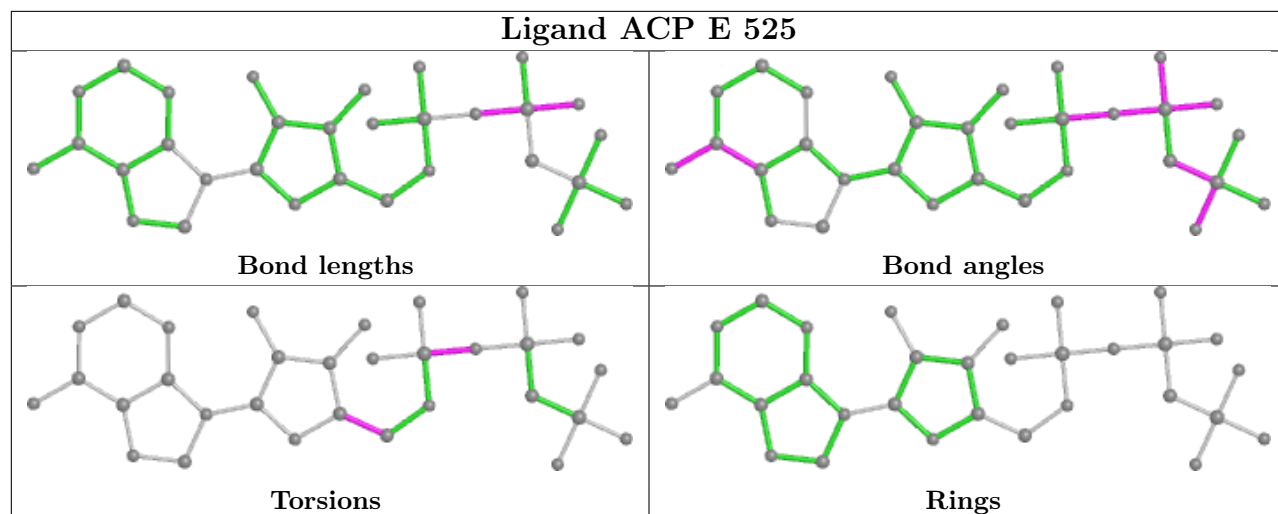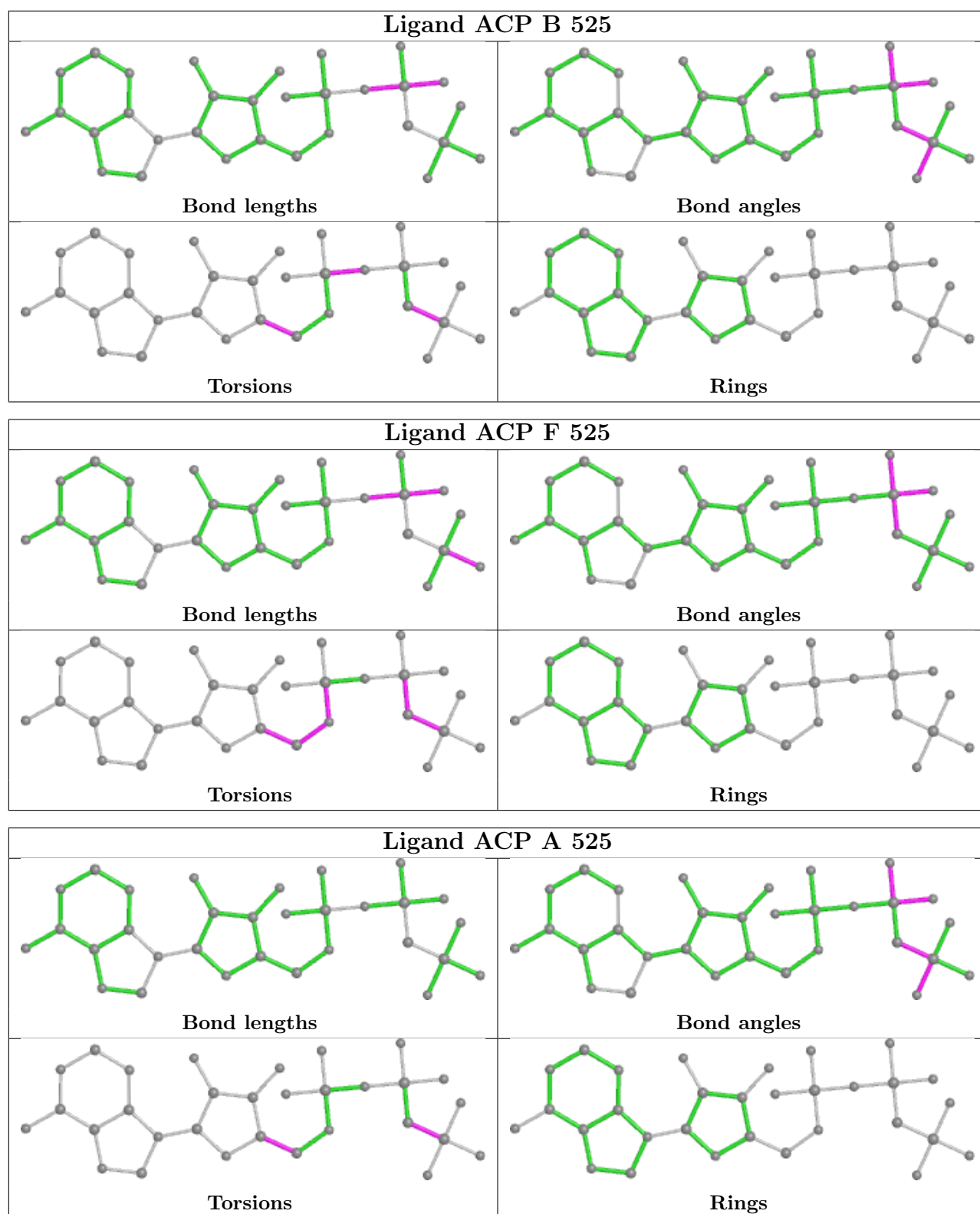
5.7 Other polymers (i)

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	359/442 (81%)	0.07	4 (1%)	80	81	66, 106, 153, 185	0
1	B	356/442 (80%)	0.08	4 (1%)	80	81	69, 110, 149, 203	0
1	C	346/442 (78%)	0.07	3 (0%)	84	84	80, 116, 151, 214	0
1	D	357/442 (80%)	0.07	5 (1%)	75	75	77, 110, 146, 170	0
1	E	342/442 (77%)	0.22	7 (2%)	65	64	84, 121, 170, 205	0
1	F	357/442 (80%)	0.12	0	100	100	71, 105, 159, 216	0
All	All	2117/2652 (79%)	0.10	23 (1%)	80	81	66, 112, 154, 216	0

All (23) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	344	ASN	4.0
1	E	33	TYR	3.5
1	D	86	VAL	3.2
1	E	338	LEU	3.0
1	E	247	LYS	3.0
1	C	338	LEU	2.8
1	B	280	GLY	2.7
1	B	345	LEU	2.6
1	A	21	GLU	2.6
1	D	396	PHE	2.5
1	E	86	VAL	2.4
1	A	137	VAL	2.3
1	E	137	VAL	2.3
1	D	331	TYR	2.2
1	D	406	VAL	2.2
1	A	406	VAL	2.2
1	B	420	ALA	2.2
1	D	362	VAL	2.1
1	A	19	ILE	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	204	LEU	2.1
1	C	179	VAL	2.0
1	C	162	ALA	2.0
1	E	32	MET	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	ACP	E	525	31/31	0.92	0.20	125,129,132,133	0
3	MG	A	526	1/1	0.92	0.16	106,106,106,106	0
2	ACP	A	525	31/31	0.93	0.20	104,115,124,126	0
2	ACP	F	525	31/31	0.94	0.21	88,95,106,108	0
2	ACP	D	525	31/31	0.94	0.20	96,110,118,118	0
2	ACP	C	525	31/31	0.95	0.20	109,115,121,123	0
3	MG	F	526	1/1	0.95	0.18	81,81,81,81	0
2	ACP	B	525	31/31	0.96	0.19	100,113,120,121	0
3	MG	C	526	1/1	0.98	0.13	102,102,102,102	0
3	MG	E	526	1/1	0.99	0.12	133,133,133,133	0
3	MG	D	526	1/1	0.99	0.15	100,100,100,100	0
3	MG	B	526	1/1	1.00	0.14	90,90,90,90	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.

WORLDWIDE
wwPDB
PROTEIN DATA BANK

Electron density around ACP E 525:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
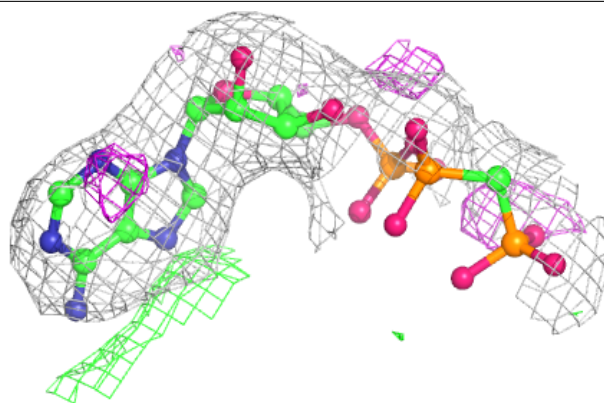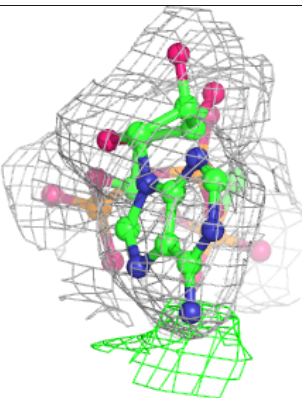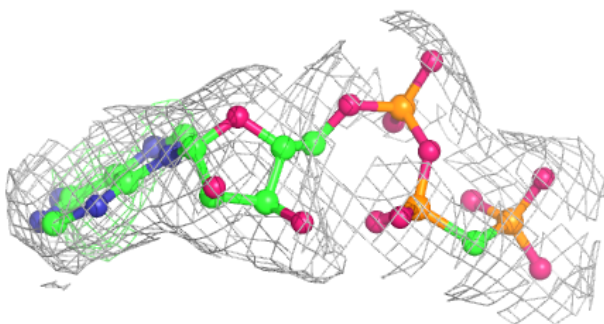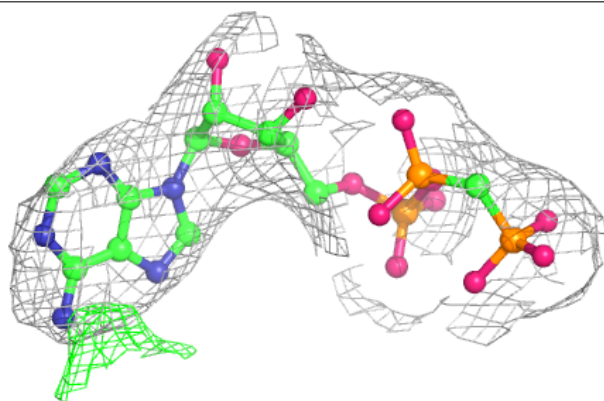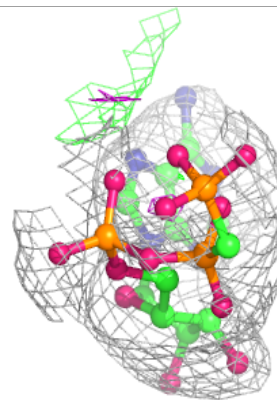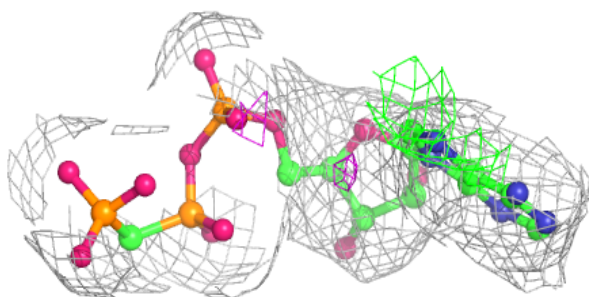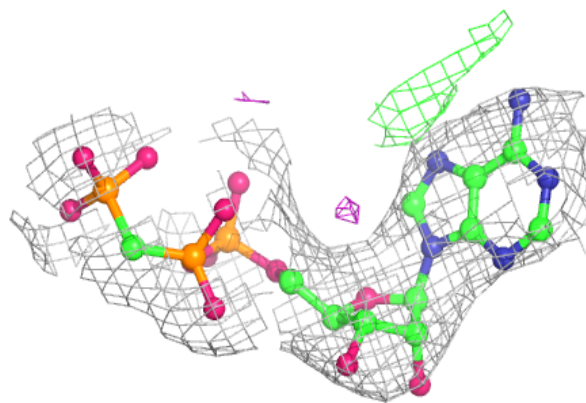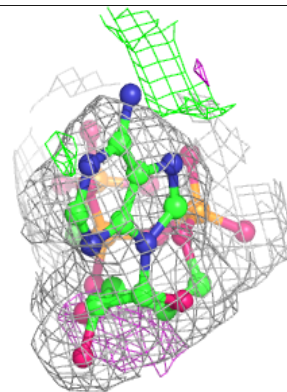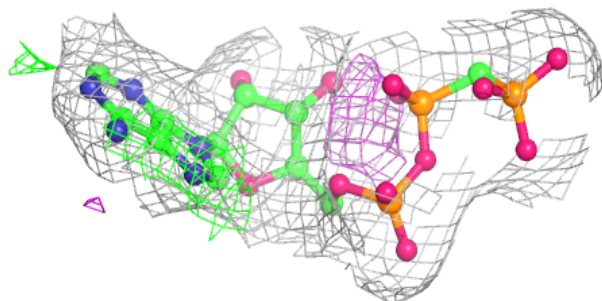and green (positive)
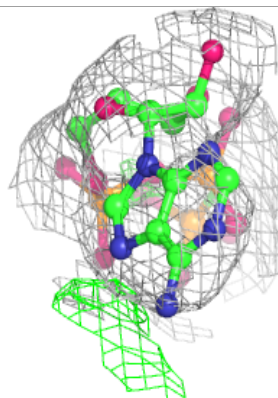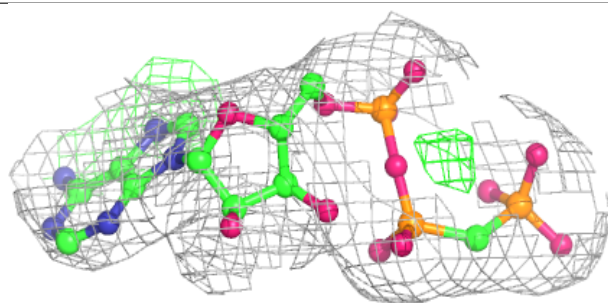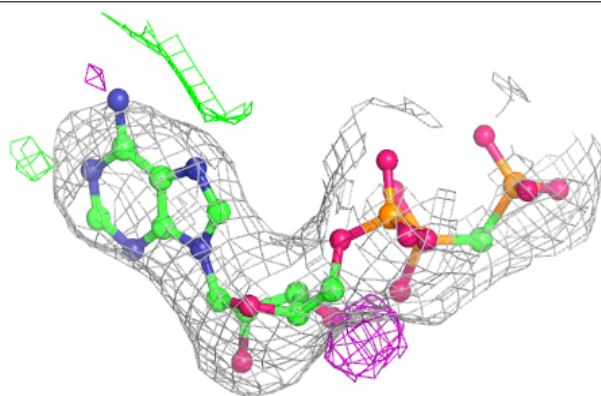

Electron density around ACP A 525:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
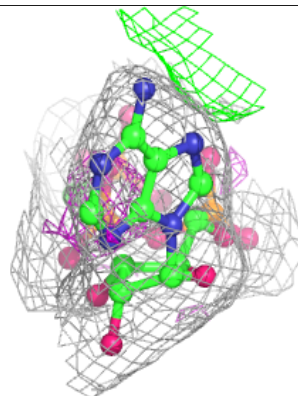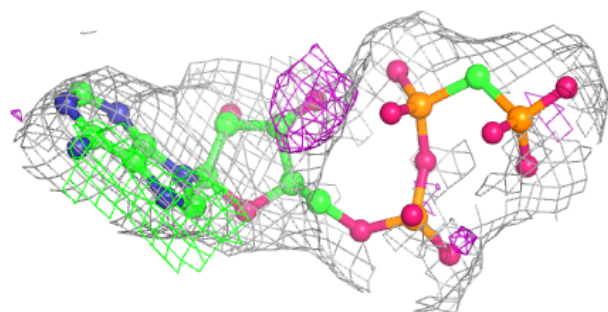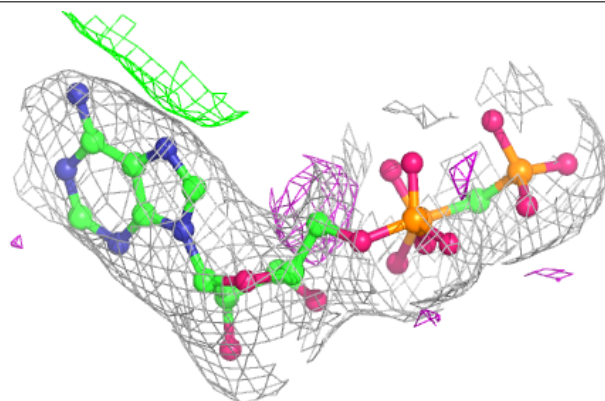
Electron density around ACP F 525:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
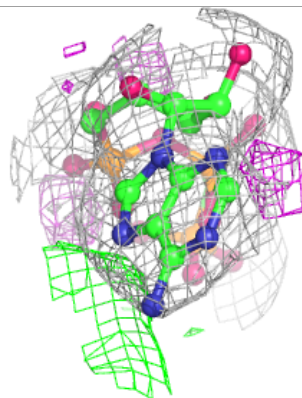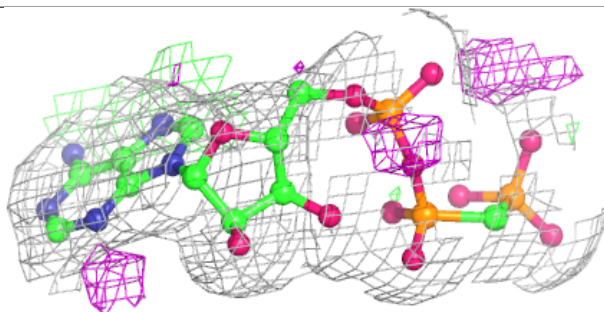
Electron density around ACP D 525:

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

Electron density around ACP C 525:

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

Electron density around ACP B 525:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.