Full wwPDB EM Validation Report ⓘ

Oct 14, 2024 – 05:27 pm BST

PDB ID	:	8QSY
EMDB ID	:	EMD-18642
Title	:	Portal capsid interface of full Haloferax tailed virus 1.
Authors	:	Zhang, D.; Daum, B.; Isupov, M.N.; McLaren, M.
Deposited on	:	2023-10-11
Resolution	:	2.68 Å(reported)
Based on initial model	:	.

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

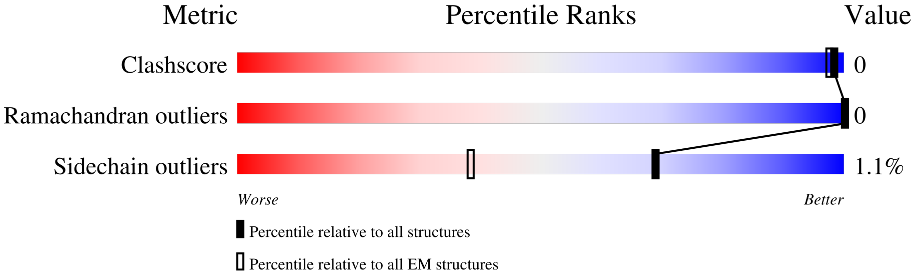
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.68 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	JA	396	
1	JB	396	
1	JC	396	
1	JD	396	
1	JE	396	
1	JF	396	
1	KA	396	
1	KB	396	

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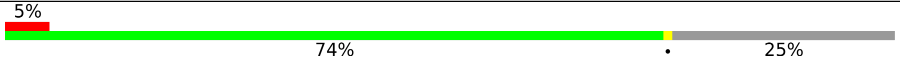
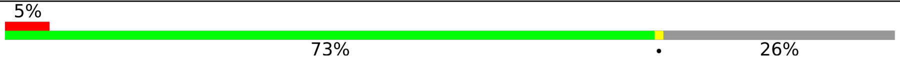
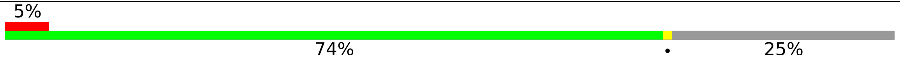
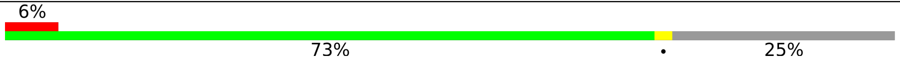
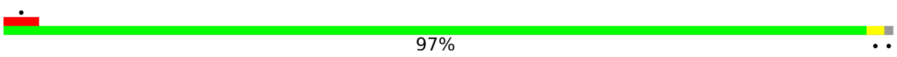
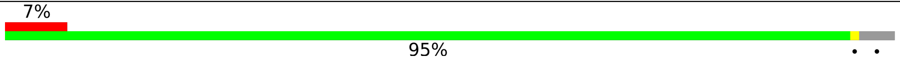
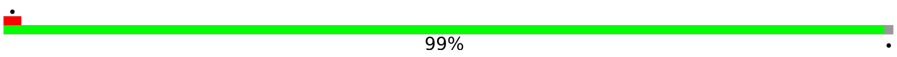
Mol	Chain	Length	Quality of chain
1	KC	396	
1	KD	396	
1	KE	396	
1	KF	396	
1	LA	396	
1	LB	396	
1	LC	396	
1	LD	396	
1	LE	396	
1	LF	396	
1	MA	396	
1	MB	396	
1	MC	396	
1	MD	396	
1	ME	396	
1	MF	396	
1	NA	396	
1	NB	396	
1	NC	396	
1	ND	396	
1	NE	396	
1	NF	396	
2	JI	137	
2	JJ	137	
2	JK	137	

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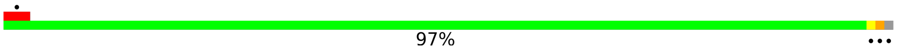
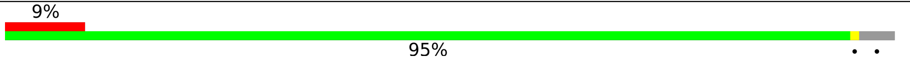
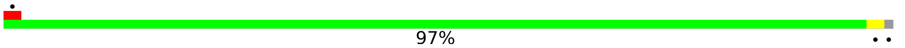
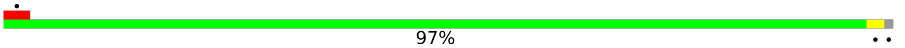
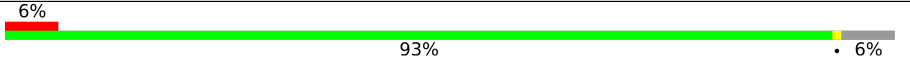
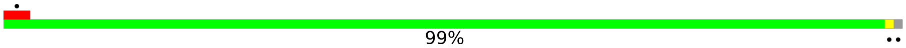
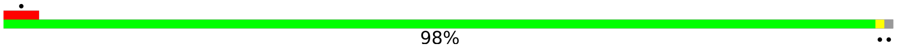
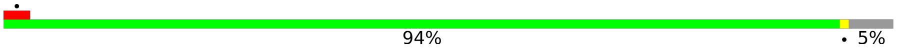
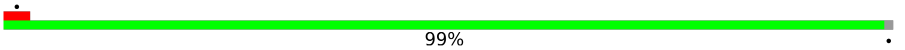
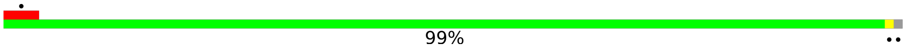
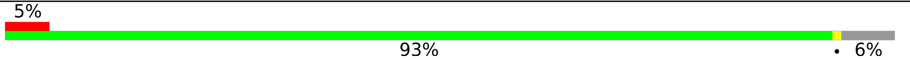
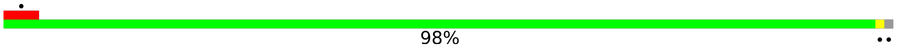
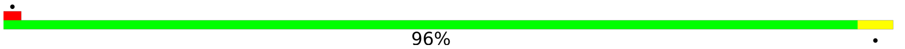
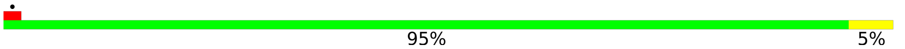
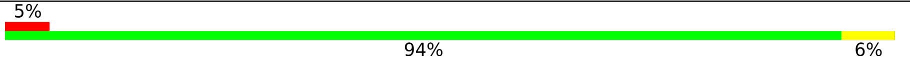
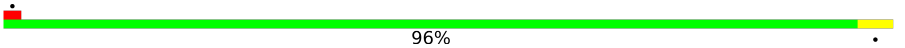
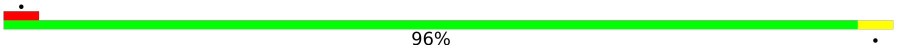
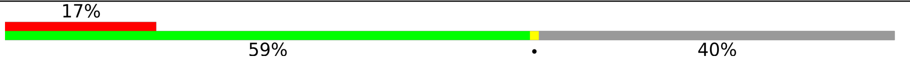
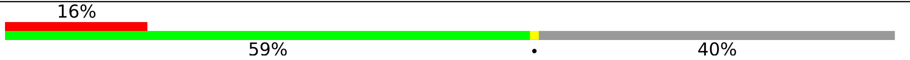
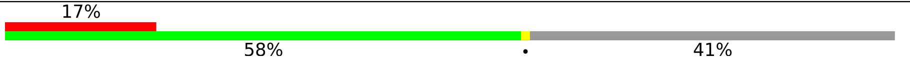
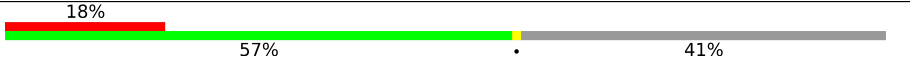
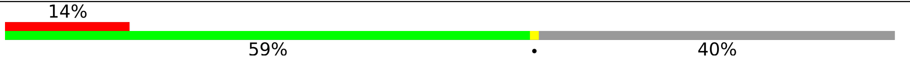
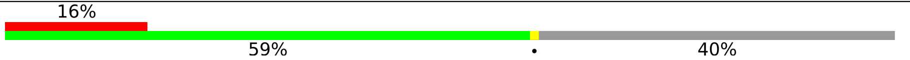
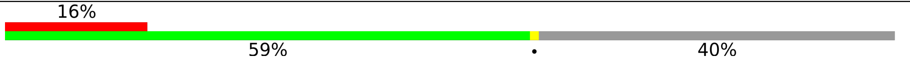
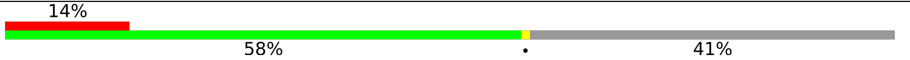
Mol	Chain	Length	Quality of chain
2	KI	137	
2	KJ	137	
2	KK	137	
2	LI	137	
2	LJ	137	
2	LK	137	
2	MI	137	
2	MJ	137	
2	MK	137	
2	NI	137	
2	NJ	137	
2	NK	137	
3	P5	82	
3	P6	82	
3	P7	82	
3	P8	82	
3	P9	82	
4	PA	675	
4	PB	675	
4	PC	675	
4	PD	675	
4	PE	675	
4	PF	675	
4	PG	675	
4	PH	675	

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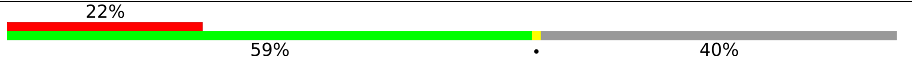
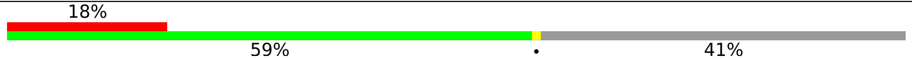
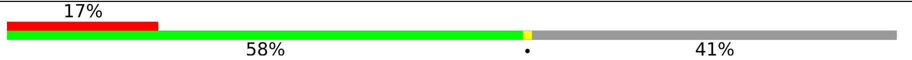
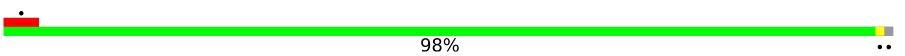
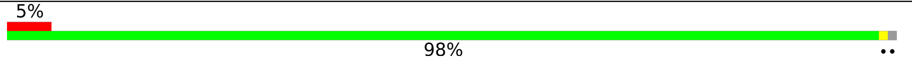
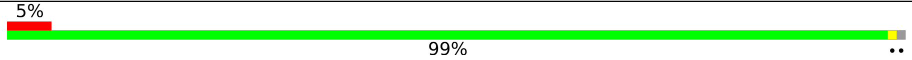
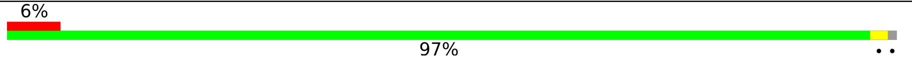
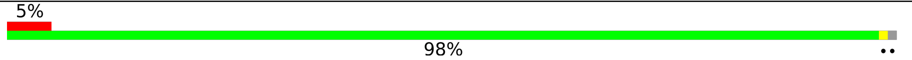
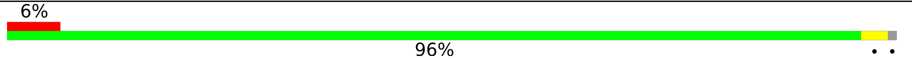
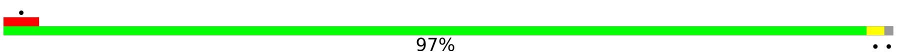
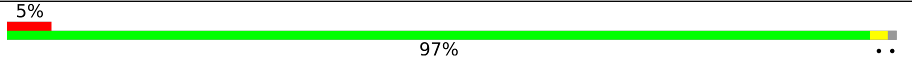
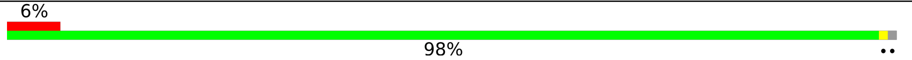
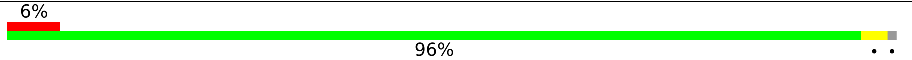
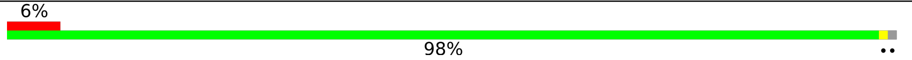
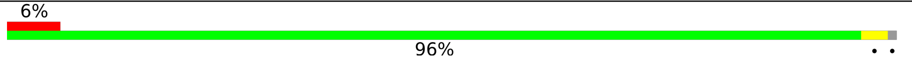
Mol	Chain	Length	Quality of chain
4	PI	675	
4	PJ	675	
4	PK	675	
4	PL	675	
5	PM	141	
5	PN	141	
5	PO	141	
5	PP	141	
5	PQ	141	
5	PR	141	
5	PS	141	
5	PT	141	
5	PU	141	
5	PV	141	
5	PW	141	
5	PX	141	

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 137239 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 HK97 gp5-like major capsid protein.

Mol	Chain	Residues	Atoms	AltConf	Trace
1	JA	296	Total C N O S 2298 1398 409 485 6	0	0
1	JB	296	Total C N O S 2298 1398 409 485 6	0	0
1	JC	296	Total C N O S 2298 1398 409 485 6	0	0
1	JD	296	Total C N O S 2298 1398 409 485 6	0	0
1	JE	296	Total C N O S 2298 1398 409 485 6	0	0
1	JF	282	Total C N O S 2183 1323 392 462 6	0	0
1	KA	296	Total C N O S 2298 1398 409 485 6	0	0
1	KB	296	Total C N O S 2298 1398 409 485 6	0	0
1	KC	296	Total C N O S 2298 1398 409 485 6	0	0
1	KD	296	Total C N O S 2298 1398 409 485 6	0	0
1	KE	296	Total C N O S 2298 1398 409 485 6	0	0
1	KF	282	Total C N O S 2183 1323 392 462 6	0	0
1	LA	296	Total C N O S 2298 1398 409 485 6	0	0
1	LB	296	Total C N O S 2298 1398 409 485 6	0	0
1	LC	296	Total C N O S 2298 1398 409 485 6	0	0
1	LD	296	Total C N O S 2298 1398 409 485 6	0	0
1	LE	296	Total C N O S 2298 1398 409 485 6	0	0

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Mol	Chain	Residues	Atoms	AltConf	Trace
1	LF	283	Total C N O S 2194 1329 396 463 6	0	0
1	MA	296	Total C N O S 2298 1398 409 485 6	0	0
1	MB	296	Total C N O S 2298 1398 409 485 6	0	0
1	MC	296	Total C N O S 2298 1398 409 485 6	0	0
1	MD	296	Total C N O S 2298 1398 409 485 6	0	0
1	ME	296	Total C N O S 2298 1398 409 485 6	0	0
1	MF	293	Total C N O S 2277 1383 406 482 6	0	0
1	NA	296	Total C N O S 2298 1398 409 485 6	0	0
1	NB	296	Total C N O S 2298 1398 409 485 6	0	0
1	NC	296	Total C N O S 2298 1398 409 485 6	0	0
1	ND	296	Total C N O S 2298 1398 409 485 6	0	0
1	NE	296	Total C N O S 2298 1398 409 485 6	0	0
1	NF	282	Total C N O S 2183 1323 392 462 6	0	0

- Molecule 2 is a protein called Capsid stabilization protein.

Mol	Chain	Residues	Atoms	AltConf	Trace
2	JI	136	Total C N O S 967 596 150 219 2	0	0
2	JJ	131	Total C N O S 930 575 144 209 2	0	0
2	JK	136	Total C N O S 967 596 150 219 2	0	0
2	KI	136	Total C N O S 967 596 150 219 2	0	0
2	KJ	131	Total C N O S 930 575 144 209 2	0	0
2	KK	136	Total C N O S 967 596 150 219 2	0	0

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Mol	Chain	Residues	Atoms	AltConf	Trace
2	LI	136	Total C N O S 967 596 150 219 2	0	0
2	LJ	129	Total C N O S 917 568 142 205 2	0	0
2	LK	136	Total C N O S 967 596 150 219 2	0	0
2	MI	136	Total C N O S 967 596 150 219 2	0	0
2	MJ	130	Total C N O S 926 573 143 208 2	0	0
2	MK	136	Total C N O S 967 596 150 219 2	0	0
2	NI	136	Total C N O S 967 596 150 219 2	0	0
2	NJ	129	Total C N O S 917 568 142 205 2	0	0
2	NK	136	Total C N O S 967 596 150 219 2	0	0

- Molecule 3 is a protein called Hypothetical protein gp21.

Mol	Chain	Residues	Atoms	AltConf	Trace
3	P5	82	Total C N O P S 689 414 132 138 1 4	0	0
3	P6	82	Total C N O P S 689 414 132 138 1 4	0	0
3	P7	82	Total C N O P S 689 414 132 138 1 4	0	0
3	P8	82	Total C N O P S 689 414 132 138 1 4	0	0
3	P9	82	Total C N O P S 689 414 132 138 1 4	0	0

- Molecule 4 is a protein called Portal protein.

Mol	Chain	Residues	Atoms	AltConf	Trace
4	PA	404	Total C N O P S 3175 1968 541 653 3 10	0	0
4	PB	404	Total C N O P S 3175 1968 541 653 3 10	0	0
4	PC	398	Total C N O P S 3119 1932 531 643 3 10	0	0

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Mol	Chain	Residues	Atoms	AltConf	Trace
4	PD	396	Total C N O P S 3108 1925 529 641 3 10	0	0
4	PE	404	Total C N O P S 3175 1968 541 653 3 10	0	0
4	PF	404	Total C N O P S 3175 1968 541 653 3 10	0	0
4	PG	404	Total C N O P S 3175 1968 541 653 3 10	0	0
4	PH	395	Total C N O P S 3102 1923 527 639 3 10	0	0
4	PI	399	Total C N O P S 3145 1951 534 648 3 9	0	0
4	PJ	404	Total C N O P S 3175 1968 541 653 3 10	0	0
4	PK	401	Total C N O P S 3147 1950 536 648 3 10	0	0
4	PL	398	Total C N O P S 3119 1932 531 643 3 10	0	0

- Molecule 5 is a protein called HK97 gp6-like/SPP1 gp15-like head-tail connector.

Mol	Chain	Residues	Atoms	AltConf	Trace
5	PM	140	Total C N O S 1087 666 184 235 2	0	0
5	PN	140	Total C N O S 1087 666 184 235 2	0	0
5	PO	140	Total C N O S 1087 666 184 235 2	0	0
5	PP	140	Total C N O S 1087 666 184 235 2	0	0
5	PQ	140	Total C N O S 1087 666 184 235 2	0	0
5	PR	140	Total C N O S 1087 666 184 235 2	0	0
5	PS	140	Total C N O S 1087 666 184 235 2	0	0
5	PT	140	Total C N O S 1087 666 184 235 2	0	0
5	PU	140	Total C N O S 1087 666 184 235 2	0	0
5	PV	140	Total C N O S 1087 666 184 235 2	0	0

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Mol	Chain	Residues	Atoms	AltConf	Trace
5	PW	140	Total C N O S 1087 666 184 235 2	0	0
5	PX	140	Total C N O S 1087 666 184 235 2	0	0

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
6	JA	5	Total Mg 5 5	0
6	JB	6	Total Mg 6 6	0
6	JC	6	Total Mg 6 6	0
6	JD	5	Total Mg 5 5	0
6	JE	5	Total Mg 5 5	0
6	JF	5	Total Mg 5 5	0
6	JI	2	Total Mg 2 2	0
6	KA	6	Total Mg 6 6	0
6	KB	5	Total Mg 5 5	0
6	KC	4	Total Mg 4 4	0
6	KD	7	Total Mg 7 7	0
6	KE	5	Total Mg 5 5	0
6	KF	5	Total Mg 5 5	0
6	KI	1	Total Mg 1 1	0
6	LA	6	Total Mg 6 6	0
6	LB	5	Total Mg 5 5	0
6	LC	4	Total Mg 4 4	0

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Mol	Chain	Residues	Atoms	AltConf
6	LD	7	Total Mg 7 7	0
6	LE	5	Total Mg 5 5	0
6	LF	4	Total Mg 4 4	0
6	LI	1	Total Mg 1 1	0
6	LJ	1	Total Mg 1 1	0
6	MA	7	Total Mg 7 7	0
6	MB	5	Total Mg 5 5	0
6	MC	3	Total Mg 3 3	0
6	MD	8	Total Mg 8 8	0
6	ME	4	Total Mg 4 4	0
6	MF	5	Total Mg 5 5	0
6	MI	1	Total Mg 1 1	0
6	NA	5	Total Mg 5 5	0
6	NB	6	Total Mg 6 6	0
6	NC	5	Total Mg 5 5	0
6	ND	7	Total Mg 7 7	0
6	NE	4	Total Mg 4 4	0
6	NF	4	Total Mg 4 4	0
6	NI	1	Total Mg 1 1	0
6	PM	2	Total Mg 2 2	0
6	PN	2	Total Mg 2 2	0

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Mol	Chain	Residues	Atoms	AltConf
6	PO	1	Total Mg 1 1	0
6	PP	2	Total Mg 2 2	0
6	PQ	2	Total Mg 2 2	0
6	PR	1	Total Mg 1 1	0
6	PS	1	Total Mg 1 1	0
6	PT	1	Total Mg 1 1	0
6	PU	1	Total Mg 1 1	0
6	PV	1	Total Mg 1 1	0
6	PW	2	Total Mg 2 2	0
6	PX	2	Total Mg 2 2	0

- Molecule 7 is POTASSIUM ION (three-letter code: K) (formula: K) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
7	JI	1	Total K 1 1	0
7	JJ	1	Total K 1 1	0
7	JK	1	Total K 1 1	0
7	KI	1	Total K 1 1	0
7	KJ	1	Total K 1 1	0
7	KK	1	Total K 1 1	0
7	LI	1	Total K 1 1	0
7	LJ	1	Total K 1 1	0
7	LK	1	Total K 1 1	0

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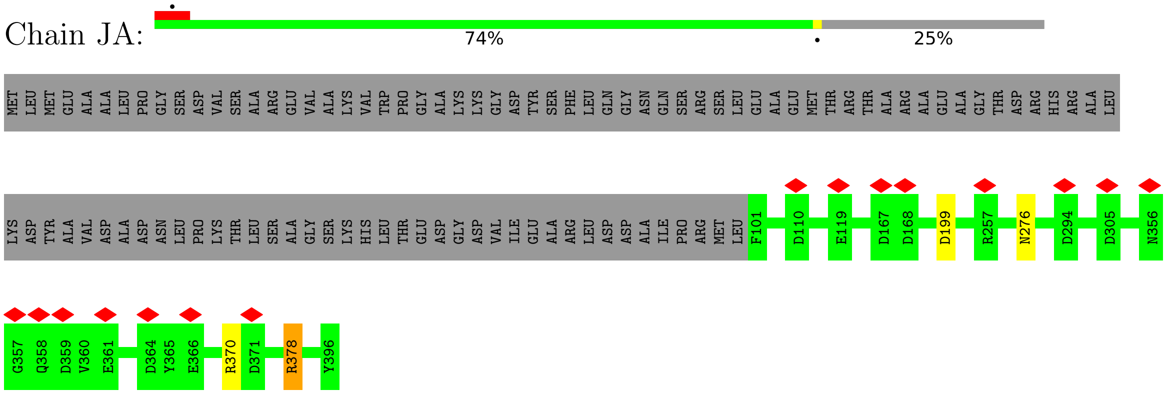
Mol	Chain	Residues	Atoms	AltConf
7	MI	1	Total K 1 1	0
7	MJ	2	Total K 2 2	0
7	MK	1	Total K 1 1	0
7	NI	1	Total K 1 1	0
7	NJ	1	Total K 1 1	0
7	NK	1	Total K 1 1	0
7	P6	1	Total K 1 1	0

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.

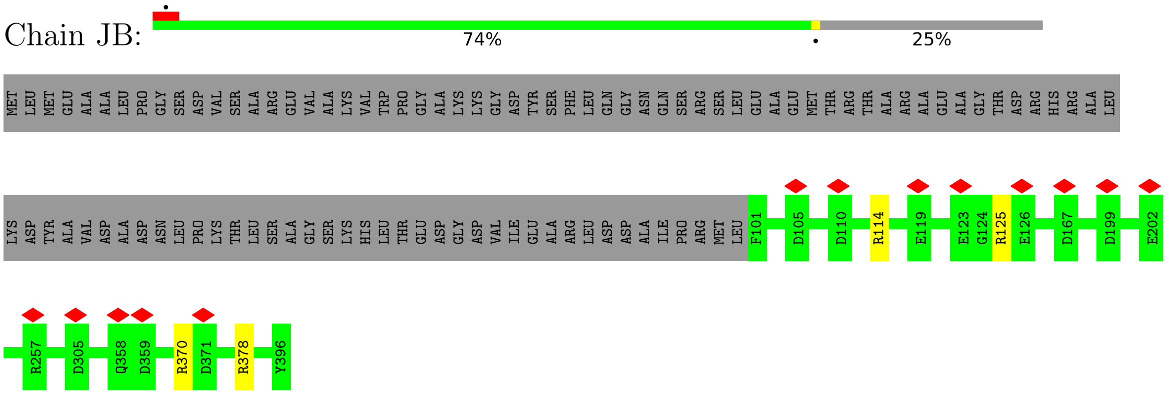
- Molecule 1: HK97 gp5-like major capsid protein

Chain JA:



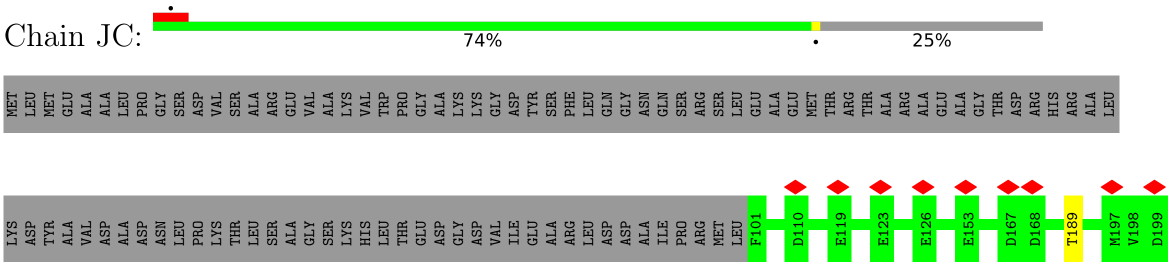
- Molecule 1: HK97 gp5-like major capsid protein

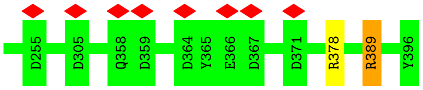
Chain JB:



- Molecule 1: HK97 gp5-like major capsid protein

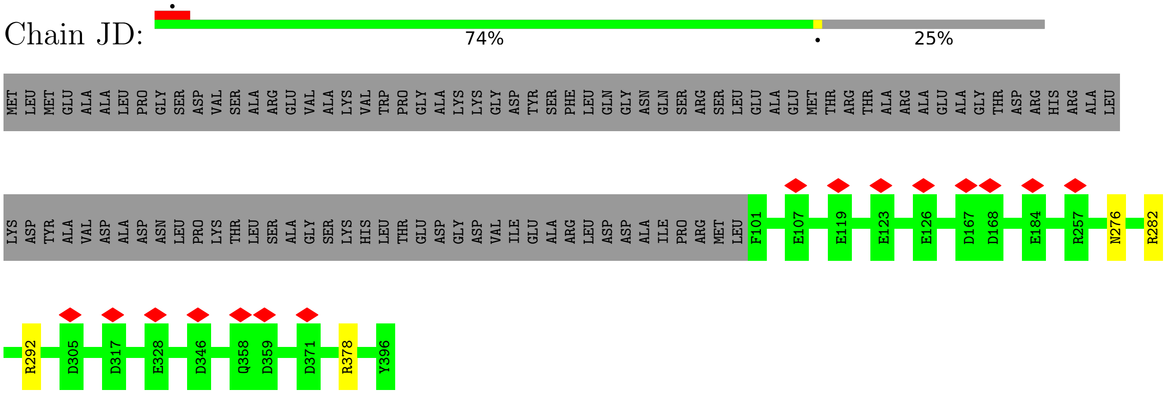
Chain JC:





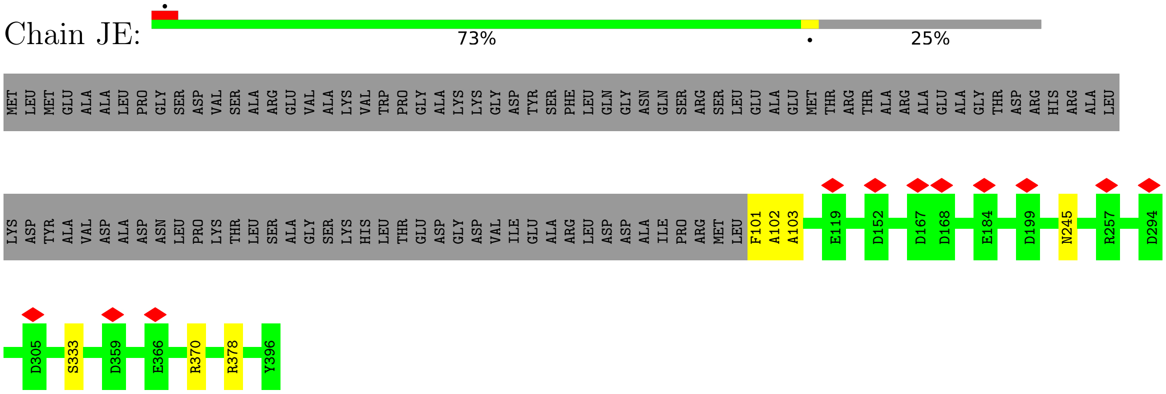
- Molecule 1: HK97 gp5-like major capsid protein

Chain JD:



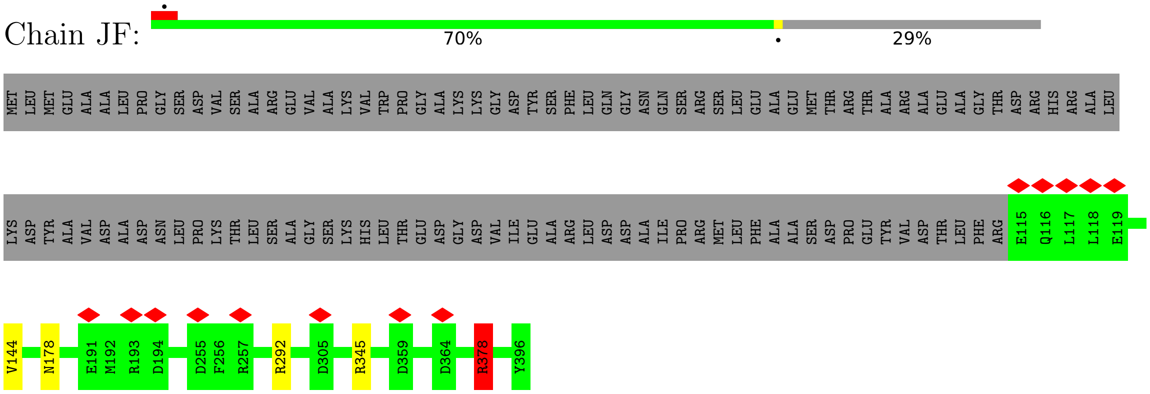
- Molecule 1: HK97 gp5-like major capsid protein

Chain JE:



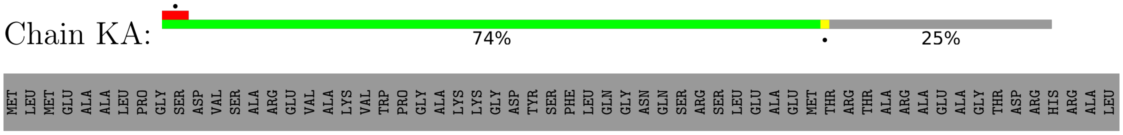
- Molecule 1: HK97 gp5-like major capsid protein

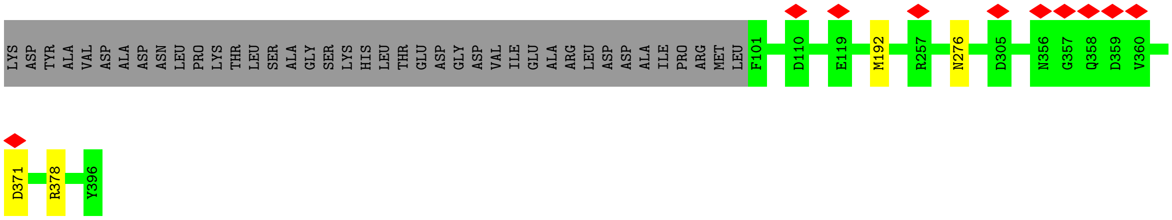
Chain JF:



- Molecule 1: HK97 gp5-like major capsid protein

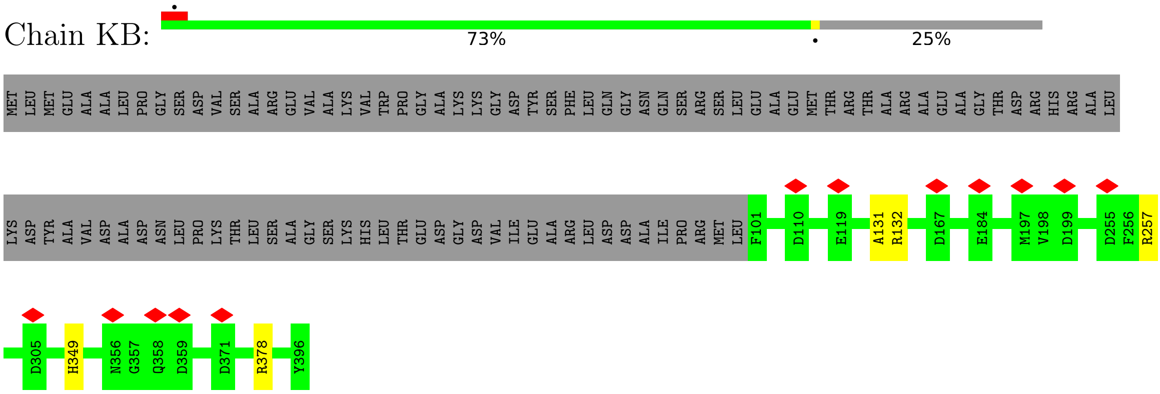
Chain KA:





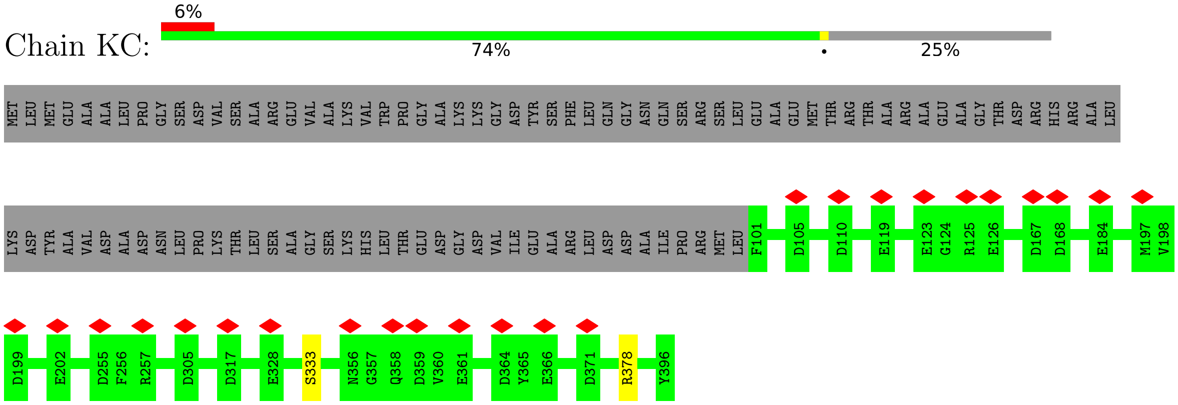
• Molecule 1: HK97 gp5-like major capsid protein

Chain KB:



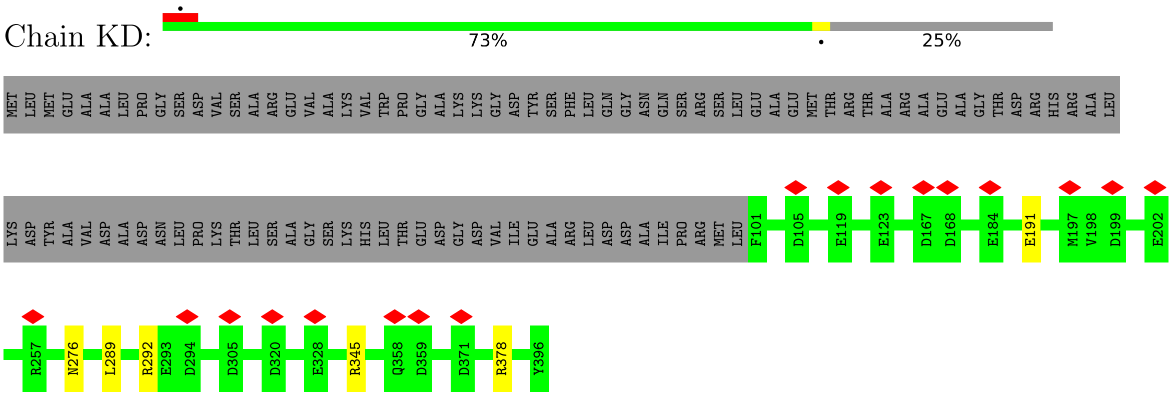
• Molecule 1: HK97 gp5-like major capsid protein

Chain KC:

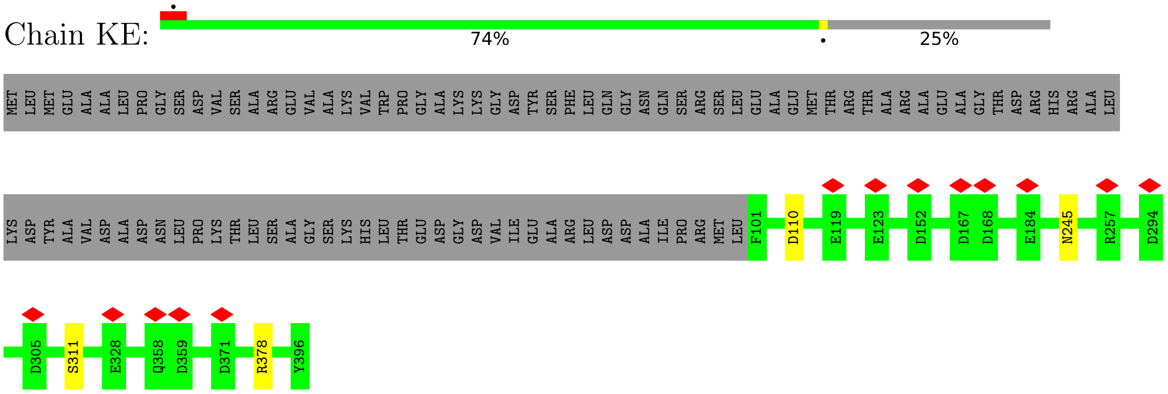


• Molecule 1: HK97 gp5-like major capsid protein

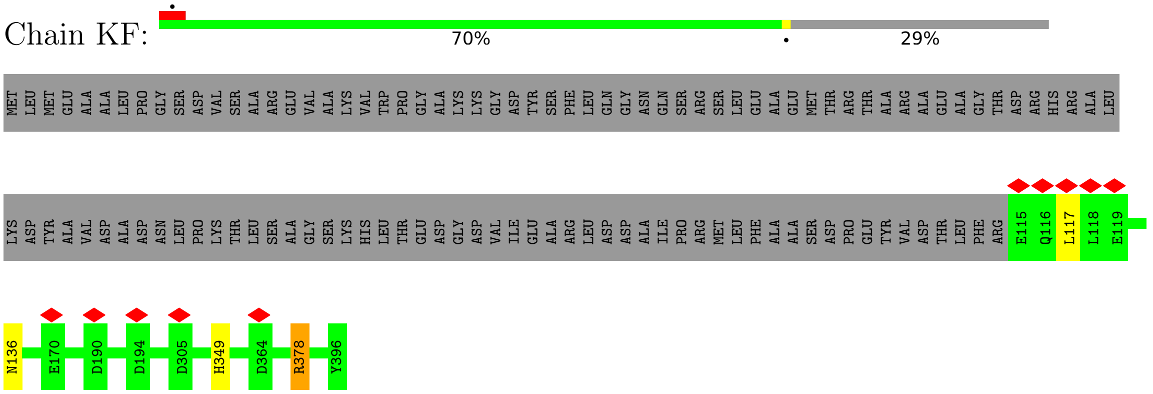
Chain KD:



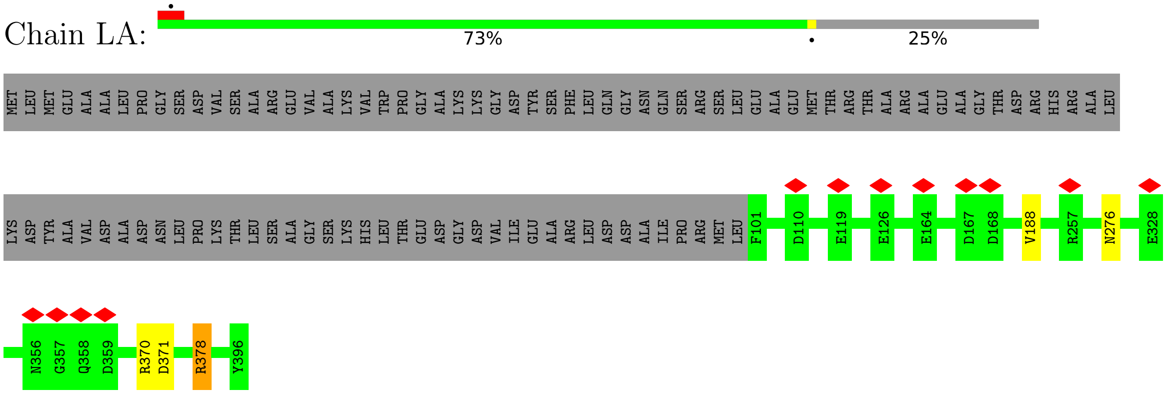
• Molecule 1: HK97 gp5-like major capsid protein



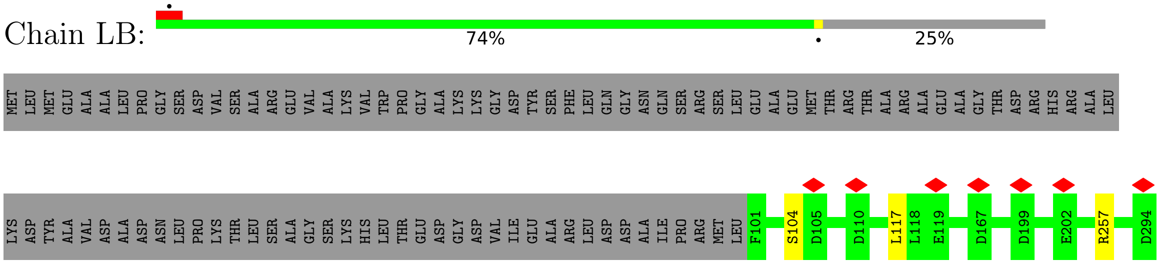
• Molecule 1: HK97 gp5-like major capsid protein

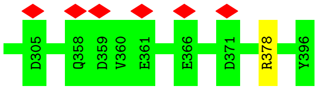


• Molecule 1: HK97 gp5-like major capsid protein

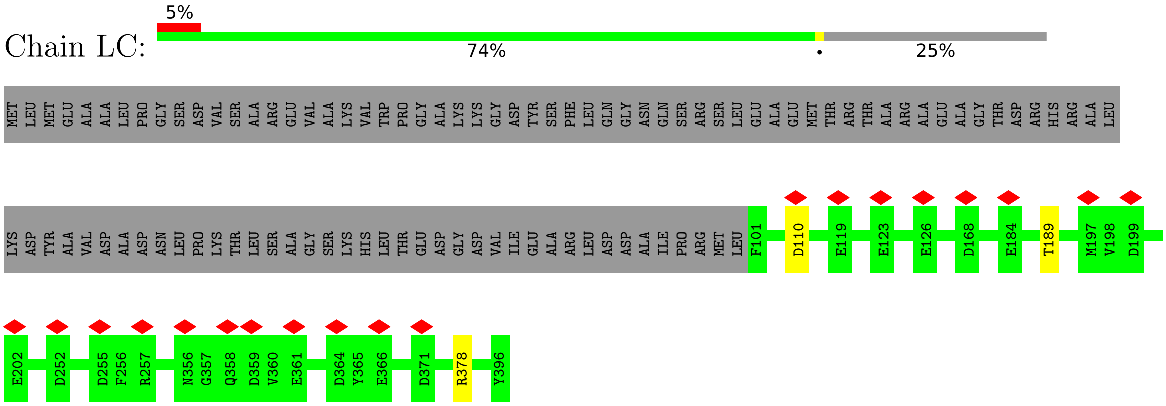


• Molecule 1: HK97 gp5-like major capsid protein

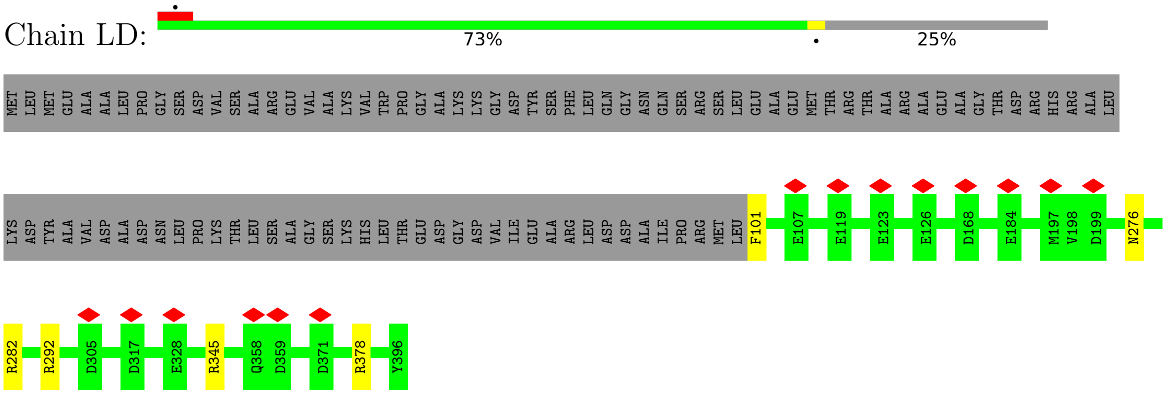




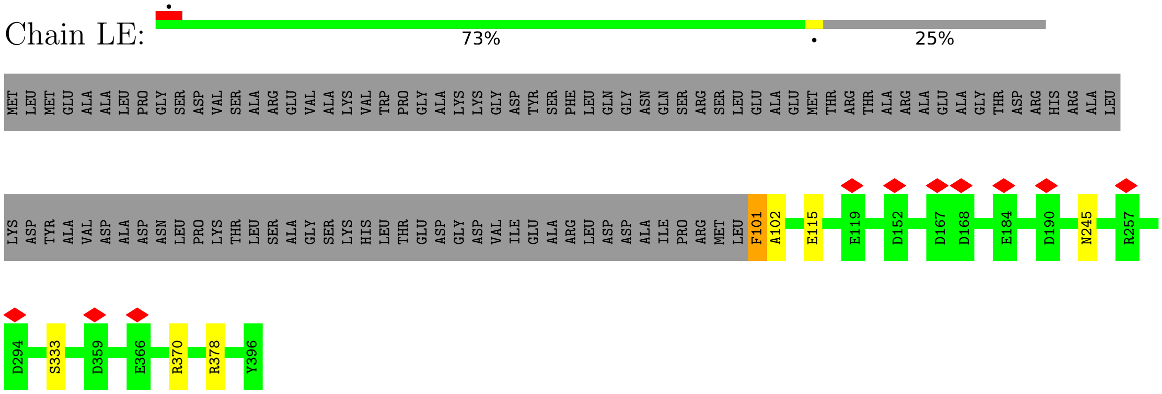
- Molecule 1: HK97 gp5-like major capsid protein



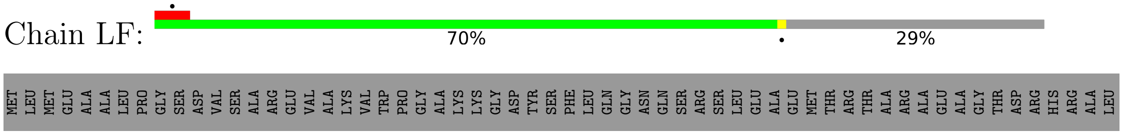
- Molecule 1: HK97 gp5-like major capsid protein

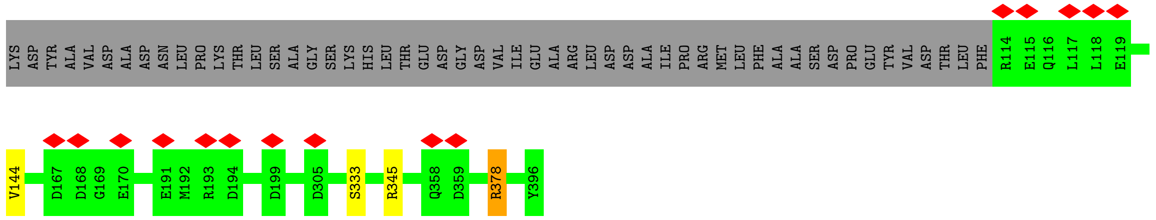


- Molecule 1: HK97 gp5-like major capsid protein



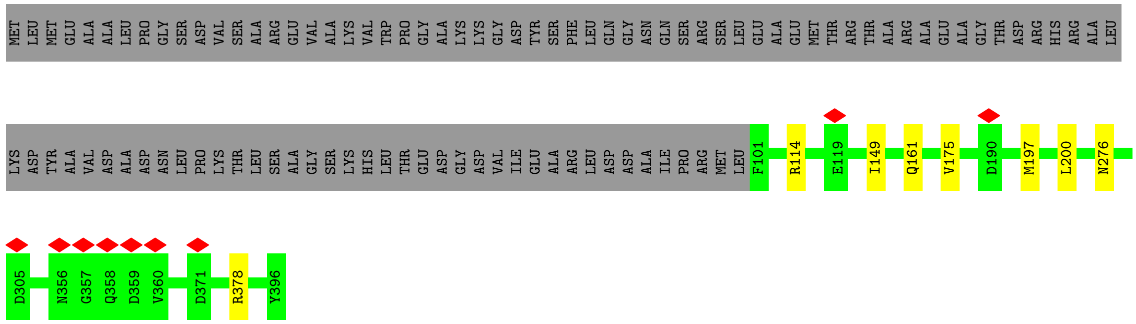
- Molecule 1: HK97 gp5-like major capsid protein





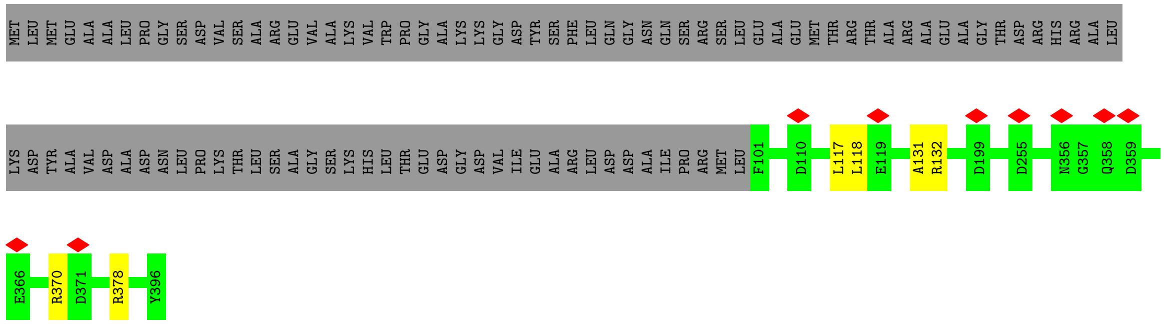
- Molecule 1: HK97 gp5-like major capsid protein

Chain MA:



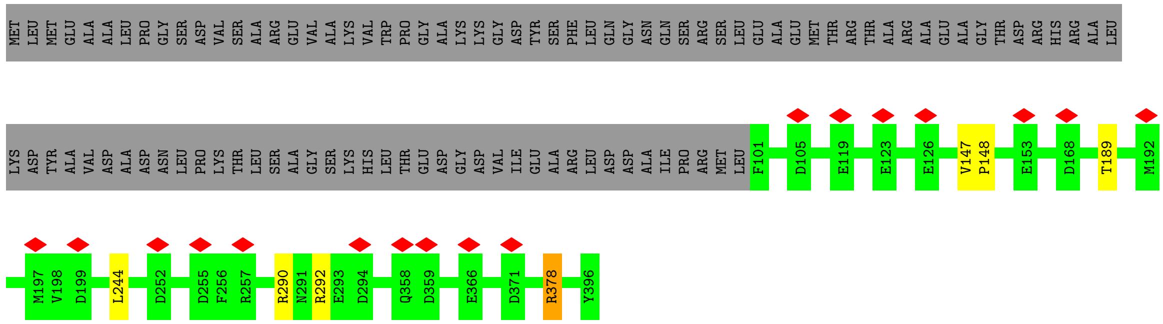
- Molecule 1: HK97 gp5-like major capsid protein

Chain MB:

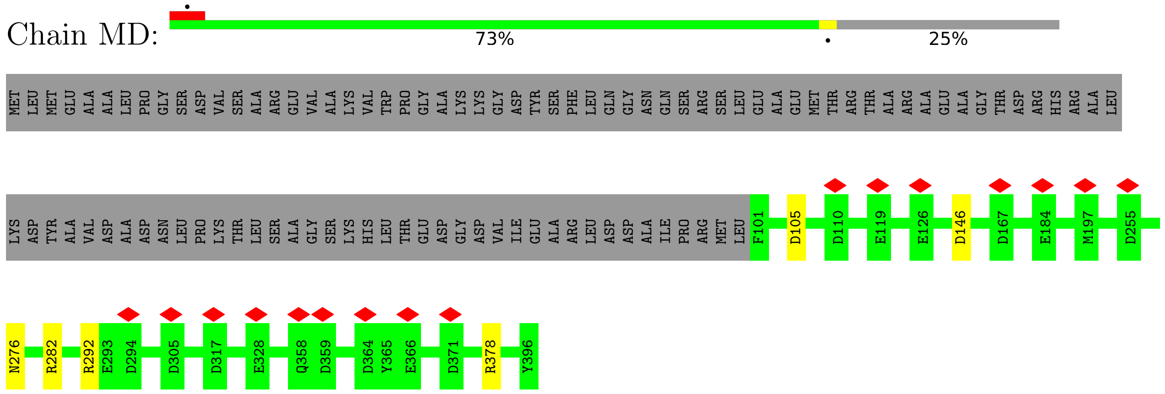


- Molecule 1: HK97 gp5-like major capsid protein

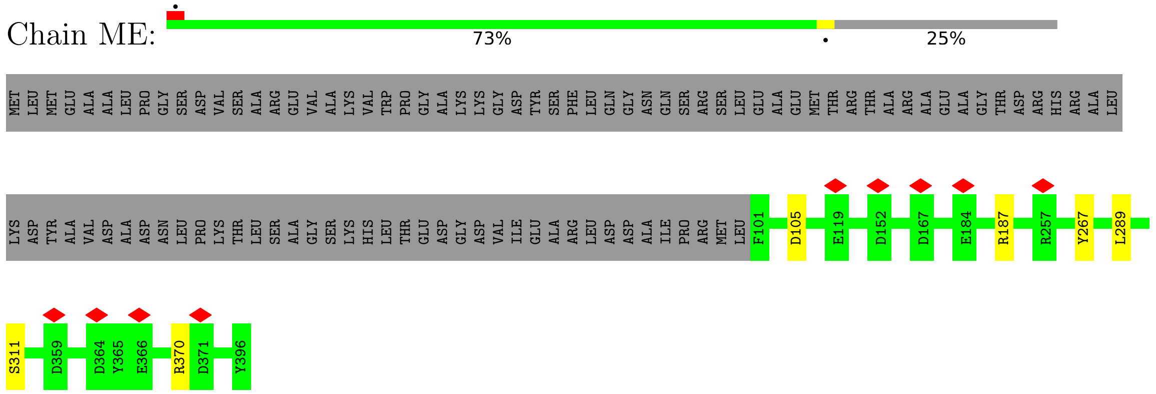
Chain MC:



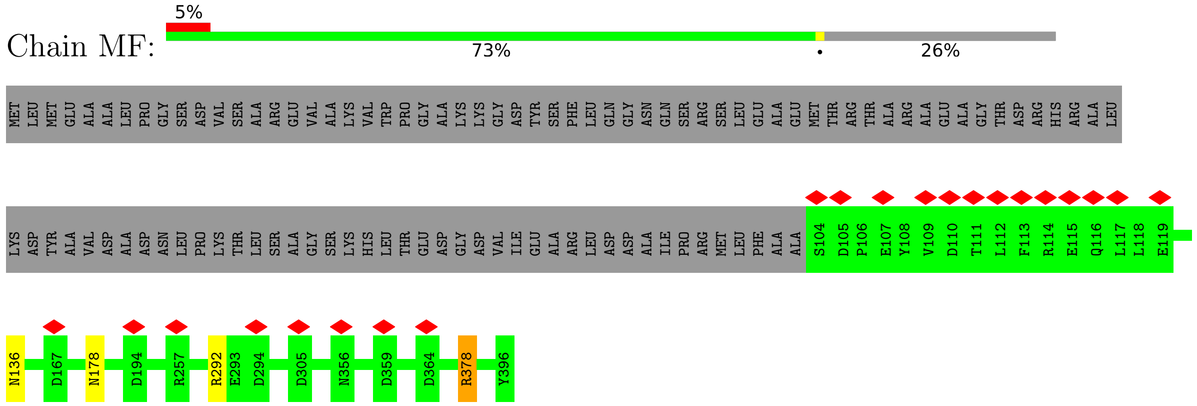
- Molecule 1: HK97 gp5-like major capsid protein



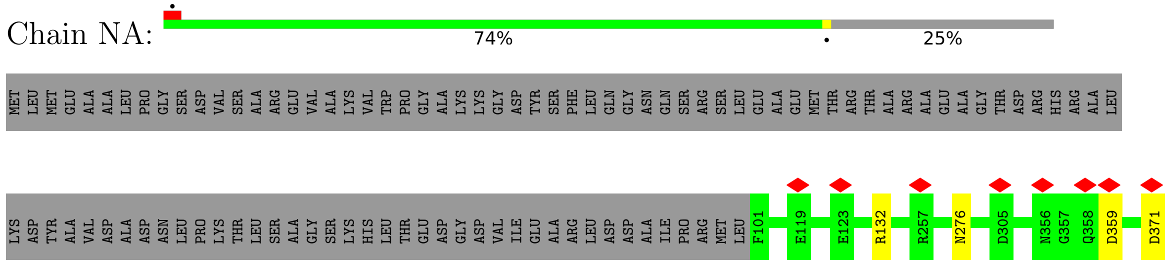
- Molecule 1: HK97 gp5-like major capsid protein



- Molecule 1: HK97 gp5-like major capsid protein

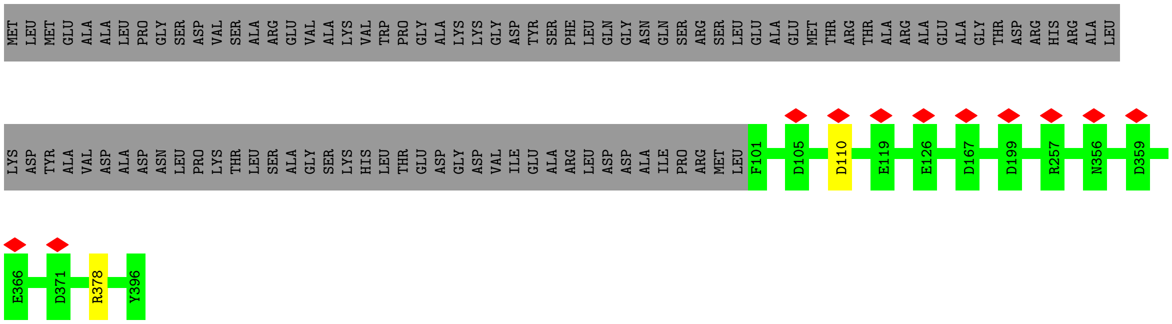


- Molecule 1: HK97 gp5-like major capsid protein



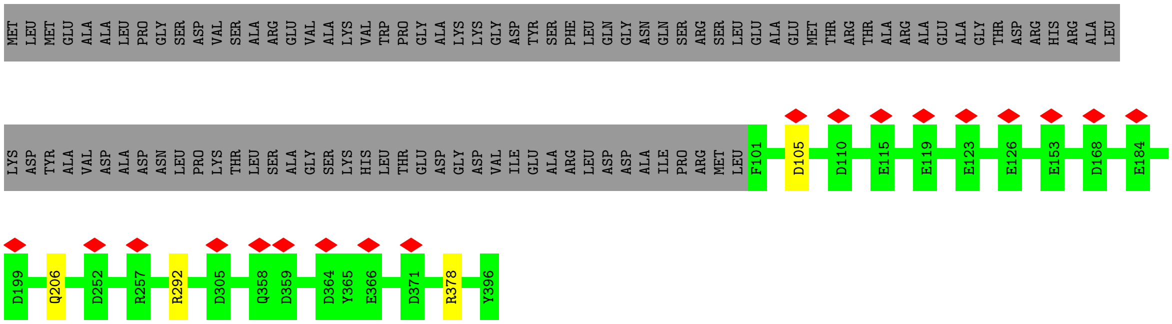
- Molecule 1: HK97 gp5-like major capsid protein

Chain NB:



- Molecule 1: HK97 gp5-like major capsid protein

Chain NC:



- Molecule 1: HK97 gp5-like major capsid protein

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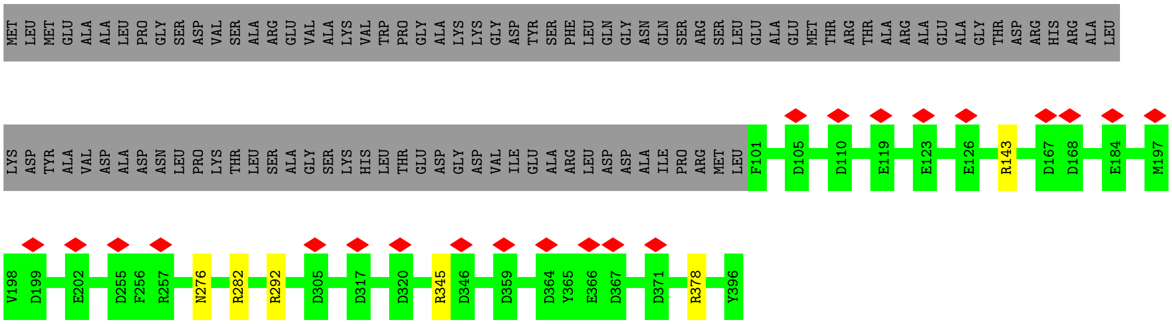

- Molecule 1: HK97 gp5-like major capsid protein

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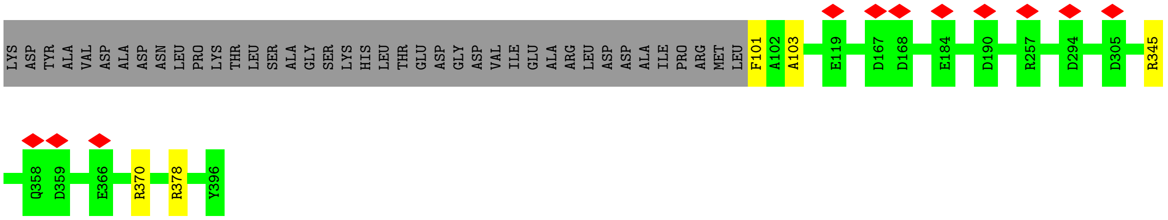
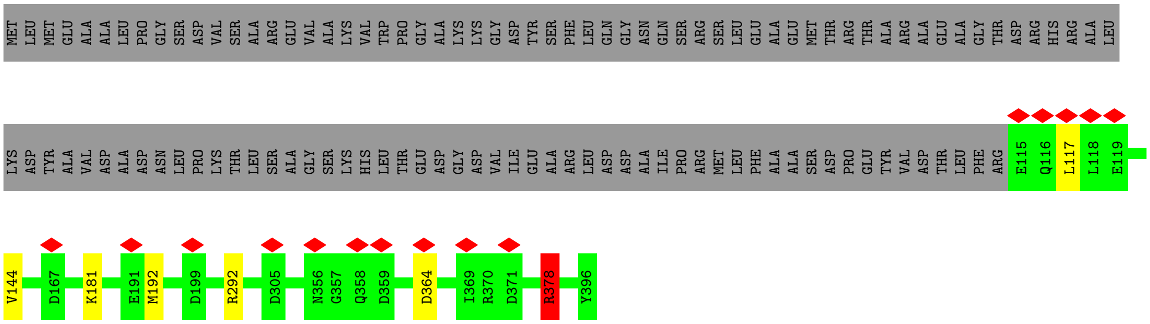


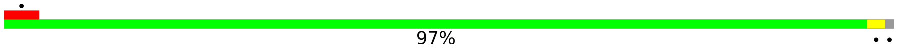
- Molecule 1: HK97 gp5-like major capsid protein

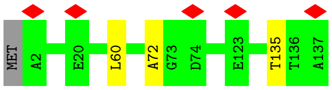
Chain NF:



- Molecule 2: Capsid stabilization protein

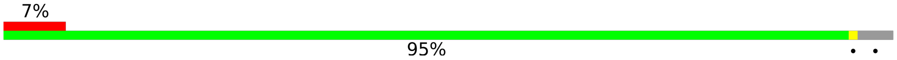
Chain JI:

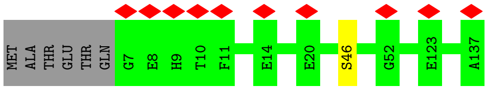




- Molecule 2: Capsid stabilization protein

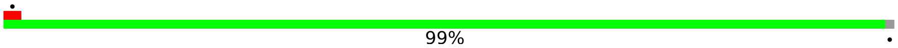
Chain JJ:

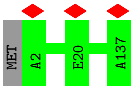




- Molecule 2: Capsid stabilization protein

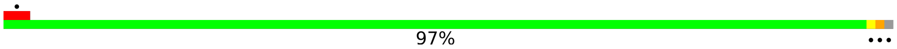
Chain JK:

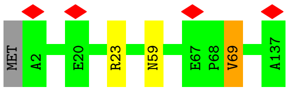




- Molecule 2: Capsid stabilization protein

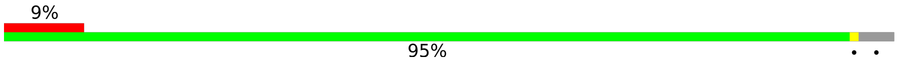
Chain KI:

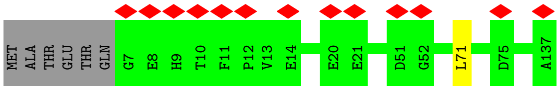




- Molecule 2: Capsid stabilization protein

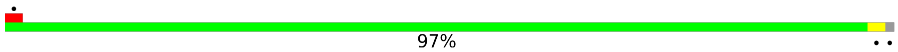
Chain KJ:

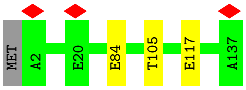




- Molecule 2: Capsid stabilization protein

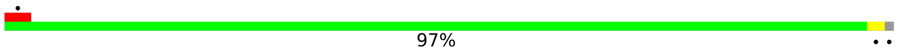
Chain KK:

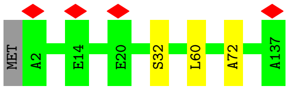




- Molecule 2: Capsid stabilization protein

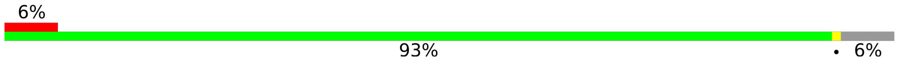
Chain LI:

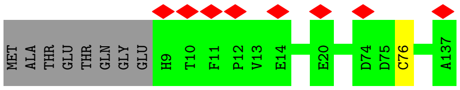




- Molecule 2: Capsid stabilization protein

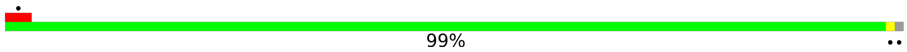
Chain LJ:

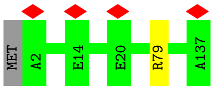




- Molecule 2: Capsid stabilization protein

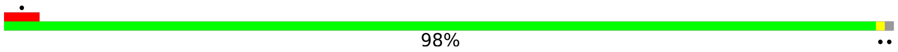
Chain LK:

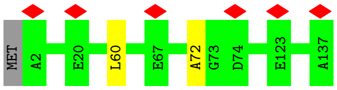




- Molecule 2: Capsid stabilization protein

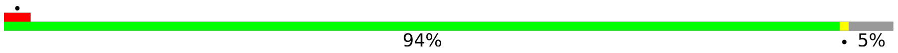
Chain MI:

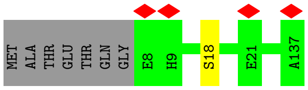




- Molecule 2: Capsid stabilization protein

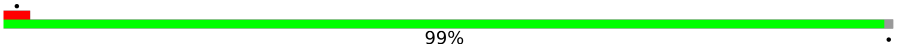
Chain MJ:

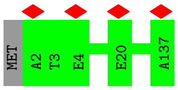




- Molecule 2: Capsid stabilization protein

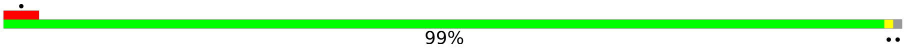
Chain MK:

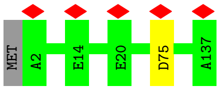




- Molecule 2: Capsid stabilization protein

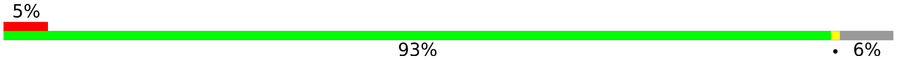
Chain NI:

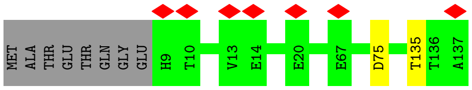




- Molecule 2: Capsid stabilization protein

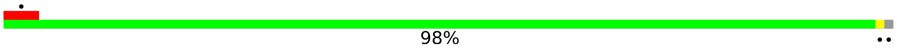
Chain NJ:

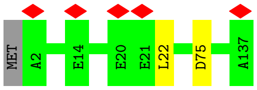




- Molecule 2: Capsid stabilization protein

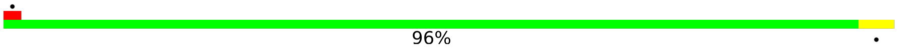
Chain NK:

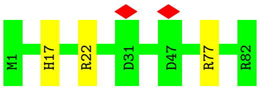




- Molecule 3: Hypothetical protein gp21

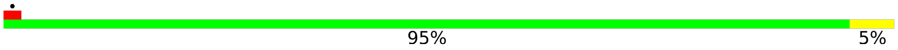
Chain P5:

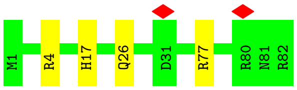




- Molecule 3: Hypothetical protein gp21

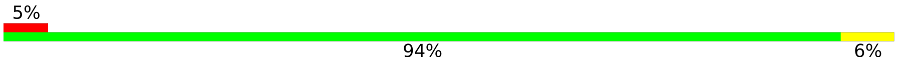
Chain P6:

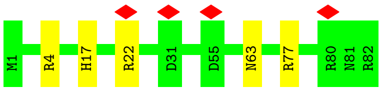




- Molecule 3: Hypothetical protein gp21

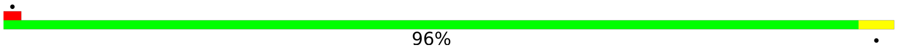
Chain P7:

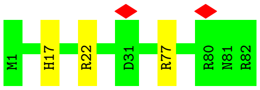




- Molecule 3: Hypothetical protein gp21

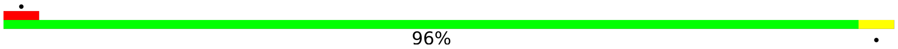
Chain P8:

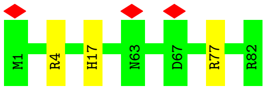




- Molecule 3: Hypothetical protein gp21

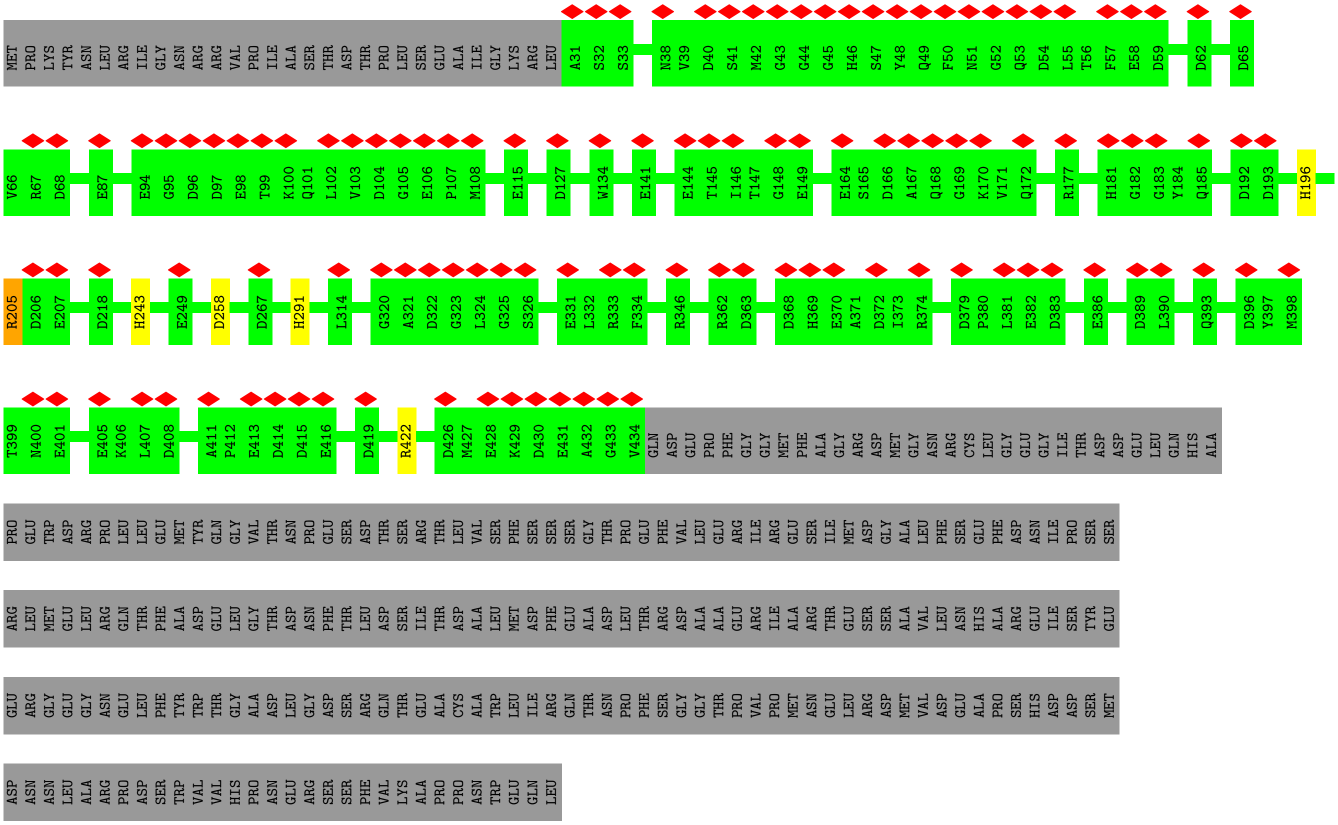
Chain P9:





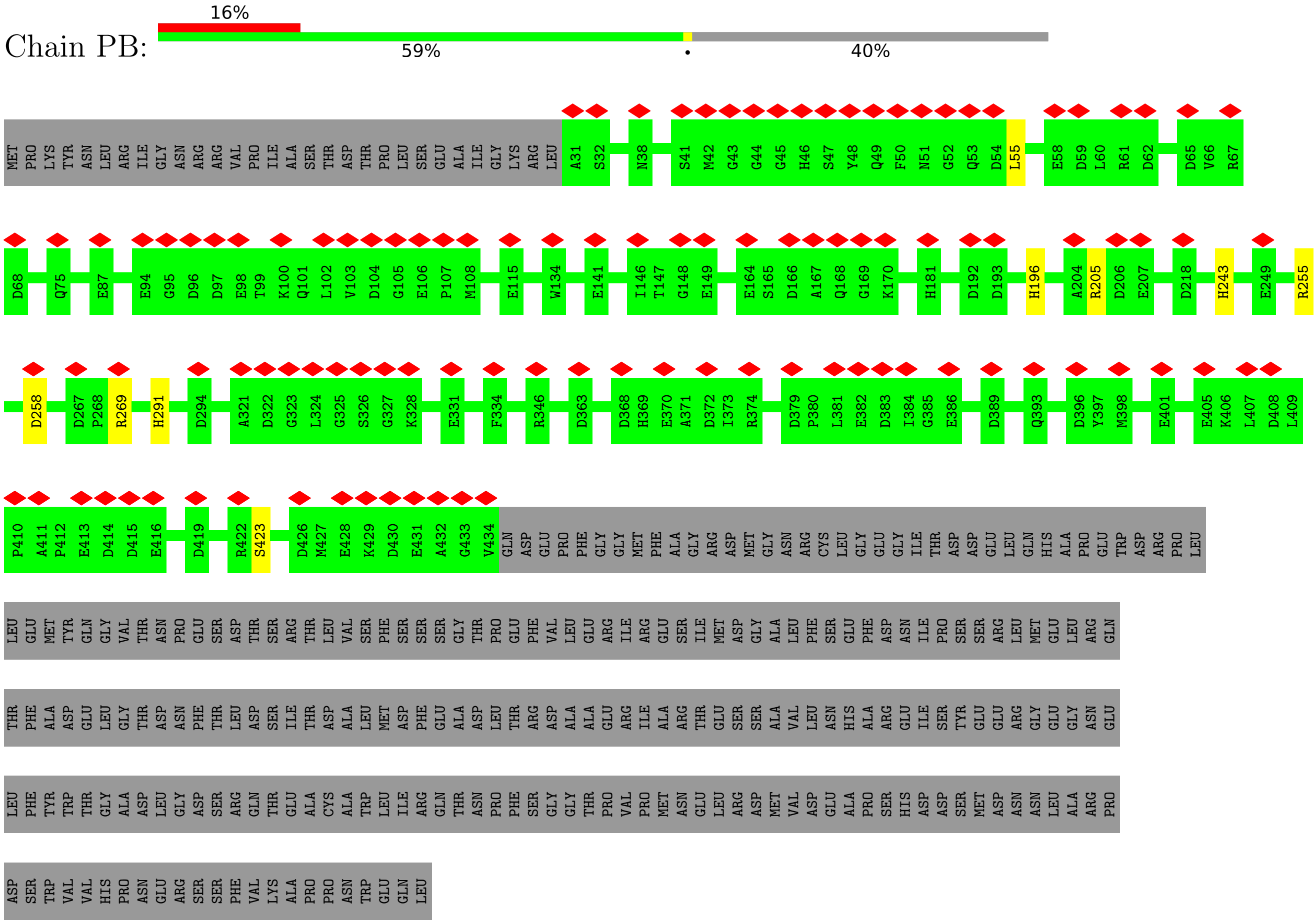
- Molecule 4: Portal protein

Chain PA:



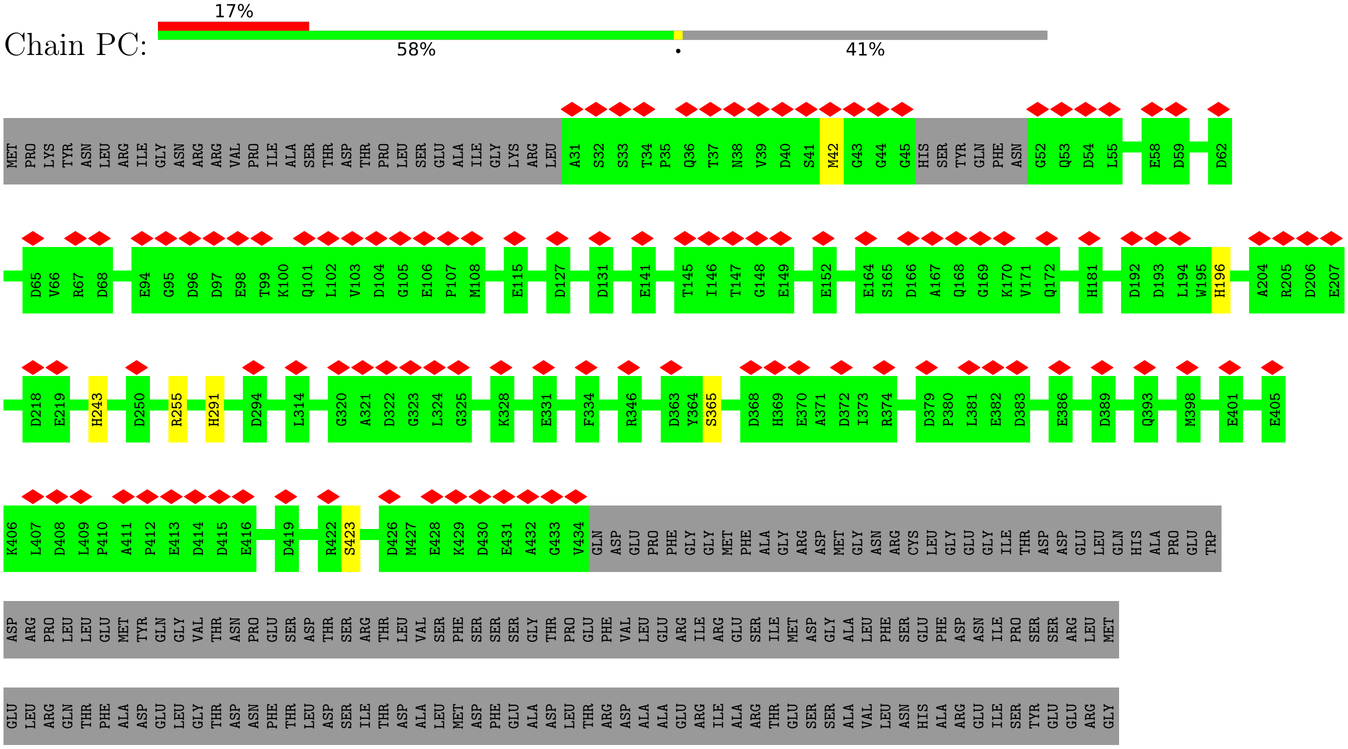
- Molecule 4: Portal protein

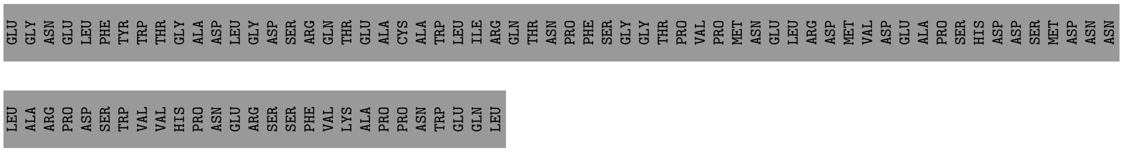
Chain PB:



- Molecule 4: Portal protein

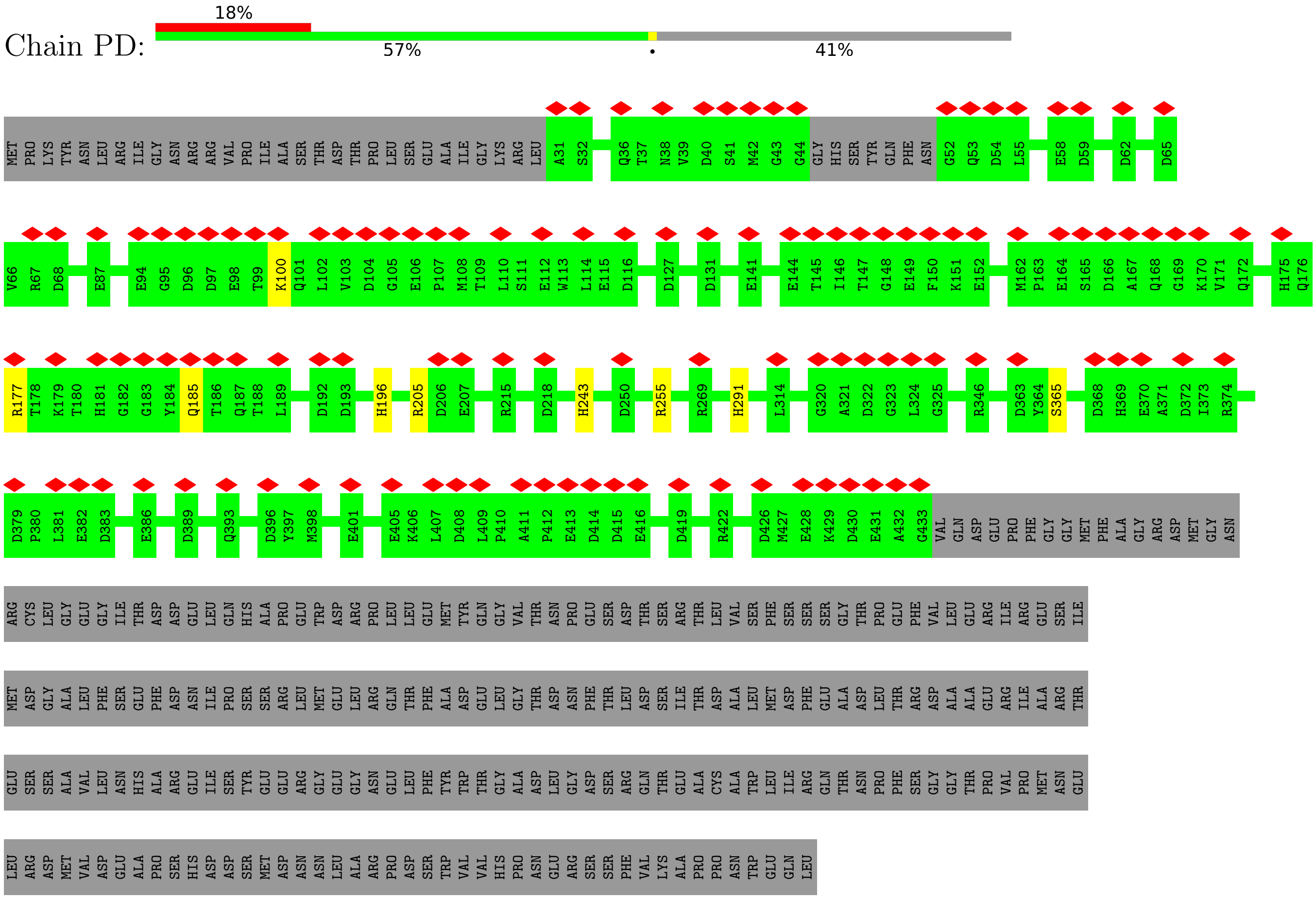
Chain PC:





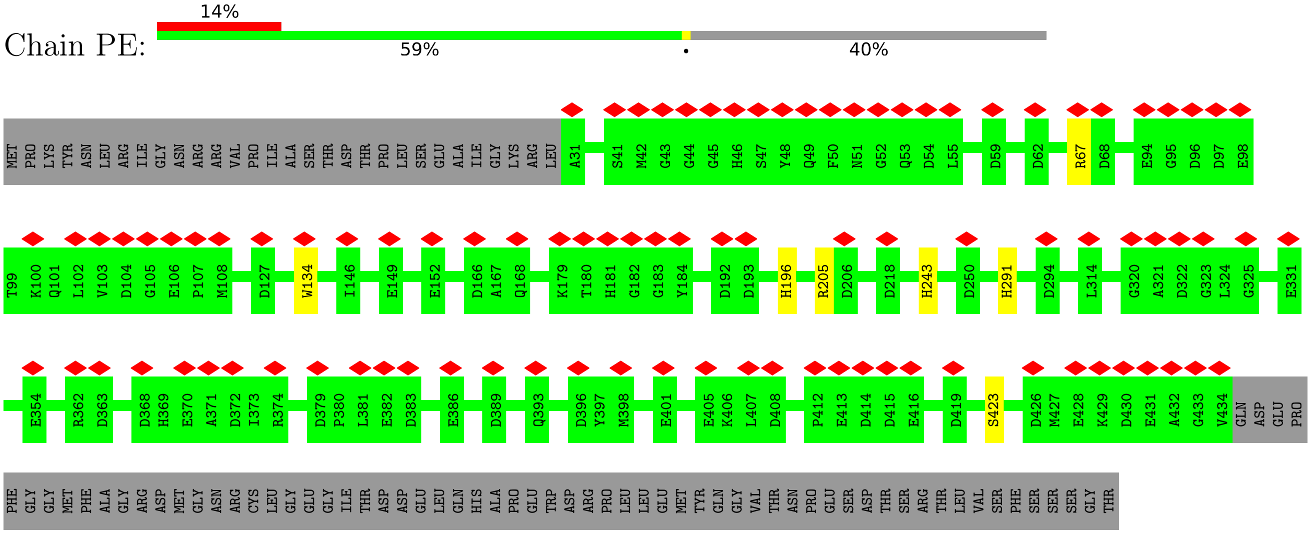
- Molecule 4: Portal protein

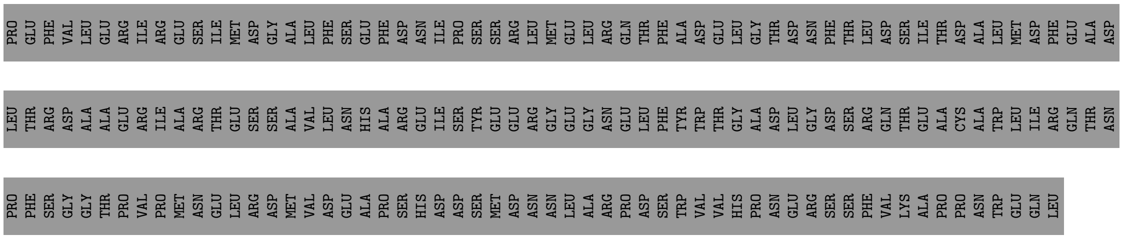
Chain PD:



- Molecule 4: Portal protein

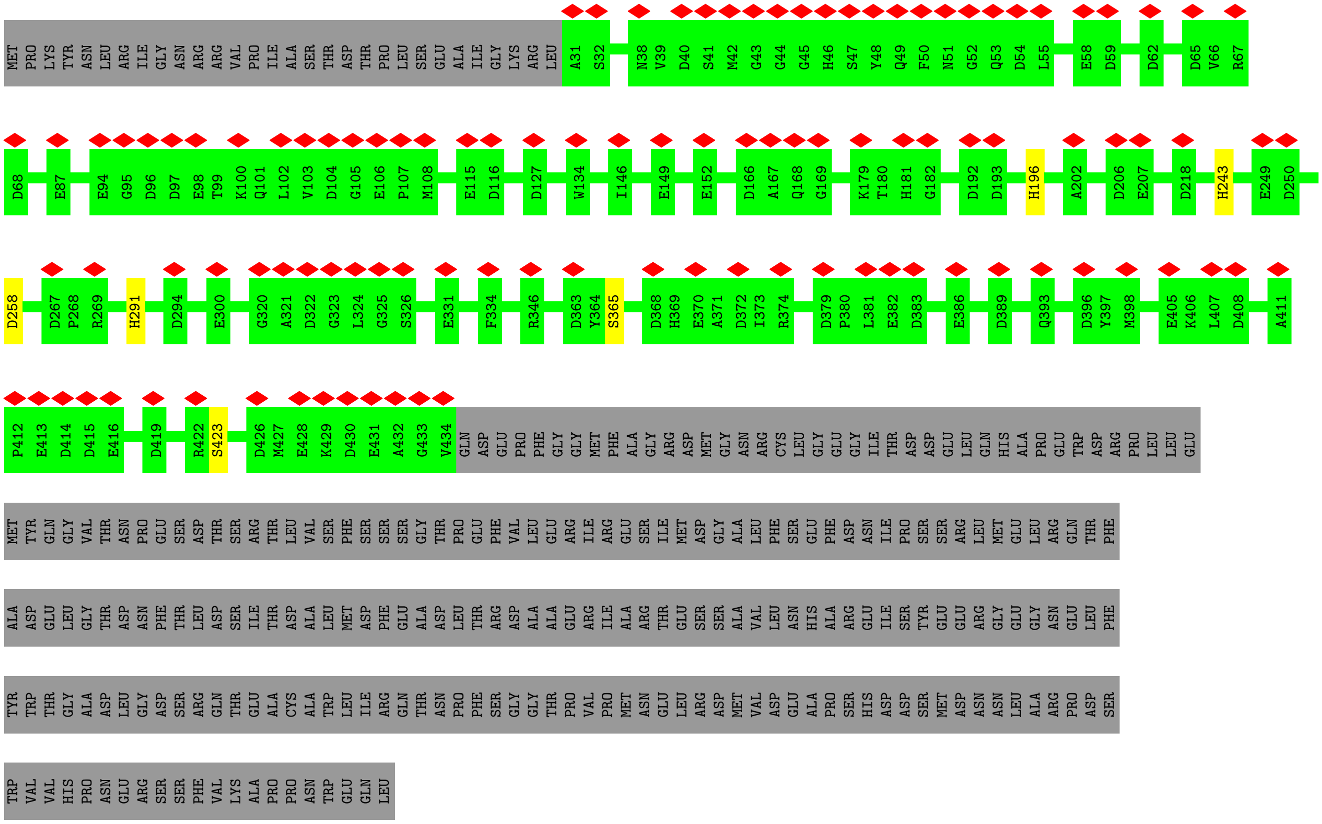
Chain PE:





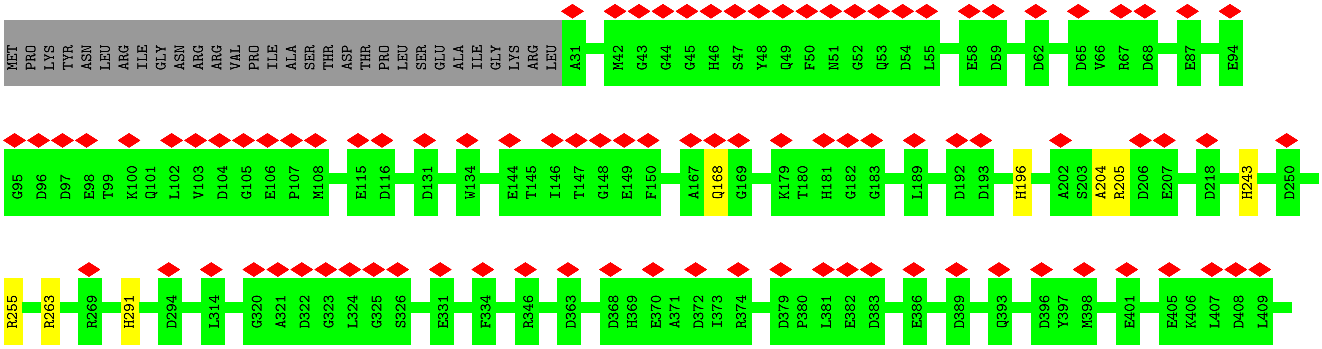
- Molecule 4: Portal protein

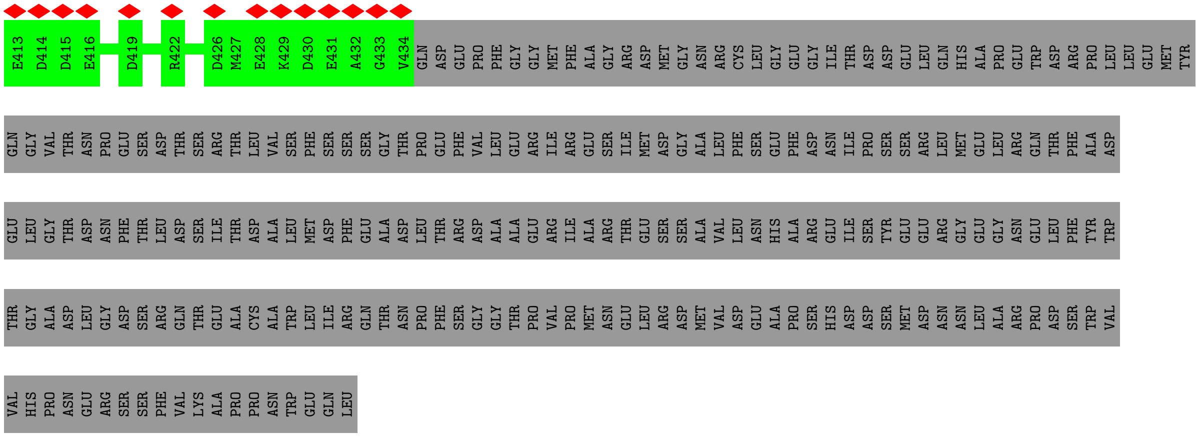
Chain PF:



- Molecule 4: Portal protein

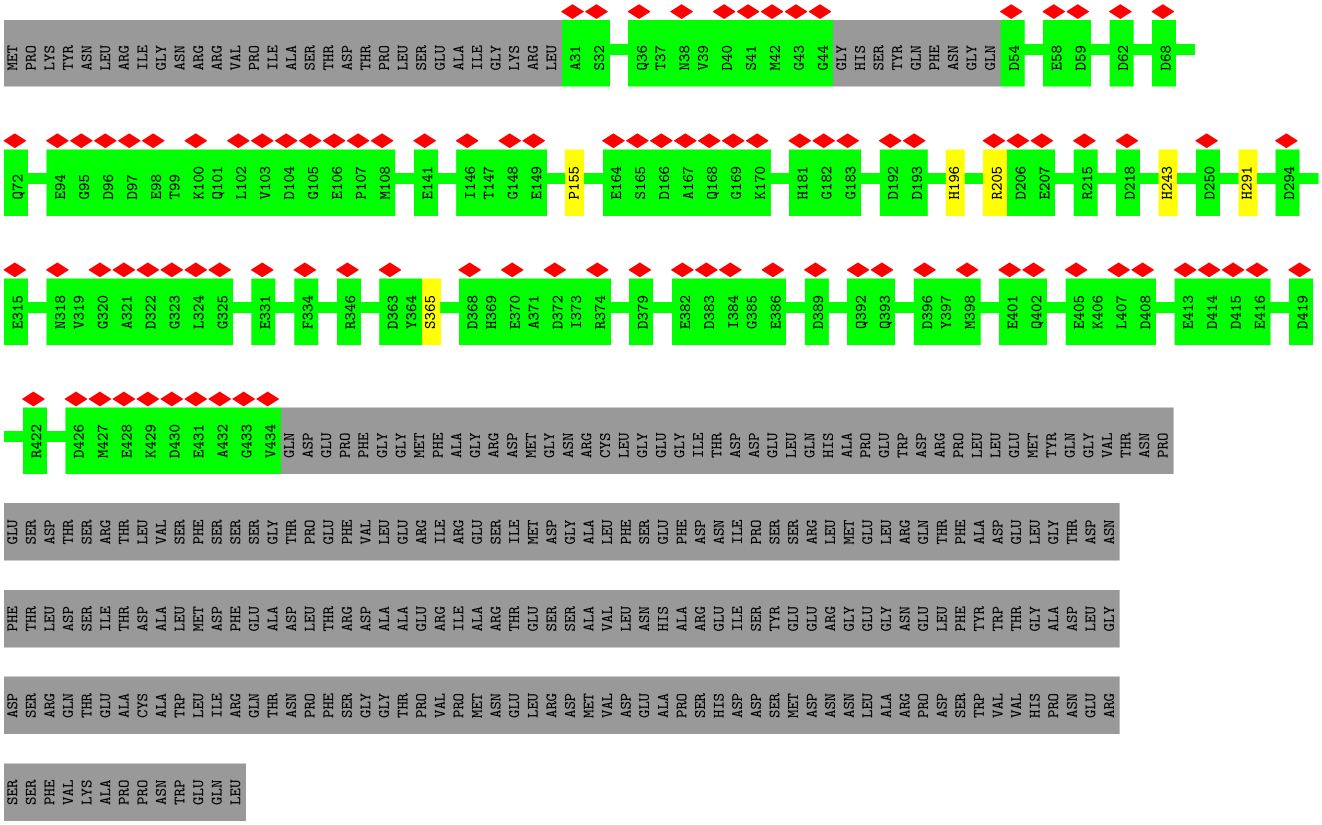
Chain PG:





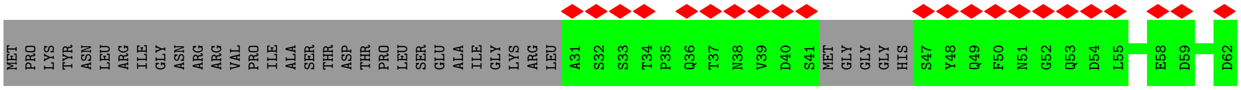
- Molecule 4: Portal protein

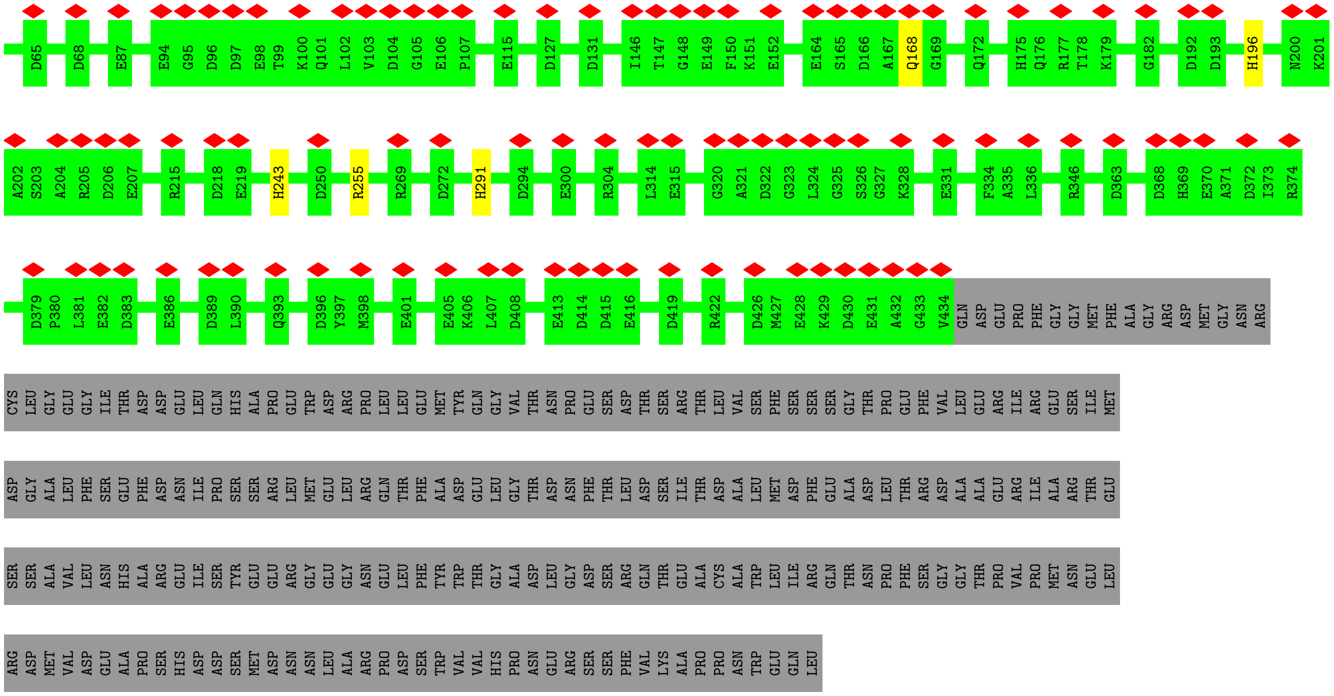
Chain PH:



- Molecule 4: Portal protein

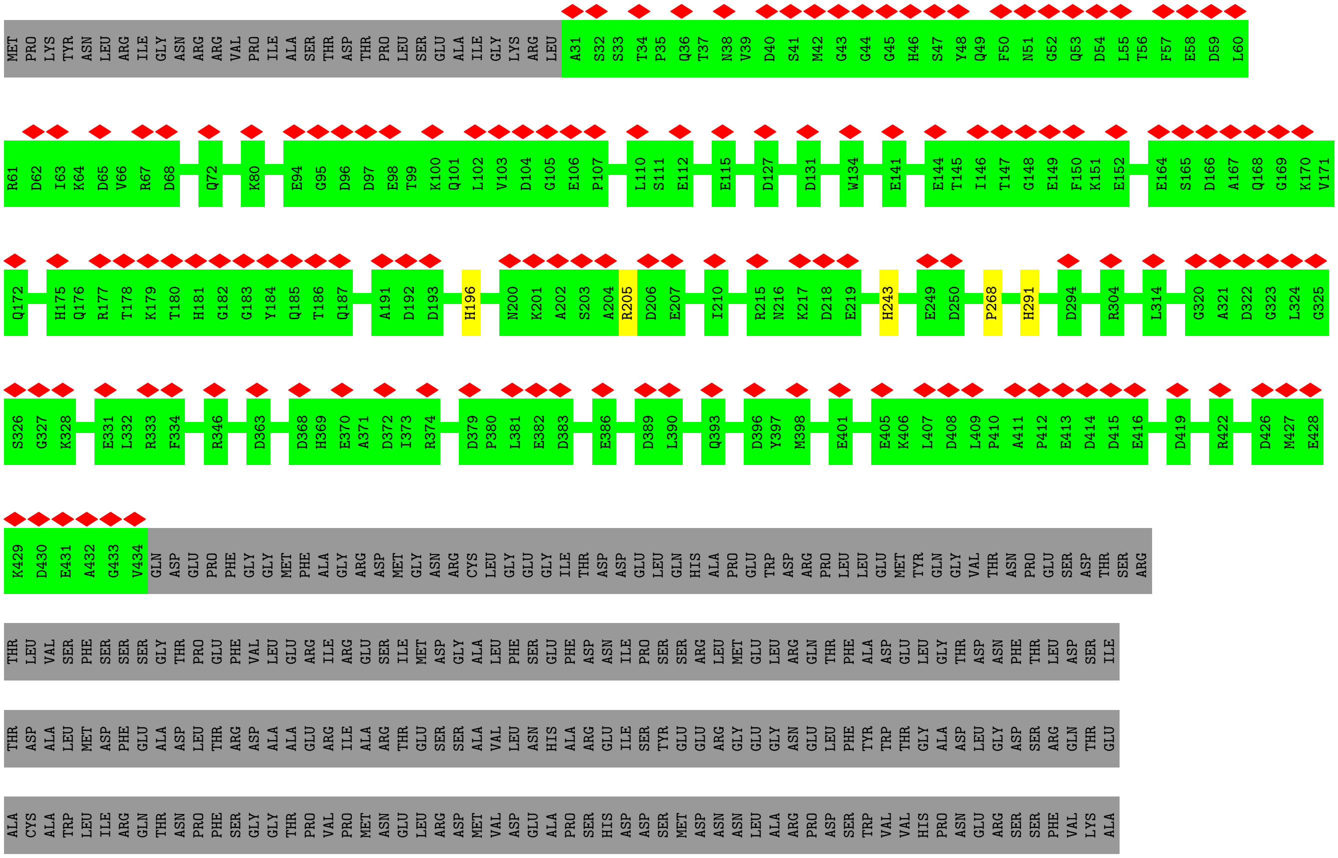
Chain PI:





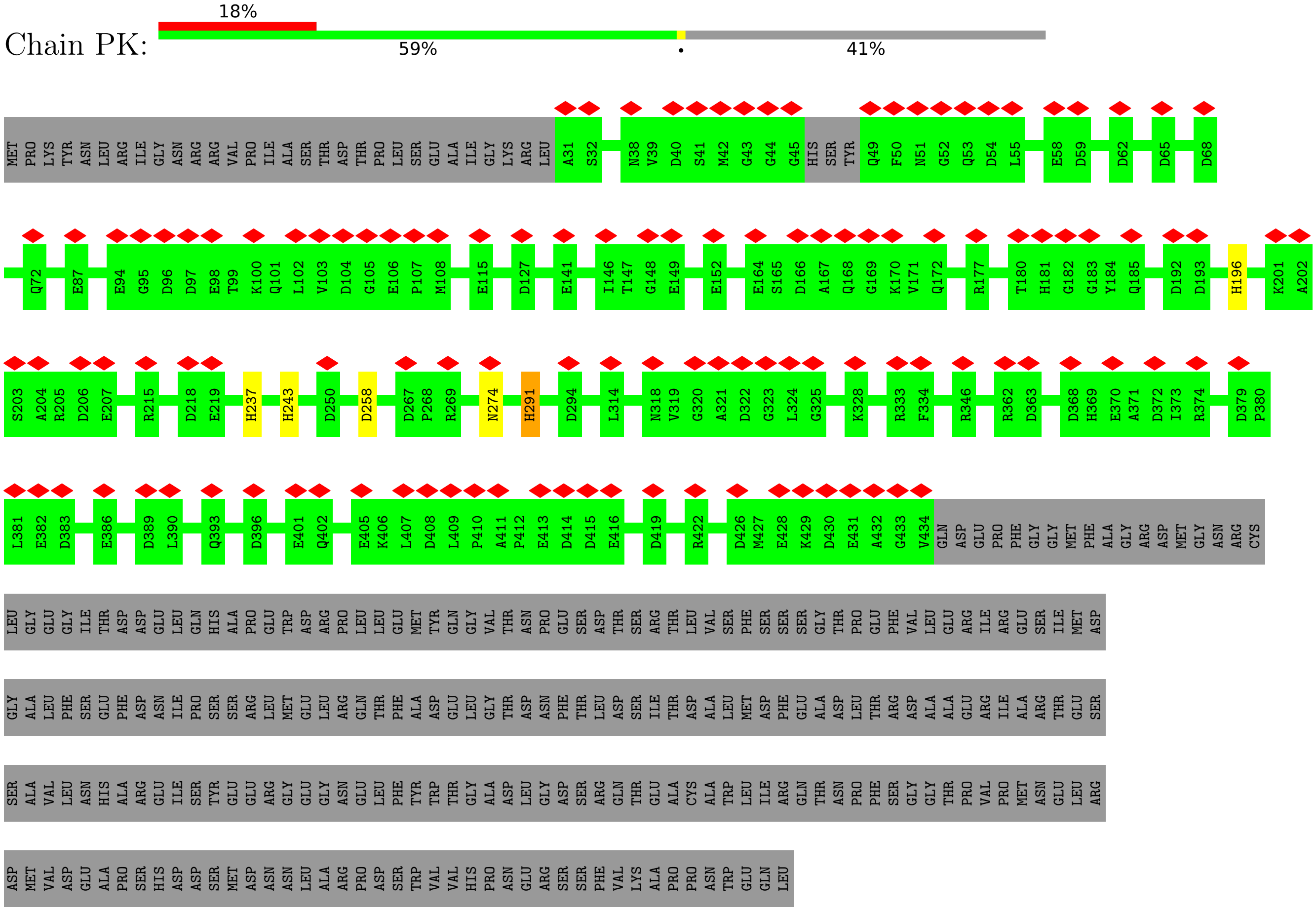
- Molecule 4: Portal protein

Chain PJ:



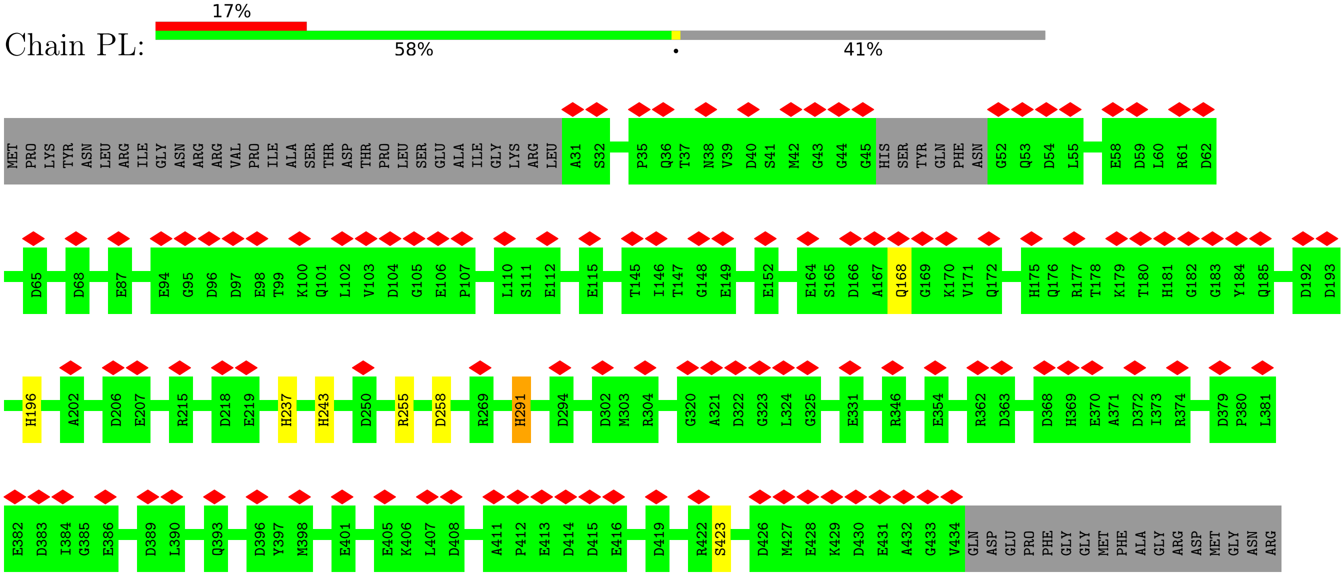
- Molecule 4: Portal protein

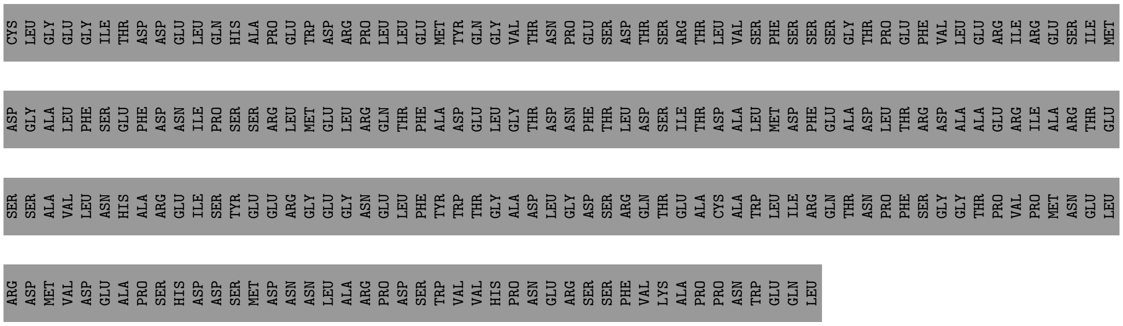
Chain PK:



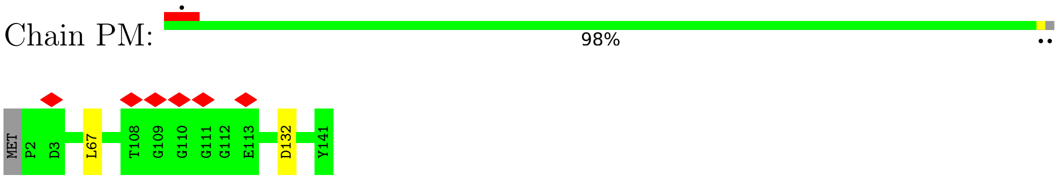
- Molecule 4: Portal protein

Chain PL:

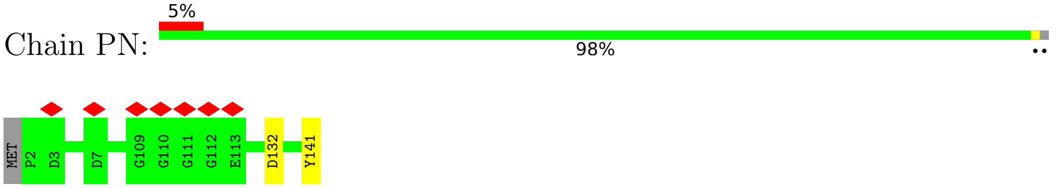




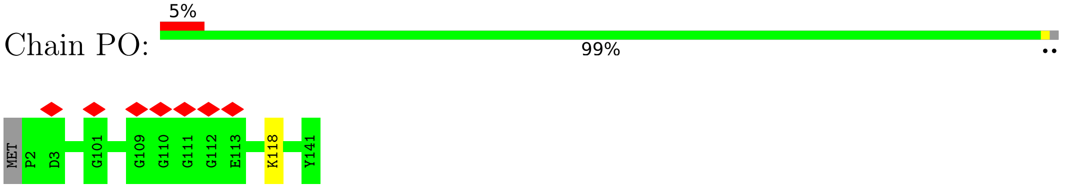
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



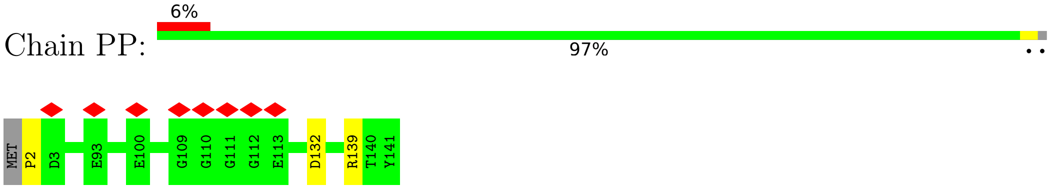
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



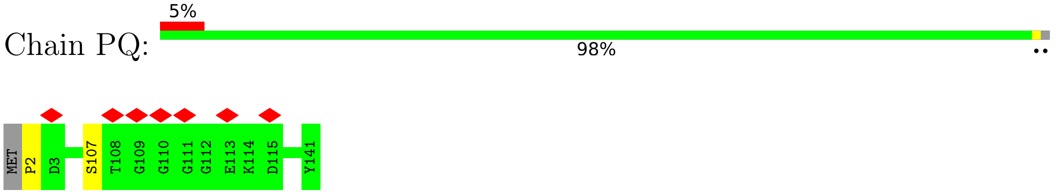
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



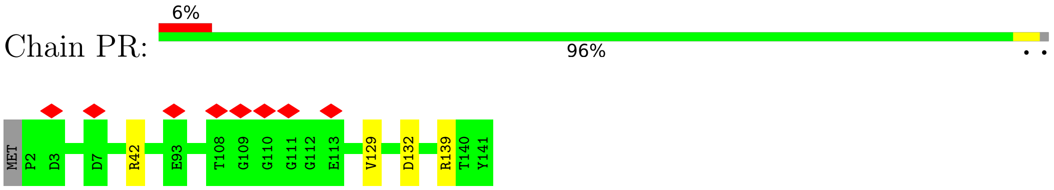
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



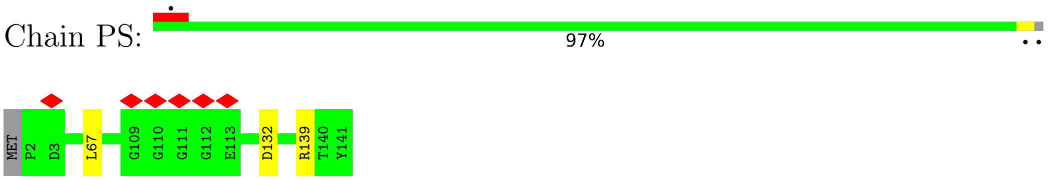
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



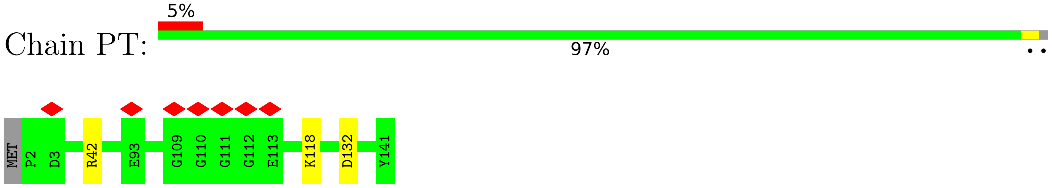
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



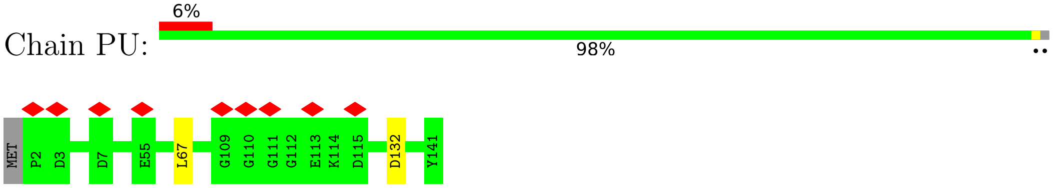
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



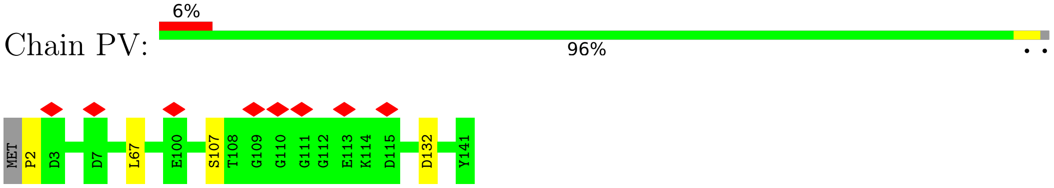
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



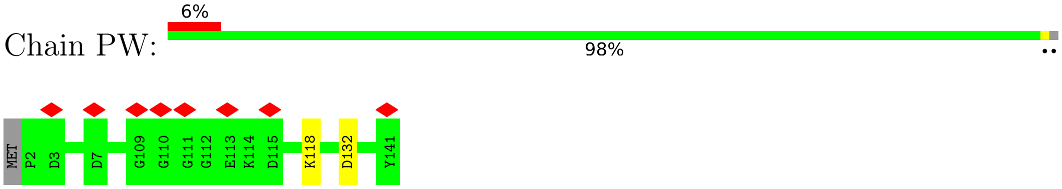
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



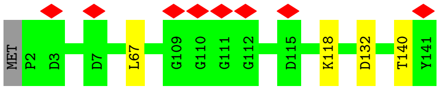
- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector



- Molecule 5: HK97 gp6-like/SPP1 gp15-like head-tail connector


MET
P2
D3
D7
L67
G109
G110
G111
G112
D115
K118
D132
T140
Y141

4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	157388	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 ($e^{-}/\text{Å}^2$)	50, 54.6	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	TFS FALCON 4i (4k x 4k), GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.057	Depositor
Minimum map value	-0.028	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.015	Depositor
Map size (Å)	412.19202, 412.19202, 412.19202	wwPDB
Map dimensions	352, 352, 352	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.171, 1.171, 1.171	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	JA	0.34	0/2335	0.79	3/3172 (0.1%)
1	JB	0.33	0/2335	0.77	1/3172 (0.0%)
1	JC	0.33	0/2335	0.77	2/3172 (0.1%)
1	JD	0.33	0/2335	0.75	1/3172 (0.0%)
1	JE	0.33	0/2335	0.76	1/3172 (0.0%)
1	JF	0.34	0/2216	0.79	4/3009 (0.1%)
1	KA	0.33	0/2335	0.76	0/3172
1	KB	0.34	0/2335	0.77	0/3172
1	KC	0.33	0/2335	0.76	0/3172
1	KD	0.34	0/2335	0.76	1/3172 (0.0%)
1	KE	0.33	0/2335	0.77	0/3172
1	KF	0.33	0/2216	0.77	2/3009 (0.1%)
1	LA	0.34	0/2335	0.79	3/3172 (0.1%)
1	LB	0.34	0/2335	0.77	0/3172
1	LC	0.33	0/2335	0.77	0/3172
1	LD	0.33	0/2335	0.74	1/3172 (0.0%)
1	LE	0.33	0/2335	0.75	1/3172 (0.0%)
1	LF	0.33	0/2227	0.77	3/3023 (0.1%)
1	MA	0.34	0/2335	0.80	2/3172 (0.1%)
1	MB	0.34	0/2335	0.78	1/3172 (0.0%)
1	MC	0.33	0/2335	0.78	2/3172 (0.1%)
1	MD	0.33	0/2335	0.77	1/3172 (0.0%)
1	ME	0.33	0/2335	0.75	1/3172 (0.0%)
1	MF	0.33	0/2313	0.76	0/3142
1	NA	0.33	0/2335	0.78	2/3172 (0.1%)
1	NB	0.34	0/2335	0.76	0/3172
1	NC	0.34	0/2335	0.78	0/3172
1	ND	0.33	0/2335	0.75	2/3172 (0.1%)
1	NE	0.33	0/2335	0.78	3/3172 (0.1%)
1	NF	0.33	0/2216	0.78	2/3009 (0.1%)
2	JI	0.37	0/980	0.71	0/1337
2	JJ	0.38	0/943	0.71	0/1286

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
2	JK	0.37	0/980	0.70	0/1337
2	KI	0.37	0/980	0.75	2/1337 (0.1%)
2	KJ	0.39	0/943	0.71	0/1286
2	KK	0.37	0/980	0.69	0/1337
2	LI	0.36	0/980	0.69	0/1337
2	LJ	0.38	0/930	0.69	0/1269
2	LK	0.38	0/980	0.71	1/1337 (0.1%)
2	MI	0.38	0/980	0.68	0/1337
2	MJ	0.39	0/939	0.70	0/1281
2	MK	0.37	0/980	0.70	0/1337
2	NI	0.37	0/980	0.69	0/1337
2	NJ	0.39	0/930	0.71	0/1269
2	NK	0.37	0/980	0.69	0/1337
3	P5	0.35	0/685	0.88	2/918 (0.2%)
3	P6	0.35	0/685	0.85	1/918 (0.1%)
3	P7	0.35	0/685	0.87	2/918 (0.2%)
3	P8	0.36	0/685	0.85	1/918 (0.1%)
3	P9	0.35	0/685	0.87	1/918 (0.1%)
4	PA	0.33	0/3190	0.69	4/4326 (0.1%)
4	PB	0.33	0/3190	0.68	0/4326
4	PC	0.33	0/3130	0.66	0/4243
4	PD	0.33	0/3119	0.70	4/4228 (0.1%)
4	PE	0.33	0/3190	0.69	2/4326 (0.0%)
4	PF	0.32	0/3190	0.66	0/4326
4	PG	0.33	0/3190	0.69	2/4326 (0.0%)
4	PH	0.33	0/3113	0.67	2/4221 (0.0%)
4	PI	0.33	0/3158	0.68	0/4283
4	PJ	0.33	0/3190	0.68	0/4326
4	PK	0.33	0/3159	0.67	0/4282
4	PL	0.33	0/3130	0.65	0/4243
5	PM	0.38	0/1105	0.78	0/1492
5	PN	0.38	0/1105	0.75	0/1492
5	PO	0.38	0/1105	0.77	0/1492
5	PP	0.38	0/1105	0.78	0/1492
5	PQ	0.38	0/1105	0.77	0/1492
5	PR	0.38	0/1105	0.77	1/1492 (0.1%)
5	PS	0.37	0/1105	0.78	0/1492
5	PT	0.38	0/1105	0.77	1/1492 (0.1%)
5	PU	0.37	0/1105	0.77	0/1492
5	PV	0.37	0/1105	0.73	0/1492
5	PW	0.37	0/1105	0.77	0/1492
5	PX	0.38	0/1105	0.73	0/1492
All	All	0.34	0/138682	0.74	65/188203 (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	LE	0	1
1	ME	0	1
1	NE	0	1
All	All	0	3

There are no bond length outliers.

All (65) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	PD	205	ARG	CG-CD-NE	7.67	127.92	111.80
1	LA	378	ARG	NE-CZ-NH2	7.37	123.99	120.30
4	PE	205	ARG	CG-CD-NE	7.31	127.15	111.80
2	KI	23	ARG	NE-CZ-NH1	-6.94	116.83	120.30
1	NF	378	ARG	NE-CZ-NH2	6.92	123.76	120.30
3	P7	77	ARG	NE-CZ-NH1	-6.76	116.92	120.30
4	PD	205	ARG	NE-CZ-NH1	-6.75	116.92	120.30
3	P9	77	ARG	NE-CZ-NH1	-6.73	116.94	120.30
1	NA	132	ARG	NE-CZ-NH1	-6.71	116.95	120.30
3	P5	77	ARG	NE-CZ-NH1	-6.70	116.95	120.30
4	PH	205	ARG	CG-CD-NE	6.69	125.84	111.80
1	JA	378	ARG	NE-CZ-NH2	6.67	123.64	120.30
1	LA	378	ARG	NE-CZ-NH1	-6.64	116.98	120.30
4	PE	205	ARG	NE-CZ-NH1	-6.62	116.99	120.30
1	LF	378	ARG	NE-CZ-NH1	-6.62	116.99	120.30
1	NE	345	ARG	NE-CZ-NH1	-6.54	117.03	120.30
4	PG	205	ARG	CG-CD-NE	6.52	125.48	111.80
4	PA	205	ARG	NE-CZ-NH2	6.46	123.53	120.30
1	MD	282	ARG	CG-CD-NE	6.42	125.29	111.80
1	KF	378	ARG	NE-CZ-NH2	6.41	123.51	120.30
1	LF	378	ARG	NE-CZ-NH2	6.26	123.43	120.30
1	JA	370	ARG	NE-CZ-NH1	-6.22	117.19	120.30
1	JC	389	ARG	NE-CZ-NH1	-6.20	117.20	120.30
1	JE	370	ARG	NE-CZ-NH1	-6.20	117.20	120.30
3	P5	22	ARG	NE-CZ-NH2	6.19	123.39	120.30
2	LK	79	ARG	NE-CZ-NH1	-6.12	117.24	120.30
1	JA	378	ARG	NE-CZ-NH1	-6.05	117.28	120.30
4	PD	205	ARG	NE-CZ-NH2	6.03	123.31	120.30
1	NA	132	ARG	NE-CZ-NH2	6.02	123.31	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	KI	23	ARG	NE-CZ-NH2	5.99	123.30	120.30
1	JF	292	ARG	NE-CZ-NH1	-5.96	117.32	120.30
3	P8	77	ARG	NE-CZ-NH1	-5.90	117.35	120.30
5	PR	42	ARG	NE-CZ-NH2	5.84	123.22	120.30
1	KF	378	ARG	NE-CZ-NH1	-5.76	117.42	120.30
4	PG	205	ARG	NE-CZ-NH1	-5.74	117.43	120.30
1	LA	370	ARG	NE-CZ-NH1	-5.68	117.46	120.30
1	NE	370	ARG	NE-CZ-NH1	-5.66	117.47	120.30
4	PA	205	ARG	NE-CZ-NH1	-5.65	117.47	120.30
1	NF	378	ARG	NE-CZ-NH1	-5.65	117.48	120.30
1	LF	345	ARG	NE-CZ-NH2	5.62	123.11	120.30
3	P7	22	ARG	NE-CZ-NH2	5.62	123.11	120.30
1	JF	378	ARG	NE-CZ-NH1	-5.60	117.50	120.30
1	JD	282	ARG	CG-CD-NE	5.53	123.42	111.80
1	JF	345	ARG	NE-CZ-NH2	5.53	123.07	120.30
1	ME	370	ARG	NE-CZ-NH1	-5.52	117.54	120.30
4	PA	205	ARG	CG-CD-NE	5.52	123.39	111.80
1	KD	345	ARG	NE-CZ-NH2	5.52	123.06	120.30
1	MA	114	ARG	NE-CZ-NH1	-5.50	117.55	120.30
1	MA	114	ARG	CG-CD-NE	5.49	123.33	111.80
1	LD	345	ARG	NE-CZ-NH2	5.49	123.05	120.30
1	JF	378	ARG	NE-CZ-NH2	5.48	123.04	120.30
1	ND	143	ARG	NE-CZ-NH1	-5.46	117.57	120.30
3	P6	77	ARG	NE-CZ-NH1	-5.41	117.59	120.30
4	PD	177	ARG	CG-CD-NE	5.40	123.14	111.80
1	LE	370	ARG	NE-CZ-NH1	-5.39	117.61	120.30
1	JC	389	ARG	NE-CZ-NH2	5.39	122.99	120.30
1	NE	345	ARG	NE-CZ-NH2	5.29	122.95	120.30
5	PT	42	ARG	NE-CZ-NH2	5.21	122.90	120.30
1	ND	345	ARG	NE-CZ-NH2	5.15	122.87	120.30
1	MC	290	ARG	NE-CZ-NH1	-5.12	117.74	120.30
1	JB	370	ARG	NE-CZ-NH1	-5.09	117.75	120.30
4	PA	422	ARG	NE-CZ-NH2	5.07	122.84	120.30
1	MC	378	ARG	NE-CZ-NH2	5.05	122.83	120.30
4	PH	205	ARG	NE-CZ-NH1	-5.05	117.77	120.30
1	MB	370	ARG	NE-CZ-NH1	-5.04	117.78	120.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	LE	101	PHE	Peptide

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Mol	Chain	Res	Type	Group
1	ME	267	TYR	Sidechain
1	NE	101	PHE	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	JA	2298	0	2139	0	0
1	JB	2298	0	2139	1	0
1	JC	2298	0	2139	1	0
1	JD	2298	0	2139	1	0
1	JE	2298	0	2139	3	0
1	JF	2183	0	2036	1	0
1	KA	2298	0	2138	4	0
1	KB	2298	0	2139	1	0
1	KC	2298	0	2139	0	0
1	KD	2298	0	2139	1	0
1	KE	2298	0	2139	1	0
1	KF	2183	0	2036	1	0
1	LA	2298	0	2139	2	0
1	LB	2298	0	2139	0	0
1	LC	2298	0	2139	0	0
1	LD	2298	0	2139	1	0
1	LE	2298	0	2139	3	0
1	LF	2194	0	2049	1	0
1	MA	2298	0	2139	3	0
1	MB	2298	0	2139	1	0
1	MC	2298	0	2139	1	0
1	MD	2298	0	2139	0	0
1	ME	2298	0	2139	2	0
1	MF	2277	0	2120	1	0
1	NA	2298	0	2139	1	0
1	NB	2298	0	2139	0	0
1	NC	2298	0	2139	0	0
1	ND	2298	0	2139	0	0
1	NE	2298	0	2139	2	0
1	NF	2183	0	2036	2	0
2	JI	967	0	894	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	JJ	930	0	861	0	0
2	JK	967	0	894	0	0
2	KI	967	0	894	1	0
2	KJ	930	0	861	0	0
2	KK	967	0	894	1	0
2	LI	967	0	894	1	0
2	LJ	917	0	852	0	0
2	LK	967	0	894	0	0
2	MI	967	0	894	1	0
2	MJ	926	0	858	0	0
2	MK	967	0	894	0	0
2	NI	967	0	894	0	0
2	NJ	917	0	852	0	0
2	NK	967	0	894	0	0
3	P5	689	0	651	0	0
3	P6	689	0	651	0	0
3	P7	689	0	651	0	0
3	P8	689	0	651	1	0
3	P9	689	0	651	0	0
4	PA	3175	0	2999	1	0
4	PB	3175	0	2998	1	0
4	PC	3119	0	2953	0	0
4	PD	3108	0	2941	0	0
4	PE	3175	0	2998	1	0
4	PF	3175	0	2998	1	0
4	PG	3175	0	2999	2	0
4	PH	3102	0	2940	1	0
4	PI	3145	0	2973	0	0
4	PJ	3175	0	2999	1	0
4	PK	3147	0	2976	2	0
4	PL	3119	0	2953	2	0
5	PM	1087	0	1018	1	0
5	PN	1087	0	1018	1	0
5	PO	1087	0	1018	0	0
5	PP	1087	0	1018	0	0
5	PQ	1087	0	1018	0	0
5	PR	1087	0	1018	1	0
5	PS	1087	0	1018	1	0
5	PT	1087	0	1018	0	0
5	PU	1087	0	1018	1	0
5	PV	1087	0	1018	1	0
5	PW	1087	0	1018	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	PX	1087	0	1018	2	0
6	JA	5	0	0	0	0
6	JB	6	0	0	0	0
6	JC	6	0	0	0	0
6	JD	5	0	0	0	0
6	JE	5	0	0	0	0
6	JF	5	0	0	0	0
6	JI	2	0	0	0	0
6	KA	6	0	0	0	0
6	KB	5	0	0	0	0
6	KC	4	0	0	0	0
6	KD	7	0	0	0	0
6	KE	5	0	0	0	0
6	KF	5	0	0	0	0
6	KI	1	0	0	0	0
6	LA	6	0	0	0	0
6	LB	5	0	0	0	0
6	LC	4	0	0	0	0
6	LD	7	0	0	0	0
6	LE	5	0	0	0	0
6	LF	4	0	0	0	0
6	LI	1	0	0	0	0
6	LJ	1	0	0	0	0
6	MA	7	0	0	0	0
6	MB	5	0	0	0	0
6	MC	3	0	0	0	0
6	MD	8	0	0	0	0
6	ME	4	0	0	0	0
6	MF	5	0	0	0	0
6	MI	1	0	0	0	0
6	NA	5	0	0	0	0
6	NB	6	0	0	0	0
6	NC	5	0	0	0	0
6	ND	7	0	0	0	0
6	NE	4	0	0	0	0
6	NF	4	0	0	0	0
6	NI	1	0	0	0	0
6	PM	2	0	0	0	0
6	PN	2	0	0	0	0
6	PO	1	0	0	0	0
6	PP	2	0	0	0	0
6	PQ	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	PR	1	0	0	0	0
6	PS	1	0	0	0	0
6	PT	1	0	0	0	0
6	PU	1	0	0	0	0
6	PV	1	0	0	0	0
6	PW	2	0	0	0	0
6	PX	2	0	0	0	0
7	JI	1	0	0	0	0
7	JJ	1	0	0	0	0
7	JK	1	0	0	0	0
7	KI	1	0	0	0	0
7	KJ	1	0	0	0	0
7	KK	1	0	0	0	0
7	LI	1	0	0	0	0
7	LJ	1	0	0	0	0
7	LK	1	0	0	0	0
7	MI	1	0	0	0	0
7	MJ	2	0	0	0	0
7	MK	1	0	0	0	0
7	NI	1	0	0	0	0
7	NJ	1	0	0	0	0
7	NK	1	0	0	0	0
7	P6	1	0	0	0	0
All	All	137239	0	128173	39	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 0.

All (39) 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:LE:115:GLU:HG2	1:LF:144:VAL:HG23	1.86	0.58
1:KA:192:MET:HE1	1:NE:103:ALA:HB1	1.92	0.51
4:PG:263:ARG:HH21	4:PG:263:ARG:HG2	1.76	0.50
2:KI:59:ASN:HD22	2:KI:69:VAL:HG23	1.77	0.49
2:MI:60:LEU:HD21	2:MI:72:ALA:HB2	1.95	0.49
1:MA:161:GLN:NE2	1:ME:105:ASP:H	2.11	0.48
4:PB:258:ASP:HA	5:PS:67:LEU:HD21	1.96	0.48
1:JE:101:PHE:CG	1:JE:102:ALA:N	2.83	0.46
1:KA:192:MET:CE	1:NE:103:ALA:HB1	2.45	0.46
1:JE:103:ALA:HB3	1:LA:188:VAL:HG12	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:PK:258:ASP:HA	5:PX:67:LEU:HD21	1.98	0.45
1:MA:161:GLN:HE22	1:ME:105:ASP:H	1.64	0.45
2:JI:60:LEU:HD21	2:JI:72:ALA:HB2	1.97	0.45
1:LD:292:ARG:NH2	1:LE:245:ASN:OD1	2.49	0.45
1:KD:292:ARG:NH2	1:KE:245:ASN:OD1	2.51	0.44
4:PL:237:HIS:HD1	4:PL:291:HIP:P	2.40	0.44
1:MF:378:ARG:NH2	1:NA:371:ASP:OD1	2.52	0.43
5:PR:129:VAL:HG12	5:PR:129:VAL:O	2.19	0.43
1:JD:292:ARG:NH2	1:JE:245:ASN:OD1	2.52	0.43
4:PL:258:ASP:HA	5:PU:67:LEU:HD21	2.01	0.43
4:PA:258:ASP:HA	5:PV:67:LEU:HD21	2.01	0.42
4:PF:258:ASP:HA	5:PM:67:LEU:HD21	2.02	0.42
1:LE:101:PHE:CG	1:LE:102:ALA:N	2.88	0.42
3:P8:22:ARG:HD3	5:PN:141:TYR:HB2	2.01	0.42
4:PE:67:ARG:HA	4:PE:134:TRP:CH2	2.55	0.42
2:LI:60:LEU:HD21	2:LI:72:ALA:HB2	2.02	0.41
1:MB:131:ALA:O	1:MB:132:ARG:HB2	2.20	0.41
4:PG:204:ALA:HB3	4:PH:155:PRO:HG2	2.01	0.41
1:JB:125:ARG:HD3	1:JC:389:ARG:NH1	2.35	0.41
1:KB:131:ALA:O	1:KB:132:ARG:HB2	2.21	0.41
1:KF:136:ASN:HD22	1:KF:349:HIS:CD2	2.38	0.41
1:KA:371:ASP:OD2	1:NF:181:LYS:NZ	2.54	0.40
4:PJ:268:PRO:HD2	5:PX:140:THR:HG21	2.03	0.40
1:KA:371:ASP:CG	1:NF:378:ARG:HE	2.25	0.40
1:MA:149:ILE:CD1	1:MA:175:VAL:HG23	2.51	0.40
1:MC:147:VAL:HA	1:MC:148:PRO:HD3	1.99	0.40
2:KK:84:GLU:CD	2:KK:105:THR:HG1	2.24	0.40
4:PK:237:HIS:HD1	4:PK:291:HIP:P	2.45	0.40
1:JF:378:ARG:HE	1:LA:371:ASP:CG	2.24	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 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	JA	294/396 (74%)	277 (94%)	17 (6%)	0	100	100
1	JB	294/396 (74%)	280 (95%)	14 (5%)	0	100	100
1	JC	294/396 (74%)	280 (95%)	14 (5%)	0	100	100
1	JD	294/396 (74%)	282 (96%)	12 (4%)	0	100	100
1	JE	294/396 (74%)	283 (96%)	11 (4%)	0	100	100
1	JF	280/396 (71%)	266 (95%)	14 (5%)	0	100	100
1	KA	294/396 (74%)	282 (96%)	12 (4%)	0	100	100
1	KB	294/396 (74%)	279 (95%)	15 (5%)	0	100	100
1	KC	294/396 (74%)	279 (95%)	15 (5%)	0	100	100
1	KD	294/396 (74%)	277 (94%)	17 (6%)	0	100	100
1	KE	294/396 (74%)	280 (95%)	14 (5%)	0	100	100
1	KF	280/396 (71%)	267 (95%)	13 (5%)	0	100	100
1	LA	294/396 (74%)	279 (95%)	15 (5%)	0	100	100
1	LB	294/396 (74%)	279 (95%)	15 (5%)	0	100	100
1	LC	294/396 (74%)	277 (94%)	17 (6%)	0	100	100
1	LD	294/396 (74%)	283 (96%)	11 (4%)	0	100	100
1	LE	294/396 (74%)	282 (96%)	12 (4%)	0	100	100
1	LF	281/396 (71%)	269 (96%)	12 (4%)	0	100	100
1	MA	294/396 (74%)	281 (96%)	13 (4%)	0	100	100
1	MB	294/396 (74%)	278 (95%)	16 (5%)	0	100	100
1	MC	294/396 (74%)	278 (95%)	16 (5%)	0	100	100
1	MD	294/396 (74%)	279 (95%)	15 (5%)	0	100	100
1	ME	294/396 (74%)	282 (96%)	12 (4%)	0	100	100
1	MF	291/396 (74%)	276 (95%)	15 (5%)	0	100	100
1	NA	294/396 (74%)	281 (96%)	13 (4%)	0	100	100
1	NB	294/396 (74%)	282 (96%)	12 (4%)	0	100	100
1	NC	294/396 (74%)	281 (96%)	13 (4%)	0	100	100
1	ND	294/396 (74%)	283 (96%)	11 (4%)	0	100	100
1	NE	294/396 (74%)	281 (96%)	13 (4%)	0	100	100
1	NF	280/396 (71%)	267 (95%)	13 (5%)	0	100	100
2	JI	134/137 (98%)	131 (98%)	3 (2%)	0	100	100
2	JJ	129/137 (94%)	124 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	JK	134/137 (98%)	132 (98%)	2 (2%)	0	100	100
2	KI	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
2	KJ	129/137 (94%)	123 (95%)	6 (5%)	0	100	100
2	KK	134/137 (98%)	129 (96%)	5 (4%)	0	100	100
2	LI	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
2	LJ	127/137 (93%)	125 (98%)	2 (2%)	0	100	100
2	LK	134/137 (98%)	131 (98%)	3 (2%)	0	100	100
2	MI	134/137 (98%)	131 (98%)	3 (2%)	0	100	100
2	MJ	128/137 (93%)	124 (97%)	4 (3%)	0	100	100
2	MK	134/137 (98%)	131 (98%)	3 (2%)	0	100	100
2	NI	134/137 (98%)	131 (98%)	3 (2%)	0	100	100
2	NJ	127/137 (93%)	123 (97%)	4 (3%)	0	100	100
2	NK	134/137 (98%)	131 (98%)	3 (2%)	0	100	100
3	P5	79/82 (96%)	75 (95%)	4 (5%)	0	100	100
3	P6	79/82 (96%)	76 (96%)	3 (4%)	0	100	100
3	P7	79/82 (96%)	76 (96%)	3 (4%)	0	100	100
3	P8	79/82 (96%)	76 (96%)	3 (4%)	0	100	100
3	P9	79/82 (96%)	77 (98%)	2 (2%)	0	100	100
4	PA	399/675 (59%)	386 (97%)	13 (3%)	0	100	100
4	PB	399/675 (59%)	389 (98%)	10 (2%)	0	100	100
4	PC	391/675 (58%)	385 (98%)	6 (2%)	0	100	100
4	PD	389/675 (58%)	385 (99%)	4 (1%)	0	100	100
4	PE	399/675 (59%)	388 (97%)	11 (3%)	0	100	100
4	PF	399/675 (59%)	385 (96%)	14 (4%)	0	100	100
4	PG	399/675 (59%)	386 (97%)	13 (3%)	0	100	100
4	PH	388/675 (58%)	380 (98%)	8 (2%)	0	100	100
4	PI	392/675 (58%)	382 (97%)	10 (3%)	0	100	100
4	PJ	399/675 (59%)	385 (96%)	14 (4%)	0	100	100
4	PK	394/675 (58%)	384 (98%)	10 (2%)	0	100	100
4	PL	391/675 (58%)	381 (97%)	10 (3%)	0	100	100
5	PM	138/141 (98%)	129 (94%)	9 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	PN	138/141 (98%)	132 (96%)	6 (4%)	0	100	100
5	PO	138/141 (98%)	129 (94%)	9 (6%)	0	100	100
5	PP	138/141 (98%)	133 (96%)	5 (4%)	0	100	100
5	PQ	138/141 (98%)	131 (95%)	7 (5%)	0	100	100
5	PR	138/141 (98%)	129 (94%)	9 (6%)	0	100	100
5	PS	138/141 (98%)	130 (94%)	8 (6%)	0	100	100
5	PT	138/141 (98%)	131 (95%)	7 (5%)	0	100	100
5	PU	138/141 (98%)	131 (95%)	7 (5%)	0	100	100
5	PV	138/141 (98%)	132 (96%)	6 (4%)	0	100	100
5	PW	138/141 (98%)	133 (96%)	5 (4%)	0	100	100
5	PX	138/141 (98%)	132 (96%)	6 (4%)	0	100	100
All	All	17532/24137 (73%)	16844 (96%)	688 (4%)	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	JA	244/322 (76%)	241 (99%)	3 (1%)	67	85
1	JB	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	JC	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	JD	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	JE	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	JF	232/322 (72%)	229 (99%)	3 (1%)	65	84
1	KA	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	KB	244/322 (76%)	241 (99%)	3 (1%)	67	85
1	KC	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	KD	244/322 (76%)	240 (98%)	4 (2%)	58	80

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	KE	244/322 (76%)	241 (99%)	3 (1%)	67	85
1	KF	232/322 (72%)	230 (99%)	2 (1%)	75	89
1	LA	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	LB	244/322 (76%)	240 (98%)	4 (2%)	58	80
1	LC	244/322 (76%)	241 (99%)	3 (1%)	67	85
1	LD	244/322 (76%)	240 (98%)	4 (2%)	58	80
1	LE	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	LF	233/322 (72%)	231 (99%)	2 (1%)	75	89
1	MA	244/322 (76%)	240 (98%)	4 (2%)	58	80
1	MB	244/322 (76%)	241 (99%)	3 (1%)	67	85
1	MC	244/322 (76%)	240 (98%)	4 (2%)	58	80
1	MD	244/322 (76%)	239 (98%)	5 (2%)	50	76
1	ME	244/322 (76%)	241 (99%)	3 (1%)	67	85
1	MF	243/322 (76%)	239 (98%)	4 (2%)	58	80
1	NA	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	NB	244/322 (76%)	242 (99%)	2 (1%)	79	91
1	NC	244/322 (76%)	240 (98%)	4 (2%)	58	80
1	ND	244/322 (76%)	240 (98%)	4 (2%)	58	80
1	NE	244/322 (76%)	243 (100%)	1 (0%)	89	96
1	NF	232/322 (72%)	226 (97%)	6 (3%)	41	68
2	JI	99/100 (99%)	98 (99%)	1 (1%)	73	88
2	JJ	95/100 (95%)	94 (99%)	1 (1%)	70	86
2	JK	99/100 (99%)	99 (100%)	0	100	100
2	KI	99/100 (99%)	98 (99%)	1 (1%)	73	88
2	KJ	95/100 (95%)	94 (99%)	1 (1%)	70	86
2	KK	99/100 (99%)	98 (99%)	1 (1%)	73	88
2	LI	99/100 (99%)	98 (99%)	1 (1%)	73	88
2	LJ	94/100 (94%)	93 (99%)	1 (1%)	70	86
2	LK	99/100 (99%)	99 (100%)	0	100	100
2	MI	99/100 (99%)	99 (100%)	0	100	100
2	MJ	95/100 (95%)	94 (99%)	1 (1%)	70	86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	MK	99/100 (99%)	99 (100%)	0	100	100
2	NI	99/100 (99%)	98 (99%)	1 (1%)	73	88
2	NJ	94/100 (94%)	92 (98%)	2 (2%)	48	74
2	NK	99/100 (99%)	97 (98%)	2 (2%)	50	76
3	P5	73/73 (100%)	73 (100%)	0	100	100
3	P6	73/73 (100%)	71 (97%)	2 (3%)	40	67
3	P7	73/73 (100%)	71 (97%)	2 (3%)	40	67
3	P8	73/73 (100%)	73 (100%)	0	100	100
3	P9	73/73 (100%)	72 (99%)	1 (1%)	62	82
4	PA	334/568 (59%)	333 (100%)	1 (0%)	91	97
4	PB	334/568 (59%)	329 (98%)	5 (2%)	60	82
4	PC	328/568 (58%)	324 (99%)	4 (1%)	67	85
4	PD	327/568 (58%)	323 (99%)	4 (1%)	67	85
4	PE	334/568 (59%)	333 (100%)	1 (0%)	91	97
4	PF	334/568 (59%)	332 (99%)	2 (1%)	84	93
4	PG	334/568 (59%)	332 (99%)	2 (1%)	84	93
4	PH	327/568 (58%)	326 (100%)	1 (0%)	91	97
4	PI	332/568 (58%)	330 (99%)	2 (1%)	84	93
4	PJ	334/568 (59%)	333 (100%)	1 (0%)	91	97
4	PK	331/568 (58%)	330 (100%)	1 (0%)	91	97
4	PL	328/568 (58%)	325 (99%)	3 (1%)	75	89
5	PM	116/117 (99%)	115 (99%)	1 (1%)	75	89
5	PN	116/117 (99%)	115 (99%)	1 (1%)	75	89
5	PO	116/117 (99%)	115 (99%)	1 (1%)	75	89
5	PP	116/117 (99%)	113 (97%)	3 (3%)	41	68
5	PQ	116/117 (99%)	114 (98%)	2 (2%)	56	79
5	PR	116/117 (99%)	114 (98%)	2 (2%)	56	79
5	PS	116/117 (99%)	114 (98%)	2 (2%)	56	79
5	PT	116/117 (99%)	114 (98%)	2 (2%)	56	79
5	PU	116/117 (99%)	115 (99%)	1 (1%)	75	89
5	PV	116/117 (99%)	113 (97%)	3 (3%)	41	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	PW	116/117 (99%)	114 (98%)	2 (2%)	56	79
5	PX	116/117 (99%)	114 (98%)	2 (2%)	56	79
All	All	14469/19745 (73%)	14313 (99%)	156 (1%)	69	86

All (156) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	JA	199	ASP
1	JA	276	ASN
1	JA	378	ARG
1	JB	114	ARG
1	JB	378	ARG
1	JC	189	THR
1	JC	378	ARG
1	JD	276	ASN
1	JD	378	ARG
1	JE	333	SER
1	JE	378	ARG
1	JF	144	VAL
1	JF	178	ASN
1	JF	378	ARG
2	JI	135	THR
2	JJ	46	SER
1	KA	276	ASN
1	KA	378	ARG
1	KB	257	ARG
1	KB	349	HIS
1	KB	378	ARG
1	KC	333	SER
1	KC	378	ARG
1	KD	191	GLU
1	KD	276	ASN
1	KD	289	LEU
1	KD	378	ARG
1	KE	110	ASP
1	KE	311	SER
1	KE	378	ARG
1	KF	117	LEU
1	KF	378	ARG
2	KI	69	VAL
2	KJ	71	LEU

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Mol	Chain	Res	Type
2	KK	117	GLU
1	LA	276	ASN
1	LA	378	ARG
1	LB	104	SER
1	LB	117	LEU
1	LB	257	ARG
1	LB	378	ARG
1	LC	110	ASP
1	LC	189	THR
1	LC	378	ARG
1	LD	101	PHE
1	LD	276	ASN
1	LD	282	ARG
1	LD	378	ARG
1	LE	333	SER
1	LE	378	ARG
1	LF	333	SER
1	LF	378	ARG
2	LI	32	SER
2	LJ	76	CYS
1	MA	197	MET
1	MA	200	LEU
1	MA	276	ASN
1	MA	378	ARG
1	MB	117	LEU
1	MB	118	LEU
1	MB	378	ARG
1	MC	189	THR
1	MC	244	LEU
1	MC	292	ARG
1	MC	378	ARG
1	MD	105	ASP
1	MD	146	ASP
1	MD	276	ASN
1	MD	292	ARG
1	MD	378	ARG
1	ME	187	ARG
1	ME	289	LEU
1	ME	311	SER
1	MF	136	ASN
1	MF	178	ASN
1	MF	292	ARG

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Mol	Chain	Res	Type
1	MF	378	ARG
2	MJ	18	SER
1	NA	276	ASN
1	NA	359	ASP
1	NB	110	ASP
1	NB	378	ARG
1	NC	105	ASP
1	NC	206	GLN
1	NC	292	ARG
1	NC	378	ARG
1	ND	276	ASN
1	ND	282	ARG
1	ND	292	ARG
1	ND	378	ARG
1	NE	378	ARG
1	NF	117	LEU
1	NF	144	VAL
1	NF	192	MET
1	NF	292	ARG
1	NF	364	ASP
1	NF	378	ARG
2	NI	75	ASP
2	NJ	75	ASP
2	NJ	135	THR
2	NK	22	LEU
2	NK	75	ASP
3	P6	4	ARG
3	P6	26	GLN
3	P7	4	ARG
3	P7	63	ASN
3	P9	4	ARG
4	PA	205	ARG
4	PB	55	LEU
4	PB	205	ARG
4	PB	255	ARG
4	PB	269	ARG
4	PB	423	SER
4	PC	42	MET
4	PC	255	ARG
4	PC	365	SER
4	PC	423	SER
4	PD	100	LYS

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Mol	Chain	Res	Type
4	PD	185	GLN
4	PD	255	ARG
4	PD	365	SER
4	PE	423	SER
4	PF	365	SER
4	PF	423	SER
4	PG	168	GLN
4	PG	255	ARG
4	PH	365	SER
4	PI	168	GLN
4	PI	255	ARG
4	PJ	205	ARG
4	PK	274	ASN
4	PL	168	GLN
4	PL	255	ARG
4	PL	423	SER
5	PM	132	ASP
5	PN	132	ASP
5	PO	118	LYS
5	PP	2	PRO
5	PP	132	ASP
5	PP	139	ARG
5	PQ	2	PRO
5	PQ	107	SER
5	PR	132	ASP
5	PR	139	ARG
5	PS	132	ASP
5	PS	139	ARG
5	PT	118	LYS
5	PT	132	ASP
5	PU	132	ASP
5	PV	2	PRO
5	PV	107	SER
5	PV	132	ASP
5	PW	118	LYS
5	PW	132	ASP
5	PX	118	LYS
5	PX	132	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	JB	178	ASN
2	JK	116	GLN
1	KA	380	HIS
1	KB	161	GLN
1	KC	161	GLN
1	KE	347	ASN
2	KK	116	GLN
1	MA	161	GLN
1	MA	380	HIS
1	MB	161	GLN
1	MF	136	ASN
1	NA	380	HIS
1	NB	161	GLN
1	NC	281	ASN
2	NK	116	GLN
3	P6	18	GLN
3	P7	2	GLN
4	PA	181	HIS
4	PA	392	GLN
4	PA	393	GLN
4	PE	392	GLN
4	PF	392	GLN
4	PG	232	GLN
4	PH	392	GLN
4	PI	392	GLN
4	PK	392	GLN
4	PL	392	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

41 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	$\#\|Z\|>2$
4	HIP	PB	196	4	10,14,15	2.06	3 (30%)	6,20,22	1.09	0
4	HIP	PI	196	4	10,14,15	2.19	4 (40%)	6,20,22	1.27	0
4	HIP	PI	291	4	10,14,15	1.97	3 (30%)	6,20,22	1.48	1 (16%)
4	HIP	PG	196	4	10,14,15	2.18	3 (30%)	6,20,22	1.09	0
4	HIP	PC	196	4	10,14,15	2.15	3 (30%)	6,20,22	1.14	0
4	HIP	PA	196	4	10,14,15	2.21	3 (30%)	6,20,22	1.16	0
4	HIP	PL	243	4	10,14,15	2.17	4 (40%)	6,20,22	1.28	0
4	HIP	PB	243	4	10,14,15	2.13	4 (40%)	6,20,22	1.30	0
4	HIP	PA	291	4	10,14,15	1.75	2 (20%)	6,20,22	2.08	3 (50%)
4	HIP	PH	243	4	10,14,15	2.15	4 (40%)	6,20,22	1.35	1 (16%)
4	HIP	PH	196	4	10,14,15	2.14	3 (30%)	6,20,22	1.24	0
4	HIP	PJ	291	4	10,14,15	1.88	3 (30%)	6,20,22	1.64	1 (16%)
3	HIP	P8	17	3	10,14,15	1.87	3 (30%)	6,20,22	1.06	0
3	HIP	P9	17	3	10,14,15	1.96	3 (30%)	6,20,22	0.88	0
4	HIP	PG	243	4	10,14,15	2.04	4 (40%)	6,20,22	1.33	1 (16%)
4	HIP	PD	291	4	10,14,15	2.91	4 (40%)	6,20,22	1.89	1 (16%)
4	HIP	PF	243	4	10,14,15	1.90	3 (30%)	6,20,22	1.35	1 (16%)
4	HIP	PH	291	4	10,14,15	1.79	3 (30%)	6,20,22	2.01	2 (33%)
4	HIP	PF	196	4	10,14,15	2.09	3 (30%)	6,20,22	1.17	0
3	HIP	P5	17	3	10,14,15	1.93	3 (30%)	6,20,22	0.88	0
4	HIP	PK	196	4	10,14,15	2.25	3 (30%)	6,20,22	1.18	0
4	HIP	PJ	196	4	10,14,15	2.21	3 (30%)	6,20,22	1.06	0
4	HIP	PJ	243	4	10,14,15	2.09	4 (40%)	6,20,22	1.33	0
4	HIP	PB	291	4	10,14,15	1.93	3 (30%)	6,20,22	1.62	1 (16%)
4	HIP	PL	196	4	10,14,15	2.20	3 (30%)	6,20,22	1.14	0
4	HIP	PG	291	4	10,14,15	1.85	3 (30%)	6,20,22	1.50	1 (16%)
4	HIP	PA	243	4	10,14,15	2.19	4 (40%)	6,20,22	1.31	0
3	HIP	P7	17	3	10,14,15	1.83	3 (30%)	6,20,22	0.99	0
4	HIP	PF	291	4	10,14,15	1.93	3 (30%)	6,20,22	1.73	1 (16%)
4	HIP	PD	196	4	10,14,15	2.00	2 (20%)	6,20,22	1.16	0
4	HIP	PD	243	4	10,14,15	2.12	4 (40%)	6,20,22	1.30	0
4	HIP	PE	196	4	10,14,15	2.11	3 (30%)	6,20,22	1.25	0
4	HIP	PL	291	4	10,14,15	1.86	3 (30%)	6,20,22	1.66	1 (16%)
4	HIP	PC	243	4	10,14,15	2.00	4 (40%)	6,20,22	1.25	0
4	HIP	PK	243	4	10,14,15	2.12	4 (40%)	6,20,22	1.35	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\vert Z\vert > 2$	Counts	RMSZ	$\#\vert Z\vert > 2$
4	HIP	PK	291	4	10,14,15	1.95	3 (30%)	6,20,22	1.77	1 (16%)
4	HIP	PC	291	4	10,14,15	1.89	3 (30%)	6,20,22	1.66	1 (16%)
4	HIP	PE	291	4	10,14,15	1.93	3 (30%)	6,20,22	1.63	1 (16%)
4	HIP	PI	243	4	10,14,15	2.21	4 (40%)	6,20,22	1.31	1 (16%)
3	HIP	P6	17	3	10,14,15	2.03	3 (30%)	6,20,22	1.05	0
4	HIP	PE	243	4	10,14,15	2.06	4 (40%)	6,20,22	1.27	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
4	HIP	PB	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PI	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PI	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PG	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PC	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PA	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PL	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PB	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PA	291	4	-	0/5/12/14	0/1/1/1
4	HIP	PH	243	4	-	2/5/12/14	0/1/1/1
4	HIP	PH	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PJ	291	4	-	0/5/12/14	0/1/1/1
3	HIP	P8	17	3	-	0/5/12/14	0/1/1/1
3	HIP	P9	17	3	-	1/5/12/14	0/1/1/1
4	HIP	PG	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PD	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PF	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PH	291	4	-	0/5/12/14	0/1/1/1
4	HIP	PF	196	4	-	2/5/12/14	0/1/1/1
3	HIP	P5	17	3	-	1/5/12/14	0/1/1/1
4	HIP	PK	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PJ	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PJ	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PB	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PL	196	4	-	2/5/12/14	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	HIP	PG	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PA	243	4	-	2/5/12/14	0/1/1/1
3	HIP	P7	17	3	-	0/5/12/14	0/1/1/1
4	HIP	PF	291	4	-	0/5/12/14	0/1/1/1
4	HIP	PD	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PD	243	4	-	1/5/12/14	0/1/1/1
4	HIP	PE	196	4	-	2/5/12/14	0/1/1/1
4	HIP	PL	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PC	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PK	243	4	-	3/5/12/14	0/1/1/1
4	HIP	PK	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PC	291	4	-	0/5/12/14	0/1/1/1
4	HIP	PE	291	4	-	1/5/12/14	0/1/1/1
4	HIP	PI	243	4	-	3/5/12/14	0/1/1/1
3	HIP	P6	17	3	-	0/5/12/14	0/1/1/1
4	HIP	PE	243	4	-	3/5/12/14	0/1/1/1

All (134) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	PD	291	HIP	P-O1P	6.45	1.52	1.47
4	PE	196	HIP	CG-ND1	5.39	1.44	1.37
4	PI	196	HIP	CG-ND1	5.34	1.44	1.37
4	PK	196	HIP	CG-ND1	5.25	1.44	1.37
4	PJ	196	HIP	CG-ND1	5.21	1.44	1.37
4	PH	196	HIP	CG-ND1	5.14	1.44	1.37
4	PF	196	HIP	CG-ND1	5.08	1.44	1.37
4	PG	196	HIP	CG-ND1	5.02	1.44	1.37
4	PD	291	HIP	CG-ND1	5.01	1.44	1.37
4	PD	196	HIP	CG-ND1	4.98	1.44	1.37
4	PC	196	HIP	CG-ND1	4.95	1.44	1.37
4	PL	196	HIP	CG-ND1	4.95	1.44	1.37
4	PA	196	HIP	CG-ND1	4.94	1.44	1.37
4	PB	196	HIP	CG-ND1	4.78	1.43	1.37
4	PK	243	HIP	CG-ND1	4.60	1.43	1.37
4	PH	243	HIP	CG-ND1	4.60	1.43	1.37
4	PI	291	HIP	CG-ND1	4.52	1.43	1.37
4	PL	243	HIP	CG-ND1	4.50	1.43	1.37
4	PG	243	HIP	CG-ND1	4.49	1.43	1.37
4	PJ	243	HIP	CG-ND1	4.48	1.43	1.37
4	PI	243	HIP	CG-ND1	4.46	1.43	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	PF	291	HIP	CG-ND1	4.43	1.43	1.37
4	PB	243	HIP	CG-ND1	4.39	1.43	1.37
4	PD	243	HIP	CG-ND1	4.31	1.43	1.37
4	PA	243	HIP	CG-ND1	4.30	1.43	1.37
4	PC	291	HIP	CG-ND1	4.29	1.43	1.37
4	PC	243	HIP	CG-ND1	4.29	1.43	1.37
4	PK	291	HIP	CG-ND1	4.25	1.43	1.37
4	PJ	291	HIP	CG-ND1	4.19	1.43	1.37
4	PE	291	HIP	CG-ND1	4.17	1.43	1.37
3	P5	17	HIP	CG-ND1	4.14	1.43	1.37
4	PH	291	HIP	CG-ND1	4.12	1.43	1.37
4	PF	243	HIP	CG-ND1	4.06	1.42	1.37
4	PG	291	HIP	CG-ND1	4.04	1.42	1.37
4	PL	291	HIP	CG-ND1	4.02	1.42	1.37
4	PB	291	HIP	CG-ND1	3.99	1.42	1.37
4	PE	243	HIP	CG-ND1	3.97	1.42	1.37
3	P6	17	HIP	P-O1P	3.96	1.50	1.47
4	PA	291	HIP	CG-ND1	3.91	1.42	1.37
3	P9	17	HIP	CG-ND1	3.82	1.42	1.37
4	PA	196	HIP	P-O1P	3.65	1.50	1.47
3	P6	17	HIP	CG-ND1	3.61	1.42	1.37
4	PL	196	HIP	P-O1P	3.56	1.50	1.47
4	PE	243	HIP	P-O1P	3.55	1.50	1.47
4	PA	243	HIP	P-O1P	3.51	1.50	1.47
4	PI	243	HIP	P-O1P	3.49	1.50	1.47
3	P7	17	HIP	P-O1P	3.45	1.50	1.47
3	P9	17	HIP	P-O1P	3.44	1.50	1.47
4	PK	196	HIP	P-O1P	3.44	1.50	1.47
3	P8	17	HIP	CG-ND1	3.41	1.42	1.37
4	PL	243	HIP	P-O1P	3.36	1.50	1.47
4	PK	291	HIP	P-O3P	-3.33	1.48	1.54
4	PB	291	HIP	P-O3P	-3.31	1.48	1.54
4	PD	243	HIP	P-O1P	3.27	1.50	1.47
4	PE	291	HIP	P-O3P	-3.26	1.48	1.54
3	P8	17	HIP	P-O1P	3.25	1.50	1.47
4	PG	196	HIP	P-O1P	3.23	1.50	1.47
4	PC	196	HIP	P-O1P	3.23	1.50	1.47
4	PJ	196	HIP	P-O1P	3.17	1.50	1.47
4	PF	291	HIP	P-O3P	-3.16	1.48	1.54
4	PI	291	HIP	P-O3P	-3.16	1.48	1.54
4	PG	291	HIP	P-O3P	-3.14	1.48	1.54
3	P7	17	HIP	CG-ND1	3.10	1.41	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	PJ	291	HIP	P-O3P	-3.06	1.48	1.54
4	PC	291	HIP	P-O3P	-3.05	1.48	1.54
4	PL	291	HIP	P-O3P	-3.05	1.48	1.54
3	P5	17	HIP	P-O1P	3.03	1.49	1.47
4	PK	243	HIP	P-O1P	3.02	1.49	1.47
4	PB	243	HIP	P-O1P	3.02	1.49	1.47
4	PB	243	HIP	P-O3P	-3.00	1.48	1.54
4	PD	291	HIP	P-O3P	-2.99	1.48	1.54
4	PA	243	HIP	P-O3P	-2.96	1.48	1.54
4	PG	243	HIP	P-O1P	2.95	1.49	1.47
4	PH	196	HIP	P-O1P	2.95	1.49	1.47
4	PH	243	HIP	P-O1P	2.93	1.49	1.47
4	PI	243	HIP	P-O3P	-2.90	1.48	1.54
4	PI	196	HIP	P-O1P	2.86	1.49	1.47
4	PB	196	HIP	P-O1P	2.82	1.49	1.47
4	PH	243	HIP	P-O3P	-2.79	1.49	1.54
4	PL	243	HIP	P-O3P	-2.78	1.49	1.54
4	PF	243	HIP	P-O3P	-2.75	1.49	1.54
4	PJ	243	HIP	P-O3P	-2.74	1.49	1.54
4	PC	243	HIP	P-O1P	2.74	1.49	1.47
4	PA	291	HIP	P-O3P	-2.70	1.49	1.54
4	PJ	243	HIP	P-O1P	2.68	1.49	1.47
4	PD	291	HIP	P-O2P	-2.67	1.49	1.54
4	PC	243	HIP	P-O3P	-2.66	1.49	1.54
4	PE	243	HIP	P-O3P	-2.63	1.49	1.54
4	PD	243	HIP	P-O3P	-2.62	1.49	1.54
4	PK	243	HIP	P-O3P	-2.59	1.49	1.54
4	PD	243	HIP	P-O2P	-2.56	1.49	1.54
4	PG	243	HIP	P-O3P	-2.56	1.49	1.54
4	PF	196	HIP	P-O1P	2.55	1.49	1.47
4	PH	243	HIP	P-O2P	-2.53	1.49	1.54
4	PA	196	HIP	P-O2P	-2.52	1.49	1.54
4	PJ	243	HIP	P-O2P	-2.51	1.49	1.54
3	P6	17	HIP	P-O3P	-2.51	1.49	1.54
4	PA	243	HIP	P-O2P	-2.50	1.49	1.54
4	PG	196	HIP	P-O2P	-2.49	1.49	1.54
4	PB	291	HIP	P-O1P	2.49	1.49	1.47
4	PC	196	HIP	P-O2P	-2.49	1.49	1.54
4	PD	196	HIP	P-O2P	-2.49	1.49	1.54
4	PL	196	HIP	P-O2P	-2.49	1.49	1.54
3	P9	17	HIP	P-O3P	-2.48	1.49	1.54
4	PB	196	HIP	P-O2P	-2.48	1.49	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	PJ	196	HIP	P-O2P	-2.47	1.49	1.54
4	PH	196	HIP	P-O2P	-2.46	1.49	1.54
4	PI	243	HIP	P-O2P	-2.45	1.49	1.54
4	PB	243	HIP	P-O2P	-2.44	1.49	1.54
4	PF	243	HIP	P-O1P	2.43	1.49	1.47
4	PE	196	HIP	P-O2P	-2.43	1.49	1.54
3	P7	17	HIP	P-O3P	-2.42	1.49	1.54
4	PE	291	HIP	P-O1P	2.41	1.49	1.47
4	PL	243	HIP	P-O2P	-2.40	1.49	1.54
4	PF	196	HIP	P-O2P	-2.40	1.49	1.54
4	PK	243	HIP	P-O2P	-2.40	1.49	1.54
4	PH	291	HIP	P-O3P	-2.39	1.49	1.54
3	P8	17	HIP	P-O3P	-2.34	1.50	1.54
4	PK	196	HIP	P-O2P	-2.30	1.50	1.54
4	PI	196	HIP	P-O2P	-2.27	1.50	1.54
4	PL	291	HIP	P-O1P	2.26	1.49	1.47
4	PK	291	HIP	P-O1P	2.26	1.49	1.47
4	PE	243	HIP	P-O2P	-2.23	1.50	1.54
4	PI	291	HIP	P-O1P	2.23	1.49	1.47
4	PH	291	HIP	P-O1P	2.23	1.49	1.47
3	P5	17	HIP	P-O3P	-2.21	1.50	1.54
4	PC	243	HIP	P-O2P	-2.20	1.50	1.54
4	PE	196	HIP	P-O1P	2.20	1.49	1.47
4	PF	291	HIP	P-O1P	2.18	1.49	1.47
4	PJ	291	HIP	P-O1P	2.18	1.49	1.47
4	PC	291	HIP	P-O1P	2.16	1.49	1.47
4	PG	291	HIP	P-O1P	2.09	1.49	1.47
4	PI	196	HIP	P-O3P	-2.05	1.50	1.54
4	PG	243	HIP	P-O2P	-2.01	1.50	1.54

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	PH	291	HIP	O3P-P-O1P	3.40	120.81	113.44
4	PD	291	HIP	O2P-P-O3P	3.38	119.85	106.57
4	PF	291	HIP	CB-CA-C	3.31	117.67	111.47
4	PK	291	HIP	CB-CA-C	3.26	117.58	111.47
4	PA	291	HIP	O3P-P-O1P	3.16	120.27	113.44
4	PJ	291	HIP	CB-CA-C	3.15	117.37	111.47
4	PC	291	HIP	CB-CA-C	2.83	116.77	111.47
4	PL	291	HIP	CB-CA-C	2.76	116.64	111.47
4	PB	291	HIP	CB-CA-C	2.62	116.38	111.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	PG	291	HIP	CB-CA-C	2.57	116.29	111.47
4	PA	291	HIP	CB-CA-C	2.56	116.27	111.47
4	PE	291	HIP	CB-CA-C	2.50	116.15	111.47
4	PI	291	HIP	CB-CA-C	2.47	116.10	111.47
4	PA	291	HIP	O2P-P-O3P	2.38	115.93	106.57
4	PG	243	HIP	O2P-P-O3P	2.24	115.39	106.57
4	PF	243	HIP	O2P-P-O3P	2.20	115.20	106.57
4	PH	291	HIP	O2P-P-O3P	2.06	114.68	106.57
4	PI	243	HIP	O2P-P-O3P	2.05	114.63	106.57
4	PH	243	HIP	O2P-P-O3P	2.02	114.51	106.57

There are no chirality outliers.

All (65) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	PA	243	HIP	O-C-CA-CB
4	PB	243	HIP	O-C-CA-CB
4	PB	291	HIP	O-C-CA-CB
4	PC	243	HIP	O-C-CA-CB
4	PD	243	HIP	O-C-CA-CB
4	PE	243	HIP	O-C-CA-CB
4	PE	291	HIP	O-C-CA-CB
4	PF	243	HIP	O-C-CA-CB
4	PG	243	HIP	O-C-CA-CB
4	PG	291	HIP	O-C-CA-CB
4	PH	243	HIP	O-C-CA-CB
4	PI	243	HIP	O-C-CA-CB
4	PI	291	HIP	O-C-CA-CB
4	PJ	243	HIP	O-C-CA-CB
4	PK	243	HIP	O-C-CA-CB
4	PK	291	HIP	O-C-CA-CB
4	PL	243	HIP	O-C-CA-CB
4	PL	291	HIP	O-C-CA-CB
4	PA	196	HIP	N-CA-CB-CG
4	PB	196	HIP	N-CA-CB-CG
4	PC	196	HIP	N-CA-CB-CG
4	PD	196	HIP	N-CA-CB-CG
4	PE	196	HIP	N-CA-CB-CG
4	PF	196	HIP	N-CA-CB-CG
4	PG	196	HIP	N-CA-CB-CG
4	PH	196	HIP	N-CA-CB-CG
4	PI	196	HIP	N-CA-CB-CG

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Mol	Chain	Res	Type	Atoms
4	PJ	196	HIP	N-CA-CB-CG
4	PK	196	HIP	N-CA-CB-CG
4	PL	196	HIP	N-CA-CB-CG
4	PJ	243	HIP	CA-CB-CG-CD2
4	PA	243	HIP	CA-CB-CG-ND1
4	PB	243	HIP	CA-CB-CG-ND1
4	PC	243	HIP	CA-CB-CG-ND1
4	PE	243	HIP	CA-CB-CG-ND1
4	PF	243	HIP	CA-CB-CG-ND1
4	PG	243	HIP	CA-CB-CG-ND1
4	PH	243	HIP	CA-CB-CG-ND1
4	PI	243	HIP	CA-CB-CG-ND1
4	PJ	243	HIP	CA-CB-CG-ND1
4	PK	243	HIP	CA-CB-CG-ND1
4	PL	243	HIP	CA-CB-CG-ND1
4	PA	196	HIP	C-CA-CB-CG
4	PB	196	HIP	C-CA-CB-CG
4	PC	196	HIP	C-CA-CB-CG
4	PD	196	HIP	C-CA-CB-CG
4	PE	196	HIP	C-CA-CB-CG
4	PF	196	HIP	C-CA-CB-CG
4	PG	196	HIP	C-CA-CB-CG
4	PH	196	HIP	C-CA-CB-CG
4	PJ	196	HIP	C-CA-CB-CG
4	PK	196	HIP	C-CA-CB-CG
4	PL	196	HIP	C-CA-CB-CG
3	P5	17	HIP	C-CA-CB-CG
3	P9	17	HIP	C-CA-CB-CG
4	PB	243	HIP	CA-CB-CG-CD2
4	PC	243	HIP	CA-CB-CG-CD2
4	PE	243	HIP	CA-CB-CG-CD2
4	PF	243	HIP	CA-CB-CG-CD2
4	PG	243	HIP	CA-CB-CG-CD2
4	PI	243	HIP	CA-CB-CG-CD2
4	PK	243	HIP	CA-CB-CG-CD2
4	PL	243	HIP	CA-CB-CG-CD2
4	PD	291	HIP	CA-CB-CG-ND1
4	PI	196	HIP	C-CA-CB-CG

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	PL	291	HIP	1	0
4	PK	291	HIP	1	0

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 200 ligands modelled in this entry, 200 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 ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

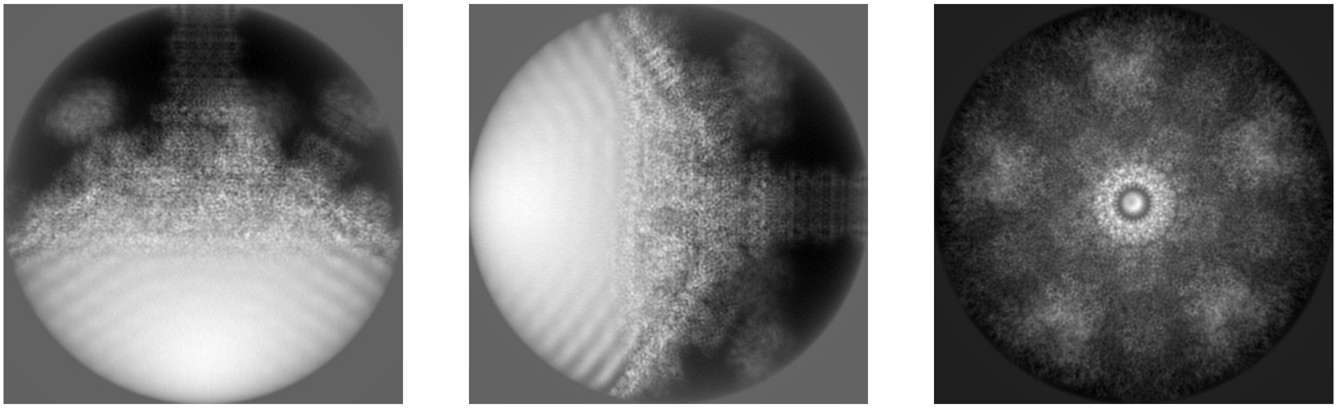
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-18642. These allow visual inspection of the internal detail of the map and identification of artifacts.

Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

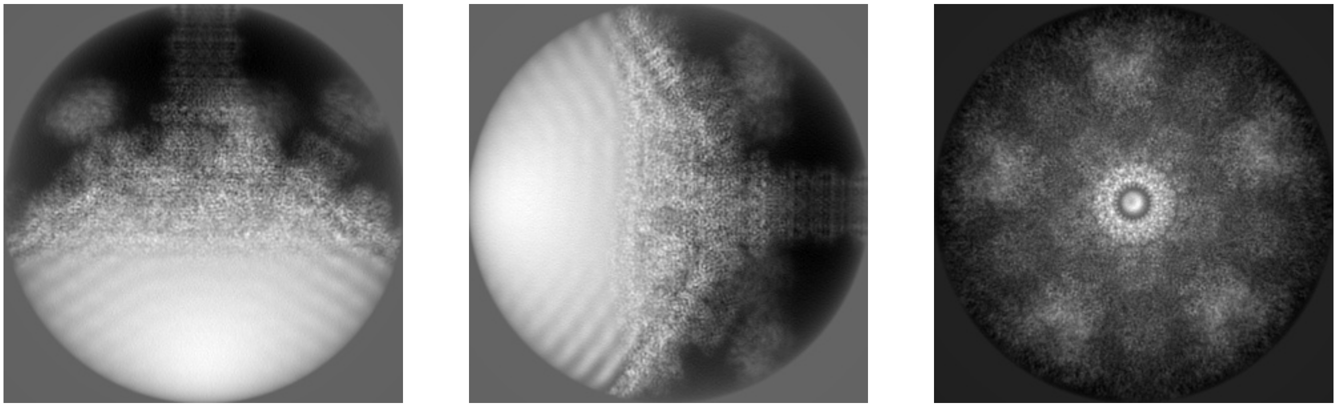
6.1 Orthogonal projections ⓘ

6.1.1 Primary map



X Y Z

6.1.2 Raw map

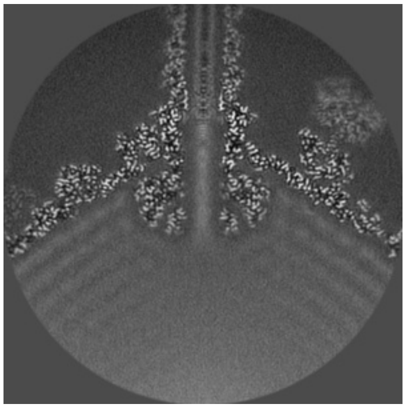


X Y Z

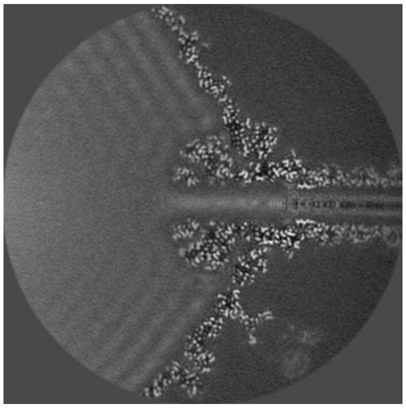
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

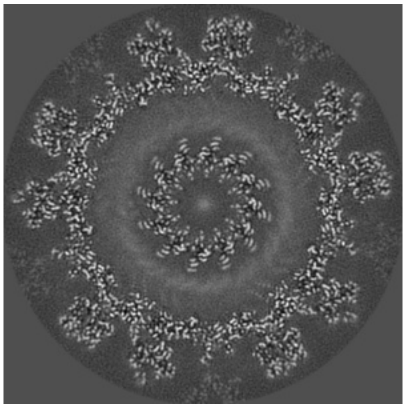
6.2.1 Primary map



X Index: 176

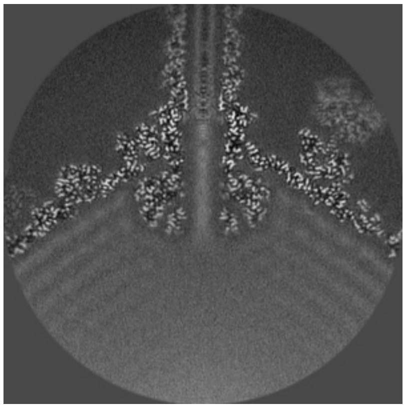


Y Index: 176

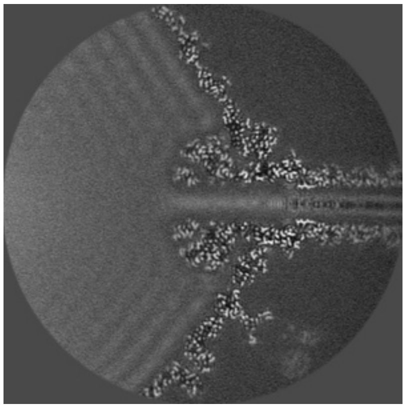


Z Index: 176

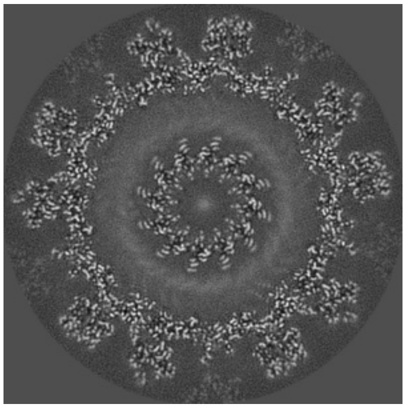
6.2.2 Raw map



X Index: 176



Y Index: 176

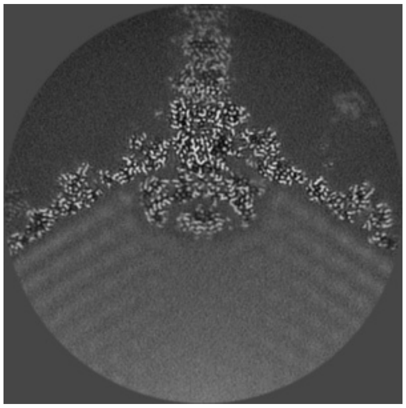


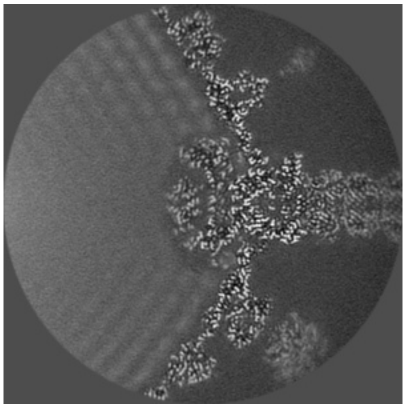
Z Index: 176

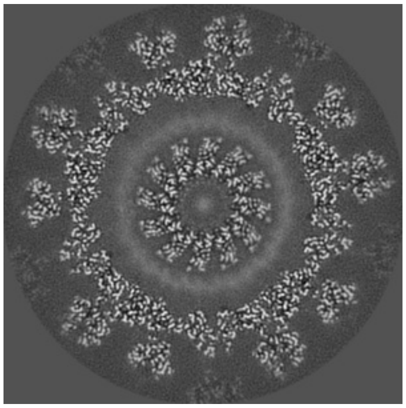
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

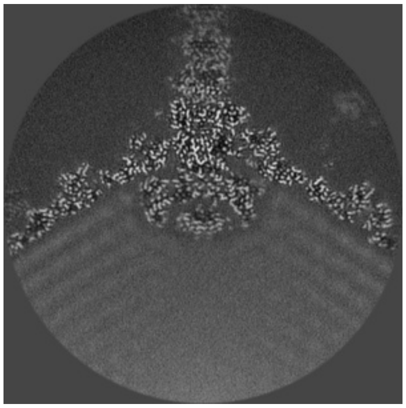
6.3.1 Primary map

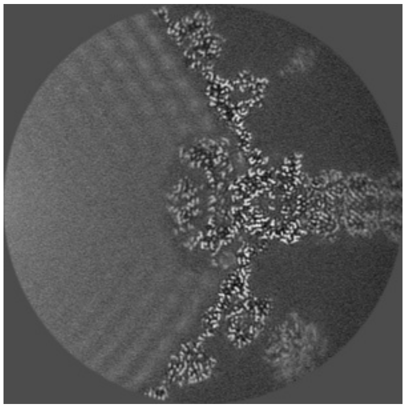

X Index: 199

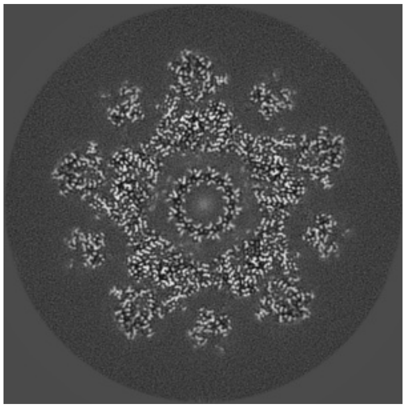

Y Index: 194


Z Index: 180

6.3.2 Raw map


X Index: 199

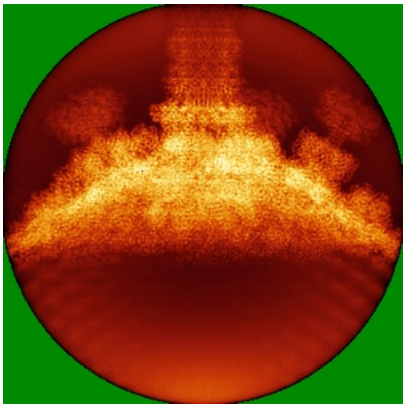

Y Index: 194


Z Index: 206

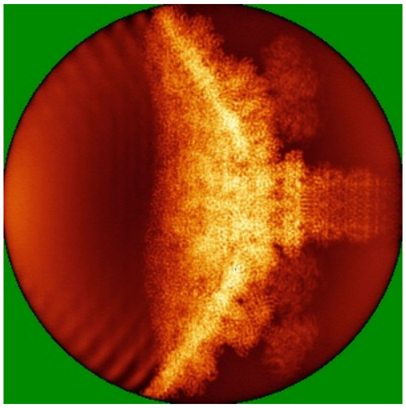
The images above show the largest variance slices of the map in three orthogonal directions.

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

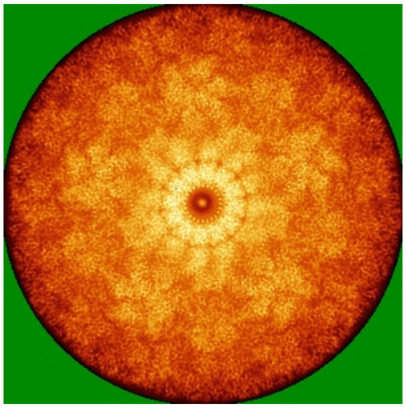
6.4.1 Primary map



X

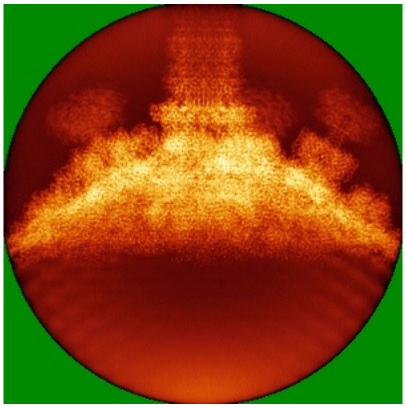


Y

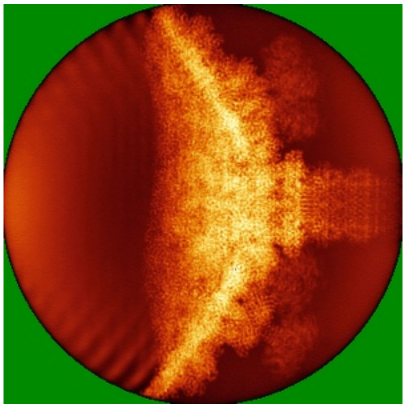


Z

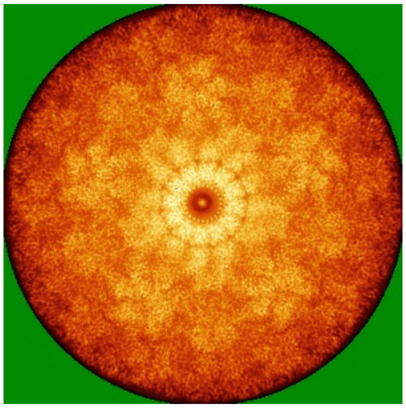
6.4.2 Raw map



X



Y

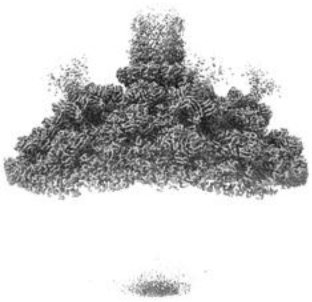


Z

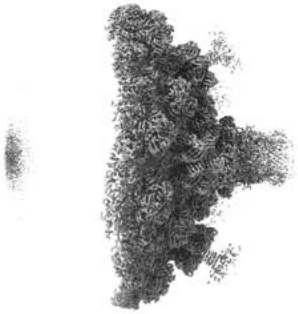
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views

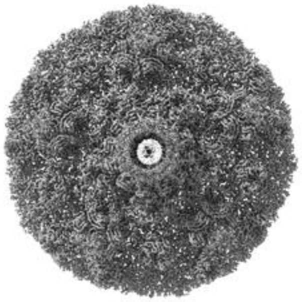
6.5.1 Primary map



X



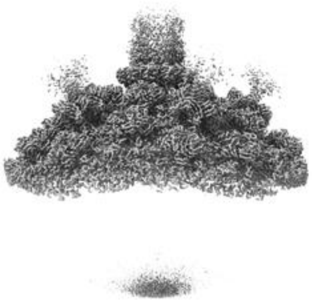
Y



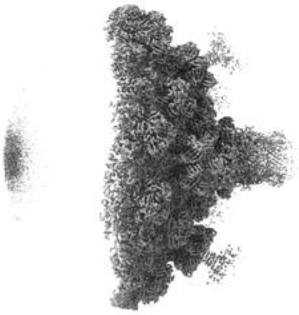
Z

The images above show the 3D surface view of the map at the recommended contour level 0.015. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

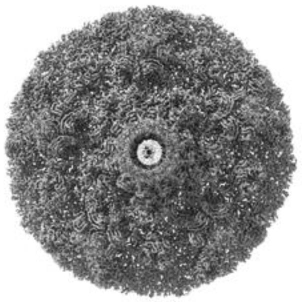
6.5.2 Raw map



X



Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

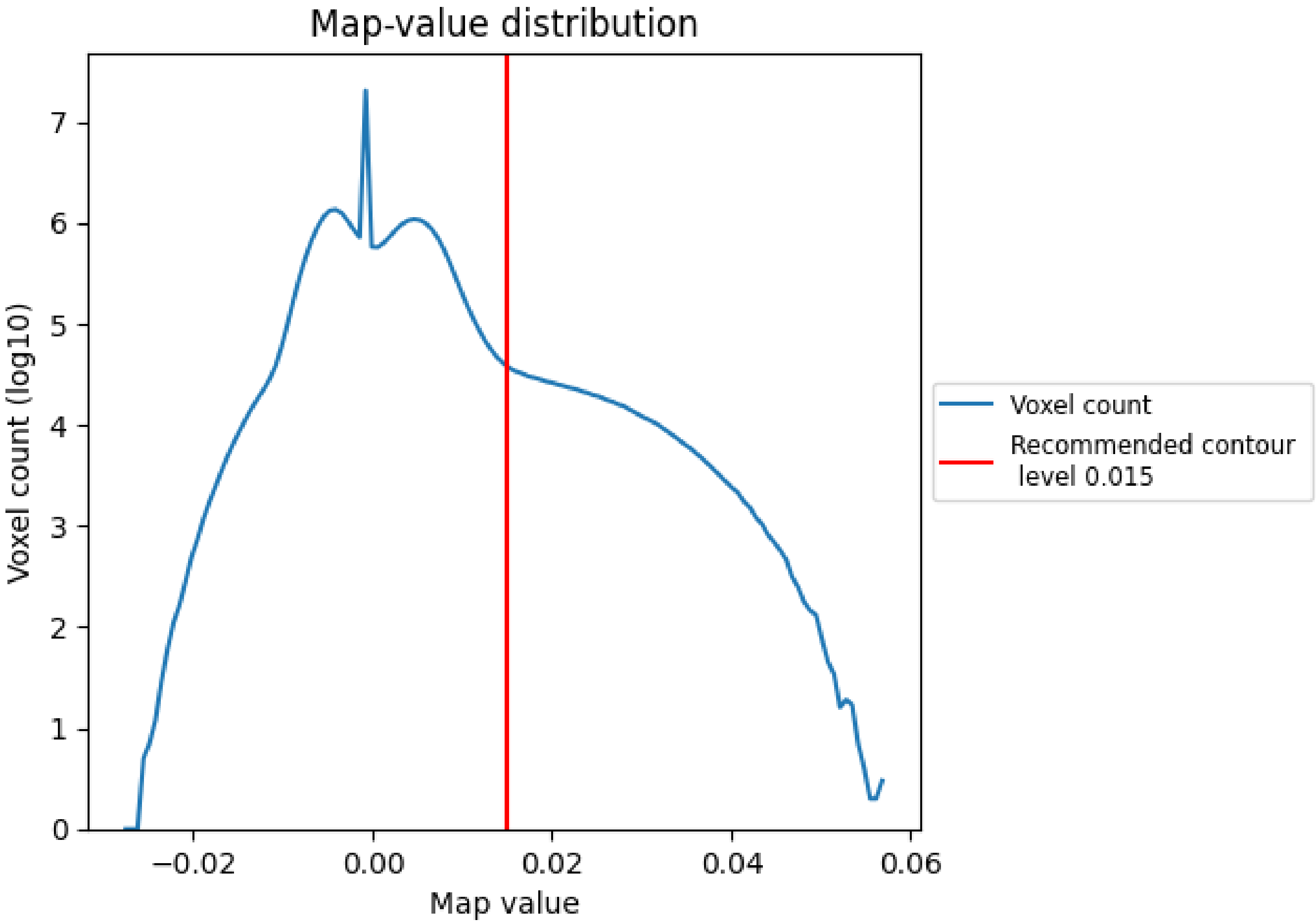
6.6 Mask visualisation

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

7 Map analysis ⓘ

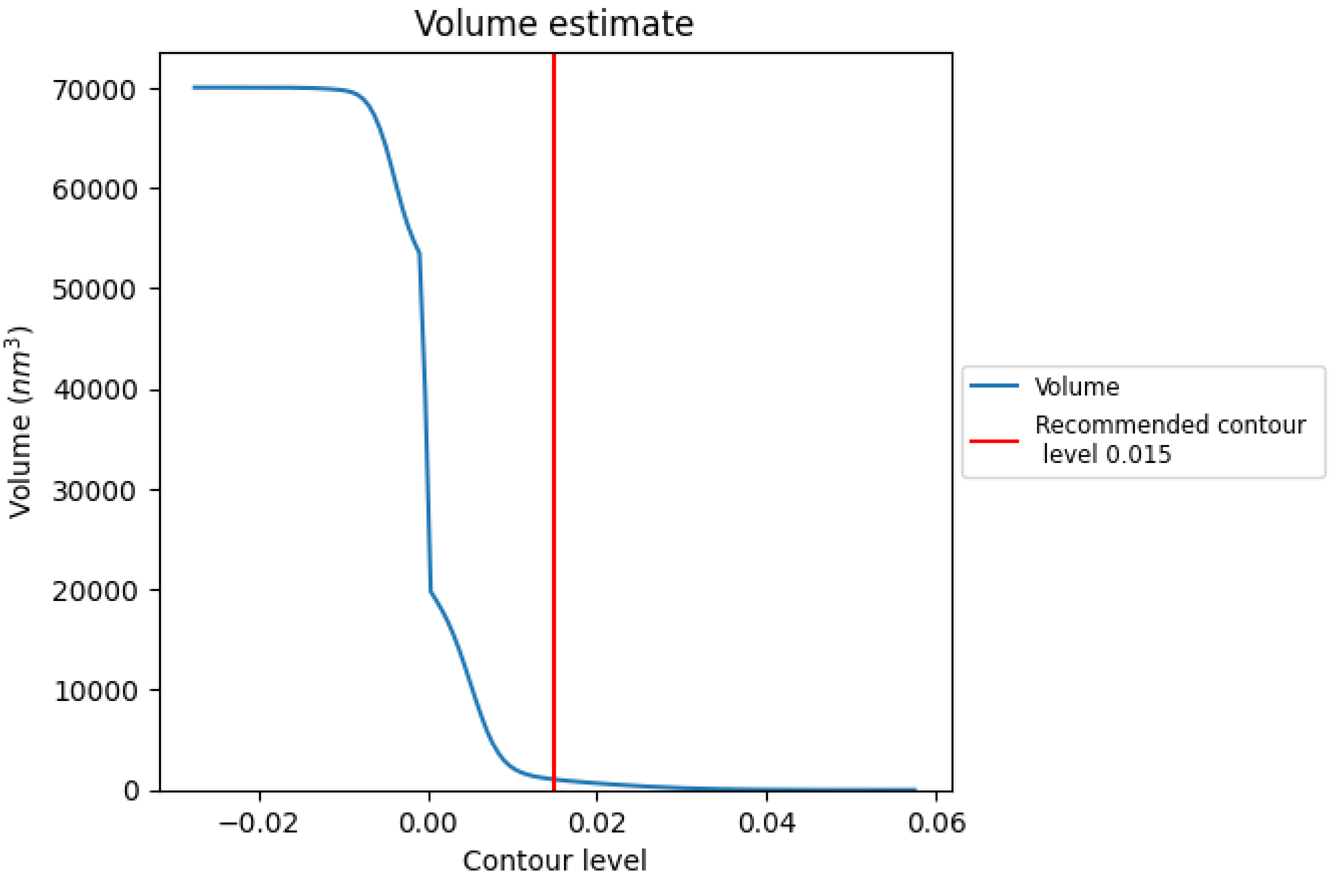
This section contains the results of statistical analysis of the map.

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.

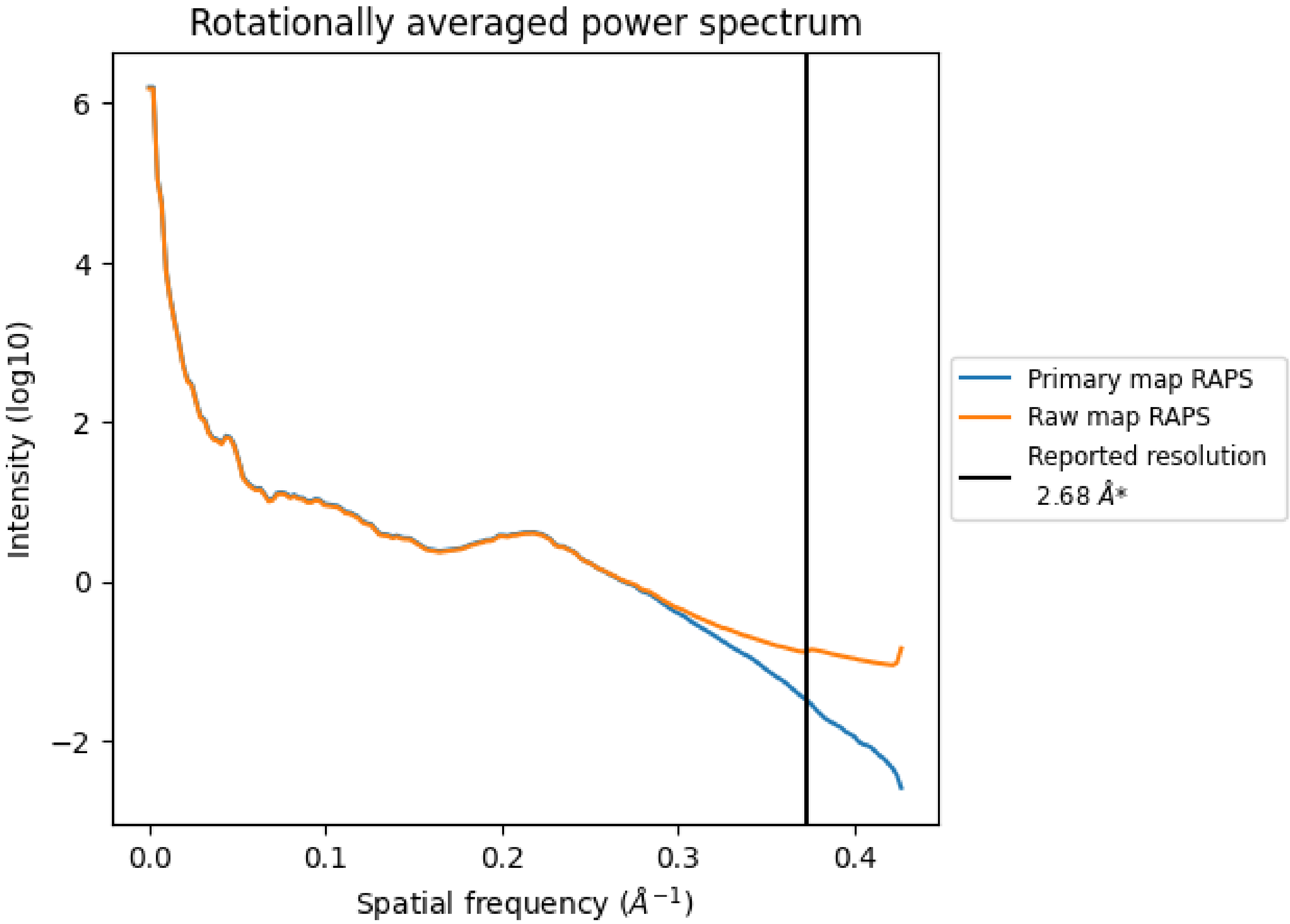
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 1041 nm^3; this corresponds to an approximate mass of 941 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 ⓘ

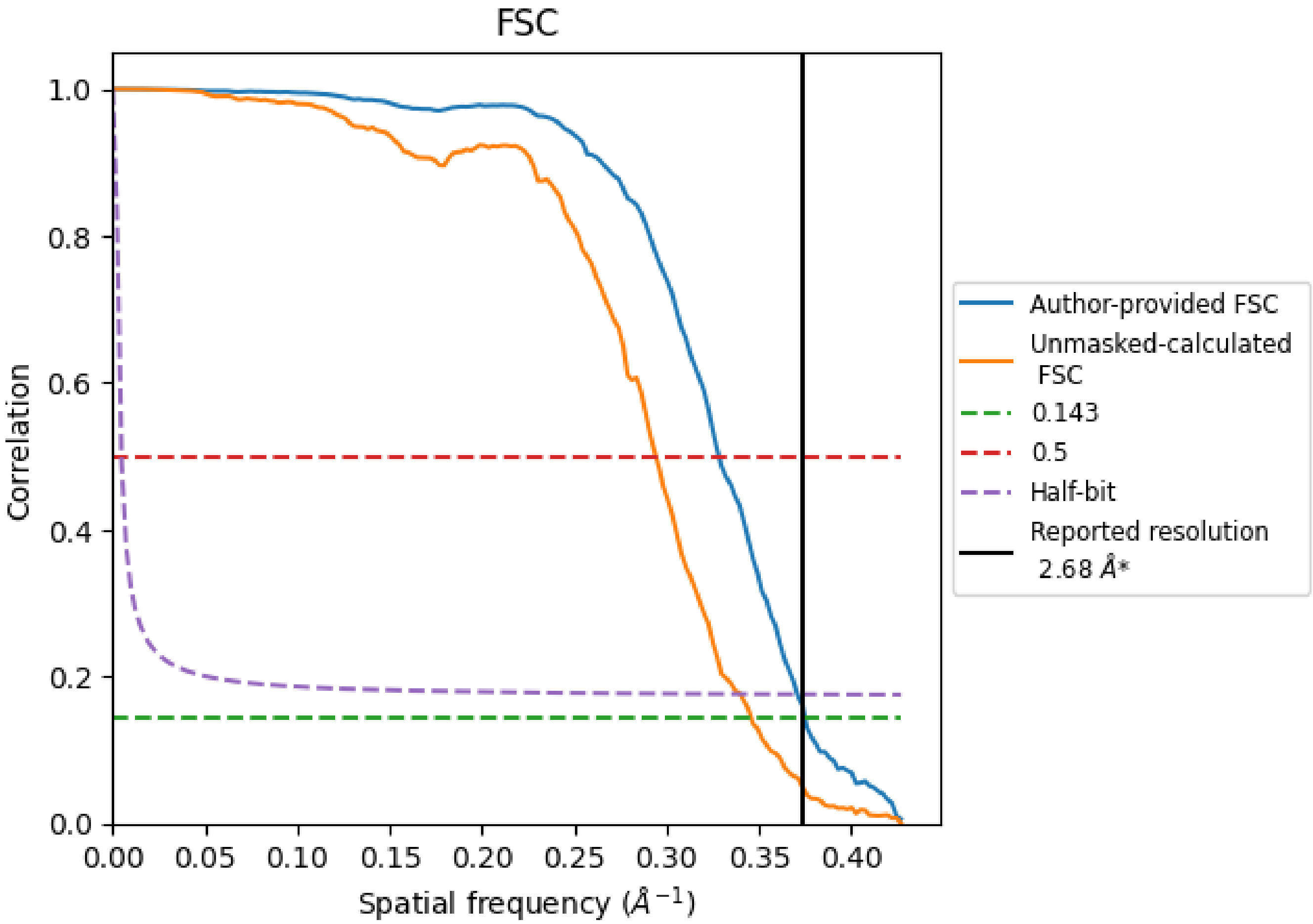


*Reported resolution corresponds to spatial frequency of 0.373 $\AA^{-1}$

8 Fourier-Shell correlation ⓘ

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC ⓘ



*Reported resolution corresponds to spatial frequency of 0.373 Å^{-1}

8.2 Resolution estimates ⓘ

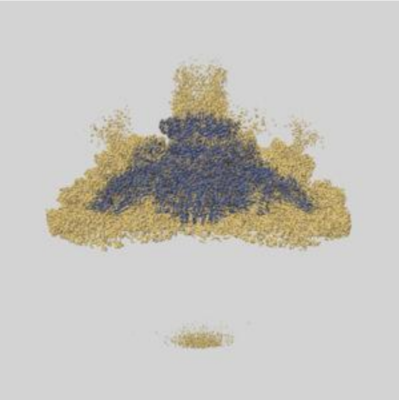
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	2.68	-	-
Author-provided FSC curve	2.67	3.04	2.70
Unmasked-calculated*	2.89	3.40	2.94

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

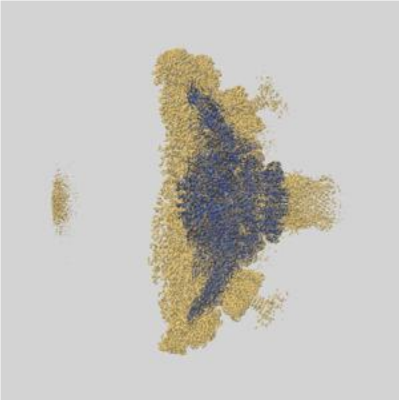
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-18642 and PDB model 8QSY. Per-residue inclusion information can be found in section 3 on page 14.

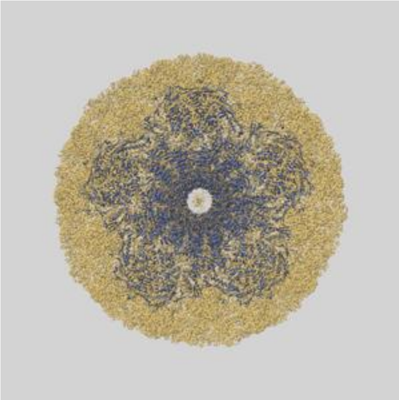
9.1 Map-model overlay



X



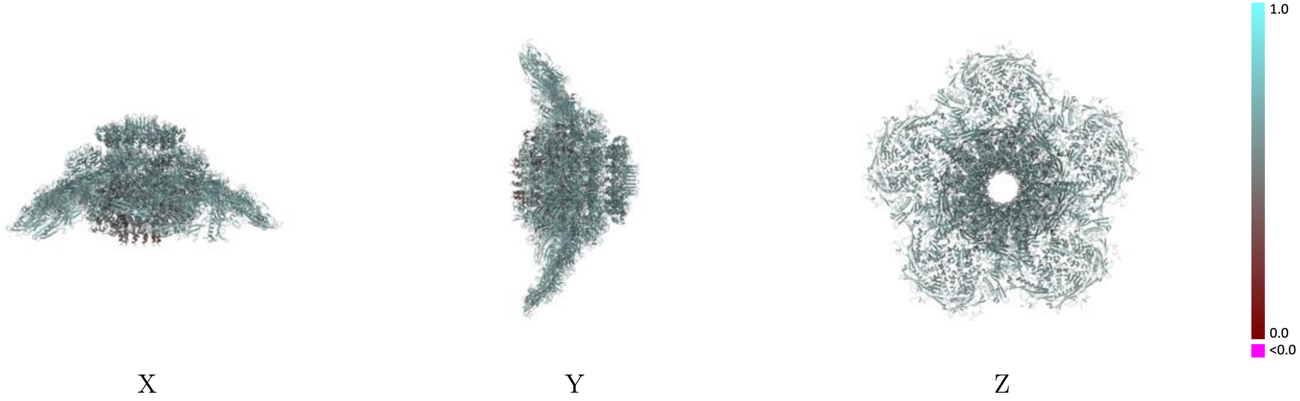
Y



Z

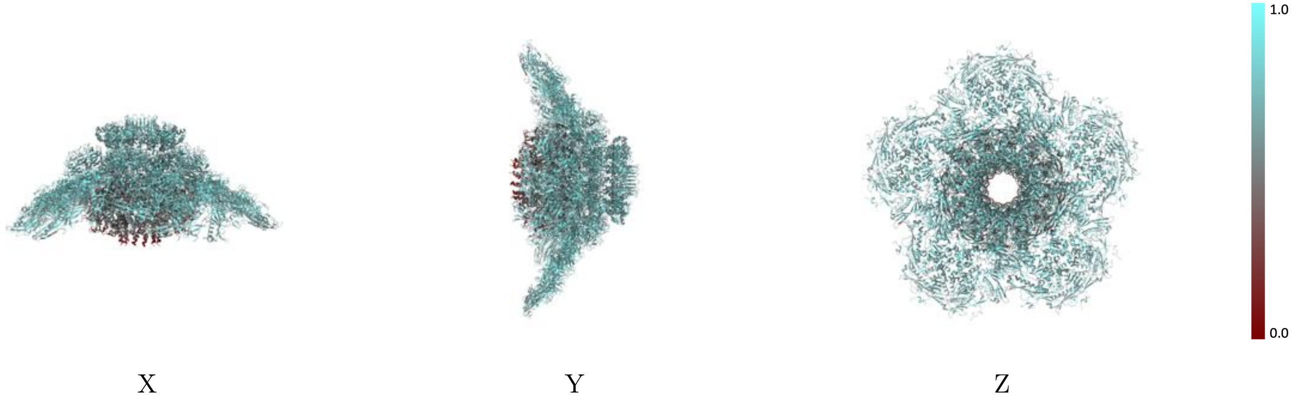
The images above show the 3D surface view of the map at the recommended contour level 0.015 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



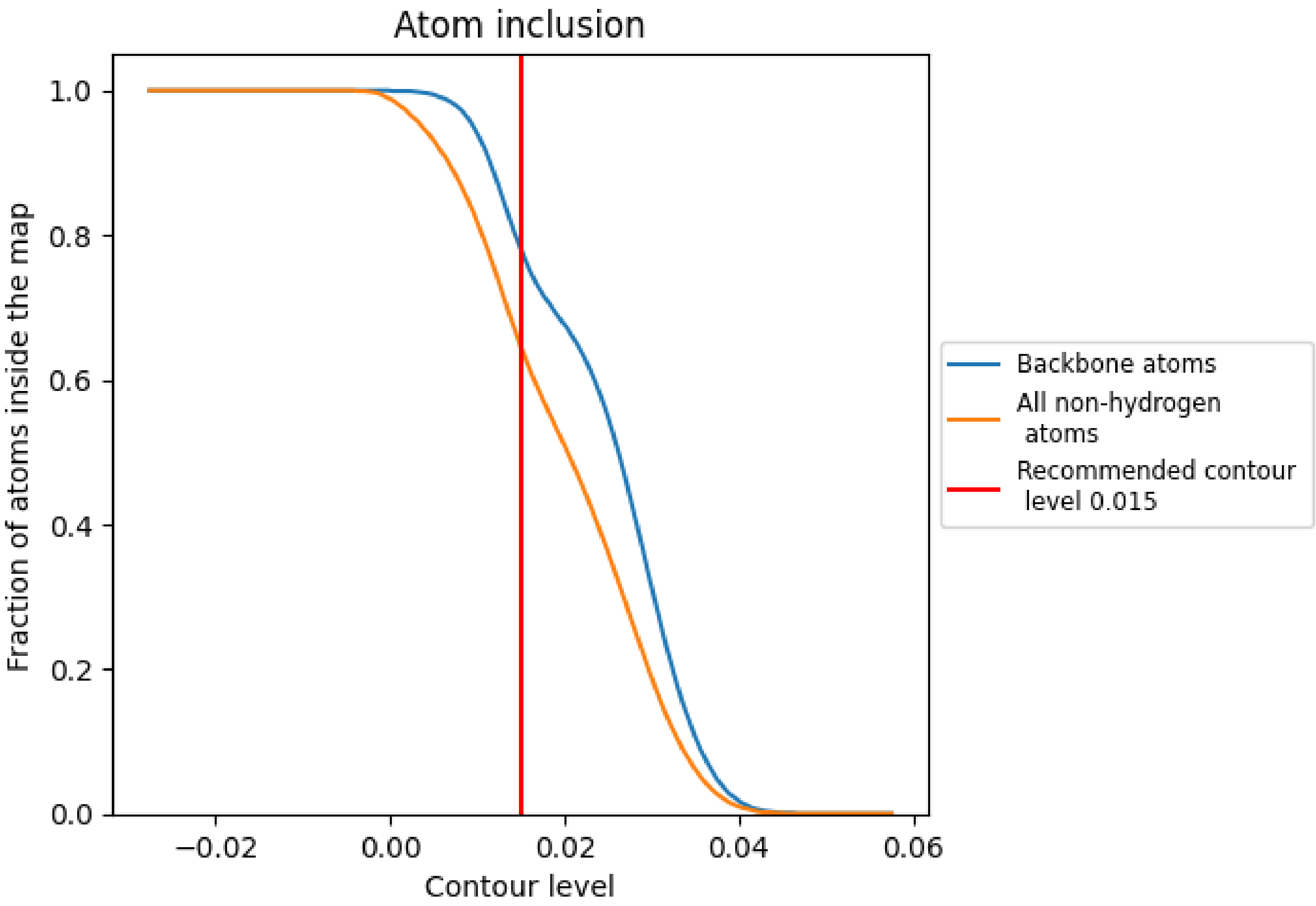
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.015).

9.4 Atom inclusion ⓘ



At the recommended contour level, 78% of all backbone atoms, 65% 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 (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	■ 0.6460	■ 0.5710
JA	■ 0.7210	■ 0.5940
JB	■ 0.7090	■ 0.5940
JC	■ 0.6730	■ 0.5820
JD	■ 0.6710	■ 0.5800
JE	■ 0.7020	■ 0.5870
JF	■ 0.7110	■ 0.5940
JI	■ 0.6770	■ 0.5990
JJ	■ 0.6520	■ 0.5770
JK	■ 0.6780	■ 0.5990
KA	■ 0.7160	■ 0.5930
KB	■ 0.7090	■ 0.5930
KC	■ 0.6710	■ 0.5830
KD	■ 0.6660	■ 0.5780
KE	■ 0.6950	■ 0.5890
KF	■ 0.7110	■ 0.5940
KI	■ 0.6730	■ 0.5960
KJ	■ 0.6530	■ 0.5750
KK	■ 0.6920	■ 0.6040
LA	■ 0.7240	■ 0.5960
LB	■ 0.7070	■ 0.5930
LC	■ 0.6730	■ 0.5850
LD	■ 0.6700	■ 0.5840
LE	■ 0.6990	■ 0.5890
LF	■ 0.7100	■ 0.5910
LI	■ 0.6700	■ 0.5950
LJ	■ 0.6550	■ 0.5860
LK	■ 0.6860	■ 0.6010
MA	■ 0.7180	■ 0.5950
MB	■ 0.7040	■ 0.5930
MC	■ 0.6760	■ 0.5820
MD	■ 0.6760	■ 0.5800
ME	■ 0.6970	■ 0.5890
MF	■ 0.6820	■ 0.5880
MI	■ 0.6800	■ 0.5990

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Chain	Atom inclusion	Q-score
MJ	0.6880	0.6000
MK	0.6980	0.6040
NA	0.7280	0.5980
NB	0.7040	0.5890
NC	0.6710	0.5830
ND	0.6710	0.5810
NE	0.6930	0.5880
NF	0.7020	0.5910
NI	0.6710	0.6020
NJ	0.6750	0.5970
NK	0.6970	0.6070
P5	0.7090	0.5890
P6	0.6930	0.5820
P7	0.7150	0.5870
P8	0.7210	0.5890
P9	0.7080	0.5850
PA	0.5050	0.5100
PB	0.5260	0.5250
PC	0.5290	0.5300
PD	0.5170	0.5160
PE	0.5490	0.5350
PF	0.5430	0.5280
PG	0.5340	0.5310
PH	0.5460	0.5380
PI	0.5140	0.5250
PJ	0.4780	0.5090
PK	0.5110	0.5230
PL	0.5120	0.5230
PM	0.7090	0.5940
PN	0.7150	0.5940
PO	0.7200	0.5900
PP	0.7060	0.5840
PQ	0.6980	0.5820
PR	0.7050	0.5910
PS	0.6800	0.5850
PT	0.6950	0.5820
PU	0.6920	0.5840
PV	0.6990	0.5840
PW	0.6940	0.5850
PX	0.6800	0.5830