



wwPDB EM Validation Summary Report ⓘ

Mar 5, 2026 – 11:48 PM UTC

PDB ID : 7W85 / pdb_00007w85
EMDB ID : EMD-32352
Title : Structural of the filamentous Escherichia coli glutamine synthetase
Authors : Huang, P.-C.; Chen, S.-K.; Wu, K.-P.
Deposited on : 2021-12-07
Resolution : 2.94 Å(reported)
Based on initial model : 2LGS

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.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

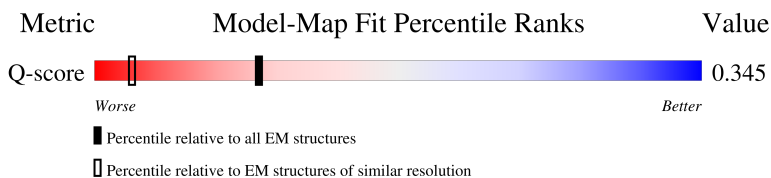
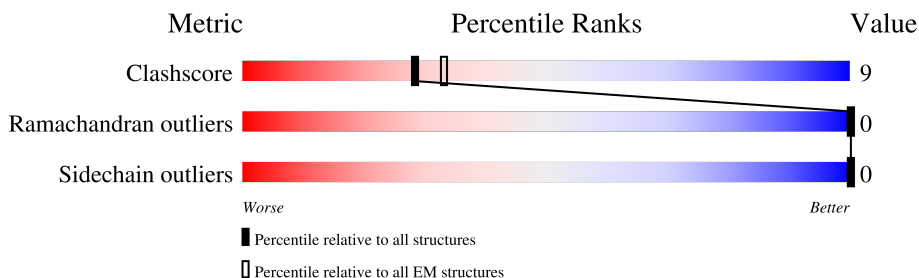
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.94 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	13068 (2.44 - 3.44)

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 $\leq 5\%$. 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	A	469	7% 71% 22% 7%
1	B	469	7% 71% 21% 7%
1	C	469	7% 72% 21% 7%
1	D	469	7% 72% 20% 7%

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Mol	Chain	Length	Quality of chain
1	E	469	
1	F	469	
1	G	469	
1	H	469	
1	I	469	
1	J	469	
1	K	469	
1	L	469	
1	M	469	
1	N	469	
1	O	469	
1	P	469	
1	Q	469	
1	R	469	
1	S	469	
1	U	469	
1	V	469	
1	W	469	
1	X	469	
1	Y	469	

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 81522 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 Glutamine synthetase.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	B	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	C	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	D	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	E	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	F	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	G	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	H	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	I	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	J	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	K	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	L	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	M	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	N	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	O	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	P	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	Q	435	Total 3395	C 2146	N 580	O 648	S 21	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	R	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	S	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	U	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	V	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	W	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	X	435	Total 3395	C 2146	N 580	O 648	S 21	0	0
1	Y	435	Total 3395	C 2146	N 580	O 648	S 21	0	0

- Molecule 2 is NICKEL (II) ION (CCD ID: NI) (formula: Ni) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
2	A	2	Total 2	Ni 2	0
2	B	2	Total 2	Ni 2	0
2	C	2	Total 2	Ni 2	0
2	D	2	Total 2	Ni 2	0
2	E	2	Total 2	Ni 2	0
2	F	2	Total 2	Ni 2	0
2	G	2	Total 2	Ni 2	0
2	H	2	Total 2	Ni 2	0
2	I	2	Total 2	Ni 2	0
2	J	2	Total 2	Ni 2	0
2	K	2	Total 2	Ni 2	0
2	L	2	Total 2	Ni 2	0

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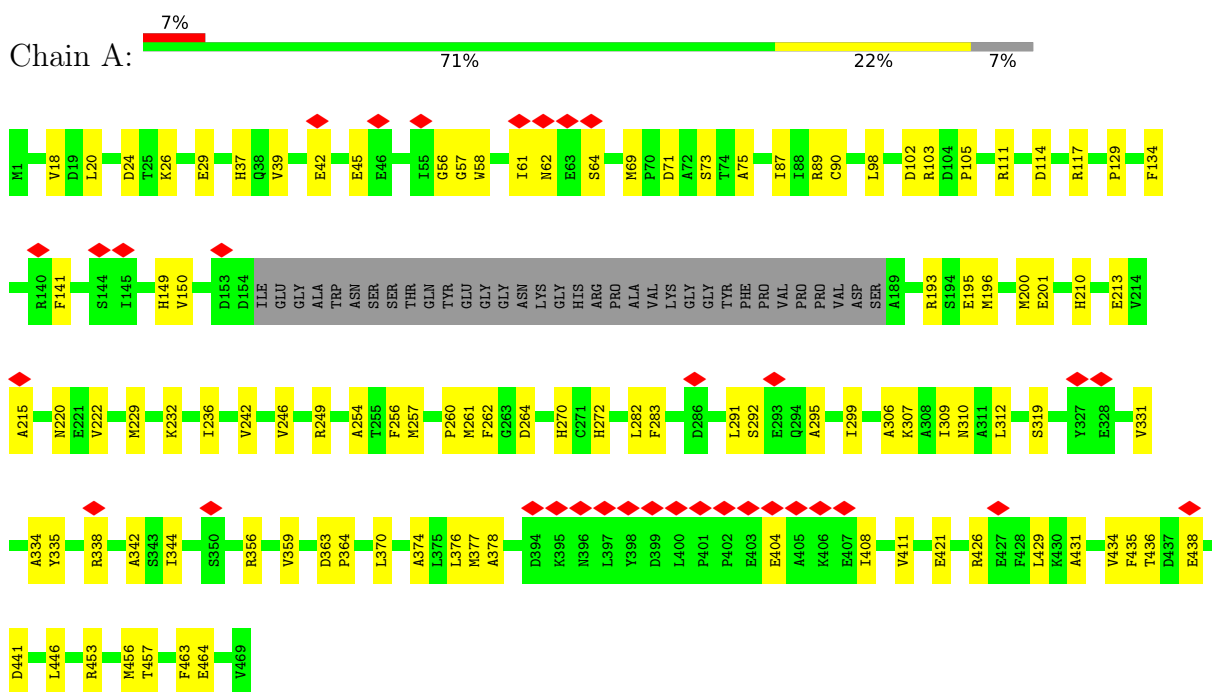
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Mol	Chain	Residues	Atoms		AltConf
2	M	1	Total 1	Ni 1	0
2	N	1	Total 1	Ni 1	0
2	O	1	Total 1	Ni 1	0
2	P	1	Total 1	Ni 1	0
2	Q	1	Total 1	Ni 1	0
2	R	1	Total 1	Ni 1	0
2	S	2	Total 2	Ni 2	0
2	U	2	Total 2	Ni 2	0
2	V	2	Total 2	Ni 2	0
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2	X	2	Total 2	Ni 2	0
2	Y	2	Total 2	Ni 2	0

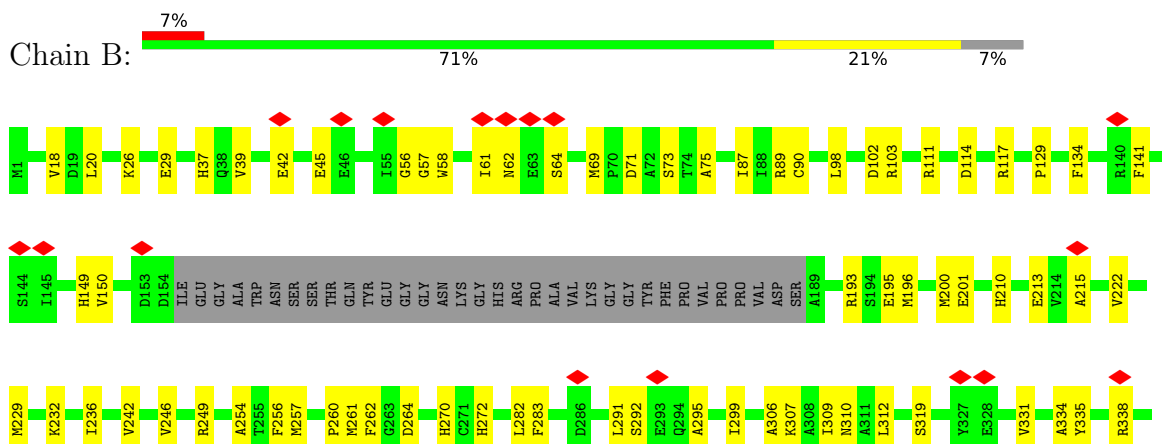
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and 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.

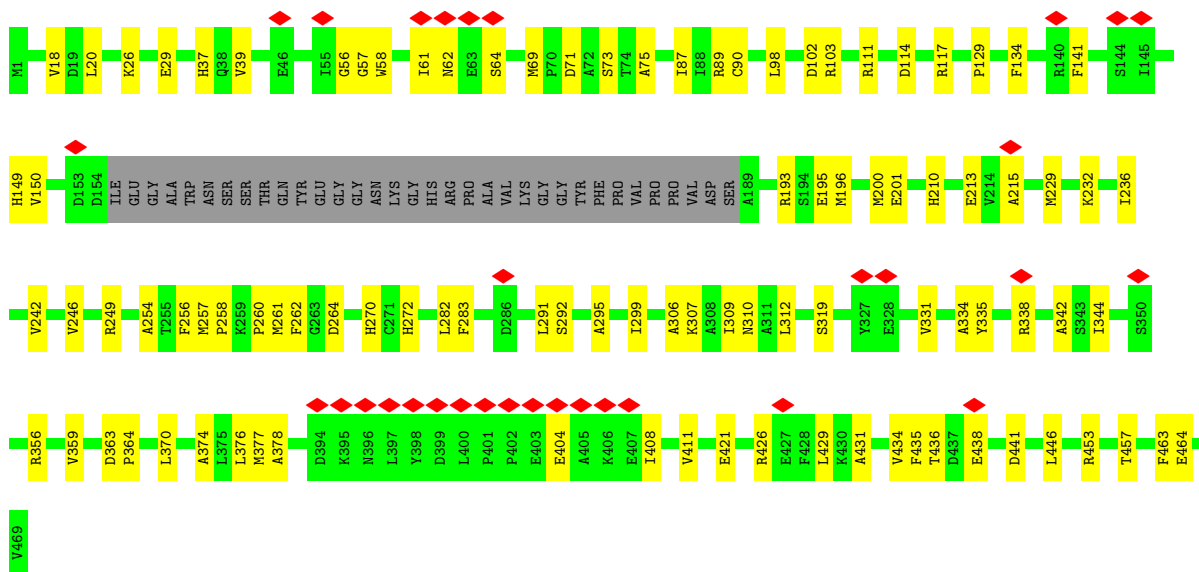
• Molecule 1: Glutamine synthetase



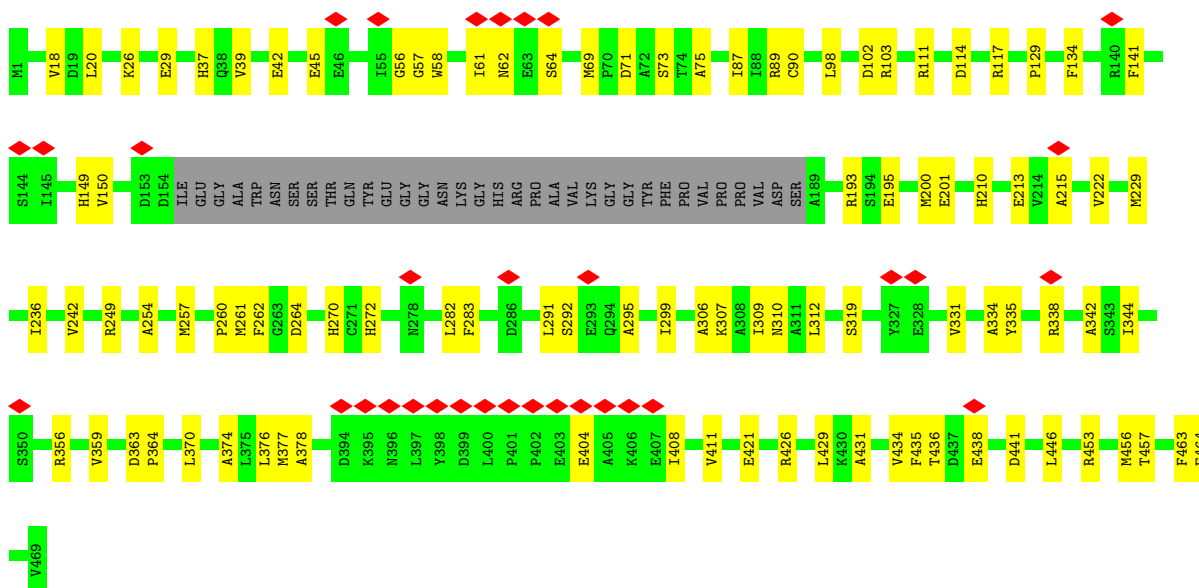
• Molecule 1: Glutamine synthetase



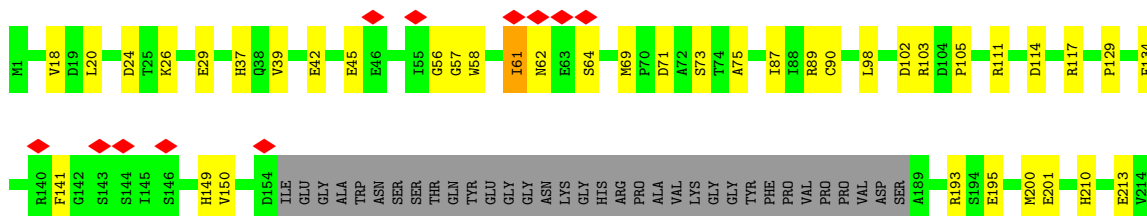


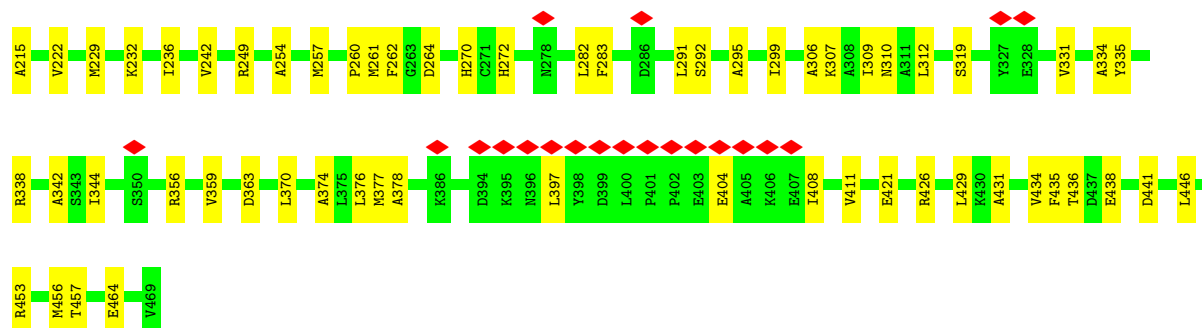


- Molecule 1: Glutamine synthetase

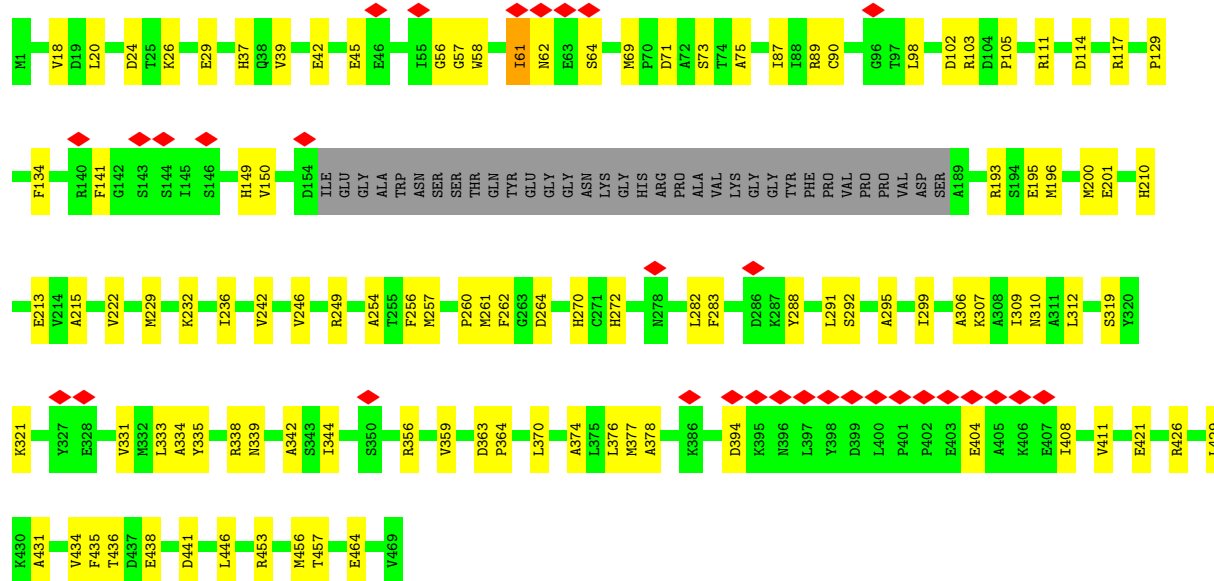


- Molecule 1: Glutamine synthetase

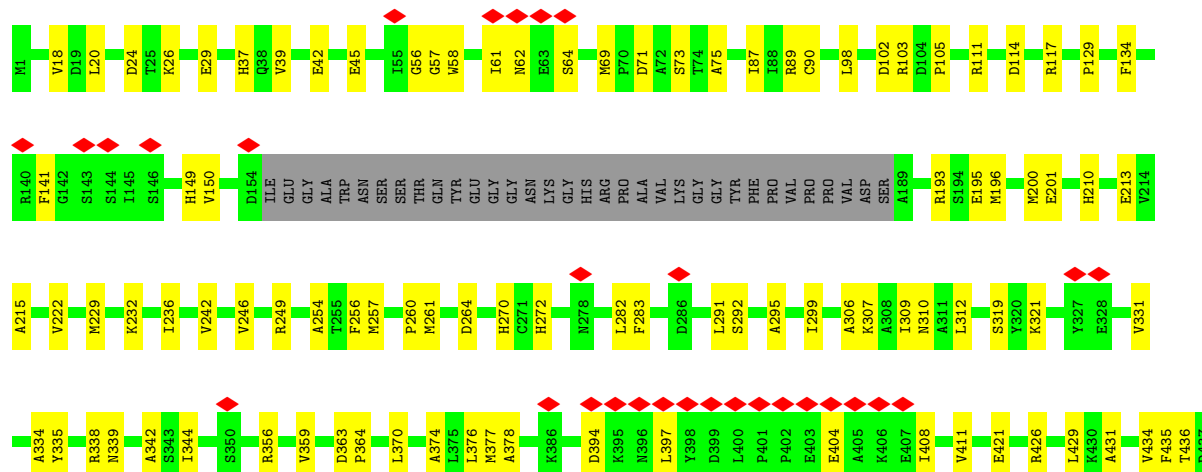




• Molecule 1: Glutamine synthetase

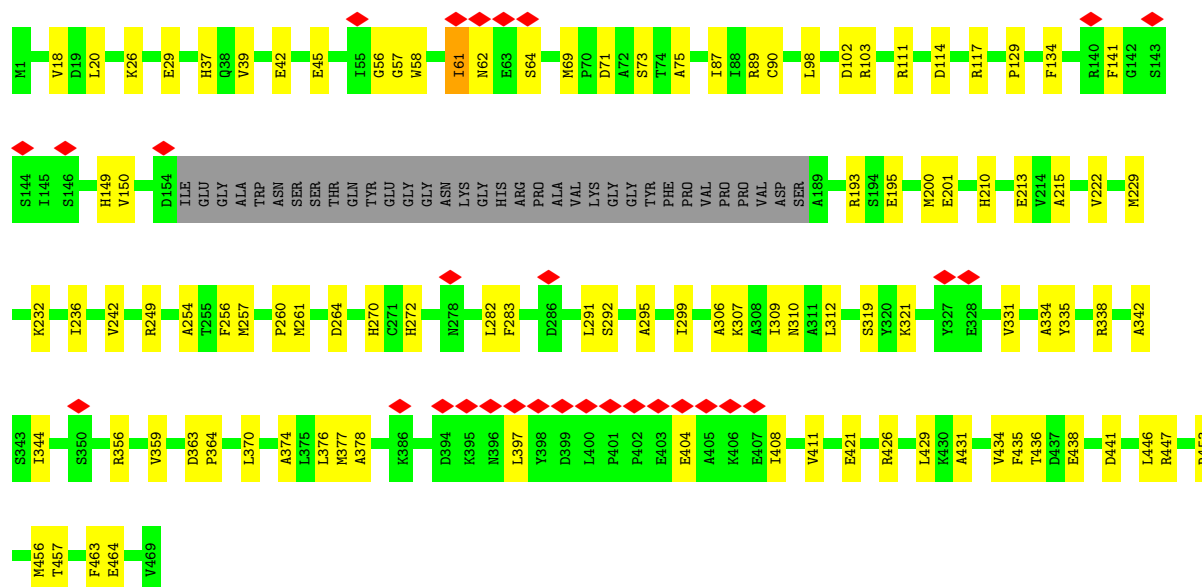


• Molecule 1: Glutamine synthetase

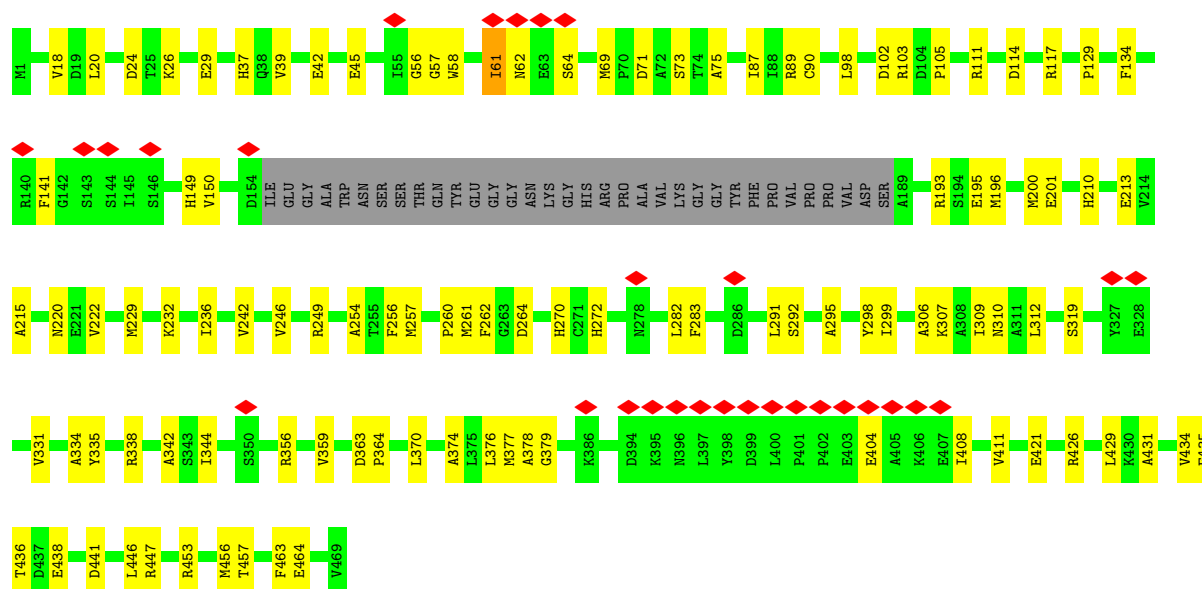




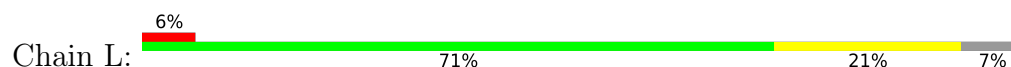
• Molecule 1: Glutamine synthetase

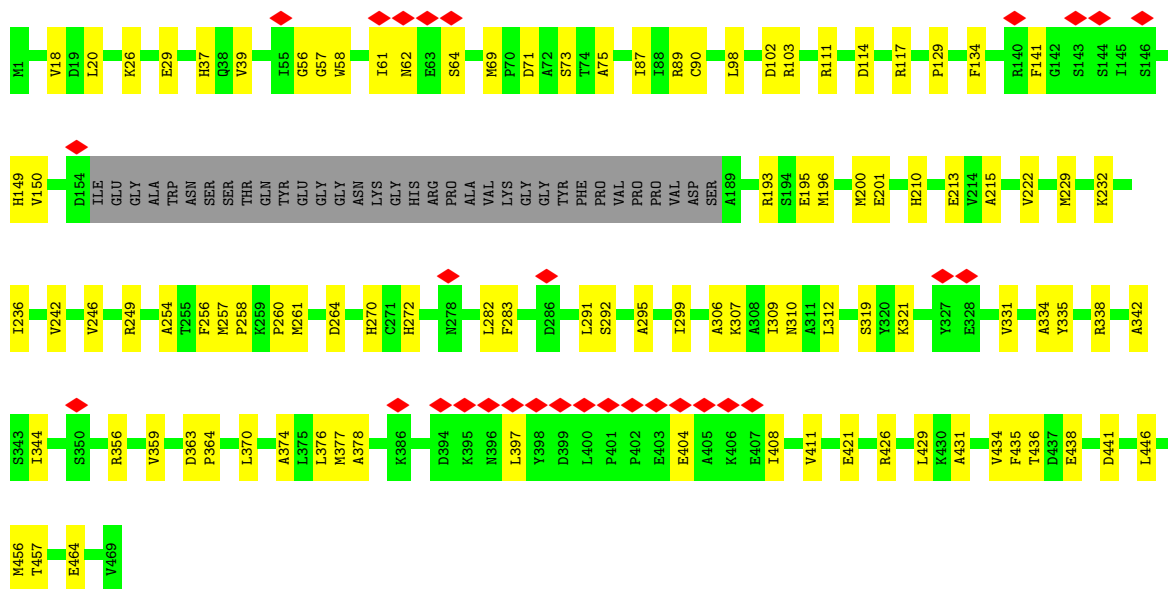


• Molecule 1: Glutamine synthetase

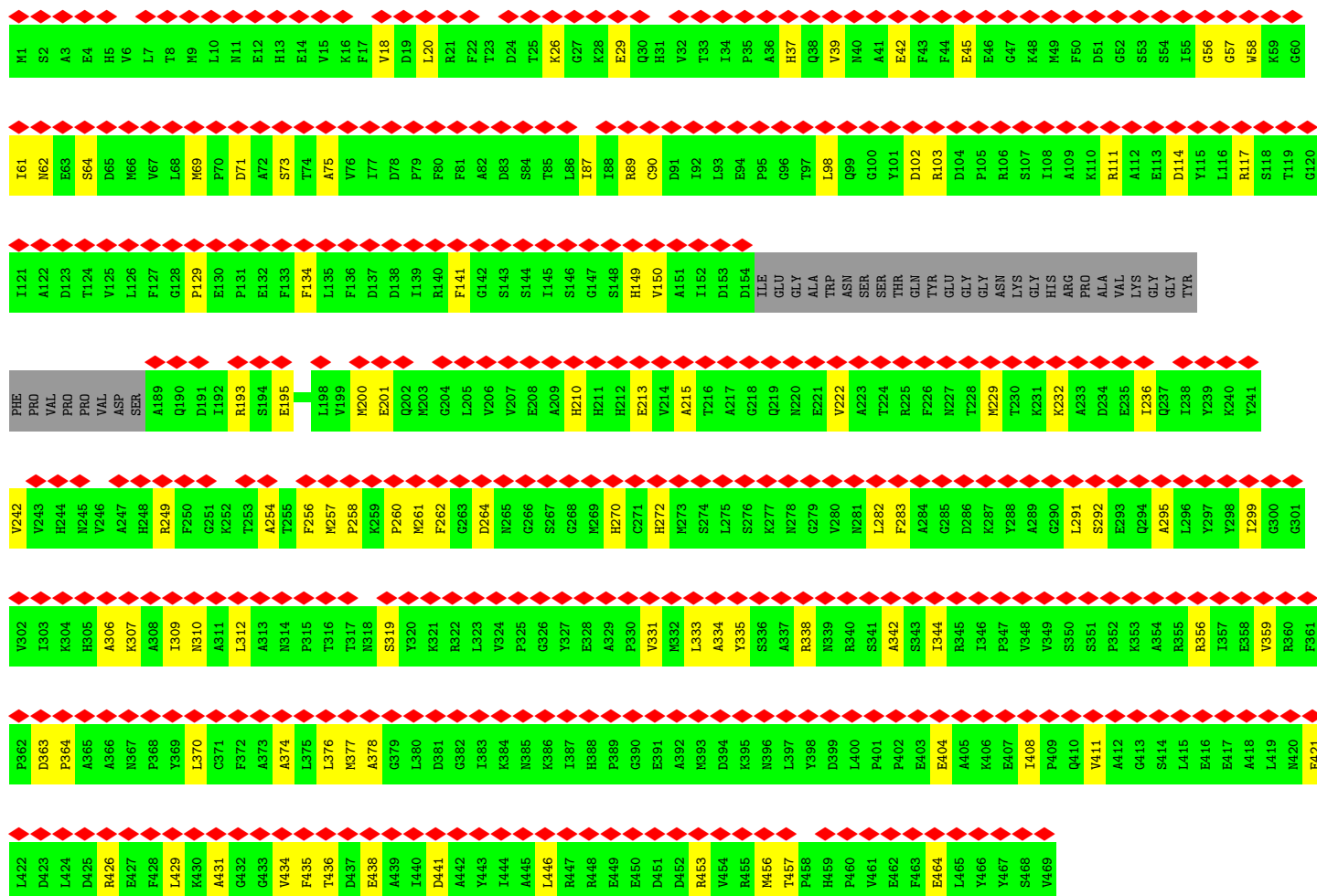
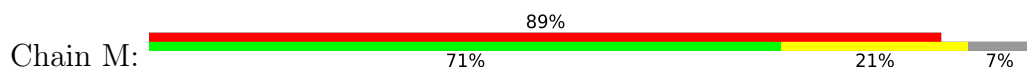


• Molecule 1: Glutamine synthetase

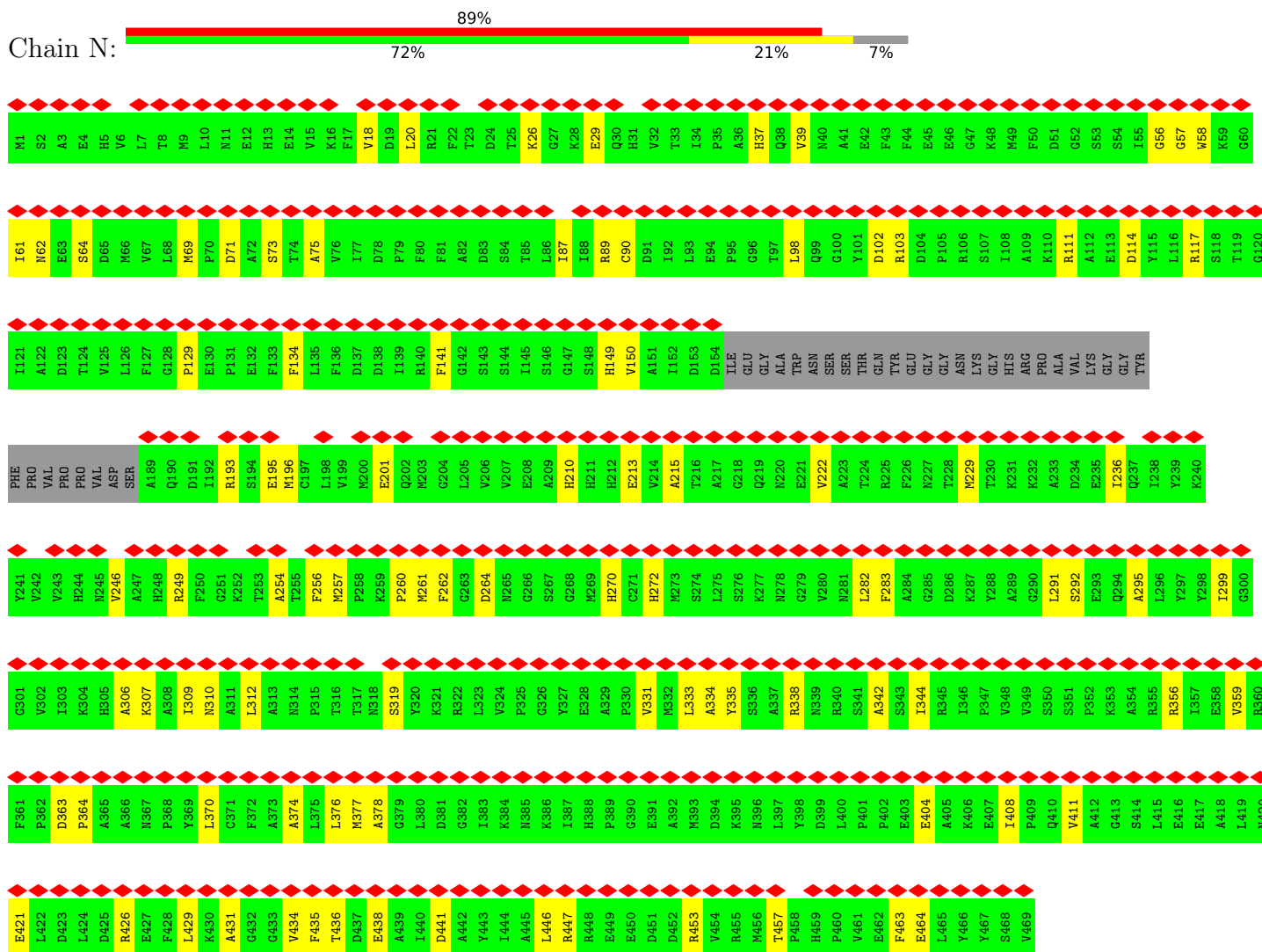




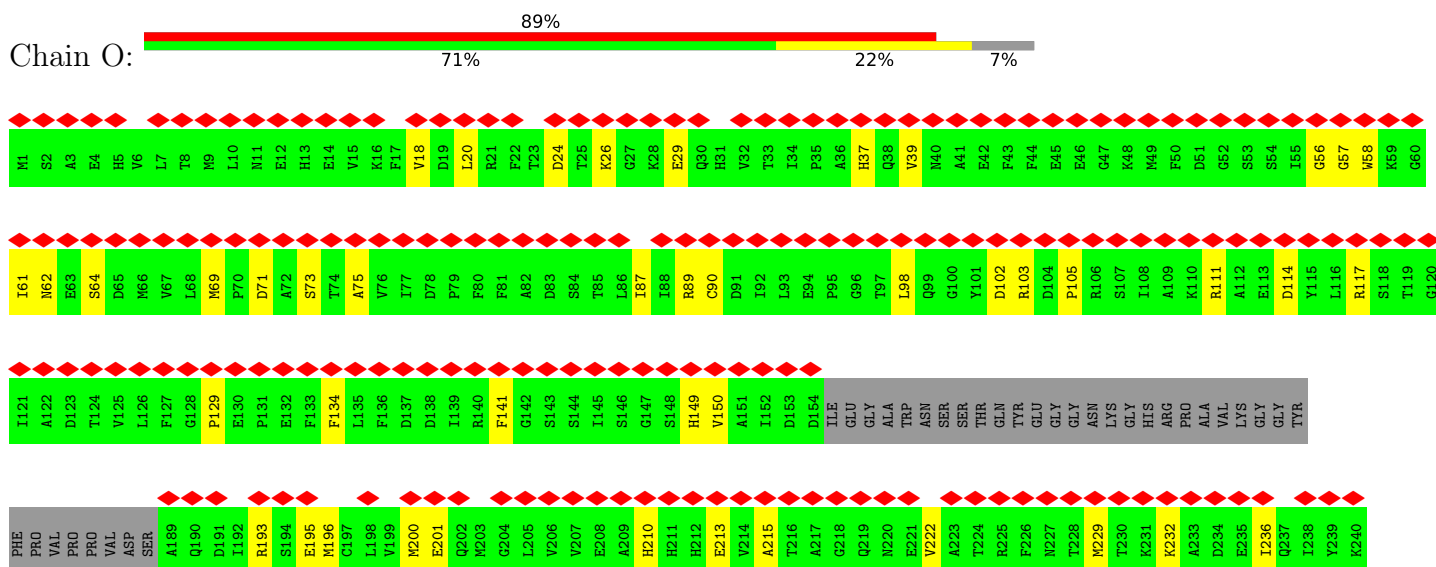
• Molecule 1: Glutamine synthetase

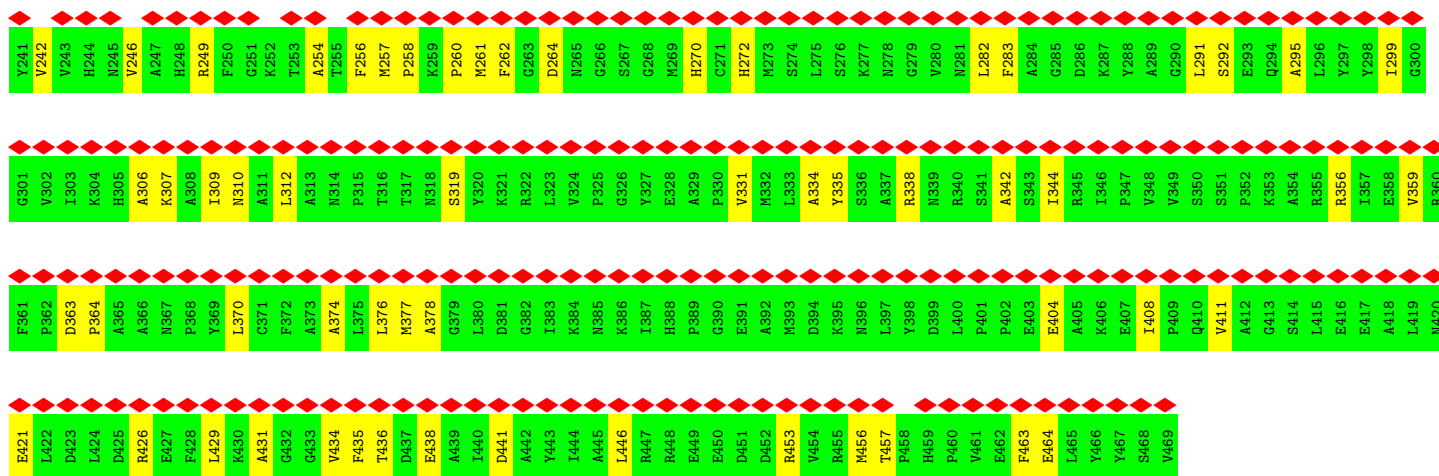


● Molecule 1: Glutamine synthetase

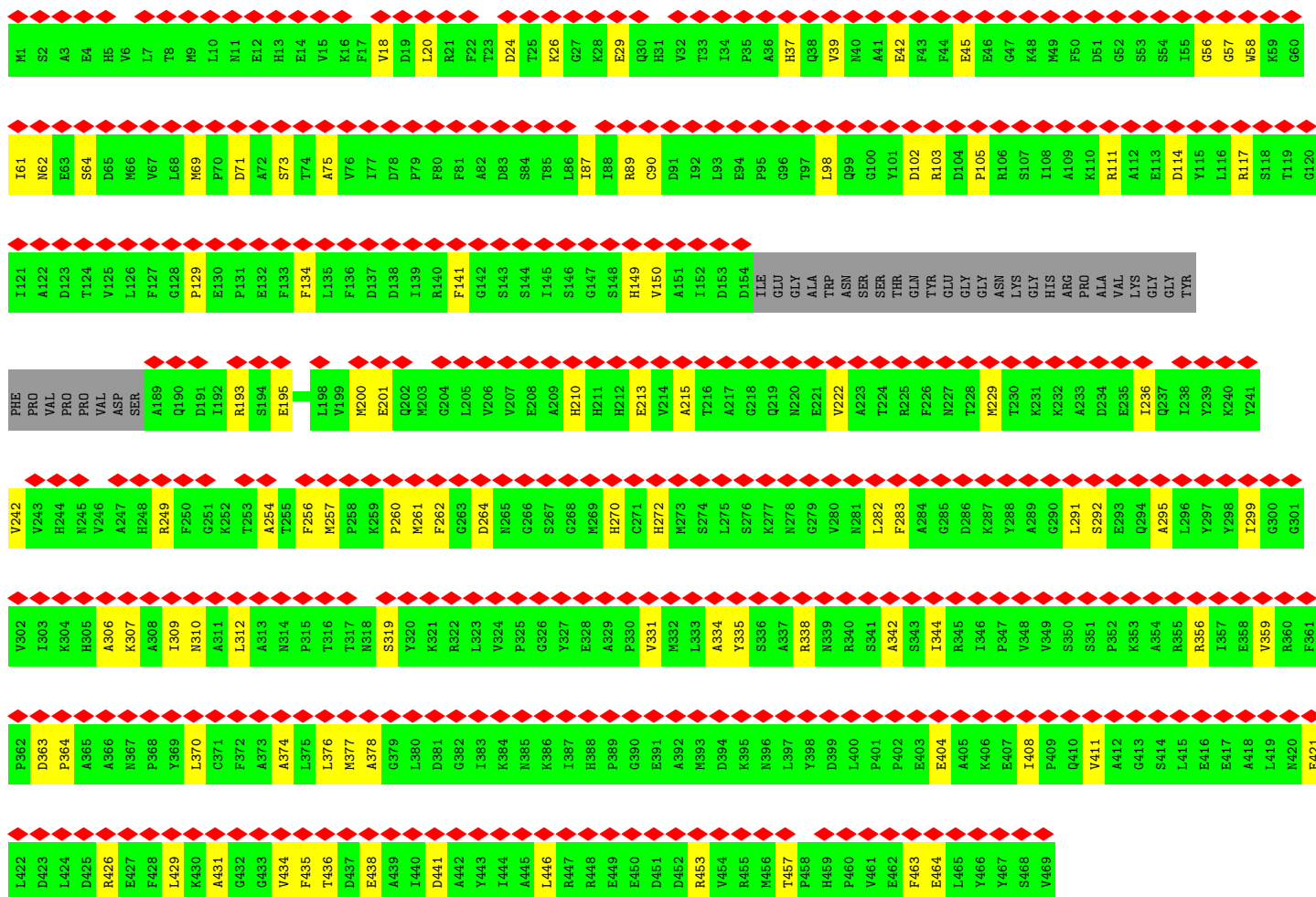
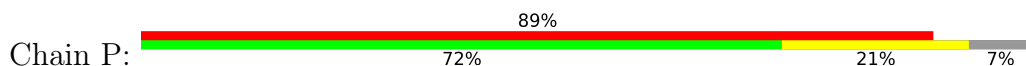


● Molecule 1: Glutamine synthetase

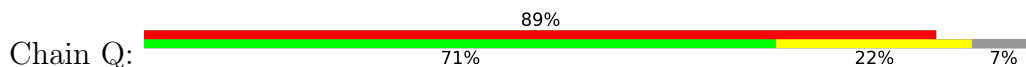


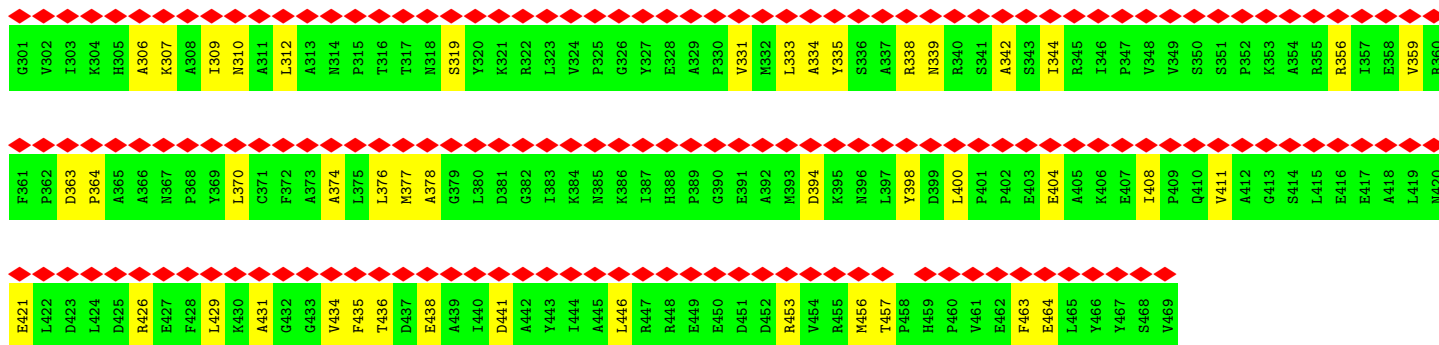


• Molecule 1: Glutamine synthetase

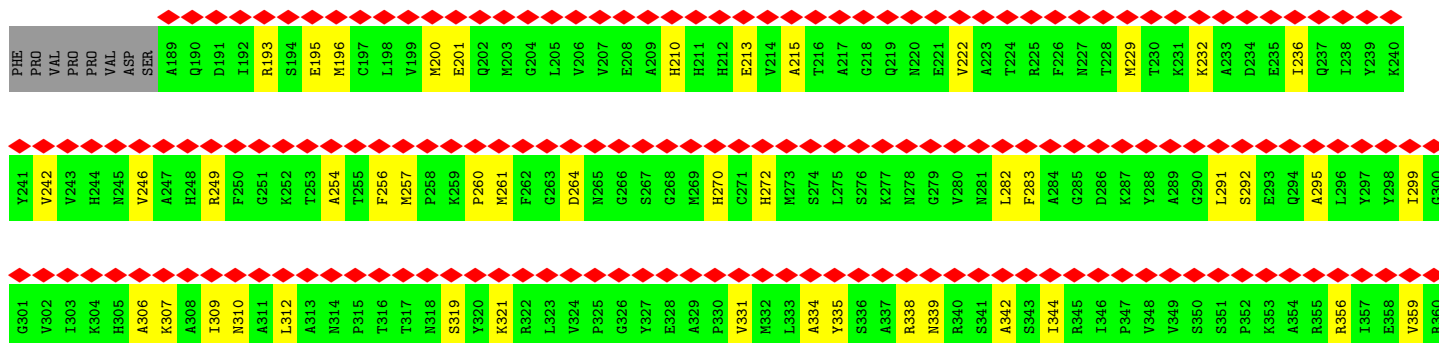
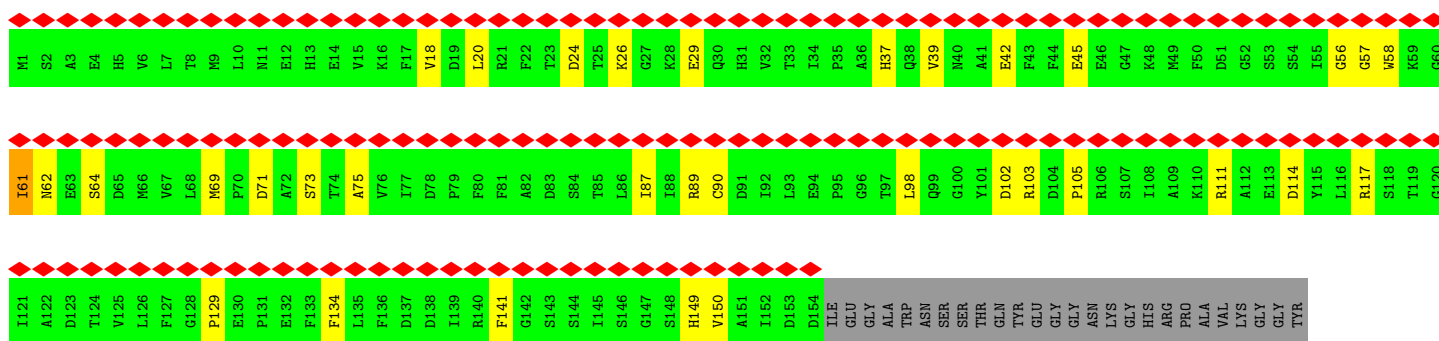


• Molecule 1: Glutamine synthetase

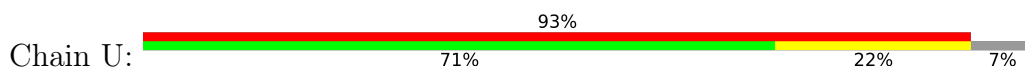


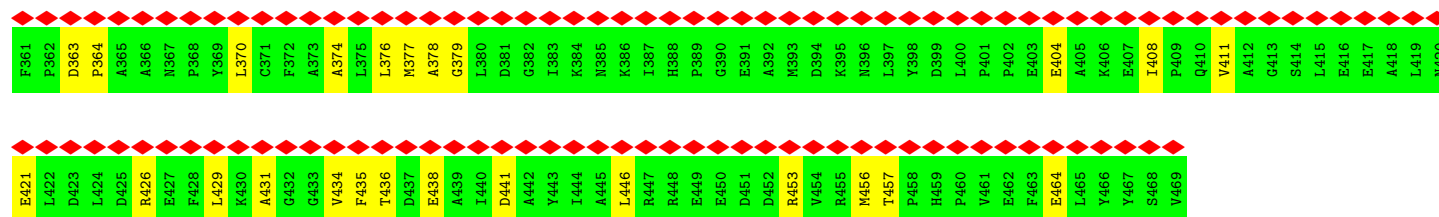


• Molecule 1: Glutamine synthetase

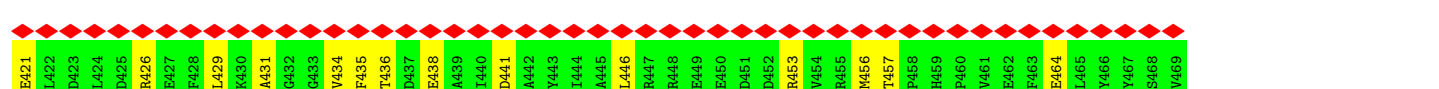
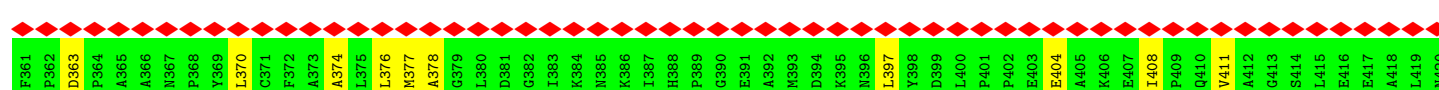
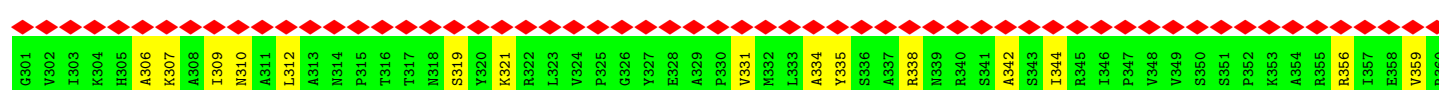
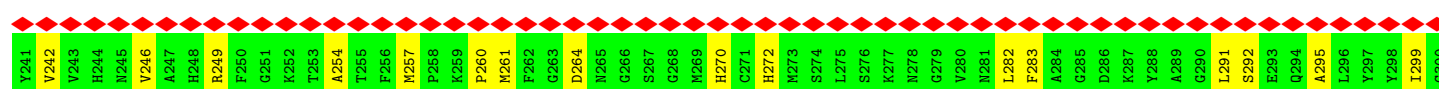
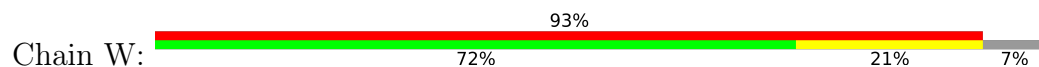


• Molecule 1: Glutamine synthetase



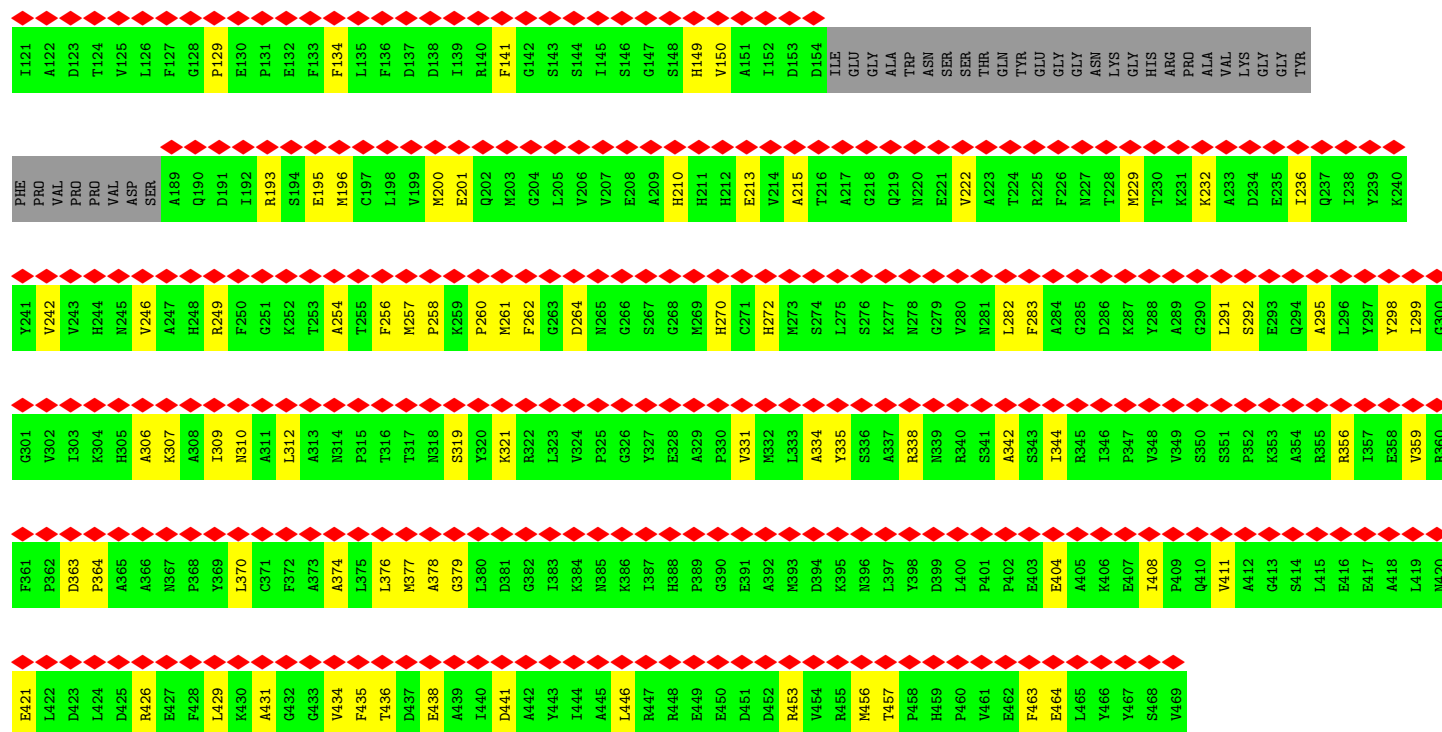


• Molecule 1: Glutamine synthetase

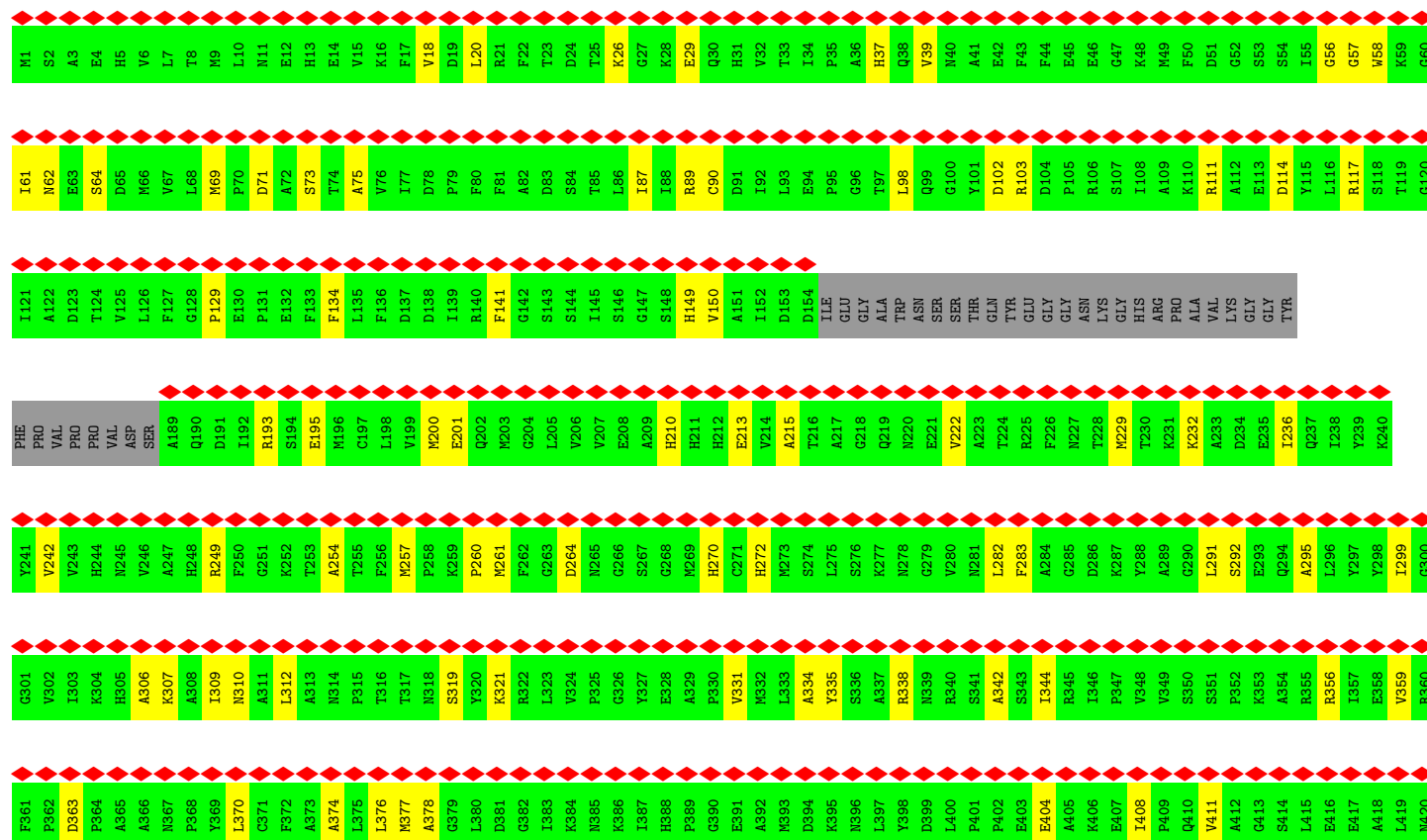
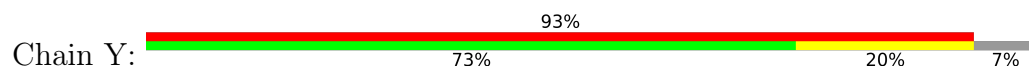


• Molecule 1: Glutamine synthetase





● Molecule 1: Glutamine synthetase



E421	L422	D423	L424	D425	R426	E427	F428	L429	K430	A431	G432	G433	V434	F435	T436	D437	E438	A439	I440	D441	A442	Y443	I444	A445	L446	R447	R448	E449	E450	D451	D452	R453	V454	R455	M456	T457	P458	H459	P460	V461	E462	F463	E464	L465	Y466	Y467	S468	V469
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C6	Depositor
Number of particles used	117242	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	59.6	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	3.228	Depositor
Minimum map value	-2.136	Depositor
Average map value	0.020	Depositor
Map value standard deviation	0.096	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	353.46002, 353.46002, 353.46002	wwPDB
Map dimensions	430, 430, 430	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.822, 0.822, 0.822	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.34	0/3470	0.43	0/4694
1	B	0.34	0/3470	0.43	0/4694
1	C	0.34	0/3470	0.43	0/4694
1	D	0.34	0/3470	0.43	0/4694
1	E	0.34	0/3470	0.43	0/4694
1	F	0.34	0/3470	0.43	0/4694
1	G	0.34	0/3470	0.43	0/4694
1	H	0.34	0/3470	0.43	0/4694
1	I	0.34	0/3470	0.43	0/4694
1	J	0.34	0/3470	0.44	0/4694
1	K	0.34	0/3470	0.43	0/4694
1	L	0.34	0/3470	0.43	0/4694
1	M	0.34	0/3470	0.43	0/4694
1	N	0.34	0/3470	0.43	0/4694
1	O	0.34	0/3470	0.43	0/4694
1	P	0.34	0/3470	0.43	0/4694
1	Q	0.34	0/3470	0.43	0/4694
1	R	0.34	0/3470	0.43	0/4694
1	S	0.34	0/3470	0.43	0/4694
1	U	0.34	0/3470	0.43	0/4694
1	V	0.34	0/3470	0.43	0/4694
1	W	0.34	0/3470	0.43	0/4694
1	X	0.34	0/3470	0.43	0/4694
1	Y	0.34	0/3470	0.43	0/4694
All	All	0.34	0/83280	0.43	0/112656

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	A	0	2
1	B	0	2
1	C	0	2
1	D	0	2
1	E	0	2
1	F	0	2
1	G	0	2
1	H	0	2
1	I	0	2
1	J	0	2
1	K	0	2
1	L	0	2
1	M	0	2
1	N	0	2
1	O	0	2
1	P	0	2
1	Q	0	2
1	R	0	2
1	S	0	2
1	U	0	2
1	V	0	2
1	W	0	2
1	X	0	2
1	Y	0	2
All	All	0	48

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 48 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	61	ILE	Peptide
1	A	62	ASN	Peptide
1	B	61	ILE	Peptide
1	B	62	ASN	Peptide
1	C	61	ILE	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3395	0	3315	70	0
1	B	3395	0	3315	67	0
1	C	3395	0	3315	67	0
1	D	3395	0	3315	66	0
1	E	3395	0	3315	66	0
1	F	3395	0	3315	67	0
1	G	3395	0	3315	68	0
1	H	3395	0	3315	73	0
1	I	3395	0	3315	71	0
1	J	3395	0	3315	72	0
1	K	3395	0	3315	75	0
1	L	3395	0	3315	67	0
1	M	3395	0	3315	70	0
1	N	3395	0	3315	67	0
1	O	3395	0	3315	69	0
1	P	3395	0	3315	67	0
1	Q	3395	0	3315	70	0
1	R	3395	0	3315	73	0
1	S	3395	0	3315	73	0
1	U	3395	0	3315	68	0
1	V	3395	0	3315	70	0
1	W	3395	0	3315	68	0
1	X	3395	0	3315	73	0
1	Y	3395	0	3315	65	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
2	C	2	0	0	0	0
2	D	2	0	0	0	0
2	E	2	0	0	0	0
2	F	2	0	0	0	0
2	G	2	0	0	0	0
2	H	2	0	0	0	0
2	I	2	0	0	0	0
2	J	2	0	0	0	0
2	K	2	0	0	0	0
2	L	2	0	0	0	0
2	M	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	N	1	0	0	0	0
2	O	1	0	0	0	0
2	P	1	0	0	0	0
2	Q	1	0	0	0	0
2	R	1	0	0	0	0
2	S	2	0	0	0	0
2	U	2	0	0	0	0
2	V	2	0	0	0	0
2	W	2	0	0	0	0
2	X	2	0	0	0	0
2	Y	2	0	0	0	0
All	All	81522	0	79560	1528	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 9.

The worst 5 of 1528 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:D:57:GLY:O	1:D:103:ARG:NH1	2.07	0.88
1:P:57:GLY:O	1:P:103:ARG:NH1	2.07	0.88
1:H:57:GLY:O	1:H:103:ARG:NH1	2.07	0.88
1:V:57:GLY:O	1:V:103:ARG:NH1	2.07	0.88
1:U:57:GLY:O	1:U:103:ARG:NH1	2.07	0.87

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
1	A	431/469 (92%)	407 (94%)	24 (6%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	C	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	D	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	E	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	F	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	G	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	H	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	I	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	J	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	K	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	L	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	M	431/469 (92%)	408 (95%)	23 (5%)	0	100	100
1	N	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	O	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	P	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	Q	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	R	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	S	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	U	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	V	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	W	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	X	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
1	Y	431/469 (92%)	407 (94%)	24 (6%)	0	100	100
All	All	10344/11256 (92%)	9769 (94%)	575 (6%)	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 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	
1	A	362/388 (93%)	362 (100%)	0	100	100
1	B	362/388 (93%)	362 (100%)	0	100	100
1	C	362/388 (93%)	362 (100%)	0	100	100
1	D	362/388 (93%)	362 (100%)	0	100	100
1	E	362/388 (93%)	362 (100%)	0	100	100
1	F	362/388 (93%)	362 (100%)	0	100	100
1	G	362/388 (93%)	362 (100%)	0	100	100
1	H	362/388 (93%)	362 (100%)	0	100	100
1	I	362/388 (93%)	362 (100%)	0	100	100
1	J	362/388 (93%)	362 (100%)	0	100	100
1	K	362/388 (93%)	362 (100%)	0	100	100
1	L	362/388 (93%)	362 (100%)	0	100	100
1	M	362/388 (93%)	362 (100%)	0	100	100
1	N	362/388 (93%)	362 (100%)	0	100	100
1	O	362/388 (93%)	362 (100%)	0	100	100
1	P	362/388 (93%)	362 (100%)	0	100	100
1	Q	362/388 (93%)	362 (100%)	0	100	100
1	R	362/388 (93%)	362 (100%)	0	100	100
1	S	362/388 (93%)	362 (100%)	0	100	100
1	U	362/388 (93%)	362 (100%)	0	100	100
1	V	362/388 (93%)	362 (100%)	0	100	100
1	W	362/388 (93%)	362 (100%)	0	100	100
1	X	362/388 (93%)	362 (100%)	0	100	100
1	Y	362/388 (93%)	362 (100%)	0	100	100
All	All	8688/9312 (93%)	8688 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 58 such sidechains are listed below:

Mol	Chain	Res	Type
1	L	210	HIS
1	X	385	ASN
1	O	210	HIS

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Mol	Chain	Res	Type
1	X	219	GLN
1	V	385	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](#)

Of 42 ligands modelled in this entry, 42 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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.

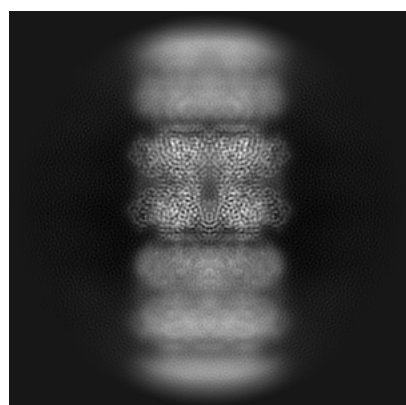
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32352. These allow visual inspection of the internal detail of the map and identification of artifacts.

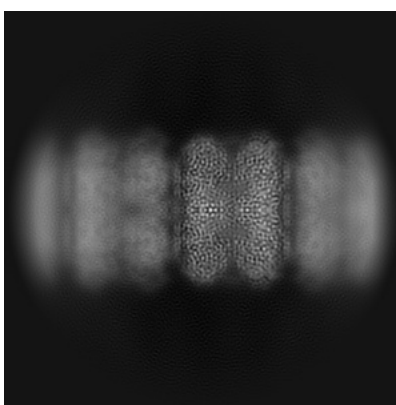
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

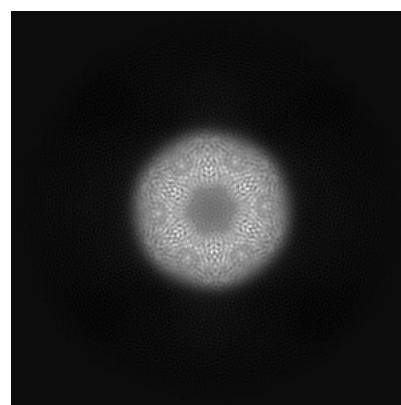
6.1.1 Primary map



X



Y

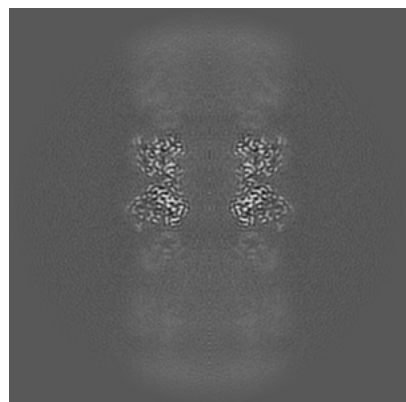


Z

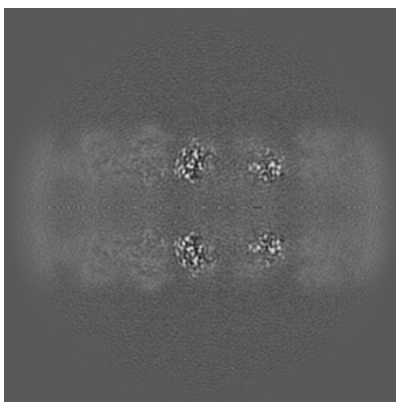
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

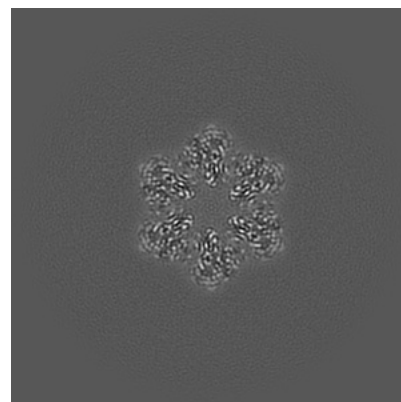
6.2.1 Primary map



X Index: 215



Y Index: 215

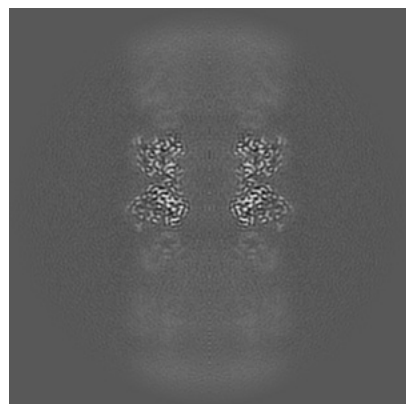


Z Index: 215

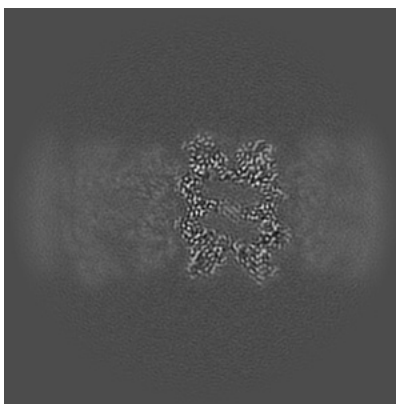
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

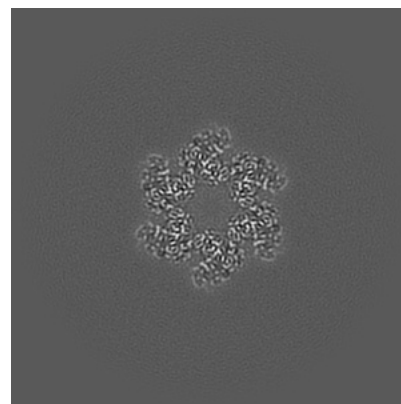
6.3.1 Primary map



X Index: 215



Y Index: 248

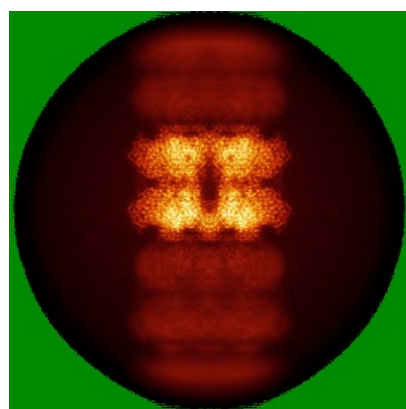


Z Index: 210

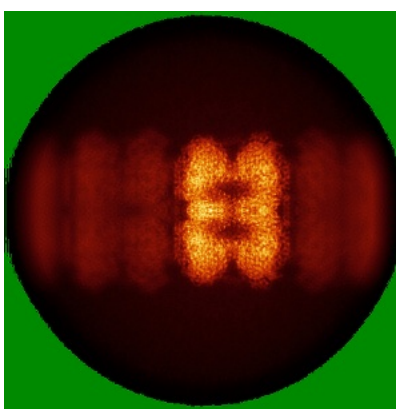
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

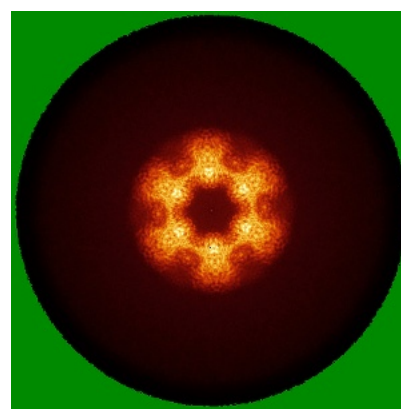
6.4.1 Primary map



X



Y

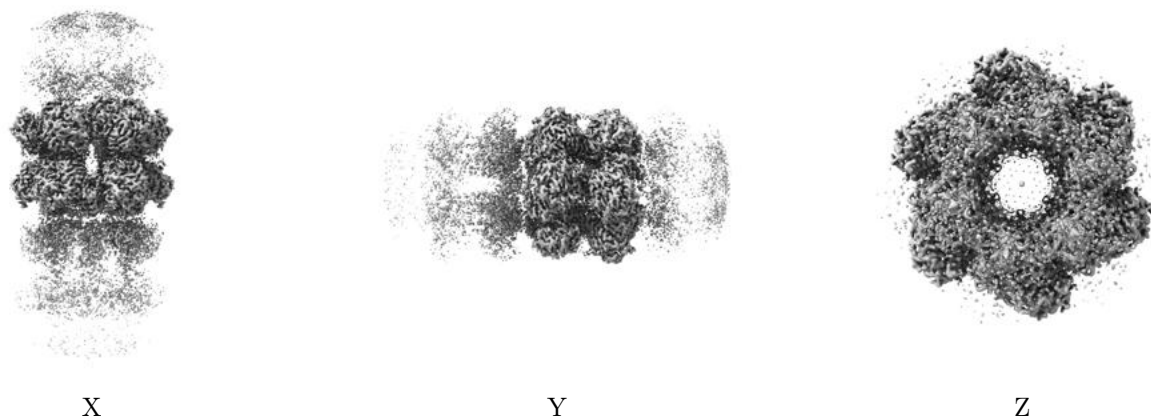


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.4. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

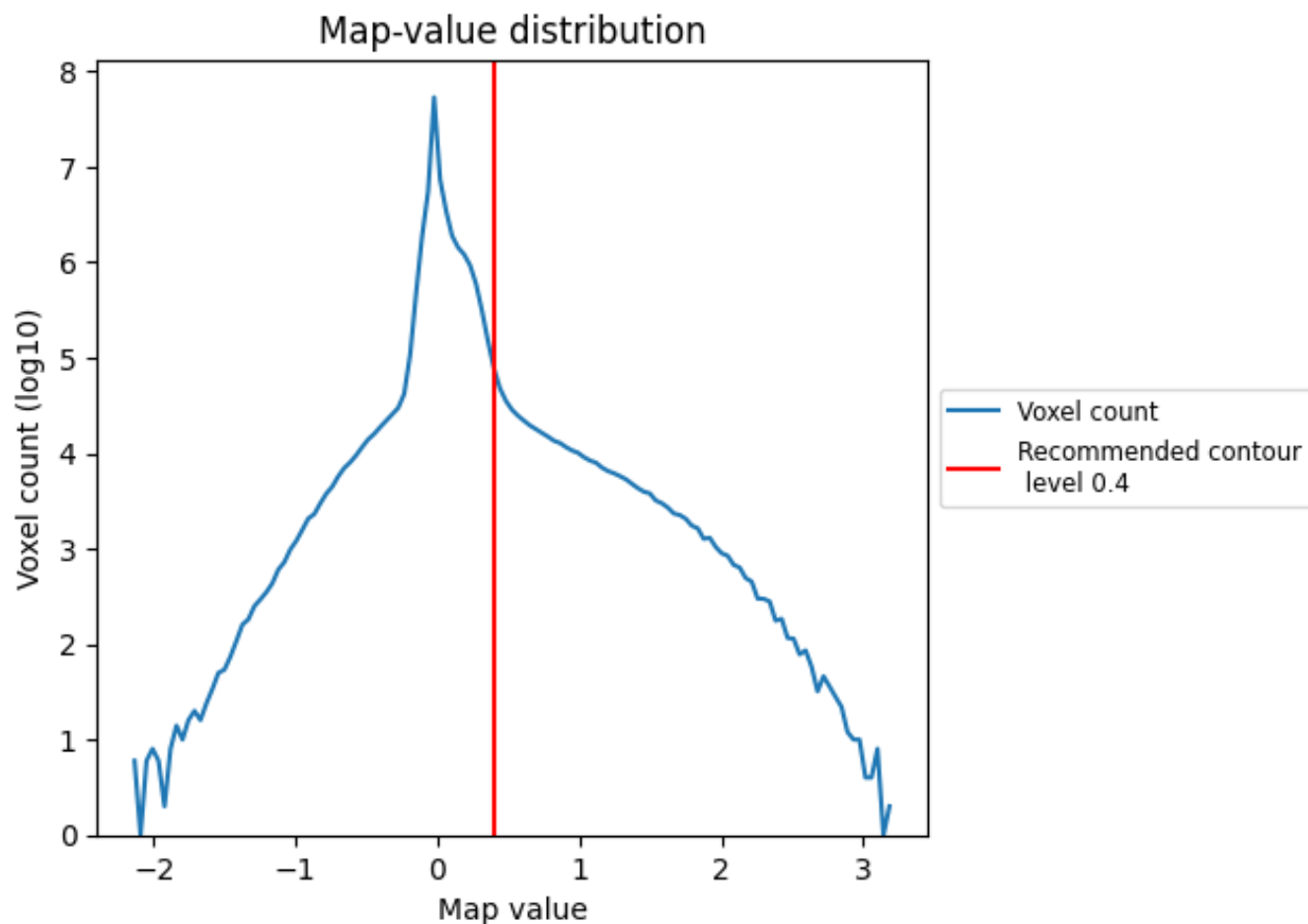
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

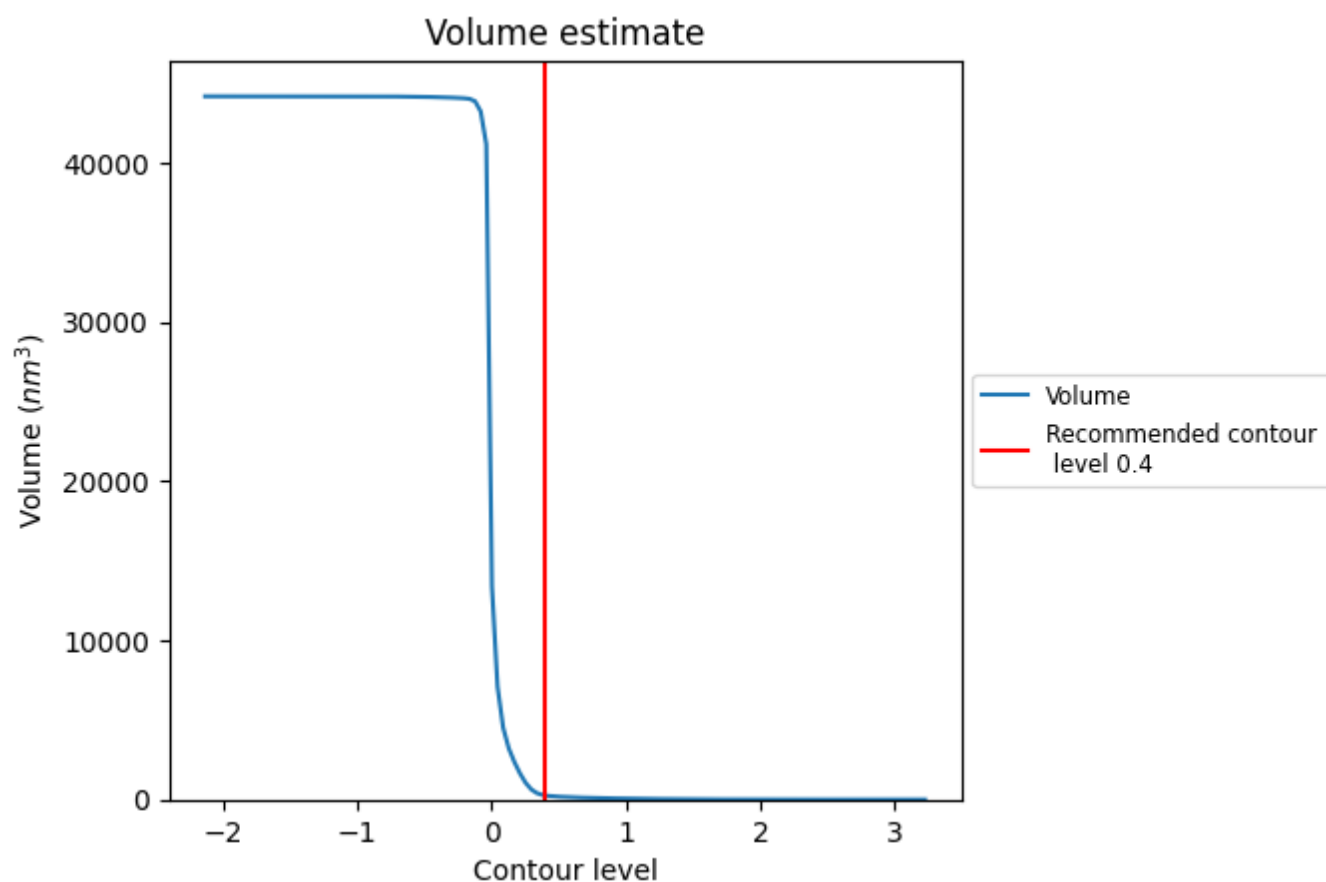
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

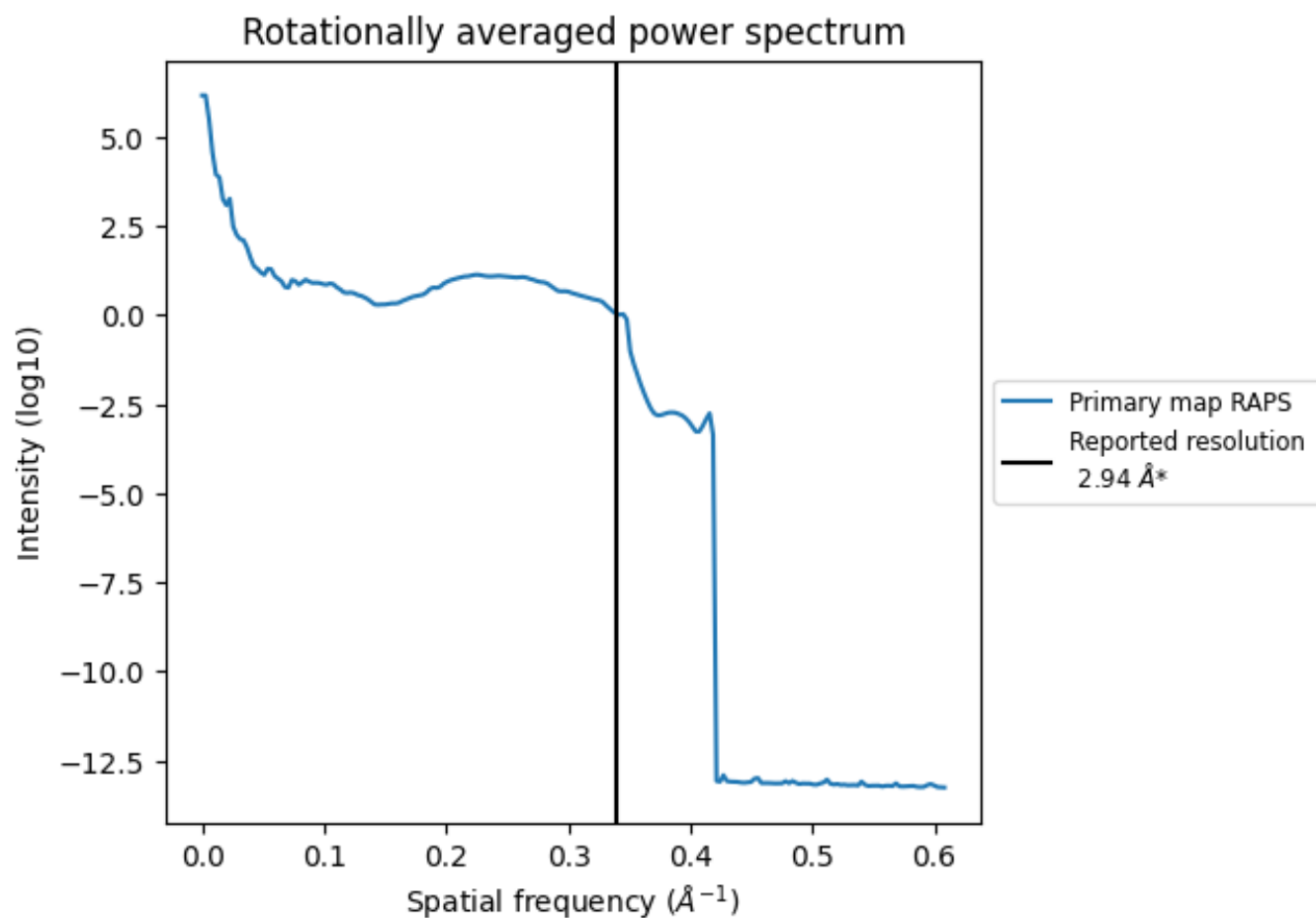
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 259 nm³; this corresponds to an approximate mass of 234 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.340 Å⁻¹

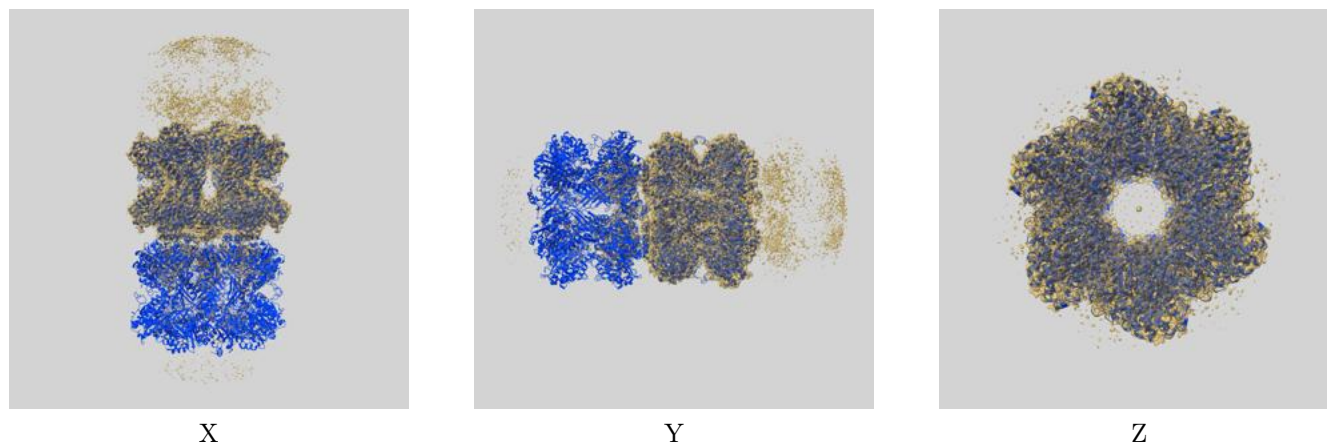
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

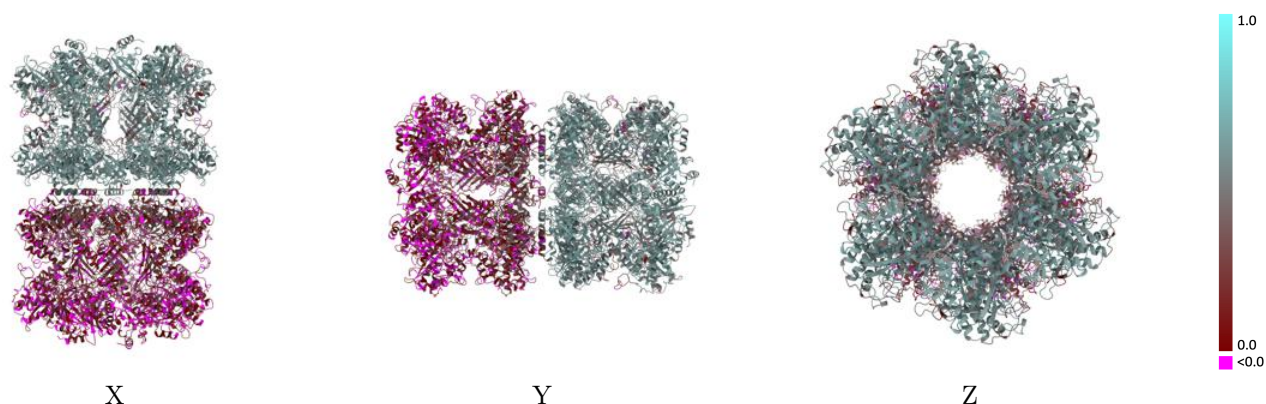
This section contains information regarding the fit between EMDB map EMD-32352 and PDB model 7W85. Per-residue inclusion information can be found in [section 3](#) on [page 7](#).

9.1 Map-model overlay [i](#)



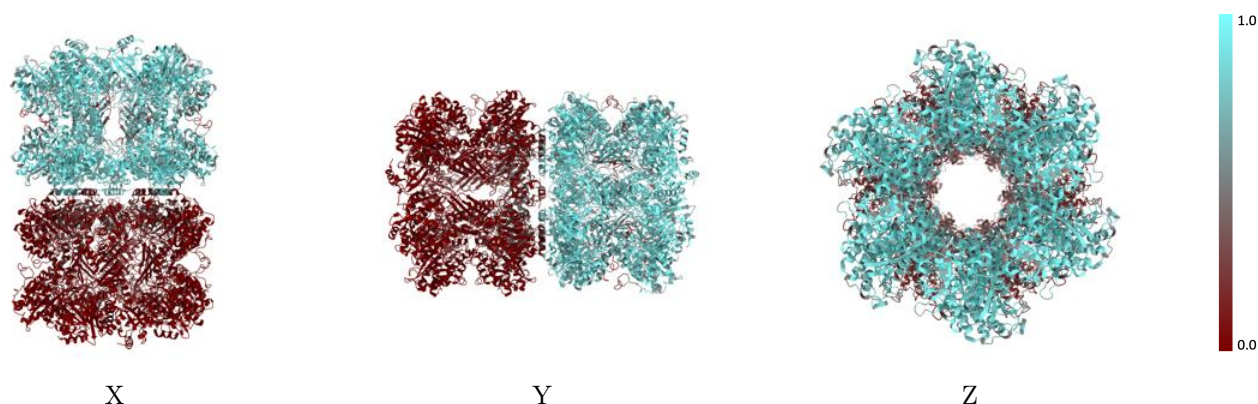
The images above show the 3D surface view of the map at the recommended contour level 0.4 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



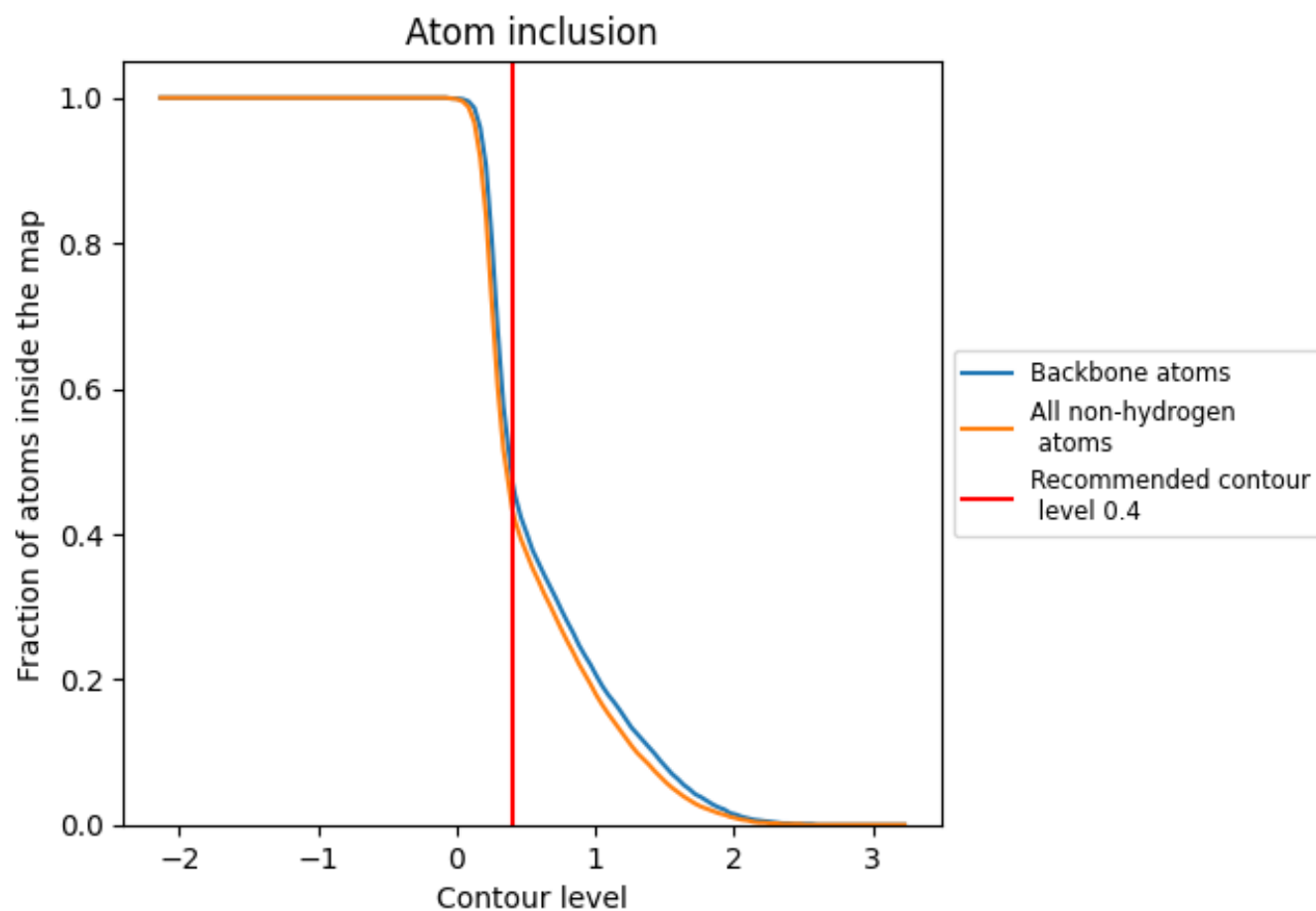
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)



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 (0.4).

9.4 Atom inclusion [i](#)



At the recommended contour level, 47% of all backbone atoms, 43% 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 (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4340	 0.3450
A	 0.8080	 0.5480
B	 0.8080	 0.5480
C	 0.8060	 0.5470
D	 0.8090	 0.5480
E	 0.8090	 0.5460
F	 0.8080	 0.5470
G	 0.8270	 0.5620
H	 0.8250	 0.5610
I	 0.8250	 0.5610
J	 0.8260	 0.5600
K	 0.8240	 0.5600
L	 0.8270	 0.5610
M	 0.0900	 0.1840
N	 0.0890	 0.1830
O	 0.0880	 0.1820
P	 0.0900	 0.1820
Q	 0.0880	 0.1850
R	 0.0880	 0.1850
S	 0.0130	 0.0850
U	 0.0130	 0.0880
V	 0.0130	 0.0860
W	 0.0110	 0.0850
X	 0.0130	 0.0870
Y	 0.0110	 0.0880

