wwPDB EM Validation Summary Report

Oct 26, 2024 – 07:37 PM EDT

PDB ID	:	6E11
EMDB ID	:	EMD-8952
Title	:	PTEX Core Complex in the Resetting (Compact) State
Authors	:	Ho, C.; Lai, M.; Zhou, Z.H.
Deposited on	:	2018-07-08
Resolution	:	4.23 Å(reported)

This is a wwPDB EM Validation Summary 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/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

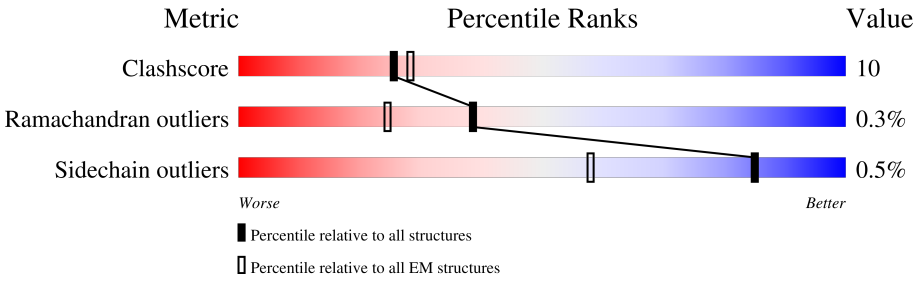
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 4.23 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)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	h	60	50% 78% 22%
1	i	60	30% 75% · 23%
1	j	60	45% 92% 8%
1	k	60	47% 100%
1	l	60	40% 88% 12%
1	m	60	70% 97% ·
1	n	60	28% 60% 40%
2	1	906	46% 60% 19% · 21%

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Mol	Chain	Length	Quality of chain
2	2	906	23% 62% 17% 21%
2	3	906	22% 60% 19% 21%
2	4	906	26% 59% 19% 21%
2	5	906	41% 60% 19% 21%
2	6	906	68% 65% 13% 21%
3	A	287	11% 54% 13% 33%
3	B	287	13% 57% 15% 27%
3	C	287	10% 60% 13% 27%
3	D	287	12% 59% 14% 27%
3	E	287	14% 57% 16% 27%
3	F	287	14% 59% 13% 27%
3	G	287	9% 56% 11% 33%
4	0	6	50% 83% 17%
5	a	993	16% 84%
5	b	993	16% 84%
5	c	993	16% 84%
5	d	993	16% 84%
5	e	993	16% 84%
5	f	993	6% 16% 84%
5	g	993	6% 16% 84%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	AGS	1	1003	-	-	X	-

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 57401 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 Unknown (Claw).

Mol	Chain	Residues	Atoms				AltConf	Trace
1	i	46	Total	C	N	O	0	0
			230	138	46	46		
1	j	55	Total	C	N	O	0	0
			275	165	55	55		
1	k	60	Total	C	N	O	0	0
			300	180	60	60		
1	n	36	Total	C	N	O	0	0
			180	108	36	36		
1	h	47	Total	C	N	O	0	0
			235	141	47	47		
1	l	53	Total	C	N	O	0	0
			265	159	53	53		
1	m	58	Total	C	N	O	0	0
			290	174	58	58		

- Molecule 2 is a protein called Heat shock protein 101.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	717	Total	C	N	O	S	0	0
			5752	3687	964	1086	15		
2	2	717	Total	C	N	O	S	0	0
			5752	3687	964	1086	15		
2	3	717	Total	C	N	O	S	0	0
			5752	3687	964	1086	15		
2	4	717	Total	C	N	O	S	0	0
			5752	3687	964	1086	15		
2	5	716	Total	C	N	O	S	0	0
			5744	3681	963	1085	15		
2	6	716	Total	C	N	O	S	0	0
			5744	3681	963	1085	15		

- Molecule 3 is a protein called Exported protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	209	Total	C	N	O	S	0	0
			1715	1107	293	309	6		
3	D	209	Total	C	N	O	S	0	0
			1715	1107	293	309	6		
3	E	210	Total	C	N	O	S	0	0
			1724	1112	294	312	6		
3	B	209	Total	C	N	O	S	0	0
			1715	1107	293	309	6		
3	A	191	Total	C	N	O	S	0	0
			1571	1019	271	275	6		
3	G	191	Total	C	N	O	S	0	0
			1571	1019	271	275	6		
3	F	209	Total	C	N	O	S	0	0
			1715	1107	293	309	6		

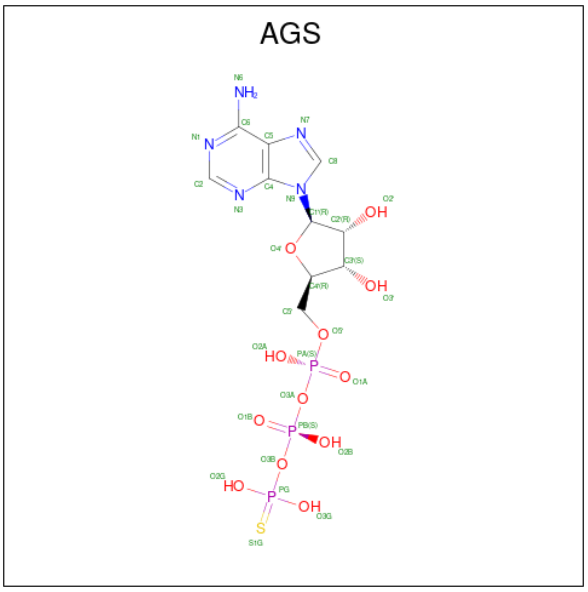
- Molecule 4 is a protein called Endogenous cargo polypeptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	0	6	Total	C	N	O	0	0
			30	18	6	6		

- Molecule 5 is a protein called Translocon component PTEX150.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	d	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		
5	c	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		
5	b	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		
5	a	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		
5	g	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		
5	f	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		
5	e	156	Total	C	N	O	S	0	0
			1286	809	203	273	1		

- Molecule 6 is PHOSPHOTHIOPHOSPHORIC ACID-ADENYLATE ESTER (three-letter code: AGS) (formula: $C_{10}H_{16}N_5O_{12}P_3S$).



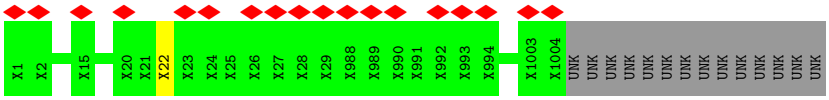
Mol	Chain	Residues	Atoms						AltConf
6	1	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	1	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	1	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	2	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	3	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	3	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	4	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	4	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	5	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	5	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	6	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
6	6	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	

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 atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

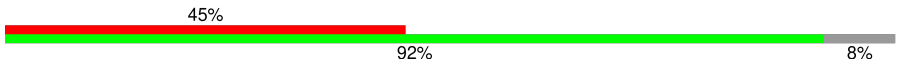
• Molecule 1: Unknown (Claw)

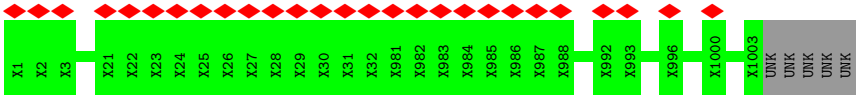
Chain i:



• Molecule 1: Unknown (Claw)

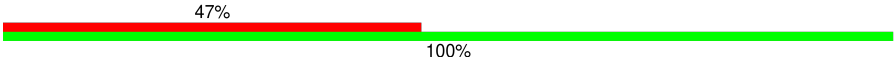
Chain j:

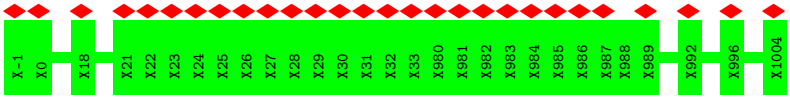




• Molecule 1: Unknown (Claw)

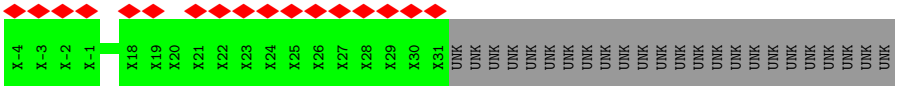
Chain k:





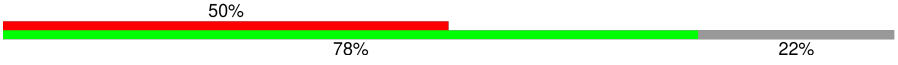
• Molecule 1: Unknown (Claw)

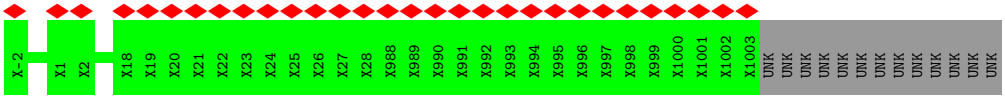
Chain n:



• Molecule 1: Unknown (Claw)

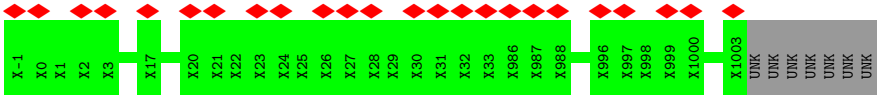
Chain h:





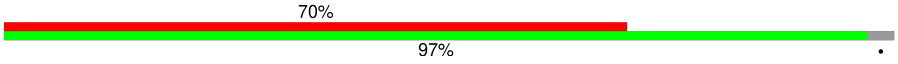
• Molecule 1: Unknown (Claw)

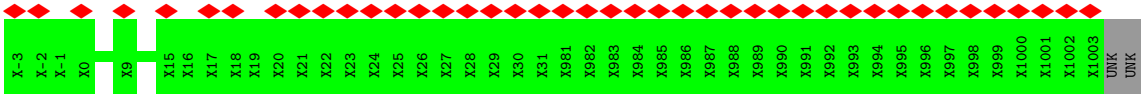
Chain l:



• Molecule 1: Unknown (Claw)

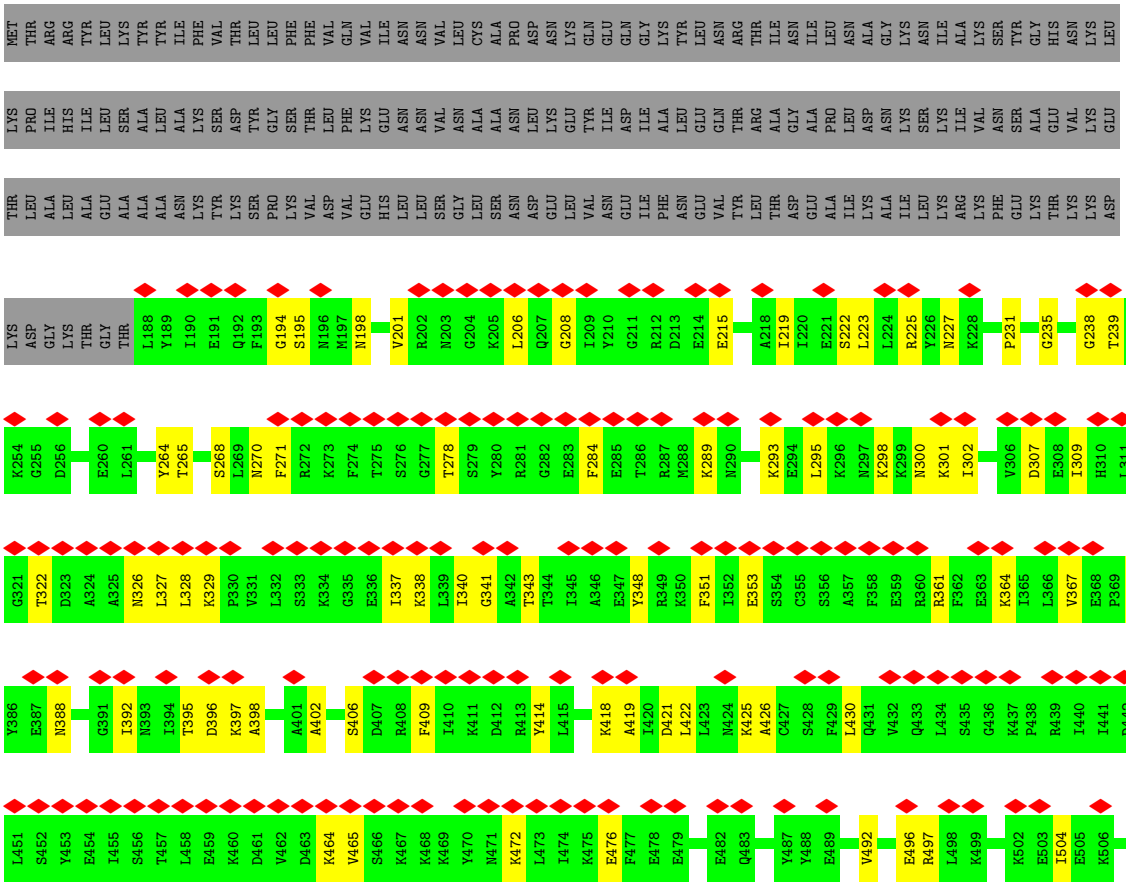
Chain m:

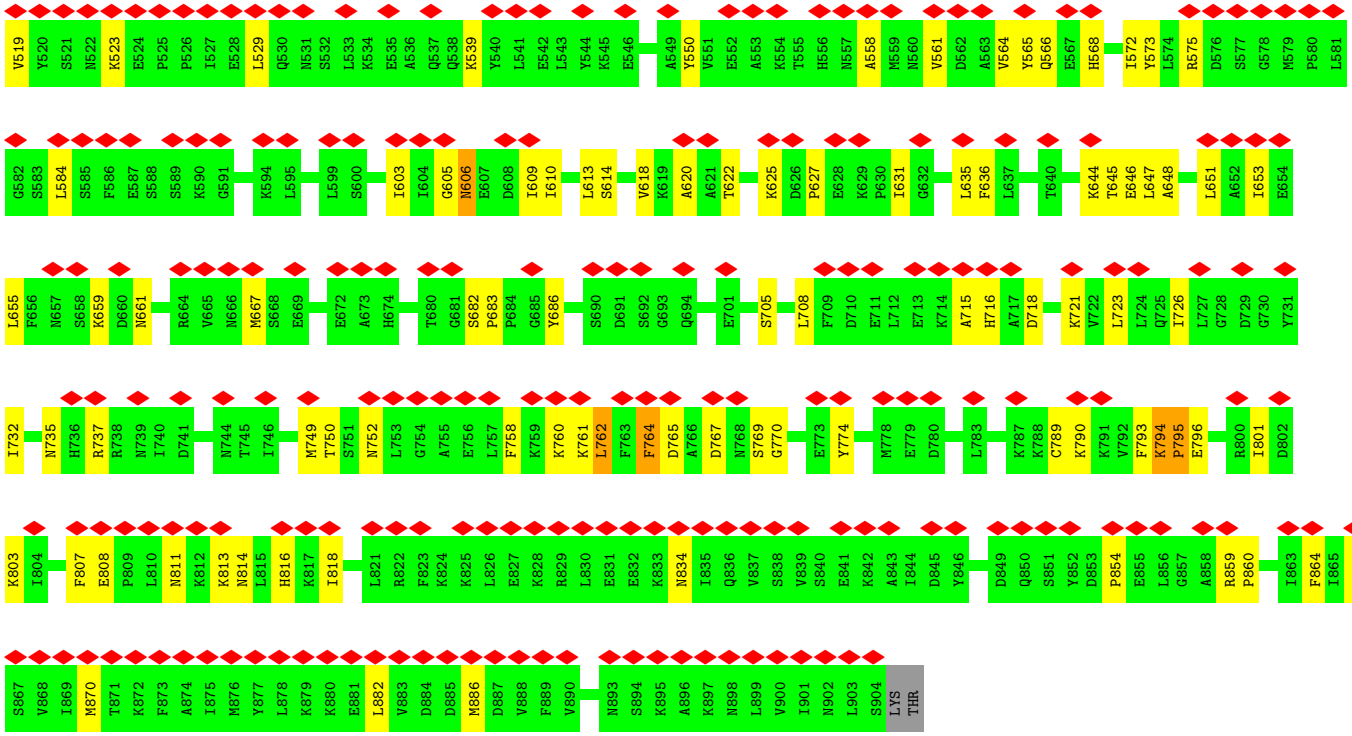




• Molecule 2: Heat shock protein 101

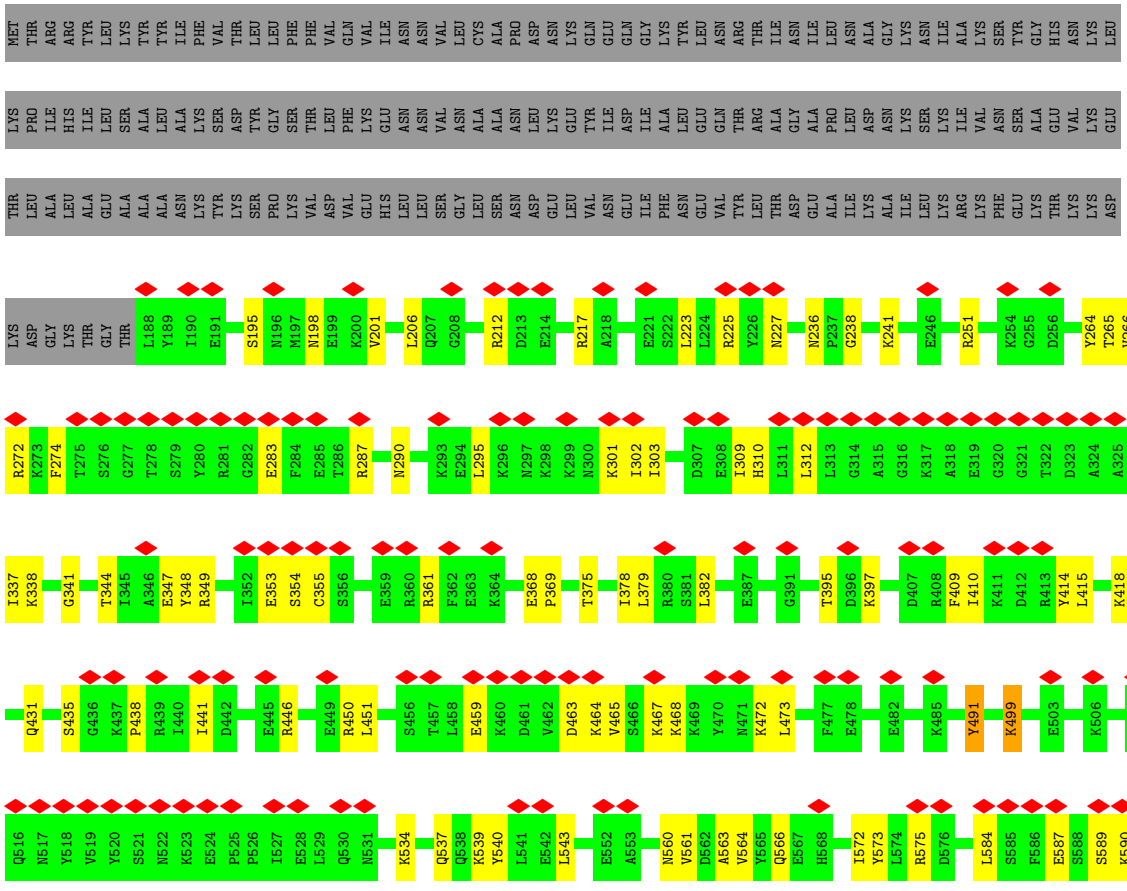
Chain 1:

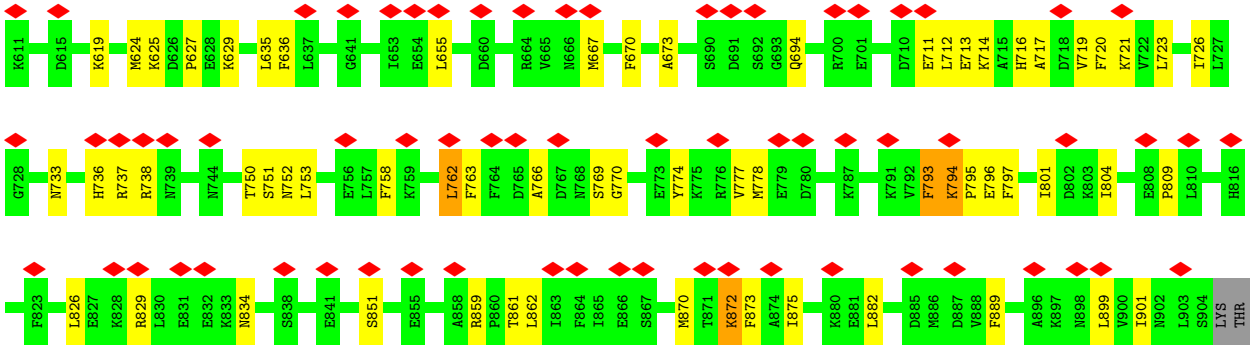




• Molecule 2: Heat shock protein 101

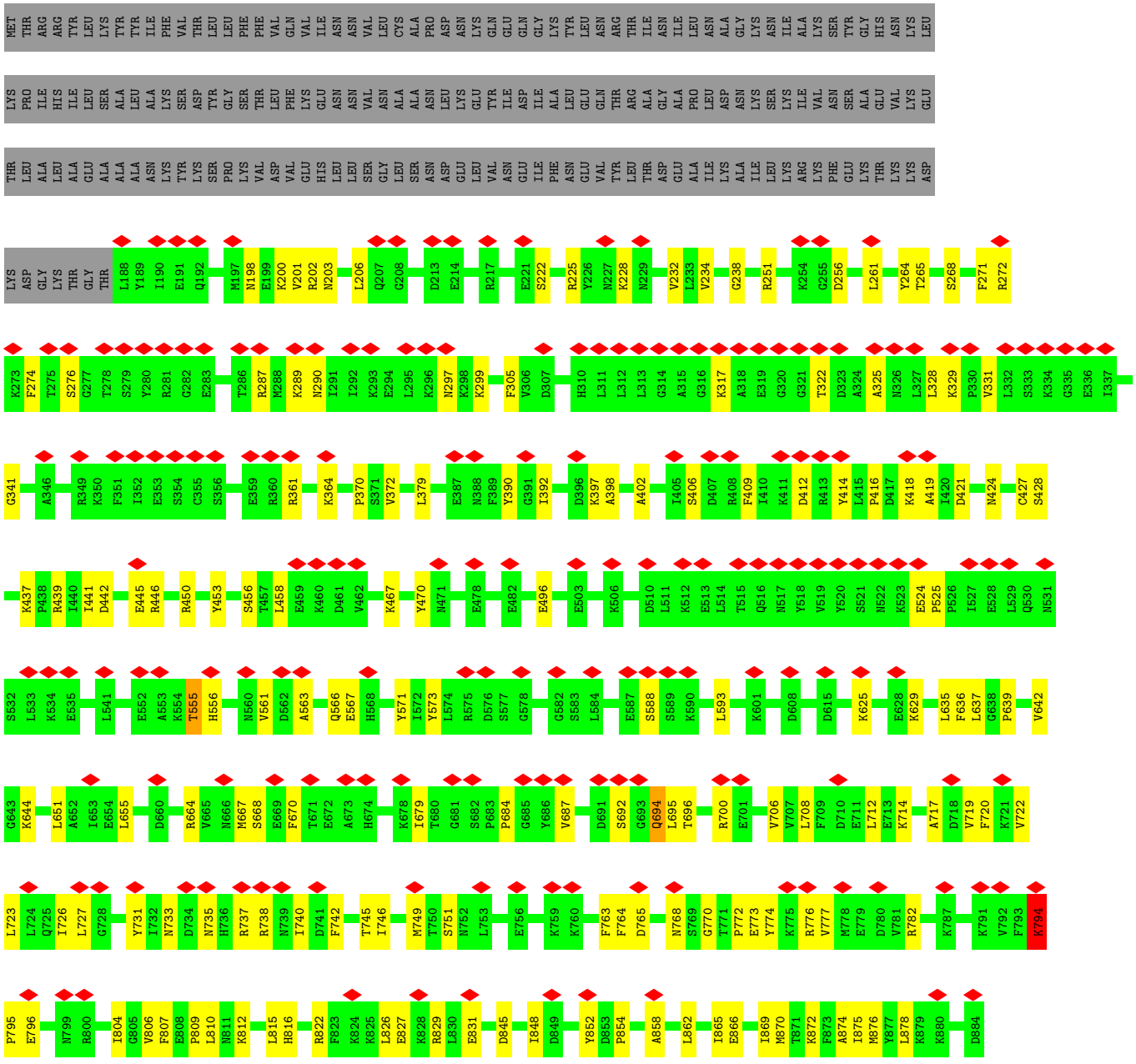
Chain 2:

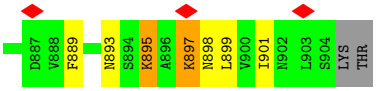




• Molecule 2: Heat shock protein 101

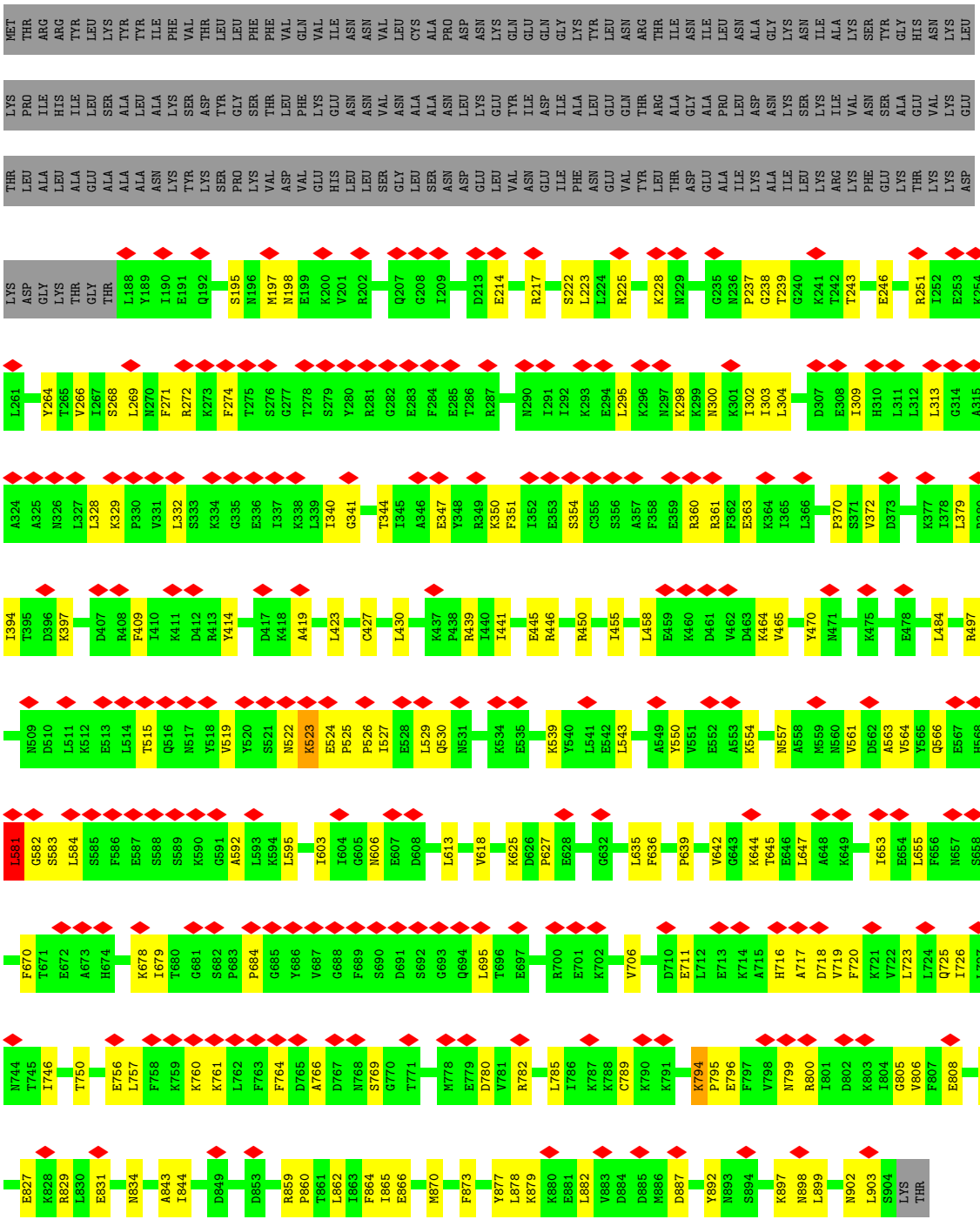
Chain 3:





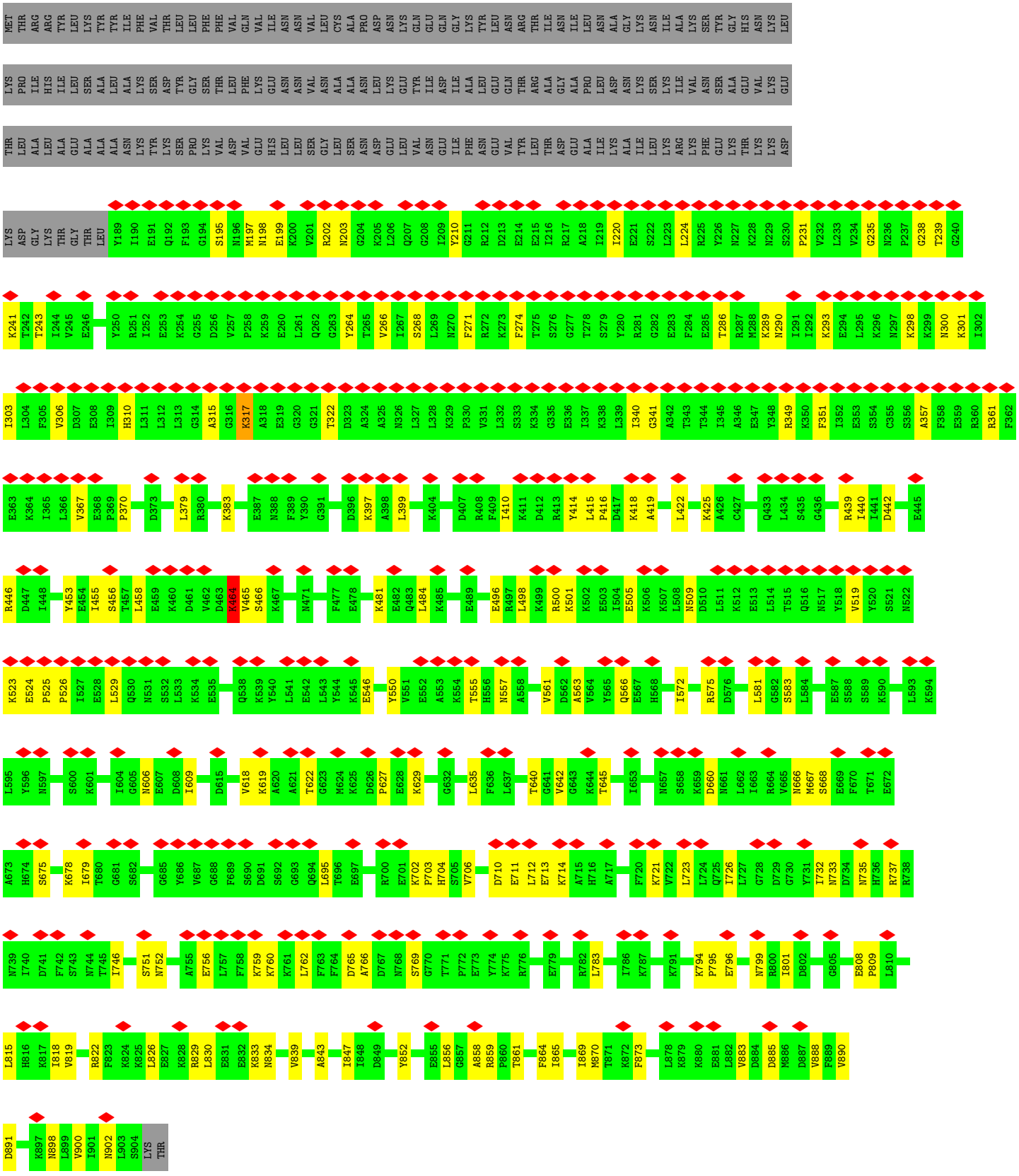
• Molecule 2: Heat shock protein 101

Chain 4:



• Molecule 2: Heat shock protein 101

Chain 5:



- Molecule 2: Heat shock protein 101

Chain 6:

Y852 D853 P854 E855 L856 G857 A858 R859 P860 T861 L862 I865 E866 S867 V868 I869 K872 F873 A874 I875 M876 Y877 L878 K879 K880 E881 L882 V883 D884 D885 M886 D887 V888 F889 V890 D891 Y892 N893 S894 K895 A896 K897 N898 L899 V900 I901 N902 L903 S904 LYS THR

- Molecule 3: Exported protein 2

Chain C: 10% 60% 13% 27%

MET LYS VAL SER TYR ILE PHE SER PHE PHE LEU LEU PHE PHE VAL TYR LYS ASN THR ASN THR VAL VAL CYS ASP ASN G27 Y28 G29 D30 L31 A32 A36 L37 I41 K42 D43 D51 E54 S81 W84 W85 R90 E91 I92 V93 G94 D95 N96 T97 I98 K101

T102 E103 E108 I109 W110 T114 I115 A116 N120 L130 L131 F132 L133 I136 E139 C140 R141 N142 N143 R149 Q150 D151 P152 S153 L154 A157 K158 I159 D160 Y168 W171 E174 P175 P191 P195 E212 K213 M217 E218 S219 K220 K221 N222 I223 E224

S225 Y228 E229 F230 D231 V232 D233 S234 S235 GLU THR ASP SER THR LYS ASP ASP GLY LYS PRO ASP ASP ASP ASP ASP ASP ASP ASP ASN PHE ASP ASP ASP ASN PHE ASP ASP ASP THR VAL GLU GLU GLU ASP ALA SER GLY ASP LEU PHE LYS ASN GLU LYS LYS ASP GLU ASN

LYS GLU

- Molecule 3: Exported protein 2

Chain D: 12% 59% 14% 27%

MET LYS VAL SER TYR ILE PHE SER PHE PHE LEU LEU PHE PHE VAL TYR LYS ASN THR ASN THR VAL VAL CYS ASP ASN G27 Y28 G29 D30 L31 A32 A33 T34 S35 A36 L37 I41 K42 D43 P44 I45 I49 K50 D51 I52 Y53 E54 K58 I64 K70 F71 I72 S81

R82 M83 W84 W85 R90 E91 I92 V93 N96 T97 I98 K101 T102 E103 K104 W110 T114 I115 A116 V117 Y118 N119 N120 E126 L133 I136 E139 C140 R141 N142 N143 R149 Q150 D151 P152 S153 L154 A157 K158 I159 D160 Y168 W171 P175 K178

R181 P191 D192 P195 E212 K213 L214 K215 E218 N222 I223 E224 S225 G226 D231 S234 S235 GLU THR ASP SER THR LYS ASP ASP GLY LYS PRO ASP ASP ASP ASP ASP ASP ASP ASP ASN PHE ASP ASP ASP ASN PHE ASP ASP ASP THR VAL GLU GLU GLU

ASP ALA SER GLY ASP LEU PHE LYS ASN GLU LYS LYS ASP GLU ASN LYS GLU

- Molecule 3: Exported protein 2

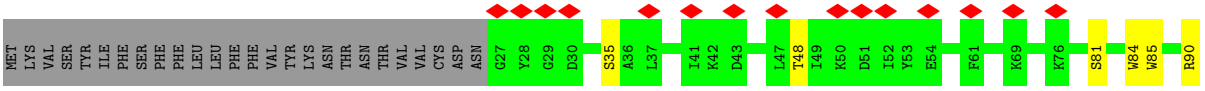
Chain E: 14% 57% 16% 27%

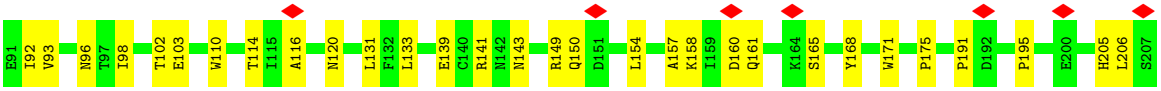
MET LYS VAL SER TYR ILE PHE SER PHE PHE LEU LEU PHE PHE VAL TYR LYS ASN THR ASN THR VAL VAL CYS ASP ASN G27 Y28 G29 D30 L31 A32 A33 T34 L37 D43 P44 I45 S46 L47 K50 D51 E54 S81 W84 W85 R90 E91 I92 V93 G94 D95 N96

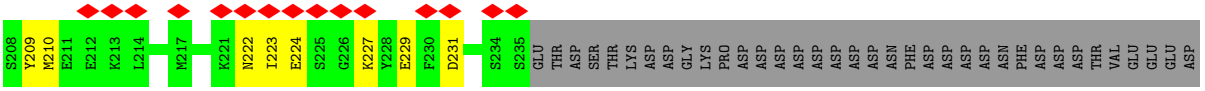
T97 I98 E99 K100 K101 T102 E103 W110 D111 T114 I115 A116 N120 L130 L133 I136 E139 C140 R141 N142 N143 R149 Q150 D151 L154 A157 K158 I159 D160 Q161 S165 Y168 W171 P175 P191 D192 P195 E200 E212 K213 L214 K215

• Molecule 3: Exported protein 2

Chain B:

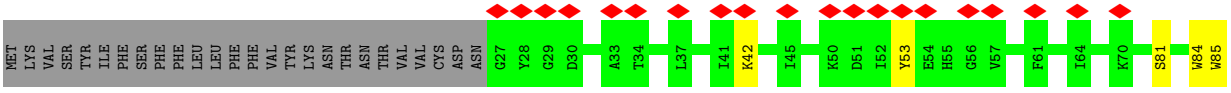


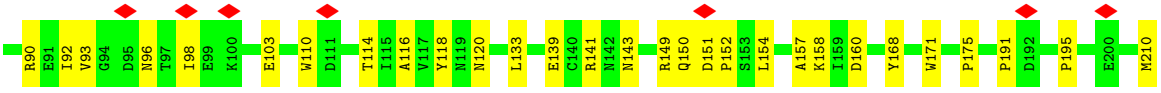


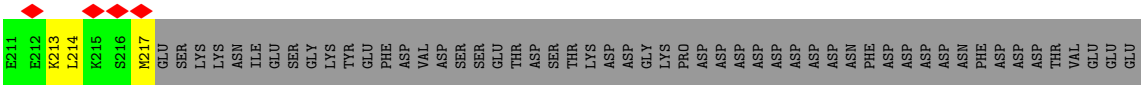


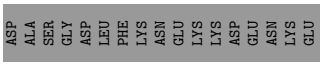
• Molecule 3: Exported protein 2

Chain A:



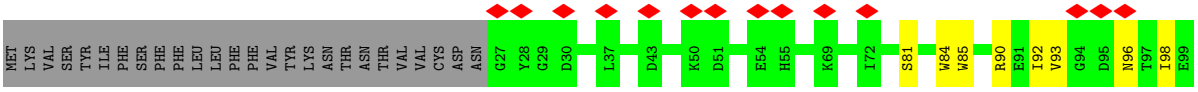


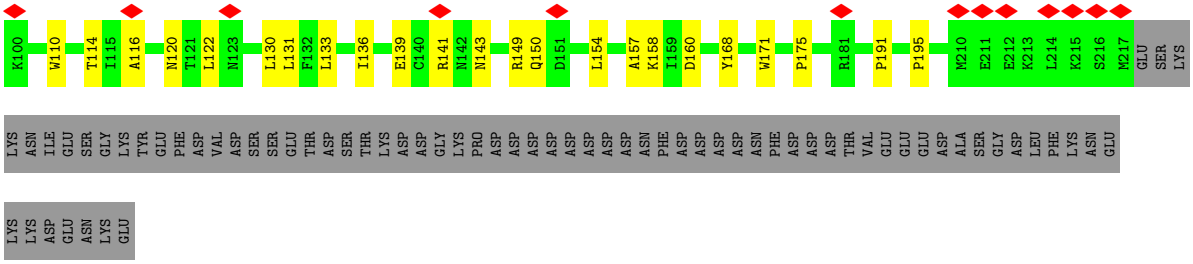




• Molecule 3: Exported protein 2

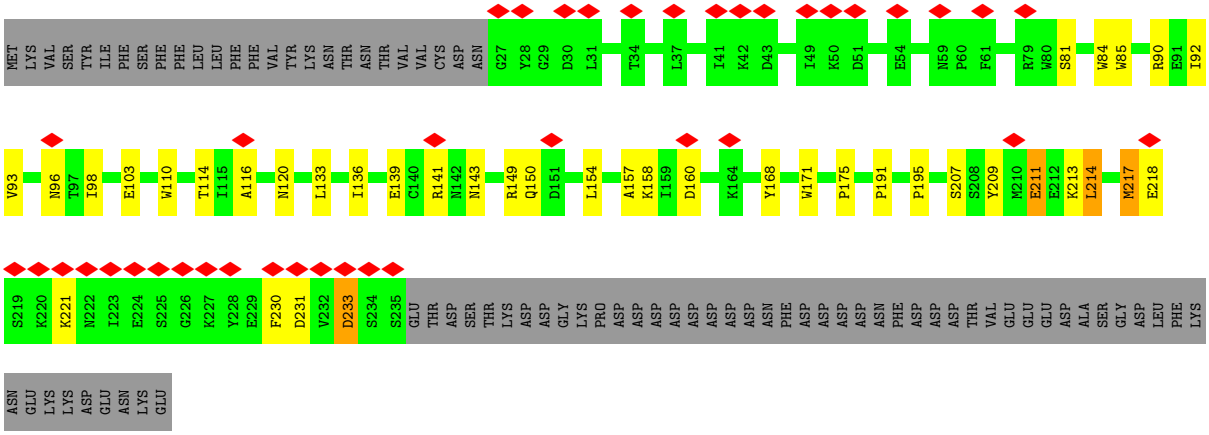
Chain G:





• Molecule 3: Exported protein 2

Chain F:

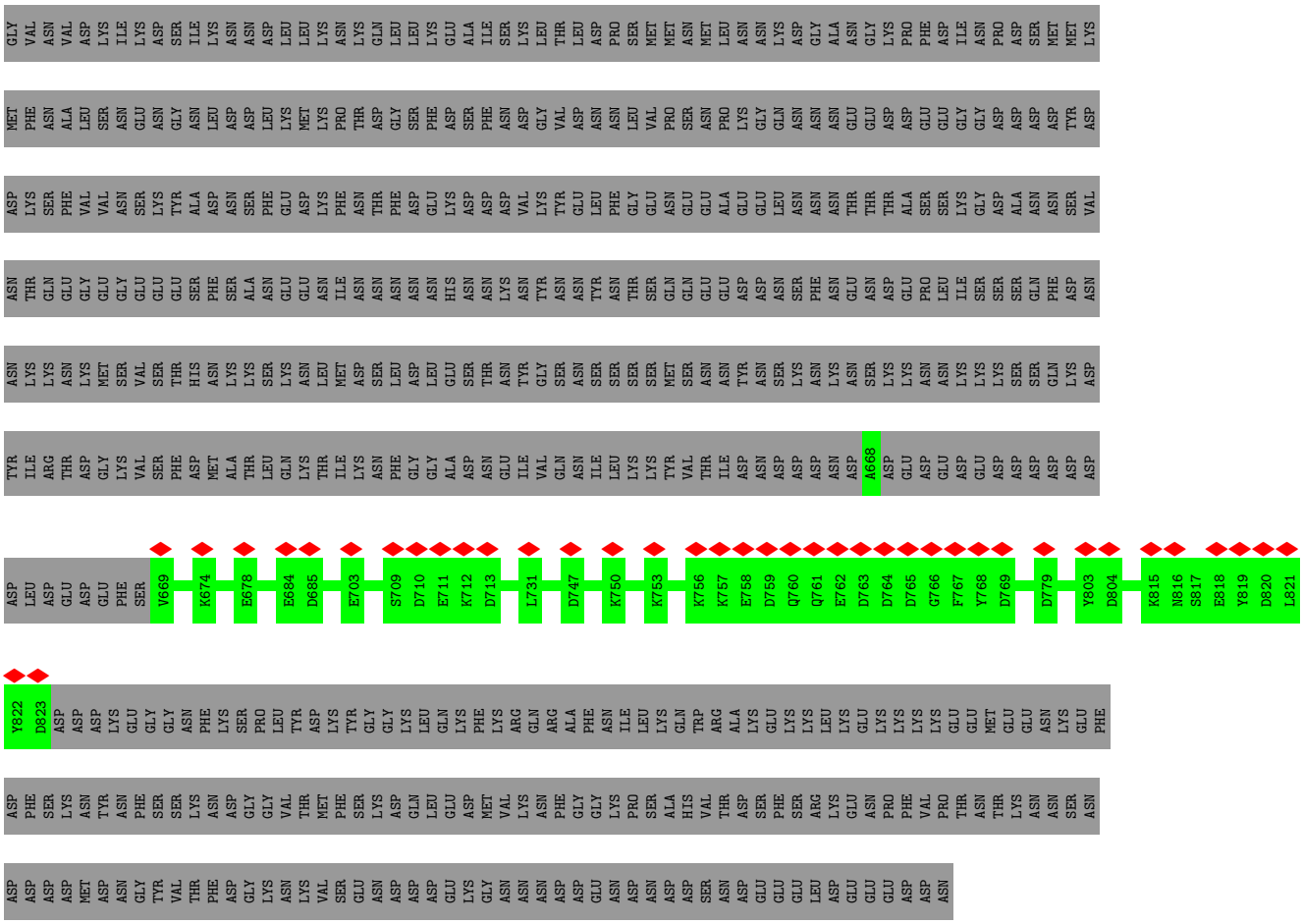


• Molecule 4: Endogenous cargo polypeptide

Chain 0:

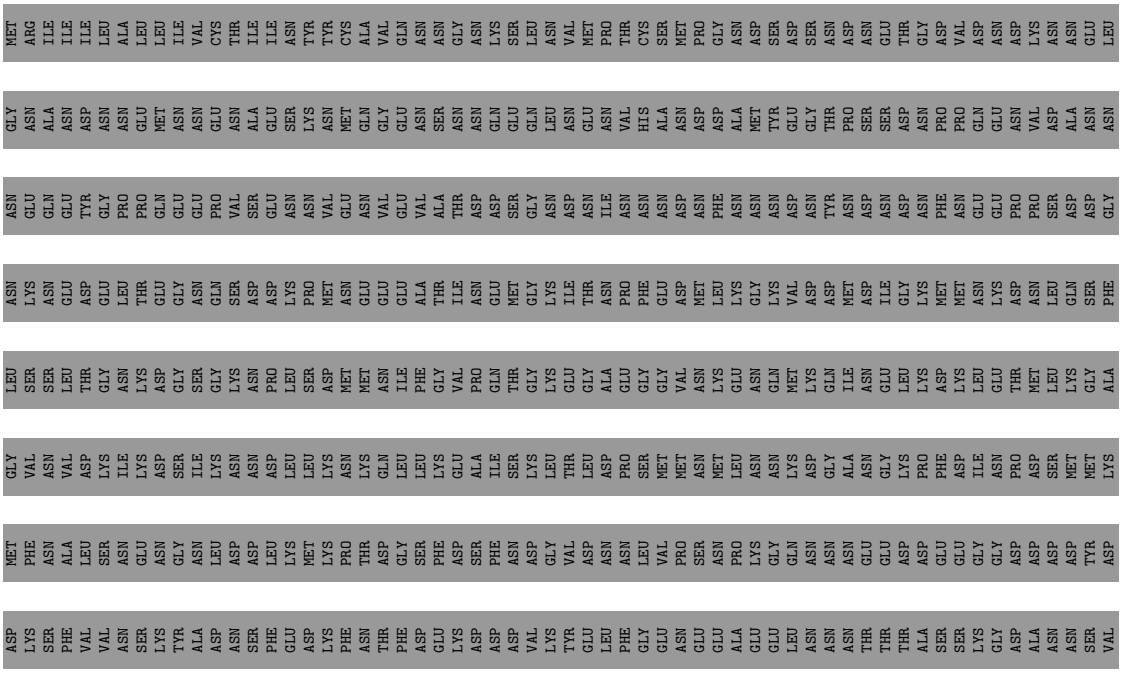
• Molecule 5: Translocon component PTEX150

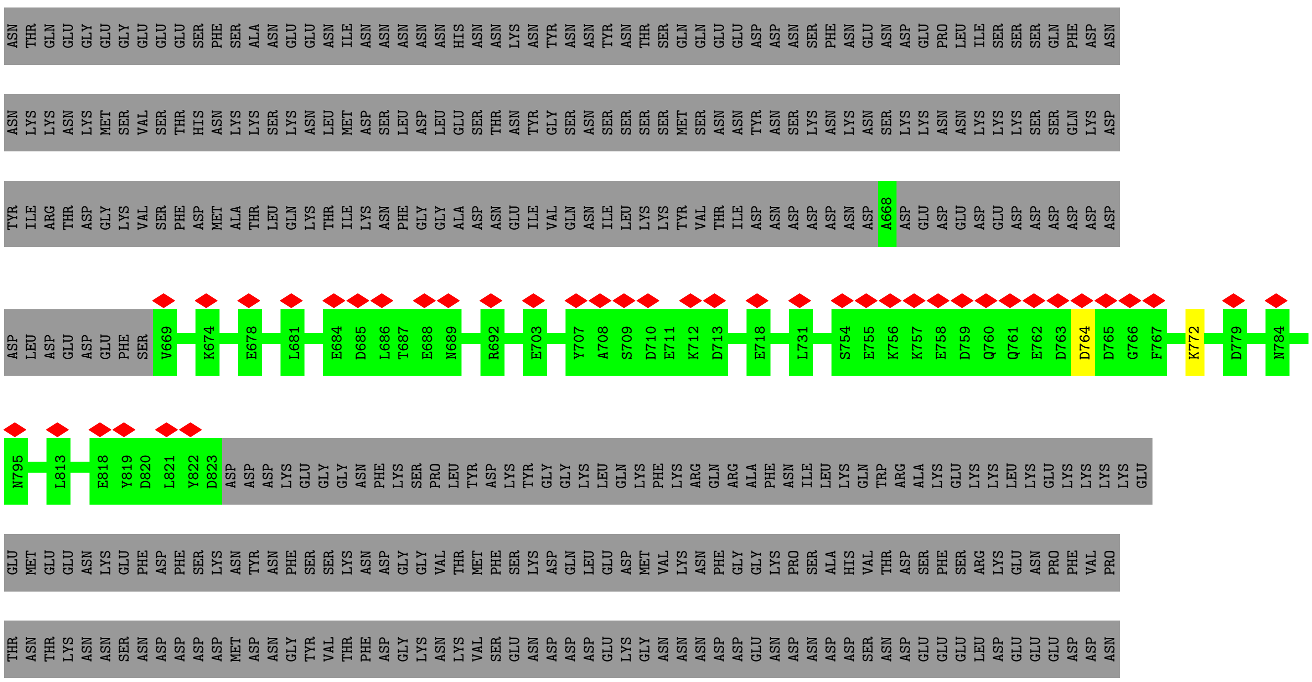
Chain d:



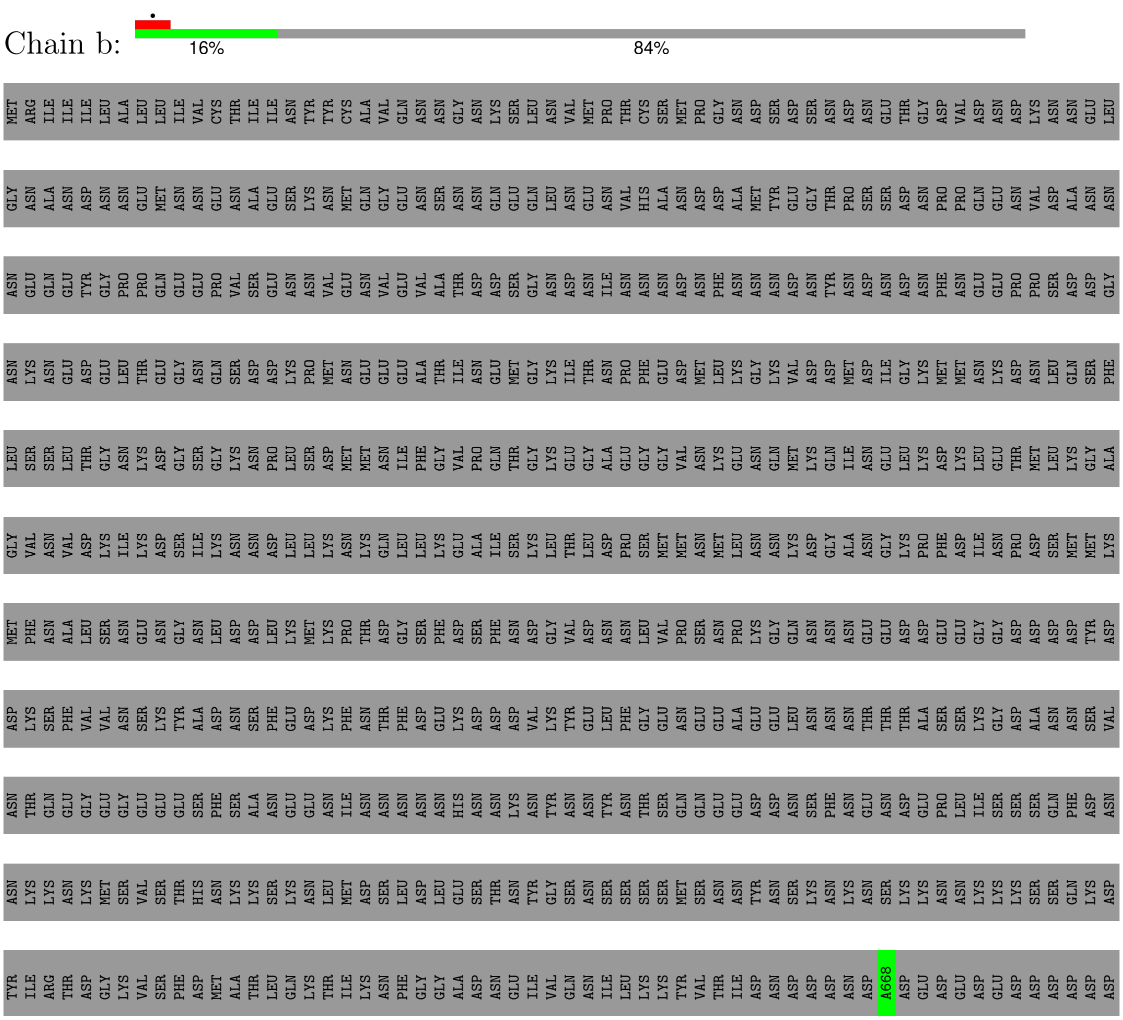
• Molecule 5: Translocon component PTEX150

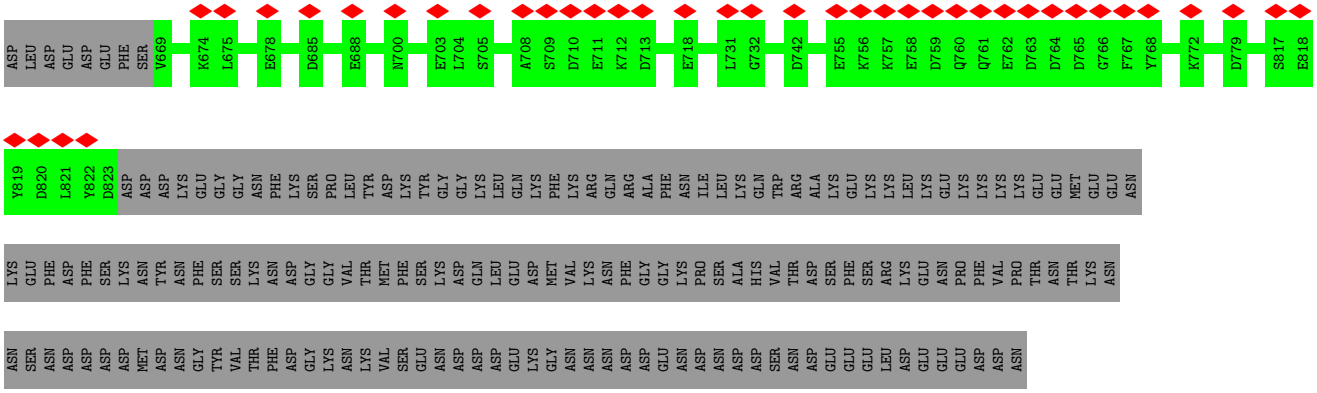
Chain c:





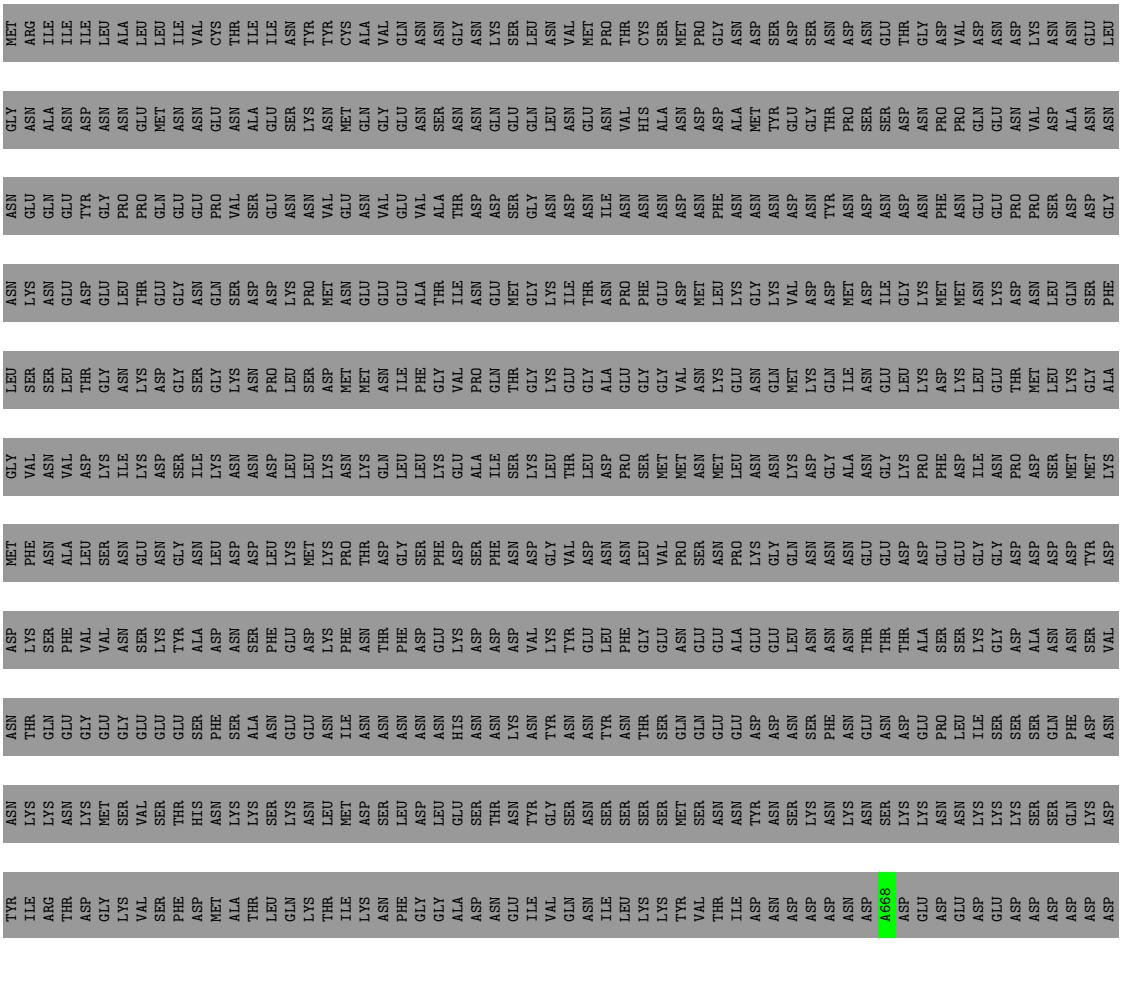
- Molecule 5: Translocon component PTEX150

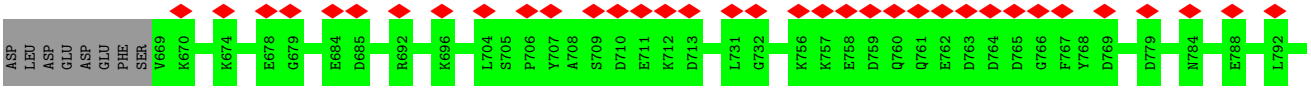


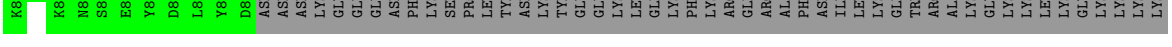


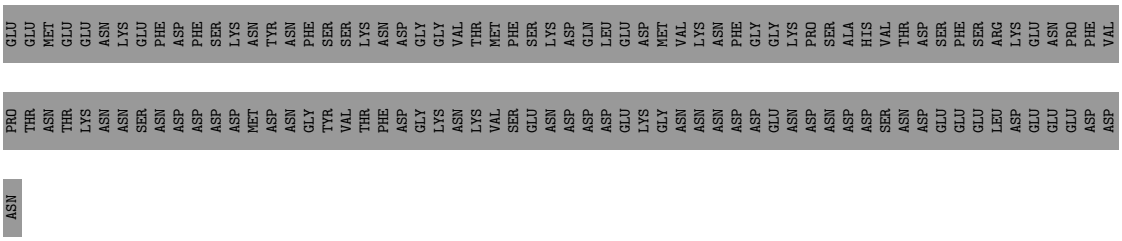
• Molecule 5: Translocon component PTEX150

Chain a:



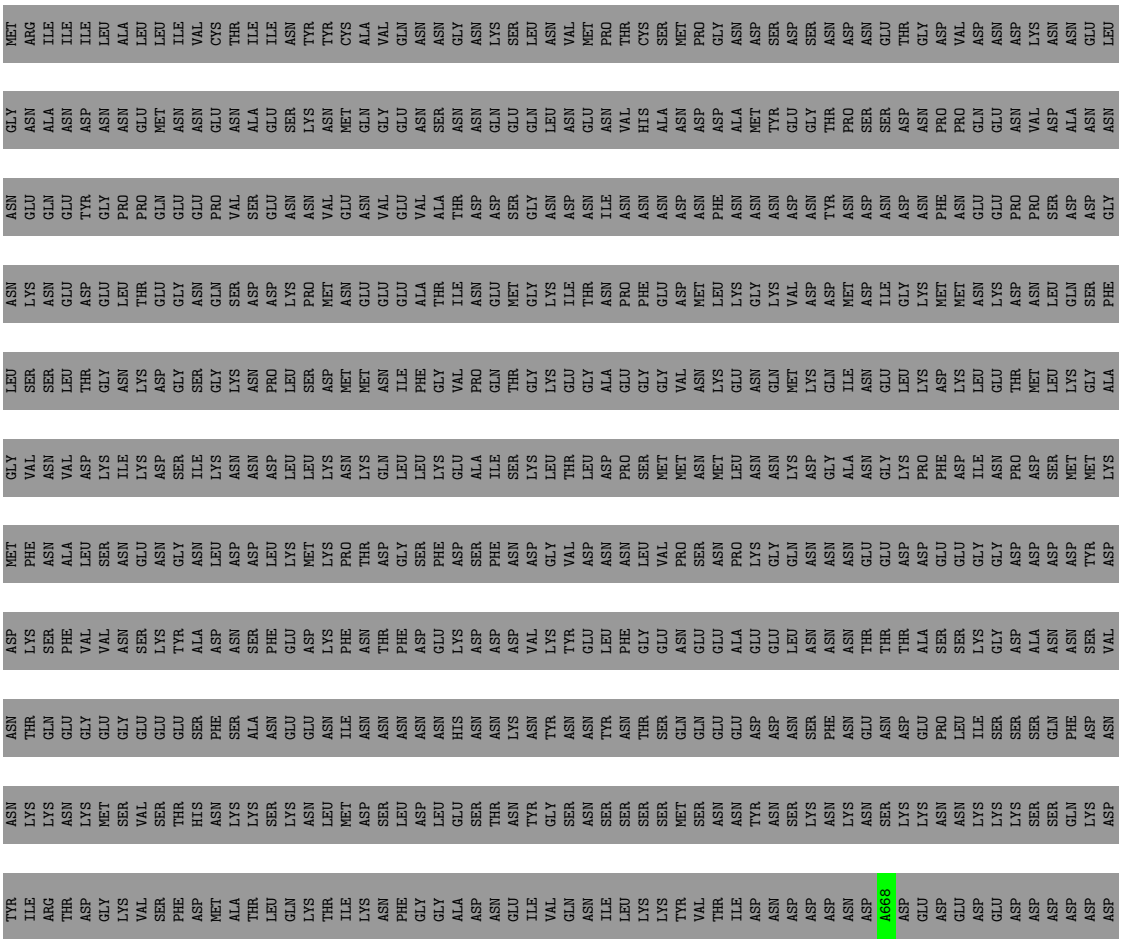


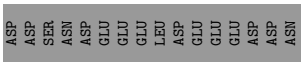




• Molecule 5: Translocon component PTEX150

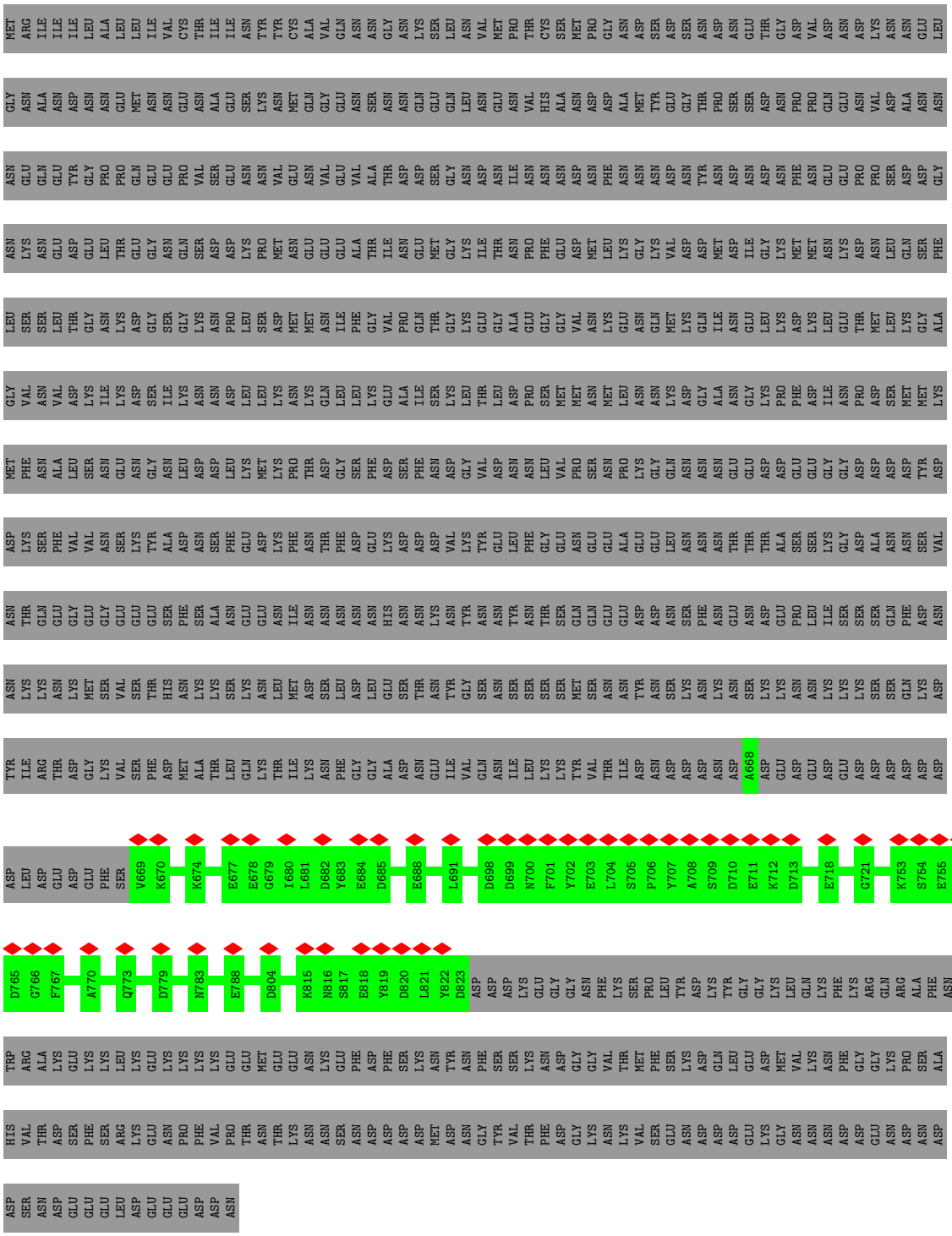
Chain g:





• Molecule 5: Translocon component PTEX150

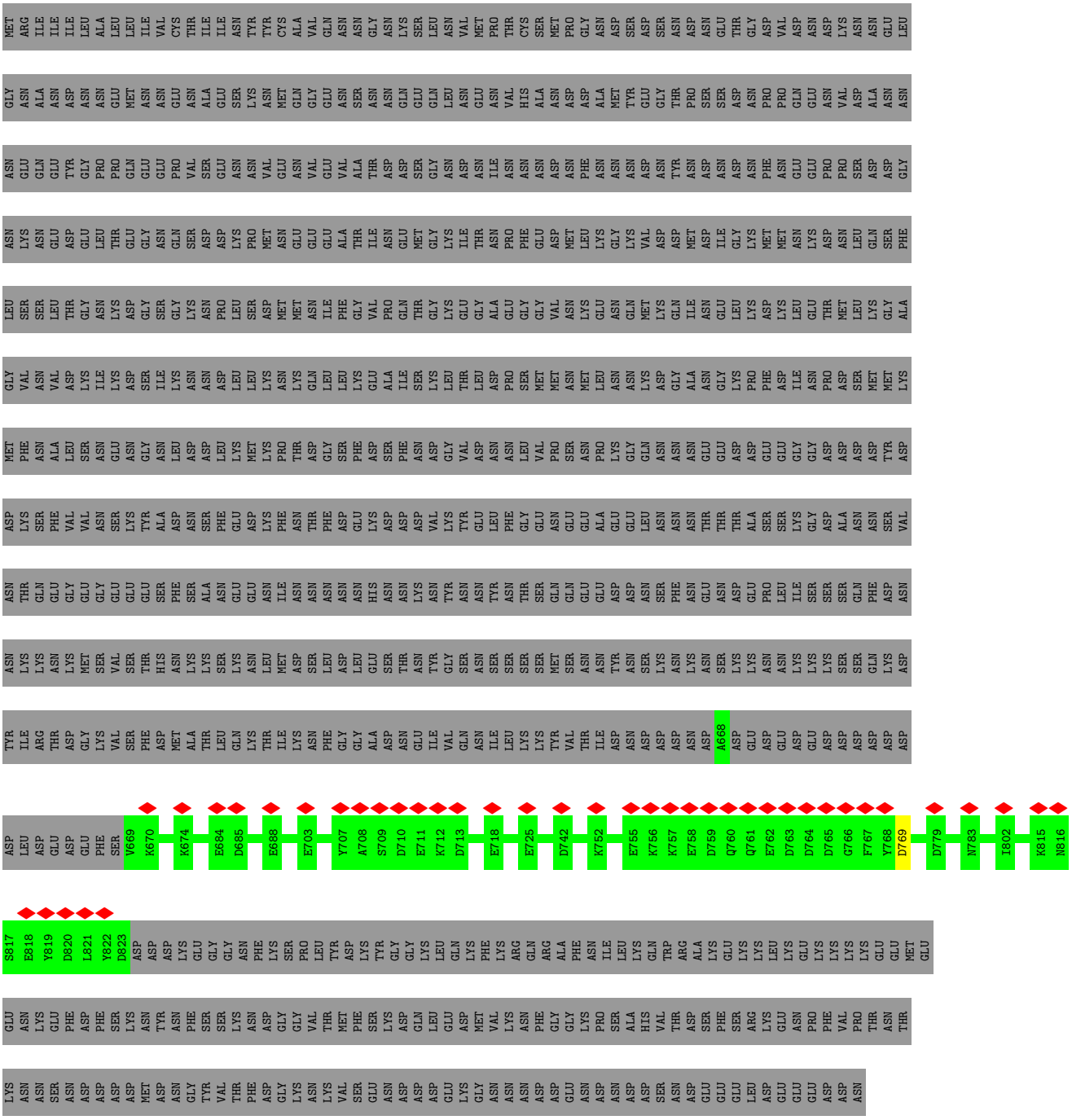
Chain f:



• Molecule 5: Translocon component PTEX150

Chain e:


16%
84%


MET ARG ILE ILE LEU ALA LEU LEU ILE VAL CYS THR ILE ILE ASN TYR TYR CYS ALA VAL GLN ASN ASN GLY ASN LYS SER LEU ASN VAL MET PRO THR CYS SER MET PRO GLY ASN ASP SER ASP SER ASN ASP ASN GLU THR GLY ASP VAL ASP ASN ASP LYS ASN ASN GLU LEU
GLY ASN ALA ASN ASP ASN ASN GLU MET ASN ASN GLU ASN ALA GLU SER LYS ASN MET GLN GLY GLU ASN SER ASN GLN GLU GLN LEU ASN GLU ASN VAL HIS ALA ASN ASP ASP ALA MET TYR GLU GLY THR PRO SER SER ASP ASN PRO PRO GLN GLU ASN VAL ASP ALA ASN ASN
ASN GLU GLN GLU TYR GLY PRO PRO GLN GLU GLU GLU PRO VAL SER GLU ASN VAL GLU ASN VAL GLU VAL ALA THR ASP ASP SER GLY ASN ASP ASN ILE ASN ASN ASN ASP ASN PHE ASN ASN ASN ASP ASN TYR ASN ASP ASN ASP ASN PHE ASN GLU GLU PRO PRO SER ASP GLY
ASN LYS ASN GLU ASP GLU LEU THR GLU GLY ASN GLN SER ASP ASP LYS PRO MET ASN GLU GLU GLU ALA THR ILE ASN GLU MET GLY LYS ILE THR ASN PRO PHE GLU ASP MET LEU LYS GLY LYS VAL ASP ASP MET ASP ILE GLY LYS MET MET ASN ASN LYS ASP ASN LEU GLN SER PHE
LEU SER SER LEU THR GLY ASN LYS ASP GLY SER GLY LYS ASN PRO LEU SER ASP MET ASN MET ILE PHE GLY VAL PRO GLN THR GLY LYS GLU GLY GLY ALA GLU GLY GLY VAL ASN LYS GLU ASN GLN MET LYS GLN ILE ASN GLU LEU LYS ASP LYS LEU GLU LEU THR MET LEU LYS GLY ALA
GLY VAL ASN VAL ASP LYS ILE LYS ASP SER ILE LYS ASN ASN ASP LEU LEU LYS ASN LYS GLN LEU LEU LYS GLU ALA ILE SER LYS LEU THR LEU ASP PRO SER MET MET ASN MET LEU ASN ASN ASN LYS ASP GLY ASN LYS PRO PHE ASP ILE ASN PRO ASP SER MET MET LYS
MET PHE ASN ALA LEU SER ASN GLU ASN GLY ASN LEU ASP ASP LEU LYS MET LYS PRO THR ASP GLY SER PHE ASP SER PHE ASN ASP GLY VAL ASP ASN ASN LEU VAL PRO SER ASN PRO LYS GLY GLN ASN ASN ASN GLU GLU GLU ASP ASP GLU GLY GLY ASP ASP ASP ASP TYR ASP
ASP LYS SER PHE VAL VAL ASN SER LYS TYR ALA ASP ASN SER PHE GLU ASP LYS PHE ASN THR PHE ASP GLU LYS ASP ASP ASP ASP VAL LYS TYR GLU LEU PHE GLY GLU ASN GLU GLU GLU LEU ASN ASN ASN THR THR THR ALA SER SER LYS GLY ASP ALA ASN ASN SER VAL
ASN THR GLN GLU GLY GLU GLU GLU SER PHE SER ALA ASN GLU GLU ASN ILE ASN ASN HIS ASN ASN ASN LYS ASN ASN TYR ASN ASN TYR ASN THR SER GLN GLN GLU GLU SER ASP ASP ASN SER PHE ASN GLU ASN ASP GLU PRO LEU ILE SER SER SER GLN PHE ASP ASN
ASN LYS LYS ASN LYS MET SER VAL SER THR HIS ASN LYS LYS SER LYS ASN LEU MET ASP SER LEU ASP LEU GLU SER THR ASN TYR GLY SER ASN ASN TYR ASN SER LYS LYS ASN ASN SER LYS LYS LYS LYS SER SER GLN PHE ASP ASN
TYR ILE ARG THR ASP GLY LYS VAL SER PHE ASP MET ALA THR LEU GLN LYS THR ILE LYS ASN PHE GLY GLY ALA ASP ASN GLU ILE LEU VAL GLN ASN ILE LEU LYS LYS TYR VAL THR ILE ASP ASN ASP ASP ASP ASN ASP A468 ASP GLU ASP GLU ASP GLU ASP ASP ASP ASP ASP
ASP LEU ASP GLU ASP PHE SER V669 K670 K674 E684 D685 E688 E703 Y707 A708 S709 D710 E711 K712 D713 E718 E725 D742 K752 E755 K756 K757 E758 D759 Q760 Q761 E762 D763 D764 D765 G766 F767 Y768 D769 D779 N783 I802 K815 N816
S817 E818 Y819 D820 L821 Y822 D823 ASP ASP LYS GLU GLY GLY ASN PHE LYS SER PRO LEU TYR ASP LYS TYR GLY GLY LYS LEU GLN LYS PHE LYS ARG GLN ARG ALA PHE ASN ILE LEU LYS GLN TRP ARG ALA LYS GLU LYS LYS LEU LYS GLU LYS LYS LYS LYS GLU GLU MET GLU
GLU ASN LYS GLU PHE ASP PHE SER LYS ASN TYR ASN PHE SER SER LYS ASN ASP GLY GLY VAL THR MET PHE SER LYS ASP GLN LEU GLU GLU ASP MET VAL LYS ASN PHE GLY GLY LYS PRO SER ALA HIS VAL THR ASP SER PHE SER GLU ARG LYS GLU ASN PRO PHE VAL PRO THR ASN THR
LYS ASN ASN SER ASN ASP ASP MET ASP ASN GLY TYR VAL THR PHE ASP GLY LYS ASN LYS VAL SER GLU ASN ASP ASP ASP GLU LYS GLY ASN ASN ASP ASP GLU ASN ASP SER ASN ASP GLU GLU GLU LEU ASP GLU GLU GLU ASP ASN

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	78499	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	130000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.131	Depositor
Minimum map value	-0.070	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.0405	Depositor
Map size (Å)	499.19998, 499.19998, 499.19998	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	Depositor

5 Model quality

5.1 Standard geometry

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

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
2	1	0.34	0/5843	0.57	0/7848
2	2	0.40	0/5843	0.61	0/7848
2	3	0.42	0/5843	0.65	0/7848
2	4	0.39	0/5843	0.61	0/7848
2	5	0.36	0/5835	0.58	1/7837 (0.0%)
2	6	0.32	0/5835	0.59	1/7837 (0.0%)
3	A	0.32	0/1607	0.57	0/2175
3	B	0.35	0/1753	0.60	0/2369
3	C	0.32	0/1753	0.57	0/2369
3	D	0.33	0/1753	0.56	0/2369
3	E	0.33	0/1762	0.59	0/2381
3	F	0.33	0/1753	0.61	0/2369
3	G	0.32	0/1607	0.56	0/2175
5	a	0.29	0/1309	0.52	0/1760
5	b	0.29	0/1309	0.52	0/1760
5	c	0.29	0/1309	0.52	0/1760
5	d	0.29	0/1309	0.52	0/1760
5	e	0.28	0/1309	0.52	0/1760
5	f	0.28	0/1309	0.51	0/1760
5	g	0.29	0/1309	0.53	0/1760
All	All	0.35	0/56193	0.58	2/75593 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	i	0	1
2	1	0	3
2	2	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	3	0	7
2	4	0	4
2	5	0	3
3	A	0	1
3	B	0	3
3	C	0	1
3	D	0	1
3	E	0	2
3	F	0	3
3	G	0	1
All	All	0	33

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	6	765	ASP	N-CA-CB	6.78	122.80	110.60
2	5	317	LYS	O-C-N	-6.19	112.80	122.70

There are no chirality outliers.

5 of 33 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1	464	LYS	Peptide
2	1	758	PHE	Peptide
2	1	794	LYS	Peptide
2	2	793	PHE	Peptide
1	i	22	UNK	Mainchain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	h	235	0	53	0	0
1	i	230	0	50	0	0
1	j	275	0	63	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	k	300	0	67	0	0
1	l	265	0	57	0	0
1	m	290	0	62	0	0
1	n	180	0	38	0	0
2	1	5752	0	5955	130	0
2	2	5752	0	5956	131	0
2	3	5752	0	5957	130	0
2	4	5752	0	5957	127	0
2	5	5744	0	5945	113	0
2	6	5744	0	5946	92	0
3	A	1571	0	1635	25	0
3	B	1715	0	1767	29	0
3	C	1715	0	1767	32	0
3	D	1715	0	1767	42	0
3	E	1724	0	1773	37	0
3	F	1715	0	1767	26	0
3	G	1571	0	1635	19	0
4	0	30	0	9	1	0
5	a	1286	0	1212	0	0
5	b	1286	0	1212	0	0
5	c	1286	0	1212	0	0
5	d	1286	0	1212	0	0
5	e	1286	0	1212	0	0
5	f	1286	0	1212	0	0
5	g	1286	0	1212	0	0
6	1	93	0	36	16	0
6	2	31	0	12	1	0
6	3	62	0	24	2	0
6	4	62	0	24	8	0
6	5	62	0	24	7	0
6	6	62	0	24	4	0
All	All	57401	0	56854	816	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 10.

The worst 5 of 816 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)
2:3:764:PHE:CE1	3:C:213:LYS:HD3	1.97	0.99
2:3:764:PHE:CZ	3:C:213:LYS:CD	2.46	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:3:764:PHE:CZ	3:C:213:LYS:HD3	1.99	0.96
2:1:859:ARG:NH2	6:1:1003:AGS:O3A	1.98	0.95
2:6:437:LYS:HB3	2:6:437:LYS:HZ2	1.29	0.94

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	
2	1	715/906 (79%)	650 (91%)	61 (8%)	4 (1%)	22	59
2	2	715/906 (79%)	644 (90%)	69 (10%)	2 (0%)	37	72
2	3	715/906 (79%)	640 (90%)	71 (10%)	4 (1%)	22	59
2	4	715/906 (79%)	635 (89%)	75 (10%)	5 (1%)	19	56
2	5	714/906 (79%)	648 (91%)	63 (9%)	3 (0%)	30	67
2	6	714/906 (79%)	639 (90%)	71 (10%)	4 (1%)	22	59
3	A	189/287 (66%)	184 (97%)	5 (3%)	0	100	100
3	B	207/287 (72%)	200 (97%)	7 (3%)	0	100	100
3	C	207/287 (72%)	199 (96%)	8 (4%)	0	100	100
3	D	207/287 (72%)	201 (97%)	6 (3%)	0	100	100
3	E	208/287 (72%)	200 (96%)	8 (4%)	0	100	100
3	F	207/287 (72%)	196 (95%)	11 (5%)	0	100	100
3	G	189/287 (66%)	183 (97%)	6 (3%)	0	100	100
5	a	153/993 (15%)	143 (94%)	10 (6%)	0	100	100
5	b	153/993 (15%)	143 (94%)	10 (6%)	0	100	100
5	c	153/993 (15%)	141 (92%)	12 (8%)	0	100	100
5	d	153/993 (15%)	143 (94%)	10 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	e	153/993 (15%)	143 (94%)	10 (6%)	0	100	100
5	f	153/993 (15%)	143 (94%)	10 (6%)	0	100	100
5	g	153/993 (15%)	142 (93%)	11 (7%)	0	100	100
All	All	6773/14396 (47%)	6217 (92%)	534 (8%)	22 (0%)	38	72

5 of 22 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	5	465	VAL
2	6	465	VAL
2	1	606	ASN
2	4	465	VAL
2	1	465	VAL

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 PDB entries followed by that with respect to all EM entries.

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	
2	1	641/804 (80%)	637 (99%)	4 (1%)	84	88
2	2	641/804 (80%)	637 (99%)	4 (1%)	84	88
2	3	641/804 (80%)	640 (100%)	1 (0%)	92	93
2	4	641/804 (80%)	637 (99%)	4 (1%)	84	88
2	5	640/804 (80%)	636 (99%)	4 (1%)	84	88
2	6	640/804 (80%)	635 (99%)	5 (1%)	79	85
3	A	176/268 (66%)	176 (100%)	0	100	100
3	B	193/268 (72%)	193 (100%)	0	100	100
3	C	193/268 (72%)	193 (100%)	0	100	100
3	D	193/268 (72%)	193 (100%)	0	100	100
3	E	194/268 (72%)	194 (100%)	0	100	100
3	F	193/268 (72%)	190 (98%)	3 (2%)	58	74
3	G	176/268 (66%)	176 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	a	143/906 (16%)	143 (100%)	0	100 100
5	b	143/906 (16%)	143 (100%)	0	100 100
5	c	143/906 (16%)	141 (99%)	2 (1%)	62 76
5	d	143/906 (16%)	143 (100%)	0	100 100
5	e	143/906 (16%)	142 (99%)	1 (1%)	81 87
5	f	143/906 (16%)	143 (100%)	0	100 100
5	g	143/906 (16%)	143 (100%)	0	100 100
All	All	6163/13042 (47%)	6135 (100%)	28 (0%)	85 90

5 of 28 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	5	322	THR
5	e	769	ASP
2	6	437	LYS
3	F	211	GLU
2	5	834	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 77 such sidechains are listed below:

Mol	Chain	Res	Type
5	d	786	ASN
5	f	724	ASN
5	b	724	ASN
5	a	776	ASN
5	e	724	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

12 ligands 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	$\#\|Z\| > 2$
6	AGS	3	1002	-	28,33,33	1.11	3 (10%)	31,52,52	1.33	3 (9%)
6	AGS	3	1001	-	28,33,33	1.46	2 (7%)	31,52,52	1.37	3 (9%)
6	AGS	2	1001	-	28,33,33	1.10	3 (10%)	31,52,52	1.33	3 (9%)
6	AGS	5	1002	-	28,33,33	0.98	3 (10%)	31,52,52	1.31	4 (12%)
6	AGS	1	1002	-	28,33,33	1.45	2 (7%)	31,52,52	1.37	3 (9%)
6	AGS	5	1001	-	28,33,33	1.29	3 (10%)	31,52,52	1.29	3 (9%)
6	AGS	1	1001	-	28,33,33	1.44	2 (7%)	31,52,52	1.37	3 (9%)
6	AGS	6	1002	-	28,33,33	1.08	3 (10%)	31,52,52	1.30	4 (12%)
6	AGS	1	1003	-	28,33,33	1.86	2 (7%)	31,52,52	1.38	4 (12%)
6	AGS	4	1001	-	28,33,33	1.46	2 (7%)	31,52,52	1.37	3 (9%)
6	AGS	4	1002	-	28,33,33	1.10	3 (10%)	31,52,52	1.33	3 (9%)
6	AGS	6	1001	-	28,33,33	0.99	2 (7%)	31,52,52	1.30	3 (9%)

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
6	AGS	3	1002	-	-	2/17/38/38	0/3/3/3
6	AGS	3	1001	-	-	2/17/38/38	0/3/3/3
6	AGS	2	1001	-	-	2/17/38/38	0/3/3/3
6	AGS	5	1002	-	-	7/17/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	AGS	1	1002	-	-	2/17/38/38	0/3/3/3
6	AGS	5	1001	-	-	3/17/38/38	0/3/3/3
6	AGS	1	1001	-	-	2/17/38/38	0/3/3/3
6	AGS	6	1002	-	-	7/17/38/38	0/3/3/3
6	AGS	1	1003	-	-	5/17/38/38	0/3/3/3
6	AGS	4	1001	-	-	2/17/38/38	0/3/3/3
6	AGS	4	1002	-	-	2/17/38/38	0/3/3/3
6	AGS	6	1001	-	-	3/17/38/38	0/3/3/3

The worst 5 of 30 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	1	1003	AGS	PG-S1G	7.97	2.08	1.90
6	4	1001	AGS	PA-O3A	-4.87	1.54	1.59
6	3	1001	AGS	PA-O3A	-4.80	1.54	1.59
6	1	1002	AGS	PA-O3A	-4.79	1.54	1.59
6	1	1001	AGS	PA-O3A	-4.74	1.54	1.59

The worst 5 of 39 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	4	1001	AGS	PB-O3B-PG	-5.74	112.18	133.17
6	1	1002	AGS	PB-O3B-PG	-5.73	112.19	133.17
6	1	1001	AGS	PB-O3B-PG	-5.73	112.20	133.17
6	3	1001	AGS	PB-O3B-PG	-5.73	112.21	133.17
6	6	1002	AGS	PB-O3B-PG	-4.96	115.01	133.17

There are no chirality outliers.

5 of 39 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	6	1002	AGS	PB-O3B-PG-O2G
6	6	1002	AGS	C5'-O5'-PA-O1A
6	6	1002	AGS	C5'-O5'-PA-O2A
6	6	1002	AGS	C5'-O5'-PA-O3A
6	6	1002	AGS	C3'-C4'-C5'-O5'

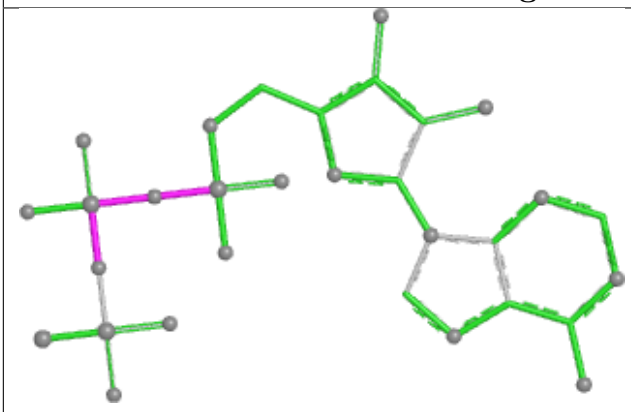
There are no ring outliers.

10 monomers are involved in 38 short contacts:

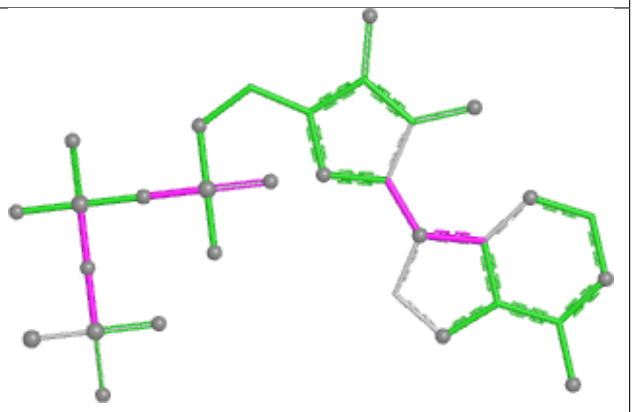
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	3	1002	AGS	2	0
6	2	1001	AGS	1	0
6	5	1002	AGS	2	0
6	5	1001	AGS	5	0
6	1	1001	AGS	2	0
6	6	1002	AGS	3	0
6	1	1003	AGS	14	0
6	4	1001	AGS	2	0
6	4	1002	AGS	6	0
6	6	1001	AGS	1	0

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

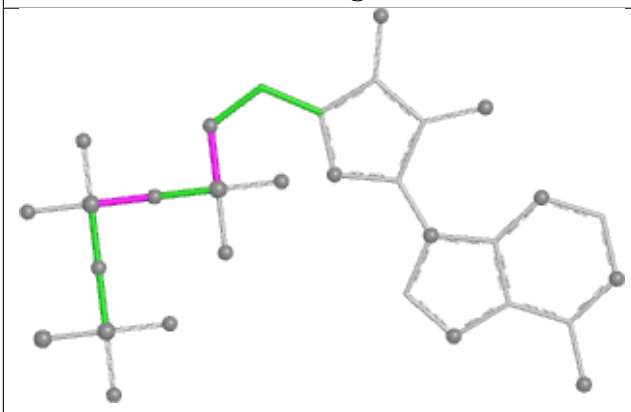
Ligand AGS 3 1002



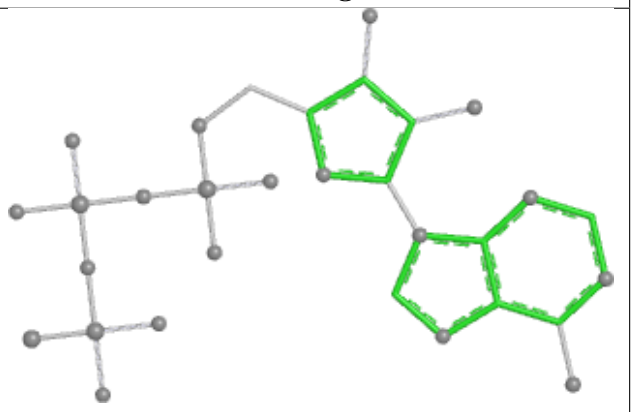
Bond lengths



Bond angles

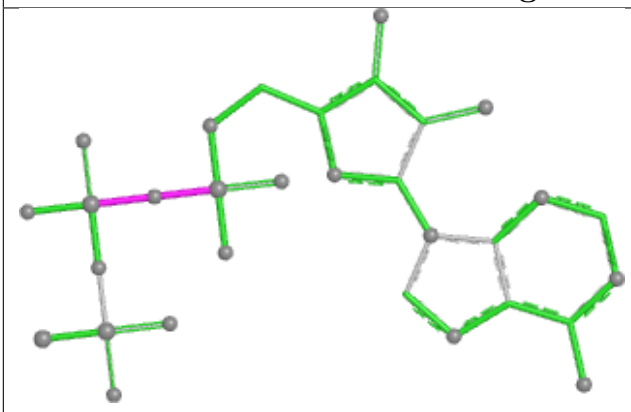


Torsions



Rings

Ligand AGS 3 1001



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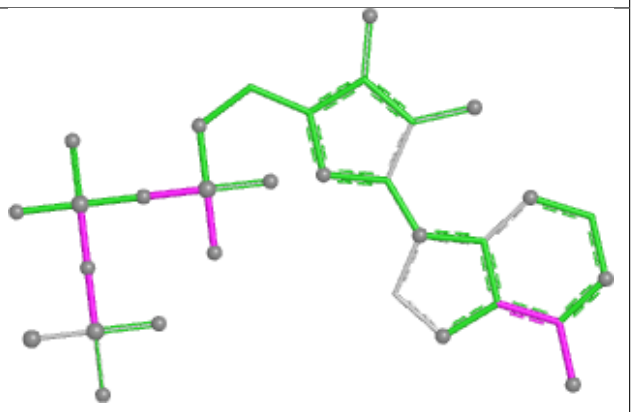
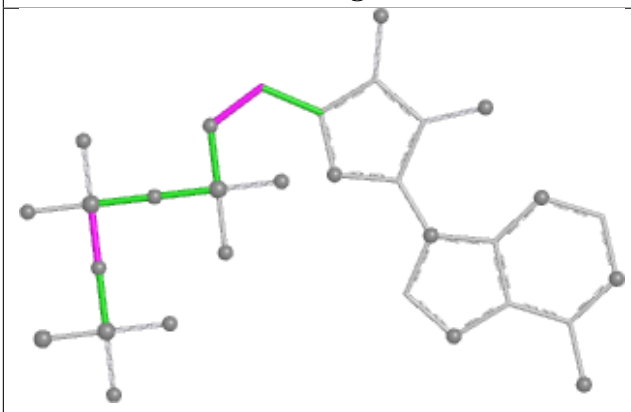
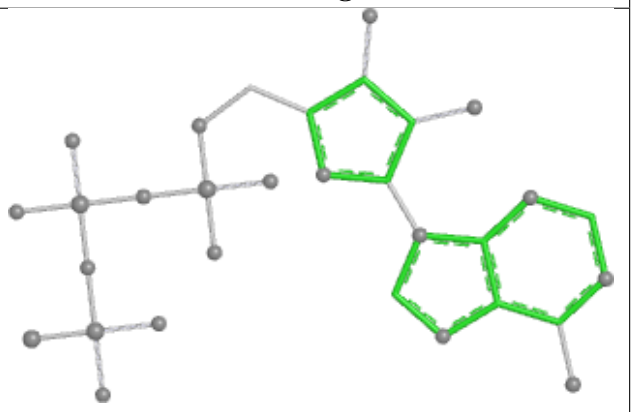


Bond angles

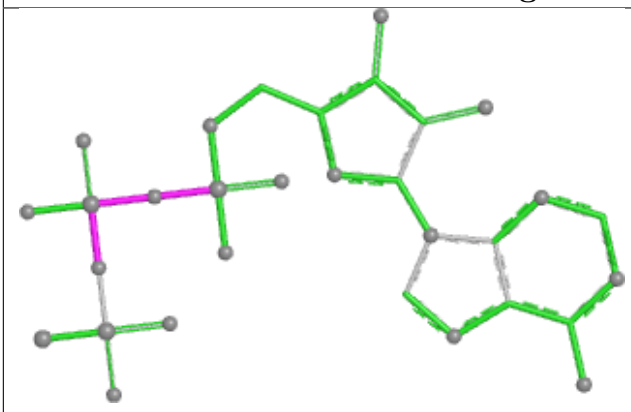


Torsions

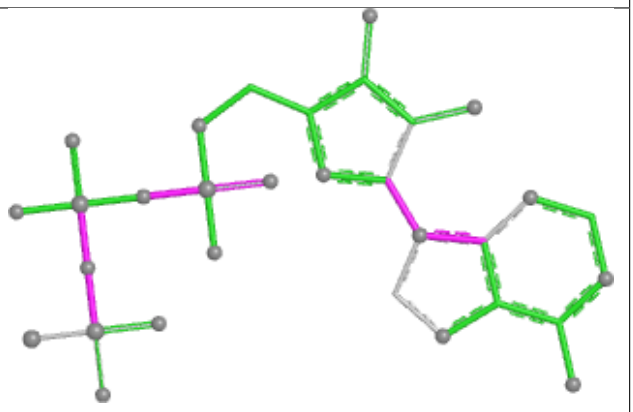


Rings

Ligand AGS 2 1001



Bond lengths



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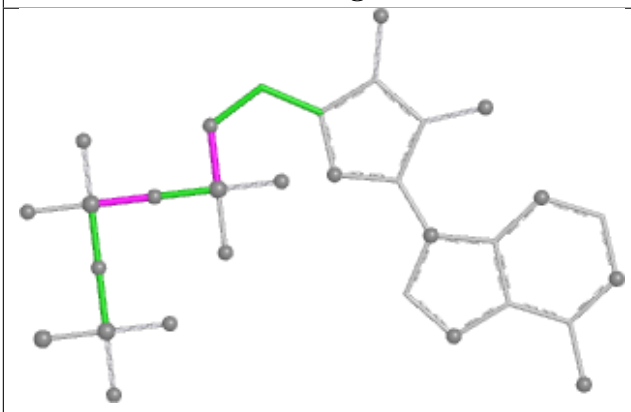

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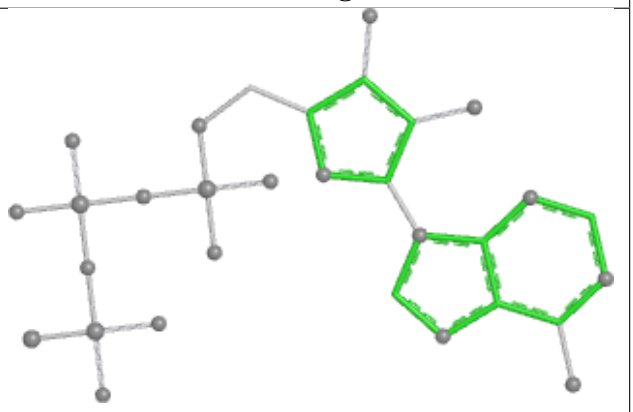
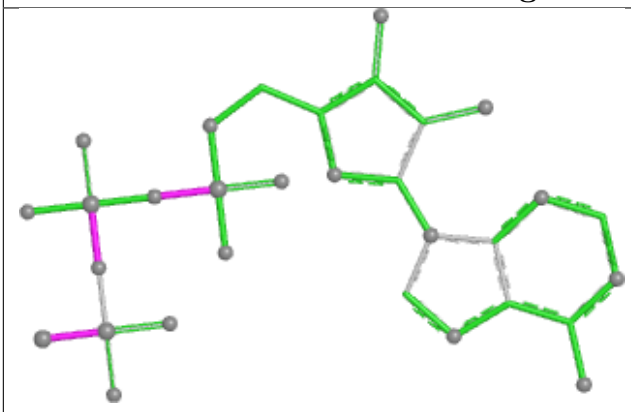


Rings

Ligand AGS 5 1002



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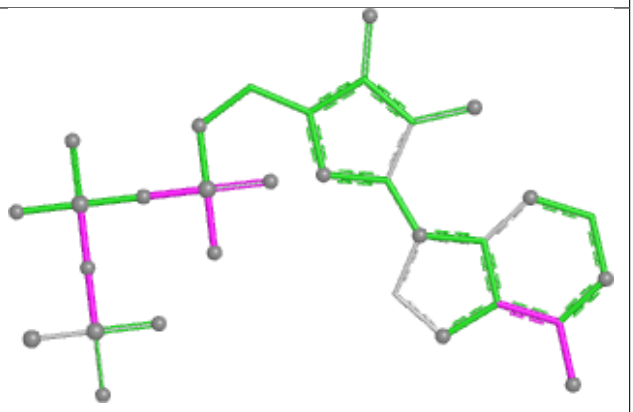

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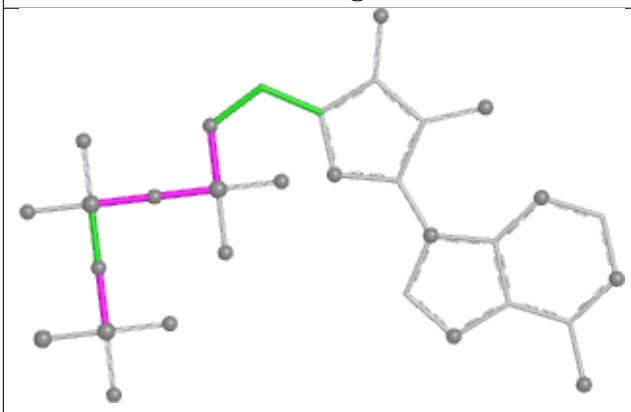

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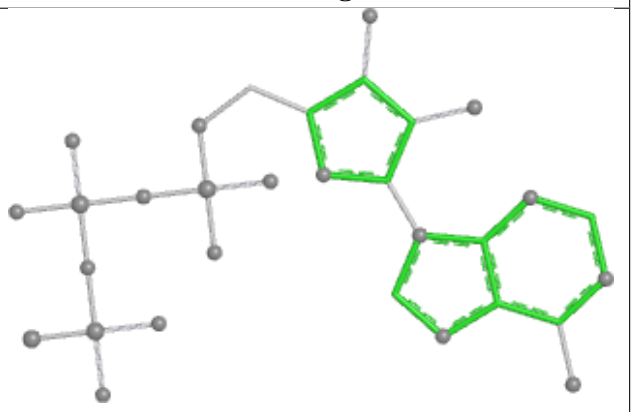
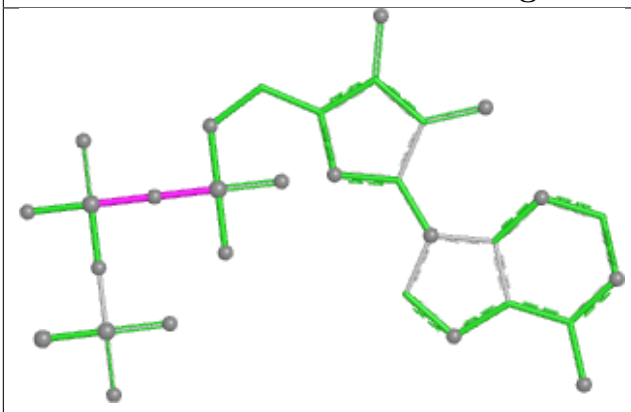


Rings

Ligand AGS 1 1002



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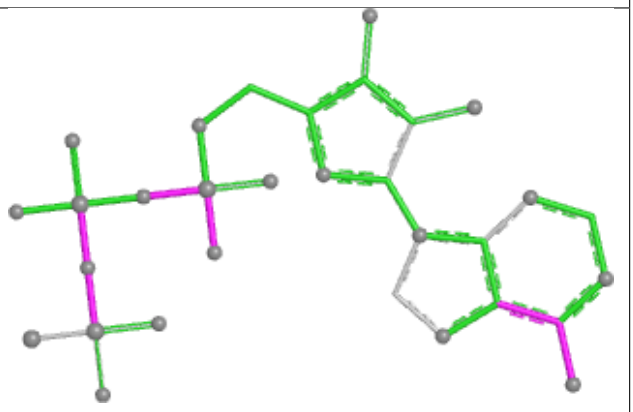

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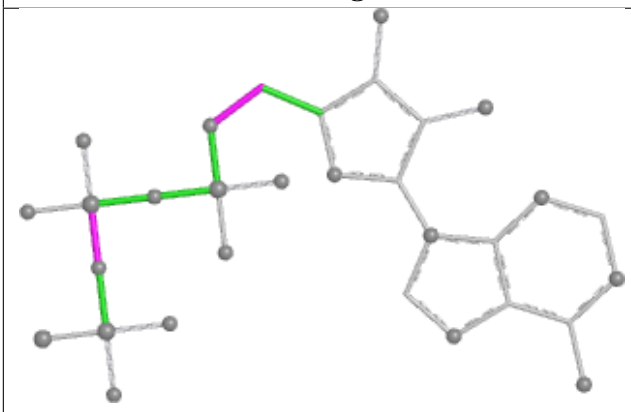

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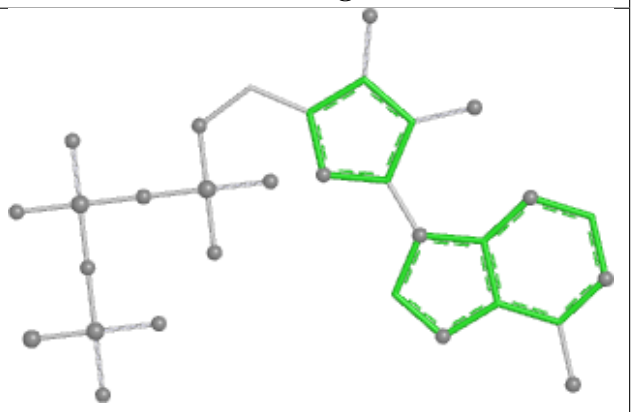
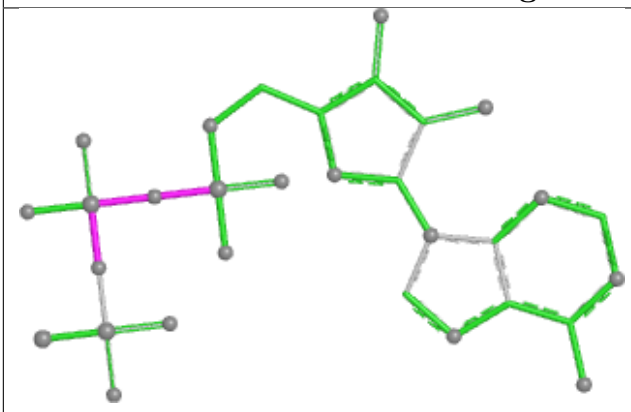


Rings

Ligand AGS 5 1001



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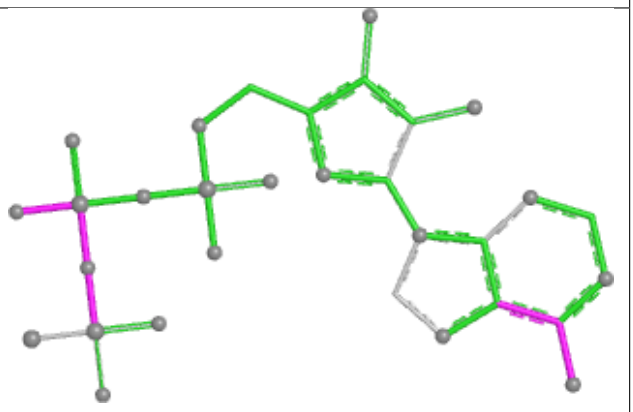

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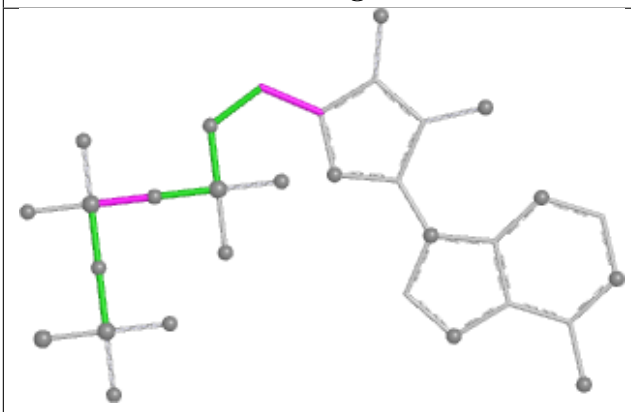

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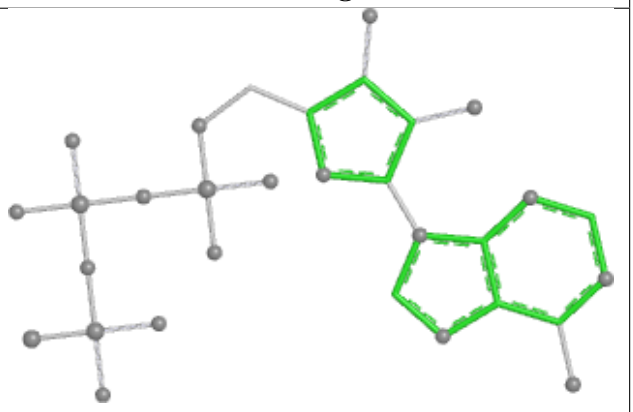
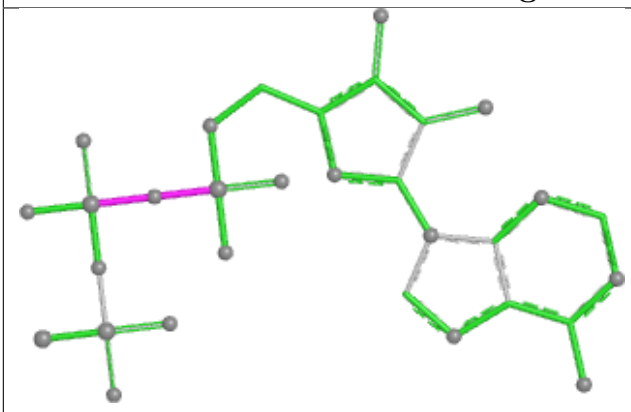
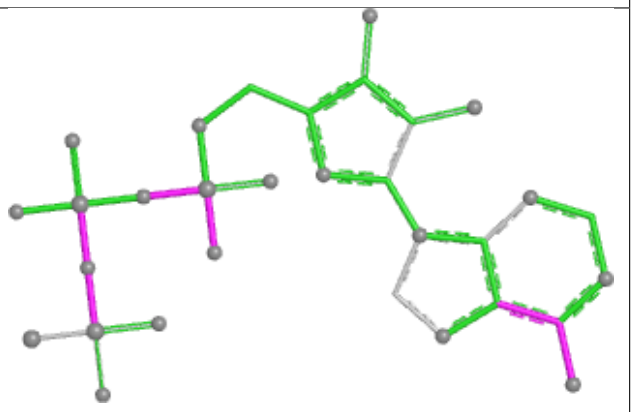


Rings

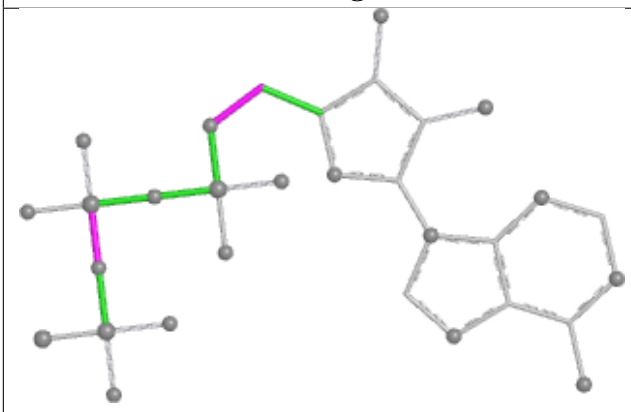
Ligand AGS 1 1001



Bond lengths



Bond angles



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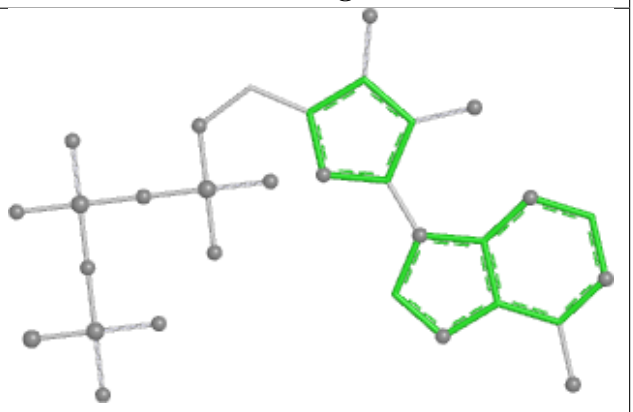
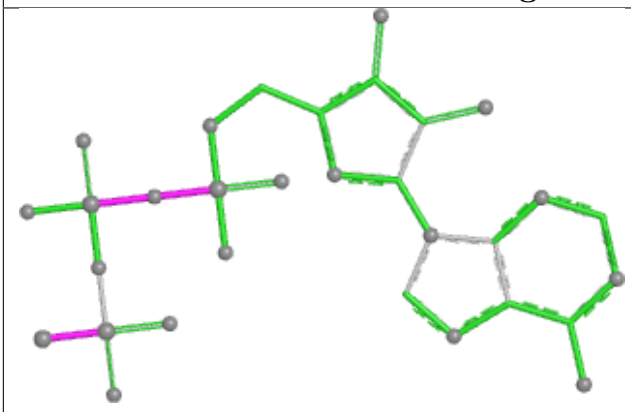


Rings

Ligand AGS 6 1002



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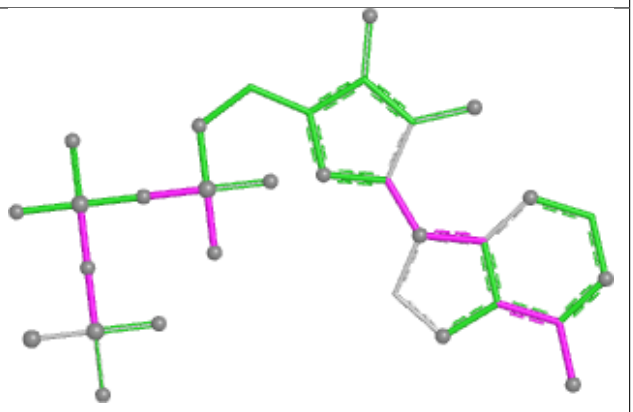

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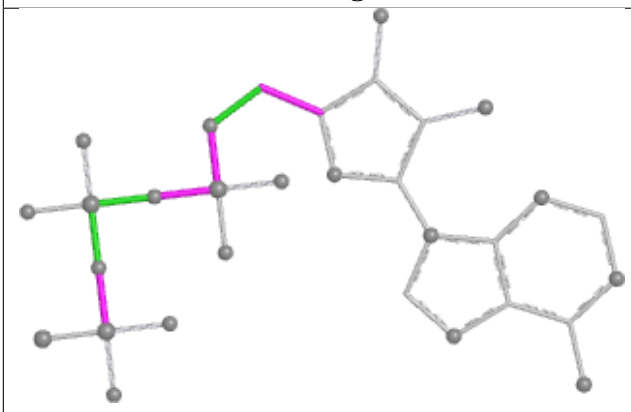

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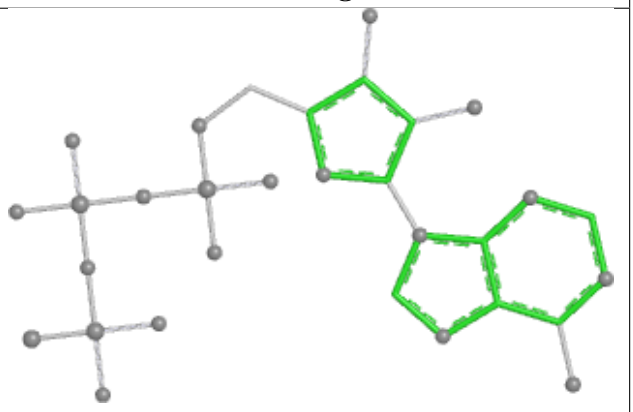
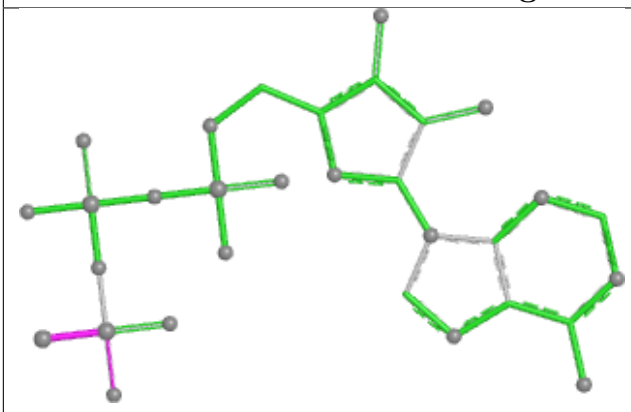
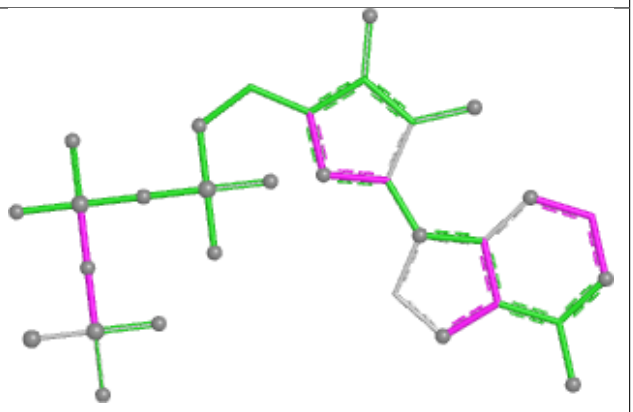


Rings

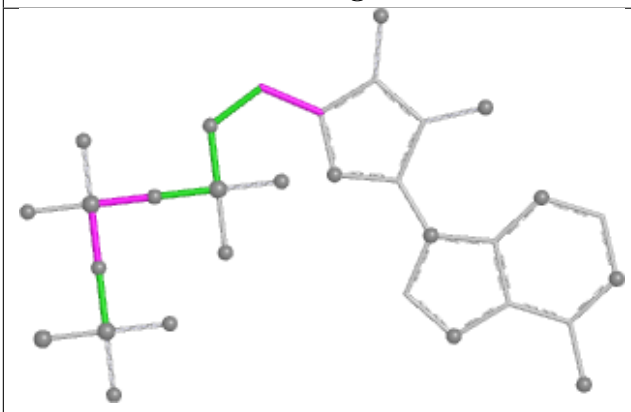
Ligand AGS 1 1003



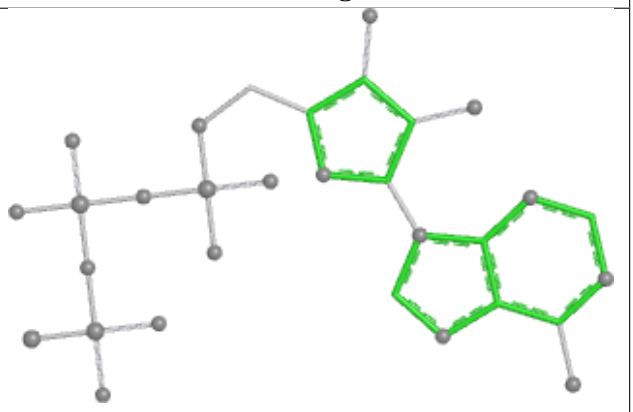
Bond lengths



Bond angles

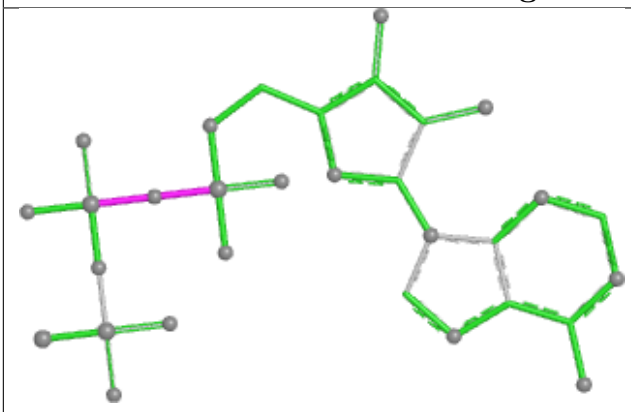


Torsions

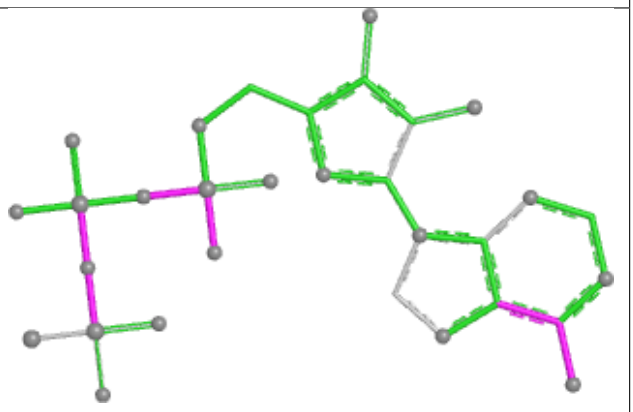


Rings

Ligand AGS 4 1001



Bond lengths



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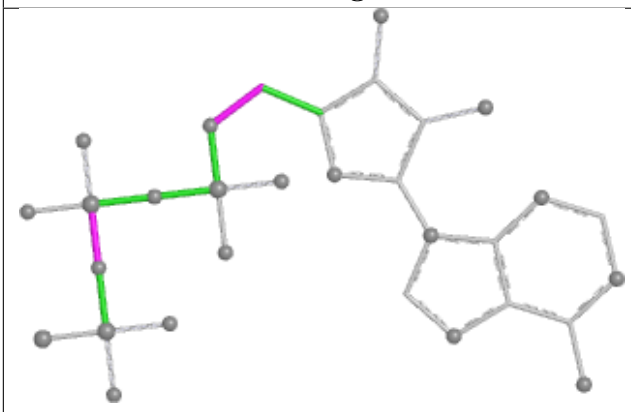

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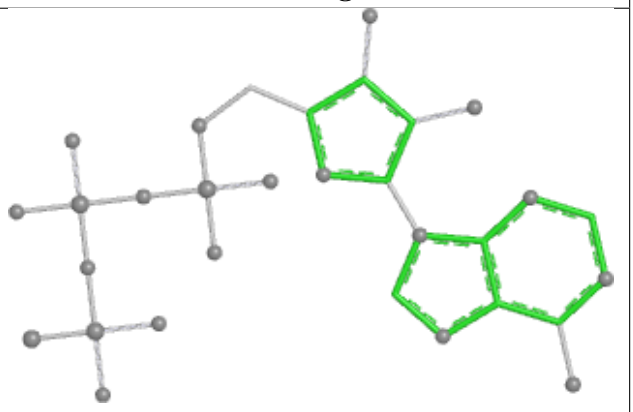
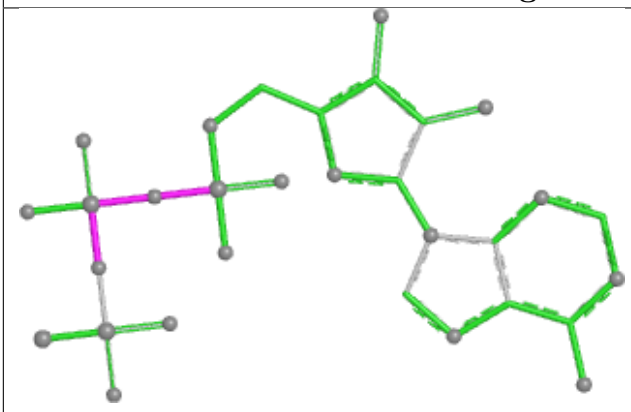
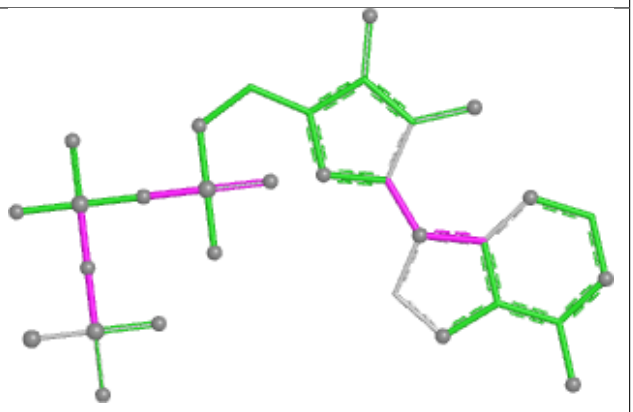


Rings

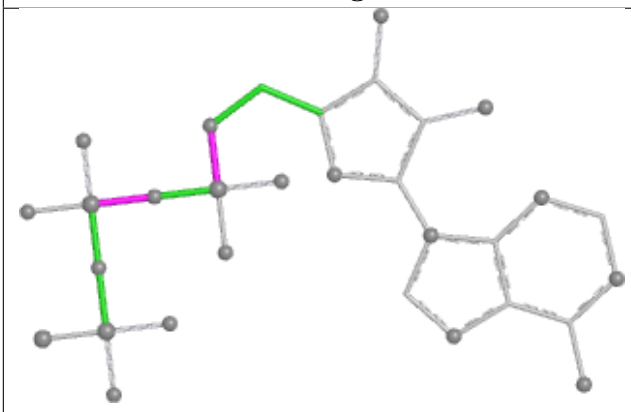
Ligand AGS 4 1002



Bond lengths



Bond angles



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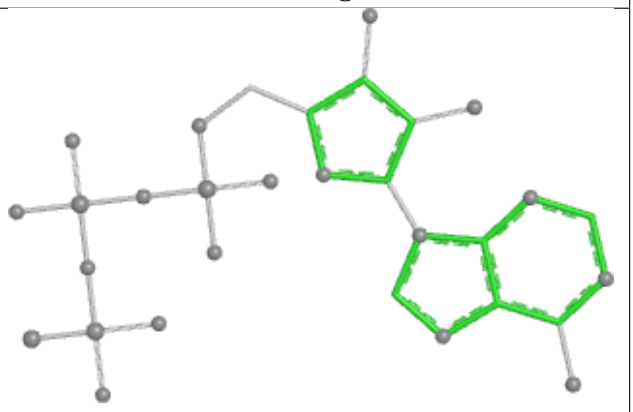
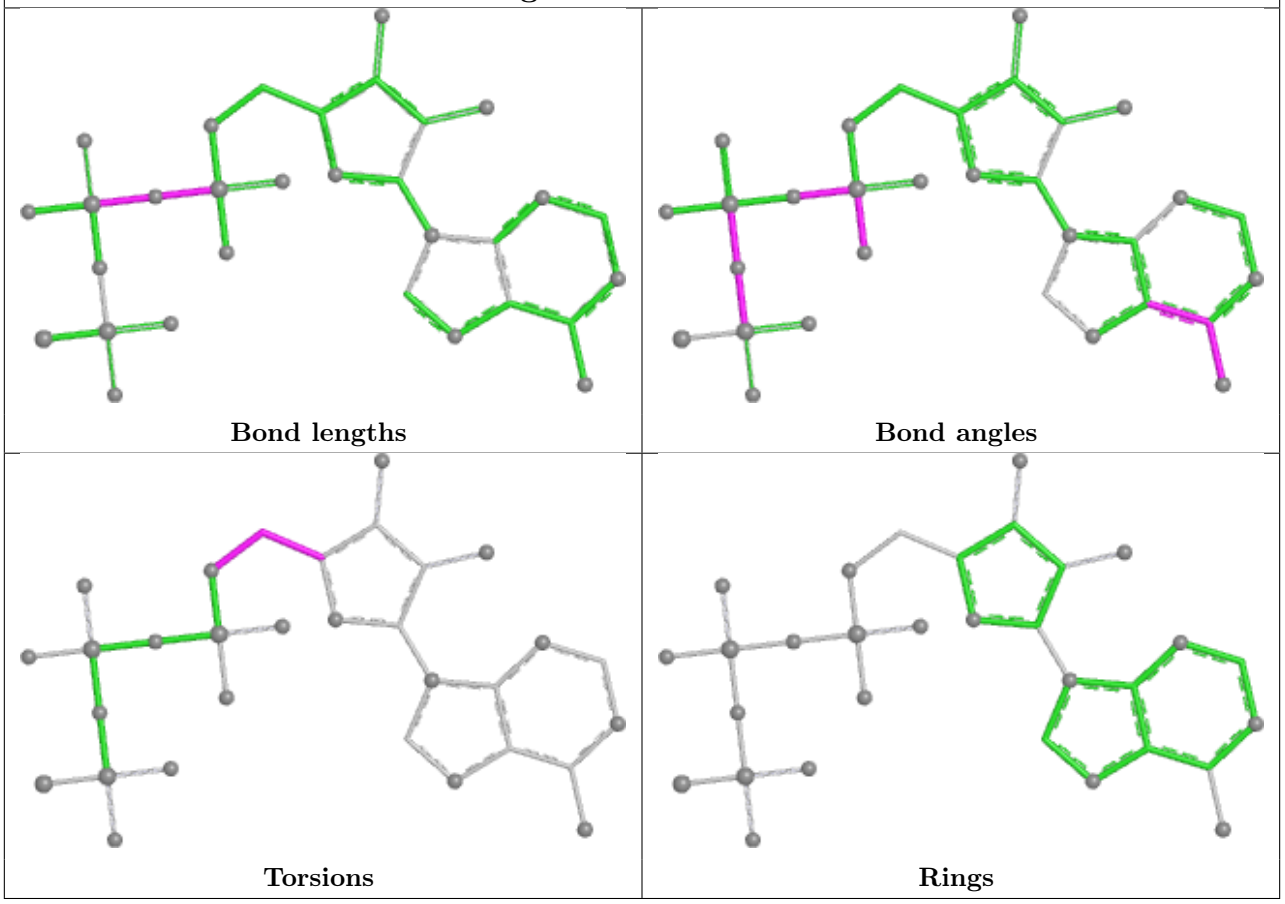


Rings

Ligand AGS 6 1001



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	h	1
1	i	1
1	l	1
1	j	1
1	k	1
1	m	1

The worst 5 of 6 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	h	28:UNK	C	988:UNK	N	44.65
1	i	29:UNK	C	988:UNK	N	43.96
1	l	33:UNK	C	986:UNK	N	33.84
1	j	32:UNK	C	981:UNK	N	24.35
1	k	33:UNK	C	980:UNK	N	19.33

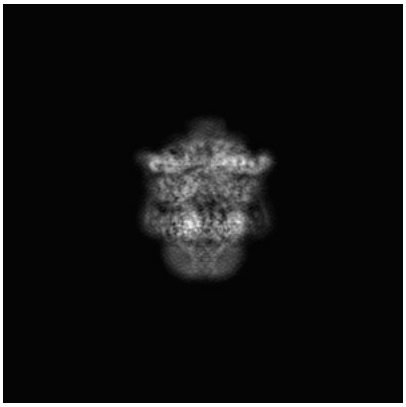
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8952. These allow visual inspection of the internal detail of the map and identification of artifacts.

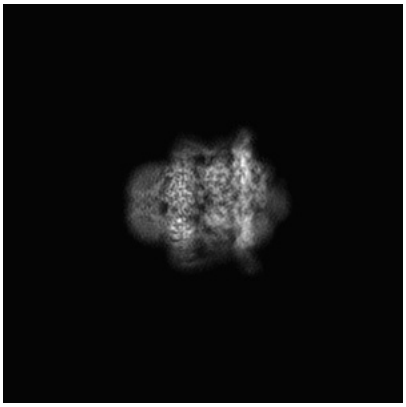
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

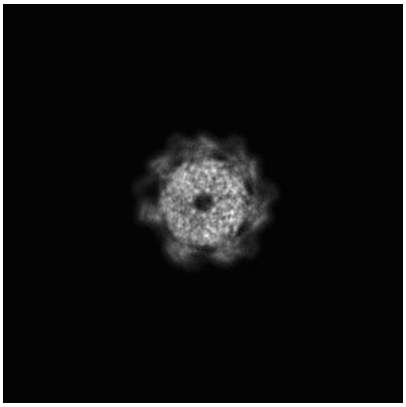
6.1.1 Primary map



X



Y

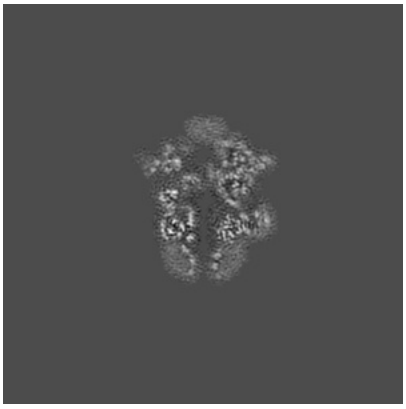


Z

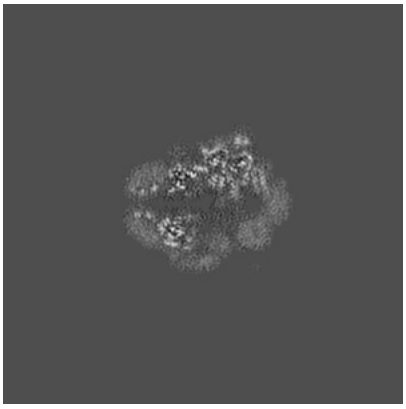
The images above show the map projected in three orthogonal directions.

6.2 Central slices

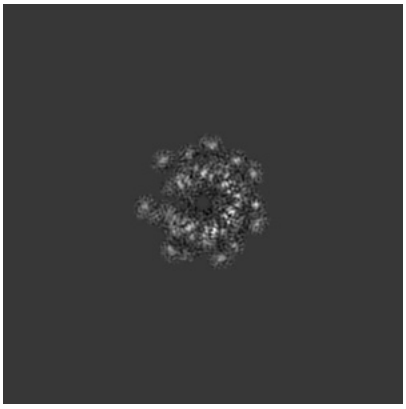
6.2.1 Primary map



X Index: 240



Y Index: 240

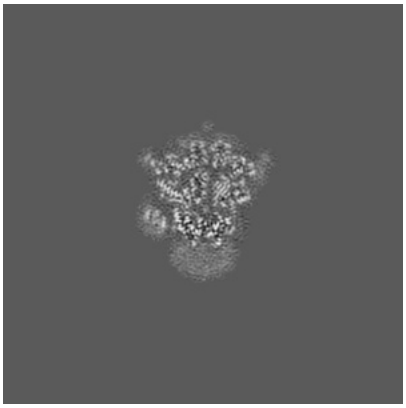


Z Index: 240

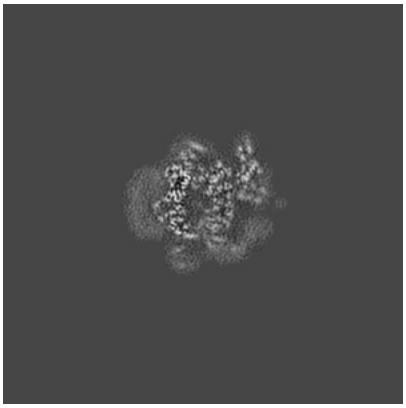
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

6.3.1 Primary map



X Index: 269



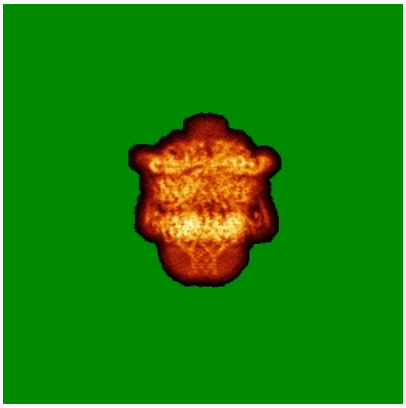
Y Index: 219

Z Index: 212

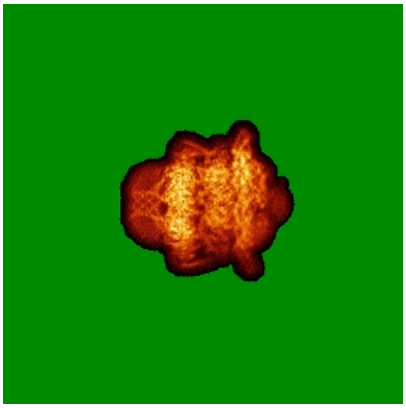
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

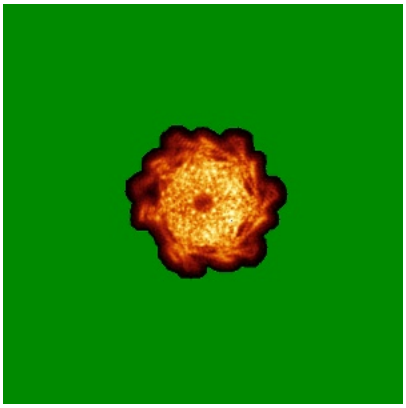
6.4.1 Primary map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0405. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

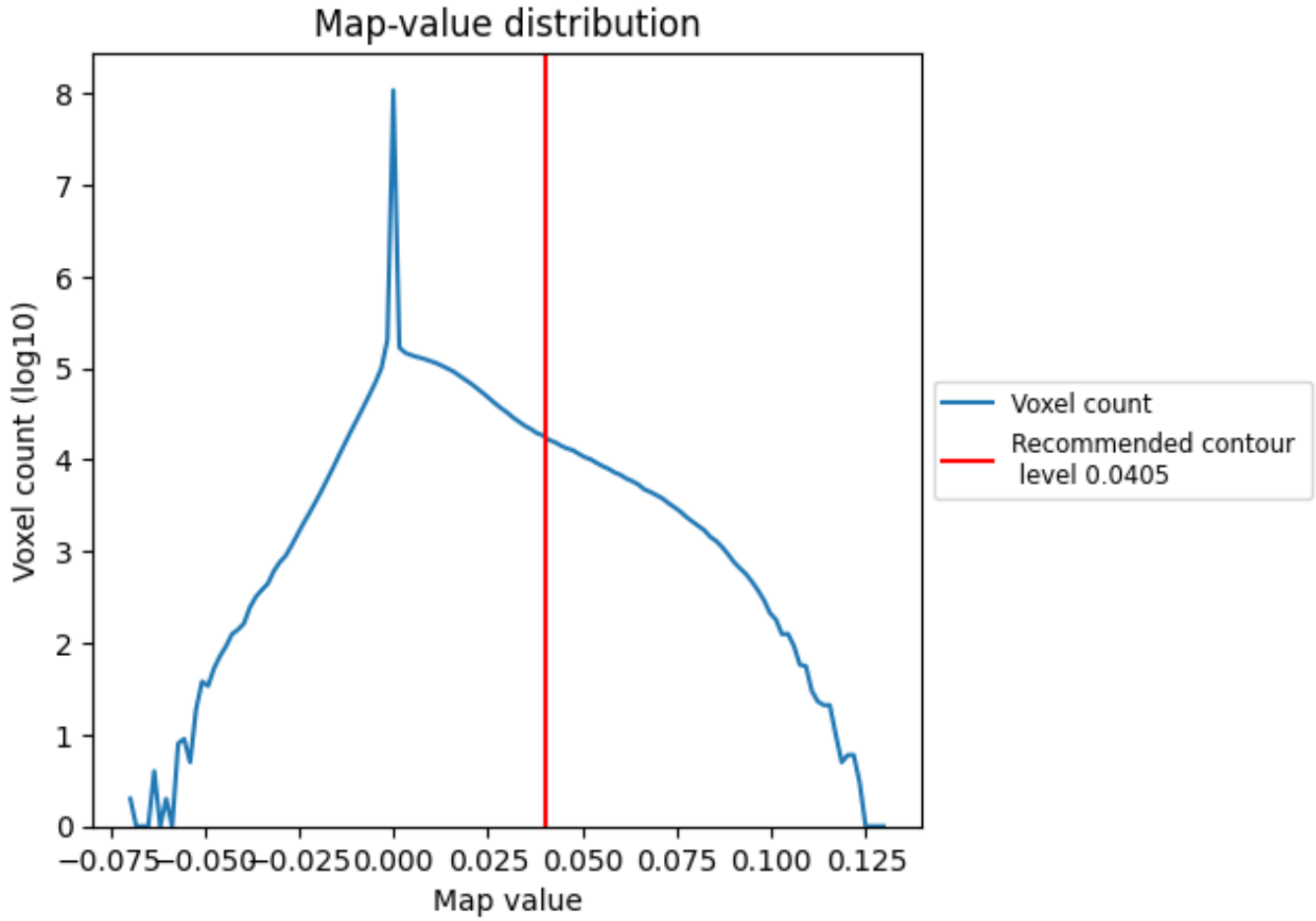
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

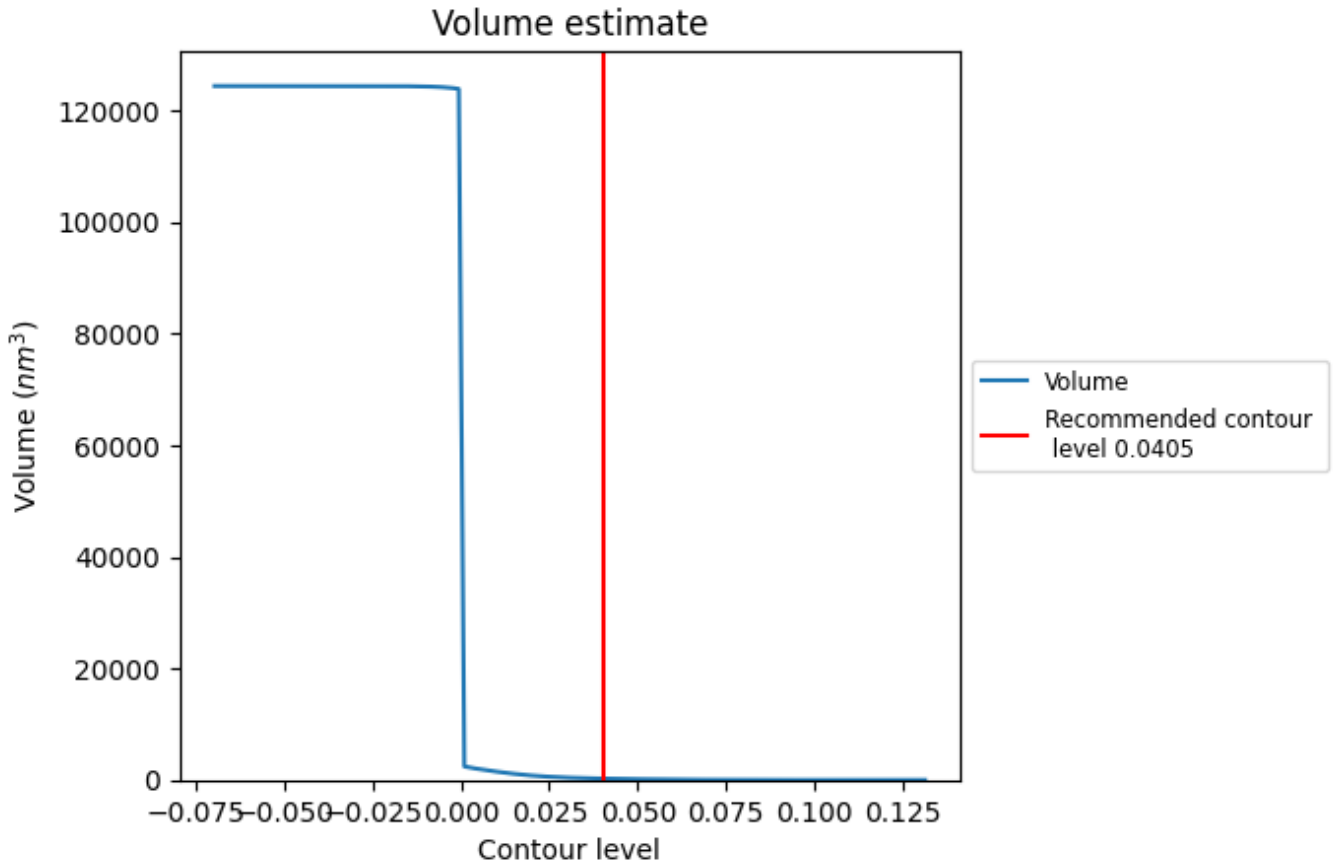
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

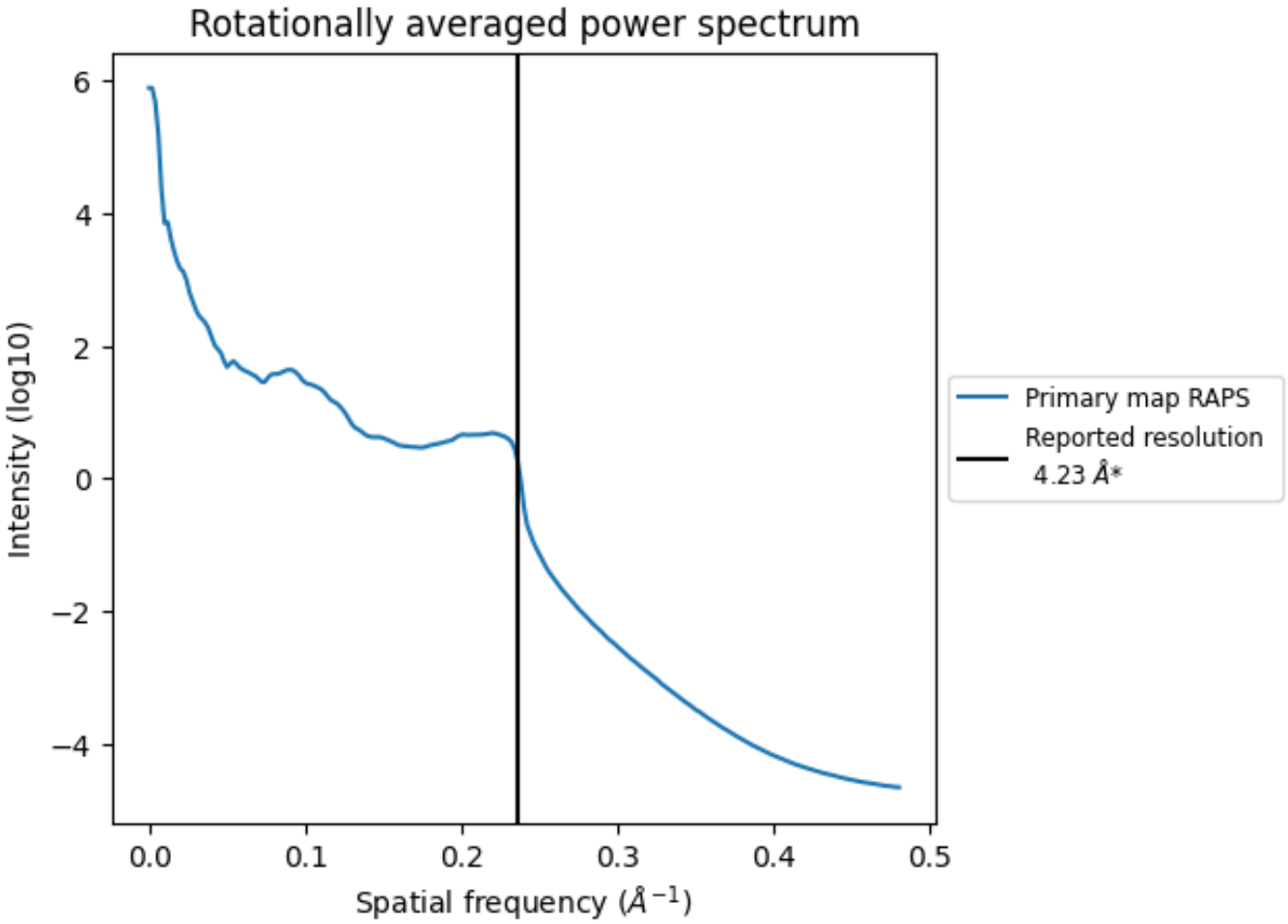
7.2 Volume estimate (i)



The volume at the recommended contour level is 239 nm^3; this corresponds to an approximate mass of 216 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.236 Å^{-1}

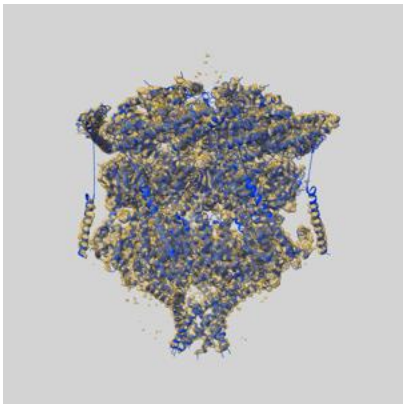
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

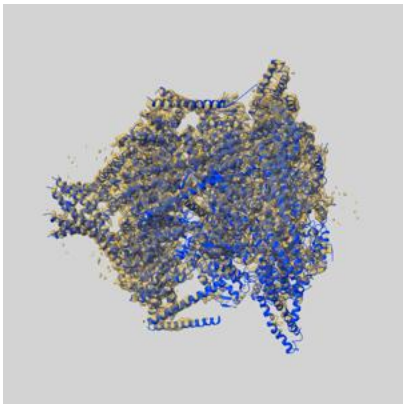
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-8952 and PDB model 6E11. Per-residue inclusion information can be found in section 3 on page 7.

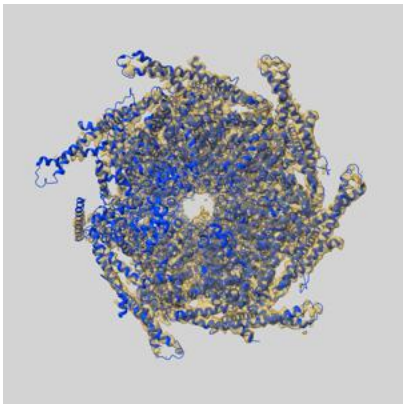
9.1 Map-model overlay



X



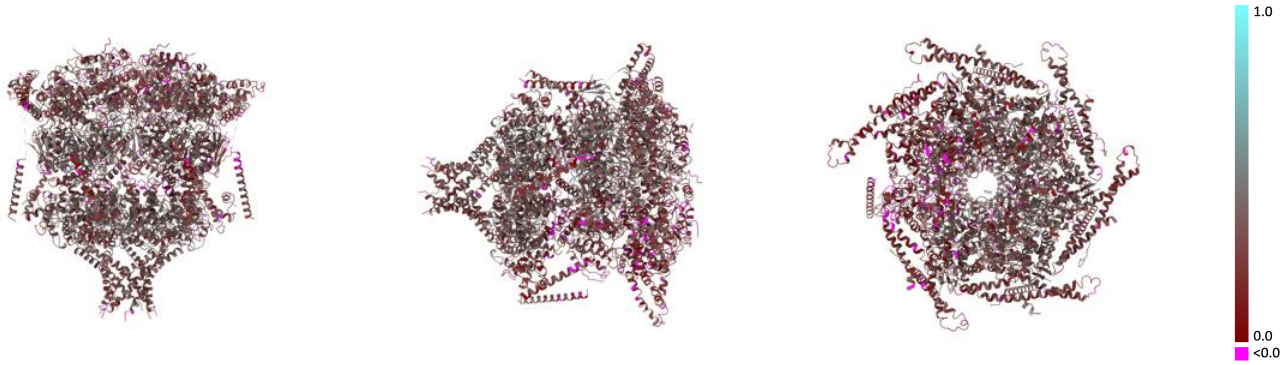
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0405 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

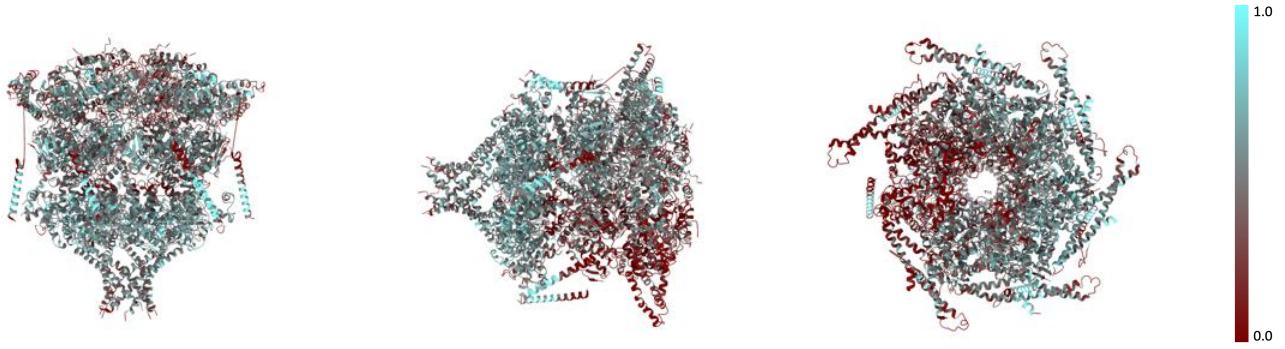
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

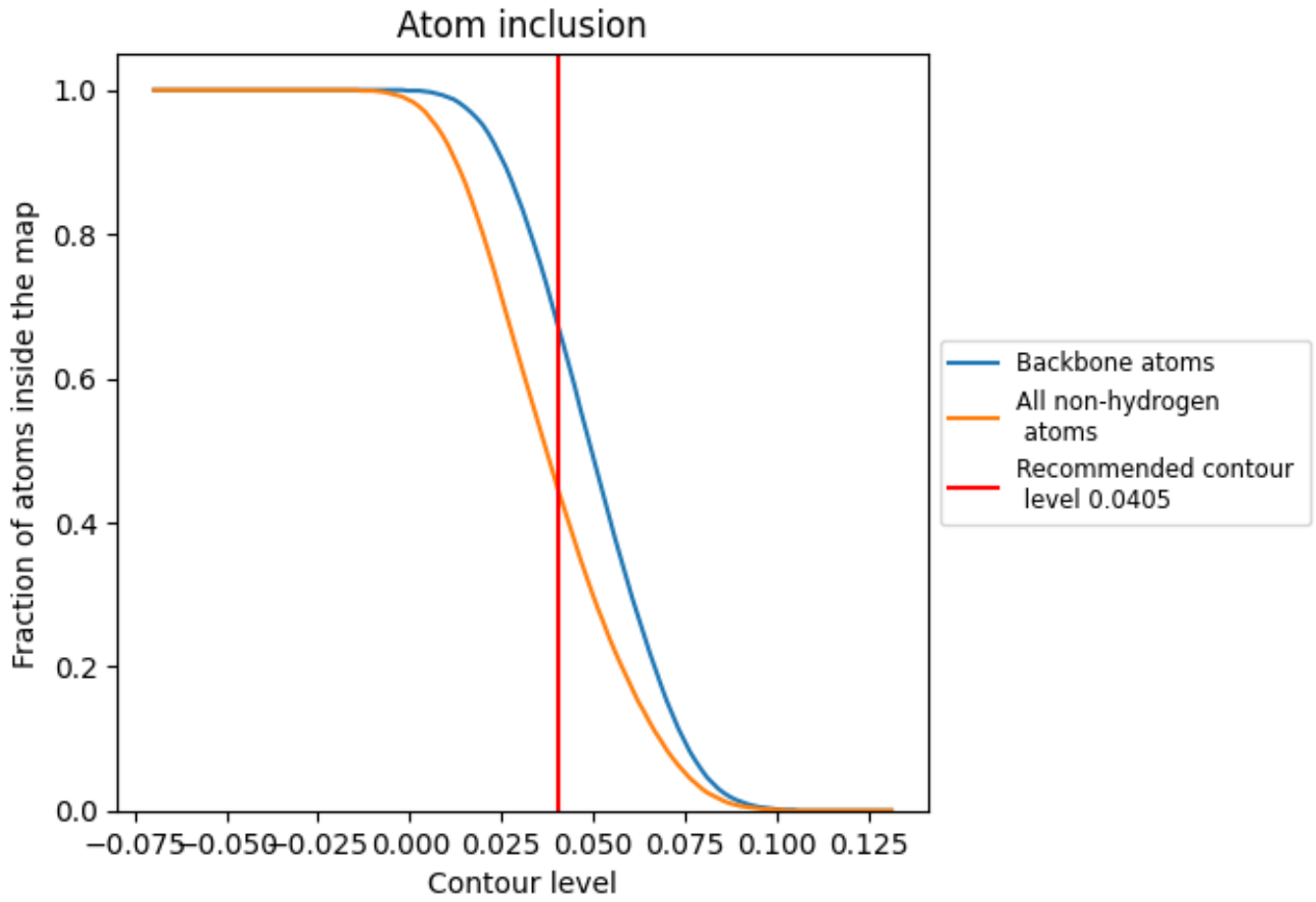
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0405).

9.4 Atom inclusion (i)



At the recommended contour level, 67% of all backbone atoms, 44% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.0405) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4440	0.2910
0	0.3670	0.3690
1	0.3430	0.2560
2	0.4990	0.3100
3	0.5110	0.3230
4	0.4810	0.3120
5	0.3820	0.2800
6	0.1580	0.1980
A	0.5660	0.3100
B	0.5540	0.3270
C	0.5840	0.3440
D	0.5670	0.3380
E	0.5500	0.3350
F	0.5440	0.3340
G	0.5610	0.3190
a	0.4810	0.2880
b	0.5050	0.3100
c	0.5180	0.3210
d	0.5010	0.3050
e	0.4860	0.3080
f	0.4460	0.2620
g	0.4330	0.2720
h	0.3230	0.1980
i	0.5650	0.2920
j	0.4840	0.2560
k	0.4830	0.2190
l	0.5090	0.2530
m	0.2930	0.1960
n	0.4500	0.2350