



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 09:00 AM UTC

PDB ID : 5OCH / pdb_00005och
Title : The crystal structure of human ABCB8 in an outward-facing state
Authors : Faust, B.; Pike, A.C.W.; Shintre, C.A.; Quigley, A.M.; Chu, A.; Barr, A.; Shrestha, L.; Mukhopadhyay, S.; Borkowska, O.; Chalk, R.; Burgess-Brown, N.A.; Arrowsmith, C.H.; Edwards, A.M.; Bountra, C.; Carpenter, E.P.; Structural Genomics Consortium (SGC)
Deposited on : 2017-06-30
Resolution : 3.40 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

The following versions of software and data (see [references](#) ①) were used in the production of this report:

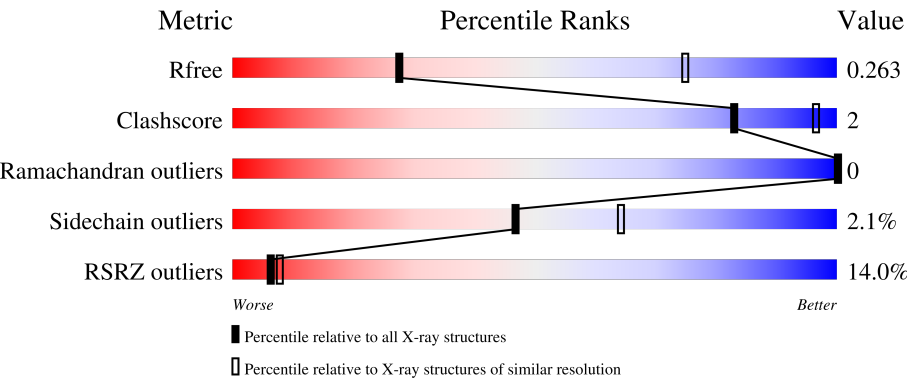
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal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

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1001 (3.44-3.36)
Clashscore	190562	1022 (3.44-3.36)
Ramachandran outliers	187476	1012 (3.44-3.36)
Sidechain outliers	187428	1012 (3.44-3.36)
RSRZ outliers	180081	1001 (3.44-3.36)

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

Mol	Chain	Length	Quality of chain
1	A	612	<div><div>9%</div><div>83%7%10%</div></div>
1	C	612	<div><div>17%</div><div>83%12%</div></div>
1	D	612	<div><div>9%</div><div>87%6%6%</div></div>
2	B	612	<div><div>8%</div><div>87%6%6%</div></div>
3	E	612	<div><div>17%</div><div>89%5%6%</div></div>

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Mol	Chain	Length	Quality of chain
4	F	612	<div><div></div><div>10%</div><div>84%</div><div>8%6%</div></div>
4	G	612	<div><div></div><div>11%</div><div>84%</div><div>6%10%</div></div>
5	H	612	<div><div></div><div>20%</div><div>84%</div><div>6%10%</div></div>

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 31278 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 ATP-binding cassette sub-family B member 8, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	552	Total	C	N	O	S	0	0	0
			3910	2479	676	733	22			
1	C	537	Total	C	N	O	S	0	0	0
			3541	2229	626	670	16			
1	D	573	Total	C	N	O	S	0	0	0
			3937	2502	682	731	22			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	110	MET	-	initiating methionine	UNP Q9NUT2
A	715	ALA	-	expression tag	UNP Q9NUT2
A	716	GLU	-	expression tag	UNP Q9NUT2
A	717	ASN	-	expression tag	UNP Q9NUT2
A	718	LEU	-	expression tag	UNP Q9NUT2
A	719	TYR	-	expression tag	UNP Q9NUT2
A	720	PHE	-	expression tag	UNP Q9NUT2
A	721	GLN	-	expression tag	UNP Q9NUT2
C	110	MET	-	initiating methionine	UNP Q9NUT2
C	715	ALA	-	expression tag	UNP Q9NUT2
C	716	GLU	-	expression tag	UNP Q9NUT2
C	717	ASN	-	expression tag	UNP Q9NUT2
C	718	LEU	-	expression tag	UNP Q9NUT2
C	719	TYR	-	expression tag	UNP Q9NUT2
C	720	PHE	-	expression tag	UNP Q9NUT2
C	721	GLN	-	expression tag	UNP Q9NUT2
D	110	MET	-	initiating methionine	UNP Q9NUT2
D	715	ALA	-	expression tag	UNP Q9NUT2
D	716	GLU	-	expression tag	UNP Q9NUT2
D	717	ASN	-	expression tag	UNP Q9NUT2
D	718	LEU	-	expression tag	UNP Q9NUT2
D	719	TYR	-	expression tag	UNP Q9NUT2
D	720	PHE	-	expression tag	UNP Q9NUT2

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Chain	Residue	Modelled	Actual	Comment	Reference
D	721	GLN	-	expression tag	UNP Q9NUT2

- Molecule 2 is a protein called ATP-binding cassette sub-family B member 8, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	573	Total	C	N	O	S	0	0	0
			4051	2562	715	753	21			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	110	MET	-	initiating methionine	UNP Q9NUT2
B	715	ALA	-	expression tag	UNP Q9NUT2
B	716	GLU	-	expression tag	UNP Q9NUT2
B	717	ASN	-	expression tag	UNP Q9NUT2
B	718	LEU	-	expression tag	UNP Q9NUT2
B	719	TYR	-	expression tag	UNP Q9NUT2
B	720	PHE	-	expression tag	UNP Q9NUT2
B	721	GLN	-	expression tag	UNP Q9NUT2

- Molecule 3 is a protein called ATP-binding cassette sub-family B member 8, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	576	Total	C	N	O	S	0	0	0
			3947	2495	697	734	21			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	110	MET	-	initiating methionine	UNP Q9NUT2
E	715	ALA	-	expression tag	UNP Q9NUT2
E	716	GLU	-	expression tag	UNP Q9NUT2
E	717	ASN	-	expression tag	UNP Q9NUT2
E	718	LEU	-	expression tag	UNP Q9NUT2
E	719	TYR	-	expression tag	UNP Q9NUT2
E	720	PHE	-	expression tag	UNP Q9NUT2
E	721	GLN	-	expression tag	UNP Q9NUT2

- Molecule 4 is a protein called ATP-binding cassette sub-family B member 8, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	F	573	Total	C	N	O	S	0	0	0
			4047	2567	700	756	24			
4	G	552	Total	C	N	O	S	0	0	0
			3812	2409	663	720	20			

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	110	MET	-	initiating methionine	UNP Q9NUT2
F	715	ALA	-	expression tag	UNP Q9NUT2
F	716	GLU	-	expression tag	UNP Q9NUT2
F	717	ASN	-	expression tag	UNP Q9NUT2
F	718	LEU	-	expression tag	UNP Q9NUT2
F	719	TYR	-	expression tag	UNP Q9NUT2
F	720	PHE	-	expression tag	UNP Q9NUT2
F	721	GLN	-	expression tag	UNP Q9NUT2
G	110	MET	-	initiating methionine	UNP Q9NUT2
G	715	ALA	-	expression tag	UNP Q9NUT2
G	716	GLU	-	expression tag	UNP Q9NUT2
G	717	ASN	-	expression tag	UNP Q9NUT2
G	718	LEU	-	expression tag	UNP Q9NUT2
G	719	TYR	-	expression tag	UNP Q9NUT2
G	720	PHE	-	expression tag	UNP Q9NUT2
G	721	GLN	-	expression tag	UNP Q9NUT2

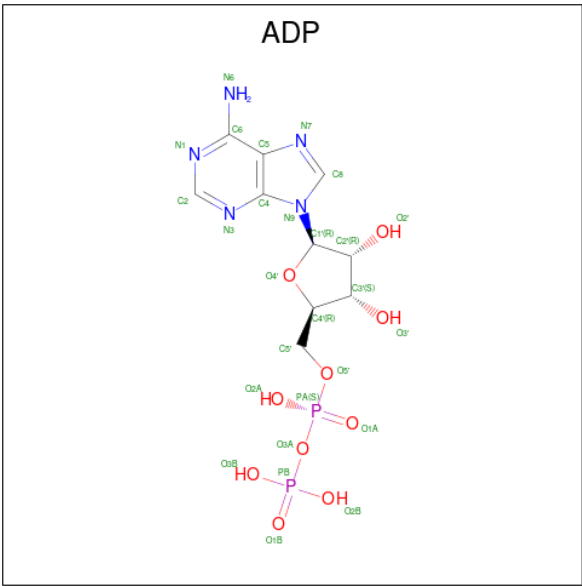
- Molecule 5 is a protein called ATP-binding cassette sub-family B member 8, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	H	548	Total	C	N	O	S	0	0	0
			3606	2255	639	691	21			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	110	MET	-	initiating methionine	UNP Q9NUT2
H	715	ALA	-	expression tag	UNP Q9NUT2
H	716	GLU	-	expression tag	UNP Q9NUT2
H	717	ASN	-	expression tag	UNP Q9NUT2
H	718	LEU	-	expression tag	UNP Q9NUT2
H	719	TYR	-	expression tag	UNP Q9NUT2
H	720	PHE	-	expression tag	UNP Q9NUT2
H	721	GLN	-	expression tag	UNP Q9NUT2

- Molecule 6 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: C₁₀H₁₅N₅O₁₀P₂).



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

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

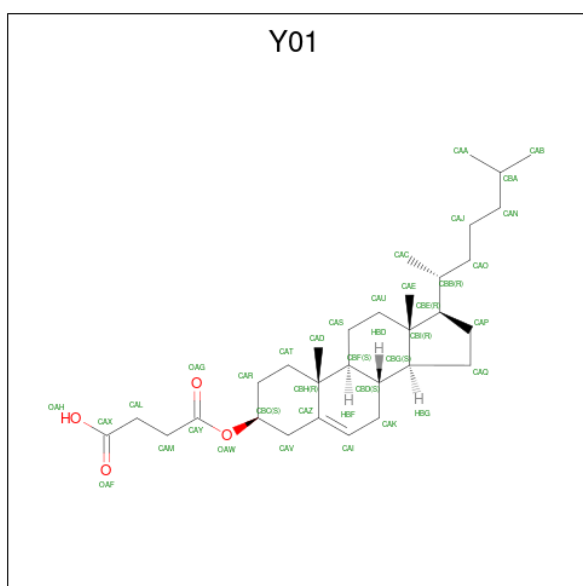
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	1	Total	Mg	0	0
			1	1		
7	B	1	Total	Mg	0	0
			1	1		
7	C	1	Total	Mg	0	0
			1	1		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	D	1	Total Mg 1 1	0	0
7	E	1	Total Mg 1 1	0	0
7	F	1	Total Mg 1 1	0	0
7	G	1	Total Mg 1 1	0	0
7	H	1	Total Mg 1 1	0	0

- Molecule 8 is CHOLESTEROL HEMISUCCINATE (CCD ID: Y01) (formula: $C_{31}H_{50}O_4$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	A	1	Total 30	C 26	O 4	0	0
8	B	1	Total 35	C 31	O 4	0	0
8	D	1	Total 26	C 24	O 2	0	0
8	E	1	Total 28	C 24	O 4	0	0
8	F	1	Total 35	C 31	O 4	0	0
8	G	1	Total 21	C 20	O 1	0	0

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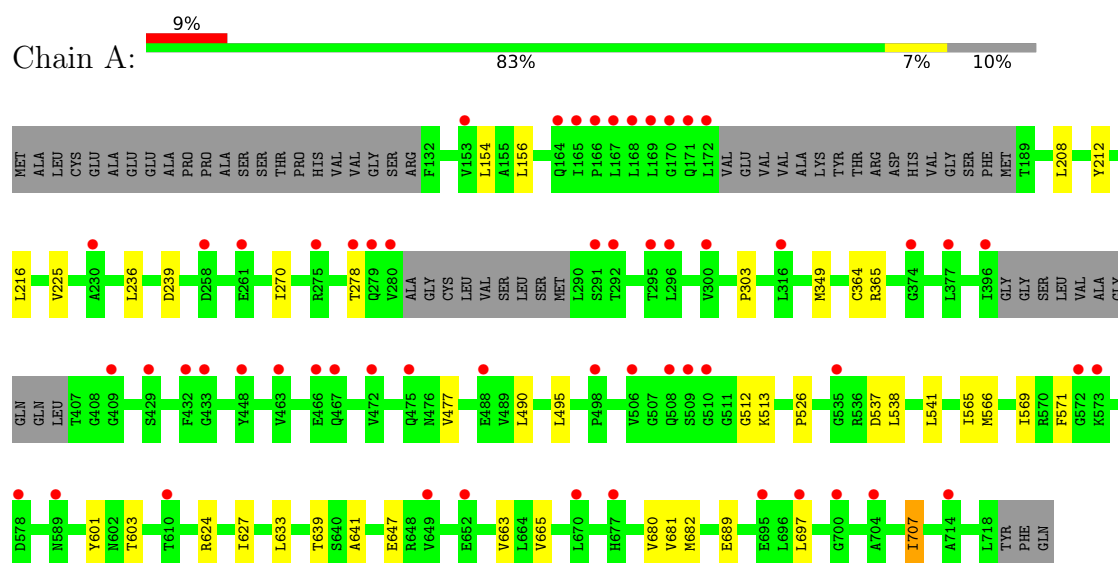
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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	H	1	Total	C	O	0	0
			28	24	4		

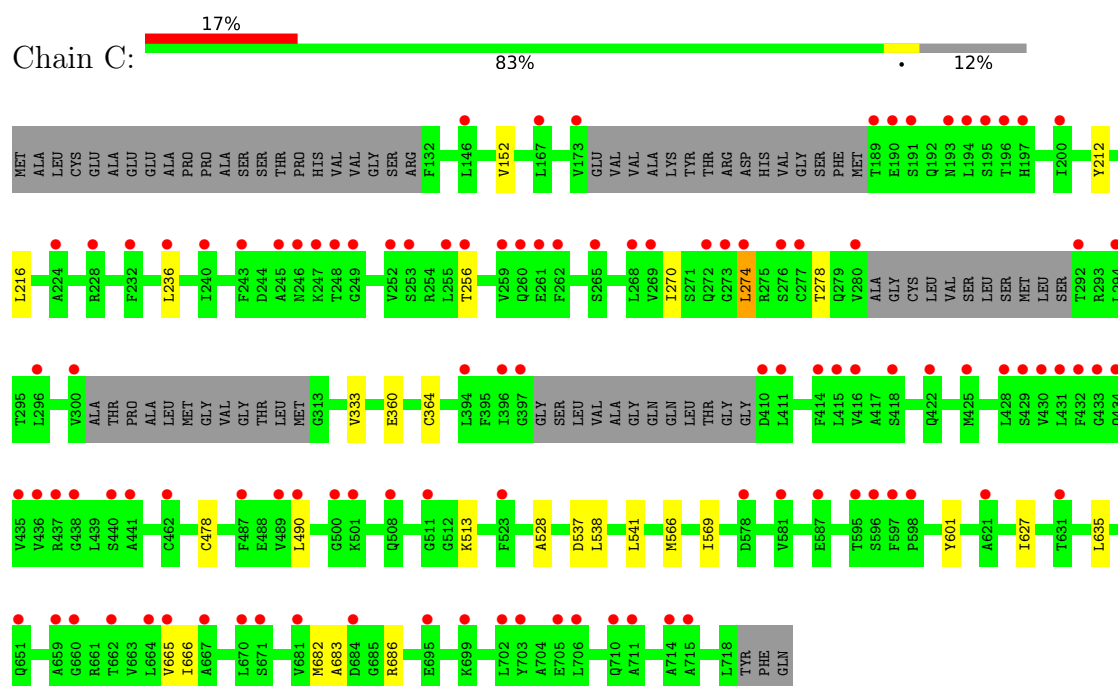
3 Residue-property plots [i](#)

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.

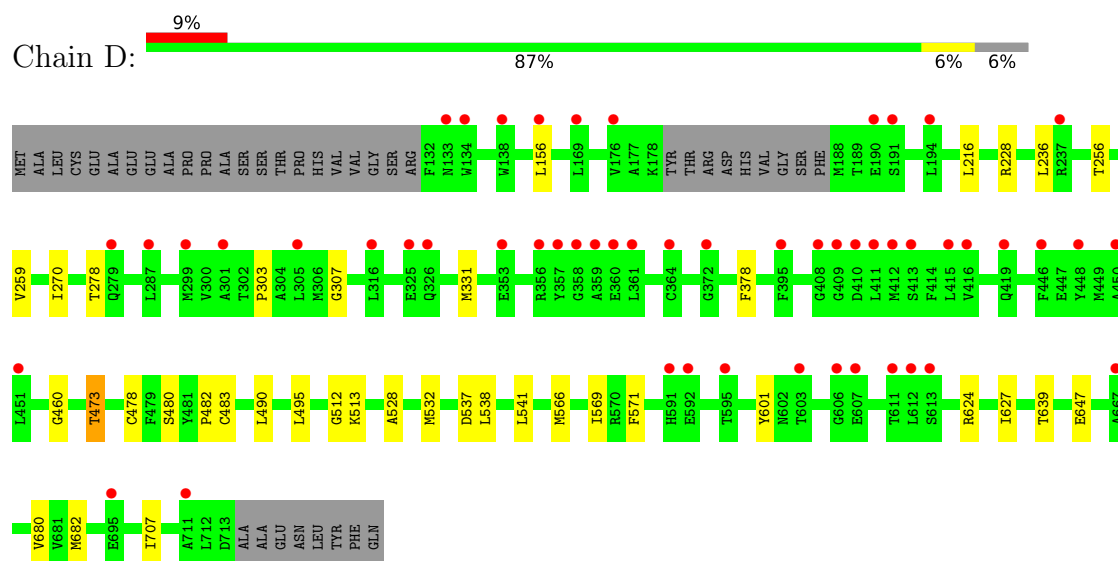
- Molecule 1: ATP-binding cassette sub-family B member 8, mitochondrial



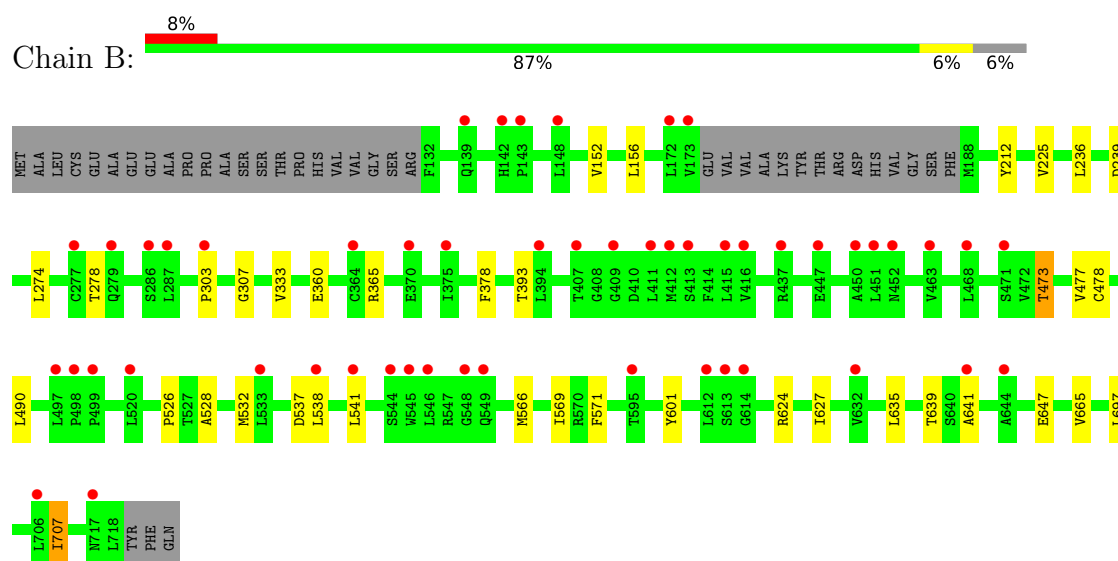
- Molecule 1: ATP-binding cassette sub-family B member 8, mitochondrial



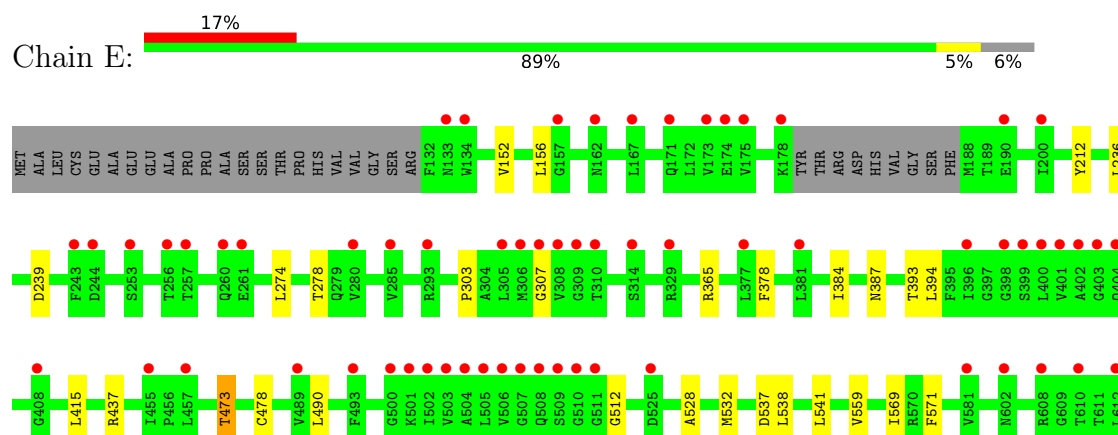
- Molecule 1: ATP-binding cassette sub-family B member 8, mitochondrial

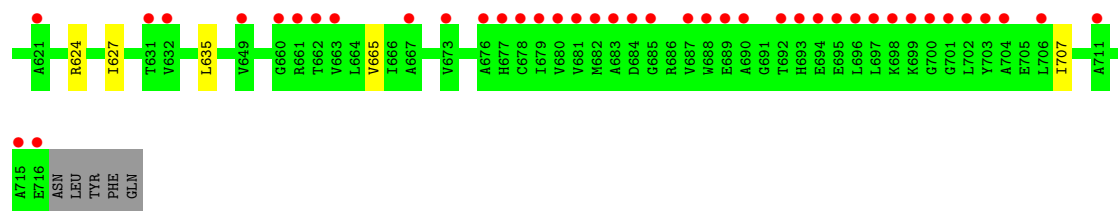


- Molecule 2: ATP-binding cassette sub-family B member 8, mitochondrial

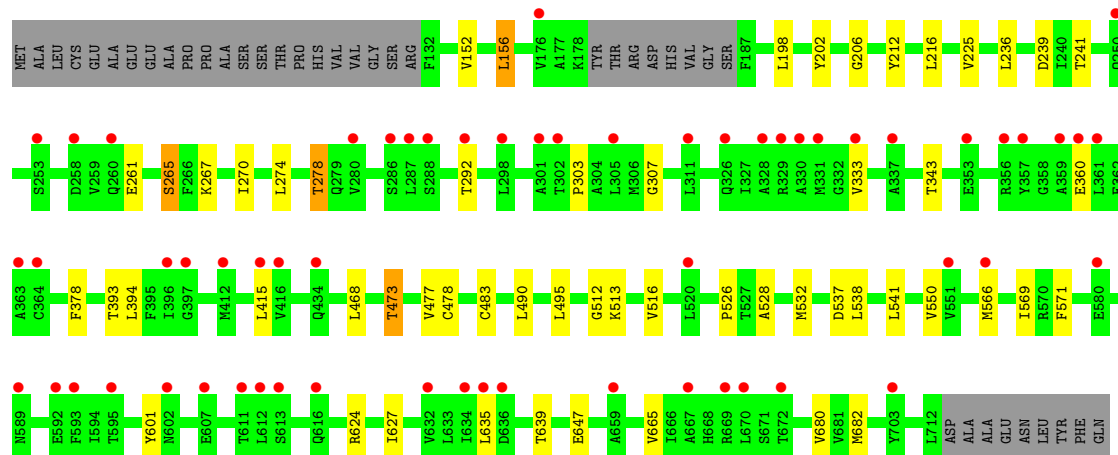
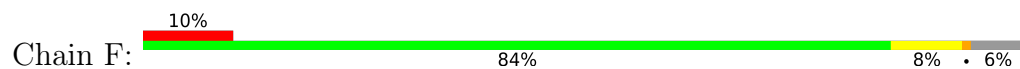


- Molecule 3: ATP-binding cassette sub-family B member 8, mitochondrial

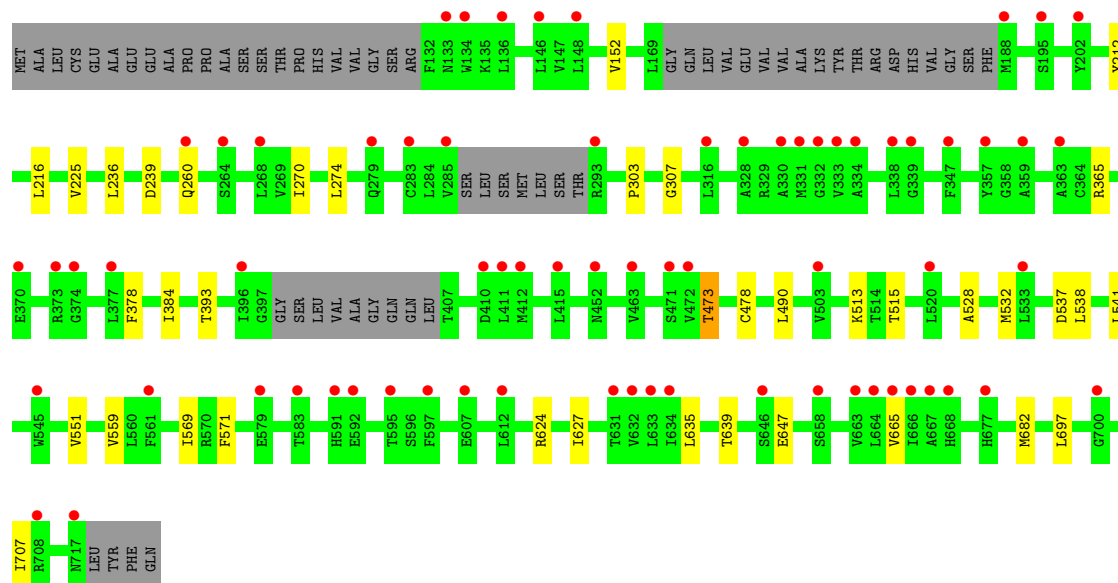
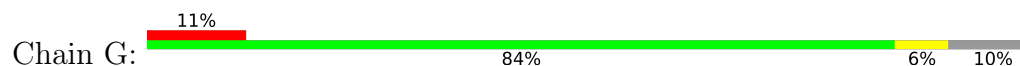




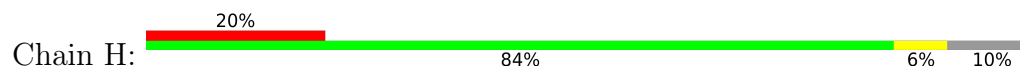
- Molecule 4: ATP-binding cassette sub-family B member 8, mitochondrial

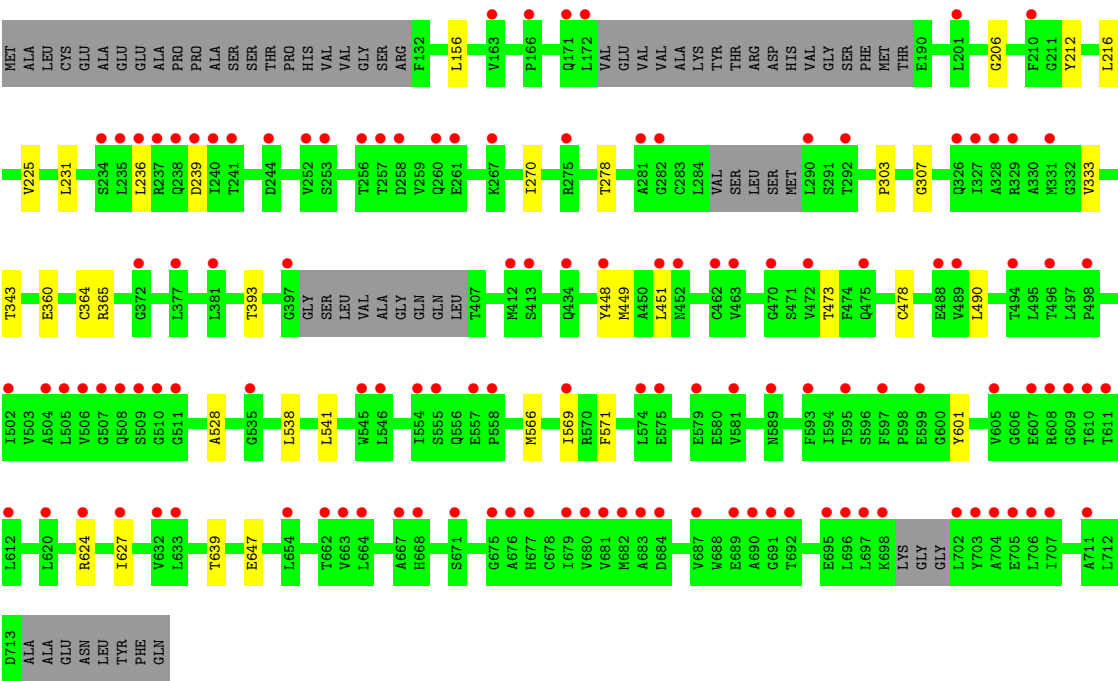


- Molecule 4: ATP-binding cassette sub-family B member 8, mitochondrial



- Molecule 5: ATP-binding cassette sub-family B member 8, mitochondrial





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	181.08Å 98.50Å 214.87Å 90.00° 90.50° 90.00°	Depositor
Resolution (Å)	72.61 – 3.40 72.61 – 3.40	Depositor EDS
% Data completeness (in resolution range)	61.9 (72.61-3.40) 62.0 (72.61-3.40)	Depositor EDS
R_{merge}	0.22	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.70 (at 3.41Å)	Xtriage
Refinement program	BUSTER 2.10.2	Depositor
R, R_{free}	0.231 , 0.251 0.248 , 0.263	Depositor DCC
R_{free} test set	3147 reflections (4.85%)	wwPDB-VP
Wilson B-factor (Å ²)	107.9	Xtriage
Anisotropy	0.150	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 115.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.41$, $\langle L^2 \rangle = 0.24$	Xtriage
Estimated twinning fraction	0.104 for h,-k,-l	Xtriage
F_o, F_c correlation	0.86	EDS
Total number of atoms	31278	wwPDB-VP
Average B, all atoms (Å ²)	137.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.58% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ADP, YCM, MG, Y01

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	0.75	0/3960	1.41	1/5387 (0.0%)
1	C	0.76	0/3577	1.41	1/4893 (0.0%)
1	D	0.75	0/3988	1.41	2/5443 (0.0%)
2	B	0.73	0/4091	1.40	4/5565 (0.1%)
3	E	0.76	0/3983	1.43	2/5429 (0.0%)
4	F	0.75	0/4086	1.41	2/5561 (0.0%)
4	G	0.75	0/3847	1.42	2/5243 (0.0%)
5	H	0.77	0/3654	1.43	3/4986 (0.1%)
All	All	0.75	0/31186	1.41	17/42507 (0.0%)

There are no bond length outliers.

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	239	ASP	CA-CB-CG	7.18	119.78	112.60
4	G	239	ASP	CA-CB-CG	6.39	119.00	112.60
5	H	239	ASP	CA-CB-CG	6.01	118.61	112.60
4	F	239	ASP	CA-CB-CG	5.95	118.55	112.60
1	D	460	GLY	N-CA-C	5.80	117.99	110.45
1	C	537	ASP	CA-CB-CG	5.53	118.13	112.60
1	A	537	ASP	CA-CB-CG	5.51	118.11	112.60
3	E	537	ASP	CA-CB-CG	5.45	118.05	112.60
2	B	537	ASP	CA-CB-CG	5.43	118.03	112.60
4	F	537	ASP	CA-CB-CG	5.42	118.02	112.60
1	D	537	ASP	CA-CB-CG	5.38	117.98	112.60
4	G	537	ASP	CA-CB-CG	5.37	117.97	112.60
2	B	239	ASP	CA-C-N	5.20	129.15	120.62
2	B	239	ASP	C-N-CA	5.20	129.15	120.62
3	E	239	ASP	CA-CB-CG	5.03	117.63	112.60
5	H	307	GLY	CA-C-N	5.01	127.72	121.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	H	307	GLY	C-N-CA	5.01	127.72	121.71

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	3910	0	3649	23	0
1	C	3541	0	3039	11	0
1	D	3937	0	3601	18	0
2	B	4051	0	3806	20	0
3	E	3947	0	3630	19	0
4	F	4047	0	3827	29	0
4	G	3812	0	3478	19	0
5	H	3606	0	3072	17	0
6	A	27	0	12	1	0
6	B	27	0	12	0	0
6	C	27	0	12	0	0
6	D	27	0	12	1	0
6	E	27	0	12	1	0
6	F	27	0	12	1	0
6	G	27	0	12	0	0
6	H	27	0	12	0	0
7	A	1	0	0	0	0
7	B	1	0	0	0	0
7	C	1	0	0	0	0
7	D	1	0	0	0	0
7	E	1	0	0	0	0
7	F	1	0	0	0	0
7	G	1	0	0	0	0
7	H	1	0	0	0	0
8	A	30	0	36	1	0
8	B	35	0	49	1	0
8	D	26	0	32	1	0
8	E	28	0	32	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	F	35	0	49	1	0
8	G	21	0	28	1	0
8	H	28	0	32	1	0
All	All	31278	0	28456	142	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 2.

All (142) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:569:ILE:HG22	1:A:627:ILE:HD11	1.77	0.67
1:D:569:ILE:HG22	1:D:627:ILE:HD11	1.75	0.67
3:E:569:ILE:HG22	3:E:627:ILE:HD11	1.78	0.65
5:H:569:ILE:HG22	5:H:627:ILE:HD11	1.79	0.65
2:B:569:ILE:HG22	2:B:627:ILE:HD11	1.78	0.65
4:F:569:ILE:HG22	4:F:627:ILE:HD11	1.78	0.64
1:C:569:ILE:HG22	1:C:627:ILE:HD11	1.80	0.63
4:G:569:ILE:HG22	4:G:627:ILE:HD11	1.83	0.61
4:F:241:THR:HA	4:F:483:YCM:NZ2	2.21	0.56
5:H:448:TYR:HA	5:H:451:LEU:HD12	1.88	0.55
3:E:437:ARG:HH22	4:F:267:LYS:HZ3	1.53	0.55
4:F:394:LEU:HD13	4:F:415:LEU:HD21	1.88	0.54
4:F:566:MET:HB2	4:F:601:TYR:HB3	1.88	0.54
5:H:538:LEU:HA	5:H:541:LEU:HD12	1.90	0.54
1:D:639:THR:HB	1:D:647:GLU:HG3	1.89	0.54
4:F:639:THR:HB	4:F:647:GLU:HG3	1.89	0.54
1:C:566:MET:HB2	1:C:601:TYR:HB3	1.89	0.53
2:B:566:MET:HB2	2:B:601:TYR:HB3	1.89	0.53
5:H:639:THR:HB	5:H:647:GLU:HG3	1.90	0.53
1:A:639:THR:HB	1:A:647:GLU:HG3	1.91	0.53
1:A:566:MET:HB2	1:A:601:TYR:HB3	1.89	0.53
2:B:639:THR:HB	2:B:647:GLU:HG3	1.91	0.53
1:D:538:LEU:HA	1:D:541:LEU:HD12	1.91	0.53
5:H:566:MET:HB2	5:H:601:TYR:HB3	1.89	0.53
1:A:697:LEU:HD21	1:A:707:ILE:HG21	1.92	0.52
4:G:639:THR:HB	4:G:647:GLU:HG3	1.90	0.52
1:D:216:LEU:HD21	1:D:270:ILE:HB	1.92	0.52
2:B:333:VAL:HG21	2:B:360:GLU:HG3	1.92	0.52
1:C:333:VAL:HG21	1:C:360:GLU:HG3	1.93	0.51
4:G:513:LYS:HA	4:G:682:MET:HE1	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:333:VAL:HG21	5:H:360:GLU:HG3	1.92	0.50
4:F:333:VAL:HG21	4:F:360:GLU:HG3	1.93	0.50
2:B:538:LEU:HA	2:B:541:LEU:HD12	1.93	0.50
4:G:384:ILE:HD11	5:H:206:GLY:HA3	1.93	0.50
1:D:478:CYS:HB2	1:D:528:ALA:HB3	1.93	0.50
4:F:495:LEU:HD13	4:F:680:VAL:HG21	1.94	0.50
1:A:495:LEU:HD13	1:A:680:VAL:HG21	1.94	0.49
4:F:473:THR:HB	4:F:532:MET:HE3	1.94	0.49
1:A:565:ILE:HD12	1:A:603:THR:HB	1.95	0.49
2:B:478:CYS:HB2	2:B:528:ALA:HB3	1.93	0.49
1:A:681:VAL:HB	1:A:689:GLU:HB2	1.93	0.49
1:A:303:PRO:HB2	8:A:1003:Y01:HBC	1.95	0.49
1:A:633:LEU:HB3	1:A:663:VAL:HG22	1.94	0.49
1:A:513:LYS:HG2	1:A:682:MET:HE3	1.95	0.49
2:B:635:LEU:HD12	2:B:665:VAL:HG22	1.95	0.49
5:H:231:LEU:HA	5:H:449:MET:HG3	1.93	0.49
2:B:303:PRO:HB2	8:B:1003:Y01:HBC	1.95	0.49
1:C:635:LEU:HD12	1:C:665:VAL:HG22	1.95	0.49
4:F:303:PRO:HB2	8:F:1003:Y01:HBC	1.95	0.49
4:F:513:LYS:HA	4:F:682:MET:HE1	1.95	0.49
1:A:663:VAL:HG12	1:A:665:VAL:HG23	1.96	0.48
4:G:303:PRO:HB2	8:G:1003:Y01:HBC	1.96	0.48
5:H:303:PRO:HB2	8:H:1003:Y01:HBC	1.96	0.48
1:A:477:VAL:HG13	1:A:526:PRO:HB3	1.95	0.48
4:F:156:LEU:HA	4:F:278:THR:HG21	1.96	0.48
4:G:635:LEU:HD12	4:G:665:VAL:HG22	1.96	0.48
4:G:559:VAL:HB	5:H:343:THR:HG21	1.96	0.48
1:C:683:ALA:O	1:C:686:ARG:HG2	2.14	0.48
1:D:495:LEU:HD13	1:D:680:VAL:HG21	1.94	0.48
4:G:307:GLY:HA2	4:G:378:PHE:HZ	1.79	0.48
3:E:478:CYS:HB2	3:E:528:ALA:HB3	1.95	0.48
1:A:216:LEU:HD21	1:A:270:ILE:HB	1.95	0.47
1:A:513:LYS:HG2	1:A:682:MET:CE	2.43	0.47
1:D:156:LEU:HA	1:D:278:THR:HG21	1.95	0.47
1:C:216:LEU:HD21	1:C:270:ILE:HB	1.97	0.47
1:A:365:ARG:HB2	2:B:225:VAL:HG21	1.95	0.47
1:C:478:CYS:HB2	1:C:528:ALA:HB3	1.95	0.47
1:D:228:ARG:HG3	1:D:259:VAL:HG11	1.95	0.47
1:A:641:ALA:HB2	2:B:641:ALA:HB2	1.96	0.47
2:B:156:LEU:HD23	2:B:278:THR:HG23	1.96	0.47
4:F:635:LEU:HD12	4:F:665:VAL:HG22	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:365:ARG:HB2	4:F:225:VAL:HG21	1.96	0.47
5:H:478:CYS:HB2	5:H:528:ALA:HB3	1.96	0.47
1:D:512:GLY:HA2	6:D:1001:ADP:H5'1	1.97	0.47
1:D:566:MET:HB2	1:D:601:TYR:HB3	1.96	0.47
4:G:365:ARG:HB2	5:H:225:VAL:HG21	1.97	0.46
1:D:303:PRO:HB2	8:D:1003:Y01:HBC	1.97	0.46
5:H:231:LEU:HB2	5:H:449:MET:HE2	1.98	0.46
4:G:225:VAL:HG21	5:H:365:ARG:HB2	1.96	0.46
3:E:635:LEU:HD12	3:E:665:VAL:HG22	1.98	0.46
3:E:303:PRO:HB2	8:E:1003:Y01:HBC	1.98	0.46
4:F:512:GLY:O	4:F:516:VAL:HG23	2.15	0.46
4:G:513:LYS:HG2	4:G:682:MET:HE3	1.97	0.46
5:H:216:LEU:HD21	5:H:270:ILE:HB	1.98	0.46
4:F:477:VAL:HG13	4:F:526:PRO:HB3	1.98	0.45
4:F:478:YCM:HB3	4:F:528:ALA:HB3	1.98	0.45
1:C:152:VAL:HA	1:C:274:LEU:HD21	1.98	0.45
2:B:307:GLY:HA2	2:B:378:PHE:HZ	1.82	0.45
4:G:473:THR:HB	4:G:532:MET:HE3	1.99	0.45
1:D:473:THR:HB	1:D:532:MET:HE3	1.99	0.45
4:G:307:GLY:HA2	4:G:378:PHE:CZ	2.52	0.45
1:C:256:THR:HG21	1:D:331:MET:HE2	1.99	0.44
3:E:538:LEU:HA	3:E:541:LEU:HD12	1.98	0.44
2:B:473:THR:HB	2:B:532:MET:HE3	2.00	0.44
4:G:697:LEU:HD21	4:G:707:ILE:HG21	2.00	0.44
2:B:152:VAL:HA	2:B:274:LEU:HD21	1.99	0.44
3:E:512:GLY:HA2	6:E:1001:ADP:H5'1	2.00	0.43
4:G:216:LEU:HD21	4:G:270:ILE:HB	1.99	0.43
4:G:478:YCM:HB3	4:G:528:ALA:HB3	2.00	0.43
1:A:349:MET:HG3	2:B:571:PHE:O	2.18	0.43
4:F:307:GLY:HA2	4:F:378:PHE:HZ	1.83	0.43
1:A:512:GLY:HA2	6:A:1001:ADP:H5'1	2.01	0.43
2:B:571:PHE:HB3	2:B:624:ARG:HD2	1.99	0.43
3:E:473:THR:HB	3:E:532:MET:HE3	1.99	0.43
4:G:152:VAL:HA	4:G:274:LEU:HD21	2.00	0.43
2:B:307:GLY:HA2	2:B:378:PHE:CZ	2.54	0.43
1:D:307:GLY:HA2	1:D:378:PHE:HZ	1.84	0.43
4:F:512:GLY:HA2	6:F:1001:ADP:H5'1	2.01	0.43
3:E:152:VAL:HA	3:E:274:LEU:HD21	2.00	0.42
4:F:307:GLY:HA2	4:F:378:PHE:CZ	2.54	0.42
3:E:156:LEU:HA	3:E:278:THR:HG21	2.02	0.42
4:F:152:VAL:HA	4:F:274:LEU:HD21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:571:PHE:HB3	5:H:624:ARG:HD2	2.01	0.42
4:F:468:LEU:HD21	4:F:550:VAL:HG13	2.01	0.42
1:A:538:LEU:HA	1:A:541:LEU:HD12	2.01	0.42
1:A:154:LEU:HD23	1:A:208:LEU:HD23	2.00	0.42
1:A:571:PHE:HB3	1:A:624:ARG:HD2	2.00	0.42
4:F:216:LEU:HD21	4:F:270:ILE:HB	2.00	0.42
5:H:156:LEU:HD23	5:H:278:THR:HG23	2.02	0.42
3:E:156:LEU:HD23	3:E:278:THR:HG23	2.02	0.41
1:C:538:LEU:HA	1:C:541:LEU:HD12	2.03	0.41
3:E:307:GLY:HA2	3:E:378:PHE:HZ	1.85	0.41
4:F:571:PHE:HB3	4:F:624:ARG:HD2	2.02	0.41
1:D:513:LYS:HA	1:D:682:MET:HE1	2.02	0.41
4:G:571:PHE:HB3	4:G:624:ARG:HD2	2.01	0.41
1:D:482:PRO:HD2	1:D:483:YCM:HZ21	1.85	0.41
1:D:571:PHE:HB3	1:D:624:ARG:HD2	2.02	0.41
3:E:559:VAL:HB	4:F:343:THR:HG21	2.02	0.41
3:E:571:PHE:HB3	3:E:624:ARG:HD2	2.01	0.41
4:G:538:LEU:HA	4:G:541:LEU:HD12	2.01	0.41
1:A:156:LEU:HD23	1:A:278:THR:HG23	2.03	0.41
1:D:307:GLY:HA2	1:D:378:PHE:CZ	2.55	0.41
3:E:387:ASN:HB3	4:F:202:TYR:CE1	2.55	0.41
3:E:307:GLY:HA2	3:E:378:PHE:CZ	2.55	0.41
2:B:697:LEU:HD21	2:B:707:ILE:HG21	2.03	0.41
4:F:261:GLU:O	4:F:265:SER:HB2	2.21	0.41
1:A:225:VAL:HG21	2:B:365:ARG:HB2	2.03	0.40
3:E:384:ILE:HD11	4:F:206:GLY:HA3	2.03	0.40
4:F:538:LEU:HD23	4:F:541:LEU:HD12	2.02	0.40
1:C:513:LYS:HA	1:C:682:MET:HE1	2.03	0.40
2:B:477:VAL:HG13	2:B:526:PRO:HB3	2.03	0.40
3:E:394:LEU:HD13	3:E:415:LEU:HD21	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	543/612 (89%)	525 (97%)	18 (3%)	0	100	100
1	C	526/612 (86%)	509 (97%)	17 (3%)	0	100	100
1	D	568/612 (93%)	550 (97%)	18 (3%)	0	100	100
2	B	567/612 (93%)	546 (96%)	21 (4%)	0	100	100
3	E	570/612 (93%)	549 (96%)	21 (4%)	0	100	100
4	F	567/612 (93%)	547 (96%)	20 (4%)	0	100	100
4	G	542/612 (89%)	524 (97%)	18 (3%)	0	100	100
5	H	538/612 (88%)	522 (97%)	16 (3%)	0	100	100
All	All	4421/4896 (90%)	4272 (97%)	149 (3%)	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	359/497 (72%)	353 (98%)	6 (2%)	53	67
1	C	271/497 (54%)	264 (97%)	7 (3%)	40	61
1	D	340/497 (68%)	334 (98%)	6 (2%)	51	67
2	B	368/496 (74%)	362 (98%)	6 (2%)	55	68
3	E	344/496 (69%)	338 (98%)	6 (2%)	53	67
4	F	375/496 (76%)	365 (97%)	10 (3%)	39	60
4	G	333/496 (67%)	325 (98%)	8 (2%)	43	62
5	H	280/498 (56%)	274 (98%)	6 (2%)	47	64
All	All	2670/3973 (67%)	2615 (98%)	55 (2%)	47	64

All (55) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	212	TYR
1	A	236	LEU
1	A	239	ASP
1	A	364	CYS
1	A	490	LEU
1	A	707	ILE
2	B	212	TYR
2	B	236	LEU
2	B	393	THR
2	B	473	THR
2	B	490	LEU
2	B	707	ILE
1	C	212	TYR
1	C	236	LEU
1	C	274	LEU
1	C	278	THR
1	C	364	CYS
1	C	490	LEU
1	C	666	ILE
1	D	236	LEU
1	D	256	THR
1	D	473	THR
1	D	480	SER
1	D	490	LEU
1	D	707	ILE
3	E	212	TYR
3	E	236	LEU
3	E	393	THR
3	E	473	THR
3	E	490	LEU
3	E	707	ILE
4	F	156	LEU
4	F	198	LEU
4	F	212	TYR
4	F	236	LEU
4	F	265	SER
4	F	278	THR
4	F	292	THR
4	F	393	THR
4	F	473	THR
4	F	490	LEU
4	G	212	TYR
4	G	236	LEU

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Mol	Chain	Res	Type
4	G	260	GLN
4	G	393	THR
4	G	473	THR
4	G	490	LEU
4	G	515	THR
4	G	551	VAL
5	H	212	TYR
5	H	236	LEU
5	H	364	CYS
5	H	393	THR
5	H	473	THR
5	H	490	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (43) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	162	ASN
1	A	197	HIS
1	A	387	ASN
1	A	419	GLN
1	A	422	GLN
1	A	476	ASN
1	A	549	GLN
1	A	717	ASN
2	B	250	GLN
2	B	549	GLN
2	B	717	ASN
1	C	133	ASN
1	C	508	GLN
1	C	549	GLN
1	D	144	HIS
1	D	197	HIS
1	D	218	HIS
1	D	549	GLN
1	D	651	GLN
3	E	197	HIS
3	E	250	GLN
3	E	419	GLN
3	E	422	GLN
3	E	427	ASN
3	E	556	GLN
3	E	651	GLN

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Mol	Chain	Res	Type
4	F	171	GLN
4	F	197	HIS
4	F	260	GLN
4	F	324	GLN
4	F	405	GLN
4	F	427	ASN
4	F	434	GLN
4	F	549	GLN
4	F	556	GLN
4	F	651	GLN
4	G	162	ASN
4	G	238	GLN
4	G	260	GLN
4	G	383	ASN
4	G	549	GLN
4	G	556	GLN
4	G	651	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

11 non-standard protein/DNA/RNA residues are modelled in this entry.

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	$\# Z > 2$
1	YCM	A	483	1	7,9,10	0.41	0	5,10,12	0.28	0
1	YCM	D	483	1	7,9,10	0.41	0	5,10,12	0.39	0
2	YCM	B	483	2	7,9,10	0.39	0	5,10,12	0.31	0
3	YCM	E	366	3	7,9,10	0.42	0	5,10,12	0.24	0
4	YCM	G	478	4	7,9,10	0.44	0	5,10,12	0.36	0
3	YCM	E	483	3	7,9,10	0.41	0	5,10,12	0.26	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	YCM	B	461	2	7,9,10	0.43	0	5,10,12	0.48	0
4	YCM	G	483	4	7,9,10	0.41	0	5,10,12	0.27	0
4	YCM	F	483	4	7,9,10	0.39	0	5,10,12	0.47	0
1	YCM	C	483	1	7,9,10	0.41	0	5,10,12	0.28	0
4	YCM	F	478	4	7,9,10	0.53	0	5,10,12	0.34	0

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
1	YCM	A	483	1	-	1/6/8/10	-
1	YCM	D	483	1	-	1/6/8/10	-
2	YCM	B	483	2	-	1/6/8/10	-
3	YCM	E	366	3	-	1/6/8/10	-
4	YCM	G	478	4	-	1/6/8/10	-
3	YCM	E	483	3	-	1/6/8/10	-
2	YCM	B	461	2	-	3/6/8/10	-
4	YCM	G	483	4	-	1/6/8/10	-
4	YCM	F	483	4	-	3/6/8/10	-
1	YCM	C	483	1	-	1/6/8/10	-
4	YCM	F	478	4	-	1/6/8/10	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	483	YCM	SG-CD-CE-NZ2
2	B	461	YCM	SG-CD-CE-OZ1
2	B	461	YCM	SG-CD-CE-NZ2
2	B	483	YCM	SG-CD-CE-NZ2
1	C	483	YCM	SG-CD-CE-NZ2
1	D	483	YCM	SG-CD-CE-NZ2
3	E	366	YCM	SG-CD-CE-NZ2
3	E	483	YCM	SG-CD-CE-NZ2
4	F	483	YCM	SG-CD-CE-OZ1
4	F	483	YCM	SG-CD-CE-NZ2

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Mol	Chain	Res	Type	Atoms
4	G	483	YCM	SG-CD-CE-NZ2
2	B	461	YCM	CA-CB-SG-CD
4	F	478	YCM	CA-CB-SG-CD
4	F	483	YCM	CE-CD-SG-CB
4	G	478	YCM	CA-CB-SG-CD

There are no ring outliers.

4 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	D	483	YCM	1	0
4	G	478	YCM	1	0
4	F	483	YCM	1	0
4	F	478	YCM	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 23 ligands modelled in this entry, 8 are monoatomic - leaving 15 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	$\# Z > 2$
8	Y01	F	1003	-	38,38,38	0.32	0	57,57,57	0.44	0
8	Y01	A	1003	-	33,33,38	0.36	0	51,51,57	0.48	0
6	ADP	D	1001	7	28,29,29	0.26	0	43,45,45	0.36	0
8	Y01	G	1003	-	24,24,38	0.47	0	38,39,57	0.66	1 (2%)
8	Y01	D	1003	-	29,29,38	0.40	0	46,46,57	0.52	0
6	ADP	C	1001	7	28,29,29	0.28	0	43,45,45	0.34	0
6	ADP	B	1001	7	28,29,29	0.24	0	43,45,45	0.33	0
8	Y01	H	1003	-	31,31,38	0.37	0	47,48,57	0.58	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	ADP	E	1001	7	28,29,29	0.46	0	43,45,45	0.58	0
6	ADP	G	1001	7	28,29,29	0.23	0	43,45,45	0.34	0
8	Y01	B	1003	-	38,38,38	0.34	0	57,57,57	0.43	0
6	ADP	H	1001	7	28,29,29	0.25	0	43,45,45	0.33	0
8	Y01	E	1003	-	31,31,38	0.37	0	47,48,57	0.53	1 (2%)
6	ADP	A	1001	7	28,29,29	0.29	0	43,45,45	0.35	0
6	ADP	F	1001	7	28,29,29	0.49	0	43,45,45	0.58	0

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
8	Y01	F	1003	-	-	6/19/77/77	0/4/4/4
8	Y01	A	1003	-	-	2/13/71/77	0/4/4/4
6	ADP	D	1001	7	-	0/16/32/32	0/3/3/3
8	Y01	G	1003	-	-	-	0/4/4/4
8	Y01	D	1003	-	-	1/8/66/77	0/4/4/4
6	ADP	C	1001	7	-	0/16/32/32	0/3/3/3
6	ADP	B	1001	7	-	0/16/32/32	0/3/3/3
8	Y01	H	1003	-	-	2/9/67/77	0/4/4/4
6	ADP	E	1001	7	-	0/16/32/32	0/3/3/3
6	ADP	G	1001	7	-	0/16/32/32	0/3/3/3
8	Y01	B	1003	-	-	7/19/77/77	0/4/4/4
6	ADP	H	1001	7	-	0/16/32/32	0/3/3/3
8	Y01	E	1003	-	-	2/9/67/77	0/4/4/4
6	ADP	A	1001	7	-	0/16/32/32	0/3/3/3
6	ADP	F	1001	7	-	0/16/32/32	0/3/3/3

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	H	1003	Y01	CBB-CBE-CBI	2.39	120.31	116.20
8	G	1003	Y01	CBB-CBE-CBI	2.38	120.28	116.20
8	E	1003	Y01	CBB-CBE-CBI	2.28	120.11	116.20

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	B	1003	Y01	CAJ-CAO-CBB-CBE
8	F	1003	Y01	CAJ-CAO-CBB-CBE
8	B	1003	Y01	CAJ-CAO-CBB-CAC
8	F	1003	Y01	CAJ-CAO-CBB-CAC
8	B	1003	Y01	CAJ-CAN-CBA-CAA
8	F	1003	Y01	CAJ-CAN-CBA-CAB
8	B	1003	Y01	CAJ-CAN-CBA-CAB
8	F	1003	Y01	CAJ-CAN-CBA-CAA
8	B	1003	Y01	CAN-CAJ-CAO-CBB
8	D	1003	Y01	CAM-CAY-OAW-CBC
8	B	1003	Y01	CAM-CAL-CAX-OAH
8	H	1003	Y01	CAM-CAL-CAX-OAH
8	A	1003	Y01	CAM-CAL-CAX-OAH
8	E	1003	Y01	CAM-CAL-CAX-OAH
8	F	1003	Y01	CAM-CAL-CAX-OAH
8	A	1003	Y01	CAM-CAL-CAX-OAF
8	H	1003	Y01	CAM-CAL-CAX-OAF
8	E	1003	Y01	CAM-CAL-CAX-OAF
8	B	1003	Y01	CAM-CAL-CAX-OAF
8	F	1003	Y01	CAM-CAL-CAX-OAF

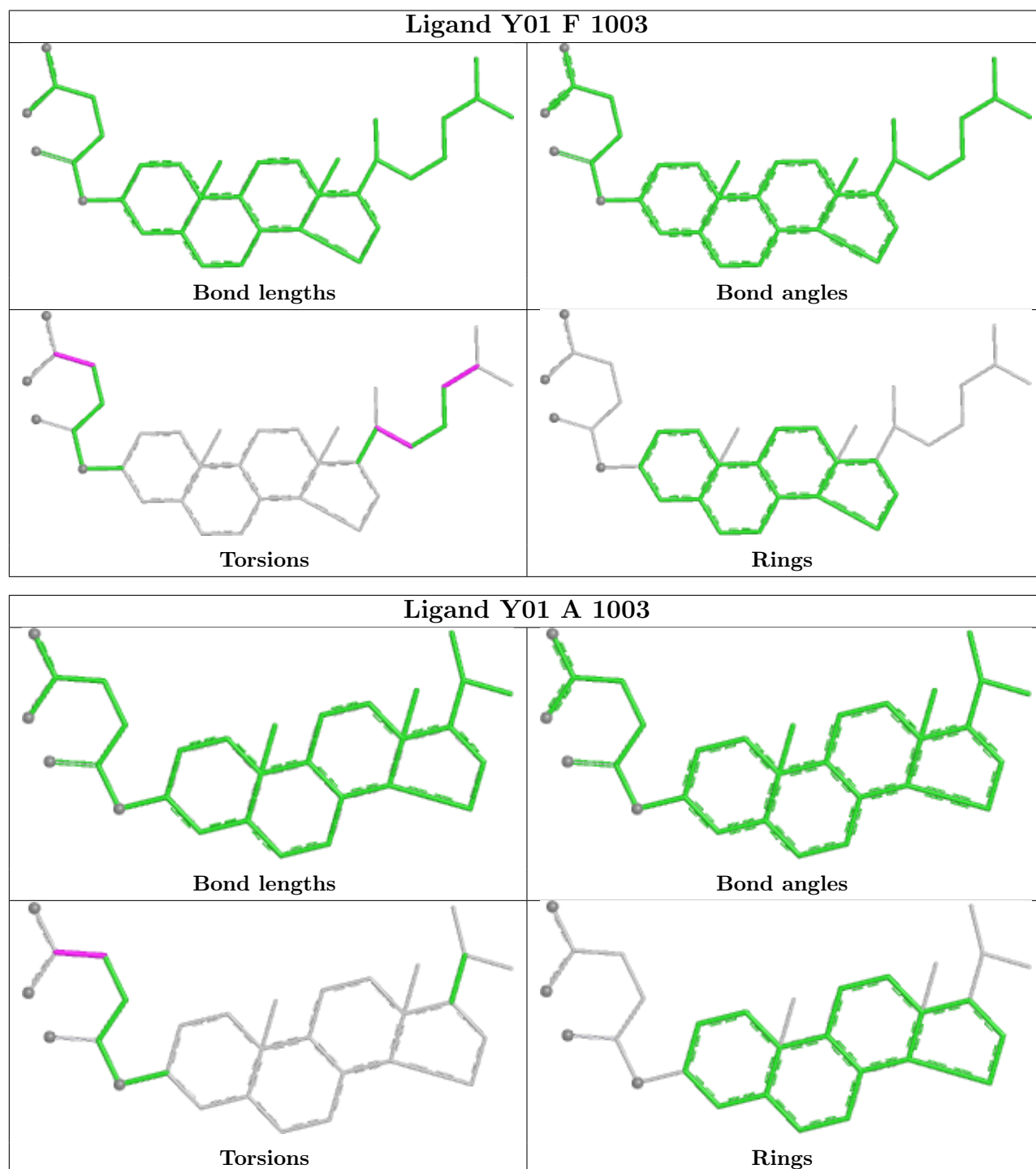
There are no ring outliers.

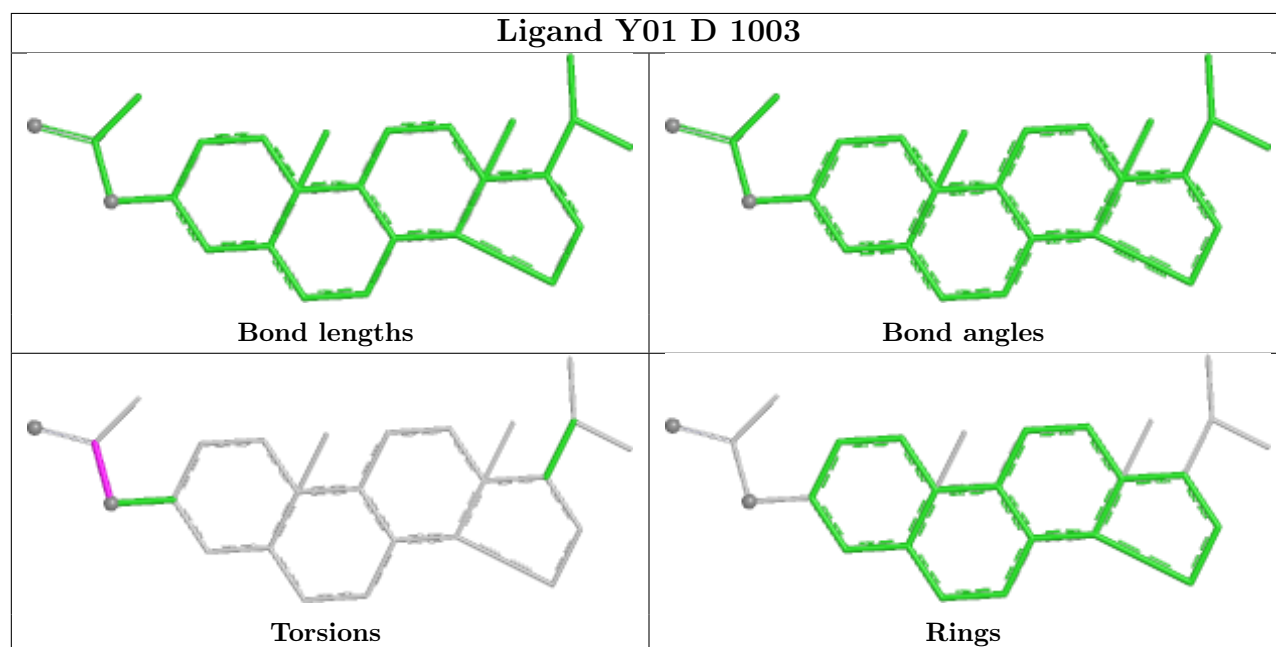
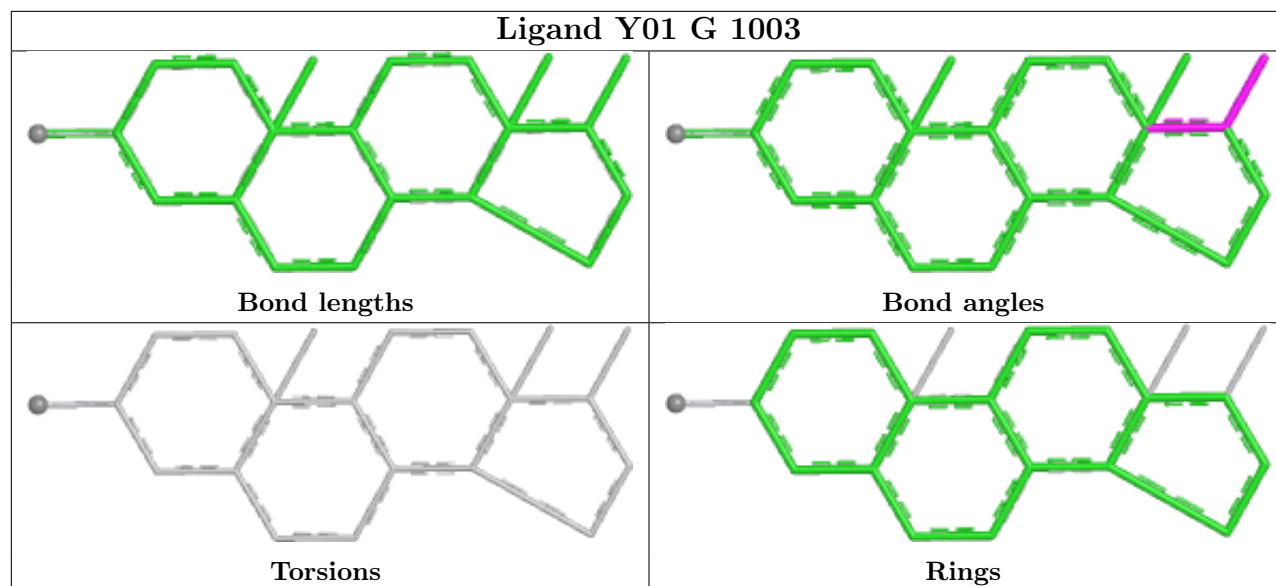
11 monomers are involved in 11 short contacts:

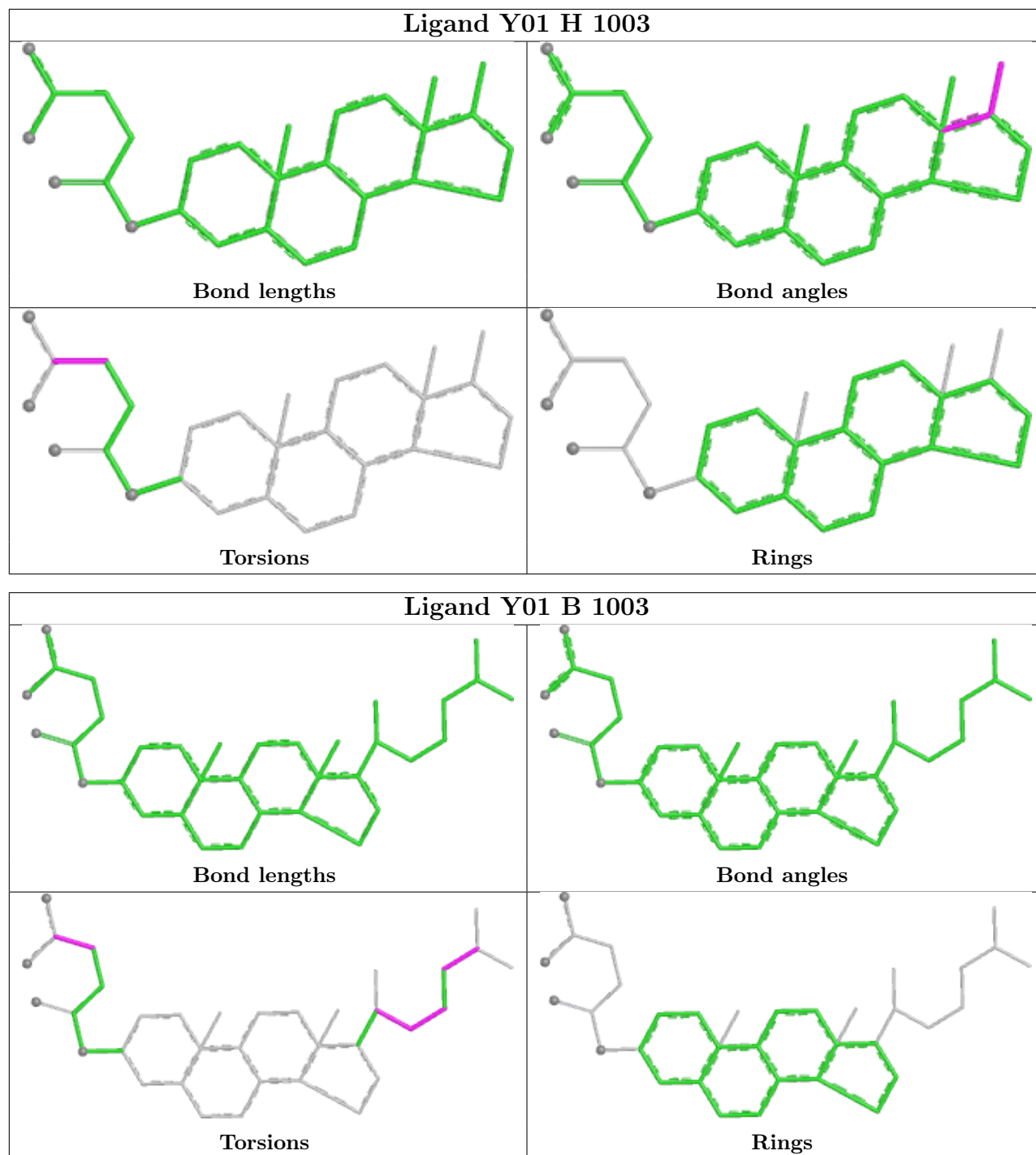
Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	F	1003	Y01	1	0
8	A	1003	Y01	1	0
6	D	1001	ADP	1	0
8	G	1003	Y01	1	0
8	D	1003	Y01	1	0
8	H	1003	Y01	1	0
6	E	1001	ADP	1	0
8	B	1003	Y01	1	0
8	E	1003	Y01	1	0
6	A	1001	ADP	1	0
6	F	1001	ADP	1	0

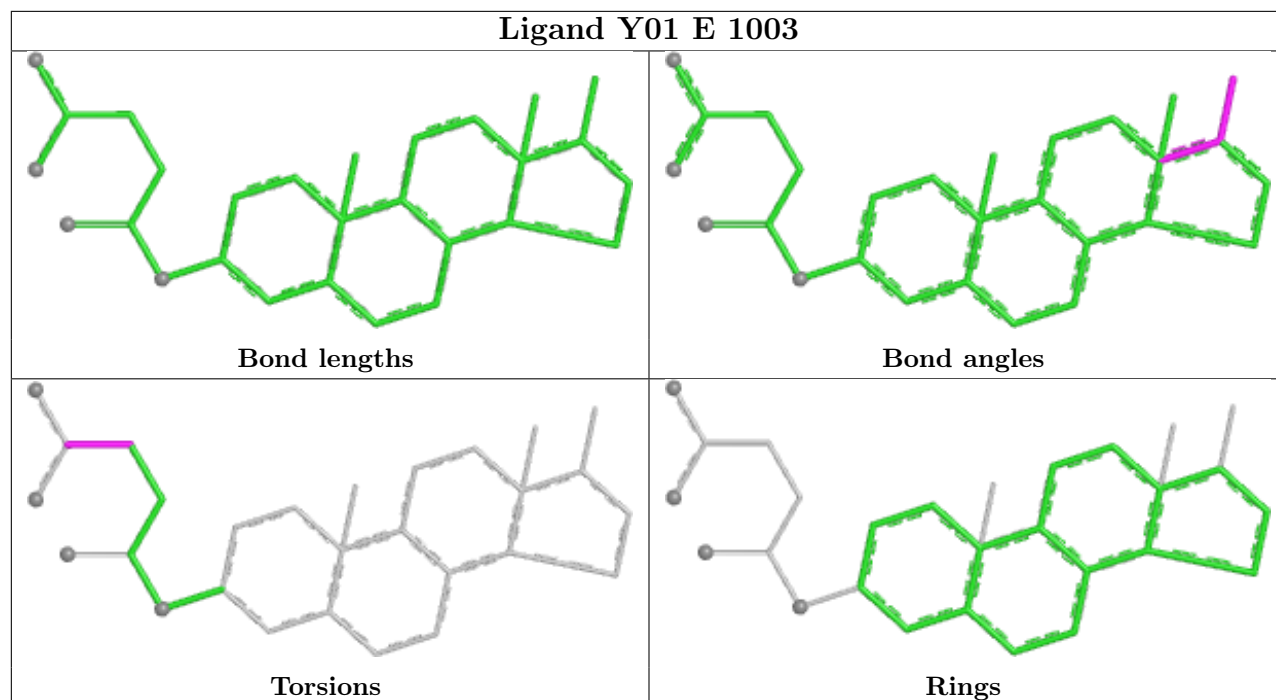
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	551/612 (90%)	0.65	57 (10%) 12 12	63, 111, 196, 250	0
1	C	536/612 (87%)	1.12	107 (19%) 3 4	87, 172, 227, 255	0
1	D	572/612 (93%)	0.59	53 (9%) 14 14	57, 130, 213, 239	0
2	B	571/612 (93%)	0.58	51 (8%) 15 14	46, 102, 208, 253	0
3	E	574/612 (93%)	1.05	104 (18%) 3 5	76, 161, 214, 233	0
4	F	571/612 (93%)	0.56	60 (10%) 11 12	62, 116, 183, 204	0
4	G	550/612 (89%)	0.76	70 (12%) 8 9	74, 134, 200, 244	0
5	H	548/612 (89%)	1.28	123 (22%) 2 4	85, 173, 234, 260	0
All	All	4473/4896 (91%)	0.82	625 (13%) 6 8	46, 137, 215, 260	0

All (625) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	E	510	GLY	11.9
5	H	702	LEU	11.5
2	B	412	MET	11.5
3	E	508	GLN	11.3
3	E	507	GLY	11.0
3	E	700	GLY	11.0
3	E	698	LYS	9.9
3	E	702	LEU	9.8
3	E	511	GLY	9.8
5	H	697	LEU	9.5
5	H	676	ALA	9.5
5	H	704	ALA	9.2
1	C	196	THR	9.1
3	E	697	LEU	8.6
5	H	690	ALA	8.4
2	B	415	LEU	8.2

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Mol	Chain	Res	Type	RSRZ
3	E	681	VAL	8.0
1	C	433	GLY	8.0
5	H	695	GLU	7.9
4	F	286	SER	7.9
1	C	436	VAL	7.7
1	D	412	MET	7.6
1	A	170	GLY	7.6
5	H	682	MET	7.3
5	H	681	VAL	7.3
3	E	687	VAL	7.3
2	B	613	SER	7.2
3	E	509	SER	7.1
3	E	682	MET	7.1
1	A	509	SER	7.1
1	C	195	SER	7.1
3	E	506	VAL	7.0
1	D	357	TYR	6.9
3	E	403	GLY	6.9
5	H	244	ASP	6.8
3	E	680	VAL	6.8
5	H	511	GLY	6.7
3	E	699	LYS	6.6
1	C	714	ALA	6.6
5	H	253	SER	6.4
1	C	437	ARG	6.4
1	C	273	GLY	6.4
2	B	287	LEU	6.3
1	C	660	GLY	6.3
3	E	688	TRP	6.3
3	E	703	TYR	6.2
1	D	450	ALA	6.2
1	A	166	PRO	6.2
1	C	428	LEU	6.2
3	E	632	VAL	6.2
3	E	701	GLY	6.2
1	C	706	LEU	6.0
4	F	359	ALA	6.0
1	C	260	GLN	5.9
3	E	694	GLU	5.9
1	C	434	GLN	5.8
5	H	235	LEU	5.7
4	G	332	GLY	5.7

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Mol	Chain	Res	Type	RSRZ
4	F	287	LEU	5.7
1	C	197	HIS	5.6
4	F	364	CYS	5.6
1	C	296	LEU	5.6
1	C	711	ALA	5.5
3	E	679	ILE	5.4
1	C	269	VAL	5.4
5	H	237	ARG	5.4
5	H	607	GLU	5.4
2	B	286	SER	5.4
1	C	256	THR	5.4
5	H	698	LYS	5.4
3	E	683	ALA	5.3
3	E	677	HIS	5.3
5	H	632	VAL	5.3
1	A	510	GLY	5.2
1	D	408	GLY	5.2
4	F	360	GLU	5.2
1	D	607	GLU	5.2
1	C	500	GLY	5.1
5	H	506	VAL	5.1
3	E	502	ILE	5.1
4	F	634	ILE	5.1
1	C	262	PHE	5.1
5	H	236	LEU	5.1
3	E	504	ALA	5.1
4	F	356	ARG	5.0
3	E	404	GLN	4.9
2	B	409	GLY	4.9
1	C	193	ASN	4.9
1	A	261	GLU	4.9
5	H	705	GLU	4.9
3	E	310	THR	4.9
5	H	696	LEU	4.9
1	A	165	ILE	4.8
2	B	614	GLY	4.8
1	A	164	GLN	4.8
1	D	133	ASN	4.8
1	D	237	ARG	4.8
5	H	608	ARG	4.8
3	E	662	THR	4.8
1	A	409	GLY	4.7

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Mol	Chain	Res	Type	RSRZ
4	F	298	LEU	4.7
1	D	353	GLU	4.7
5	H	612	LEU	4.7
1	A	467	GLN	4.7
4	F	326	GLN	4.7
4	F	363	ALA	4.7
3	E	690	ALA	4.7
4	G	377	LEU	4.6
5	H	504	ALA	4.6
3	E	174	GLU	4.6
1	C	255	LEU	4.6
5	H	505	LEU	4.6
1	A	291	SER	4.6
5	H	510	GLY	4.6
1	C	232	PHE	4.6
4	F	632	VAL	4.6
1	D	361	LEU	4.5
4	G	415	LEU	4.5
3	E	257	THR	4.5
4	G	396	ILE	4.5
4	F	416	VAL	4.5
5	H	535	GLY	4.5
5	H	282	GLY	4.4
1	C	432	PHE	4.4
3	E	689	GLU	4.4
2	B	545	TRP	4.4
2	B	413	SER	4.4
1	D	416	VAL	4.4
1	A	171	GLN	4.4
1	D	287	LEU	4.4
4	G	533	LEU	4.4
4	G	331	MET	4.3
4	F	329	ARG	4.3
4	G	717	ASN	4.3
1	C	659	ALA	4.3
3	E	501	LYS	4.3
1	A	508	GLN	4.3
1	C	441	ALA	4.3
1	A	169	LEU	4.2
4	G	338	LEU	4.2
5	H	662	THR	4.2
1	C	431	LEU	4.2

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Mol	Chain	Res	Type	RSRZ
5	H	331	MET	4.2
5	H	328	ALA	4.1
1	C	415	LEU	4.1
1	A	652	GLU	4.1
4	G	452	ASN	4.1
1	C	397	GLY	4.1
1	A	463	VAL	4.1
5	H	703	TYR	4.1
3	E	399	SER	4.1
5	H	581	VAL	4.1
1	C	667	ALA	4.1
1	C	596	SER	4.1
4	G	339	GLY	4.1
3	E	704	ALA	4.1
4	F	305	LEU	4.0
5	H	381	LEU	4.0
4	F	292	THR	4.0
4	G	268	LEU	4.0
4	F	613	SER	4.0
1	C	438	GLY	3.9
1	D	134	TRP	3.9
4	G	411	LEU	3.9
5	H	472	VAL	3.9
5	H	507	GLY	3.9
1	D	316	LEU	3.9
4	F	333	VAL	3.8
4	G	370	GLU	3.8
4	G	666	ILE	3.8
4	F	592	GLU	3.8
1	C	703	TYR	3.8
5	H	508	GLN	3.8
4	G	328	ALA	3.8
1	A	168	LEU	3.8
2	B	411	LEU	3.8
5	H	238	GLN	3.8
3	E	673	VAL	3.8
1	C	410	ASP	3.8
1	D	451	LEU	3.8
1	C	489	VAL	3.7
5	H	498	PRO	3.7
1	A	589	ASN	3.7
4	G	634	ILE	3.7

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Mol	Chain	Res	Type	RSRZ
1	C	702	LEU	3.7
1	D	138	TRP	3.7
1	C	268	LEU	3.7
5	H	234	SER	3.7
5	H	683	ALA	3.7
1	C	411	LEU	3.7
3	E	396	ILE	3.7
4	G	374	GLY	3.7
2	B	173	VAL	3.6
1	C	710	GLN	3.6
1	D	364	CYS	3.6
1	C	665	VAL	3.6
1	D	415	LEU	3.6
5	H	706	LEU	3.6
1	C	280	VAL	3.6
5	H	689	GLU	3.6
1	C	578	ASP	3.6
3	E	505	LEU	3.6
5	H	292	THR	3.6
5	H	470	GLY	3.6
4	F	551	VAL	3.6
1	D	448	TYR	3.6
1	C	228	ARG	3.6
2	B	612	LEU	3.6
3	E	256	THR	3.6
5	H	494	THR	3.6
2	B	143	PRO	3.5
5	H	509	SER	3.5
4	F	288	SER	3.5
5	H	372	GLY	3.5
5	H	172	LEU	3.5
3	E	171	GLN	3.5
1	D	613	SER	3.5
2	B	544	SER	3.5
3	E	706	LEU	3.5
2	B	450	ALA	3.5
2	B	452	ASN	3.4
5	H	377	LEU	3.4
1	C	276	SER	3.4
2	B	416	VAL	3.4
3	E	503	VAL	3.4
3	E	402	ALA	3.4

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Mol	Chain	Res	Type	RSRZ
1	C	598	PRO	3.4
4	F	253	SER	3.4
3	E	309	GLY	3.4
4	G	283	CYS	3.4
4	G	592	GLU	3.4
3	E	489	VAL	3.3
3	E	678	CYS	3.3
1	A	432	PHE	3.3
2	B	520	LEU	3.3
1	C	224	ALA	3.3
4	F	328	ALA	3.3
1	D	279	GLN	3.3
4	G	260	GLN	3.3
1	C	699	LYS	3.3
1	C	261	GLU	3.3
1	D	695	GLU	3.3
1	C	416	VAL	3.3
3	E	676	ALA	3.3
4	F	396	ILE	3.3
1	A	275	ARG	3.2
5	H	329	ARG	3.2
4	G	612	LEU	3.2
1	C	173	VAL	3.2
3	E	631	THR	3.2
4	G	607	GLU	3.2
2	B	451	LEU	3.2
2	B	549	GLN	3.2
1	C	294	LEU	3.2
3	E	693	HIS	3.2
1	D	595	THR	3.2
5	H	684	ASP	3.2
4	F	397	GLY	3.2
4	F	667	ALA	3.2
3	E	398	GLY	3.2
3	E	685	GLY	3.2
5	H	691	GLY	3.2
1	C	394	LEU	3.2
1	C	490	LEU	3.2
4	G	663	VAL	3.2
5	H	680	VAL	3.2
4	F	260	GLN	3.2
5	H	327	ILE	3.2

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Mol	Chain	Res	Type	RSRZ
4	F	593	PHE	3.1
1	A	167	LEU	3.1
1	C	414	PHE	3.1
3	E	692	THR	3.1
1	C	440	SER	3.1
5	H	448	TYR	3.1
4	G	412	MET	3.1
5	H	326	GLN	3.1
4	F	415	LEU	3.1
5	H	679	ILE	3.1
1	A	677	HIS	3.1
5	H	256	THR	3.1
2	B	471	SER	3.1
1	C	508	GLN	3.0
5	H	397	GLY	3.0
5	H	579	GLU	3.0
1	C	265	SER	3.0
1	D	191	SER	3.0
4	G	667	ALA	3.0
1	C	272	GLN	3.0
5	H	452	ASN	3.0
1	C	430	VAL	3.0
4	G	595	THR	3.0
4	G	520	LEU	3.0
4	F	636	ASP	3.0
3	E	175	VAL	3.0
1	D	446	PHE	3.0
1	D	305	LEU	3.0
1	D	411	LEU	3.0
2	B	641	ALA	3.0
4	G	202	TYR	3.0
1	D	326	GLN	3.0
1	A	573	LYS	2.9
1	A	300	VAL	2.9
2	B	447	GLU	2.9
3	E	190	GLU	2.9
5	H	667	ALA	2.9
3	E	173	VAL	2.9
3	E	260	GLN	2.9
2	B	533	LEU	2.9
3	E	178	LYS	2.9
1	C	651	GLN	2.9

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Mol	Chain	Res	Type	RSRZ
4	F	331	MET	2.9
5	H	558	PRO	2.9
3	E	401	VAL	2.9
1	A	535	GLY	2.9
4	G	664	LEU	2.9
4	F	434	GLN	2.9
1	C	189	THR	2.9
3	E	306	MET	2.9
4	F	566	MET	2.9
4	G	188	MET	2.9
5	H	620	LEU	2.9
5	H	413	SER	2.8
5	H	589	ASN	2.8
3	E	200	ILE	2.8
4	G	591	HIS	2.8
3	E	244	ASP	2.8
3	E	695	GLU	2.8
5	H	241	THR	2.8
1	C	581	VAL	2.8
3	E	329	ARG	2.8
5	H	488	GLU	2.8
1	C	146	LEU	2.8
1	C	274	LEU	2.8
4	G	561	PHE	2.8
5	H	260	GLN	2.8
4	G	471	SER	2.8
3	E	608	ARG	2.8
4	F	612	LEU	2.8
1	A	714	ALA	2.8
1	C	300	VAL	2.8
1	C	248	THR	2.8
4	F	520	LEU	2.8
4	F	357	TYR	2.8
3	E	667	ALA	2.8
3	E	715	ALA	2.8
5	H	281	ALA	2.8
3	E	649	VAL	2.8
1	C	243	PHE	2.7
1	A	700	GLY	2.7
1	C	670	LEU	2.7
1	C	671	SER	2.7
5	H	575	GLU	2.7

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Mol	Chain	Res	Type	RSRZ
5	H	593	PHE	2.7
4	G	668	HIS	2.7
5	H	711	ALA	2.7
1	C	252	VAL	2.7
1	A	377	LEU	2.7
1	A	697	LEU	2.7
1	A	695	GLU	2.7
1	C	695	GLU	2.7
5	H	261	GLU	2.7
1	D	611	THR	2.7
1	D	667	ALA	2.7
3	E	581	VAL	2.7
3	E	455	ILE	2.7
4	F	607	GLU	2.7
4	G	264	SER	2.7
1	C	245	ALA	2.7
1	C	240	ILE	2.7
2	B	499	PRO	2.7
3	E	243	PHE	2.7
1	C	191	SER	2.7
4	F	659	ALA	2.7
1	A	316	LEU	2.7
1	C	681	VAL	2.7
4	G	503	VAL	2.7
1	C	200	ILE	2.6
5	H	210	PHE	2.6
1	D	358	GLY	2.6
2	B	364	CYS	2.6
4	F	302	THR	2.6
1	C	501	LYS	2.6
2	B	437	ARG	2.6
2	B	370	GLU	2.6
5	H	489	VAL	2.6
5	H	664	LEU	2.6
5	H	627	ILE	2.6
2	B	541	LEU	2.6
5	H	462	CYS	2.6
5	H	668	HIS	2.6
1	A	296	LEU	2.6
2	B	148	LEU	2.6
1	C	621	ALA	2.6
3	E	285	VAL	2.6

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Mol	Chain	Res	Type	RSRZ
5	H	463	VAL	2.6
1	C	662	THR	2.6
1	C	462	CYS	2.6
1	A	374	GLY	2.6
3	E	157	GLY	2.6
1	C	664	LEU	2.6
2	B	546	LEU	2.6
3	E	377	LEU	2.6
3	E	696	LEU	2.6
1	D	325	GLU	2.6
1	D	592	GLU	2.6
5	H	412	MET	2.5
2	B	142	HIS	2.5
1	A	429	SER	2.5
1	A	572	GLY	2.5
4	F	361	LEU	2.5
3	E	684	ASP	2.5
5	H	692	THR	2.5
4	F	703	TYR	2.5
3	E	305	LEU	2.5
4	G	148	LEU	2.5
5	H	671	SER	2.5
5	H	434	GLN	2.5
3	E	293	ARG	2.5
1	C	715	ALA	2.5
1	D	711	ALA	2.5
2	B	375	ILE	2.5
3	E	610	THR	2.5
1	D	194	LEU	2.5
3	E	457	LEU	2.5
4	F	670	LEU	2.5
1	C	253	SER	2.5
4	G	463	VAL	2.5
4	G	472	VAL	2.5
3	E	621	ALA	2.5
3	E	711	ALA	2.5
4	G	410	ASP	2.5
5	H	663	VAL	2.5
5	H	599	GLU	2.5
1	C	292	THR	2.5
1	A	498	PRO	2.5
3	E	500	GLY	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	280	VAL	2.5
5	H	605	VAL	2.5
1	D	359	ALA	2.4
4	G	708	ARG	2.4
4	G	583	THR	2.4
4	F	412	MET	2.4
1	C	190	GLU	2.4
2	B	172	LEU	2.4
5	H	290	LEU	2.4
1	A	278	THR	2.4
3	E	133	ASN	2.4
5	H	610	THR	2.4
3	E	663	VAL	2.4
4	F	337	ALA	2.4
1	D	419	GLN	2.4
4	F	616	GLN	2.4
3	E	493	PHE	2.4
1	D	169	LEU	2.4
4	G	136	LEU	2.4
2	B	407	THR	2.4
2	B	498	PRO	2.4
4	F	602	ASN	2.4
5	H	257	THR	2.4
4	G	333	VAL	2.4
2	B	279	GLN	2.4
3	E	400	LEU	2.4
1	C	259	VAL	2.4
2	B	632	VAL	2.4
4	F	672	THR	2.4
4	G	357	TYR	2.4
4	G	363	ALA	2.4
4	F	311	LEU	2.4
5	H	574	LEU	2.4
1	A	649	VAL	2.4
5	H	554	ILE	2.3
1	C	167	LEU	2.3
1	C	487	PHE	2.3
2	B	538	LEU	2.3
1	D	190	GLU	2.3
4	F	353	GLU	2.3
1	A	292	THR	2.3
2	B	595	THR	2.3

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Mol	Chain	Res	Type	RSRZ
4	G	700	GLY	2.3
5	H	595	THR	2.3
1	C	425	MET	2.3
2	B	468	LEU	2.3
1	A	475	GLN	2.3
5	H	475	GLN	2.3
1	A	506	VAL	2.3
5	H	240	ILE	2.3
5	H	609	GLY	2.3
2	B	644	ALA	2.3
4	F	330	ALA	2.3
1	D	299	MET	2.3
1	A	258	ASP	2.3
5	H	239	ASP	2.3
1	C	247	LYS	2.3
1	C	396	ILE	2.3
5	H	545	TRP	2.3
1	D	413	SER	2.3
2	B	717	ASN	2.3
3	E	716	GLU	2.3
5	H	252	VAL	2.3
3	E	408	GLY	2.3
1	C	631	THR	2.3
4	F	635	LEU	2.3
1	A	472	VAL	2.3
3	E	525	ASP	2.3
4	F	258	ASP	2.3
1	A	488	GLU	2.2
4	G	579	GLU	2.2
1	D	606	GLY	2.2
3	E	612	LEU	2.2
4	G	545	TRP	2.2
1	D	395	PHE	2.2
4	G	293	ARG	2.2
1	A	153	VAL	2.2
2	B	139	GLN	2.2
2	B	463	VAL	2.2
3	E	280	VAL	2.2
3	E	308	VAL	2.2
4	F	280	VAL	2.2
2	B	303	PRO	2.2
1	A	172	LEU	2.2

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Mol	Chain	Res	Type	RSRZ
3	E	167	LEU	2.2
4	G	330	ALA	2.2
4	G	359	ALA	2.2
1	C	595	THR	2.2
5	H	496	THR	2.2
4	G	665	VAL	2.2
1	A	279	GLN	2.2
3	E	162	ASN	2.2
3	E	261	GLU	2.2
1	C	511	GLY	2.2
1	D	612	LEU	2.2
4	G	334	ALA	2.2
4	G	633	LEU	2.2
1	C	597	PHE	2.2
4	G	373	ARG	2.2
5	H	611	THR	2.2
1	C	435	VAL	2.2
1	D	176	VAL	2.2
1	A	466	GLU	2.2
1	D	360	GLU	2.2
2	B	394	LEU	2.2
5	H	654	LEU	2.2
1	D	301	ALA	2.2
1	D	372	GLY	2.2
5	H	675	GLY	2.2
5	H	267	LYS	2.2
3	E	661	ARG	2.2
5	H	597	PHE	2.2
1	A	610	THR	2.2
1	D	591	HIS	2.2
4	F	250	GLN	2.2
5	H	171	GLN	2.2
5	H	707	ILE	2.2
1	A	230	ALA	2.2
4	F	301	ALA	2.2
1	C	277	CYS	2.2
4	G	347	PHE	2.2
4	G	597	PHE	2.2
5	H	258	ASP	2.2
4	G	677	HIS	2.2
4	G	632	VAL	2.1
1	C	236	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
4	G	146	LEU	2.1
5	H	555	SER	2.1
1	D	356	ARG	2.1
5	H	275	ARG	2.1
4	F	176	VAL	2.1
5	H	163	VAL	2.1
4	G	631	THR	2.1
5	H	502	ILE	2.1
1	A	704	ALA	2.1
1	C	418	SER	2.1
1	C	429	SER	2.1
1	C	587	GLU	2.1
3	E	660	GLY	2.1
1	C	523	PHE	2.1
1	A	578	ASP	2.1
4	G	134	TRP	2.1
5	H	687	VAL	2.1
1	C	194	LEU	2.1
3	E	381	LEU	2.1
2	B	548	GLY	2.1
5	H	166	PRO	2.1
3	E	314	SER	2.1
1	C	246	ASN	2.1
1	A	396	ILE	2.1
1	D	410	ASP	2.1
1	A	295	THR	2.1
4	F	595	THR	2.1
1	C	422	GLN	2.1
4	G	279	GLN	2.1
1	D	409	GLY	2.1
3	E	307	GLY	2.1
1	C	705	GLU	2.1
5	H	557	GLU	2.1
3	E	253	SER	2.1
4	G	646	SER	2.1
4	F	589	ASN	2.1
4	G	133	ASN	2.1
4	F	669	ARG	2.1
5	H	201	LEU	2.1
5	H	546	LEU	2.1
1	A	448	TYR	2.1
1	D	603	THR	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	433	GLY	2.1
1	C	249	GLY	2.1
4	F	580	GLU	2.1
4	G	195	SER	2.0
4	G	316	LEU	2.0
5	H	569	ILE	2.0
3	E	134	TRP	2.0
5	H	677	HIS	2.0
4	G	285	VAL	2.0
4	G	658	SER	2.0
3	E	602	ASN	2.0
4	F	611	THR	2.0
1	C	684	ASP	2.0
2	B	277	CYS	2.0
5	H	624	ARG	2.0
1	A	670	LEU	2.0
1	D	156	LEU	2.0
2	B	497	LEU	2.0
2	B	706	LEU	2.0
5	H	451	LEU	2.0
5	H	633	LEU	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	YCM	G	478	10/11	0.75	0.16	93,100,118,119	0
1	YCM	A	483	10/11	0.83	0.15	116,122,125,126	0
4	YCM	F	478	10/11	0.84	0.13	93,102,124,124	0
3	YCM	E	483	10/11	0.84	0.10	159,162,171,171	0
1	YCM	C	483	10/11	0.85	0.10	169,172,178,178	0
4	YCM	G	483	10/11	0.86	0.10	105,113,114,114	0
2	YCM	B	461	10/11	0.87	0.11	95,104,116,116	0
1	YCM	D	483	10/11	0.90	0.08	95,99,104,106	0
3	YCM	E	366	10/11	0.90	0.08	101,111,126,129	0
4	YCM	F	483	10/11	0.91	0.08	96,99,105,107	0
2	YCM	B	483	10/11	0.92	0.07	83,85,91,93	0

6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

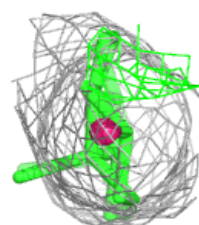
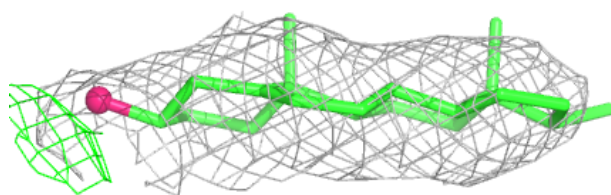
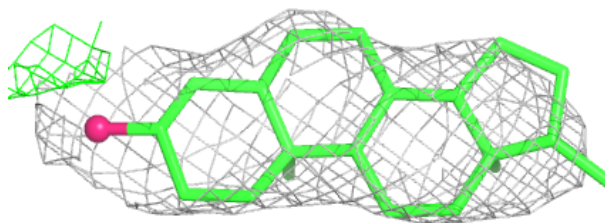
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
6	ADP	E	1001	27/27	0.82	0.12	144,153,160,160	0
6	ADP	H	1001	27/27	0.83	0.09	195,196,201,201	0
8	Y01	G	1003	21/35	0.84	0.18	117,119,120,120	0
7	MG	E	1002	1/1	0.86	0.14	109,109,109,109	0
7	MG	H	1002	1/1	0.87	0.11	99,99,99,99	0
6	ADP	C	1001	27/27	0.88	0.10	151,160,165,166	0
8	Y01	B	1003	35/35	0.91	0.13	109,116,129,130	0
8	Y01	D	1003	26/35	0.91	0.15	110,114,118,118	0
7	MG	D	1002	1/1	0.91	0.20	48,48,48,48	0
7	MG	A	1002	1/1	0.92	0.10	51,51,51,51	0
7	MG	F	1002	1/1	0.92	0.18	52,52,52,52	0
8	Y01	F	1003	35/35	0.92	0.13	76,80,93,95	0
6	ADP	B	1001	27/27	0.92	0.09	92,100,104,104	0
6	ADP	A	1001	27/27	0.93	0.09	94,105,114,114	0
7	MG	C	1002	1/1	0.94	0.08	97,97,97,97	0
8	Y01	E	1003	28/35	0.94	0.11	102,106,116,117	0
8	Y01	A	1003	30/35	0.94	0.12	96,101,115,116	0
6	ADP	G	1001	27/27	0.94	0.07	124,132,136,136	0
7	MG	B	1002	1/1	0.95	0.16	34,34,34,34	0
6	ADP	F	1001	27/27	0.95	0.06	108,113,118,119	0
6	ADP	D	1001	27/27	0.95	0.07	102,106,110,112	0
8	Y01	H	1003	28/35	0.95	0.11	96,100,110,112	0
7	MG	G	1002	1/1	0.98	0.03	75,75,75,75	0

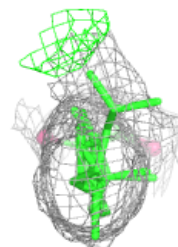
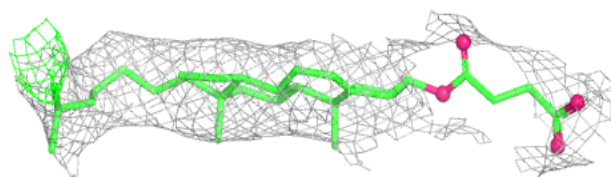
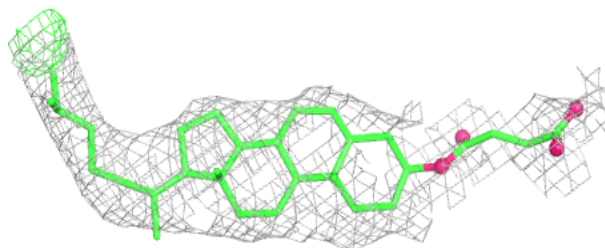
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around Y01 G 1003:

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

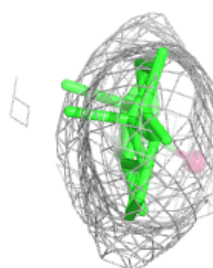
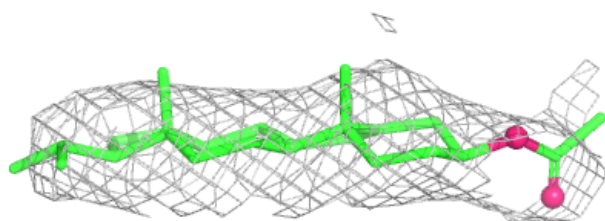
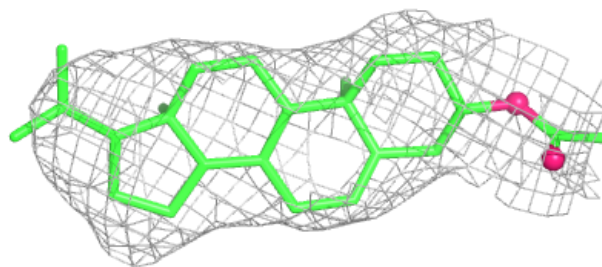
**Electron density around Y01 B 1003:**

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

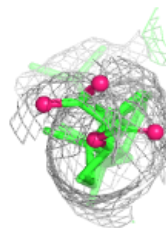
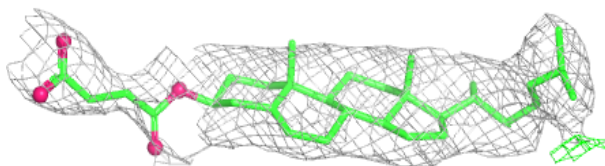
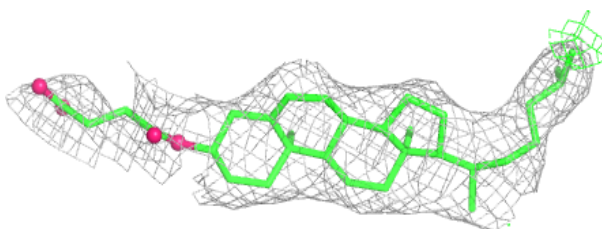


Electron density around Y01 D 1003:

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

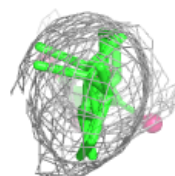
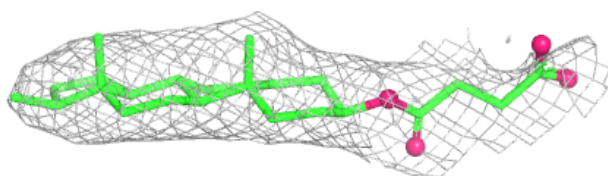
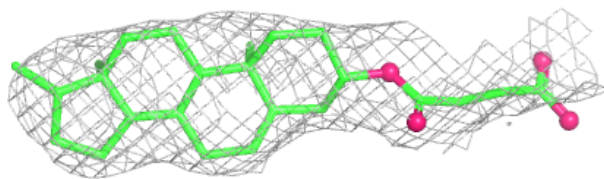
**Electron density around Y01 F 1003:**

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

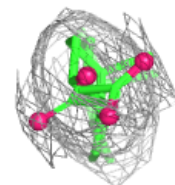
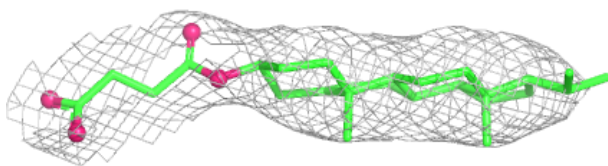
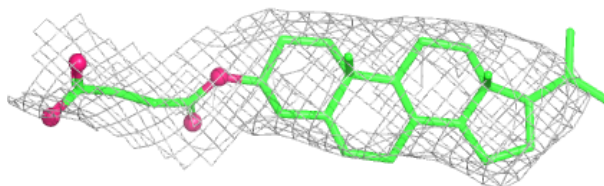


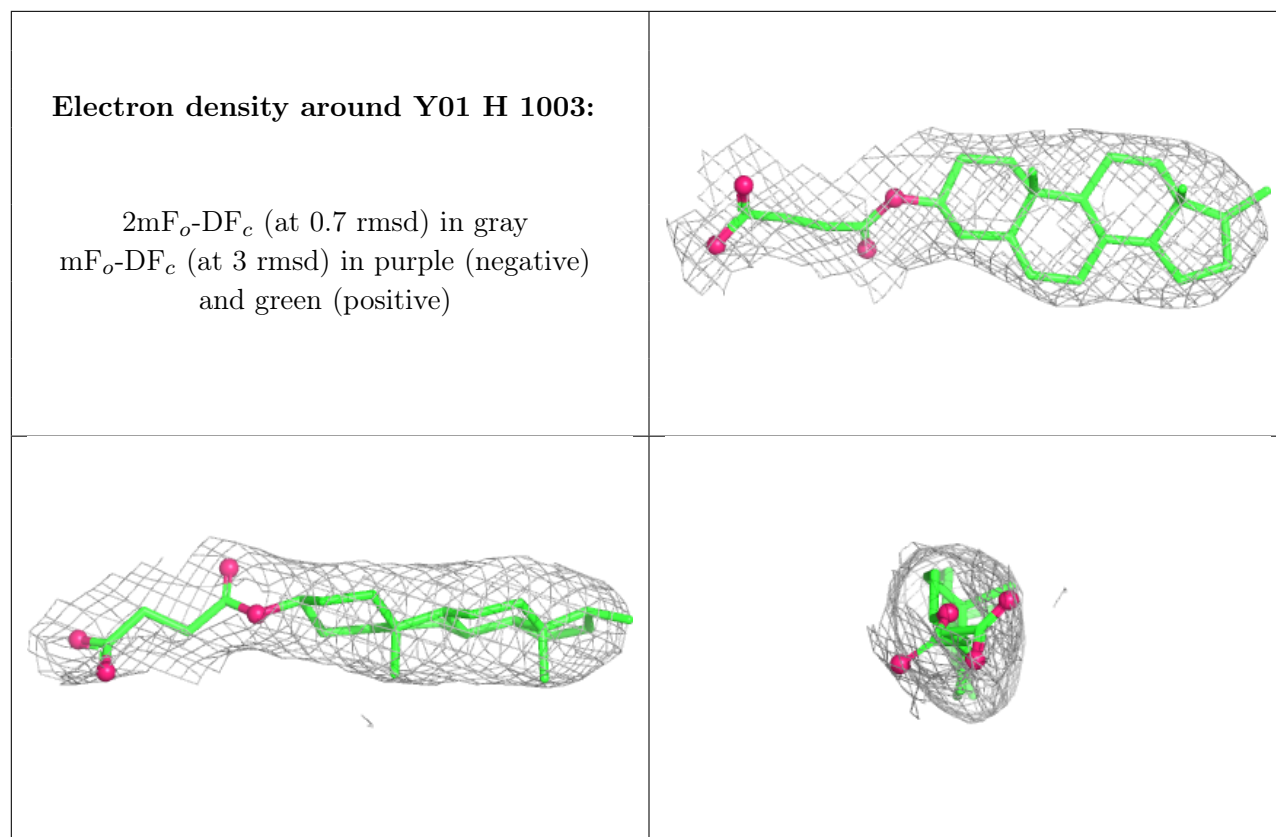
Electron density around Y01 E 1003:

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

**Electron density around Y01 A 1003:**

$2mF_o-DF_c$ (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.