



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 11, 2023 – 08:18 AM EDT

PDB ID : 7K3Z  
Title : P. falciparum Cpn60 D474A mutant bound to ATP  
Authors : Tolia, N.H.; Shi, D.; Nguyen, B.  
Deposited on : 2020-09-14  
Resolution : 3.69 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](mailto: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>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.35.1  
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) : 2.35.1

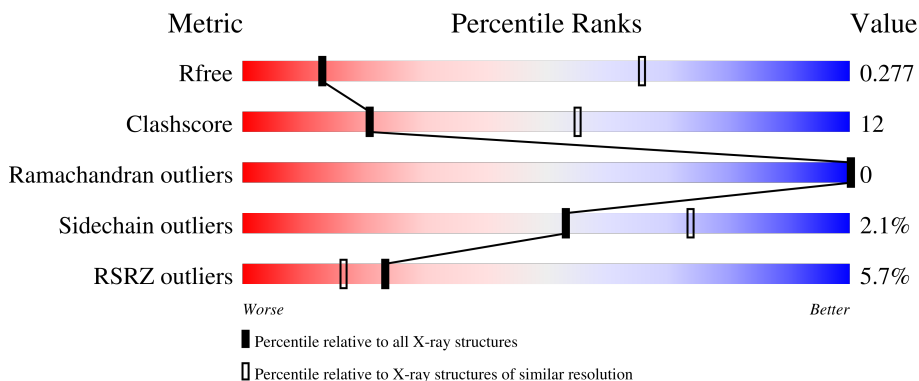
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.69 Å.

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



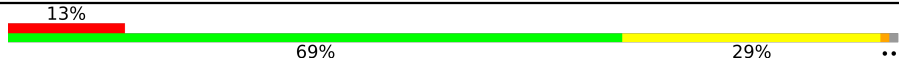

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1049 (3.88-3.52)
Clashscore	141614	1027 (3.86-3.54)
Ramachandran outliers	138981	1069 (3.88-3.52)
Sidechain outliers	138945	1065 (3.88-3.52)
RSRZ outliers	127900	1578 (3.90-3.50)

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  $\geq 3$ , 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	568	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 70%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 29%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">70%      29%      .</p>
1	B	568	<div style="display: flex; align-items: center;"> <div style="width: 7%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 72%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 26%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">7%      72%      26%      ..</p>
1	C	568	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 69%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 29%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">8%      69%      29%      ..</p>
1	D	568	<div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 68%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 30%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">3%      68%      30%      ..</p>
1	E	568	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 68%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 30%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">5%      68%      30%      ..</p>

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Mol	Chain	Length	Quality of chain
1	F	568	
1	G	568	

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 30938 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 60 kDa chaperonin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	564	4404	2770	743	875	16	0	0	0
1	B	560	4369	2746	737	870	16	0	0	0
1	C	562	4390	2761	740	873	16	0	0	0
1	D	562	4386	2758	739	873	16	0	0	0
1	E	562	4387	2760	739	872	16	0	0	0
1	F	561	4383	2756	739	872	16	0	0	0
1	G	563	4395	2764	741	874	16	0	0	0

There are 56 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	65	MET	-	initiating methionine	UNP Q8I0V3
A	66	THR	-	expression tag	UNP Q8I0V3
A	67	GLY	-	expression tag	UNP Q8I0V3
A	125	GLN	ASN	engineered mutation	UNP Q8I0V3
A	145	GLN	ASN	engineered mutation	UNP Q8I0V3
A	283	GLN	ASN	engineered mutation	UNP Q8I0V3
A	381	GLN	ASN	engineered mutation	UNP Q8I0V3
A	474	ALA	ASP	engineered mutation	UNP Q8I0V3
B	65	MET	-	initiating methionine	UNP Q8I0V3
B	66	THR	-	expression tag	UNP Q8I0V3
B	67	GLY	-	expression tag	UNP Q8I0V3
B	125	GLN	ASN	engineered mutation	UNP Q8I0V3
B	145	GLN	ASN	engineered mutation	UNP Q8I0V3
B	283	GLN	ASN	engineered mutation	UNP Q8I0V3
B	381	GLN	ASN	engineered mutation	UNP Q8I0V3

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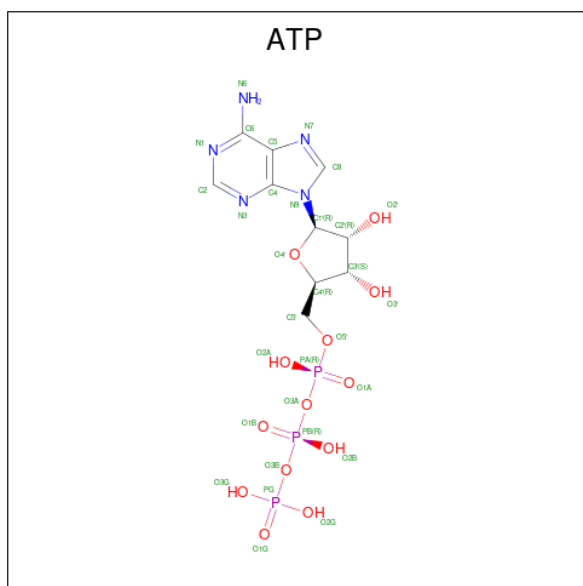
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Chain	Residue	Modelled	Actual	Comment	Reference
B	474	ALA	ASP	engineered mutation	UNP Q8I0V3
C	65	MET	-	initiating methionine	UNP Q8I0V3
C	66	THR	-	expression tag	UNP Q8I0V3
C	67	GLY	-	expression tag	UNP Q8I0V3
C	125	GLN	ASN	engineered mutation	UNP Q8I0V3
C	145	GLN	ASN	engineered mutation	UNP Q8I0V3
C	283	GLN	ASN	engineered mutation	UNP Q8I0V3
C	381	GLN	ASN	engineered mutation	UNP Q8I0V3
C	474	ALA	ASP	engineered mutation	UNP Q8I0V3
D	65	MET	-	initiating methionine	UNP Q8I0V3
D	66	THR	-	expression tag	UNP Q8I0V3
D	67	GLY	-	expression tag	UNP Q8I0V3
D	125	GLN	ASN	engineered mutation	UNP Q8I0V3
D	145	GLN	ASN	engineered mutation	UNP Q8I0V3
D	283	GLN	ASN	engineered mutation	UNP Q8I0V3
D	381	GLN	ASN	engineered mutation	UNP Q8I0V3
D	474	ALA	ASP	engineered mutation	UNP Q8I0V3
E	65	MET	-	initiating methionine	UNP Q8I0V3
E	66	THR	-	expression tag	UNP Q8I0V3
E	67	GLY	-	expression tag	UNP Q8I0V3
E	125	GLN	ASN	engineered mutation	UNP Q8I0V3
E	145	GLN	ASN	engineered mutation	UNP Q8I0V3
E	283	GLN	ASN	engineered mutation	UNP Q8I0V3
E	381	GLN	ASN	engineered mutation	UNP Q8I0V3
E	474	ALA	ASP	engineered mutation	UNP Q8I0V3
F	65	MET	-	initiating methionine	UNP Q8I0V3
F	66	THR	-	expression tag	UNP Q8I0V3
F	67	GLY	-	expression tag	UNP Q8I0V3
F	125	GLN	ASN	engineered mutation	UNP Q8I0V3
F	145	GLN	ASN	engineered mutation	UNP Q8I0V3
F	283	GLN	ASN	engineered mutation	UNP Q8I0V3
F	381	GLN	ASN	engineered mutation	UNP Q8I0V3
F	474	ALA	ASP	engineered mutation	UNP Q8I0V3
G	65	MET	-	initiating methionine	UNP Q8I0V3
G	66	THR	-	expression tag	UNP Q8I0V3
G	67	GLY	-	expression tag	UNP Q8I0V3
G	125	GLN	ASN	engineered mutation	UNP Q8I0V3
G	145	GLN	ASN	engineered mutation	UNP Q8I0V3
G	283	GLN	ASN	engineered mutation	UNP Q8I0V3
G	381	GLN	ASN	engineered mutation	UNP Q8I0V3
G	474	ALA	ASP	engineered mutation	UNP Q8I0V3

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Mg 1 1	0	0
2	B	1	Total Mg 1 1	0	0
2	C	1	Total Mg 1 1	0	0
2	D	1	Total Mg 1 1	0	0
2	E	1	Total Mg 1 1	0	0
2	F	1	Total Mg 1 1	0	0
2	G	1	Total Mg 1 1	0	0

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:  $C_{10}H_{16}N_5O_{13}P_3$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O P 31 10 5 13 3	0	0
3	B	1	Total C N O P 31 10 5 13 3	0	0
3	C	1	Total C N O P 31 10 5 13 3	0	0
3	D	1	Total C N O P 31 10 5 13 3	0	0

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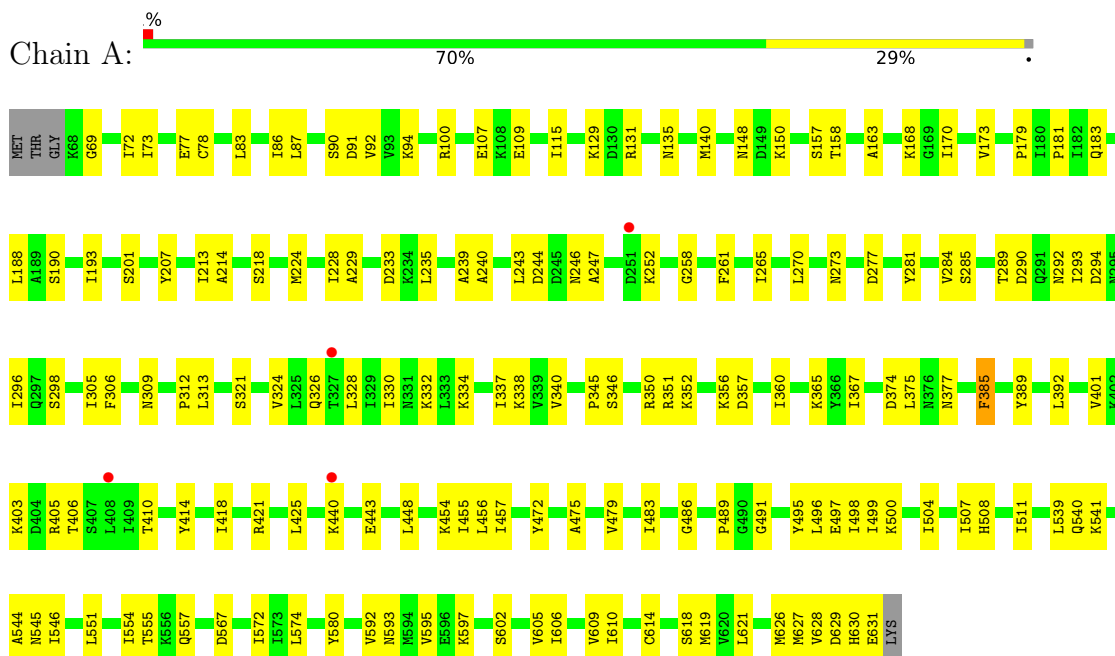
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<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>					<b>ZeroOcc</b>	<b>AltConf</b>
3	E	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	F	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	G	1	Total	C	N	O	P	0	0
			31	10	5	13	3		

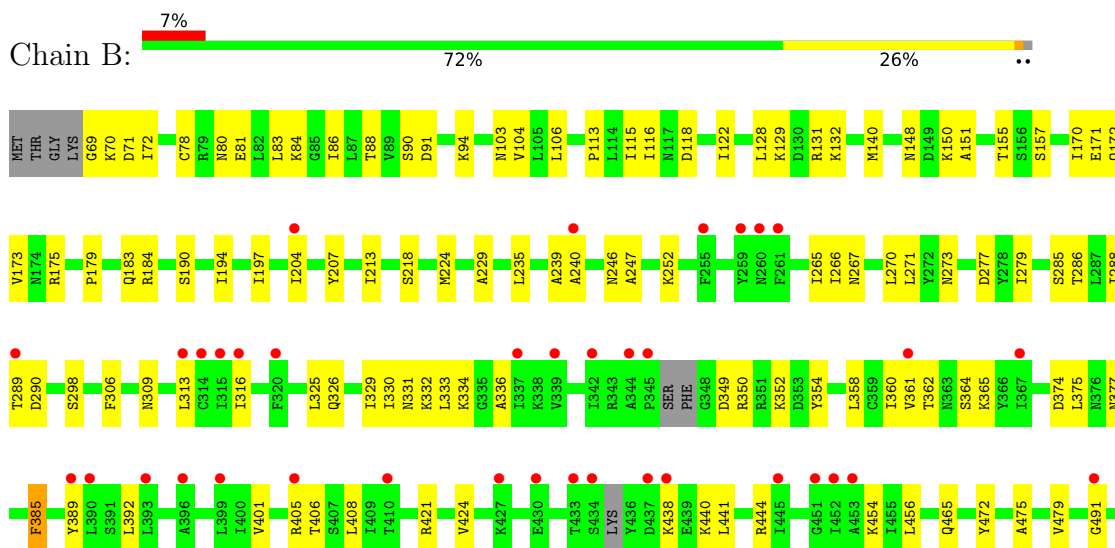
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

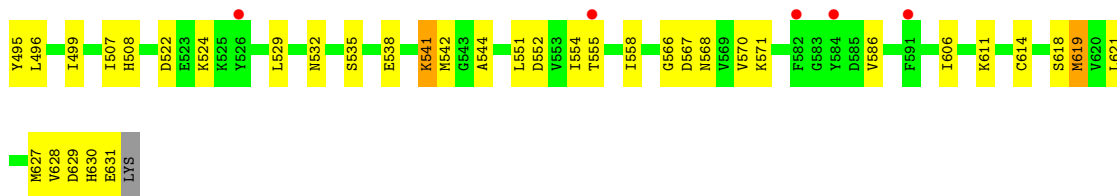
- Molecule 1: 60 kDa chaperonin



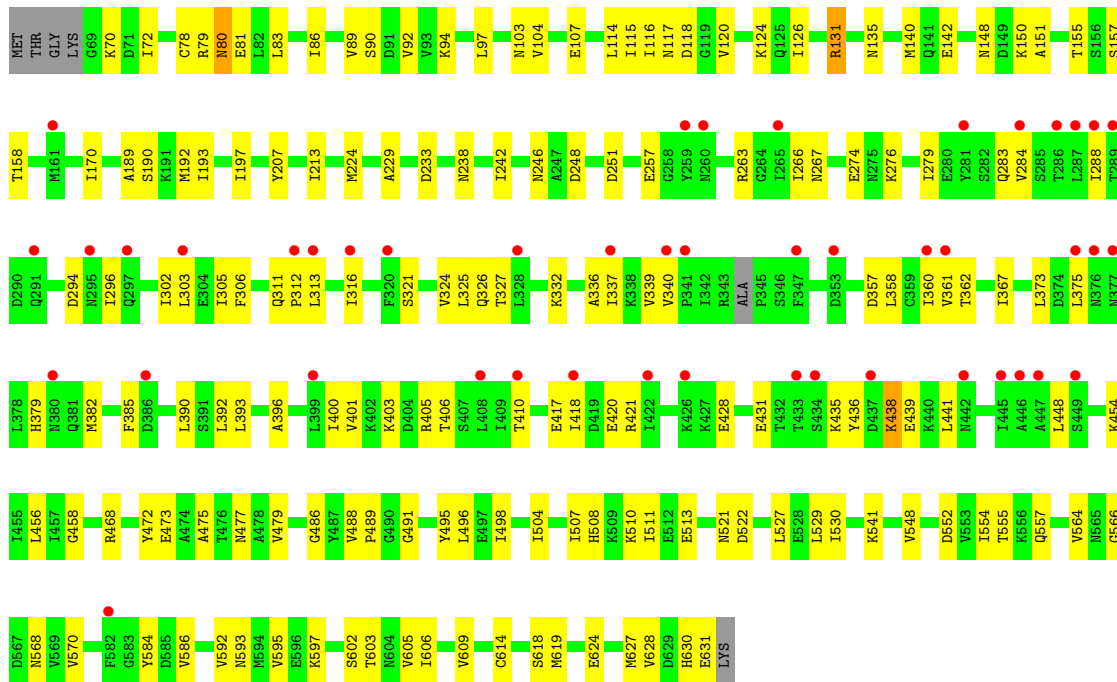
- Molecule 1: 60 kDa chaperonin



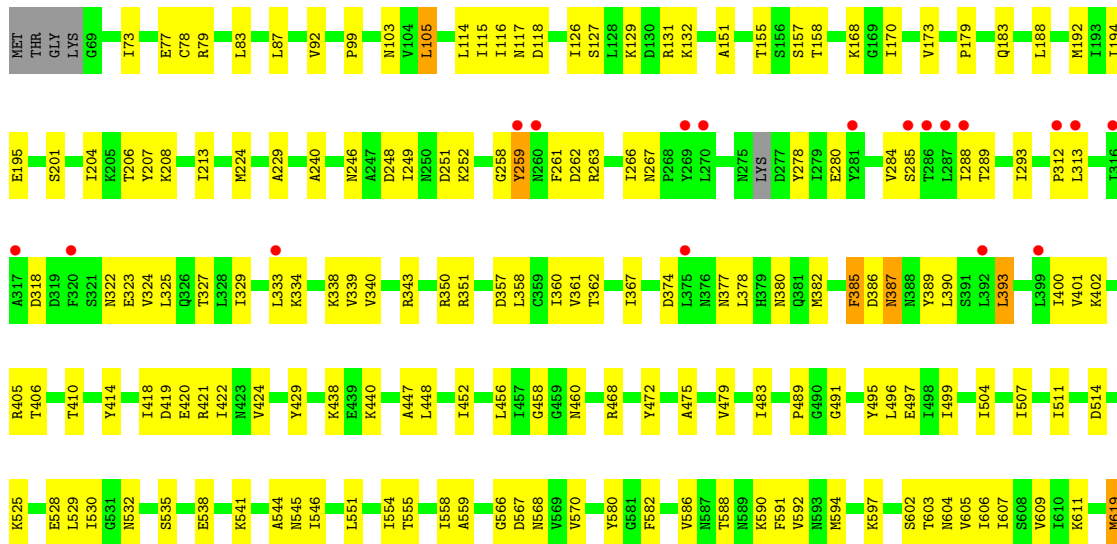


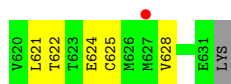


● Molecule 1: 60 kDa chaperonin

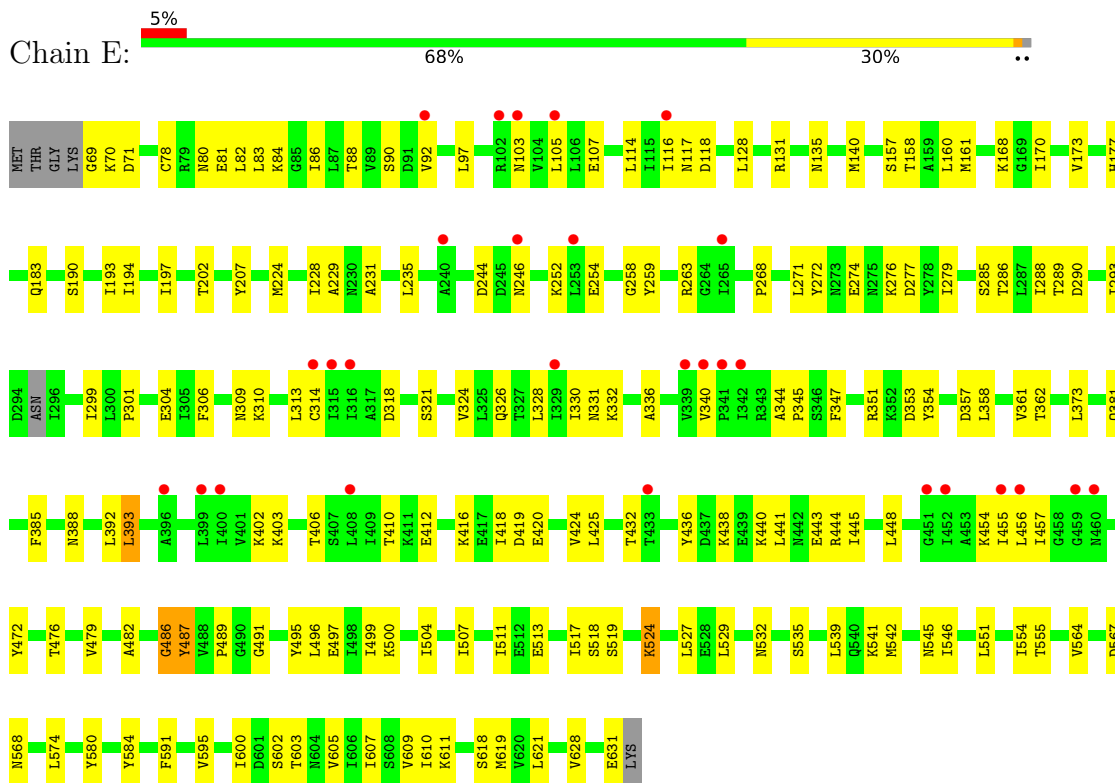


● Molecule 1: 60 kDa chaperonin

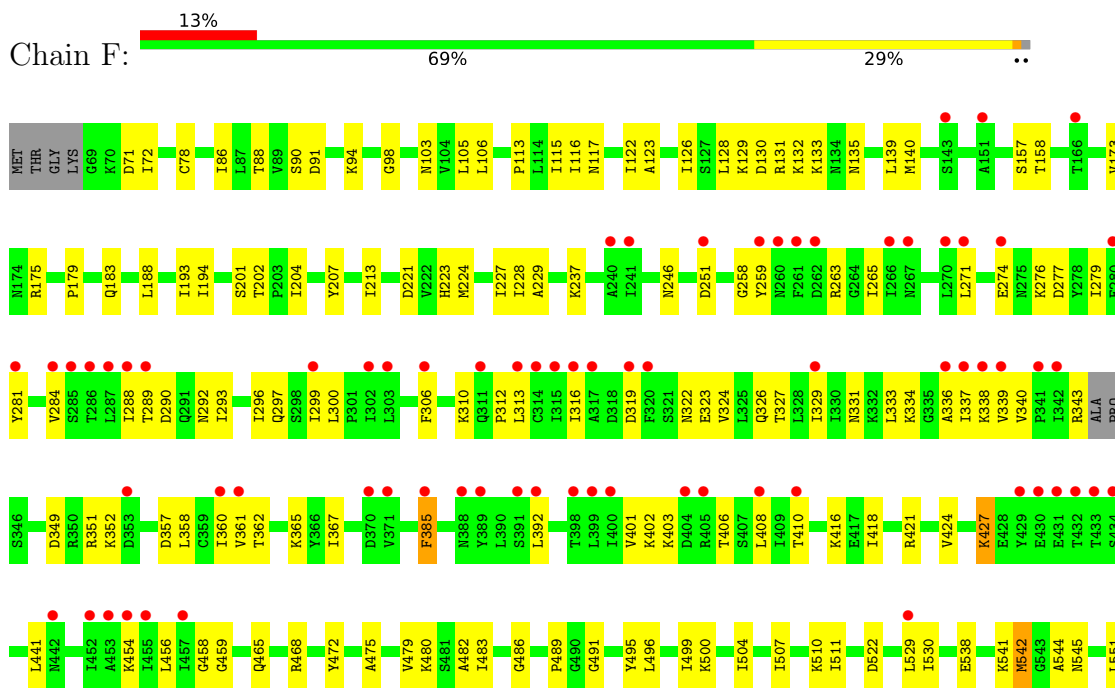




• Molecule 1: 60 kDa chaperonin

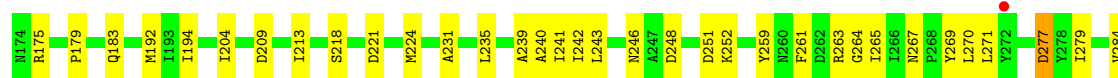
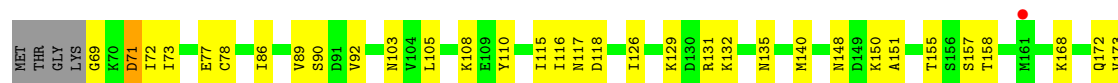


• Molecule 1: 60 kDa chaperonin





• Molecule 1: 60 kDa chaperonin



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 63 2 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	281.50Å 281.50Å 298.83Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	51.99 – 3.69 94.45 – 3.69	Depositor EDS
% Data completeness (in resolution range)	98.7 (51.99-3.69) 93.0 (94.45-3.69)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.53 (at 3.67Å)	Xtrriage
Refinement program	PHENIX 1.14_3260	Depositor
R, $R_{free}$	0.227 , 0.277 0.227 , 0.277	Depositor DCC
$R_{free}$ test set	1684 reflections (2.27%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	129.4	Xtrriage
Anisotropy	0.096	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.30 , 101.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	30938	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	163.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.73% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

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

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.26	0/4450	0.49	0/5996
1	B	0.25	0/4412	0.49	0/5944
1	C	0.25	0/4435	0.50	0/5974
1	D	0.25	0/4431	0.48	0/5971
1	E	0.26	0/4432	0.51	1/5971 (0.0%)
1	F	0.25	0/4427	0.49	0/5963
1	G	0.26	0/4441	0.50	0/5985
All	All	0.25	0/31028	0.49	1/41804 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	486	GLY	N-CA-C	5.58	127.04	113.10

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4404	0	4532	119	0
1	B	4369	0	4490	105	0
1	C	4390	0	4514	107	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	4386	0	4505	111	0
1	E	4387	0	4512	120	0
1	F	4383	0	4506	119	0
1	G	4395	0	4519	125	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
2	G	1	0	0	0	0
3	A	31	0	12	1	0
3	B	31	0	12	1	0
3	C	31	0	12	1	0
3	D	31	0	12	1	0
3	E	31	0	12	1	0
3	F	31	0	12	2	0
3	G	31	0	12	1	0
All	All	30938	0	31662	765	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 12.

All (765) 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:E:518:SER:O	1:E:524:LYS:NZ	1.92	1.01
1:D:385:PHE:HD2	1:D:386:ASP:H	1.11	0.92
1:E:326:GLN:O	1:E:331:ASN:ND2	2.12	0.82
1:C:332:LYS:HB3	1:C:336:ALA:HB3	1.59	0.82
1:C:288:ILE:HD13	1:C:358:LEU:HB3	1.60	0.81
1:C:288:ILE:HG12	1:C:316:ILE:HD13	1.62	0.81
1:G:507:ILE:HD12	1:G:544:ALA:HB1	1.63	0.79
1:D:103:ASN:OD1	1:D:117:ASN:ND2	2.16	0.79
1:D:350:ARG:HD2	1:D:440:LYS:HD3	1.64	0.79
1:E:373:LEU:HD21	1:E:381:GLN:HG2	1.64	0.77
1:D:266:ILE:HG13	1:D:267:ASN:H	1.50	0.76
1:A:507:ILE:HD12	1:A:544:ALA:HB1	1.67	0.75
1:B:266:ILE:HG13	1:B:267:ASN:H	1.52	0.74
1:C:357:ASP:HB3	1:C:448:LEU:HD21	1.69	0.74
1:C:602:SER:HB2	1:C:605:VAL:HG23	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:602:SER:HB2	1:D:605:VAL:HG23	1.69	0.73
1:B:270:LEU:HD23	1:B:333:LEU:HD22	1.70	0.73
1:C:296:ILE:HG13	1:C:327:THR:HG21	1.69	0.73
1:E:183:GLN:HG3	1:E:618:SER:HB2	1.70	0.73
1:B:172:GLN:OE1	1:B:175:ARG:NH2	2.21	0.72
1:A:499:ILE:HD11	1:A:551:LEU:HB2	1.71	0.72
1:A:247:ALA:HB3	1:B:326:GLN:HG2	1.71	0.72
1:C:103:ASN:OD1	1:C:117:ASN:ND2	2.22	0.71
1:C:279:ILE:HG22	1:C:401:VAL:H	1.55	0.70
1:E:357:ASP:HB3	1:E:448:LEU:HD21	1.72	0.70
1:F:322:ASN:O	1:F:326:GLN:NE2	2.23	0.70
1:B:507:ILE:HD12	1:B:544:ALA:HB1	1.74	0.70
1:B:183:GLN:HG3	1:B:618:SER:HB2	1.74	0.69
1:B:172:GLN:NE2	1:B:542:MET:SD	2.66	0.69
1:B:204:ILE:HD11	1:B:213:ILE:HD12	1.74	0.69
1:B:568:ASN:ND2	1:C:529:LEU:O	2.23	0.69
1:G:240:ALA:HB2	1:G:405:ARG:HH21	1.56	0.69
1:C:592:VAL:HG21	1:C:597:LYS:HD2	1.74	0.69
1:A:258:GLY:HA2	1:A:410:THR:HG23	1.74	0.69
1:B:326:GLN:O	1:B:331:ASN:ND2	2.25	0.69
1:A:340:VAL:HG11	1:A:401:VAL:HG21	1.74	0.68
1:E:103:ASN:OD1	1:E:117:ASN:ND2	2.26	0.68
1:C:491:GLY:N	3:C:702:ATP:O2'	2.26	0.68
1:G:103:ASN:OD1	1:G:117:ASN:ND2	2.26	0.68
1:C:568:ASN:ND2	1:D:529:LEU:O	2.27	0.68
1:E:499:ILE:HD11	1:E:551:LEU:HB2	1.75	0.68
1:F:72:ILE:HG12	1:F:627:MET:HG3	1.76	0.68
1:C:246:ASN:HB2	1:C:456:LEU:HB3	1.75	0.67
1:E:114:LEU:HB3	1:E:116:ILE:HD11	1.77	0.67
1:F:284:VAL:HG13	1:F:312:PRO:HB2	1.77	0.66
1:G:602:SER:HB2	1:G:605:VAL:HG23	1.76	0.66
1:F:602:SER:HB3	1:F:605:VAL:HG23	1.77	0.66
1:F:468:ARG:NH1	1:F:472:TYR:OH	2.29	0.66
1:A:367:ILE:HD11	1:A:392:LEU:HD11	1.79	0.66
1:A:602:SER:HB2	1:A:605:VAL:HG23	1.77	0.66
1:D:258:GLY:HA2	1:D:410:THR:HG23	1.76	0.66
1:G:441:LEU:O	1:G:445:ILE:HG13	1.96	0.66
1:D:129:LYS:HG2	1:E:69:GLY:HA3	1.77	0.65
1:C:496:LEU:HD11	1:C:555:THR:HG21	1.78	0.65
1:G:499:ILE:HD11	1:G:551:LEU:HB2	1.77	0.65
1:B:252:LYS:HG3	1:B:456:LEU:HB2	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:401:VAL:HG22	1:C:406:THR:HG23	1.78	0.65
1:F:499:ILE:HD11	1:F:551:LEU:HB2	1.78	0.65
1:F:568:ASN:ND2	1:G:529:LEU:O	2.26	0.65
1:D:204:ILE:HD11	1:D:213:ILE:HD12	1.79	0.65
1:A:491:GLY:N	3:A:702:ATP:O2'	2.27	0.65
1:D:460:ASN:O	1:E:272:TYR:OH	2.15	0.64
1:E:274:GLU:HG3	1:E:276:LYS:HG3	1.79	0.64
1:E:491:GLY:N	3:E:702:ATP:O2'	2.30	0.64
1:G:92:VAL:HG11	1:G:126:ILE:HG21	1.78	0.64
1:D:499:ILE:HD11	1:D:551:LEU:HB2	1.79	0.64
1:G:151:ALA:HB1	1:G:155:THR:HG21	1.80	0.64
1:C:552:ASP:HB2	1:C:570:VAL:HG11	1.79	0.64
1:F:103:ASN:ND2	1:F:117:ASN:OD1	2.30	0.64
1:E:246:ASN:HB2	1:E:456:LEU:HB3	1.79	0.64
1:F:288:ILE:HD13	1:F:358:LEU:HB3	1.78	0.64
1:E:202:THR:O	1:E:487:TYR:HB3	1.98	0.63
1:G:318:ASP:OD1	1:G:351:ARG:NH1	2.31	0.63
1:B:350:ARG:HB2	1:B:440:LYS:HE3	1.80	0.63
1:E:441:LEU:O	1:E:445:ILE:HG13	1.98	0.63
1:B:88:THR:HG21	1:B:128:LEU:HD21	1.79	0.63
1:E:524:LYS:HD2	1:E:527:LEU:HB2	1.80	0.63
1:G:294:ASP:OD1	1:G:321:SER:OG	2.17	0.63
1:G:496:LEU:HD11	1:G:555:THR:HG21	1.80	0.63
1:D:496:LEU:HD11	1:D:555:THR:HG21	1.81	0.63
1:A:365:LYS:HG2	1:A:392:LEU:HD12	1.80	0.62
1:D:288:ILE:HD13	1:D:358:LEU:HB3	1.81	0.62
1:G:270:LEU:HD12	1:G:271:LEU:HG	1.81	0.62
1:A:181:PRO:HB2	1:A:539:LEU:HB3	1.81	0.62
1:A:312:PRO:HA	1:A:338:LYS:HB2	1.82	0.62
1:C:428:GLU:HA	1:C:431:GLU:HG2	1.82	0.62
1:B:171:GLU:O	1:B:175:ARG:NH1	2.33	0.62
1:F:507:ILE:HD12	1:F:544:ALA:HB1	1.82	0.62
1:C:193:ILE:HD12	1:C:498:ILE:HG12	1.81	0.62
1:F:221:ASP:OD2	1:F:472:TYR:OH	2.17	0.62
1:A:385:PHE:CD2	1:A:392:LEU:HD13	2.34	0.62
1:B:286:THR:HG1	1:B:364:SER:HG	1.30	0.61
1:A:240:ALA:HB2	1:A:405:ARG:HE	1.65	0.61
1:C:303:LEU:HD22	1:C:337:ILE:HD12	1.81	0.61
1:D:491:GLY:N	3:D:702:ATP:O2'	2.31	0.61
1:D:558:ILE:HG22	1:D:586:VAL:HG11	1.82	0.61
1:E:487:TYR:HE2	1:E:600:ILE:HG21	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:130:ASP:OD2	1:F:133:LYS:NZ	2.29	0.61
1:A:572:ILE:HD11	1:B:529:LEU:HD11	1.83	0.61
1:F:480:LYS:HD2	1:F:483:ILE:HD11	1.83	0.61
1:B:552:ASP:HB2	1:B:570:VAL:HG11	1.82	0.61
1:A:293:ILE:O	1:A:324:VAL:HG11	2.01	0.61
1:B:330:ILE:HA	1:B:333:LEU:HD23	1.83	0.61
1:B:385:PHE:HB3	1:B:392:LEU:HD13	1.82	0.61
1:F:290:ASP:OD2	1:F:351:ARG:NH1	2.34	0.61
1:A:326:GLN:NE2	1:G:246:ASN:OD1	2.34	0.60
1:D:92:VAL:HG11	1:D:126:ILE:HG21	1.82	0.60
1:E:500:LYS:HB3	1:E:574:LEU:HD22	1.83	0.60
1:F:131:ARG:HD2	1:F:630:HIS:HB3	1.83	0.60
1:D:151:ALA:HB1	1:D:155:THR:HG21	1.82	0.60
1:F:401:VAL:HG22	1:F:406:THR:HG23	1.83	0.60
1:D:266:ILE:HG13	1:D:267:ASN:N	2.14	0.60
1:F:293:ILE:O	1:F:324:VAL:HG11	2.02	0.60
1:F:454:LYS:HE2	1:F:456:LEU:HD21	1.82	0.60
1:G:340:VAL:HG11	1:G:401:VAL:HG21	1.82	0.60
1:B:129:LYS:NZ	1:C:70:LYS:O	2.34	0.60
1:D:327:THR:HB	1:D:339:VAL:HG21	1.83	0.60
1:E:497:GLU:HG3	1:E:580:TYR:CE1	2.36	0.60
1:F:274:GLU:HG2	1:F:276:LYS:HG2	1.83	0.60
1:F:296:ILE:HG22	1:F:324:VAL:HG23	1.84	0.59
1:B:360:ILE:HD13	1:B:421:ARG:HG3	1.84	0.59
1:C:224:MET:HG2	1:C:472:TYR:CZ	2.37	0.59
1:A:183:GLN:HG3	1:A:618:SER:HB2	1.84	0.59
1:C:151:ALA:HB1	1:C:155:THR:HG21	1.85	0.59
1:D:312:PRO:HA	1:D:338:LYS:HB2	1.85	0.59
1:F:491:GLY:N	3:F:702:ATP:O2'	2.34	0.59
1:C:486:GLY:O	1:C:603:THR:OG1	2.20	0.59
1:F:183:GLN:HG3	1:F:618:SER:HB2	1.84	0.59
1:C:131:ARG:HG3	1:C:628:VAL:HG11	1.85	0.59
1:D:507:ILE:HD12	1:D:544:ALA:HB1	1.83	0.59
1:E:381:GLN:HG3	1:E:385:PHE:HE2	1.67	0.59
1:G:285:SER:HB3	1:G:393:LEU:HD13	1.85	0.59
1:D:377:ASN:OD1	1:D:380:ASN:ND2	2.35	0.58
1:G:270:LEU:HA	1:G:328:LEU:HD11	1.85	0.58
1:G:491:GLY:N	3:G:702:ATP:O2'	2.35	0.58
1:B:266:ILE:HG13	1:B:267:ASN:N	2.18	0.58
1:F:310:LYS:HD2	1:F:336:ALA:HB1	1.84	0.58
1:G:183:GLN:HG3	1:G:618:SER:HB2	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:258:GLY:HA2	1:F:410:THR:HG23	1.86	0.58
1:D:289:THR:HG22	1:D:367:ILE:HD13	1.86	0.58
1:B:240:ALA:HB2	1:B:405:ARG:HE	1.69	0.58
1:D:131:ARG:HG3	1:D:628:VAL:HG11	1.84	0.58
1:G:218:SER:HB2	1:G:224:MET:SD	2.44	0.58
1:G:251:ASP:OD2	1:G:468:ARG:NH1	2.37	0.58
1:B:151:ALA:HB1	1:B:155:THR:HG21	1.86	0.58
1:F:201:SER:HB2	1:F:486:GLY:HA3	1.86	0.58
1:G:284:VAL:HA	1:G:312:PRO:HG2	1.86	0.58
1:E:326:GLN:HA	1:E:330:ILE:HG22	1.86	0.57
1:G:504:ILE:HD11	1:G:545:ASN:OD1	2.04	0.57
1:A:350:ARG:NH1	1:A:443:GLU:OE1	2.35	0.57
1:F:327:THR:O	1:F:331:ASN:ND2	2.29	0.57
1:C:313:LEU:O	1:C:339:VAL:HA	2.03	0.57
1:F:204:ILE:HD11	1:F:213:ILE:HD12	1.85	0.57
1:F:367:ILE:HD11	1:F:392:LEU:HD11	1.86	0.57
1:D:263:ARG:O	1:D:406:THR:OG1	2.19	0.57
1:A:69:GLY:HA3	1:G:129:LYS:HG2	1.86	0.57
1:G:390:LEU:O	1:G:393:LEU:HG	2.05	0.57
1:B:246:ASN:OD1	1:C:326:GLN:NE2	2.38	0.57
1:B:279:ILE:HG22	1:B:401:VAL:HB	1.86	0.57
1:B:496:LEU:HD11	1:B:555:THR:HG21	1.86	0.56
1:D:419:ASP:O	1:D:422:ILE:HG22	2.05	0.56
1:A:504:ILE:HD11	1:A:545:ASN:OD1	2.05	0.56
1:C:263:ARG:O	1:C:406:THR:OG1	2.15	0.56
1:C:473:GLU:O	1:C:477:ASN:ND2	2.32	0.56
1:A:593:ASN:OD1	1:A:595:VAL:HG22	2.05	0.56
1:D:251:ASP:OD2	1:D:468:ARG:NH1	2.39	0.56
1:E:224:MET:HG2	1:E:472:TYR:CD1	2.40	0.56
1:F:424:VAL:O	1:F:427:LYS:HG3	2.04	0.56
1:A:73:ILE:HD11	1:A:77:GLU:HB3	1.85	0.56
1:E:285:SER:HB2	1:E:393:LEU:HD12	1.87	0.56
1:G:454:LYS:HE2	1:G:456:LEU:HD21	1.88	0.56
1:F:421:ARG:O	1:F:424:VAL:HG22	2.05	0.56
1:E:177:HIS:HD2	1:E:539:LEU:HD11	1.70	0.56
1:F:288:ILE:HG12	1:F:316:ILE:HD12	1.87	0.56
1:A:498:ILE:HD11	1:A:551:LEU:HD13	1.88	0.56
1:E:519:SER:HA	1:E:524:LYS:HE2	1.86	0.56
1:F:157:SER:HB3	1:F:554:ILE:HD12	1.88	0.56
1:G:330:ILE:HD12	1:G:337:ILE:HD13	1.87	0.56
1:B:265:ILE:HD13	1:B:271:LEU:HD11	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:273:ASN:HB3	1:B:334:LYS:HD2	1.87	0.55
1:C:313:LEU:HD23	1:C:339:VAL:HG13	1.87	0.55
1:D:284:VAL:HA	1:D:312:PRO:HG2	1.86	0.55
1:A:401:VAL:HG22	1:A:406:THR:HG23	1.88	0.55
1:C:593:ASN:OD1	1:C:595:VAL:HG22	2.06	0.55
1:G:357:ASP:HB3	1:G:448:LEU:HD21	1.88	0.55
1:G:367:ILE:HD11	1:G:392:LEU:HD21	1.89	0.55
1:A:541:LYS:O	1:A:545:ASN:ND2	2.40	0.55
1:B:72:ILE:HG12	1:B:627:MET:HG3	1.88	0.55
1:B:306:PHE:HD2	1:B:313:LEU:HD22	1.71	0.55
1:C:207:TYR:CE1	1:C:229:ALA:HB1	2.41	0.55
1:F:504:ILE:HD11	1:F:545:ASN:OD1	2.06	0.55
1:D:114:LEU:HB3	1:D:116:ILE:HD11	1.88	0.55
1:F:224:MET:HG2	1:F:472:TYR:CD1	2.41	0.55
1:A:357:ASP:HB3	1:A:448:LEU:HD21	1.89	0.55
1:A:497:GLU:HG2	1:A:580:TYR:CE1	2.41	0.55
1:F:496:LEU:HD11	1:F:555:THR:HG21	1.87	0.55
1:G:252:LYS:HG3	1:G:456:LEU:HB2	1.88	0.55
1:E:83:LEU:HB2	1:E:170:ILE:HD12	1.88	0.55
1:E:314:CYS:HA	1:E:340:VAL:HG23	1.89	0.55
1:G:239:ALA:O	1:G:241:ILE:HG13	2.06	0.55
1:F:105:LEU:HD11	1:F:113:PRO:HB2	1.88	0.55
1:F:357:ASP:O	1:F:360:ILE:HG12	2.07	0.55
1:G:172:GLN:OE1	1:G:175:ARG:NH2	2.40	0.55
1:B:421:ARG:O	1:B:424:VAL:HG12	2.07	0.54
1:D:201:SER:HB2	1:D:603:THR:HG21	1.89	0.54
1:D:541:LYS:O	1:D:545:ASN:ND2	2.40	0.54
1:E:519:SER:HA	1:E:524:LYS:CE	2.37	0.54
1:F:385:PHE:HB3	1:F:392:LEU:HD13	1.89	0.54
1:A:626:MET:HG2	1:G:105:LEU:HD22	1.89	0.54
1:C:340:VAL:HG11	1:C:401:VAL:HG21	1.90	0.54
1:A:131:ARG:NE	1:A:630:HIS:HB3	2.22	0.54
1:C:238:ASN:O	1:C:405:ARG:NH2	2.41	0.54
1:A:193:ILE:HG21	1:A:610:ILE:HD13	1.90	0.54
1:D:249:ILE:HD11	1:E:268:PRO:HG3	1.88	0.54
1:E:402:LYS:HG2	1:E:403:LYS:H	1.72	0.54
1:G:525:LYS:HE2	1:G:529:LEU:HD21	1.89	0.54
1:B:349:ASP:O	1:B:352:LYS:HG2	2.07	0.54
1:D:497:GLU:HG3	1:D:580:TYR:CE1	2.43	0.54
1:E:107:GLU:HG2	1:F:628:VAL:HA	1.89	0.54
1:E:194:ILE:HD11	1:E:611:LYS:HB2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:73:ILE:HD11	1:D:77:GLU:HB2	1.90	0.53
1:D:402:LYS:HE3	1:D:405:ARG:HB3	1.91	0.53
1:C:242:ILE:HD12	1:C:400:ILE:HG13	1.90	0.53
1:F:105:LEU:HD13	1:F:115:ILE:HD13	1.89	0.53
1:B:354:TYR:CE2	1:B:440:LYS:HE2	2.44	0.53
1:E:207:TYR:CE1	1:E:229:ALA:HB1	2.42	0.53
1:E:268:PRO:O	1:E:271:LEU:HG	2.09	0.53
1:F:349:ASP:O	1:F:352:LYS:HG2	2.07	0.53
1:A:168:LYS:HG3	1:A:546:ILE:HG12	1.90	0.53
1:B:288:ILE:HD13	1:B:358:LEU:HB3	1.91	0.53
1:D:132:LYS:HG2	1:D:628:VAL:HG21	1.89	0.53
1:E:263:ARG:O	1:E:406:THR:OG1	2.26	0.53
1:G:532:ASN:HB3	1:G:535:SER:HB3	1.91	0.53
1:D:168:LYS:HG3	1:D:546:ILE:HG12	1.90	0.53
1:E:288:ILE:HD13	1:E:358:LEU:HB3	1.91	0.53
1:A:631:GLU:HB3	1:G:129:LYS:HG3	1.91	0.53
1:C:114:LEU:HB3	1:C:116:ILE:HD11	1.90	0.53
1:F:340:VAL:HG11	1:F:401:VAL:HG21	1.91	0.53
1:F:246:ASN:HB2	1:F:456:LEU:HB3	1.89	0.53
1:G:288:ILE:HD13	1:G:358:LEU:HB3	1.89	0.53
1:G:552:ASP:HB2	1:G:570:VAL:HG11	1.91	0.53
1:A:346:SER:CB	1:A:351:ARG:HB3	2.40	0.52
1:E:542:MET:HA	1:E:545:ASN:HD22	1.74	0.52
1:F:88:THR:HG21	1:F:128:LEU:HD21	1.91	0.52
1:C:115:ILE:HD12	1:D:619:MET:SD	2.49	0.52
1:C:294:ASP:HA	1:C:324:VAL:HG11	1.91	0.52
1:D:479:VAL:O	1:D:483:ILE:HG13	2.10	0.52
1:A:92:VAL:HG21	1:B:72:ILE:HD13	1.90	0.52
1:B:566:GLY:O	1:B:570:VAL:HG23	2.09	0.52
1:F:482:ALA:HB2	1:F:602:SER:HB2	1.91	0.52
1:C:213:ILE:HD12	1:C:479:VAL:HA	1.92	0.52
1:E:116:ILE:HG22	1:E:118:ASP:H	1.75	0.52
1:D:567:ASP:OD1	1:D:567:ASP:N	2.42	0.52
1:E:193:ILE:HG21	1:E:610:ILE:HD13	1.90	0.52
1:A:567:ASP:OD1	1:A:567:ASP:N	2.43	0.52
1:E:293:ILE:HG22	1:E:324:VAL:HG21	1.92	0.52
1:G:567:ASP:OD1	1:G:567:ASP:N	2.42	0.52
1:A:294:ASP:HA	1:A:321:SER:HB3	1.92	0.52
1:D:387:ASN:O	1:D:387:ASN:ND2	2.43	0.52
1:F:251:ASP:HA	1:F:456:LEU:O	2.10	0.52
1:G:566:GLY:O	1:G:570:VAL:HG23	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:491:GLY:N	3:B:702:ATP:O2'	2.37	0.52
1:E:246:ASN:HD21	1:E:252:LYS:HE2	1.75	0.52
1:E:602:SER:O	1:E:605:VAL:HG22	2.09	0.52
1:F:131:ARG:NE	1:F:630:HIS:O	2.43	0.52
1:G:73:ILE:HD11	1:G:77:GLU:HB2	1.91	0.52
1:G:116:ILE:HG22	1:G:118:ASP:H	1.73	0.52
1:A:629:ASP:OD1	1:A:629:ASP:N	2.43	0.52
1:C:436:TYR:O	1:C:439:GLU:HG3	2.10	0.52
1:F:402:LYS:HG2	1:F:403:LYS:H	1.74	0.52
1:A:252:LYS:HG3	1:A:456:LEU:HB2	1.91	0.51
1:C:566:GLY:O	1:C:570:VAL:HG23	2.10	0.51
1:A:188:LEU:HD23	1:A:511:ILE:HG22	1.92	0.51
1:D:105:LEU:HD12	1:E:82:LEU:HD11	1.92	0.51
1:D:259:TYR:HE1	1:D:447:ALA:HB1	1.74	0.51
1:D:489:PRO:HB3	1:D:594:MET:HB2	1.92	0.51
1:E:486:GLY:HA2	1:E:603:THR:OG1	2.09	0.51
1:G:523:GLU:HG3	1:G:523:GLU:O	2.09	0.51
1:A:265:ILE:HG13	1:A:270:LEU:HD12	1.92	0.51
1:B:288:ILE:HG12	1:B:316:ILE:HD13	1.91	0.51
1:F:265:ILE:O	1:F:265:ILE:HG22	2.10	0.51
1:G:131:ARG:HG3	1:G:628:VAL:HG11	1.92	0.51
1:G:271:LEU:HD13	1:G:277:ASP:HA	1.93	0.51
1:C:251:ASP:OD2	1:C:468:ARG:NH1	2.43	0.51
1:A:414:TYR:O	1:A:418:ILE:HG13	2.10	0.51
1:D:99:PRO:HD2	1:D:586:VAL:HG21	1.92	0.51
1:D:390:LEU:HA	1:D:393:LEU:HD21	1.92	0.51
1:E:454:LYS:HE2	1:E:456:LEU:HD21	1.93	0.51
1:E:293:ILE:HG21	1:E:299:ILE:HD11	1.93	0.51
1:G:480:LYS:O	1:G:483:ILE:HG12	2.11	0.51
1:A:157:SER:HB3	1:A:554:ILE:HD12	1.91	0.51
1:A:290:ASP:OD1	1:A:351:ARG:NH1	2.44	0.51
1:B:401:VAL:HG13	1:B:406:THR:HG22	1.92	0.51
1:C:89:VAL:HG22	1:C:126:ILE:HD12	1.91	0.51
1:F:279:ILE:HD11	1:F:401:VAL:HG23	1.93	0.51
1:F:522:ASP:OD1	1:F:522:ASP:N	2.44	0.51
1:C:630:HIS:CG	1:C:631:GLU:H	2.28	0.51
1:E:436:TYR:CE1	1:E:440:LYS:HE3	2.46	0.51
1:F:361:VAL:HG22	1:F:418:ILE:HD13	1.93	0.51
1:A:385:PHE:HD2	1:A:392:LEU:HD13	1.73	0.51
1:D:252:LYS:HG3	1:D:456:LEU:HB2	1.93	0.51
1:D:361:VAL:HG13	1:D:362:THR:HG23	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:513:GLU:O	1:E:517:ILE:HG23	2.11	0.51
1:A:475:ALA:O	1:A:479:VAL:HG23	2.11	0.50
1:E:80:ASN:OD1	1:E:81:GLU:N	2.44	0.50
1:F:297:GLN:HA	1:F:300:LEU:HB2	1.93	0.50
1:A:86:ILE:HG12	1:A:140:MET:HG3	1.92	0.50
1:A:107:GLU:HG2	1:B:628:VAL:HA	1.93	0.50
1:D:83:LEU:HD13	1:D:170:ILE:HD12	1.93	0.50
1:E:301:PRO:O	1:E:304:GLU:HG3	2.10	0.50
1:A:244:ASP:HB3	1:A:456:LEU:HD23	1.93	0.50
1:F:542:MET:HA	1:F:545:ASN:HD22	1.76	0.50
1:G:541:LYS:O	1:G:545:ASN:ND2	2.44	0.50
1:A:173:VAL:HG13	1:A:179:PRO:HG3	1.93	0.50
1:A:305:ILE:O	1:A:309:ASN:ND2	2.44	0.50
1:A:495:TYR:HB3	1:A:551:LEU:HB3	1.93	0.50
1:B:475:ALA:O	1:B:479:VAL:HG23	2.11	0.50
1:D:568:ASN:ND2	1:E:529:LEU:O	2.43	0.50
1:E:393:LEU:HD23	1:E:393:LEU:H	1.76	0.50
1:F:129:LYS:HG3	1:G:69:GLY:HA3	1.93	0.50
1:B:246:ASN:HB2	1:B:456:LEU:HB3	1.93	0.50
1:G:270:LEU:HD13	1:G:279:ILE:HD11	1.93	0.50
1:A:109:GLU:HG3	1:B:629:ASP:OD2	2.12	0.50
1:B:207:TYR:CE1	1:B:229:ALA:HB1	2.47	0.50
1:E:486:GLY:CA	1:E:603:THR:H	2.25	0.50
1:G:489:PRO:HB3	1:G:594:MET:HB2	1.94	0.50
1:B:361:VAL:HG13	1:B:362:THR:HG23	1.92	0.50
1:D:566:GLY:O	1:D:570:VAL:HG23	2.12	0.50
1:A:306:PHE:HD2	1:A:313:LEU:HD22	1.77	0.50
1:E:158:THR:OG1	1:E:609:VAL:HG22	2.11	0.50
1:F:193:ILE:HG21	1:F:610:ILE:HD13	1.94	0.49
1:G:192:MET:SD	1:G:510:LYS:HD3	2.52	0.49
1:A:498:ILE:HD11	1:A:551:LEU:CD1	2.42	0.49
1:B:91:ASP:HA	1:B:94:LYS:HE2	1.95	0.49
1:B:538:GLU:O	1:B:541:LYS:HG3	2.12	0.49
1:G:289:THR:HG23	1:G:317:ALA:HA	1.94	0.49
1:A:454:LYS:HE2	1:A:456:LEU:HD21	1.94	0.49
1:C:266:ILE:HG23	1:C:267:ASN:H	1.77	0.49
1:D:318:ASP:OD1	1:D:351:ARG:NH1	2.45	0.49
1:E:504:ILE:HD11	1:E:545:ASN:OD1	2.13	0.49
1:E:532:ASN:HB3	1:E:535:SER:HB3	1.93	0.49
1:E:541:LYS:O	1:E:545:ASN:ND2	2.45	0.49
1:F:289:THR:OG1	1:F:290:ASP:N	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:79:ARG:NH2	1:D:624:GLU:OE2	2.37	0.49
1:F:360:ILE:HD12	1:F:421:ARG:HG3	1.93	0.49
1:G:265:ILE:HD13	1:G:270:LEU:HD11	1.94	0.49
1:A:218:SER:HB3	1:A:224:MET:SD	2.53	0.49
1:A:246:ASN:OD1	1:B:326:GLN:NE2	2.46	0.49
1:C:92:VAL:HG11	1:C:126:ILE:HG21	1.94	0.49
1:C:157:SER:HB3	1:C:554:ILE:HD12	1.94	0.49
1:C:417:GLU:O	1:C:420:GLU:HG3	2.12	0.49
1:D:116:ILE:HG22	1:D:118:ASP:H	1.78	0.49
1:E:328:LEU:O	1:E:332:LYS:HB2	2.13	0.49
1:E:568:ASN:ND2	1:F:529:LEU:O	2.44	0.49
1:A:207:TYR:CE1	1:A:229:ALA:HB1	2.48	0.49
1:C:148:ASN:O	1:C:150:LYS:HD2	2.12	0.49
1:F:312:PRO:HA	1:F:338:LYS:HB2	1.95	0.49
1:G:630:HIS:CG	1:G:631:GLU:H	2.31	0.49
1:C:418:ILE:HD11	1:C:448:LEU:HB3	1.94	0.49
1:F:86:ILE:HG23	1:F:140:MET:SD	2.52	0.49
1:F:292:ASN:ND2	1:F:319:ASP:HB2	2.27	0.49
1:A:497:GLU:HG2	1:A:580:TYR:HE1	1.78	0.48
1:B:440:LYS:HZ3	1:B:444:ARG:HD2	1.78	0.48
1:B:532:ASN:HB3	1:B:535:SER:HB3	1.94	0.48
1:C:504:ILE:HD12	1:C:507:ILE:HD11	1.95	0.48
1:G:475:ALA:O	1:G:479:VAL:HG23	2.13	0.48
1:C:306:PHE:CD2	1:C:311:GLN:HB3	2.48	0.48
1:D:194:ILE:HD11	1:D:611:LYS:HB2	1.96	0.48
1:D:504:ILE:HD11	1:D:545:ASN:OD1	2.12	0.48
1:G:209:ASP:O	1:G:213:ILE:HG12	2.13	0.48
1:E:476:THR:O	1:E:479:VAL:HG12	2.12	0.48
1:F:98:GLY:N	3:F:702:ATP:O1A	2.45	0.48
1:A:479:VAL:O	1:A:483:ILE:HG12	2.14	0.48
1:F:139:LEU:HD11	1:F:619:MET:HE1	1.95	0.48
1:F:361:VAL:HG12	1:F:362:THR:HG23	1.95	0.48
1:B:235:LEU:HD13	1:B:239:ALA:HB1	1.94	0.48
1:C:564:VAL:HG13	1:D:530:ILE:HB	1.95	0.48
1:E:455:ILE:HG22	1:E:457:ILE:HG23	1.94	0.48
1:F:207:TYR:CE1	1:F:229:ALA:HB1	2.48	0.48
1:F:541:LYS:O	1:F:545:ASN:ND2	2.47	0.48
1:G:425:LEU:HB3	1:G:445:ILE:HG12	1.96	0.48
1:G:488:VAL:HG13	1:G:603:THR:HG22	1.95	0.48
1:A:201:SER:OG	1:A:486:GLY:HA3	2.14	0.48
1:A:296:ILE:HG12	1:A:328:LEU:HD12	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:188:LEU:HD23	1:F:511:ILE:HG22	1.96	0.48
1:F:507:ILE:O	1:F:511:ILE:HG23	2.14	0.48
1:C:97:LEU:HD23	1:C:557:GLN:HB3	1.96	0.48
1:C:521:ASN:OD1	1:C:522:ASP:N	2.43	0.48
1:G:157:SER:HB3	1:G:554:ILE:HD12	1.95	0.48
1:A:173:VAL:HG21	1:A:621:LEU:HD22	1.96	0.48
1:A:496:LEU:HD11	1:A:555:THR:HG21	1.95	0.48
1:C:72:ILE:HG12	1:C:627:MET:HG2	1.95	0.48
1:D:192:MET:O	1:D:195:GLU:HG2	2.14	0.48
1:C:103:ASN:HB3	1:C:115:ILE:HG22	1.95	0.48
1:F:224:MET:O	1:F:228:ILE:HG12	2.14	0.48
1:G:86:ILE:HG23	1:G:140:MET:SD	2.54	0.47
1:G:131:ARG:NE	1:G:630:HIS:HB3	2.29	0.47
1:B:306:PHE:HA	1:B:309:ASN:HD21	1.78	0.47
1:E:81:GLU:HA	1:E:84:LYS:HG2	1.95	0.47
1:E:347:PHE:HD2	1:E:351:ARG:HH21	1.62	0.47
1:F:263:ARG:O	1:F:406:THR:OG1	2.30	0.47
1:A:131:ARG:HG3	1:A:628:VAL:HG11	1.96	0.47
1:B:116:ILE:HG22	1:B:118:ASP:H	1.79	0.47
1:C:360:ILE:HG21	1:C:421:ARG:HD3	1.95	0.47
1:D:475:ALA:O	1:D:479:VAL:HG23	2.14	0.47
1:F:459:GLY:O	1:G:269:TYR:OH	2.16	0.47
1:D:592:VAL:HG21	1:D:597:LYS:HG3	1.96	0.47
1:G:221:ASP:HB3	1:G:224:MET:HG2	1.96	0.47
1:A:131:ARG:HE	1:A:630:HIS:HB3	1.79	0.47
1:A:592:VAL:HG21	1:A:597:LYS:HD3	1.96	0.47
1:B:289:THR:OG1	1:B:290:ASP:N	2.47	0.47
1:C:283:GLN:HA	1:C:396:ALA:O	2.14	0.47
1:B:629:ASP:N	1:B:629:ASP:OD1	2.43	0.47
1:D:127:SER:O	1:E:70:LYS:N	2.29	0.47
1:D:207:TYR:CE1	1:D:229:ALA:HB1	2.50	0.47
1:D:429:TYR:CE1	1:D:438:LYS:HE3	2.50	0.47
1:D:538:GLU:HG2	1:D:541:LYS:HE2	1.95	0.47
1:F:489:PRO:HB3	1:F:594:MET:HB2	1.97	0.47
1:G:108:LYS:HB3	1:G:110:TYR:HD2	1.78	0.47
1:G:263:ARG:O	1:G:406:THR:OG1	2.27	0.47
1:G:565:ASN:HB3	1:G:568:ASN:HB2	1.96	0.47
1:G:582:PHE:CE1	1:G:591:PHE:HB3	2.50	0.47
1:B:106:LEU:HD12	1:B:116:ILE:HD12	1.97	0.47
1:C:421:ARG:HE	1:C:421:ARG:HB3	1.57	0.47
1:E:440:LYS:O	1:E:443:GLU:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:425:LEU:HD22	1:G:441:LEU:HD22	1.97	0.47
1:A:235:LEU:HB3	1:A:239:ALA:HB2	1.97	0.47
1:A:298:SER:HB2	1:A:375:LEU:O	2.15	0.47
1:C:116:ILE:HG22	1:C:118:ASP:H	1.80	0.47
1:C:251:ASP:OD1	1:C:458:GLY:N	2.45	0.47
1:C:390:LEU:O	1:C:393:LEU:HG	2.14	0.47
1:D:333:LEU:O	1:D:334:LYS:HD3	2.15	0.47
1:E:306:PHE:HA	1:E:309:ASN:HD21	1.79	0.47
1:F:265:ILE:HD11	1:F:401:VAL:HB	1.96	0.47
1:G:289:THR:OG1	1:G:290:ASP:N	2.47	0.47
1:B:454:LYS:HE2	1:B:456:LEU:HD11	1.97	0.47
1:E:289:THR:OG1	1:E:290:ASP:N	2.48	0.47
1:A:129:LYS:HG3	1:B:631:GLU:HB2	1.96	0.46
1:C:510:LYS:HA	1:C:513:GLU:HG2	1.95	0.46
1:F:475:ALA:O	1:F:479:VAL:HG23	2.14	0.46
1:A:495:TYR:CE1	1:A:606:ILE:HG23	2.50	0.46
1:A:129:LYS:HG2	1:B:69:GLY:HA3	1.96	0.46
1:B:267:ASN:O	1:B:270:LEU:HD12	2.15	0.46
1:C:189:ALA:O	1:C:193:ILE:HG12	2.15	0.46
1:C:488:VAL:HG12	1:C:489:PRO:HD2	1.97	0.46
1:G:72:ILE:HG12	1:G:627:MET:HG2	1.97	0.46
1:G:242:ILE:HG23	1:G:454:LYS:HA	1.97	0.46
1:C:197:ILE:HD13	1:C:606:ILE:HG22	1.96	0.46
1:E:92:VAL:HG21	1:F:72:ILE:HD13	1.96	0.46
1:F:224:MET:HG2	1:F:472:TYR:CG	2.50	0.46
1:B:495:TYR:CE1	1:B:606:ILE:HG23	2.50	0.46
1:F:106:LEU:HD11	1:F:122:ILE:HG23	1.97	0.46
1:G:158:THR:OG1	1:G:609:VAL:HG22	2.16	0.46
1:A:94:LYS:HB2	1:A:557:GLN:HG2	1.97	0.46
1:B:81:GLU:HA	1:B:84:LYS:HG2	1.98	0.46
1:C:302:ILE:O	1:C:305:ILE:HG22	2.15	0.46
1:E:86:ILE:HG23	1:E:140:MET:HE3	1.98	0.46
1:E:496:LEU:HD11	1:E:555:THR:HG21	1.97	0.46
1:F:131:ARG:HG3	1:F:628:VAL:HG11	1.98	0.46
1:G:487:TYR:N	1:G:603:THR:HG23	2.31	0.46
1:A:107:GLU:O	1:A:107:GLU:HG3	2.16	0.46
1:B:113:PRO:HD2	1:C:142:GLU:HG3	1.98	0.46
1:D:261:PHE:CE2	1:D:263:ARG:HB2	2.50	0.46
1:E:344:ALA:HB3	1:E:351:ARG:NH1	2.31	0.46
1:G:150:LYS:HE2	1:G:277:ASP:HB3	1.97	0.46
1:G:348:GLY:O	1:G:351:ARG:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:592:VAL:HG21	1:G:597:LYS:HG3	1.98	0.46
1:A:246:ASN:HB2	1:A:456:LEU:HB3	1.98	0.46
1:C:158:THR:OG1	1:C:609:VAL:HG22	2.16	0.46
1:D:168:LYS:HB3	1:D:546:ILE:HG23	1.97	0.46
1:D:240:ALA:HB3	1:D:452:ILE:HD12	1.97	0.46
1:E:286:THR:O	1:E:393:LEU:HB2	2.16	0.46
1:F:123:ALA:HA	1:F:126:ILE:HD11	1.98	0.46
1:F:251:ASP:OD1	1:F:458:GLY:N	2.46	0.46
1:F:306:PHE:HD2	1:F:313:LEU:HD22	1.81	0.46
1:A:346:SER:HB3	1:A:351:ARG:HB3	1.98	0.46
1:B:325:LEU:O	1:B:330:ILE:HG12	2.15	0.46
1:C:504:ILE:HD13	1:C:548:VAL:HG21	1.98	0.46
1:A:360:ILE:HD12	1:A:421:ARG:HG3	1.98	0.46
1:B:71:ASP:HB2	1:B:630:HIS:O	2.16	0.46
1:B:286:THR:OG1	1:B:364:SER:OG	2.13	0.46
1:A:306:PHE:CE2	1:A:313:LEU:HD13	2.52	0.45
1:A:500:LYS:HB3	1:A:574:LEU:HD22	1.97	0.45
1:B:332:LYS:HB3	1:B:336:ALA:HB3	1.98	0.45
1:C:454:LYS:HE2	1:C:456:LEU:HD11	1.97	0.45
1:C:495:TYR:CE1	1:C:606:ILE:HG23	2.50	0.45
1:D:188:LEU:HD23	1:D:511:ILE:HG22	1.97	0.45
1:D:361:VAL:HG23	1:D:418:ILE:HG12	1.97	0.45
1:C:274:GLU:HB2	1:C:276:LYS:HG2	1.99	0.45
1:D:401:VAL:HG22	1:D:406:THR:HG23	1.99	0.45
1:G:148:ASN:O	1:G:150:LYS:HD2	2.17	0.45
1:G:414:TYR:O	1:G:418:ILE:HG13	2.16	0.45
1:A:508:HIS:CE1	1:A:541:LYS:HB2	2.51	0.45
1:C:190:SER:HB2	1:C:614:CYS:SG	2.56	0.45
1:D:280:GLU:HG3	1:D:400:ILE:HG12	1.98	0.45
1:F:567:ASP:O	1:F:570:VAL:HG22	2.16	0.45
1:A:507:ILE:O	1:A:511:ILE:HG23	2.17	0.45
1:B:374:ASP:HB3	1:B:377:ASN:OD1	2.16	0.45
1:D:420:GLU:O	1:D:424:VAL:HG23	2.16	0.45
1:E:107:GLU:O	1:E:107:GLU:HG3	2.15	0.45
1:G:246:ASN:HB2	1:G:456:LEU:HB3	1.98	0.45
1:A:332:LYS:NZ	1:A:337:ILE:HB	2.32	0.45
1:A:357:ASP:O	1:A:360:ILE:HG12	2.16	0.45
1:A:489:PRO:HD2	1:A:580:TYR:HE2	1.80	0.45
1:B:103:ASN:HB3	1:B:115:ILE:HG22	1.98	0.45
1:B:157:SER:HB3	1:B:554:ILE:HD12	1.97	0.45
1:B:298:SER:HB2	1:B:375:LEU:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:131:ARG:O	1:F:135:ASN:ND2	2.49	0.45
1:G:231:ALA:O	1:G:235:LEU:HB2	2.17	0.45
1:G:558:ILE:HG22	1:G:586:VAL:HG11	1.96	0.45
1:B:86:ILE:HG23	1:B:140:MET:SD	2.57	0.45
1:C:475:ALA:O	1:C:479:VAL:HG13	2.17	0.45
1:D:559:ALA:HB3	1:D:566:GLY:HA2	1.98	0.45
1:F:510:LYS:HD3	1:F:510:LYS:HA	1.80	0.45
1:G:420:GLU:O	1:G:424:VAL:HG23	2.17	0.45
1:A:168:LYS:HB3	1:A:546:ILE:HG23	1.98	0.45
1:A:213:ILE:HG13	1:A:214:ALA:N	2.32	0.45
1:B:70:LYS:HD3	1:B:629:ASP:HA	1.99	0.45
1:E:231:ALA:O	1:E:235:LEU:HB2	2.17	0.45
1:F:158:THR:OG1	1:F:609:VAL:HG22	2.17	0.45
1:C:373:LEU:HD12	1:C:373:LEU:HA	1.80	0.45
1:D:206:THR:HG22	1:D:208:LYS:H	1.80	0.45
1:E:425:LEU:HB3	1:E:445:ILE:HG12	1.98	0.45
1:F:306:PHE:HE2	1:F:313:LEU:HD13	1.82	0.45
1:B:197:ILE:HD13	1:B:606:ILE:HG22	1.98	0.45
1:E:71:ASP:HB2	1:E:631:GLU:H	1.82	0.45
1:G:261:PHE:CE2	1:G:263:ARG:HB2	2.52	0.45
1:G:495:TYR:CE1	1:G:606:ILE:HG23	2.52	0.45
1:A:91:ASP:HA	1:A:94:LYS:HE2	1.98	0.45
1:G:440:LYS:HA	1:G:440:LYS:HD2	1.75	0.45
1:C:360:ILE:HG13	1:C:421:ARG:HH11	1.81	0.44
1:E:105:LEU:HD22	1:F:626:MET:HG2	1.99	0.44
1:E:168:LYS:HG3	1:E:546:ILE:HG12	1.99	0.44
1:E:432:THR:O	1:E:438:LYS:HE3	2.17	0.44
1:D:173:VAL:HG13	1:D:179:PRO:HG3	1.99	0.44
1:D:582:PHE:CE1	1:D:591:PHE:HB3	2.53	0.44
1:G:242:ILE:HB	1:G:400:ILE:HD13	1.99	0.44
1:G:267:ASN:O	1:G:270:LEU:HG	2.18	0.44
1:G:584:TYR:HB2	1:G:591:PHE:CE2	2.51	0.44
1:D:83:LEU:O	1:D:87:LEU:HD13	2.17	0.44
1:D:313:LEU:O	1:D:339:VAL:HA	2.18	0.44
1:D:495:TYR:CE1	1:D:606:ILE:HG23	2.52	0.44
1:D:525:LYS:HD2	1:D:528:GLU:OE1	2.17	0.44
1:E:197:ILE:HG22	1:E:603:THR:HG23	1.99	0.44
1:E:279:ILE:HG21	1:E:340:VAL:HG11	2.00	0.44
1:C:321:SER:HB2	1:C:324:VAL:HG22	2.00	0.44
1:F:129:LYS:HD2	1:G:631:GLU:OE1	2.18	0.44
1:G:293:ILE:O	1:G:324:VAL:HG11	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:224:MET:HG2	1:D:472:TYR:CZ	2.53	0.44
1:E:567:ASP:OD1	1:E:567:ASP:N	2.44	0.44
1:G:194:ILE:HD11	1:G:611:LYS:HB2	1.98	0.44
1:G:343:ARG:HG2	1:G:344:ALA:H	1.82	0.44
1:D:374:ASP:O	1:D:378:LEU:HG	2.18	0.44
1:D:538:GLU:HA	1:D:541:LYS:HG2	2.00	0.44
1:F:237:LYS:HE2	1:F:237:LYS:HB3	1.79	0.44
1:F:333:LEU:HA	1:F:337:ILE:HG23	2.00	0.44
1:G:264:GLY:HA3	1:G:403:LYS:O	2.17	0.44
1:E:71:ASP:HB3	1:E:628:VAL:HG23	1.99	0.44
1:E:244:ASP:HB3	1:E:456:LEU:HD23	1.99	0.44
1:A:72:ILE:HG12	1:A:627:MET:HG2	2.00	0.44
1:B:194:ILE:HD11	1:B:611:LYS:HB2	2.00	0.44
1:D:173:VAL:HG21	1:D:621:LEU:HD22	1.99	0.44
1:F:416:LYS:H	1:F:416:LYS:HD2	1.82	0.44
1:G:507:ILE:O	1:G:511:ILE:HG23	2.18	0.44
1:A:265:ILE:HG22	1:A:403:LYS:HA	1.99	0.44
1:A:289:THR:HA	1:A:367:ILE:HB	2.00	0.44
1:B:148:ASN:O	1:B:150:LYS:HD2	2.18	0.44
1:D:293:ILE:HG22	1:D:324:VAL:HG11	2.00	0.44
1:E:602:SER:HB3	1:E:605:VAL:HG13	1.98	0.44
1:F:329:ILE:HG23	1:F:339:VAL:HB	1.99	0.44
1:F:592:VAL:HG21	1:F:597:LYS:HD3	1.99	0.44
1:G:479:VAL:O	1:G:483:ILE:HG23	2.17	0.44
1:B:83:LEU:HB2	1:B:170:ILE:HD12	2.00	0.43
1:F:129:LYS:NZ	1:G:71:ASP:OD1	2.41	0.43
1:A:224:MET:O	1:A:228:ILE:HG12	2.18	0.43
1:B:218:SER:HB2	1:B:224:MET:CE	2.48	0.43
1:D:325:LEU:HD23	1:D:325:LEU:HA	1.86	0.43
1:D:360:ILE:HG21	1:D:421:ARG:HB2	2.00	0.43
1:F:194:ILE:HD11	1:F:611:LYS:HB2	1.99	0.43
1:A:281:TYR:CE2	1:A:338:LYS:HB3	2.54	0.43
1:C:80:ASN:OD1	1:C:81:GLU:N	2.51	0.43
1:C:527:LEU:HA	1:C:530:ILE:HG12	2.01	0.43
1:E:197:ILE:HB	1:E:607:ILE:HD11	2.00	0.43
1:G:173:VAL:HG13	1:G:179:PRO:HG3	2.01	0.43
1:A:273:ASN:HB2	1:A:334:LYS:HD2	2.01	0.43
1:B:285:SER:O	1:B:313:LEU:HD12	2.18	0.43
1:E:361:VAL:HG23	1:E:362:THR:HG23	2.00	0.43
1:E:497:GLU:HG3	1:E:580:TYR:HE1	1.80	0.43
1:D:246:ASN:HD21	1:D:252:LYS:HE2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:135:ASN:HD22	1:E:135:ASN:HA	1.62	0.43
1:F:202:THR:O	1:F:486:GLY:HA2	2.16	0.43
1:G:194:ILE:HG12	1:G:607:ILE:HG23	2.00	0.43
1:G:440:LYS:O	1:G:443:GLU:HG2	2.19	0.43
1:B:173:VAL:HG21	1:B:621:LEU:HD22	2.01	0.43
1:C:379:HIS:O	1:C:382:MET:HG2	2.18	0.43
1:D:201:SER:CB	1:D:603:THR:HG21	2.48	0.43
1:E:507:ILE:O	1:E:511:ILE:HG23	2.19	0.43
1:F:175:ARG:HA	1:F:175:ARG:NE	2.33	0.43
1:A:190:SER:HB2	1:A:614:CYS:SG	2.59	0.43
1:B:365:LYS:HG3	1:B:392:LEU:HA	2.00	0.43
1:B:401:VAL:HG13	1:B:406:THR:CG2	2.49	0.43
1:B:567:ASP:O	1:B:571:LYS:HG3	2.19	0.43
1:F:106:LEU:HD13	1:F:116:ILE:HD12	2.00	0.43
1:A:148:ASN:O	1:A:150:LYS:HD2	2.19	0.43
1:E:321:SER:O	1:E:324:VAL:HG12	2.19	0.43
1:A:497:GLU:OE2	1:A:500:LYS:HE2	2.18	0.43
1:B:173:VAL:HG13	1:B:179:PRO:HG3	2.01	0.43
1:C:248:ASP:O	1:C:458:GLY:HA3	2.19	0.43
1:D:183:GLN:OE1	1:D:622:THR:OG1	2.36	0.43
1:D:357:ASP:HB3	1:D:448:LEU:HD21	2.01	0.43
1:D:507:ILE:O	1:D:511:ILE:HG23	2.19	0.43
1:E:489:PRO:HG3	1:E:595:VAL:HG22	2.01	0.43
1:F:71:ASP:OD2	1:F:131:ARG:NH2	2.52	0.43
1:G:135:ASN:HD22	1:G:135:ASN:HA	1.62	0.43
1:B:224:MET:HG2	1:B:472:TYR:CZ	2.54	0.43
1:C:79:ARG:NH2	1:C:624:GLU:OE2	2.39	0.43
1:C:367:ILE:HD11	1:C:392:LEU:HD11	2.01	0.43
1:F:322:ASN:OD1	1:F:323:GLU:N	2.51	0.43
1:F:365:LYS:HG3	1:F:392:LEU:HA	2.01	0.43
1:G:243:LEU:HD21	1:G:472:TYR:HB3	2.01	0.43
1:A:425:LEU:HD23	1:A:425:LEU:HA	1.83	0.42
1:E:489:PRO:HG3	1:E:595:VAL:CG2	2.49	0.42
1:F:281:TYR:CE2	1:F:338:LYS:HB3	2.54	0.42
1:G:584:TYR:CE2	1:G:586:VAL:HG12	2.53	0.42
1:A:261:PHE:HB2	1:A:345:PRO:HG3	2.01	0.42
1:B:441:LEU:HD23	1:B:441:LEU:HA	1.92	0.42
1:C:120:VAL:HG12	1:C:124:LYS:HE3	2.01	0.42
1:D:262:ASP:OD1	1:D:262:ASP:N	2.52	0.42
1:B:247:ALA:H	1:C:326:GLN:NE2	2.18	0.42
1:C:135:ASN:HD22	1:C:135:ASN:HA	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:157:SER:HB3	1:D:554:ILE:HD12	2.01	0.42
1:E:254:GLU:OE2	1:E:454:LYS:HD3	2.20	0.42
1:E:306:PHE:HA	1:E:309:ASN:ND2	2.34	0.42
1:E:412:GLU:H	1:E:412:GLU:HG3	1.71	0.42
1:E:564:VAL:HG21	1:F:530:ILE:HD12	2.01	0.42
1:F:223:HIS:O	1:F:227:ILE:HG12	2.20	0.42
1:G:332:LYS:HD3	1:G:332:LYS:HA	1.85	0.42
1:G:350:ARG:HD3	1:G:350:ARG:HA	1.87	0.42
1:B:508:HIS:NE2	1:B:541:LYS:HB2	2.35	0.42
1:C:94:LYS:HB2	1:C:557:GLN:HG2	2.01	0.42
1:C:361:VAL:HG12	1:C:362:THR:HG23	2.00	0.42
1:D:340:VAL:HG11	1:D:401:VAL:HG21	2.00	0.42
1:E:194:ILE:HA	1:E:607:ILE:HD12	2.01	0.42
1:E:416:LYS:H	1:E:416:LYS:HD2	1.84	0.42
1:A:158:THR:OG1	1:A:609:VAL:HG22	2.20	0.42
1:A:285:SER:O	1:A:313:LEU:HD12	2.19	0.42
1:A:292:ASN:OD1	1:A:292:ASN:N	2.51	0.42
1:C:257:GLU:O	1:C:410:THR:OG1	2.37	0.42
1:D:246:ASN:ND2	1:D:252:LYS:HE2	2.34	0.42
1:F:319:ASP:HA	1:F:343:ARG:HD3	2.01	0.42
1:G:388:ASN:O	1:G:389:TYR:HB2	2.19	0.42
1:A:246:ASN:HD21	1:A:252:LYS:HE2	1.85	0.42
1:A:270:LEU:HD23	1:A:330:ILE:HG12	2.02	0.42
1:E:161:MET:HE2	1:E:610:ILE:HG13	2.01	0.42
1:E:224:MET:O	1:E:228:ILE:HG12	2.20	0.42
1:A:100:ARG:NH1	1:B:184:ARG:HH21	2.18	0.42
1:A:306:PHE:HE2	1:A:313:LEU:HD13	1.84	0.42
1:B:190:SER:HB2	1:B:614:CYS:SG	2.59	0.42
1:C:584:TYR:CE1	1:C:586:VAL:HG12	2.55	0.42
1:D:248:ASP:O	1:D:458:GLY:HA3	2.19	0.42
1:E:97:LEU:HD22	1:E:160:LEU:HD12	2.01	0.42
1:G:629:ASP:OD1	1:G:629:ASP:N	2.42	0.42
1:A:135:ASN:HD22	1:A:135:ASN:HA	1.63	0.42
1:B:279:ILE:HD12	1:B:279:ILE:HA	1.95	0.42
1:C:508:HIS:NE2	1:C:541:LYS:HB2	2.34	0.42
1:E:345:PRO:HG2	1:E:354:TYR:HB3	2.02	0.42
1:B:129:LYS:HE2	1:B:129:LYS:HB2	1.91	0.42
1:B:558:ILE:HG22	1:B:586:VAL:HG11	2.00	0.42
1:C:86:ILE:HG23	1:C:140:MET:SD	2.60	0.42
1:G:103:ASN:HB3	1:G:115:ILE:HG22	2.02	0.42
1:G:433:THR:O	1:G:438:LYS:NZ	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:325:LEU:HA	1:B:329:ILE:HD12	2.02	0.42
1:C:104:VAL:HG22	1:D:625:CYS:HB3	2.02	0.42
1:D:588:THR:O	1:D:590:LYS:N	2.47	0.42
1:E:84:LYS:HE2	1:E:84:LYS:HB3	1.97	0.42
1:G:89:VAL:HG22	1:G:126:ILE:HD12	2.01	0.42
1:A:83:LEU:HB2	1:A:170:ILE:HD12	2.02	0.41
1:A:352:LYS:O	1:A:356:LYS:HG3	2.20	0.41
1:C:403:LYS:HA	1:C:403:LYS:HD3	1.84	0.41
1:D:414:TYR:O	1:D:418:ILE:HD12	2.19	0.41
1:A:235:LEU:HD13	1:A:239:ALA:HB1	2.03	0.41
1:E:246:ASN:ND2	1:E:252:LYS:HE2	2.35	0.41
1:F:495:TYR:CE1	1:F:606:ILE:HG23	2.55	0.41
1:B:246:ASN:HA	1:C:326:GLN:HE22	1.85	0.41
1:C:284:VAL:HG23	1:C:312:PRO:HB2	2.02	0.41
1:D:263:ARG:HD3	1:D:263:ARG:HA	1.86	0.41
1:G:204:ILE:HG21	1:G:483:ILE:HA	2.00	0.41
1:G:325:LEU:HA	1:G:325:LEU:HD23	1.81	0.41
1:A:87:LEU:HD23	1:A:163:ALA:HB1	2.02	0.41
1:A:224:MET:HE3	1:A:472:TYR:CD2	2.55	0.41
1:C:103:ASN:HB3	1:C:115:ILE:CG2	2.49	0.41
1:C:418:ILE:HD13	1:C:448:LEU:HD22	2.01	0.41
1:E:353:ASP:HB3	1:E:444:ARG:CZ	2.50	0.41
1:E:497:GLU:OE2	1:E:500:LYS:HD3	2.20	0.41
1:G:224:MET:HE3	1:G:472:TYR:CD1	2.56	0.41
1:B:265:ILE:HG13	1:B:401:VAL:HG12	2.02	0.41
1:F:458:GLY:HA2	1:F:465:GLN:HE22	1.85	0.41
1:G:582:PHE:CZ	1:G:591:PHE:HB3	2.55	0.41
1:A:455:ILE:HG22	1:A:457:ILE:HG12	2.03	0.41
1:D:115:ILE:HD13	1:E:619:MET:SD	2.61	0.41
1:D:329:ILE:HG23	1:D:333:LEU:HD12	2.02	0.41
1:E:310:LYS:HZ3	1:E:336:ALA:HA	1.85	0.41
1:G:488:VAL:HG21	1:G:606:ILE:HD12	2.02	0.41
1:G:520:ASN:O	1:G:520:ASN:ND2	2.54	0.41
1:A:115:ILE:HD12	1:B:619:MET:SD	2.61	0.41
1:A:306:PHE:CD2	1:A:313:LEU:HB2	2.55	0.41
1:B:522:ASP:O	1:B:524:LYS:N	2.50	0.41
1:C:428:GLU:OE2	1:C:441:LEU:HD22	2.19	0.41
1:E:258:GLY:HA2	1:E:410:THR:HG23	2.02	0.41
1:E:420:GLU:O	1:E:424:VAL:HG23	2.20	0.41
1:E:511:ILE:HD11	1:E:541:LYS:HB3	2.02	0.41
1:F:173:VAL:HG13	1:F:179:PRO:HG3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:538:GLU:HA	1:F:541:LYS:HG2	2.03	0.41
1:B:360:ILE:HD13	1:B:421:ARG:CG	2.50	0.41
1:D:194:ILE:HG12	1:D:607:ILE:HG23	2.01	0.41
1:E:157:SER:HB3	1:E:554:ILE:HD12	2.02	0.41
1:F:91:ASP:HA	1:F:94:LYS:HE2	2.02	0.41
1:G:559:ALA:HB3	1:G:566:GLY:HA2	2.03	0.41
1:C:267:ASN:OD1	1:C:325:LEU:HD21	2.20	0.41
1:D:278:TYR:CD1	1:D:402:LYS:HA	2.56	0.41
1:E:88:THR:HG21	1:E:128:LEU:HD21	2.03	0.41
1:E:482:ALA:HB2	1:E:602:SER:HB2	2.03	0.41
1:E:495:TYR:HB3	1:E:551:LEU:HB3	2.03	0.41
1:E:584:TYR:HB2	1:E:591:PHE:CE1	2.56	0.41
1:F:271:LEU:HD21	1:F:279:ILE:HG22	2.02	0.41
1:F:495:TYR:HB3	1:F:551:LEU:HB3	2.03	0.41
1:G:504:ILE:O	1:G:507:ILE:HG13	2.21	0.41
1:G:542:MET:HA	1:G:545:ASN:HD22	1.86	0.41
1:A:243:LEU:HD21	1:A:472:TYR:HB3	2.03	0.41
1:A:374:ASP:HB3	1:A:377:ASN:OD1	2.21	0.41
1:C:192:MET:CE	1:C:510:LYS:HG2	2.51	0.41
1:C:435:LYS:O	1:C:438:LYS:HG3	2.21	0.41
1:B:104:VAL:HB	1:B:122:ILE:HD13	2.01	0.40
1:B:306:PHE:HA	1:B:309:ASN:ND2	2.37	0.40
1:D:158:THR:OG1	1:D:609:VAL:HG22	2.20	0.40
1:D:532:ASN:HB2	1:D:535:SER:HB3	2.03	0.40
1:E:524:LYS:HD3	1:E:527:LEU:HD13	2.03	0.40
1:G:248:ASP:O	1:G:458:GLY:HA3	2.21	0.40
1:G:261:PHE:CZ	1:G:406:THR:HB	2.55	0.40
1:A:511:ILE:HD12	1:A:540:GLN:HB3	2.03	0.40
1:F:263:ARG:HD3	1:F:263:ARG:HA	1.83	0.40
1:F:500:LYS:HB2	1:F:574:LEU:HD22	2.03	0.40
1:G:132:LYS:HG2	1:G:628:VAL:HG21	2.02	0.40
1:C:83:LEU:HB2	1:C:170:ILE:HD12	2.03	0.40
1:C:107:GLU:O	1:C:107:GLU:HG3	2.20	0.40
1:C:508:HIS:O	1:C:511:ILE:HG12	2.22	0.40
1:D:285:SER:HB3	1:D:393:LEU:HD12	2.03	0.40
1:E:173:VAL:HG21	1:E:621:LEU:HD22	2.03	0.40
1:G:306:PHE:CE2	1:G:313:LEU:HB2	2.55	0.40
1:G:362:THR:O	1:G:364:SER:N	2.51	0.40
1:C:263:ARG:O	1:C:406:THR:N	2.55	0.40
1:D:322:ASN:OD1	1:D:323:GLU:N	2.52	0.40
1:D:382:MET:O	1:D:387:ASN:HA	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:418:ILE:HG13	1:E:419:ASP:N	2.34	0.40
1:G:243:LEU:O	1:G:469:LYS:NZ	2.54	0.40
1:A:284:VAL:HG12	1:A:312:PRO:HB2	2.03	0.40
1:A:350:ARG:HG2	1:A:440:LYS:HE3	2.02	0.40
1:B:80:ASN:O	1:B:84:LYS:HG2	2.22	0.40
1:B:132:LYS:HG2	1:B:628:VAL:HG21	2.04	0.40
1:B:499:ILE:HD11	1:B:551:LEU:HB2	2.03	0.40
1:F:132:LYS:O	1:F:135:ASN:HB2	2.21	0.40
1:F:293:ILE:HG21	1:F:299:ILE:HD13	2.04	0.40
1:F:333:LEU:HD12	1:F:334:LYS:HD2	2.04	0.40
1:F:566:GLY:O	1:F:570:VAL:HG13	2.21	0.40
1:G:286:THR:O	1:G:393:LEU:HB2	2.21	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	562/568 (99%)	523 (93%)	39 (7%)	0	100	100
1	B	554/568 (98%)	518 (94%)	36 (6%)	0	100	100
1	C	558/568 (98%)	512 (92%)	46 (8%)	0	100	100
1	D	558/568 (98%)	517 (93%)	41 (7%)	0	100	100
1	E	558/568 (98%)	515 (92%)	43 (8%)	0	100	100
1	F	557/568 (98%)	514 (92%)	43 (8%)	0	100	100
1	G	561/568 (99%)	518 (92%)	43 (8%)	0	100	100
All	All	3908/3976 (98%)	3617 (93%)	291 (7%)	0	100	100

There are no Ramachandran outliers to report.

### 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	500/503 (99%)	493 (99%)	7 (1%)	67	82
1	B	496/503 (99%)	485 (98%)	11 (2%)	52	72
1	C	499/503 (99%)	489 (98%)	10 (2%)	55	74
1	D	498/503 (99%)	487 (98%)	11 (2%)	52	72
1	E	498/503 (99%)	485 (97%)	13 (3%)	46	69
1	F	498/503 (99%)	489 (98%)	9 (2%)	59	77
1	G	499/503 (99%)	488 (98%)	11 (2%)	52	72
All	All	3488/3521 (99%)	3416 (98%)	72 (2%)	53	74

All (72) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	78	CYS
1	A	90	SER
1	A	233	ASP
1	A	277	ASP
1	A	385	PHE
1	A	389	TYR
1	A	619	MET
1	B	78	CYS
1	B	90	SER
1	B	131	ARG
1	B	277	ASP
1	B	385	PHE
1	B	389	TYR
1	B	408	LEU
1	B	438	LYS
1	B	465	GLN
1	B	541	LYS
1	B	619	MET
1	C	78	CYS
1	C	80	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	90	SER
1	C	131	ARG
1	C	233	ASP
1	C	375	LEU
1	C	385	PHE
1	C	438	LYS
1	C	618	SER
1	C	619	MET
1	D	78	CYS
1	D	105	LEU
1	D	259	TYR
1	D	343	ARG
1	D	385	PHE
1	D	387	ASN
1	D	389	TYR
1	D	393	LEU
1	D	514	ASP
1	D	604	ASN
1	D	619	MET
1	E	78	CYS
1	E	90	SER
1	E	131	ARG
1	E	190	SER
1	E	259	TYR
1	E	277	ASP
1	E	313	LEU
1	E	318	ASP
1	E	388	ASN
1	E	392	LEU
1	E	393	LEU
1	E	487	TYR
1	E	524	LYS
1	F	78	CYS
1	F	90	SER
1	F	259	TYR
1	F	277	ASP
1	F	385	PHE
1	F	408	LEU
1	F	427	LYS
1	F	441	LEU
1	F	542	MET
1	G	71	ASP

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Mol	Chain	Res	Type
1	G	78	CYS
1	G	90	SER
1	G	168	LYS
1	G	259	TYR
1	G	277	ASP
1	G	353	ASP
1	G	391	SER
1	G	392	LEU
1	G	520	ASN
1	G	619	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	135	ASN
1	C	326	GLN
1	C	561	ASN
1	D	377	ASN
1	D	380	ASN
1	E	388	ASN
1	F	516	GLN
1	G	377	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 14 ligands modelled in this entry, 7 are monoatomic - leaving 7 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	ATP	F	702	2	26,33,33	0.93	1 (3%)	31,52,52	1.53	5 (16%)
3	ATP	G	702	2	26,33,33	0.92	1 (3%)	31,52,52	1.49	5 (16%)
3	ATP	D	702	2	26,33,33	0.94	1 (3%)	31,52,52	1.51	5 (16%)
3	ATP	E	702	2	26,33,33	0.93	1 (3%)	31,52,52	1.50	5 (16%)
3	ATP	C	702	2	26,33,33	0.93	1 (3%)	31,52,52	1.52	5 (16%)
3	ATP	B	702	2	26,33,33	0.93	1 (3%)	31,52,52	1.51	5 (16%)
3	ATP	A	702	2	26,33,33	0.94	1 (3%)	31,52,52	1.53	5 (16%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ATP	F	702	2	-	0/18/38/38	0/3/3/3
3	ATP	G	702	2	-	0/18/38/38	0/3/3/3
3	ATP	D	702	2	-	0/18/38/38	0/3/3/3
3	ATP	E	702	2	-	0/18/38/38	0/3/3/3
3	ATP	C	702	2	-	0/18/38/38	0/3/3/3
3	ATP	B	702	2	-	0/18/38/38	0/3/3/3
3	ATP	A	702	2	-	0/18/38/38	0/3/3/3

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	702	ATP	C5-C4	2.50	1.47	1.40
3	F	702	ATP	C5-C4	2.49	1.47	1.40
3	E	702	ATP	C5-C4	2.49	1.47	1.40
3	D	702	ATP	C5-C4	2.48	1.47	1.40
3	G	702	ATP	C5-C4	2.46	1.47	1.40
3	C	702	ATP	C5-C4	2.46	1.47	1.40
3	B	702	ATP	C5-C4	2.45	1.47	1.40

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	702	ATP	PB-O3B-PG	-3.44	121.03	132.83
3	F	702	ATP	PB-O3B-PG	-3.38	121.21	132.83
3	A	702	ATP	C3'-C2'-C1'	3.38	106.07	100.98
3	E	702	ATP	PB-O3B-PG	-3.38	121.24	132.83
3	B	702	ATP	PB-O3B-PG	-3.26	121.65	132.83
3	D	702	ATP	PB-O3B-PG	-3.25	121.66	132.83
3	F	702	ATP	C3'-C2'-C1'	3.25	105.88	100.98
3	D	702	ATP	C3'-C2'-C1'	3.24	105.85	100.98
3	C	702	ATP	N3-C2-N1	-3.23	123.63	128.68
3	C	702	ATP	PB-O3B-PG	-3.23	121.75	132.83
3	B	702	ATP	N3-C2-N1	-3.22	123.64	128.68
3	B	702	ATP	C3'-C2'-C1'	3.22	105.83	100.98
3	G	702	ATP	N3-C2-N1	-3.21	123.66	128.68
3	D	702	ATP	N3-C2-N1	-3.20	123.68	128.68
3	G	702	ATP	PB-O3B-PG	-3.19	121.87	132.83
3	C	702	ATP	C3'-C2'-C1'	3.19	105.78	100.98
3	F	702	ATP	N3-C2-N1	-3.17	123.72	128.68
3	A	702	ATP	N3-C2-N1	-3.17	123.73	128.68
3	E	702	ATP	N3-C2-N1	-3.12	123.80	128.68
3	G	702	ATP	C3'-C2'-C1'	3.10	105.64	100.98
3	E	702	ATP	C3'-C2'-C1'	3.07	105.60	100.98
3	F	702	ATP	PA-O3A-PB	-2.83	123.11	132.83
3	D	702	ATP	PA-O3A-PB	-2.77	123.34	132.83
3	E	702	ATP	C4-C5-N7	-2.76	106.52	109.40
3	B	702	ATP	C4-C5-N7	-2.75	106.54	109.40
3	G	702	ATP	PA-O3A-PB	-2.72	123.49	132.83
3	E	702	ATP	PA-O3A-PB	-2.69	123.58	132.83
3	C	702	ATP	C4-C5-N7	-2.69	106.59	109.40
3	F	702	ATP	C4-C5-N7	-2.66	106.62	109.40
3	B	702	ATP	PA-O3A-PB	-2.66	123.69	132.83
3	D	702	ATP	C4-C5-N7	-2.65	106.64	109.40
3	A	702	ATP	C4-C5-N7	-2.65	106.64	109.40
3	C	702	ATP	PA-O3A-PB	-2.63	123.81	132.83
3	G	702	ATP	C4-C5-N7	-2.61	106.68	109.40
3	A	702	ATP	PA-O3A-PB	-2.57	124.00	132.83

There are no chirality outliers.

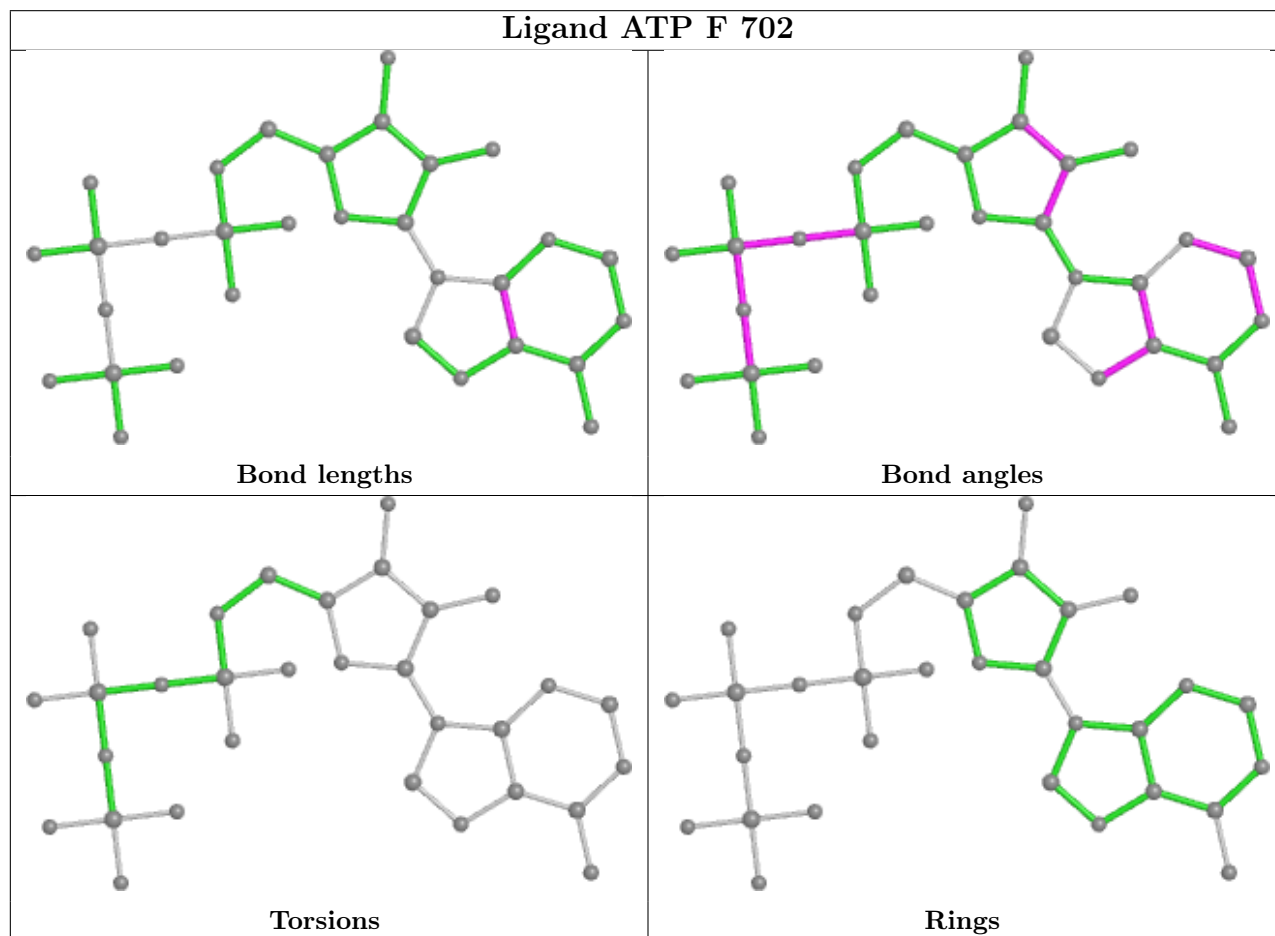
There are no torsion outliers.

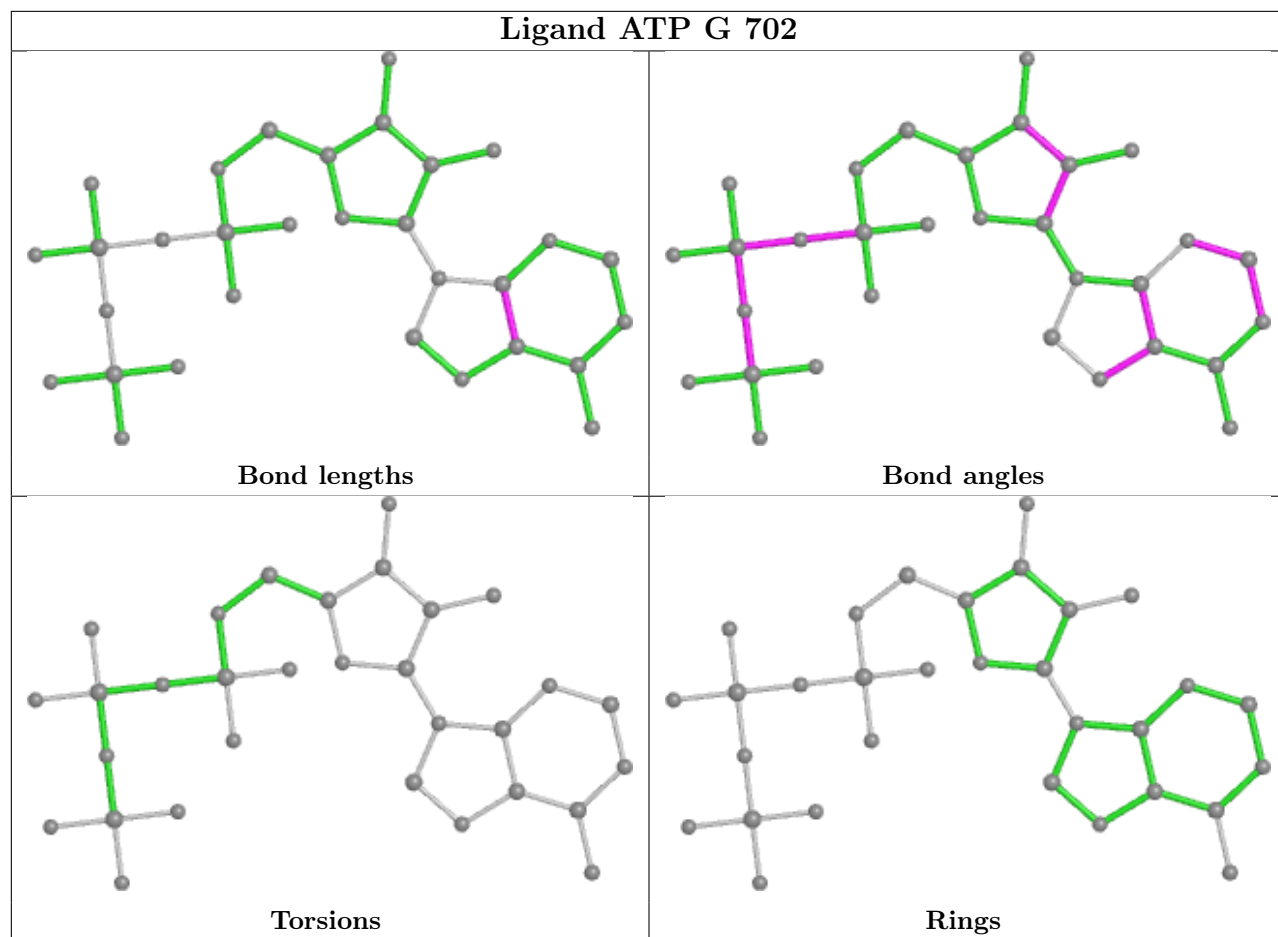
There are no ring outliers.

7 monomers are involved in 8 short contacts:

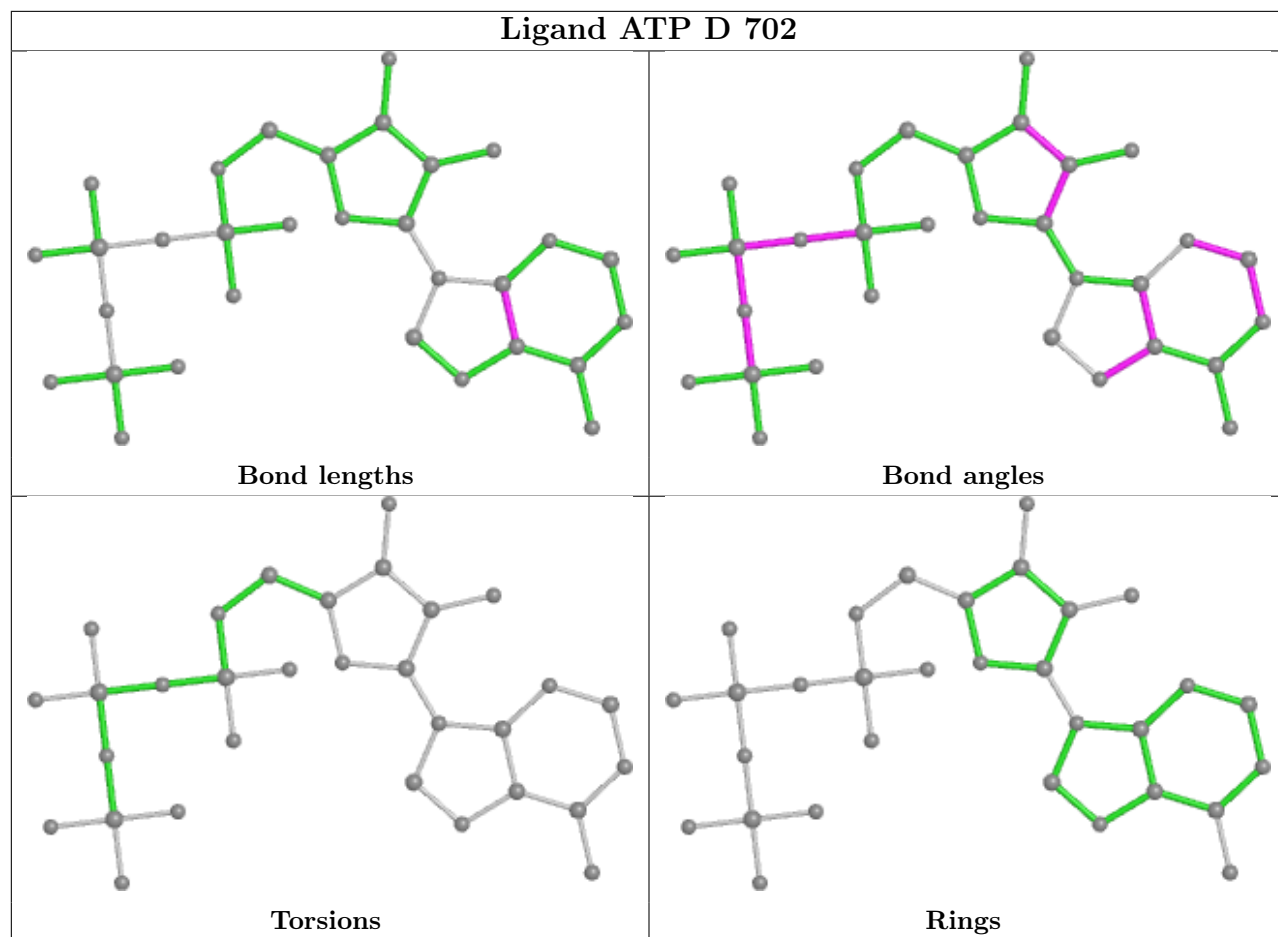
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	F	702	ATP	2	0
3	G	702	ATP	1	0
3	D	702	ATP	1	0
3	E	702	ATP	1	0
3	C	702	ATP	1	0
3	B	702	ATP	1	0
3	A	702	ATP	1	0

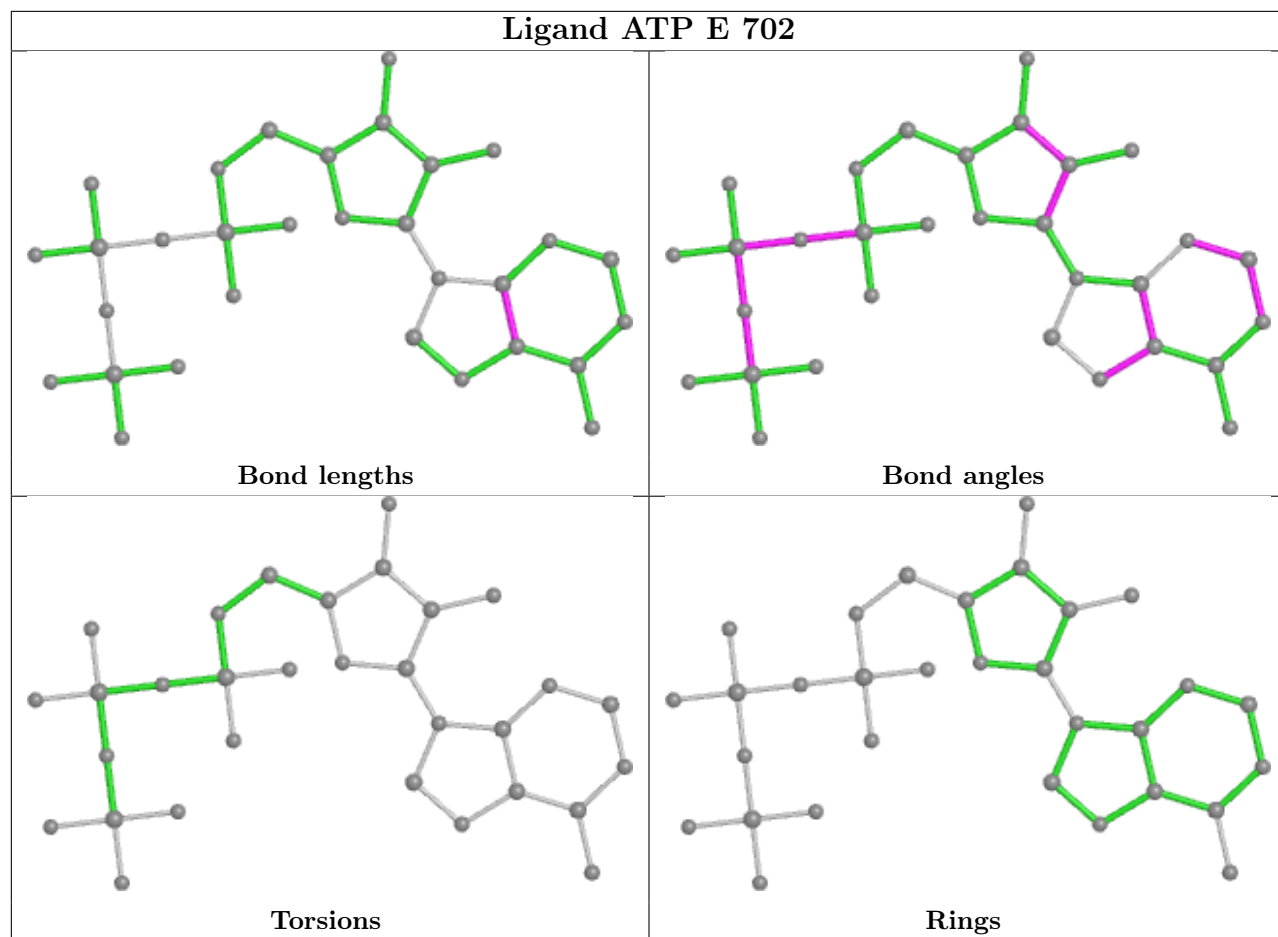
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

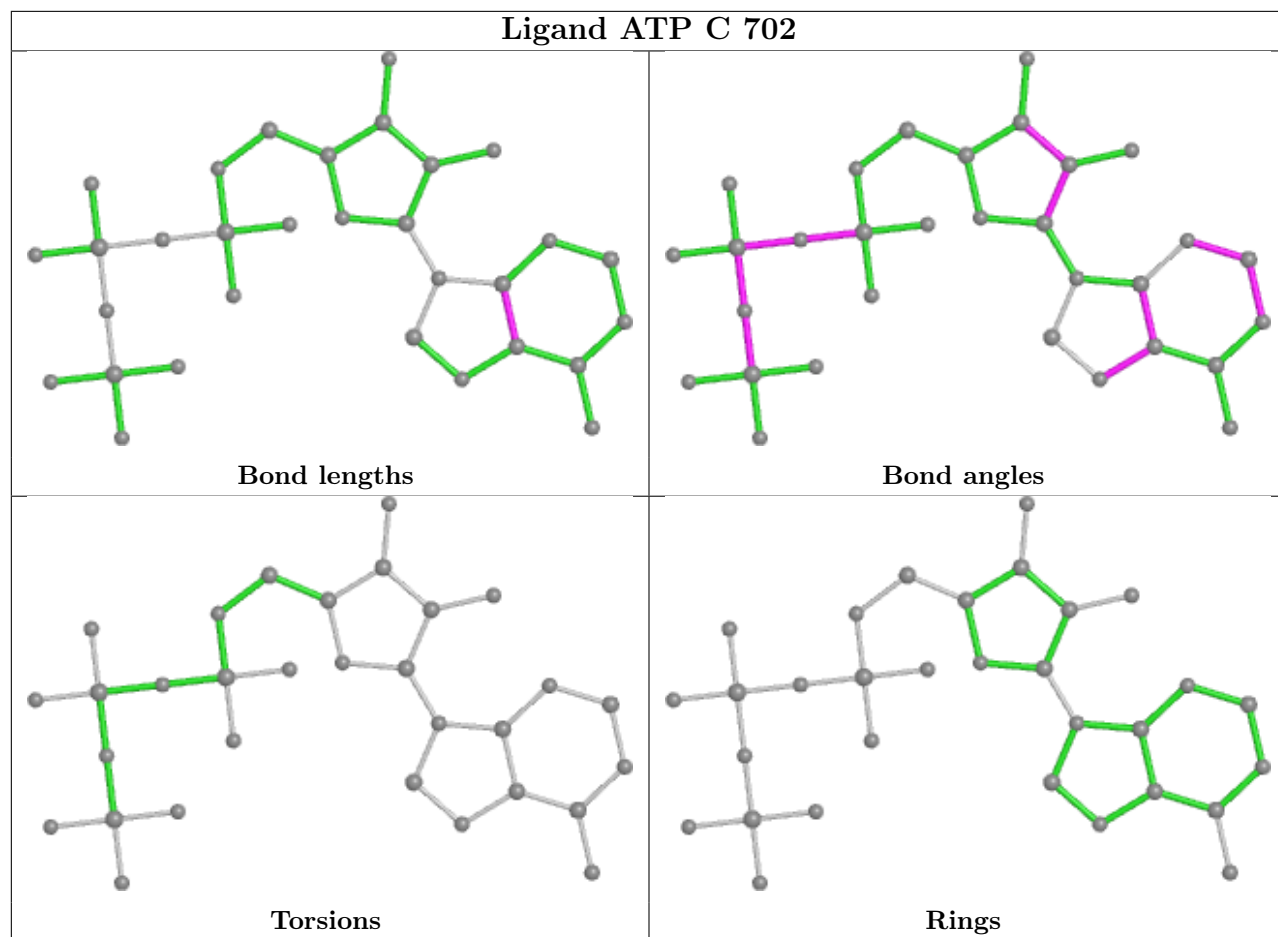


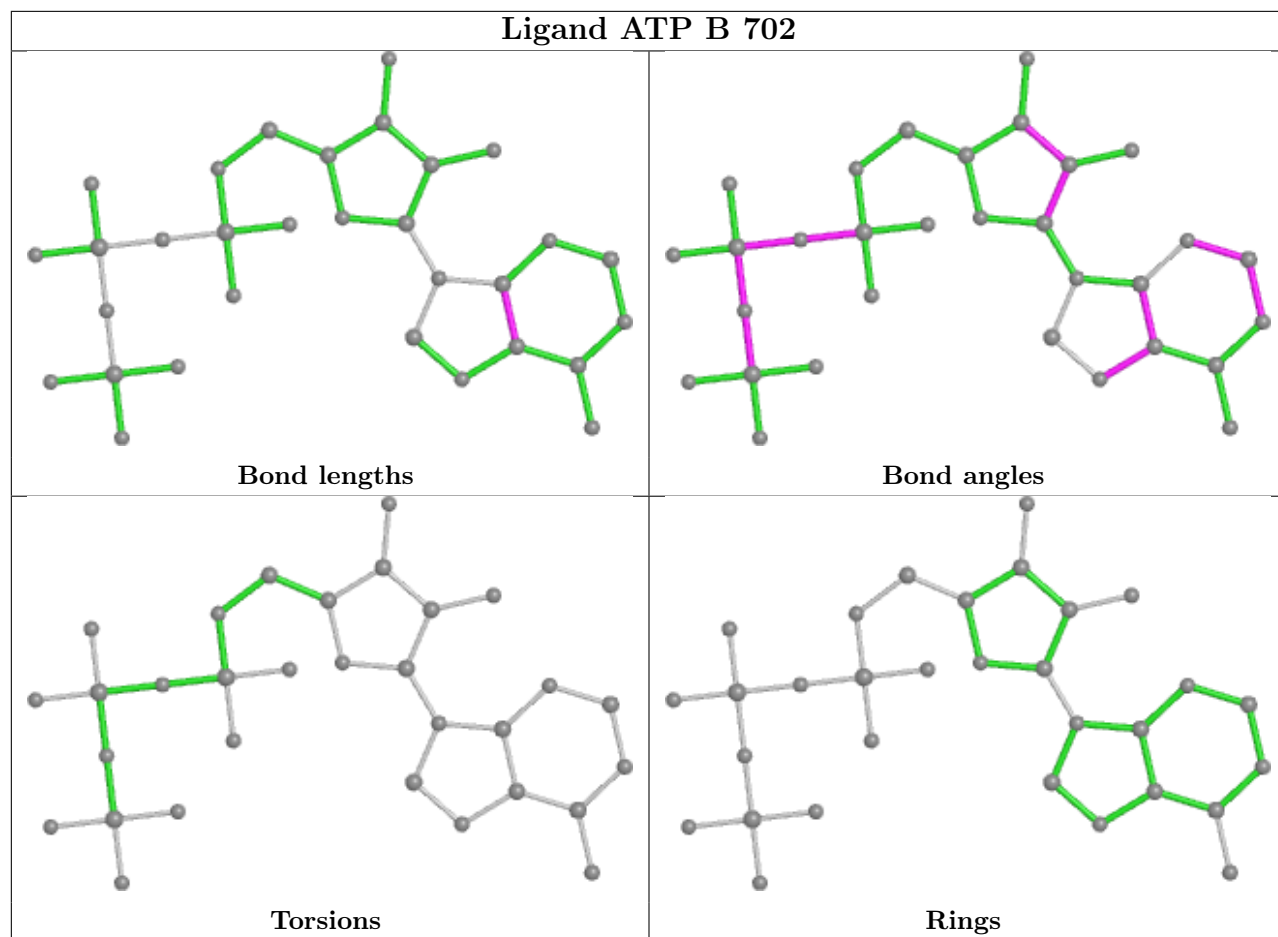


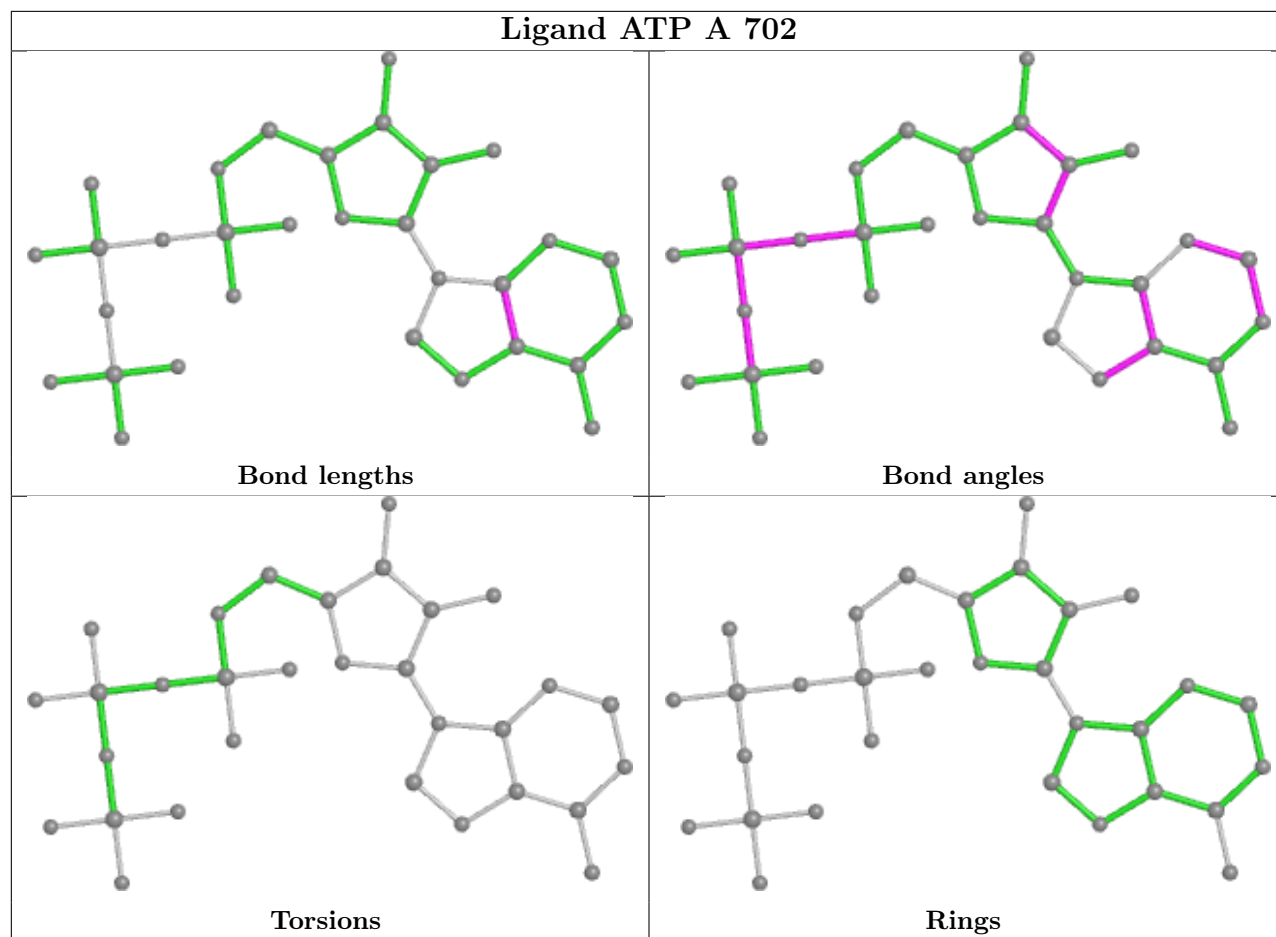












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	564/568 (99%)	0.23	4 (0%) 87 81	80, 132, 185, 240	0
1	B	560/568 (98%)	0.45	42 (7%) 14 10	78, 159, 264, 307	0
1	C	562/568 (98%)	0.55	46 (8%) 11 9	85, 159, 318, 410	0
1	D	562/568 (98%)	0.28	19 (3%) 45 34	89, 153, 219, 262	0
1	E	562/568 (98%)	0.35	28 (4%) 28 21	91, 159, 227, 259	0
1	F	561/568 (98%)	0.72	73 (13%) 3 3	90, 172, 295, 321	0
1	G	563/568 (99%)	0.25	12 (2%) 63 52	85, 137, 194, 257	0
All	All	3934/3976 (98%)	0.40	224 (5%) 23 16	78, 149, 274, 410	0

All (224) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	337	ILE	8.3
1	F	281	TYR	8.2
1	C	337	ILE	7.0
1	F	260	ASN	6.5
1	B	405	ARG	6.5
1	F	314	CYS	6.3
1	A	327	THR	6.3
1	F	329	ILE	6.0
1	C	281	TYR	6.0
1	C	376	ASN	5.9
1	B	337	ILE	5.8
1	F	316	ILE	5.7
1	C	360	ILE	5.5
1	F	434	SER	5.2
1	F	302	ILE	5.0
1	F	339	VAL	4.9
1	C	260	ASN	4.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	442	ASN	4.9
1	D	281	TYR	4.6
1	F	433	THR	4.6
1	D	333	LEU	4.5
1	C	446	ALA	4.5
1	F	389	TYR	4.4
1	F	287	LEU	4.2
1	F	338	LYS	4.1
1	C	445	ILE	4.1
1	B	452	ILE	4.1
1	E	452	ILE	4.0
1	F	388	ASN	4.0
1	E	316	ILE	4.0
1	B	451	GLY	3.8
1	F	336	ALA	3.8
1	C	316	ILE	3.8
1	E	265	ILE	3.8
1	F	315	ILE	3.7
1	C	361	VAL	3.7
1	C	289	THR	3.7
1	B	438	LYS	3.6
1	B	393	LEU	3.6
1	B	410	THR	3.6
1	F	370	ASP	3.6
1	D	260	ASN	3.6
1	C	422	ILE	3.5
1	C	287	LEU	3.5
1	C	288	ILE	3.5
1	C	341	PRO	3.5
1	F	400	ILE	3.5
1	C	386	ASP	3.5
1	D	269	TYR	3.5
1	F	313	LEU	3.4
1	F	453	ALA	3.4
1	F	405	ARG	3.4
1	F	289	THR	3.4
1	E	456	LEU	3.4
1	D	286	THR	3.4
1	B	445	ILE	3.3
1	F	270	LEU	3.3
1	F	399	LEU	3.3
1	F	320	PHE	3.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	F	455	ILE	3.3
1	C	408	LEU	3.3
1	E	451	GLY	3.3
1	F	299	ILE	3.3
1	E	329	ILE	3.3
1	E	342	ILE	3.2
1	F	311	GLN	3.2
1	C	399	LEU	3.2
1	F	317	ALA	3.2
1	C	259	TYR	3.2
1	F	430	GLU	3.2
1	F	240	ALA	3.1
1	F	261	PHE	3.1
1	D	392	LEU	3.1
1	C	347	PHE	3.1
1	F	454	LYS	3.1
1	B	367	ILE	3.1
1	C	312	PRO	3.1
1	E	315	ILE	3.0
1	F	306	PHE	3.0
1	F	284	VAL	3.0
1	C	284	VAL	3.0
1	B	584	TYR	3.0
1	B	261	PHE	3.0
1	F	371	VAL	3.0
1	F	166	THR	2.9
1	F	143	SER	2.9
1	E	408	LEU	2.9
1	F	410	THR	2.9
1	E	399	LEU	2.8
1	B	399	LEU	2.8
1	F	452	ILE	2.8
1	B	430	GLU	2.8
1	D	317	ALA	2.8
1	C	297	GLN	2.8
1	B	259	TYR	2.8
1	F	391	SER	2.8
1	B	313	LEU	2.8
1	D	313	LEU	2.7
1	F	241	ILE	2.7
1	F	262	ASP	2.7
1	E	460	ASN	2.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	287	LEU	2.7
1	D	285	SER	2.7
1	F	442	ASN	2.7
1	B	339	VAL	2.7
1	F	432	THR	2.7
1	D	320	PHE	2.7
1	F	408	LEU	2.7
1	B	204	ILE	2.7
1	B	344	ALA	2.7
1	E	240	ALA	2.7
1	F	288	ILE	2.7
1	C	353	ASP	2.7
1	F	303	LEU	2.7
1	F	280	GLU	2.6
1	F	286	THR	2.6
1	G	382	MET	2.6
1	B	320	PHE	2.6
1	E	102	ARG	2.6
1	F	529	LEU	2.6
1	F	271	LEU	2.6
1	B	434	SER	2.6
1	B	342	ILE	2.6
1	D	288	ILE	2.6
1	C	449	SER	2.5
1	B	526	TYR	2.5
1	F	341	PRO	2.5
1	B	316	ILE	2.5
1	C	380	ASN	2.5
1	B	314	CYS	2.5
1	C	433	THR	2.5
1	B	491	GLY	2.5
1	C	313	LEU	2.5
1	C	437	ASP	2.4
1	G	312	PRO	2.4
1	B	427	LYS	2.4
1	E	246	ASN	2.4
1	F	385	PHE	2.4
1	B	389	TYR	2.4
1	C	320	PHE	2.4
1	B	289	THR	2.4
1	E	92	VAL	2.4
1	E	400	ILE	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	315	ILE	2.4
1	D	312	PRO	2.4
1	C	303	LEU	2.4
1	C	340	VAL	2.4
1	C	447	ALA	2.4
1	F	285	SER	2.3
1	B	396	ALA	2.3
1	C	418	ILE	2.3
1	G	342	ILE	2.3
1	G	408	LEU	2.3
1	C	161	MET	2.3
1	F	404	ASP	2.3
1	G	288	ILE	2.3
1	B	453	ALA	2.3
1	F	360	ILE	2.3
1	B	345	PRO	2.2
1	D	316	ILE	2.2
1	F	259	TYR	2.2
1	B	582	PHE	2.2
1	D	259	TYR	2.2
1	D	627	MET	2.2
1	F	392	LEU	2.2
1	F	267	ASN	2.2
1	B	240	ALA	2.2
1	C	265	ILE	2.2
1	G	526	TYR	2.2
1	G	161	MET	2.2
1	B	437	ASP	2.2
1	C	328	LEU	2.2
1	D	375	LEU	2.2
1	E	314	CYS	2.2
1	D	399	LEU	2.2
1	G	289	THR	2.2
1	F	266	ILE	2.2
1	B	260	ASN	2.2
1	G	341	PRO	2.2
1	E	455	ILE	2.2
1	E	459	GLY	2.2
1	F	319	ASP	2.2
1	G	272	TYR	2.2
1	F	342	ILE	2.2
1	F	457	ILE	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	F	353	ASP	2.2
1	C	410	THR	2.1
1	F	274	GLU	2.1
1	A	440	LYS	2.1
1	B	555	THR	2.1
1	E	340	VAL	2.1
1	E	341	PRO	2.1
1	F	626	MET	2.1
1	F	431	GLU	2.1
1	E	433	THR	2.1
1	E	103	ASN	2.1
1	C	375	LEU	2.1
1	E	339	VAL	2.1
1	B	255	PHE	2.1
1	B	591	PHE	2.1
1	C	582	PHE	2.1
1	E	396	ALA	2.1
1	C	295	ASN	2.1
1	B	361	VAL	2.1
1	C	434	SER	2.1
1	D	270	LEU	2.1
1	A	408	LEU	2.1
1	E	253	LEU	2.1
1	B	433	THR	2.0
1	F	151	ALA	2.0
1	F	251	ASP	2.0
1	F	398	THR	2.0
1	C	291	GLN	2.0
1	A	251	ASP	2.0
1	E	105	LEU	2.0
1	C	377	ASN	2.0
1	B	390	LEU	2.0
1	G	529	LEU	2.0
1	C	286	THR	2.0
1	F	429	TYR	2.0
1	C	426	LYS	2.0
1	G	338	LYS	2.0
1	E	116	ILE	2.0
1	F	361	VAL	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

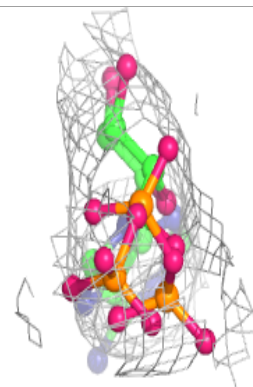
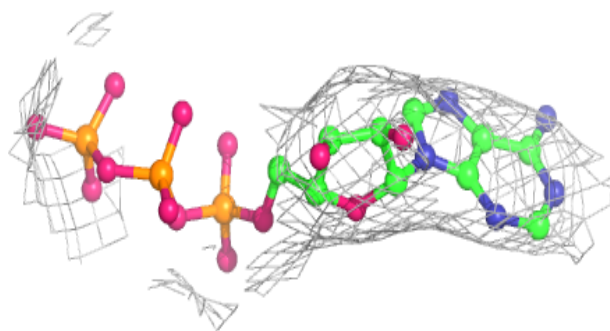
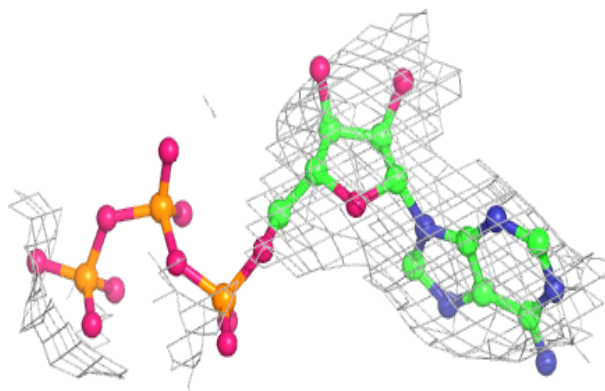
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	MG	B	701	1/1	0.88	0.12	90,90,90,90	0
2	MG	F	701	1/1	0.89	0.18	132,132,132,132	0
3	ATP	B	702	31/31	0.90	0.26	78,119,185,228	0
2	MG	E	701	1/1	0.92	0.10	149,149,149,149	0
3	ATP	E	702	31/31	0.93	0.24	68,128,202,210	0
3	ATP	D	702	31/31	0.94	0.27	75,114,169,198	0
3	ATP	A	702	31/31	0.94	0.25	67,108,168,197	0
3	ATP	F	702	31/31	0.94	0.25	84,120,181,210	0
3	ATP	C	702	31/31	0.95	0.26	84,125,191,212	0
3	ATP	G	702	31/31	0.95	0.23	61,99,186,200	0
2	MG	G	701	1/1	0.96	0.17	115,115,115,115	0
2	MG	A	701	1/1	0.96	0.15	97,97,97,97	0
2	MG	D	701	1/1	0.98	0.21	122,122,122,122	0
2	MG	C	701	1/1	0.99	0.15	124,124,124,124	0

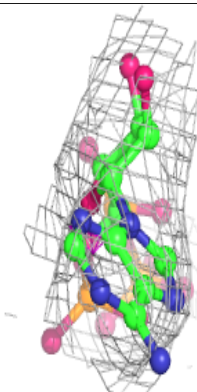
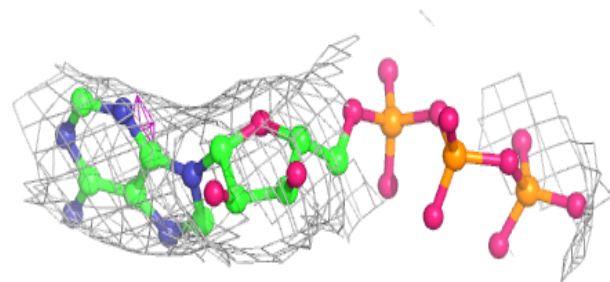
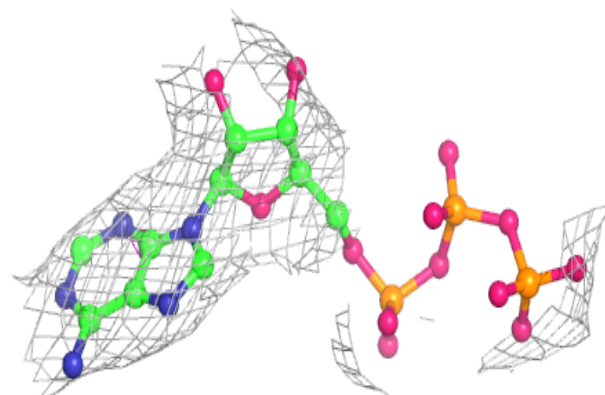
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around ATP B 702:**

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

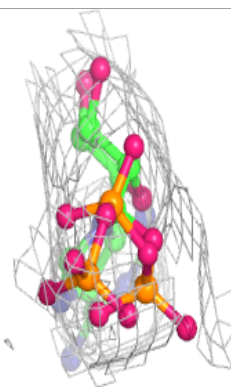
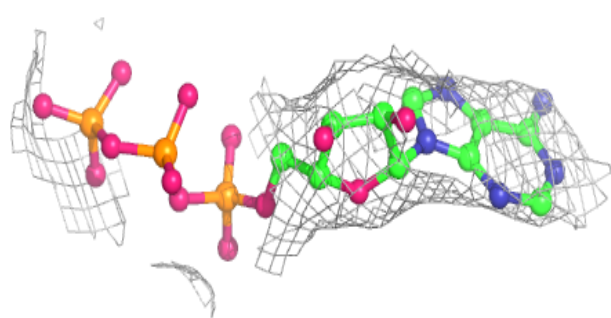
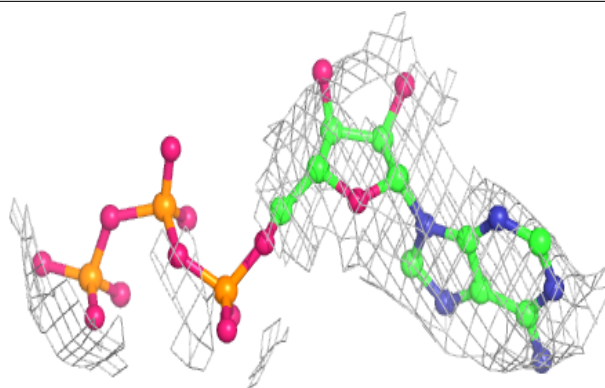
**Electron density around ATP E 702:**

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

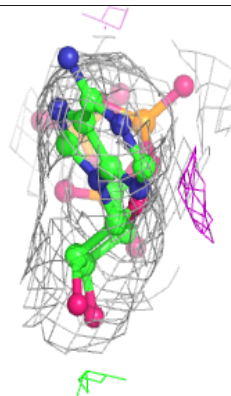
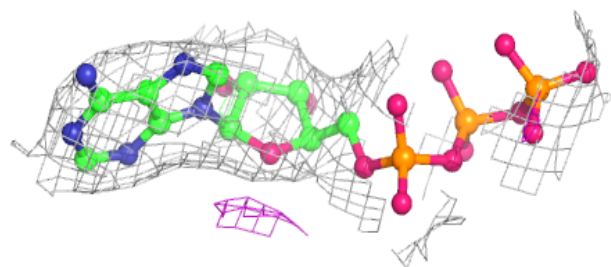
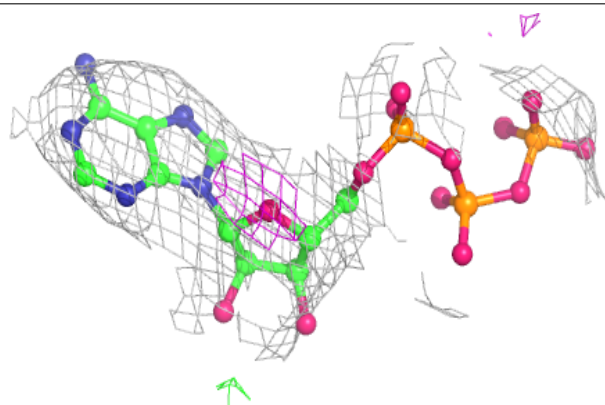


**Electron density around ATP D 702:**

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

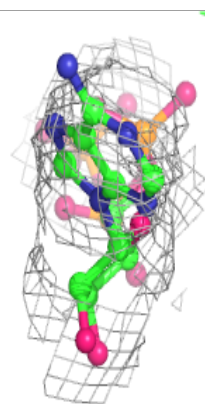
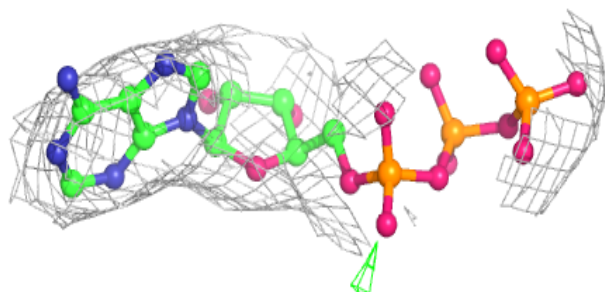
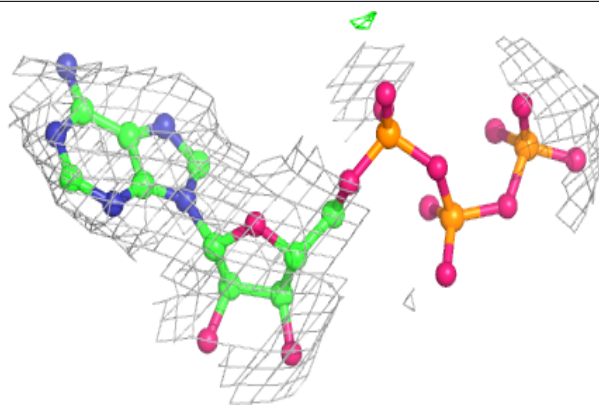
**Electron density around ATP A 702:**

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

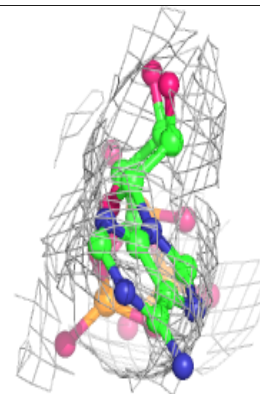
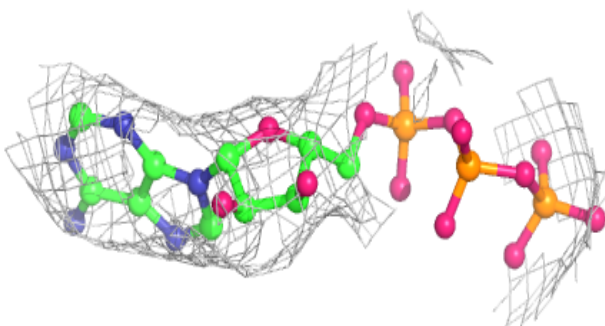
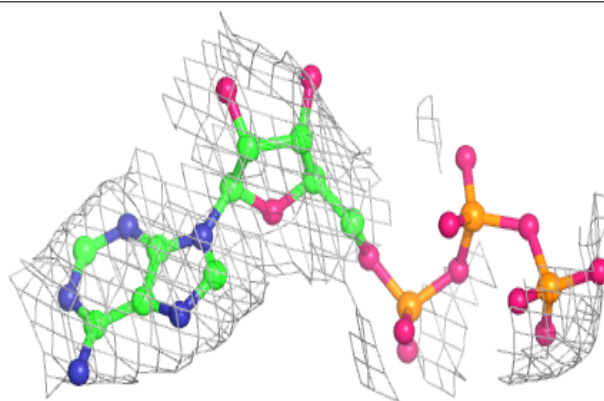


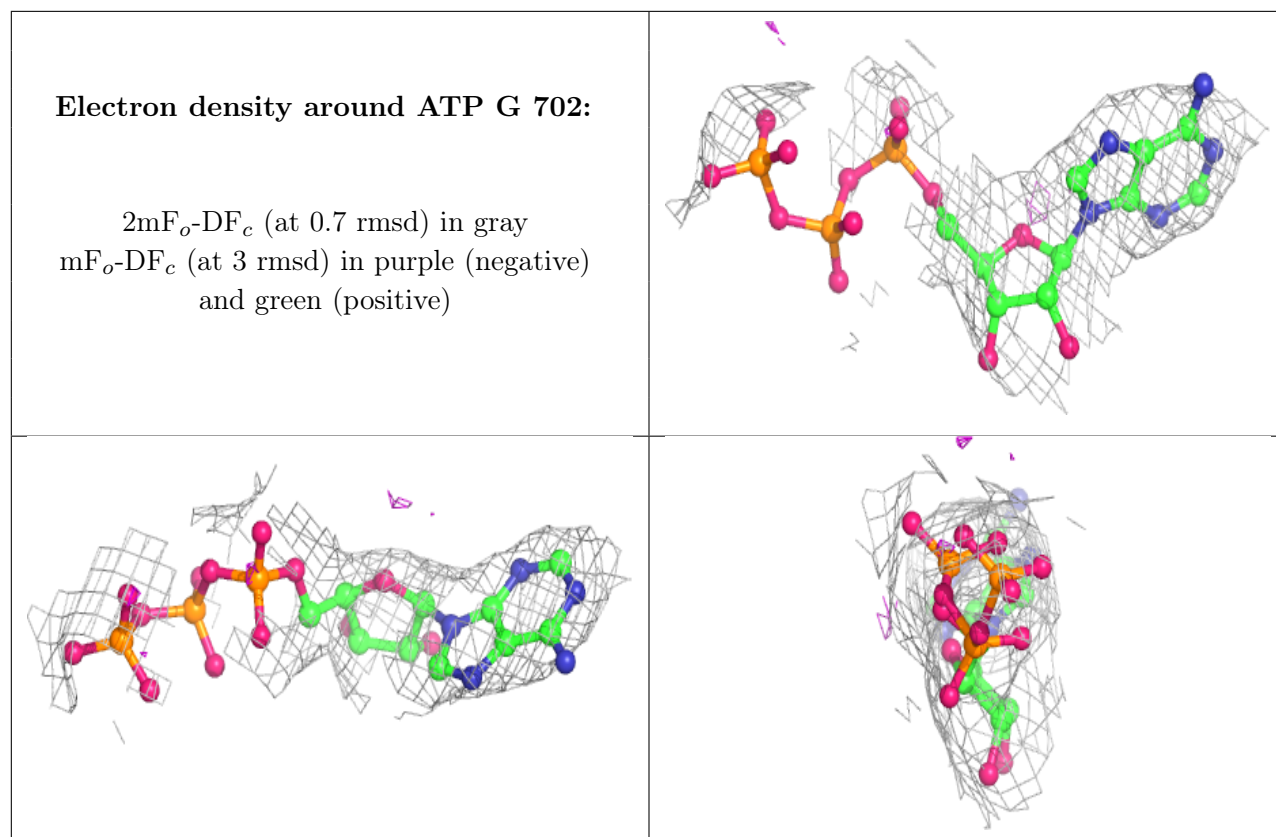
**Electron density around ATP F 702:**

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

**Electron density around ATP C 702:**

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





## 6.5 Other polymers [i](#)

There are no such residues in this entry.