



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 2, 2024 – 11:05 PM EST

PDB ID : 5W74  
Title : Crystal Structure of the Group II Chaperonin from Methanococcus Maripaludis D386ADeltaLid Mutant in the Open, ADP-Bound State  
Authors : Dalton, K.M.; Lopez, T.; Liu, C.; Ralston, C.Y.; Pereira, J.H.; Chartron, J.W.; McAndrew, R.P.; Douglas, N.R.; Adams, P.D.; Pande, V.S.; Frydman, J.  
Deposited on : 2017-06-19  
Resolution : 3.65 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](#) ①) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtrriage (Phenix) : 1.13  
EDS : 2.36  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

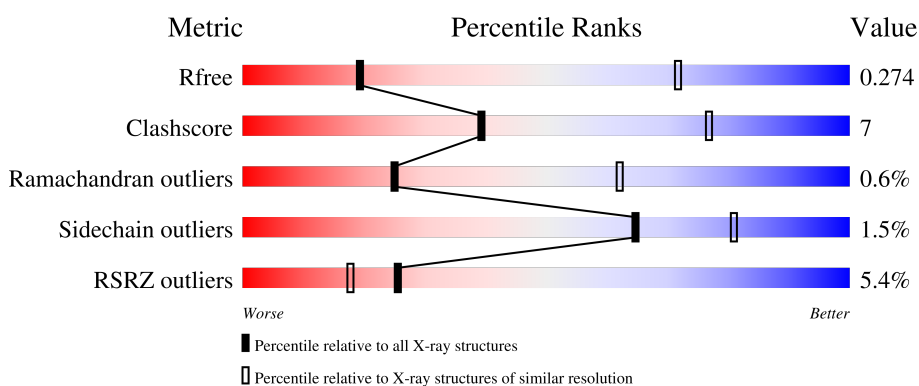
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.65 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.



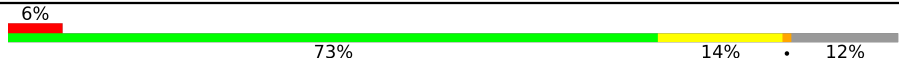

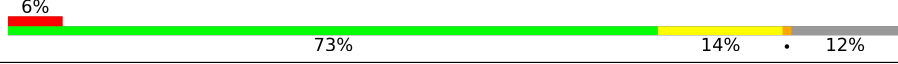
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1557 (3.82-3.50)
Clashscore	141614	1037 (3.80-3.52)
Ramachandran outliers	138981	1004 (3.80-3.52)
Sidechain outliers	138945	1002 (3.80-3.52)
RSRZ outliers	127900	1441 (3.82-3.50)

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	543	<div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 14%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin-top: 5px;">3%      73%      14%      •      12%</p>
1	B	543	<div style="display: flex; align-items: center;"> <div style="width: 6%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 71%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin-top: 5px;">6%      71%      16%      •      12%</p>
1	C	543	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 14%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin-top: 5px;">5%      73%      14%      12%</p>
1	D	543	<div style="display: flex; align-items: center;"> <div style="width: 6%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 71%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 17%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin-top: 5px;">6%      71%      17%      12%</p>
1	E	543	<div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 15%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin-top: 5px;">3%      73%      15%      12%</p>

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Mol	Chain	Length	Quality of chain
1	F	543	 6% 73% 14% • 12%
1	G	543	 3% 73% 14% • 12%
1	H	543	 6% 73% 14% • 12%

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 28632 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.

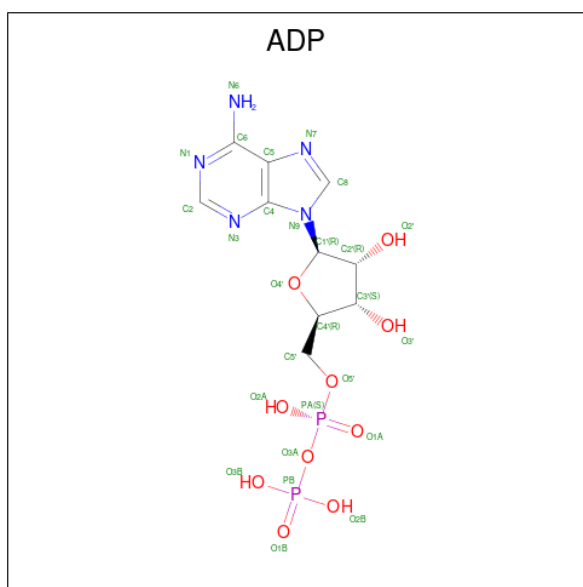
- Molecule 1 is a protein called Chaperonin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	477	3551	2205	617	707	22	0	0	0
1	B	477	3551	2205	617	707	22	0	0	0
1	C	477	3551	2205	617	707	22	0	0	0
1	D	477	3551	2205	617	707	22	0	0	0
1	E	477	3551	2205	617	707	22	0	0	0
1	F	477	3551	2205	617	707	22	0	0	0
1	G	477	3551	2205	617	707	22	0	0	0
1	H	477	3551	2205	617	707	22	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	386	ALA	ASP	engineered mutation	UNP Q877G8
B	386	ALA	ASP	engineered mutation	UNP Q877G8
C	386	ALA	ASP	engineered mutation	UNP Q877G8
D	386	ALA	ASP	engineered mutation	UNP Q877G8
E	386	ALA	ASP	engineered mutation	UNP Q877G8
F	386	ALA	ASP	engineered mutation	UNP Q877G8
G	386	ALA	ASP	engineered mutation	UNP Q877G8
H	386	ALA	ASP	engineered mutation	UNP Q877G8

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula:  $C_{10}H_{15}N_5O_{10}P_2$ ).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
2	A	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	B	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	C	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	D	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	E	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	F	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	G	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	H	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
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		

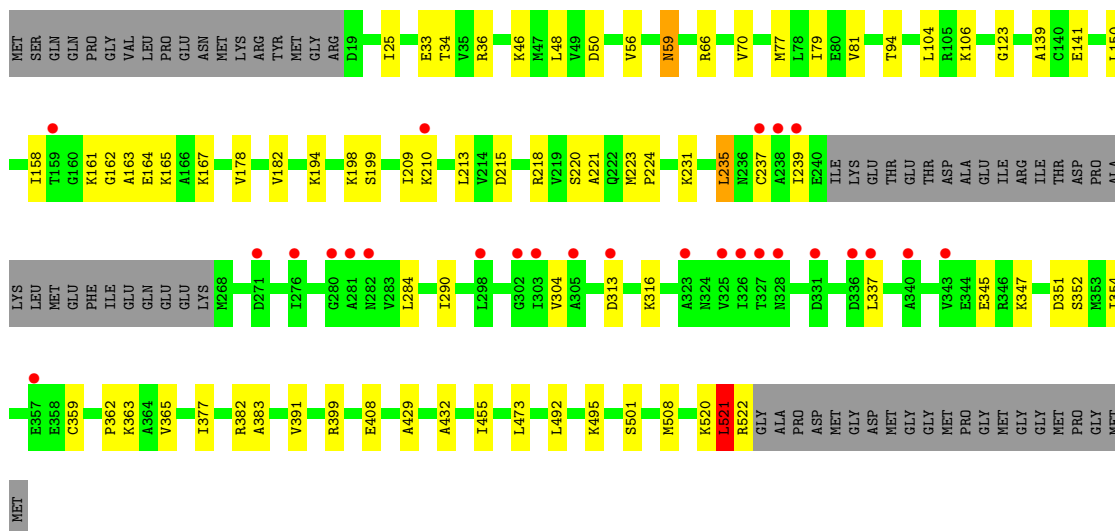
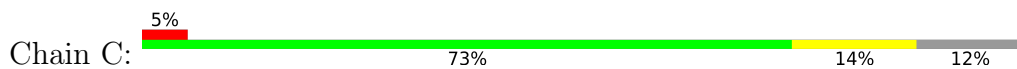
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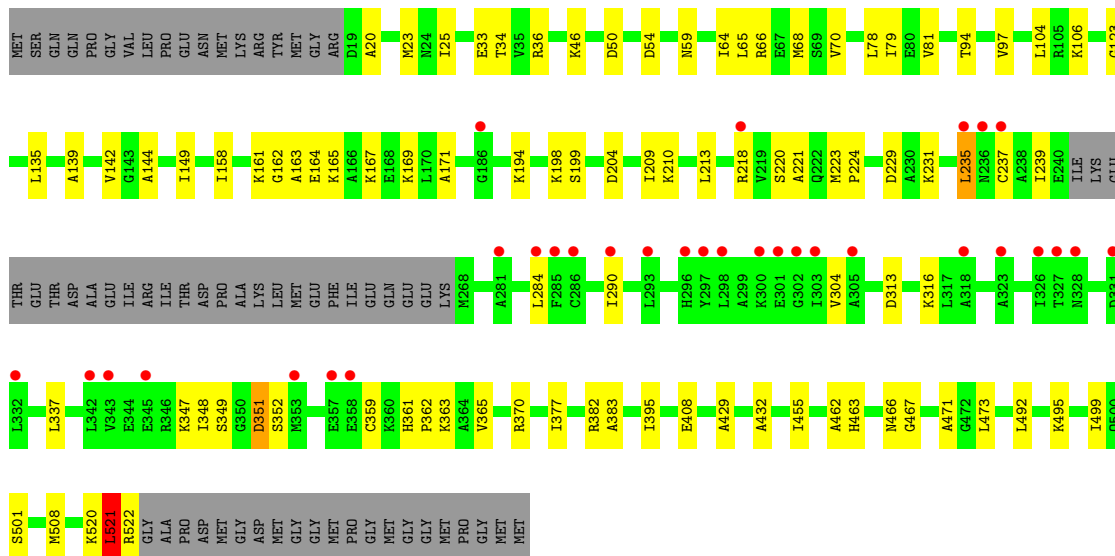
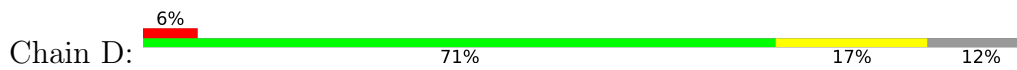
<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>ZeroOcc</b>	<b>AltConf</b>
3	E	1	Total 1	Mg 1	0	0
3	F	1	Total 1	Mg 1	0	0
3	G	1	Total 1	Mg 1	0	0
3	H	1	Total 1	Mg 1	0	0



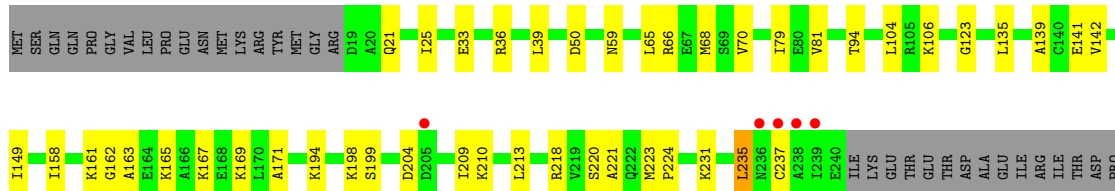
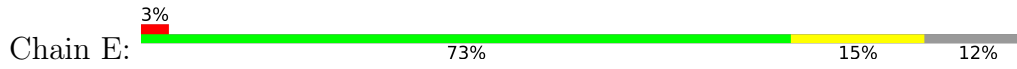


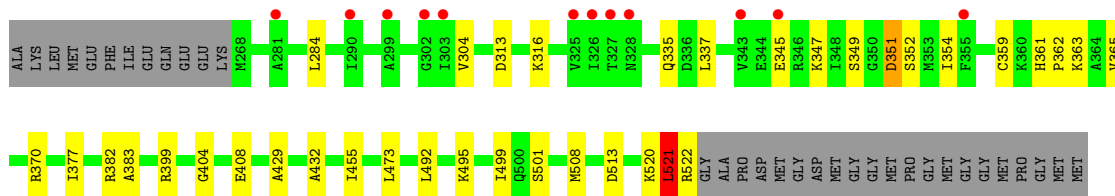


• Molecule 1: Chaperonin

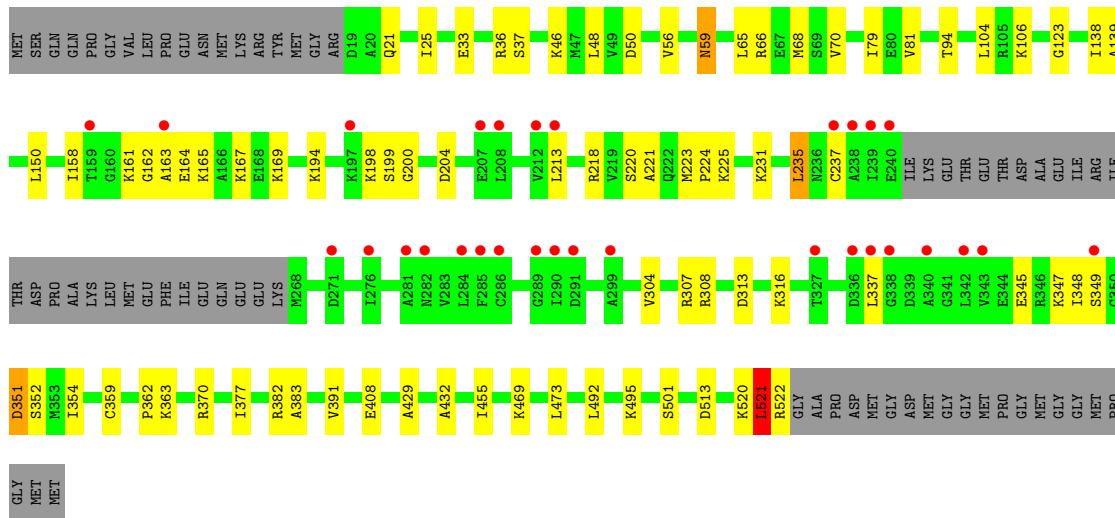


• Molecule 1: Chaperonin

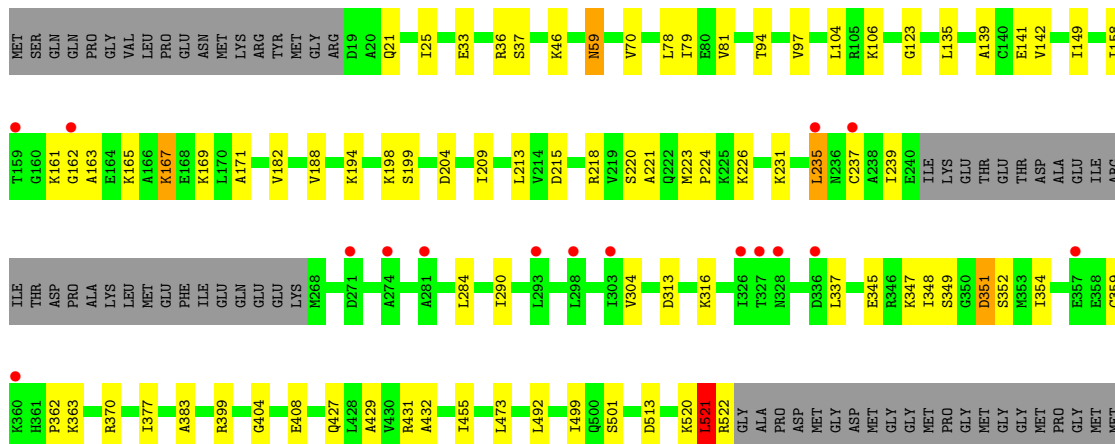
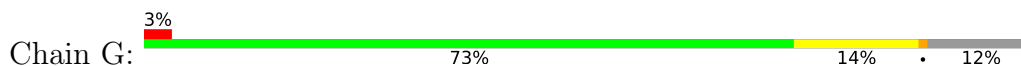




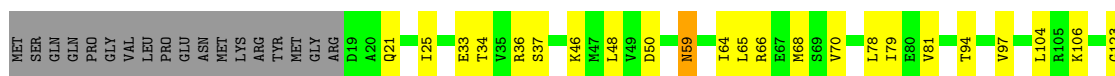
• Molecule 1: Chaperonin

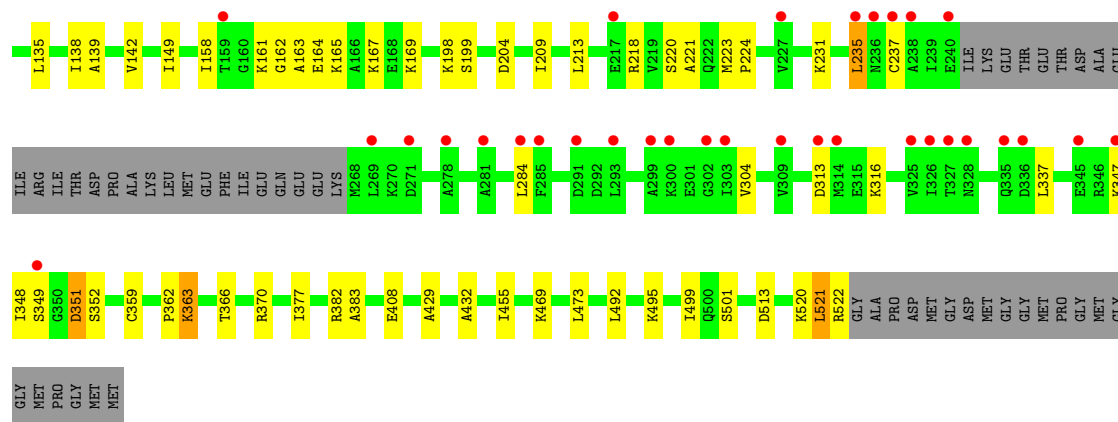


• Molecule 1: Chaperonin



• Molecule 1: Chaperonin





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	152.72Å 221.93Å 262.15Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.59 – 3.65 49.59 – 3.65	Depositor EDS
% Data completeness (in resolution range)	97.1 (49.59-3.65) 97.1 (49.59-3.65)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.71 (at 3.67Å)	Xtrriage
Refinement program	PHENIX (1.11.1_2575: ???)	Depositor
R, $R_{free}$	0.265 , 0.275 0.264 , 0.274	Depositor DCC
$R_{free}$ test set	4823 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	116.7	Xtrriage
Anisotropy	0.396	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.27 , 64.8	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.45$ , $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	28632	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	160.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 16.18% 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

### 5.1 Standard geometry

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

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	0.23	0/3569	0.42	1/4803 (0.0%)
1	B	0.23	0/3569	0.42	1/4803 (0.0%)
1	C	0.23	0/3569	0.42	1/4803 (0.0%)
1	D	0.24	0/3569	0.42	1/4803 (0.0%)
1	E	0.23	0/3569	0.42	1/4803 (0.0%)
1	F	0.23	0/3569	0.42	1/4803 (0.0%)
1	G	0.23	0/3569	0.42	1/4803 (0.0%)
1	H	0.24	0/3569	0.42	1/4803 (0.0%)
All	All	0.23	0/28552	0.42	8/38424 (0.0%)

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	521	LEU	CA-CB-CG	5.46	127.85	115.30
1	G	521	LEU	CA-CB-CG	5.33	127.57	115.30
1	A	521	LEU	CA-CB-CG	5.25	127.38	115.30
1	B	521	LEU	CA-CB-CG	5.24	127.35	115.30
1	D	521	LEU	CA-CB-CG	5.23	127.33	115.30
1	E	521	LEU	CA-CB-CG	5.21	127.28	115.30
1	C	521	LEU	CA-CB-CG	5.10	127.02	115.30
1	F	521	LEU	CA-CB-CG	5.05	126.92	115.30

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3551	0	3701	55	0
1	B	3551	0	3701	63	0
1	C	3551	0	3701	48	0
1	D	3551	0	3701	61	1
1	E	3551	0	3701	50	1
1	F	3551	0	3701	52	1
1	G	3551	0	3701	56	1
1	H	3551	0	3701	55	0
2	A	27	0	12	4	0
2	B	27	0	12	1	0
2	C	27	0	12	1	0
2	D	27	0	12	1	0
2	E	27	0	12	4	0
2	F	27	0	12	1	0
2	G	27	0	12	2	0
2	H	27	0	12	1	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
3	G	1	0	0	0	0
3	H	1	0	0	0	0
All	All	28632	0	29704	431	2

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 7.

All (431) 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:F:224:PRO:O	1:F:304:VAL:HG22	1.43	1.17
1:B:224:PRO:O	1:B:304:VAL:HG22	1.50	1.10
1:E:224:PRO:O	1:E:304:VAL:HG22	1.52	1.10

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:224:PRO:O	1:G:304:VAL:HG22	1.53	1.09
1:A:224:PRO:O	1:A:304:VAL:HG22	1.60	1.02
1:F:224:PRO:O	1:F:304:VAL:CG2	2.07	1.02
1:D:224:PRO:O	1:D:304:VAL:HG22	1.59	1.01
1:C:224:PRO:O	1:C:304:VAL:HG22	1.65	0.97
1:G:224:PRO:O	1:G:304:VAL:CG2	2.17	0.92
1:E:224:PRO:O	1:E:304:VAL:CG2	2.17	0.92
1:H:224:PRO:O	1:H:304:VAL:HG22	1.70	0.91
1:B:408:GLU:OE2	1:B:495:LYS:NZ	2.03	0.90
1:B:224:PRO:O	1:B:304:VAL:CG2	2.19	0.89
1:B:198:LYS:NZ	1:B:351:ASP:OD2	2.07	0.86
1:F:408:GLU:OE2	1:F:495:LYS:NZ	2.11	0.83
1:D:224:PRO:O	1:D:304:VAL:CG2	2.27	0.82
1:C:224:PRO:O	1:C:304:VAL:CG2	2.29	0.81
1:F:66:ARG:NH2	1:F:382:ARG:HH12	1.79	0.80
1:B:66:ARG:NH2	1:B:382:ARG:HH12	1.79	0.79
1:A:224:PRO:O	1:A:304:VAL:CG2	2.29	0.79
1:D:408:GLU:OE2	1:D:495:LYS:NZ	2.13	0.78
1:H:349:SER:HB2	1:H:370:ARG:HH22	1.50	0.76
1:F:194:LYS:HE2	1:F:316:LYS:HZ2	1.52	0.75
1:B:198:LYS:HE2	1:B:351:ASP:HB2	1.70	0.74
1:B:194:LYS:HE2	1:B:316:LYS:HZ2	1.51	0.74
1:D:349:SER:HB2	1:D:370:ARG:HH22	1.53	0.74
1:B:213:LEU:O	1:B:316:LYS:NZ	2.22	0.73
1:A:455:ILE:HG21	1:A:473:LEU:HD22	1.71	0.73
1:H:224:PRO:O	1:H:304:VAL:CG2	2.36	0.73
1:A:66:ARG:NH2	1:A:382:ARG:HH12	1.89	0.70
1:B:347:LYS:HE3	1:B:352:SER:HB3	1.72	0.70
1:F:347:LYS:HE3	1:F:352:SER:HB3	1.74	0.69
1:H:408:GLU:OE2	1:H:495:LYS:NZ	2.19	0.69
1:C:194:LYS:HE2	1:C:316:LYS:HD2	1.78	0.66
1:H:25:ILE:HG23	1:H:104:LEU:HB3	1.77	0.66
1:D:66:ARG:NH2	1:D:382:ARG:HH12	1.94	0.65
1:G:81:VAL:HG13	1:G:501:SER:HB3	1.78	0.65
1:G:194:LYS:HE2	1:G:316:LYS:HD2	1.77	0.64
1:E:66:ARG:NH2	1:E:382:ARG:HH12	1.95	0.64
1:G:349:SER:O	1:G:370:ARG:NH2	2.31	0.64
1:E:165:LYS:HB2	1:E:165:LYS:HZ2	1.62	0.64
1:C:81:VAL:HG13	1:C:501:SER:HB3	1.80	0.63
1:E:455:ILE:HG21	1:E:473:LEU:HD22	1.79	0.63
1:F:198:LYS:HE2	1:F:351:ASP:HB2	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:66:ARG:HH22	1:B:382:ARG:HH12	1.47	0.63
1:H:455:ILE:HG21	1:H:473:LEU:HD22	1.81	0.63
1:A:165:LYS:HZ2	1:A:165:LYS:HB2	1.64	0.62
1:H:81:VAL:HG13	1:H:501:SER:HB3	1.80	0.62
1:D:81:VAL:HG13	1:D:501:SER:HB3	1.81	0.62
1:F:123:GLY:HA3	1:F:429:ALA:HB3	1.81	0.62
1:F:66:ARG:HH22	1:F:382:ARG:HH12	1.47	0.62
1:C:94:THR:HB	2:C:600:ADP:O2B	1.99	0.62
1:F:165:LYS:HZ2	1:F:165:LYS:HB2	1.65	0.62
1:A:37:SER:OG	1:A:46:LYS:NZ	2.30	0.61
1:B:37:SER:OG	1:B:46:LYS:NZ	2.32	0.61
1:E:33:GLU:HA	1:E:36:ARG:HB2	1.82	0.61
1:F:81:VAL:HG13	1:F:501:SER:HB3	1.81	0.61
1:F:106:LYS:HB3	1:F:432:ALA:HB1	1.82	0.61
1:C:198:LYS:HD3	1:C:215:ASP:OD2	2.01	0.60
1:A:163:ALA:HB3	1:A:167:LYS:NZ	2.17	0.60
1:C:106:LYS:HB3	1:C:432:ALA:HB1	1.82	0.60
1:A:81:VAL:HG13	1:A:501:SER:HB3	1.84	0.60
1:G:25:ILE:HG23	1:G:104:LEU:HB3	1.82	0.60
1:H:70:VAL:HG21	1:H:79:ILE:HD11	1.84	0.60
1:B:106:LYS:HB3	1:B:432:ALA:HB1	1.84	0.59
1:B:123:GLY:HA3	1:B:429:ALA:HB3	1.84	0.59
1:E:70:VAL:HG21	1:E:79:ILE:HD11	1.84	0.59
1:F:25:ILE:HG23	1:F:104:LEU:HB3	1.84	0.59
1:C:220:SER:HB3	1:C:223:MET:HG3	1.85	0.59
1:D:33:GLU:HA	1:D:36:ARG:HB2	1.83	0.59
1:D:348:ILE:HG13	1:D:370:ARG:HH12	1.68	0.59
1:D:25:ILE:HG23	1:D:104:LEU:HB3	1.84	0.59
1:E:220:SER:HB3	1:E:223:MET:HG3	1.85	0.58
1:F:200:GLY:HA2	1:F:349:SER:HB2	1.85	0.58
1:A:220:SER:HB3	1:A:223:MET:HG3	1.85	0.58
1:C:25:ILE:HG23	1:C:104:LEU:HB3	1.85	0.58
1:H:94:THR:HB	2:H:600:ADP:O2B	2.03	0.58
1:D:455:ILE:HG21	1:D:473:LEU:HD22	1.85	0.58
1:A:404:GLY:N	2:A:600:ADP:O2'	2.36	0.58
1:C:161:LYS:HE3	1:C:383:ALA:HA	1.85	0.58
1:F:455:ILE:HG21	1:F:473:LEU:HD22	1.85	0.58
1:A:313:ASP:HA	1:A:316:LYS:HG2	1.85	0.58
1:D:94:THR:HB	2:D:600:ADP:O2B	2.03	0.58
1:E:231:LYS:HB3	1:E:337:LEU:HD13	1.85	0.58
1:A:123:GLY:HA3	1:A:429:ALA:HB3	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:313:ASP:HA	1:E:316:LYS:HG2	1.84	0.58
1:F:199:SER:HA	1:F:377:ILE:HD11	1.86	0.58
1:G:123:GLY:HA3	1:G:429:ALA:HB3	1.86	0.57
1:B:455:ILE:HG21	1:B:473:LEU:HD22	1.85	0.57
1:B:161:LYS:HE3	1:B:383:ALA:HA	1.86	0.57
1:E:404:GLY:N	2:E:600:ADP:O2'	2.37	0.57
1:G:220:SER:HB3	1:G:223:MET:HG3	1.86	0.57
1:D:70:VAL:HG21	1:D:79:ILE:HD11	1.86	0.57
1:G:70:VAL:HG21	1:G:79:ILE:HD11	1.87	0.57
1:E:106:LYS:HB3	1:E:432:ALA:HB1	1.85	0.57
1:A:70:VAL:HG21	1:A:79:ILE:HD11	1.86	0.57
1:B:81:VAL:HG13	1:B:501:SER:HB3	1.86	0.56
1:F:165:LYS:HB2	1:F:165:LYS:NZ	2.20	0.56
1:A:404:GLY:HA2	2:A:600:ADP:N3	2.19	0.56
1:B:218:ARG:HE	1:B:221:ALA:HA	1.69	0.56
1:A:231:LYS:HB3	1:A:337:LEU:HD13	1.88	0.56
1:B:199:SER:HA	1:B:377:ILE:HD11	1.86	0.56
1:B:163:ALA:HB3	1:B:167:LYS:NZ	2.20	0.56
1:C:66:ARG:NH2	1:C:382:ARG:HH12	2.03	0.56
1:G:139:ALA:HB2	1:G:492:LEU:HD13	1.88	0.56
1:G:198:LYS:HE2	1:G:351:ASP:OD2	2.06	0.56
1:H:218:ARG:HE	1:H:221:ALA:HA	1.70	0.56
1:C:70:VAL:HG21	1:C:79:ILE:HD11	1.87	0.56
1:D:220:SER:HB3	1:D:223:MET:HG3	1.87	0.56
1:G:33:GLU:HA	1:G:36:ARG:HB2	1.87	0.56
1:A:33:GLU:HA	1:A:36:ARG:HB2	1.88	0.55
1:E:123:GLY:HA3	1:E:429:ALA:HB3	1.87	0.55
1:H:106:LYS:HB3	1:H:432:ALA:HB1	1.88	0.55
1:G:165:LYS:HZ2	1:G:165:LYS:HB2	1.72	0.55
1:D:106:LYS:HB3	1:D:432:ALA:HB1	1.87	0.55
1:H:123:GLY:HA3	1:H:429:ALA:HB3	1.88	0.55
1:D:123:GLY:HA3	1:D:429:ALA:HB3	1.89	0.55
1:C:165:LYS:HB2	1:C:165:LYS:HZ2	1.72	0.55
1:F:70:VAL:HG21	1:F:79:ILE:HD11	1.87	0.55
1:B:164:GLU:HG3	1:B:165:LYS:HZ2	1.71	0.55
1:D:198:LYS:HE2	1:D:351:ASP:OD2	2.06	0.55
1:H:161:LYS:HE3	1:H:383:ALA:HA	1.88	0.55
1:B:33:GLU:HA	1:B:36:ARG:HB2	1.89	0.54
1:C:123:GLY:HA3	1:C:429:ALA:HB3	1.88	0.54
1:G:106:LYS:HB3	1:G:432:ALA:HB1	1.90	0.54
1:D:163:ALA:HB3	1:D:167:LYS:NZ	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:313:ASP:HA	1:D:316:LYS:HG2	1.89	0.54
1:H:139:ALA:HB2	1:H:492:LEU:HD13	1.89	0.54
1:E:210:LYS:HA	1:E:365:VAL:HG12	1.89	0.54
1:H:165:LYS:NZ	1:H:165:LYS:HB2	2.23	0.54
1:F:218:ARG:HE	1:F:221:ALA:HA	1.73	0.54
1:G:161:LYS:HE3	1:G:383:ALA:HA	1.88	0.54
1:B:220:SER:HB3	1:B:223:MET:HG3	1.89	0.54
1:H:33:GLU:HA	1:H:36:ARG:HB2	1.89	0.54
1:B:70:VAL:HG21	1:B:79:ILE:HD11	1.89	0.53
1:D:165:LYS:HB2	1:D:165:LYS:NZ	2.23	0.53
1:E:161:LYS:HE3	1:E:383:ALA:HA	1.90	0.53
1:D:66:ARG:HH22	1:D:382:ARG:HH12	1.56	0.53
1:E:165:LYS:HB2	1:E:165:LYS:NZ	2.23	0.53
1:H:165:LYS:HB2	1:H:165:LYS:HZ2	1.72	0.53
1:B:25:ILE:HG23	1:B:104:LEU:HB3	1.91	0.53
1:B:158:ILE:HG23	1:B:383:ALA:HB1	1.91	0.53
1:C:455:ILE:HG21	1:C:473:LEU:HD22	1.89	0.53
1:F:139:ALA:HB2	1:F:492:LEU:HD13	1.91	0.53
1:A:25:ILE:HG23	1:A:104:LEU:HB3	1.91	0.53
1:C:158:ILE:HG23	1:C:383:ALA:HB1	1.89	0.53
1:E:81:VAL:HG13	1:E:501:SER:HB3	1.91	0.53
1:E:194:LYS:HE2	1:E:316:LYS:HD2	1.91	0.53
1:D:142:VAL:HG11	1:D:149:ILE:HG21	1.90	0.53
1:G:455:ILE:HG21	1:G:473:LEU:HD22	1.90	0.53
1:B:165:LYS:HB2	1:B:165:LYS:NZ	2.24	0.52
1:G:142:VAL:HG11	1:G:149:ILE:HG21	1.91	0.52
1:G:231:LYS:HB3	1:G:337:LEU:HD13	1.90	0.52
1:C:231:LYS:HB3	1:C:337:LEU:HD13	1.92	0.52
1:F:21:GLN:HB2	1:F:513:ASP:HA	1.92	0.52
1:F:50:ASP:HB3	1:G:521:LEU:HG	1.91	0.52
1:C:313:ASP:HA	1:C:316:LYS:HG2	1.90	0.52
1:D:231:LYS:HB3	1:D:337:LEU:HD13	1.91	0.52
1:D:235:LEU:HB2	1:D:284:LEU:HD11	1.91	0.52
1:F:94:THR:HB	2:F:600:ADP:O2B	2.09	0.52
1:H:163:ALA:HB3	1:H:167:LYS:NZ	2.24	0.52
1:A:161:LYS:HE3	1:A:383:ALA:HA	1.90	0.52
1:C:33:GLU:HA	1:C:36:ARG:HB2	1.92	0.52
1:C:165:LYS:HB2	1:C:165:LYS:NZ	2.24	0.52
1:H:66:ARG:NH2	1:H:382:ARG:HH12	2.07	0.52
1:E:163:ALA:HB3	1:E:167:LYS:NZ	2.24	0.52
1:G:347:LYS:HE3	1:G:352:SER:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:313:ASP:HA	1:B:316:LYS:HG2	1.93	0.51
1:G:313:ASP:HA	1:G:316:LYS:HG2	1.91	0.51
1:H:231:LYS:HB3	1:H:337:LEU:HD13	1.92	0.51
1:F:48:LEU:HB2	1:F:56:VAL:HB	1.90	0.51
1:F:345:GLU:HA	1:F:354:ILE:HA	1.93	0.51
1:F:161:LYS:HE3	1:F:383:ALA:HA	1.91	0.51
1:B:139:ALA:HB2	1:B:492:LEU:HD13	1.92	0.51
1:E:347:LYS:HE3	1:E:352:SER:HB3	1.93	0.51
1:G:213:LEU:H	1:G:316:LYS:NZ	2.09	0.51
1:C:213:LEU:H	1:C:316:LYS:NZ	2.09	0.51
1:D:161:LYS:HE3	1:D:383:ALA:HA	1.93	0.51
1:E:50:ASP:HB3	1:F:521:LEU:HG	1.93	0.51
1:E:94:THR:HB	2:E:600:ADP:O2B	2.10	0.51
1:D:199:SER:HA	1:D:377:ILE:HD11	1.93	0.51
1:E:139:ALA:HB2	1:E:492:LEU:HD13	1.93	0.51
1:F:313:ASP:HA	1:F:316:LYS:HG2	1.92	0.51
1:F:348:ILE:HD11	1:F:370:ARG:NH1	2.26	0.51
1:A:66:ARG:HH22	1:A:382:ARG:HH12	1.57	0.51
1:A:165:LYS:HB2	1:A:165:LYS:NZ	2.25	0.51
1:G:165:LYS:HB2	1:G:165:LYS:NZ	2.25	0.51
1:F:138:ILE:HG23	1:F:469:LYS:HD2	1.92	0.50
1:A:347:LYS:HE3	1:A:352:SER:HB3	1.94	0.50
1:B:345:GLU:HB2	1:B:354:ILE:HG12	1.93	0.50
1:C:48:LEU:HB2	1:C:56:VAL:HB	1.92	0.50
1:A:139:ALA:HB2	1:A:492:LEU:HD13	1.93	0.50
1:B:169:LYS:NZ	1:B:204:ASP:HA	2.27	0.50
1:D:347:LYS:HE3	1:D:352:SER:HB3	1.94	0.50
1:H:198:LYS:HE2	1:H:351:ASP:OD2	2.11	0.50
1:A:158:ILE:HG23	1:A:383:ALA:HB1	1.94	0.50
1:E:25:ILE:HG23	1:E:104:LEU:HB3	1.94	0.50
1:A:198:LYS:HE2	1:A:351:ASP:OD2	2.12	0.50
1:B:77:MET:HB3	1:B:508:MET:HE1	1.94	0.50
1:B:213:LEU:H	1:B:316:LYS:NZ	2.10	0.50
1:C:347:LYS:HE3	1:C:352:SER:HB3	1.93	0.50
1:C:163:ALA:HB3	1:C:167:LYS:NZ	2.27	0.49
1:C:235:LEU:HB2	1:C:284:LEU:HD11	1.93	0.49
1:D:349:SER:O	1:D:370:ARG:NH2	2.46	0.49
1:A:50:ASP:HB3	1:B:521:LEU:HG	1.95	0.49
1:C:141:GLU:HG3	1:C:399:ARG:HH12	1.78	0.49
1:D:139:ALA:HB2	1:D:492:LEU:HD13	1.94	0.49
1:C:141:GLU:HG3	1:C:399:ARG:NH1	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:37:SER:OG	1:G:46:LYS:NZ	2.41	0.49
1:B:345:GLU:HA	1:B:354:ILE:HA	1.95	0.49
1:D:167:LYS:O	1:D:171:ALA:N	2.28	0.49
1:C:139:ALA:HB2	1:C:492:LEU:HD13	1.95	0.49
1:B:94:THR:HB	2:B:600:ADP:O2B	2.12	0.49
1:H:142:VAL:HG11	1:H:149:ILE:HG21	1.94	0.49
1:B:165:LYS:HZ2	1:B:165:LYS:HB2	1.77	0.48
1:H:347:LYS:HE3	1:H:352:SER:HB3	1.95	0.48
1:A:218:ARG:HE	1:A:221:ALA:HA	1.79	0.48
1:D:34:THR:O	1:D:46:LYS:HE2	2.13	0.48
1:A:78:LEU:HD11	1:A:97:VAL:HG13	1.95	0.48
1:G:163:ALA:HB3	1:G:167:LYS:NZ	2.28	0.48
1:H:21:GLN:HB2	1:H:513:ASP:HA	1.94	0.48
1:H:199:SER:HA	1:H:377:ILE:HD11	1.96	0.48
1:C:239:ILE:HD12	1:C:290:ILE:HG23	1.95	0.48
1:D:466:ASN:ND2	1:D:466:ASN:O	2.47	0.48
1:F:33:GLU:HA	1:F:36:ARG:HB2	1.95	0.48
1:F:231:LYS:HB3	1:F:337:LEU:HD13	1.95	0.48
1:G:135:LEU:HD11	1:G:499:ILE:HD12	1.96	0.48
1:B:212:VAL:HG23	1:B:356:VAL:HB	1.96	0.48
1:D:194:LYS:HE2	1:D:316:LYS:HZ2	1.78	0.48
1:F:220:SER:HB3	1:F:223:MET:HG3	1.96	0.48
1:B:231:LYS:HB3	1:B:337:LEU:HD13	1.96	0.47
1:E:209:ILE:HD12	1:E:213:LEU:HD21	1.96	0.47
1:A:450:LEU:HD12	1:A:473:LEU:HD21	1.95	0.47
1:G:167:LYS:H	1:G:167:LYS:HG2	1.49	0.47
1:B:235:LEU:HB2	1:B:284:LEU:HD11	1.96	0.47
1:H:235:LEU:HB2	1:H:284:LEU:HD11	1.94	0.47
1:B:194:LYS:CE	1:B:316:LYS:HZ2	2.24	0.47
1:B:218:ARG:NE	1:B:221:ALA:HA	2.30	0.47
1:G:213:LEU:O	1:G:316:LYS:NZ	2.37	0.47
1:B:138:ILE:HG23	1:B:469:LYS:HD2	1.97	0.47
1:B:169:LYS:HZ1	1:B:204:ASP:HA	1.79	0.47
1:E:404:GLY:HA2	2:E:600:ADP:N3	2.28	0.47
1:H:34:THR:O	1:H:46:LYS:HE2	2.15	0.47
1:H:220:SER:HB3	1:H:223:MET:HG3	1.96	0.47
1:H:164:GLU:HG3	1:H:165:LYS:HZ2	1.79	0.47
1:D:462:ALA:O	1:D:467:GLY:HA3	2.15	0.47
1:G:21:GLN:HB2	1:G:513:ASP:HA	1.95	0.47
1:H:78:LEU:HD11	1:H:97:VAL:HG13	1.97	0.47
1:H:135:LEU:HD11	1:H:499:ILE:HD12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:408:GLU:OE2	1:C:495:LYS:NZ	2.22	0.47
1:F:163:ALA:HB3	1:F:167:LYS:NZ	2.29	0.47
1:F:164:GLU:HG3	1:F:165:LYS:HZ2	1.78	0.47
1:F:169:LYS:NZ	1:F:204:ASP:HA	2.30	0.47
1:A:135:LEU:HD11	1:A:499:ILE:HD12	1.97	0.46
1:A:141:GLU:HG3	1:A:399:ARG:HH12	1.80	0.46
1:E:199:SER:HA	1:E:377:ILE:HD11	1.97	0.46
1:E:408:GLU:OE2	1:E:495:LYS:NZ	2.26	0.46
1:C:218:ARG:HE	1:C:221:ALA:HA	1.80	0.46
1:G:198:LYS:HD3	1:G:215:ASP:OD2	2.15	0.46
1:H:158:ILE:HG23	1:H:383:ALA:HB1	1.97	0.46
1:H:348:ILE:HG13	1:H:370:ARG:HH12	1.80	0.46
1:B:65:LEU:HA	1:B:68:MET:HE2	1.98	0.46
1:B:167:LYS:H	1:B:167:LYS:HG2	1.49	0.46
1:D:169:LYS:NZ	1:D:204:ASP:HA	2.30	0.46
1:E:158:ILE:HG23	1:E:383:ALA:HB1	1.96	0.46
1:D:218:ARG:HE	1:D:221:ALA:HA	1.81	0.46
1:F:198:LYS:HD2	1:F:198:LYS:HA	1.79	0.46
1:G:141:GLU:HG3	1:G:399:ARG:HH12	1.80	0.46
1:H:169:LYS:NZ	1:H:204:ASP:HA	2.30	0.46
1:A:163:ALA:HB3	1:A:167:LYS:HZ1	1.81	0.46
1:A:235:LEU:HB2	1:A:284:LEU:HD11	1.98	0.46
1:G:345:GLU:HB2	1:G:354:ILE:HG12	1.97	0.46
1:A:194:LYS:HE2	1:A:316:LYS:HD2	1.98	0.45
1:E:141:GLU:HG3	1:E:399:ARG:HH12	1.81	0.45
1:F:37:SER:OG	1:F:46:LYS:NZ	2.37	0.45
1:G:59:ASN:O	1:G:59:ASN:ND2	2.35	0.45
1:A:77:MET:HB3	1:A:508:MET:HE1	1.98	0.45
1:E:235:LEU:HB2	1:E:284:LEU:HD11	1.98	0.45
1:A:359:CYS:O	1:A:362:PRO:HD2	2.17	0.45
1:H:313:ASP:HA	1:H:316:LYS:HG2	1.97	0.45
1:B:198:LYS:HA	1:B:198:LYS:HD2	1.70	0.45
1:C:150:LEU:HD22	1:C:391:VAL:HG13	1.98	0.45
1:D:165:LYS:HB2	1:D:165:LYS:HZ2	1.79	0.45
1:D:144:ALA:HB1	1:D:395:ILE:HG23	1.97	0.45
1:G:94:THR:HB	2:G:600:ADP:O2B	2.17	0.45
1:G:169:LYS:NZ	1:G:204:ASP:HA	2.31	0.45
1:G:345:GLU:HA	1:G:354:ILE:HA	1.99	0.45
1:E:39:LEU:HD12	2:E:600:ADP:O2A	2.17	0.45
1:A:167:LYS:H	1:A:167:LYS:HG2	1.48	0.45
1:D:50:ASP:HB3	1:E:521:LEU:HG	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:164:GLU:HG3	1:D:165:LYS:HZ2	1.81	0.45
1:G:158:ILE:HG23	1:G:383:ALA:HB1	1.98	0.45
1:H:167:LYS:H	1:H:167:LYS:HG2	1.53	0.45
1:B:213:LEU:H	1:B:316:LYS:HZ1	1.64	0.45
1:B:54:ASP:HB2	1:C:521:LEU:HD11	1.98	0.45
1:C:77:MET:HB3	1:C:508:MET:HE1	1.99	0.45
1:G:209:ILE:HD12	1:G:213:LEU:HD21	1.99	0.45
1:H:213:LEU:H	1:H:316:LYS:HZ3	1.65	0.45
1:A:199:SER:HA	1:A:377:ILE:HD11	1.98	0.44
1:B:359:CYS:O	1:B:362:PRO:HD2	2.17	0.44
1:C:59:ASN:O	1:C:59:ASN:ND2	2.34	0.44
1:H:209:ILE:HD12	1:H:213:LEU:HD11	1.99	0.44
1:E:218:ARG:HE	1:E:221:ALA:HA	1.81	0.44
1:A:106:LYS:HB3	1:A:432:ALA:HB1	2.00	0.44
1:D:158:ILE:HG23	1:D:383:ALA:HB1	1.97	0.44
1:D:463:HIS:NE2	1:D:471:ALA:O	2.38	0.44
1:C:164:GLU:HG3	1:C:165:LYS:HZ2	1.82	0.44
1:A:473:LEU:O	2:A:600:ADP:H2	2.01	0.44
1:E:135:LEU:HD11	1:E:499:ILE:HD12	1.99	0.44
1:G:141:GLU:HG3	1:G:399:ARG:NH1	2.33	0.44
1:G:347:LYS:HG2	1:G:352:SER:HB3	2.00	0.44
1:H:218:ARG:NE	1:H:221:ALA:HA	2.33	0.44
1:E:345:GLU:HA	1:E:354:ILE:HA	2.00	0.44
1:F:150:LEU:HD22	1:F:391:VAL:HG13	1.99	0.44
1:F:347:LYS:HG2	1:F:352:SER:HB3	1.99	0.44
1:C:167:LYS:H	1:C:167:LYS:HG2	1.52	0.44
1:D:78:LEU:HD11	1:D:97:VAL:HG13	2.00	0.44
1:E:359:CYS:O	1:E:362:PRO:HD2	2.18	0.44
1:F:158:ILE:HG23	1:F:383:ALA:HB1	2.00	0.43
1:G:78:LEU:HD11	1:G:97:VAL:HG13	2.00	0.43
1:H:213:LEU:HD13	1:H:366:THR:HB	2.00	0.43
1:D:210:LYS:HA	1:D:365:VAL:HG12	2.00	0.43
1:A:160:GLY:HA3	2:A:600:ADP:O1A	2.18	0.43
1:D:347:LYS:HG2	1:D:352:SER:HB3	2.00	0.43
1:F:198:LYS:NZ	1:F:351:ASP:OD2	2.44	0.43
1:F:213:LEU:O	1:F:316:LYS:NZ	2.46	0.43
1:H:363:LYS:HB3	1:H:363:LYS:HE3	1.73	0.43
1:E:349:SER:O	1:E:370:ARG:NH2	2.50	0.43
1:A:209:ILE:HD12	1:A:213:LEU:HD11	2.01	0.43
1:B:142:VAL:HG11	1:B:149:ILE:HG21	2.01	0.43
1:G:199:SER:HA	1:G:377:ILE:HD11	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:218:ARG:HE	1:G:221:ALA:HA	1.83	0.43
1:D:64:ILE:O	1:D:68:MET:HG3	2.19	0.43
1:D:213:LEU:H	1:D:316:LYS:NZ	2.17	0.43
1:D:348:ILE:HG13	1:D:370:ARG:NH1	2.32	0.43
1:F:167:LYS:H	1:F:167:LYS:HG2	1.53	0.43
1:C:359:CYS:O	1:C:362:PRO:HD2	2.19	0.43
1:D:167:LYS:H	1:D:167:LYS:HG2	1.52	0.43
1:F:65:LEU:HA	1:F:68:MET:HE2	2.00	0.43
1:F:307:ARG:NE	1:F:308:ARG:NH1	2.66	0.43
1:G:213:LEU:H	1:G:316:LYS:HZ1	1.66	0.43
1:H:213:LEU:H	1:H:316:LYS:NZ	2.17	0.43
1:A:235:LEU:HD23	1:A:237:CYS:H	1.84	0.43
1:G:167:LYS:O	1:G:171:ALA:N	2.32	0.43
1:D:235:LEU:HD23	1:D:237:CYS:H	1.84	0.42
1:D:348:ILE:HD12	1:D:348:ILE:HA	1.91	0.42
1:A:363:LYS:HE3	1:A:363:LYS:HB3	1.58	0.42
1:B:78:LEU:HD11	1:B:97:VAL:HG13	2.00	0.42
1:B:349:SER:HB2	1:B:370:ARG:NH2	2.34	0.42
1:G:408:GLU:OE1	1:G:408:GLU:N	2.52	0.42
1:G:427:GLN:OE1	1:G:431:ARG:NH2	2.52	0.42
1:A:232:ILE:O	1:A:337:LEU:HA	2.19	0.42
1:F:59:ASN:O	1:F:59:ASN:ND2	2.36	0.42
1:H:235:LEU:HD23	1:H:237:CYS:H	1.84	0.42
1:D:209:ILE:HD12	1:D:213:LEU:HD11	2.00	0.42
1:E:65:LEU:HA	1:E:68:MET:HE2	2.00	0.42
1:G:348:ILE:HD12	1:G:348:ILE:HA	1.91	0.42
1:H:59:ASN:O	1:H:59:ASN:ND2	2.36	0.42
1:C:50:ASP:HB3	1:D:521:LEU:HG	2.01	0.42
1:C:199:SER:HA	1:C:377:ILE:HD11	2.02	0.42
1:H:37:SER:OG	1:H:46:LYS:NZ	2.45	0.42
1:B:348:ILE:HD12	1:B:348:ILE:HA	1.92	0.42
1:C:408:GLU:OE1	1:C:408:GLU:N	2.50	0.42
1:F:235:LEU:HD23	1:F:237:CYS:H	1.84	0.42
1:F:359:CYS:O	1:F:362:PRO:HD2	2.19	0.42
1:G:359:CYS:O	1:G:362:PRO:HD2	2.19	0.42
1:A:521:LEU:HG	1:H:50:ASP:HB3	2.02	0.42
1:B:235:LEU:HD23	1:B:237:CYS:H	1.85	0.42
1:G:239:ILE:HD12	1:G:290:ILE:HG23	2.02	0.42
1:D:361:HIS:HB3	1:D:362:PRO:HD3	2.00	0.42
1:F:408:GLU:OE1	1:F:408:GLU:N	2.51	0.42
1:B:408:GLU:OE1	1:B:408:GLU:N	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:34:THR:O	1:C:46:LYS:HE2	2.20	0.42
1:H:65:LEU:HA	1:H:68:MET:HE2	2.02	0.42
1:B:48:LEU:HB2	1:B:56:VAL:HB	2.02	0.42
1:B:141:GLU:HG3	1:B:399:ARG:NH1	2.34	0.42
1:E:235:LEU:HD23	1:E:237:CYS:H	1.84	0.42
1:D:65:LEU:HA	1:D:68:MET:HE2	2.02	0.41
1:C:345:GLU:HB2	1:C:354:ILE:HG12	2.02	0.41
1:D:20:ALA:O	1:D:23:MET:HG2	2.20	0.41
1:E:169:LYS:NZ	1:E:204:ASP:HA	2.35	0.41
1:F:348:ILE:HD12	1:F:348:ILE:HA	1.90	0.41
1:G:169:LYS:HZ1	1:G:204:ASP:HA	1.84	0.41
1:C:210:LYS:HA	1:C:365:VAL:HG12	2.02	0.41
1:G:182:VAL:HG22	1:G:188:VAL:HG22	2.02	0.41
1:D:54:ASP:HB2	1:E:521:LEU:HD11	2.03	0.41
1:E:21:GLN:HB2	1:E:513:ASP:HA	2.01	0.41
1:H:169:LYS:HE3	1:H:169:LYS:HB3	1.93	0.41
1:A:21:GLN:HB2	1:A:513:ASP:HA	2.03	0.41
1:C:235:LEU:HD23	1:C:237:CYS:H	1.84	0.41
1:E:198:LYS:HE2	1:E:351:ASP:OD2	2.21	0.41
1:E:408:GLU:OE1	1:E:408:GLU:N	2.51	0.41
1:H:138:ILE:HG23	1:H:469:LYS:HD2	2.03	0.41
1:B:178:VAL:O	1:B:182:VAL:HG23	2.21	0.41
1:D:135:LEU:HD11	1:D:499:ILE:HD12	2.02	0.41
1:A:141:GLU:HG3	1:A:399:ARG:NH1	2.35	0.41
1:A:169:LYS:NZ	1:A:204:ASP:HA	2.36	0.41
1:A:192:LEU:O	1:A:364:ALA:HB1	2.21	0.41
1:C:345:GLU:HA	1:C:354:ILE:HA	2.02	0.41
1:G:209:ILE:HD12	1:G:213:LEU:HD11	2.03	0.41
1:G:235:LEU:HD23	1:G:237:CYS:H	1.86	0.41
1:A:347:LYS:HG2	1:A:352:SER:HB3	2.02	0.41
1:B:21:GLN:HB2	1:B:513:ASP:HA	2.03	0.41
1:B:169:LYS:HE3	1:B:169:LYS:HB3	1.90	0.41
1:B:192:LEU:O	1:B:364:ALA:HB1	2.20	0.41
1:D:239:ILE:HD12	1:D:290:ILE:HG23	2.03	0.41
1:E:141:GLU:HG3	1:E:399:ARG:NH1	2.36	0.41
1:G:235:LEU:HB2	1:G:284:LEU:HD11	2.02	0.41
1:G:404:GLY:HA2	2:G:600:ADP:N3	2.36	0.41
1:H:135:LEU:HB3	1:H:492:LEU:HD11	2.03	0.41
1:B:141:GLU:HG3	1:B:399:ARG:HH12	1.84	0.41
1:C:209:ILE:HD12	1:C:213:LEU:HD11	2.02	0.41
1:E:213:LEU:H	1:E:316:LYS:NZ	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:359:CYS:O	1:H:362:PRO:HD2	2.21	0.41
1:A:348:ILE:HD12	1:A:348:ILE:HA	1.92	0.40
1:A:348:ILE:HG13	1:A:349:SER:H	1.87	0.40
1:D:348:ILE:CG1	1:D:370:ARG:NH1	2.84	0.40
1:E:142:VAL:HG11	1:E:149:ILE:HG21	2.02	0.40
1:H:408:GLU:OE1	1:H:408:GLU:N	2.53	0.40
1:A:198:LYS:HD2	1:A:198:LYS:HA	1.89	0.40
1:B:182:VAL:HG22	1:B:188:VAL:HG22	2.04	0.40
1:E:167:LYS:O	1:E:171:ALA:N	2.30	0.40
1:A:516:ILE:HB	1:H:48:LEU:HD23	2.03	0.40
1:D:359:CYS:O	1:D:362:PRO:HD2	2.22	0.40
1:H:64:ILE:O	1:H:68:MET:HG3	2.21	0.40
1:E:508:MET:HE2	1:E:508:MET:HB3	1.95	0.40
1:H:347:LYS:HG2	1:H:352:SER:HB3	2.03	0.40
1:A:508:MET:HE2	1:A:508:MET:HB3	1.97	0.40
1:C:178:VAL:O	1:C:182:VAL:HG23	2.22	0.40
1:D:508:MET:HE2	1:D:508:MET:HB3	1.93	0.40
1:F:345:GLU:HB2	1:F:354:ILE:HG12	2.04	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:229:ASP:OD2	1:G:226:LYS:NZ[1_455]	1.79	0.41
1:E:335:GLN:O	1:F:225:LYS:NZ[3_454]	2.06	0.14

## 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	473/543 (87%)	460 (97%)	10 (2%)	3 (1%)	25 62

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	473/543 (87%)	458 (97%)	12 (2%)	3 (1%)	25	62
1	C	473/543 (87%)	460 (97%)	10 (2%)	3 (1%)	25	62
1	D	473/543 (87%)	460 (97%)	10 (2%)	3 (1%)	25	62
1	E	473/543 (87%)	460 (97%)	10 (2%)	3 (1%)	25	62
1	F	473/543 (87%)	459 (97%)	11 (2%)	3 (1%)	25	62
1	G	473/543 (87%)	460 (97%)	10 (2%)	3 (1%)	25	62
1	H	473/543 (87%)	460 (97%)	10 (2%)	3 (1%)	25	62
All	All	3784/4344 (87%)	3677 (97%)	83 (2%)	24 (1%)	25	62

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	521	LEU
1	B	521	LEU
1	C	521	LEU
1	D	521	LEU
1	E	521	LEU
1	F	521	LEU
1	A	520	LYS
1	B	520	LYS
1	C	520	LYS
1	D	520	LYS
1	E	520	LYS
1	F	520	LYS
1	G	520	LYS
1	G	521	LEU
1	H	520	LYS
1	H	521	LEU
1	A	162	GLY
1	C	162	GLY
1	D	162	GLY
1	E	162	GLY
1	G	162	GLY
1	H	162	GLY
1	B	162	GLY
1	F	162	GLY

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	380/433 (88%)	373 (98%)	7 (2%)	59 77
1	B	380/433 (88%)	373 (98%)	7 (2%)	59 77
1	C	380/433 (88%)	375 (99%)	5 (1%)	69 82
1	D	380/433 (88%)	375 (99%)	5 (1%)	69 82
1	E	380/433 (88%)	374 (98%)	6 (2%)	62 79
1	F	380/433 (88%)	375 (99%)	5 (1%)	69 82
1	G	380/433 (88%)	374 (98%)	6 (2%)	62 79
1	H	380/433 (88%)	375 (99%)	5 (1%)	69 82
All	All	3040/3464 (88%)	2994 (98%)	46 (2%)	65 81

All (46) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	59	ASN
1	A	167	LYS
1	A	235	LEU
1	A	351	ASP
1	A	361	HIS
1	A	363	LYS
1	A	522	ARG
1	B	59	ASN
1	B	167	LYS
1	B	235	LEU
1	B	351	ASP
1	B	360	LYS
1	B	363	LYS
1	B	522	ARG
1	C	59	ASN
1	C	235	LEU
1	C	351	ASP
1	C	363	LYS
1	C	522	ARG

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Mol	Chain	Res	Type
1	D	59	ASN
1	D	235	LEU
1	D	351	ASP
1	D	363	LYS
1	D	522	ARG
1	E	59	ASN
1	E	235	LEU
1	E	351	ASP
1	E	361	HIS
1	E	363	LYS
1	E	522	ARG
1	F	59	ASN
1	F	235	LEU
1	F	351	ASP
1	F	363	LYS
1	F	522	ARG
1	G	59	ASN
1	G	167	LYS
1	G	235	LEU
1	G	351	ASP
1	G	363	LYS
1	G	522	ARG
1	H	59	ASN
1	H	235	LEU
1	H	351	ASP
1	H	363	LYS
1	H	522	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 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 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 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	ADP	A	600	3	24,29,29	0.93	1 (4%)	29,45,45	1.37	4 (13%)
2	ADP	F	600	3	24,29,29	0.96	1 (4%)	29,45,45	1.31	4 (13%)
2	ADP	E	600	3	24,29,29	0.93	1 (4%)	29,45,45	1.37	4 (13%)
2	ADP	B	600	3	24,29,29	0.92	1 (4%)	29,45,45	1.33	4 (13%)
2	ADP	C	600	3	24,29,29	0.97	1 (4%)	29,45,45	1.33	4 (13%)
2	ADP	D	600	3	24,29,29	0.94	1 (4%)	29,45,45	1.29	4 (13%)
2	ADP	H	600	3	24,29,29	0.96	1 (4%)	29,45,45	1.33	4 (13%)
2	ADP	G	600	3	24,29,29	0.97	1 (4%)	29,45,45	1.34	4 (13%)

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	ADP	A	600	3	-	7/12/32/32	0/3/3/3
2	ADP	F	600	3	-	7/12/32/32	0/3/3/3
2	ADP	E	600	3	-	7/12/32/32	0/3/3/3
2	ADP	B	600	3	-	6/12/32/32	0/3/3/3
2	ADP	C	600	3	-	7/12/32/32	0/3/3/3
2	ADP	D	600	3	-	6/12/32/32	0/3/3/3
2	ADP	H	600	3	-	7/12/32/32	0/3/3/3
2	ADP	G	600	3	-	7/12/32/32	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	600	ADP	C5-C4	2.47	1.47	1.40
2	H	600	ADP	C5-C4	2.46	1.47	1.40
2	G	600	ADP	C5-C4	2.45	1.47	1.40
2	D	600	ADP	C5-C4	2.45	1.47	1.40
2	F	600	ADP	C5-C4	2.43	1.47	1.40
2	C	600	ADP	C5-C4	2.43	1.47	1.40
2	A	600	ADP	C5-C4	2.42	1.47	1.40
2	E	600	ADP	C5-C4	2.41	1.47	1.40

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	600	ADP	N3-C2-N1	-3.25	123.60	128.68
2	G	600	ADP	N3-C2-N1	-3.24	123.61	128.68
2	C	600	ADP	N3-C2-N1	-3.24	123.62	128.68
2	D	600	ADP	N3-C2-N1	-3.21	123.65	128.68
2	F	600	ADP	N3-C2-N1	-3.21	123.66	128.68
2	A	600	ADP	C4-C5-N7	-3.18	106.09	109.40
2	A	600	ADP	C3'-C2'-C1'	3.17	105.76	100.98
2	B	600	ADP	N3-C2-N1	-3.14	123.78	128.68
2	E	600	ADP	C3'-C2'-C1'	3.13	105.69	100.98
2	E	600	ADP	N3-C2-N1	-3.07	123.88	128.68
2	C	600	ADP	C3'-C2'-C1'	2.87	105.30	100.98
2	G	600	ADP	C4-C5-N7	-2.87	106.41	109.40
2	E	600	ADP	C4-C5-N7	-2.84	106.44	109.40
2	B	600	ADP	C3'-C2'-C1'	2.84	105.25	100.98
2	H	600	ADP	C4-C5-N7	-2.81	106.47	109.40
2	C	600	ADP	C4-C5-N7	-2.81	106.47	109.40
2	G	600	ADP	C3'-C2'-C1'	2.78	105.16	100.98
2	F	600	ADP	C3'-C2'-C1'	2.77	105.16	100.98
2	B	600	ADP	PA-O3A-PB	-2.77	123.32	132.83
2	A	600	ADP	N3-C2-N1	-2.75	124.38	128.68
2	E	600	ADP	PA-O3A-PB	-2.64	123.75	132.83
2	F	600	ADP	C4-C5-N7	-2.64	106.64	109.40
2	H	600	ADP	C3'-C2'-C1'	2.64	104.95	100.98
2	D	600	ADP	C3'-C2'-C1'	2.58	104.87	100.98
2	A	600	ADP	PA-O3A-PB	-2.56	124.06	132.83
2	D	600	ADP	C4-C5-N7	-2.47	106.83	109.40
2	G	600	ADP	PA-O3A-PB	-2.46	124.40	132.83
2	F	600	ADP	PA-O3A-PB	-2.42	124.52	132.83
2	B	600	ADP	C4-C5-N7	-2.33	106.97	109.40
2	D	600	ADP	PA-O3A-PB	-2.30	124.92	132.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	600	ADP	PA-O3A-PB	-2.28	125.00	132.83
2	C	600	ADP	PA-O3A-PB	-2.10	125.61	132.83

There are no chirality outliers.

All (54) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	600	ADP	PA-O3A-PB-O2B
2	A	600	ADP	C5'-O5'-PA-O3A
2	B	600	ADP	PA-O3A-PB-O2B
2	B	600	ADP	C5'-O5'-PA-O3A
2	C	600	ADP	PA-O3A-PB-O2B
2	C	600	ADP	C5'-O5'-PA-O3A
2	D	600	ADP	PA-O3A-PB-O2B
2	D	600	ADP	C5'-O5'-PA-O3A
2	E	600	ADP	PA-O3A-PB-O2B
2	E	600	ADP	C5'-O5'-PA-O3A
2	F	600	ADP	PA-O3A-PB-O2B
2	F	600	ADP	C5'-O5'-PA-O3A
2	G	600	ADP	PA-O3A-PB-O2B
2	G	600	ADP	C5'-O5'-PA-O3A
2	H	600	ADP	PA-O3A-PB-O2B
2	H	600	ADP	C5'-O5'-PA-O3A
2	A	600	ADP	O4'-C4'-C5'-O5'
2	E	600	ADP	O4'-C4'-C5'-O5'
2	A	600	ADP	C3'-C4'-C5'-O5'
2	E	600	ADP	C3'-C4'-C5'-O5'
2	B	600	ADP	O4'-C4'-C5'-O5'
2	B	600	ADP	C3'-C4'-C5'-O5'
2	G	600	ADP	C3'-C4'-C5'-O5'
2	F	600	ADP	C3'-C4'-C5'-O5'
2	G	600	ADP	O4'-C4'-C5'-O5'
2	C	600	ADP	C3'-C4'-C5'-O5'
2	D	600	ADP	C3'-C4'-C5'-O5'
2	C	600	ADP	O4'-C4'-C5'-O5'
2	F	600	ADP	O4'-C4'-C5'-O5'
2	D	600	ADP	O4'-C4'-C5'-O5'
2	H	600	ADP	C3'-C4'-C5'-O5'
2	A	600	ADP	C5'-O5'-PA-O1A
2	A	600	ADP	C5'-O5'-PA-O2A
2	C	600	ADP	C5'-O5'-PA-O2A
2	E	600	ADP	C5'-O5'-PA-O1A

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Mol	Chain	Res	Type	Atoms
2	E	600	ADP	C5'-O5'-PA-O2A
2	G	600	ADP	C5'-O5'-PA-O1A
2	G	600	ADP	C5'-O5'-PA-O2A
2	H	600	ADP	O4'-C4'-C5'-O5'
2	B	600	ADP	PA-O3A-PB-O1B
2	C	600	ADP	PA-O3A-PB-O1B
2	D	600	ADP	PA-O3A-PB-O1B
2	F	600	ADP	PA-O3A-PB-O1B
2	H	600	ADP	PA-O3A-PB-O1B
2	B	600	ADP	C5'-O5'-PA-O1A
2	C	600	ADP	C5'-O5'-PA-O1A
2	D	600	ADP	C5'-O5'-PA-O1A
2	F	600	ADP	C5'-O5'-PA-O1A
2	F	600	ADP	C5'-O5'-PA-O2A
2	H	600	ADP	C5'-O5'-PA-O1A
2	H	600	ADP	C5'-O5'-PA-O2A
2	A	600	ADP	PA-O3A-PB-O1B
2	E	600	ADP	PA-O3A-PB-O1B
2	G	600	ADP	PA-O3A-PB-O1B

There are no ring outliers.

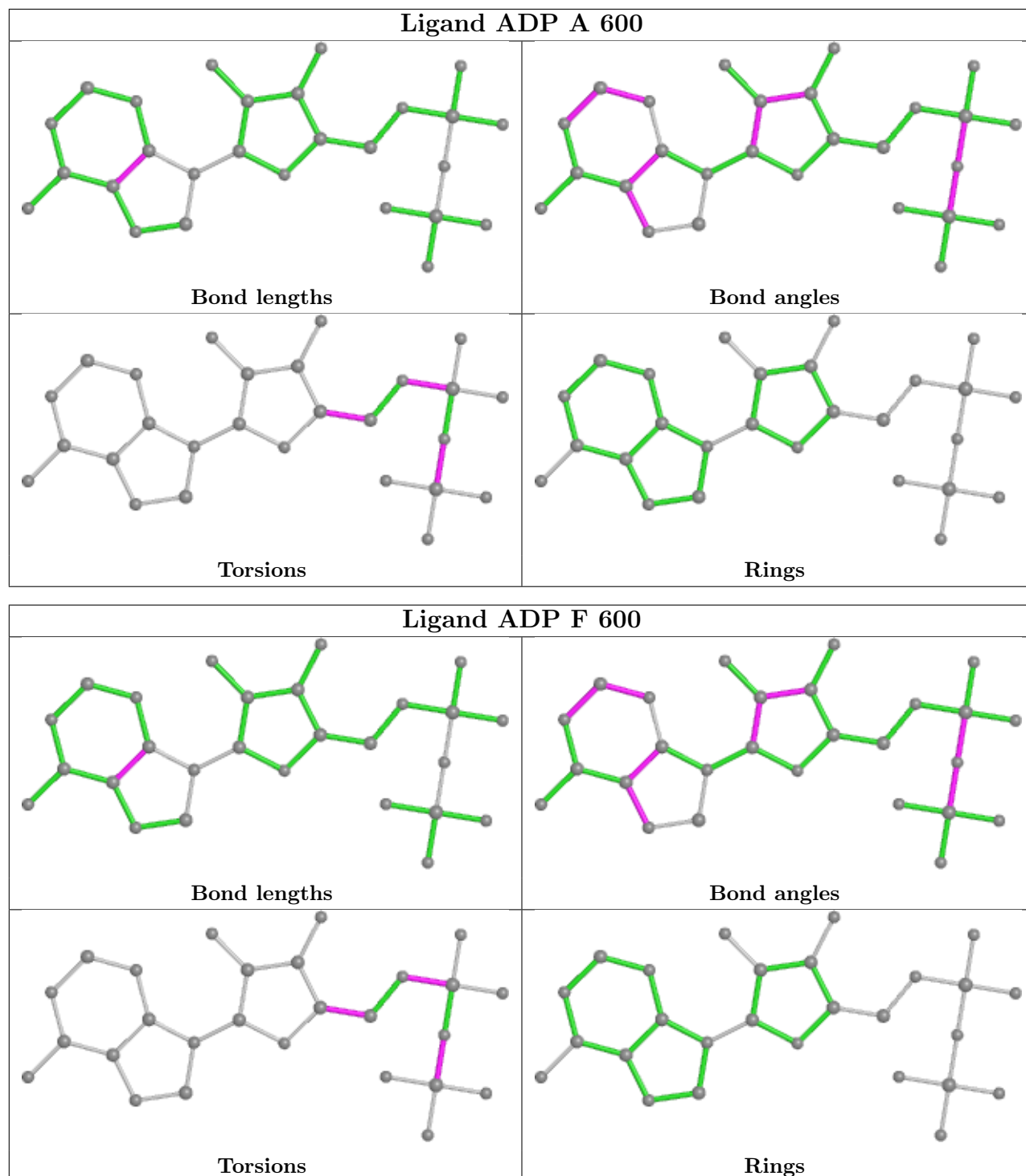
8 monomers are involved in 15 short contacts:

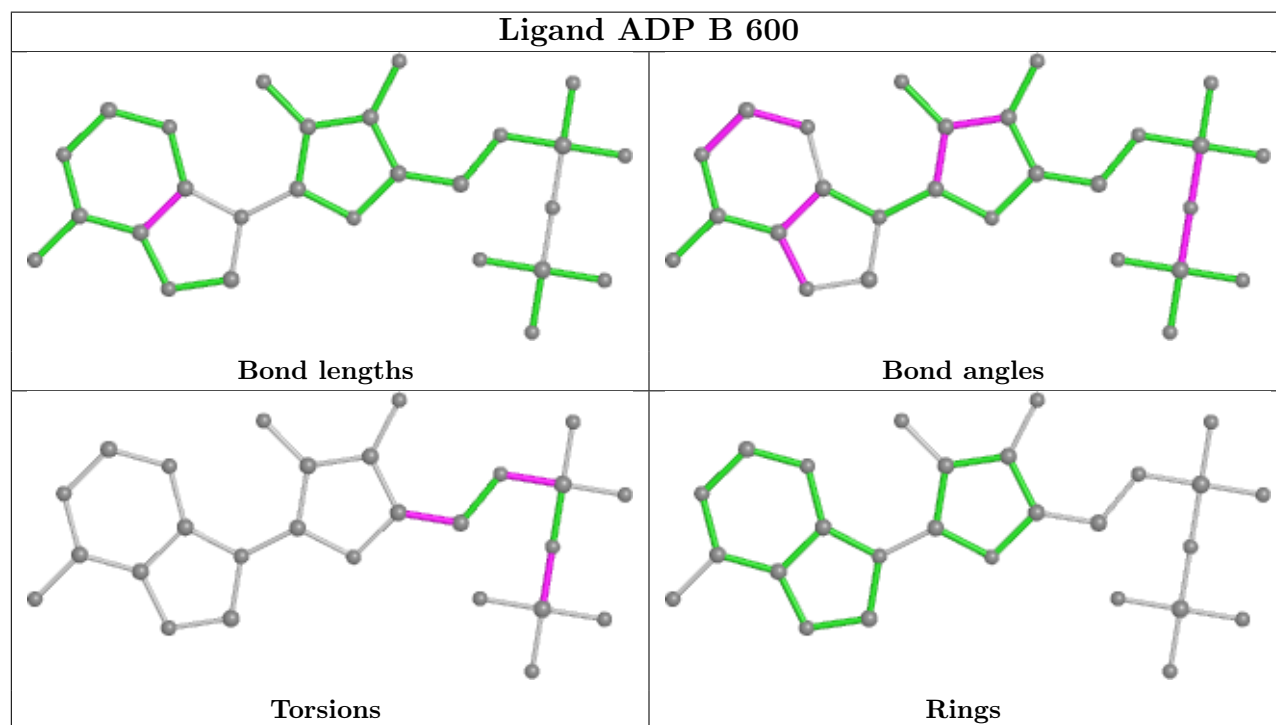
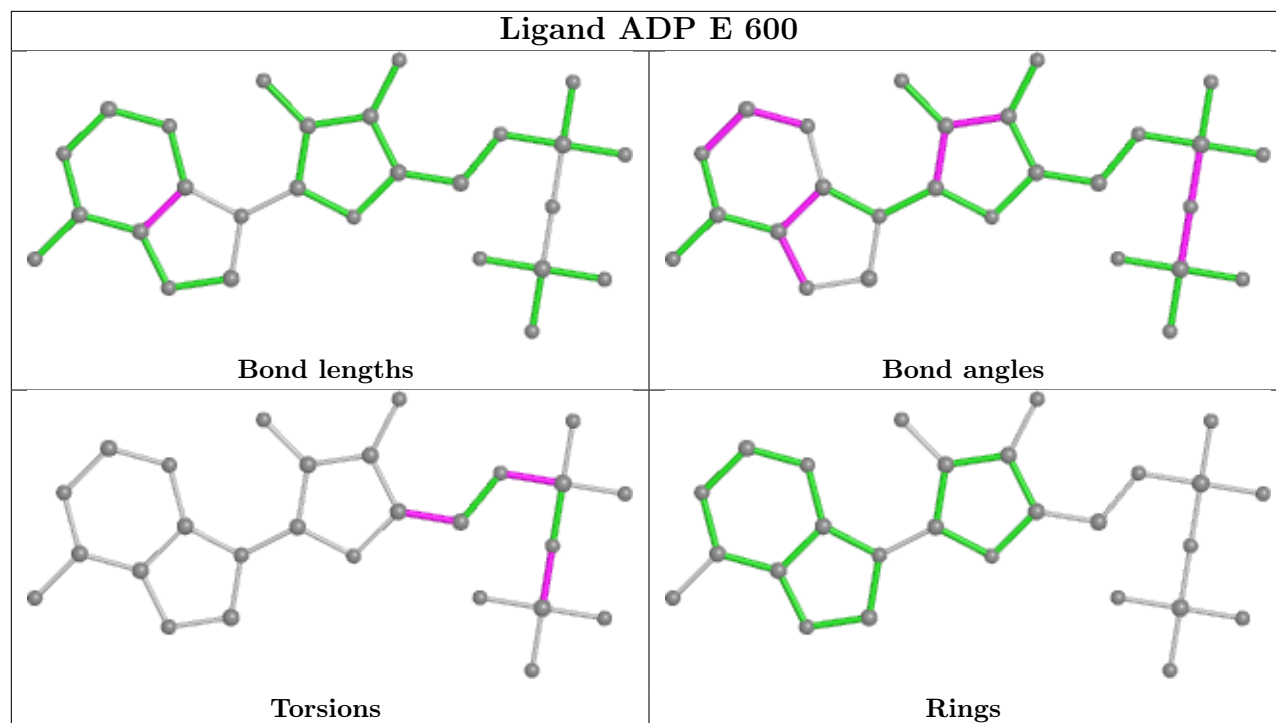
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	600	ADP	4	0
2	F	600	ADP	1	0
2	E	600	ADP	4	0
2	B	600	ADP	1	0
2	C	600	ADP	1	0
2	D	600	ADP	1	0
2	H	600	ADP	1	0
2	G	600	ADP	2	0

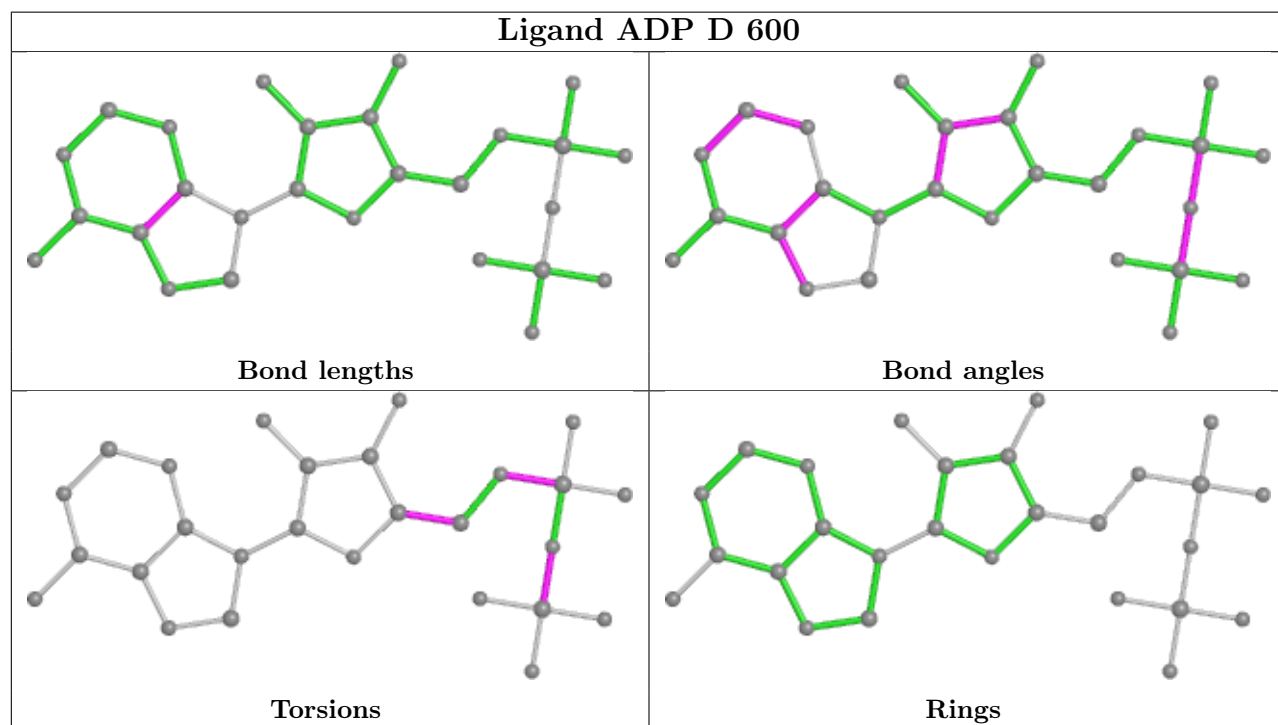
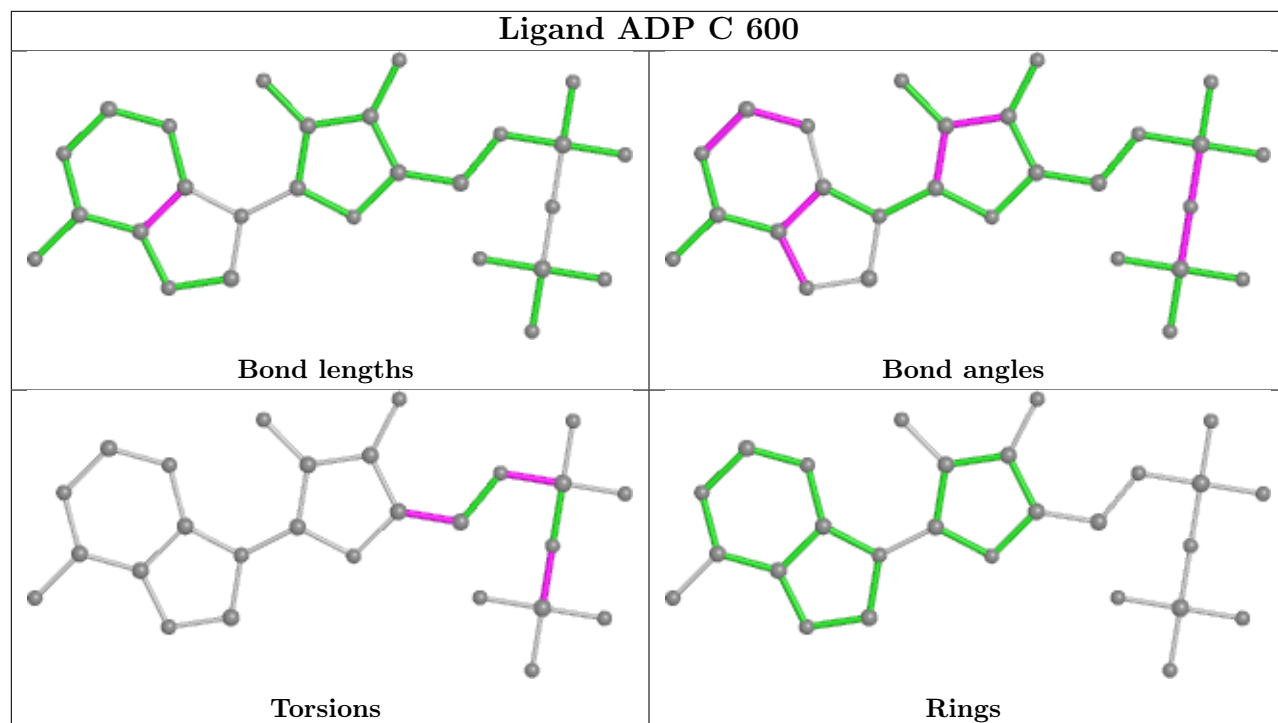
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

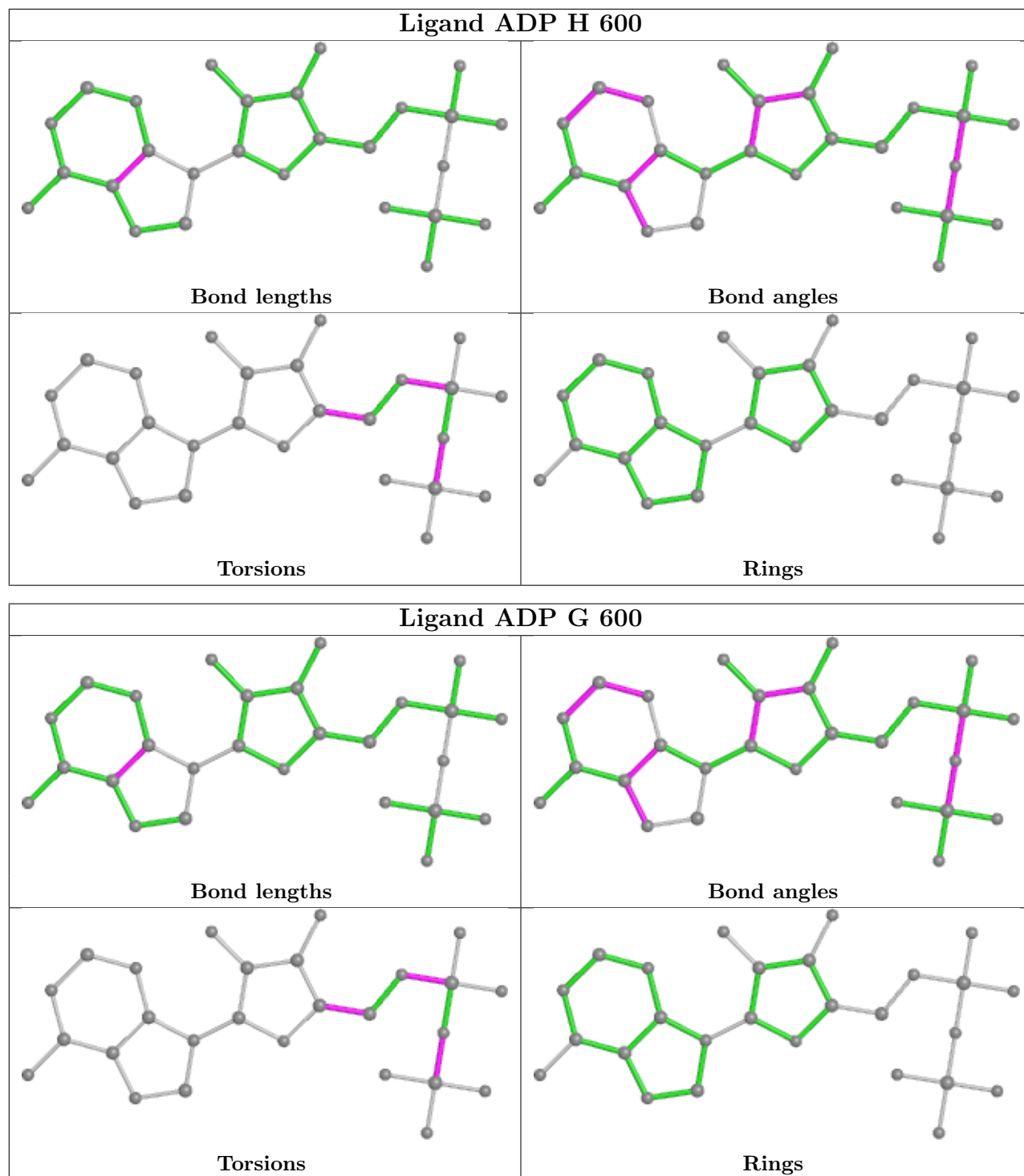


any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.









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

There are no such residues in this entry.

## 5.8 Polymer linkage issues

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	477/543 (87%)	0.13	18 (3%) 40 28	84, 140, 295, 316	0
1	B	477/543 (87%)	0.27	35 (7%) 15 10	92, 149, 303, 323	0
1	C	477/543 (87%)	0.19	26 (5%) 25 17	83, 130, 290, 328	0
1	D	477/543 (87%)	0.22	32 (6%) 17 11	67, 109, 287, 315	0
1	E	477/543 (87%)	0.04	17 (3%) 42 31	73, 135, 259, 279	0
1	F	477/543 (87%)	0.17	30 (6%) 20 12	86, 151, 287, 318	0
1	G	477/543 (87%)	0.10	16 (3%) 45 33	74, 121, 271, 315	0
1	H	477/543 (87%)	0.24	32 (6%) 17 11	71, 117, 305, 355	0
All	All	3816/4344 (87%)	0.17	206 (5%) 25 18	67, 133, 293, 355	0

All (206) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	281	ALA	11.2
1	B	281	ALA	9.7
1	H	327	THR	9.3
1	G	281	ALA	8.7
1	F	281	ALA	8.2
1	H	281	ALA	7.1
1	D	281	ALA	6.9
1	D	327	THR	6.2
1	B	343	VAL	6.0
1	A	281	ALA	6.0
1	F	343	VAL	5.9
1	C	327	THR	5.9
1	B	303	ILE	5.6
1	C	326	ILE	5.6
1	B	327	THR	5.5
1	F	337	LEU	5.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	303	ILE	5.1
1	H	303	ILE	5.1
1	B	302	GLY	5.1
1	H	237	CYS	5.1
1	H	302	GLY	4.9
1	H	326	ILE	4.8
1	A	303	ILE	4.8
1	C	302	GLY	4.8
1	A	327	THR	4.8
1	C	237	CYS	4.7
1	D	236	ASN	4.7
1	B	237	CYS	4.4
1	C	343	VAL	4.3
1	H	325	VAL	4.2
1	H	293	LEU	4.1
1	E	281	ALA	4.1
1	F	284	LEU	4.0
1	E	327	THR	4.0
1	C	323	ALA	4.0
1	G	274	ALA	4.0
1	E	236	ASN	4.0
1	A	302	GLY	4.0
1	D	302	GLY	3.9
1	G	303	ILE	3.8
1	G	328	ASN	3.8
1	B	238	ALA	3.8
1	D	332	LEU	3.8
1	H	284	LEU	3.6
1	C	280	GLY	3.6
1	F	239	ILE	3.6
1	A	345	GLU	3.6
1	C	328	ASN	3.6
1	C	336	ASP	3.6
1	B	342	LEU	3.6
1	B	279	SER	3.5
1	C	337	LEU	3.5
1	G	327	THR	3.5
1	D	326	ILE	3.4
1	B	236	ASN	3.4
1	A	343	VAL	3.4
1	H	336	ASP	3.4
1	F	336	ASP	3.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	296	HIS	3.4
1	E	343	VAL	3.4
1	A	237	CYS	3.4
1	B	280	GLY	3.4
1	D	305	ALA	3.3
1	H	299	ALA	3.3
1	C	303	ILE	3.3
1	C	238	ALA	3.3
1	C	325	VAL	3.3
1	B	336	ASP	3.3
1	B	317	LEU	3.3
1	H	349	SER	3.3
1	A	238	ALA	3.2
1	B	326	ILE	3.2
1	D	328	ASN	3.2
1	F	327	THR	3.2
1	B	282	ASN	3.2
1	D	331	ASP	3.2
1	H	271	ASP	3.2
1	H	240	GLU	3.2
1	B	349	SER	3.2
1	E	328	ASN	3.2
1	G	237	CYS	3.1
1	C	298	LEU	3.1
1	E	299	ALA	3.1
1	B	323	ALA	3.1
1	H	314	MET	3.1
1	D	323	ALA	3.0
1	F	299	ALA	3.0
1	D	298	LEU	3.0
1	D	235	LEU	3.0
1	B	337	LEU	3.0
1	G	336	ASP	3.0
1	F	349	SER	3.0
1	D	345	GLU	2.9
1	F	342	LEU	2.9
1	B	328	ASN	2.9
1	F	159	THR	2.9
1	D	286	CYS	2.9
1	D	357	GLU	2.9
1	E	237	CYS	2.9
1	E	325	VAL	2.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	285	PHE	2.9
1	F	240	GLU	2.9
1	C	271	ASP	2.9
1	A	239	ILE	2.9
1	A	328	ASN	2.8
1	G	271	ASP	2.8
1	F	208	LEU	2.8
1	A	240	GLU	2.8
1	C	331	ASP	2.8
1	E	238	ALA	2.8
1	G	159	THR	2.8
1	H	313	ASP	2.8
1	H	159	THR	2.7
1	E	239	ILE	2.7
1	F	285	PHE	2.7
1	D	290	ILE	2.7
1	F	290	ILE	2.7
1	D	237	CYS	2.7
1	B	163	ALA	2.7
1	H	236	ASN	2.7
1	C	276	ILE	2.7
1	B	235	LEU	2.7
1	C	159	THR	2.7
1	D	186	GLY	2.7
1	H	285	PHE	2.6
1	F	213	LEU	2.6
1	F	212	VAL	2.6
1	F	207	GLU	2.6
1	B	357	GLU	2.6
1	D	343	VAL	2.6
1	F	340	ALA	2.6
1	B	292	ASP	2.6
1	D	318	ALA	2.5
1	B	321	THR	2.5
1	E	205	ASP	2.5
1	B	291	ASP	2.5
1	D	301	GLU	2.5
1	H	269	LEU	2.5
1	H	291	ASP	2.5
1	G	162	GLY	2.5
1	D	342	LEU	2.5
1	C	305	ALA	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	296	HIS	2.4
1	F	291	ASP	2.4
1	D	358	GLU	2.4
1	H	238	ALA	2.4
1	G	298	LEU	2.4
1	H	278	ALA	2.4
1	F	238	ALA	2.4
1	A	293	LEU	2.4
1	E	355	PHE	2.4
1	B	208	LEU	2.4
1	F	276	ILE	2.4
1	F	286	CYS	2.4
1	G	293	LEU	2.3
1	E	303	ILE	2.3
1	A	326	ILE	2.3
1	A	341	GLY	2.3
1	B	234	LEU	2.3
1	B	358	GLU	2.3
1	H	309	VAL	2.3
1	D	284	LEU	2.3
1	G	357	GLU	2.3
1	C	210	LYS	2.3
1	A	289	GLY	2.2
1	A	342	LEU	2.2
1	B	213	LEU	2.2
1	H	335	GLN	2.2
1	E	290	ILE	2.2
1	H	227	VAL	2.2
1	H	300	LYS	2.2
1	A	298	LEU	2.2
1	F	163	ALA	2.2
1	H	345	GLU	2.2
1	D	300	LYS	2.2
1	E	326	ILE	2.2
1	F	338	GLY	2.2
1	H	217	GLU	2.2
1	B	271	ASP	2.2
1	H	235	LEU	2.2
1	F	271	ASP	2.2
1	H	347	LYS	2.2
1	H	328	ASN	2.2
1	D	297	TYR	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	300	LYS	2.1
1	C	340	ALA	2.1
1	D	218	ARG	2.1
1	A	357	GLU	2.1
1	B	318	ALA	2.1
1	B	159	THR	2.1
1	C	239	ILE	2.1
1	F	197	LYS	2.1
1	B	227	VAL	2.1
1	D	353	MET	2.1
1	C	282	ASN	2.1
1	F	237	CYS	2.1
1	G	360	LYS	2.1
1	C	313	ASP	2.1
1	C	357	GLU	2.1
1	F	282	ASN	2.1
1	G	326	ILE	2.1
1	D	293	LEU	2.1
1	E	345	GLU	2.0
1	G	235	LEU	2.0
1	F	289	GLY	2.0
1	E	302	GLY	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.

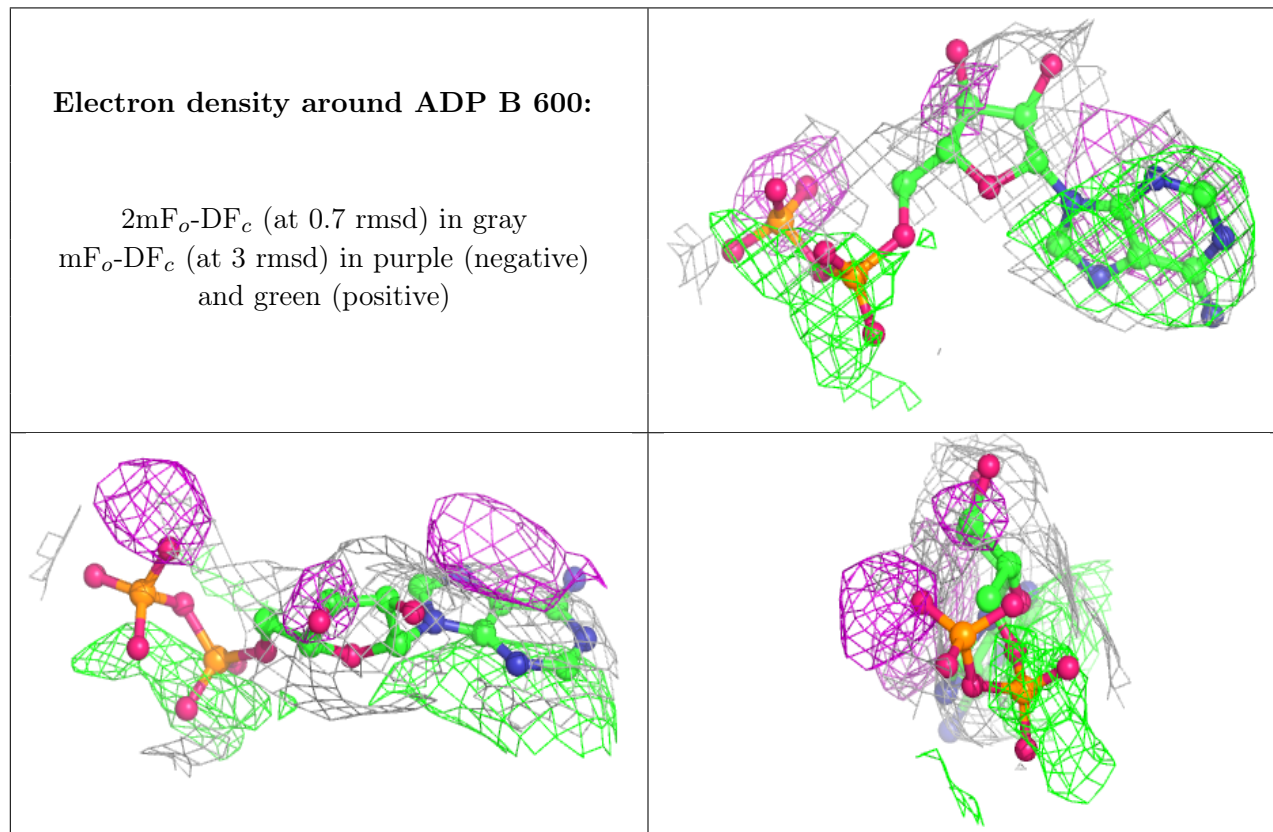
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	ADP	B	600	27/27	0.80	0.34	96,119,159,168	0

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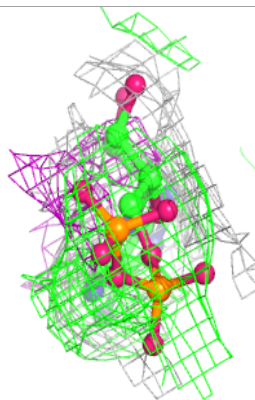
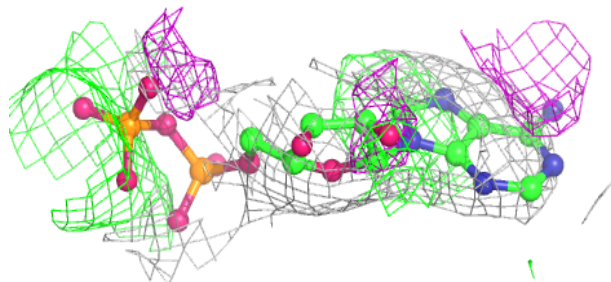
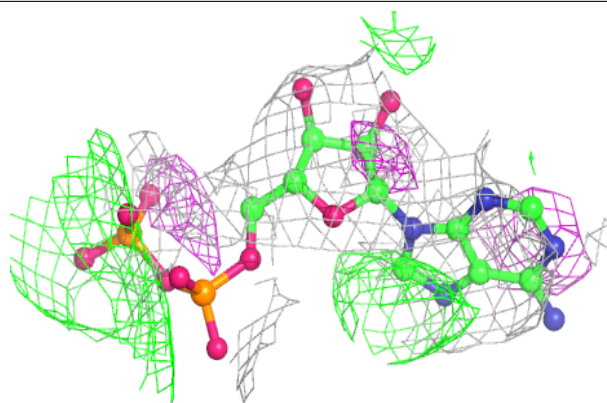
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	ADP	A	600	27/27	0.81	0.33	95,118,158,167	0
2	ADP	E	600	27/27	0.85	0.31	82,105,145,154	0
2	ADP	F	600	27/27	0.89	0.30	91,114,154,162	0
2	ADP	G	600	27/27	0.89	0.32	69,92,132,141	0
2	ADP	C	600	27/27	0.90	0.30	74,98,137,146	0
2	ADP	H	600	27/27	0.91	0.28	63,87,126,135	0
2	ADP	D	600	27/27	0.93	0.27	56,79,118,127	0
3	MG	D	601	1/1	0.95	0.27	78,78,78,78	0
3	MG	B	601	1/1	0.96	0.32	113,113,113,113	0
3	MG	F	601	1/1	0.96	0.35	108,108,108,108	0
3	MG	E	601	1/1	0.97	0.44	101,101,101,101	0
3	MG	A	601	1/1	0.97	0.45	120,120,120,120	0
3	MG	G	601	1/1	0.97	0.48	89,89,89,89	0
3	MG	H	601	1/1	0.97	0.29	84,84,84,84	0
3	MG	C	601	1/1	0.98	0.42	87,87,87,87	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.

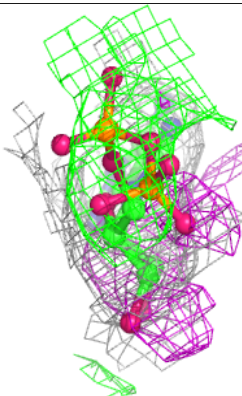
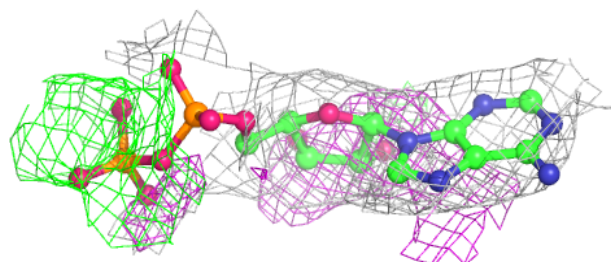
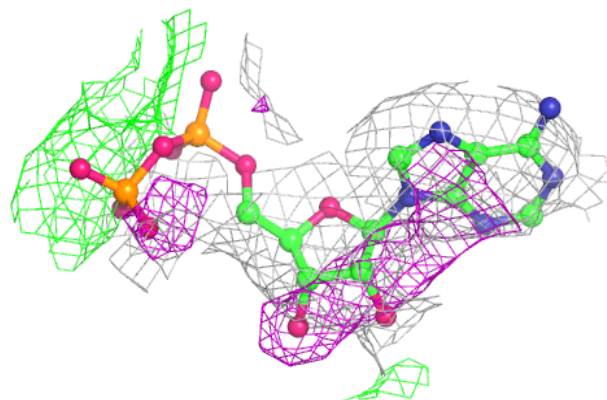


**Electron density around ADP A 600:**

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

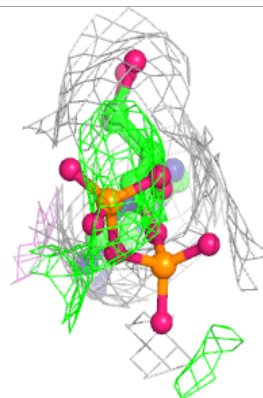
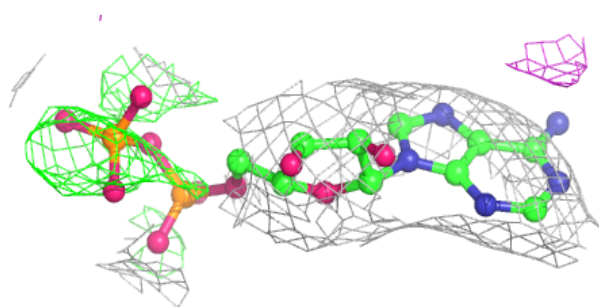
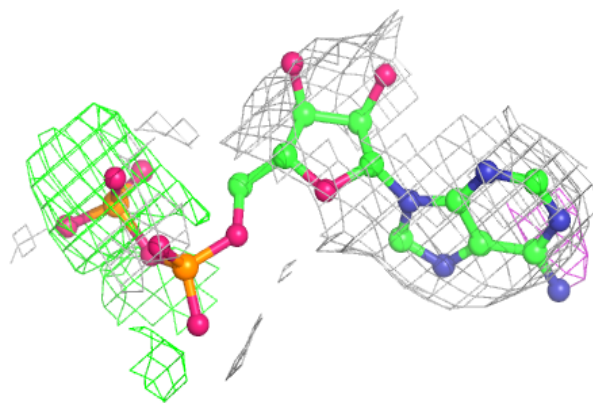
**Electron density around ADP E 600:**

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

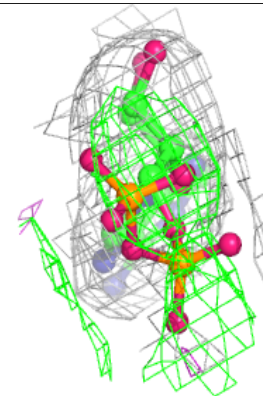
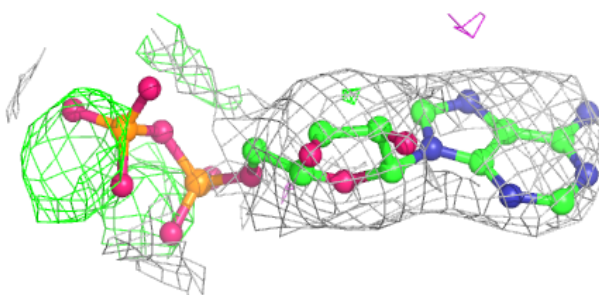
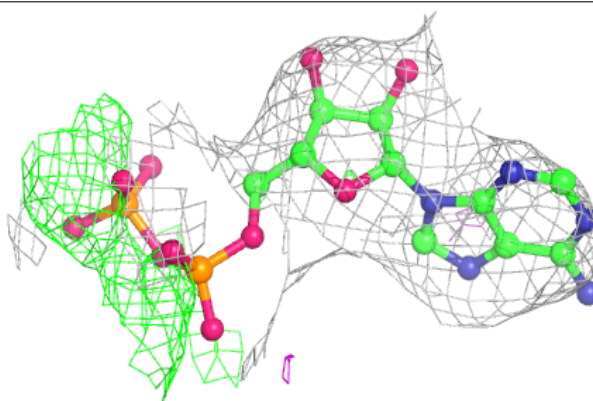


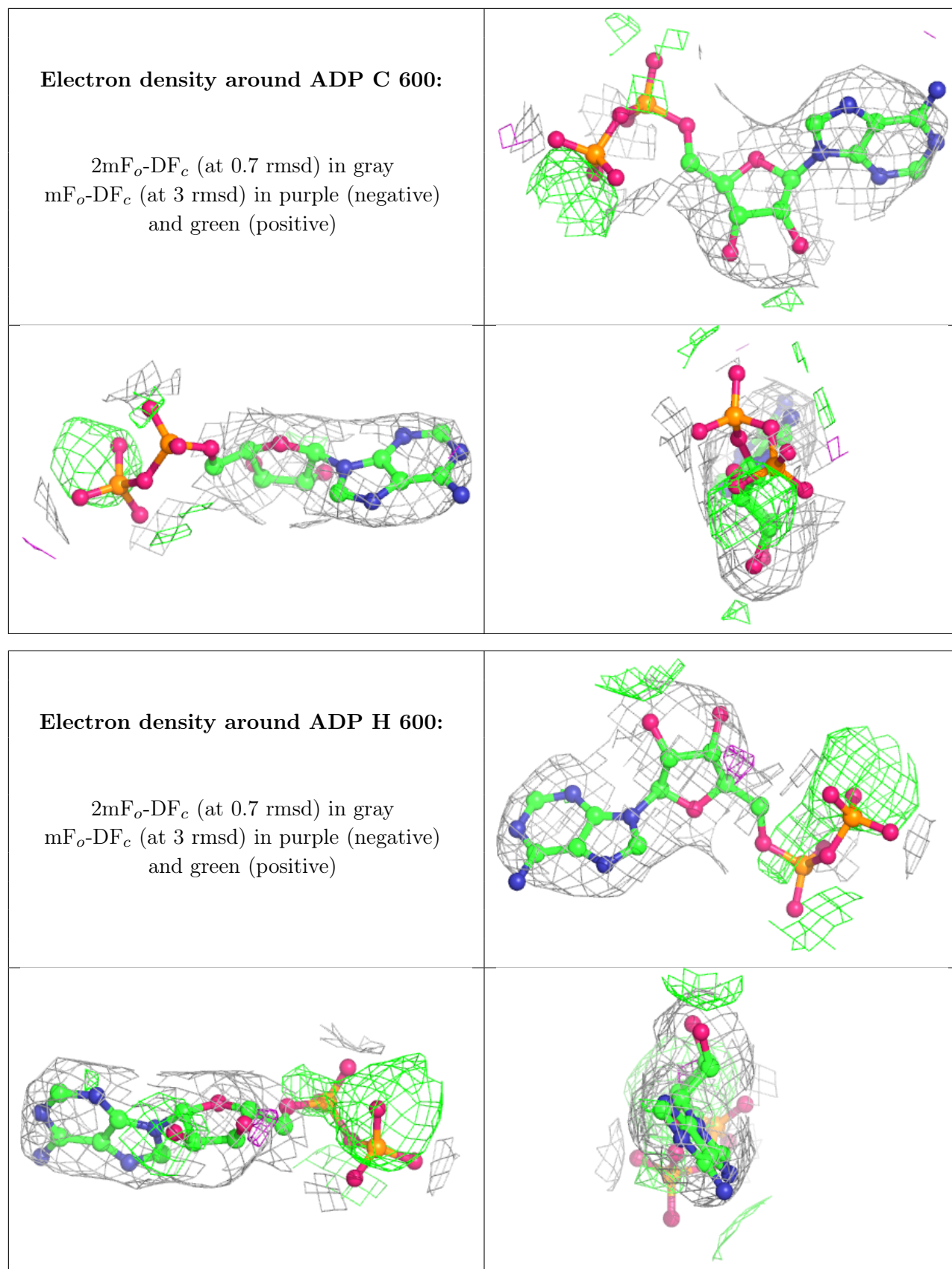
**Electron density around ADP F 600:**

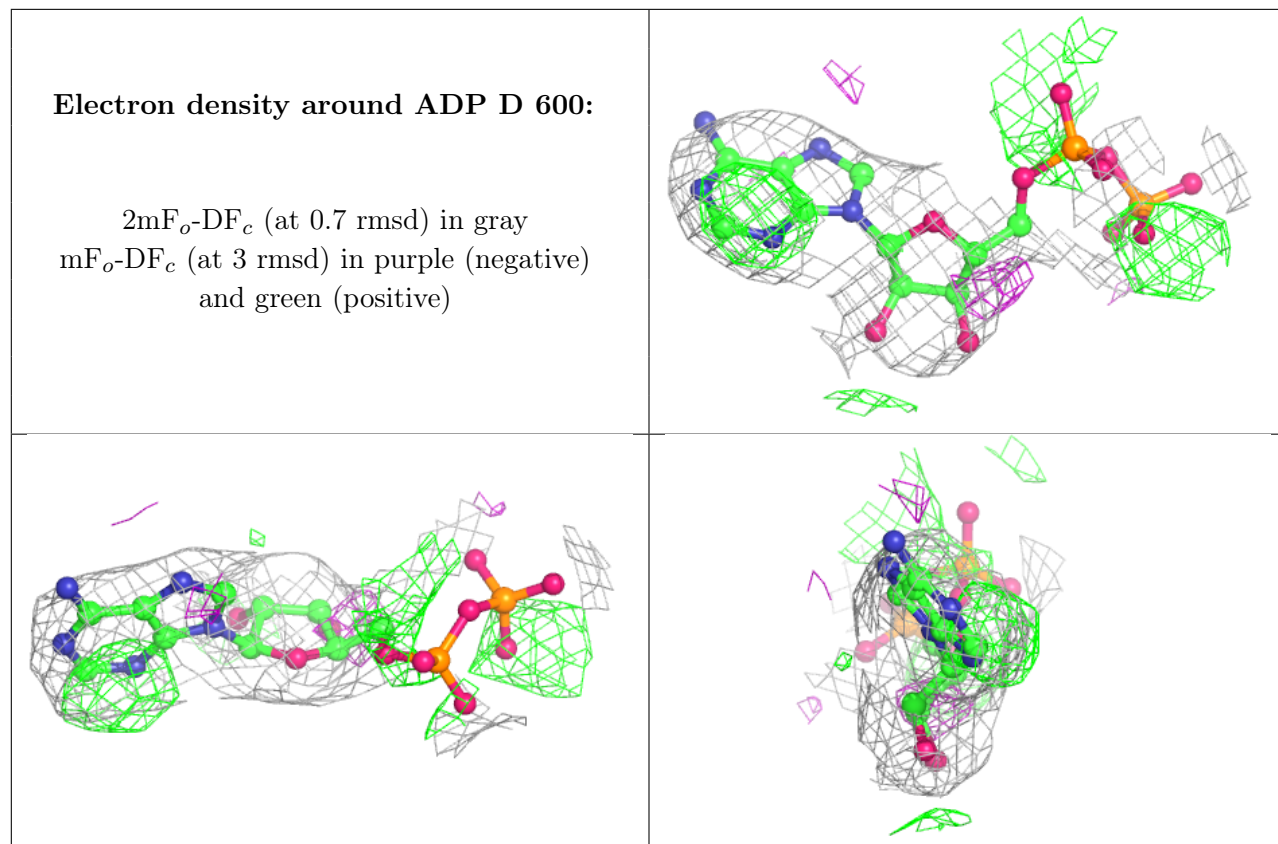
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around ADP G 600:**

$2mF_o-DF_c$  (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.