



wwPDB EM Validation Summary Report ⓘ

Nov 19, 2022 – 11:28 AM EST

PDB ID : 7LHD
EMDB ID : EMD-23336
Title : The complete model of phage Qbeta virion
Authors : Chang, J.Y.; Zhang, J.
Deposited on : 2021-01-22
Resolution : 4.60 Å (reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

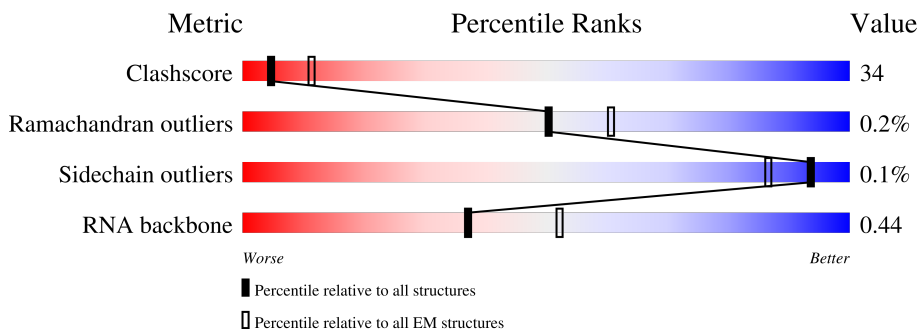
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

1 Overall quality at a glance i

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

The reported resolution of this entry is 4.60 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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

Mol	Chain	Length	Quality of chain
1	A	4217	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>57%</p> <p>30%</p> </div> <div style="text-align: center;"> <p>52%</p> <p>17%</p> </div> </div>
2	M	420	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>48%</p> <p>65%</p> </div> <div style="text-align: center;"> <p>35%</p> </div> </div>
3	B	133	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>92%</p> <p>74%</p> </div> <div style="text-align: center;"> <p>25%</p> </div> </div>
3	BA	133	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>6%</p> <p>47%</p> </div> <div style="text-align: center;"> <p>53%</p> </div> </div>
3	BB	133	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>5%</p> <p>44%</p> </div> <div style="text-align: center;"> <p>52%</p> </div> </div>
3	BC	133	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>5%</p> <p>49%</p> </div> <div style="text-align: center;"> <p>50%</p> </div> </div>
3	BD	133	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>5%</p> <p>48%</p> </div> <div style="text-align: center;"> <p>50%</p> </div> </div>

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Mol	Chain	Length	Quality of chain	
3	BE	133	51%	48%
3	BF	133	53%	46%
3	BG	133	44%	54%
3	BH	133	54%	43%
3	BI	133	48%	51%
3	BJ	133	53%	45%
3	BK	133	47%	53%
3	BL	133	53%	47%
3	BM	133	55%	44%
3	BN	133	56%	42%
3	CA	133	49%	50%
3	CB	133	43%	56%
3	CC	133	44%	52%
3	CD	133	50%	48%
3	CE	133	50%	49%
3	CF	133	52%	47%
3	CG	133	50%	49%
3	CH	133	50%	48%
3	CI	133	46%	52%
3	CJ	133	50%	47%
3	CK	133	55%	44%
3	CL	133	52%	47%
3	CM	133	49%	50%
3	CN	133	47%	52%
3	D	133	94%	24%

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Mol	Chain	Length	Quality of chain	
3	DA	133	6%	56% 43%
3	DB	133	8%	50% 49%
3	DC	133	7%	44% 55%
3	DD	133	5%	54% 44%
3	DE	133	8%	49% 49%
3	DF	133	8%	47% 52%
3	DG	133	8%	56% 41%
3	DH	133	8%	49% 50%
3	DI	133	7%	54% 44%
3	DJ	133	5%	53% 45%
3	DK	133	5%	51% 48%
3	DL	133	8%	45% 53%
3	DM	133	6%	51% 47%
3	DN	133	8%	56% 43%
3	EA	133	8%	51% 48%
3	EB	133	8%	48% 49%
3	EC	133	11%	50% 50%
3	ED	133	15%	49% 50%
3	EE	133	19%	41% 58%
3	EF	133	11%	57% 41%
3	EG	133	11%	45% 54%
3	EH	133	11%	56% 42%
3	EI	133	5%	39% 59%
3	EJ	133	6%	42% 56%
3	EK	133	5%	50% 48%

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Mol	Chain	Length	Quality of chain
3	EL	133	7% 44% 55%
3	EM	133	11% 56% 43%
3	EN	133	52% 47%
3	FA	133	10% 50% 49%
3	FB	133	32% 47% 52%
3	FC	133	50% 58% 40%
3	FD	133	47% 51% 41% 8%
3	FE	133	14% 53% 45%
3	FF	133	35% 57% 41%
3	FG	133	44% 62% 36%
3	FH	133	17% 50% 50%
3	FI	133	17% 48% 51%
3	FJ	133	8% 45% 53%
3	FK	133	6% 45% 51%
3	FL	133	8% 47% 52%
3	FM	133	11% 44% 56%
3	FN	133	5% 41% 57%
3	GA	133	11% 45% 54%
3	GB	133	58% 56% 38% 7%
3	GC	133	38% 53% 46%
3	GD	133	15% 45% 53%
3	GE	133	7% 53% 47%
3	GF	133	5% 50% 49%
3	GG	133	5% 50% 47%
3	GH	133	7% 44% 54%


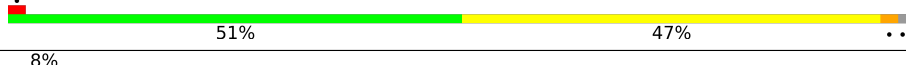


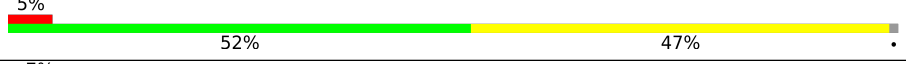

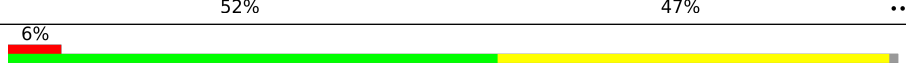
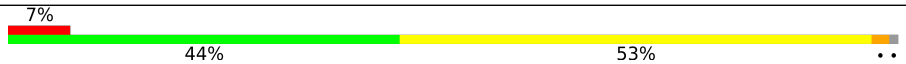




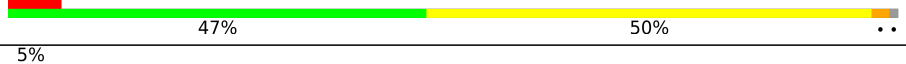


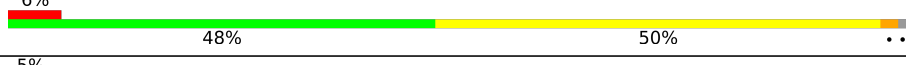



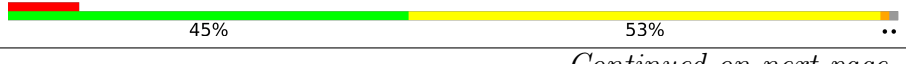



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Mol	Chain	Length	Quality of chain	
3	GI	133	6%	54% 45%
3	GJ	133	7%	47% 52%
3	GK	133	5%	42% 56%
3	GL	133	7%	50% 50%
3	GM	133	7%	48% 50%
3	GN	133	•	41% 57%
3	HA	133	8%	48% 50%
3	HB	133	10%	45% 53%
3	HC	133	8%	48% 50%
3	HD	133	8%	50% 49%
3	HE	133	8%	52% 47%
3	HF	133	7%	61% 38%
3	HG	133	7%	55% 44%
3	HH	133	8%	54% 44%
3	HI	133	•	45% 53%
3	HJ	133	5%	44% 56%
3	HK	133	6%	44% 53%
3	HL	133	•	45% 53%
3	HM	133	5%	54% 45%
3	HN	133	•	46% 53%
3	IA	133	5%	47% 51%
3	IB	133	5%	56% 44%
3	IC	133	5%	50% 49%
3	ID	133	•	44% 55%
3	IE	133	5%	49% 50%

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Mol	Chain	Length	Quality of chain
3	IF	133	 7% 53% 46%
3	IG	133	 51% 47%
3	IH	133	 8% 53% 46%
3	II	133	 7% 50% 48%
3	IJ	133	 51% 47%
3	IK	133	 5% 52% 47%
3	IL	133	 7% 44% 55%
3	IM	133	 5% 52% 47%
3	IN	133	 6% 55% 44%
3	JA	133	 7% 44% 53%
3	JB	133	 5% 56% 41%
3	JC	133	 7% 56% 42%
3	JD	133	 7% 47% 52%
3	JE	133	 50% 48%
3	JF	133	 5% 53% 45%
3	JG	133	 6% 47% 50%
3	JH	133	 5% 59% 39%
3	JI	133	 8% 47% 53%
3	JJ	133	 6% 49% 50%
3	JK	133	 6% 48% 50%
3	JL	133	 5% 54% 44%
3	JM	133	 7% 44% 54%
3	JN	133	 50% 47%
3	KA	133	7% 57% 42%
3	KB	133	8% 45% 53%

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Mol	Chain	Length	Quality of chain
3	KC	133	5% 50% 49% ..
3	KD	133	11% 63% 36% .
3	KE	133	25% 53% 46% ..
3	KF	133	13% 46% 51% ..
3	KG	133	33% 52% 47% .
3	KH	133	8% 50% 47% ...
3	KI	133	8% 50% 47% ..
3	KJ	133	6% 43% 56% .
3	KK	133	8% 51% 47% ..
3	KL	133	8% 51% 47% ..
3	KM	133	7% 52% 47% ..
3	KN	133	6% 42% 57% .
3	LA	133	. 45% 53% ..
3	LB	133	5% 47% 51% ..
3	LC	133	8% 52% 47% .
3	LD	133	5% 50% 47% ..
3	LE	133	8% 46% 53% .
3	LF	133	47% 56% 44% .
3	LG	133	16% 49% 48% ..
3	LH	133	51% 53% 47% .
3	LI	133	17% 61% 38% ..
3	LJ	133	32% 52% 47% ..
3	LK	133	17% 50% 49% ..
3	LL	133	10% 53% 45% ..
3	LM	133	7% 48% 50% ..

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Mol	Chain	Length	Quality of chain	
3	LN	133	8%	56% 43%
3	MA	133	6%	43% 55%
3	MB	133	6%	50% 48%
3	MC	133	8%	47% 50%
3	MD	133	9%	48% 51%
3	ME	133	5%	50% 48%
3	MF	133	7%	51% 46%
3	MG	133	15%	50% 49%
3	MH	133	9%	45% 54%
3	MI	133	9%	48% 50%
3	MJ	133	6%	50% 48%
3	MK	133	5%	46% 52%
3	ML	133	6%	47% 51%
3	MM	133	8%	44% 54%
3	MN	133	•	41% 58%
3	NA	133	6%	54% 45%
3	NB	133	7%	56% 43%
3	NC	133	•	47% 50%
3	ND	133	7%	53% 46%
3	NE	133	7%	47% 53%
3	NF	133	•	53% 45%
3	NG	133	8%	53% 46%
3	NH	133	6%	50% 48%
3	NI	133	5%	51% 47%
3	NJ	133	7%	50% 48%

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 271383 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 RNA chain called Genomic RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	4217	89319	39933	15385	29784	4217	0	0

- Molecule 2 is a protein called Maturation protein A2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	M	419	3438	2210	615	610	3	0	0

- Molecule 3 is a protein called Capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	132	993	616	177	198	2	0	0
3	D	132	993	616	177	198	2	0	0
3	BA	132	993	616	177	198	2	0	0
3	BB	132	993	616	177	198	2	0	0
3	BC	132	993	616	177	198	2	0	0
3	BD	132	993	616	177	198	2	0	0
3	BE	132	993	616	177	198	2	0	0
3	BF	132	993	616	177	198	2	0	0
3	BG	132	993	616	177	198	2	0	0
3	BH	132	993	616	177	198	2	0	0
3	BI	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	BJ	132	993	616	177	198	2	0	0
3	BK	132	993	616	177	198	2	0	0
3	BL	132	993	616	177	198	2	0	0
3	BM	132	993	616	177	198	2	0	0
3	BN	132	993	616	177	198	2	0	0
3	CA	132	993	616	177	198	2	0	0
3	CB	132	993	616	177	198	2	0	0
3	CC	132	993	616	177	198	2	0	0
3	CD	132	993	616	177	198	2	0	0
3	CE	132	993	616	177	198	2	0	0
3	CF	132	993	616	177	198	2	0	0
3	CG	132	993	616	177	198	2	0	0
3	CH	132	993	616	177	198	2	0	0
3	CI	132	993	616	177	198	2	0	0
3	CJ	132	993	616	177	198	2	0	0
3	CK	132	993	616	177	198	2	0	0
3	CL	132	993	616	177	198	2	0	0
3	CM	132	993	616	177	198	2	0	0
3	CN	132	993	616	177	198	2	0	0
3	DA	132	993	616	177	198	2	0	0
3	DB	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	DC	132	993	616	177	198	2	0	0
3	DD	132	993	616	177	198	2	0	0
3	DE	132	993	616	177	198	2	0	0
3	DF	132	993	616	177	198	2	0	0
3	DG	132	993	616	177	198	2	0	0
3	DH	132	993	616	177	198	2	0	0
3	DI	132	993	616	177	198	2	0	0
3	DJ	132	993	616	177	198	2	0	0
3	DK	132	993	616	177	198	2	0	0
3	DL	132	993	616	177	198	2	0	0
3	DM	132	993	616	177	198	2	0	0
3	DN	132	993	616	177	198	2	0	0
3	EA	132	993	616	177	198	2	0	0
3	EB	132	993	616	177	198	2	0	0
3	EC	132	993	616	177	198	2	0	0
3	ED	132	993	616	177	198	2	0	0
3	EE	132	993	616	177	198	2	0	0
3	EF	132	993	616	177	198	2	0	0
3	EG	132	993	616	177	198	2	0	0
3	EH	132	993	616	177	198	2	0	0
3	EI	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	EJ	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	EK	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	EL	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	EM	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	EN	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FA	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FB	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FC	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FD	122	Total 930	C 582	N 166	O 182		0	0
3	FE	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FF	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FG	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FH	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FI	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FJ	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FK	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FL	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FM	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	FN	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	GA	132	Total 993	C 616	N 177	O 198	S 2	0	0
3	GB	124	Total 942	C 588	N 168	O 185	S 1	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	GC	132	993	616	177	198	2	0	0
3	GD	132	993	616	177	198	2	0	0
3	GE	132	993	616	177	198	2	0	0
3	GF	132	993	616	177	198	2	0	0
3	GG	132	993	616	177	198	2	0	0
3	GH	132	993	616	177	198	2	0	0
3	GI	132	993	616	177	198	2	0	0
3	GJ	132	993	616	177	198	2	0	0
3	GK	132	993	616	177	198	2	0	0
3	GL	132	993	616	177	198	2	0	0
3	GM	132	993	616	177	198	2	0	0
3	GN	132	993	616	177	198	2	0	0
3	HA	132	993	616	177	198	2	0	0
3	HB	132	993	616	177	198	2	0	0
3	HC	132	993	616	177	198	2	0	0
3	HD	132	993	616	177	198	2	0	0
3	HE	132	993	616	177	198	2	0	0
3	HF	132	993	616	177	198	2	0	0
3	HG	132	993	616	177	198	2	0	0
3	HH	132	993	616	177	198	2	0	0
3	HI	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	HJ	132	993	616	177	198	2	0	0
3	HK	132	993	616	177	198	2	0	0
3	HL	132	993	616	177	198	2	0	0
3	HM	132	993	616	177	198	2	0	0
3	HN	132	993	616	177	198	2	0	0
3	IA	132	993	616	177	198	2	0	0
3	IB	132	993	616	177	198	2	0	0
3	IC	132	993	616	177	198	2	0	0
3	ID	132	993	616	177	198	2	0	0
3	IE	132	993	616	177	198	2	0	0
3	IF	132	993	616	177	198	2	0	0
3	IG	132	993	616	177	198	2	0	0
3	IH	132	993	616	177	198	2	0	0
3	II	132	993	616	177	198	2	0	0
3	IJ	132	993	616	177	198	2	0	0
3	IK	132	993	616	177	198	2	0	0
3	IL	132	993	616	177	198	2	0	0
3	IM	132	993	616	177	198	2	0	0
3	IN	132	993	616	177	198	2	0	0
3	JA	132	993	616	177	198	2	0	0
3	JB	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	JC	132	993	616	177	198	2	0	0
3	JD	132	993	616	177	198	2	0	0
3	JE	132	993	616	177	198	2	0	0
3	JF	132	993	616	177	198	2	0	0
3	JG	132	993	616	177	198	2	0	0
3	JH	132	993	616	177	198	2	0	0
3	JI	132	993	616	177	198	2	0	0
3	JJ	132	993	616	177	198	2	0	0
3	JK	132	993	616	177	198	2	0	0
3	JL	132	993	616	177	198	2	0	0
3	JM	132	993	616	177	198	2	0	0
3	JN	132	993	616	177	198	2	0	0
3	KA	132	993	616	177	198	2	0	0
3	KB	132	993	616	177	198	2	0	0
3	KC	132	993	616	177	198	2	0	0
3	KD	132	993	616	177	198	2	0	0
3	KE	132	993	616	177	198	2	0	0
3	KF	132	993	616	177	198	2	0	0
3	KG	132	993	616	177	198	2	0	0
3	KH	132	993	616	177	198	2	0	0
3	KI	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	KJ	132	993	616	177	198	2	0	0
3	KK	132	993	616	177	198	2	0	0
3	KL	132	993	616	177	198	2	0	0
3	KM	132	993	616	177	198	2	0	0
3	KN	132	993	616	177	198	2	0	0
3	LA	132	993	616	177	198	2	0	0
3	LB	132	993	616	177	198	2	0	0
3	LC	132	993	616	177	198	2	0	0
3	LD	132	993	616	177	198	2	0	0
3	LE	132	993	616	177	198	2	0	0
3	LF	132	993	616	177	198	2	0	0
3	LG	132	993	616	177	198	2	0	0
3	LH	132	993	616	177	198	2	0	0
3	LI	132	993	616	177	198	2	0	0
3	LJ	132	993	616	177	198	2	0	0
3	LK	132	993	616	177	198	2	0	0
3	LL	132	993	616	177	198	2	0	0
3	LM	132	993	616	177	198	2	0	0
3	LN	132	993	616	177	198	2	0	0
3	MA	132	993	616	177	198	2	0	0
3	MB	132	993	616	177	198	2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	MC	132	993	616	177	198	2	0	0
3	MD	132	993	616	177	198	2	0	0
3	ME	132	993	616	177	198	2	0	0
3	MF	132	993	616	177	198	2	0	0
3	MG	132	993	616	177	198	2	0	0
3	MH	132	993	616	177	198	2	0	0
3	MI	132	993	616	177	198	2	0	0
3	MJ	132	993	616	177	198	2	0	0
3	MK	132	993	616	177	198	2	0	0
3	ML	132	993	616	177	198	2	0	0
3	MM	132	993	616	177	198	2	0	0
3	MN	132	993	616	177	198	2	0	0
3	NA	132	993	616	177	198	2	0	0
3	NB	132	993	616	177	198	2	0	0
3	NC	132	993	616	177	198	2	0	0
3	ND	132	993	616	177	198	2	0	0
3	NE	132	993	616	177	198	2	0	0
3	NF	132	993	616	177	198	2	0	0
3	NG	132	993	616	177	198	2	0	0
3	NH	132	993	616	177	198	2	0	0
3	NI	132	993	616	177	198	2	0	0

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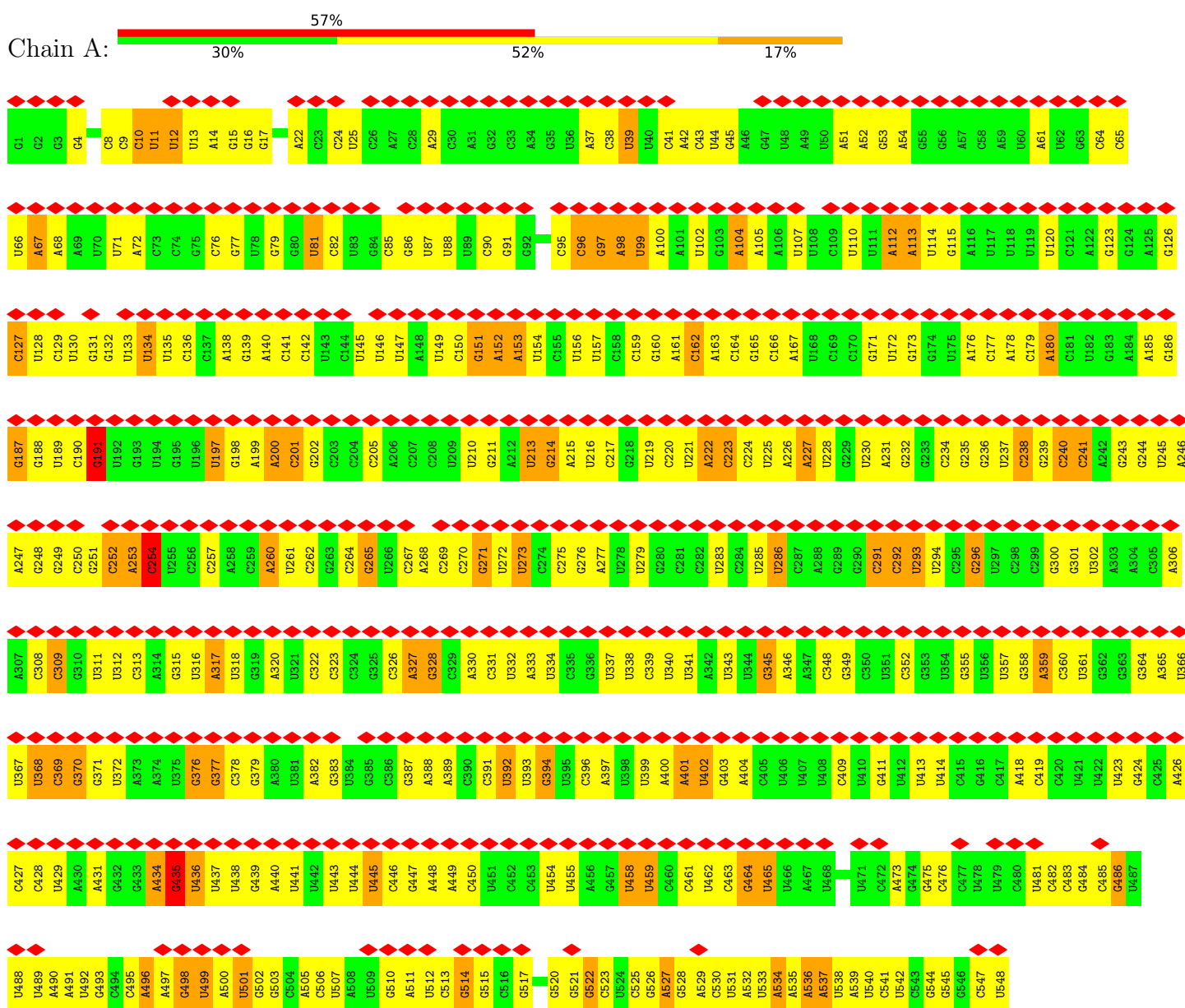
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Mol	Chain	Residues	Atoms				AltConf	Trace	
			Total	C	N	O			S
3	NJ	132	993	616	177	198	2	0	0

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: Genomic RNA

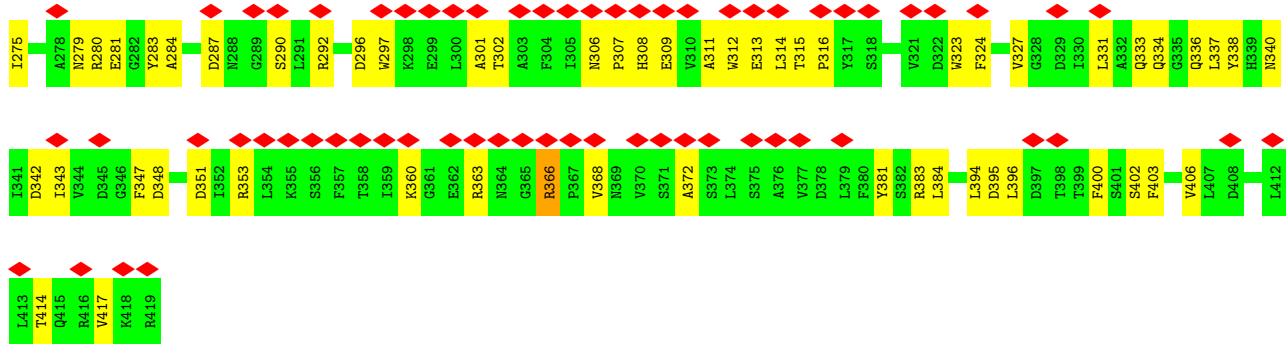


U549	U550	U551	A552	U553	U554	U555	U556	U557	U558	A559	U560	U561	U562	U563	U564	U565	U566	U567	U568	U569	U570	U571	U572	U573	U574	A575	U576	U577	U578	U579	U580	U581	U582	U583	U584	U585	U586	U587	U588	U589	U590	U591	U592	U593	U594	U595	U596	U597	U598	U599	A600	U601	U602	U603	U604	U605	U606	U607	U608																																																																
U609	C610	G611	U612	A613	U614	U615	U616	U617	U618	A619	U620	U621	U622	A623	U624	U625	U626	U627	U628	U629	U630	U631	U632	U633	U634	U635	U636	U637	U638	U639	U640	U641	U642	U643	U644	U645	U646	U647	U648	U649	U650	U651	U652	U653	U654	U655	U656	U657	U658	U659	U660	U661	U662	U663	U664	U665	U666	U667	U668																																																																
C669	U670	U671	U672	U673	U674	U675	U676	U677	U678	U679	U680	U681	U682	U683	U684	U685	U686	U687	U688	U689	U690	U691	U692	U693	U694	U695	U696	U697	U698	U699	U700	U701	U702	U703	U704	U705	U706	U707	U708	U709	U710	U711	U712	U713	U714	U715	U716	U717	U718	U719	U720	U721	U722	U723	U724	U725	U726	U727	U728																																																																
A729	U730	U731	U732	U733	U734	U735	U736	U737	U738	U739	U740	U741	U742	U743	U744	U745	U746	U747	U748	U749	U750	U751	U752	U753	U754	U755	U756	U757	U758	U759	U760	U761	U762	U763	U764	U765	U766	U767	U768	U769	U770	U771	U772	U773	U774	U775	U776	U777	U778	U779	U780	U781	U782	U783	U784	U785	U786	U787	U788																																																																
U789	U790	U791	U792	U793	U794	U795	U796	U797	U798	U799	U800	U801	U802	U803	U804	U805	U806	U807	U808	U809	U810	U811	U812	U813	U814	U815	U816	U817	U818	U819	U820	U821	U822	U823	U824	U825	U826	U827	U828	U829	U830	U831	U832	U833	U834	U835	U836	U837	U838	U839	U840	U841	U842	U843	U844	U845	U846	U847	U848																																																																
A849	U850	U851	U852	U853	U854	U855	U856	U857	U858	U859	U860	U861	U862	U863	U864	U865	U866	U867	U868	U869	U870	U871	U872	U873	U874	U875	U876	U877	U878	U879	U880	U881	U882	U883	U884	U885	U886	U887	U888	U889	U890	U891	U892	U893	U894	U895	U896	U897	U898	U899	U900	U901	U902	U903	U904	U905	U906	U907	U908	U909	U910	U911	U912																																																												
U913	U914	U915	U916	U917	U918	U919	U920	U921	U922	U923	U924	U925	U926	U927	U928	U929	U930	U931	U932	U933	U934	U935	U936	U937	U938	U939	U940	U941	U942	U943	U944	U945	U946	U947	U948	U949	U950	U951	U952	U953	U954	U955	U956	U957	U958	U959	U960	U961	U962	U963	U964	U965	U966	U967	U968	U969	U970	U971	U972	U973	U974	U975	U976	U977	U978	U979	U980	U981	U982	U983	U984	U985	U986	U987	U988	U989	U990	U991	U992	U993	U994	U995	U996	U997	U998	U999	U1000	U1001	U1002	U1003	U1004	U1005	U1006	U1007	U1008	U1009	U1010	U1011	U1012	U1013	U1014	U1015	U1016	U1017	U1018	U1019	U1020	U1021	U1022	U1023	U1024	U1025	U1026	U1027	U1028	U1029	U1030	U1031	U1032	U1033	U1034	U1035	U1036
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U1037	U1038	U1042	U1043	U1044	U1045	U1046	U1047	U1048	U1049	U1050	U1051	U1052	U1053	U1054	U1055	U1056	U1057	U1058	U1059	U1060	U1061	U1062	U1063	U1064	U1065	U1066	U1067	U1068	U1069	U1070	U1071	U1072	U1073	U1074	U1075	U1076	U1077	U1078	U1079	U1080	U1081	U1082	U1083	U1088	U1089	U1090	U1091	U1092	U1093	U1094	U1095	U1096	U1097	U1098	U1099	U1100	U1101																																																																		
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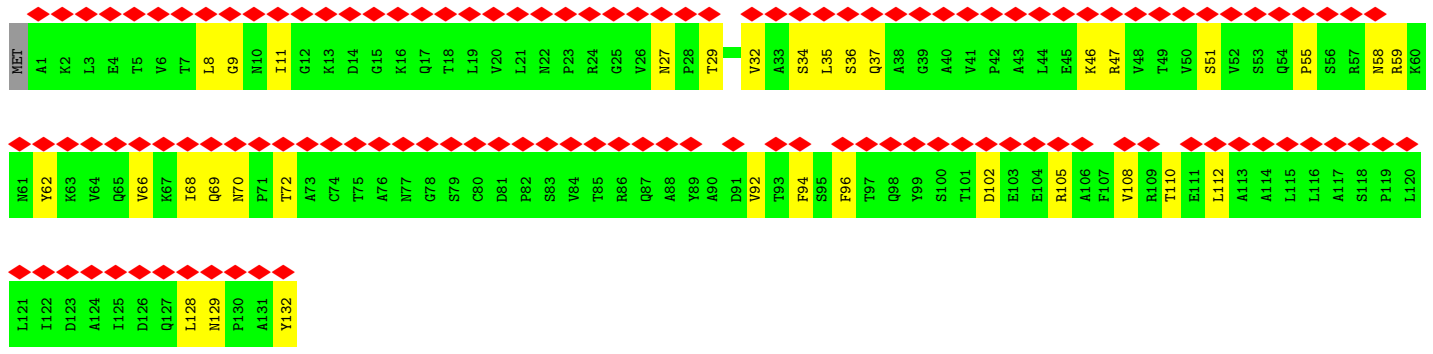
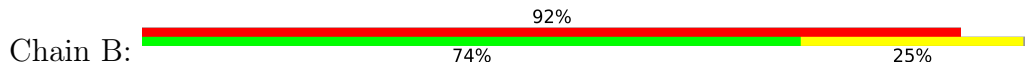
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C2085	U2025	U1965	G1843	U1721	U1601	C1539	C1409	C1348
G2086	G2026	U1966	U1844	G1722	G1602	A1540	A1410	A1349
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G2093	G2032	U1911	C1852	U1728	G1608	G1481	G1416	A1355
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A2035	U1913	U1913	A1854	U1731	A1610	G1484	C1418	U1357
U2036	A1914	U1914	U1855	A1732	G1611	C1485	U1419	A1358
G2037	A1915	A1915	G1856	C1733	U1612	G1486	U1420	A1359
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C2048	A1926	A1926	G1869	U1681	U1566	U1497	C1437	U1372
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G2057	C1935	C1935	U1878	C1749	U1630	G1572	U1447	G1381
A2058	U1936	U1936	A1879	U1750	G1631	U1506	G1448	G1382
C2059	G1937	G1937	G1880	C1752	A1632	A1574	U1450	A1383
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C2080	A1951	A1951	A1894	U1774	A1653	U1592	U1468	
U2081	U1952	U1952	G1895	C1775	U1654	C1593	U1468	
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	A1957	A1957	G1899	U1778	A1657	U1596	U1468	
	U1958	U1958	C1900	U1779	U1658	G1597	U1468	
	G1959	G1959	U1901	A1778	U1659	U1598	U1468	
	U1961	U1961	C1940	U1779	U1660	U1599	U1468	
	C1962	C1962	U1718	U1718	U1661	U1600	U1468	

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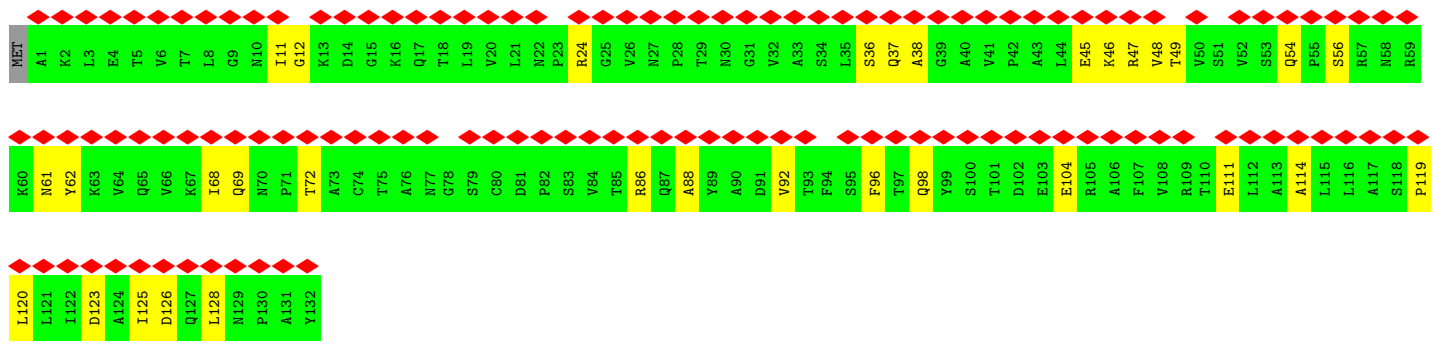
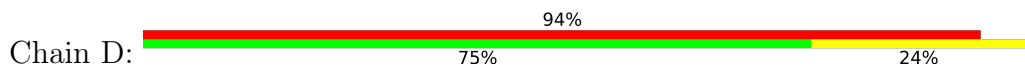
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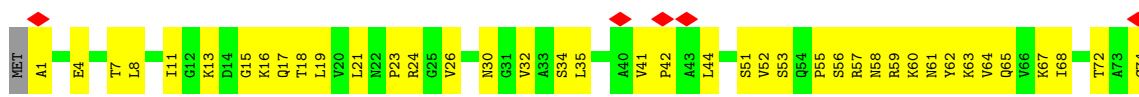
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

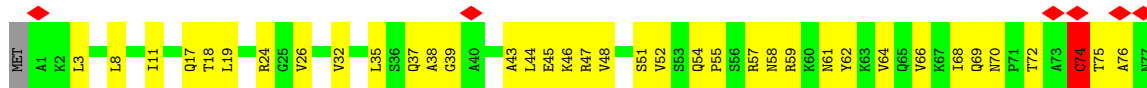
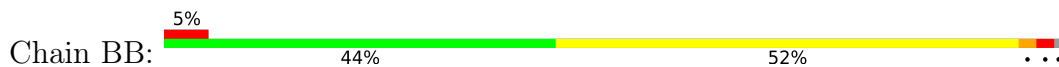


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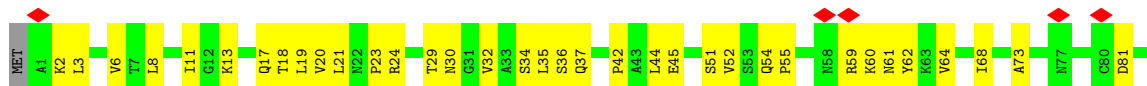




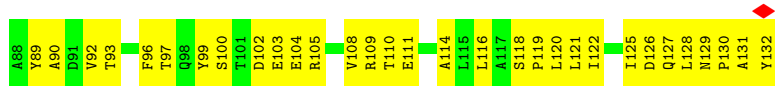
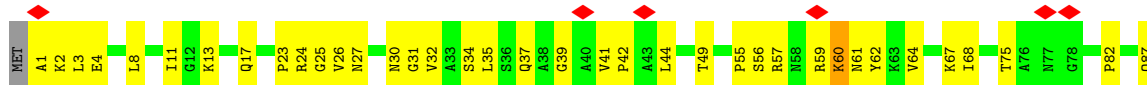
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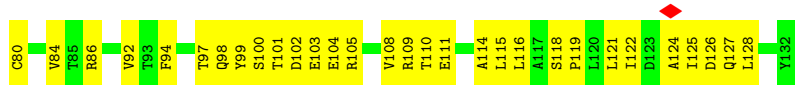
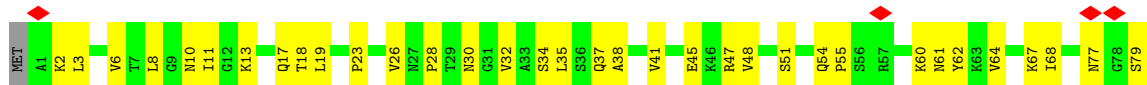
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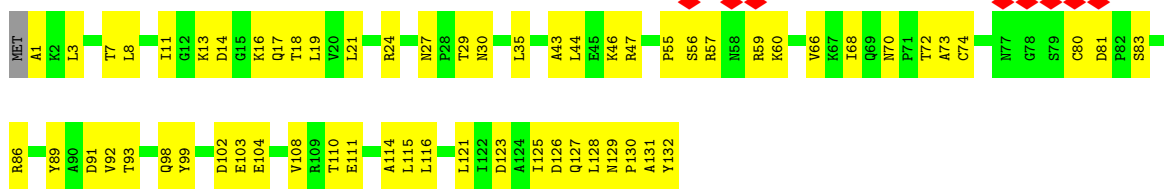
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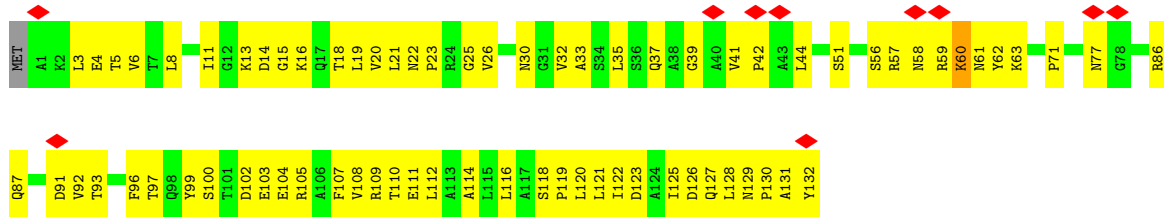
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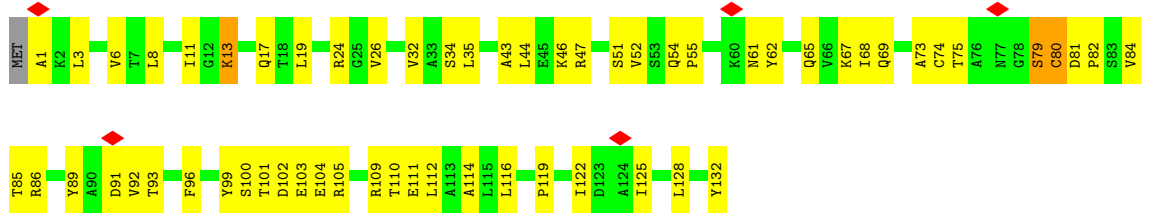
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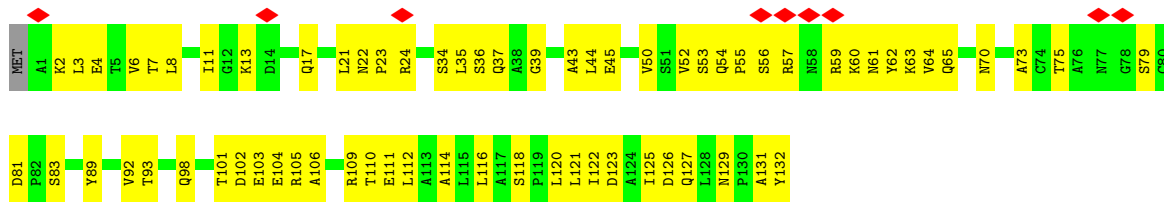
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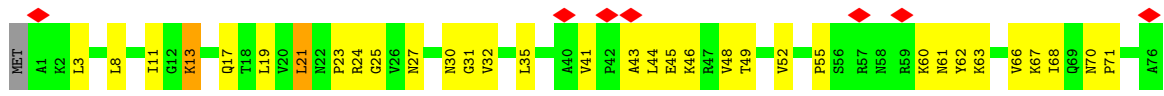
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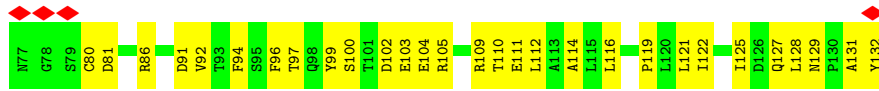


• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

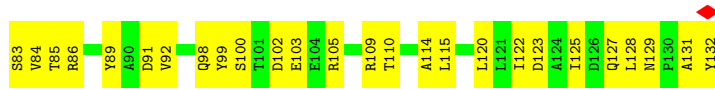
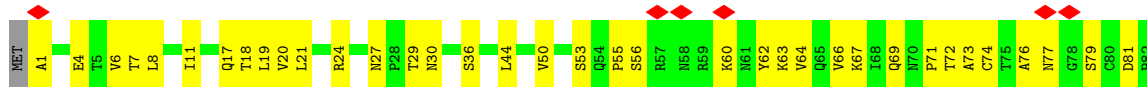




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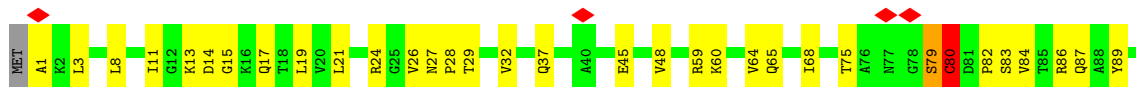
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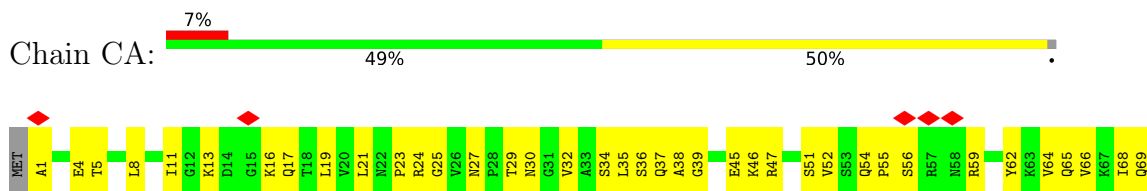
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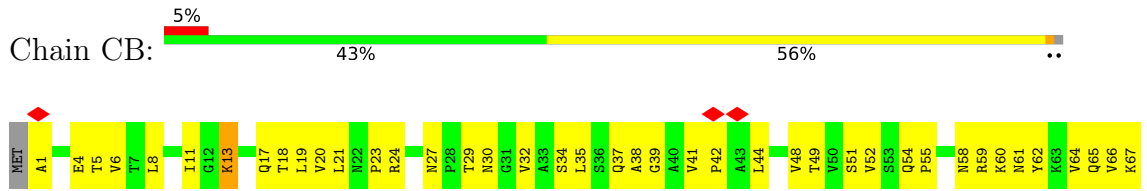
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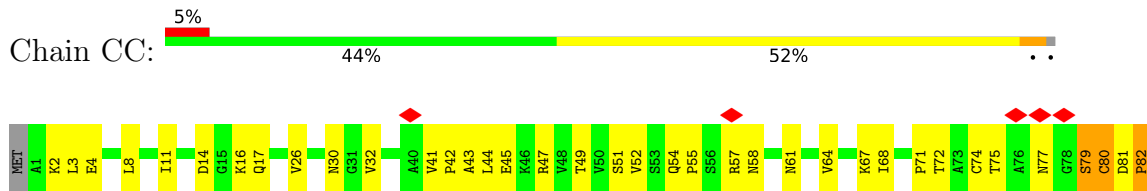
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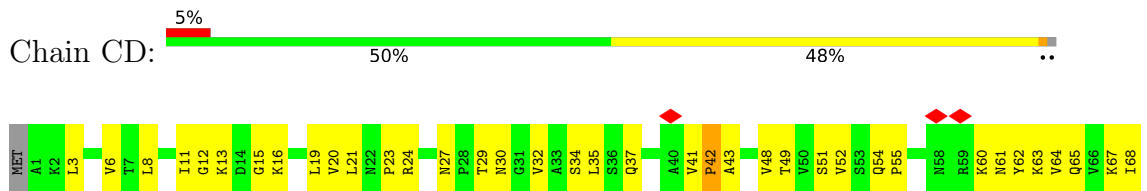
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• Molecule 3: Capsid protein

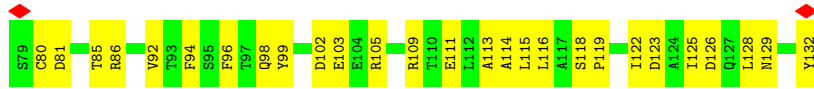


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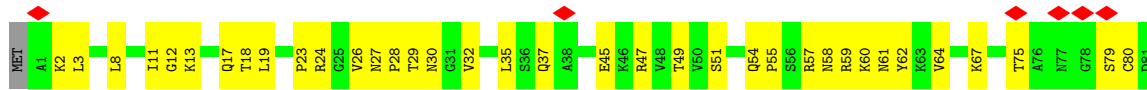


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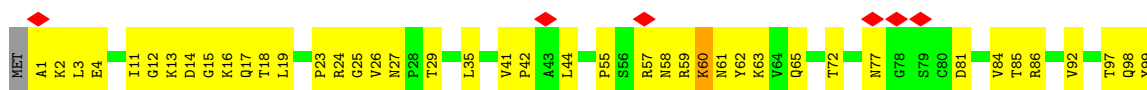
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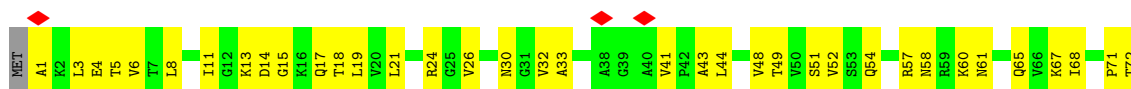
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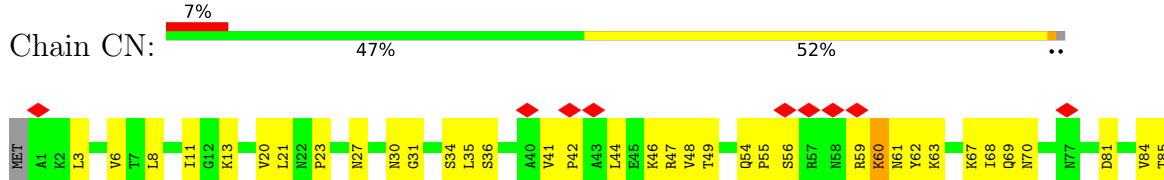
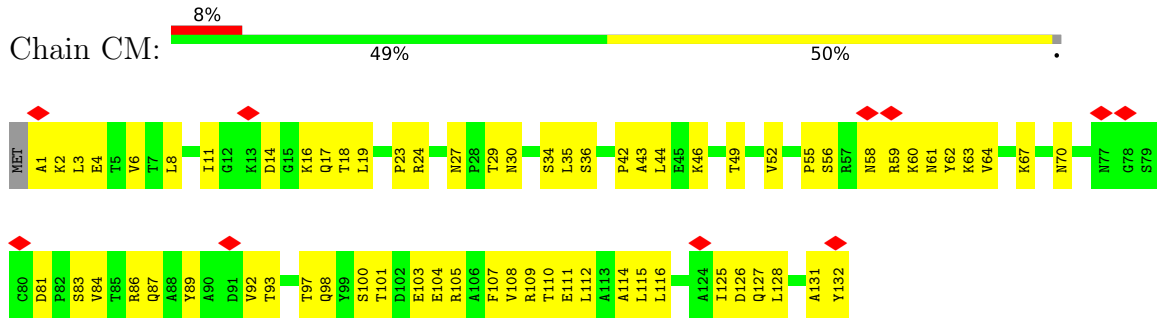
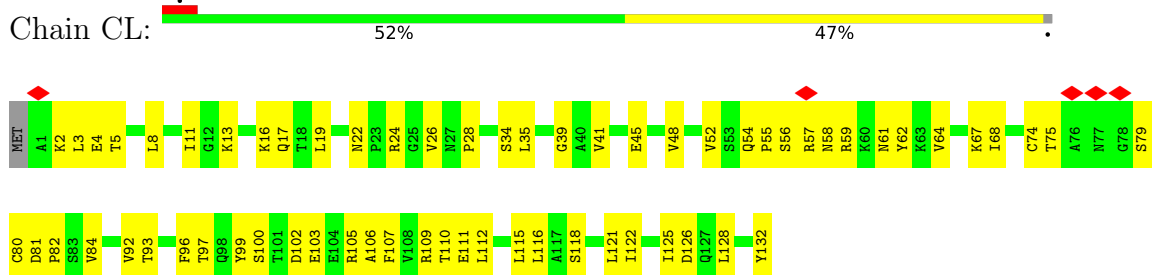
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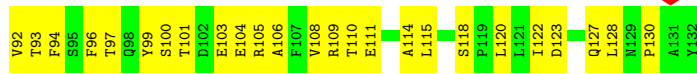
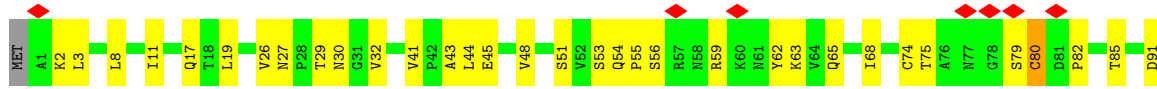


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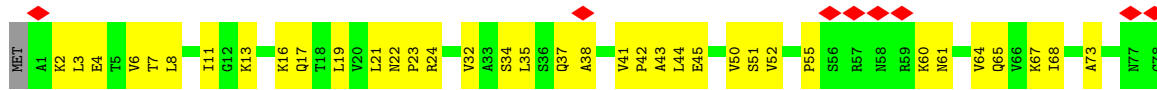




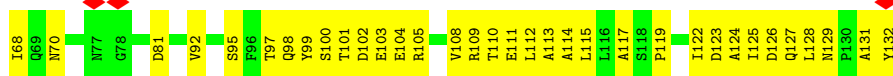
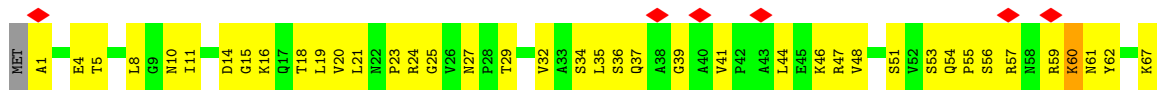
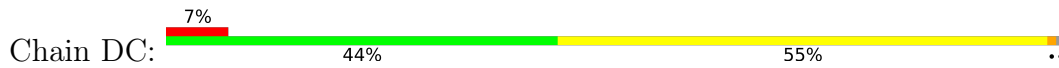
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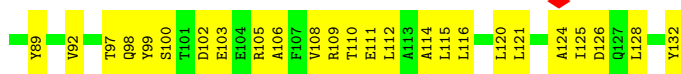
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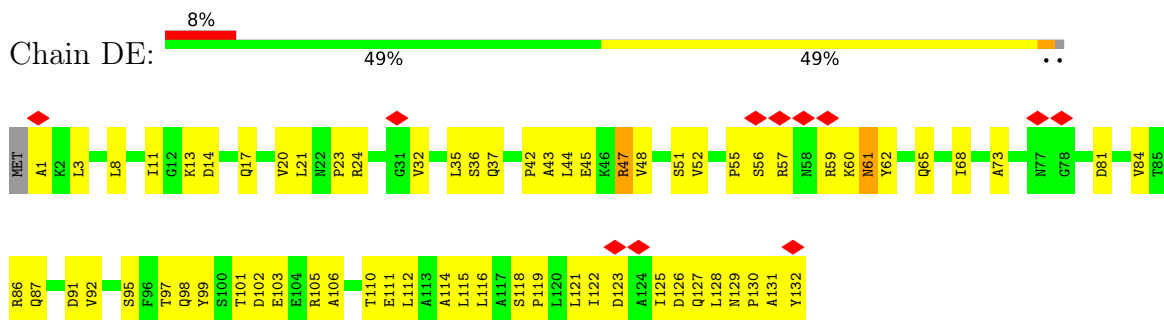
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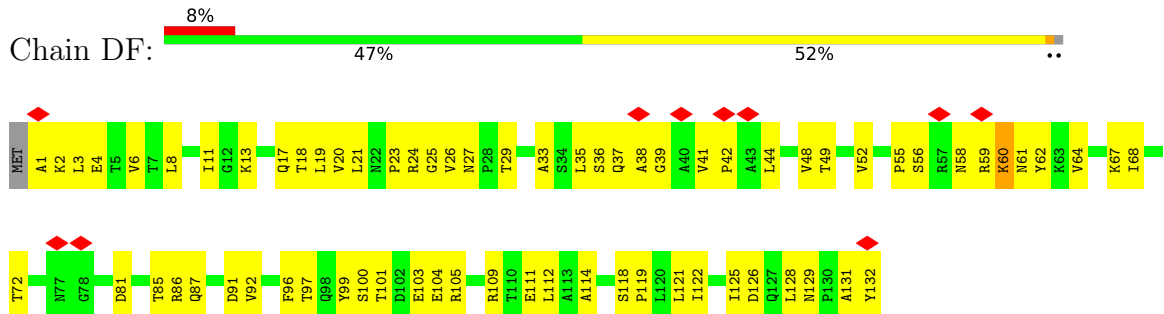
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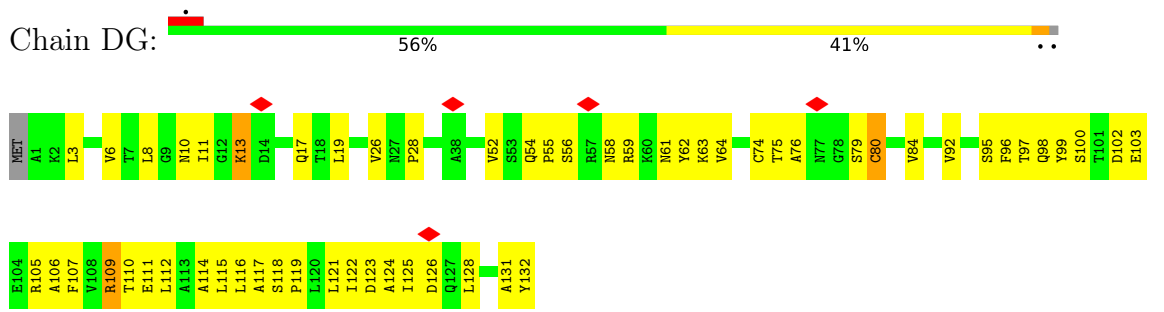
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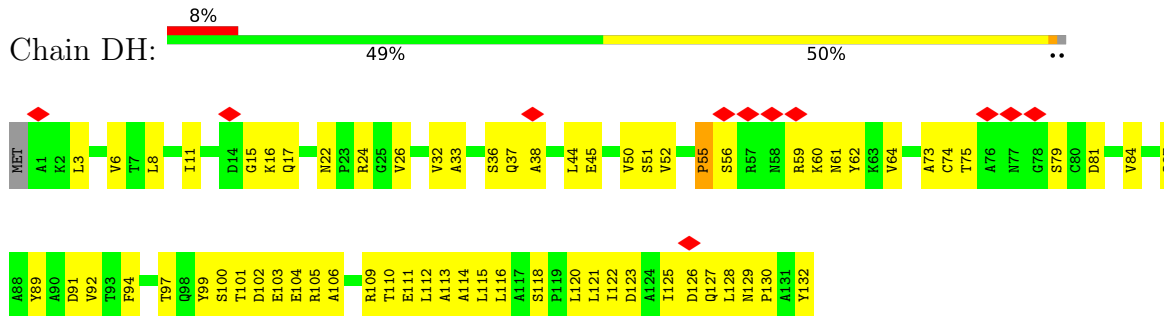
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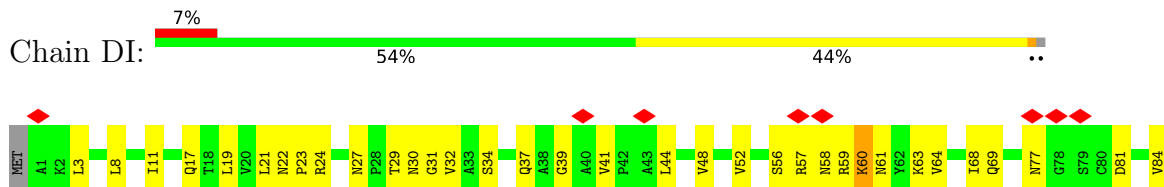
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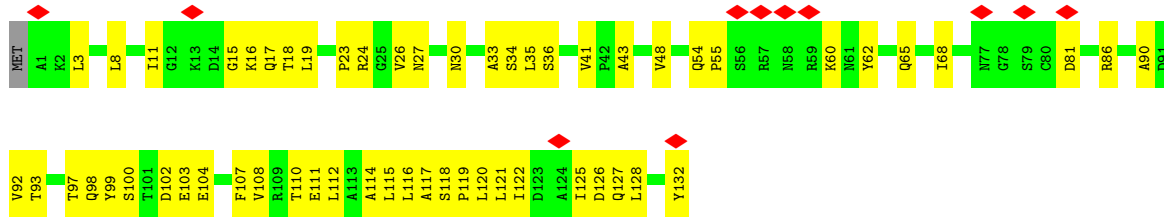


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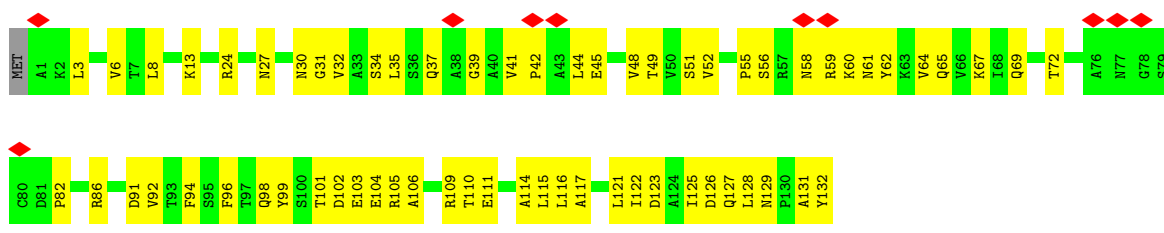


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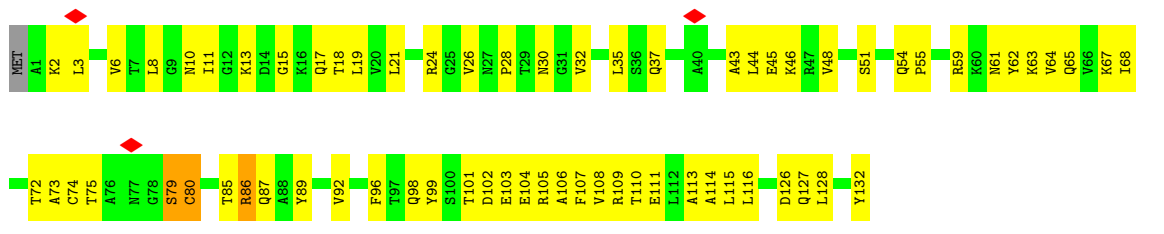
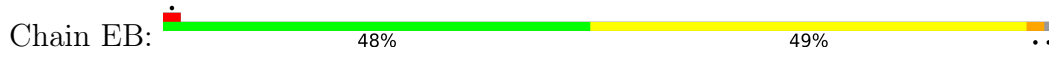




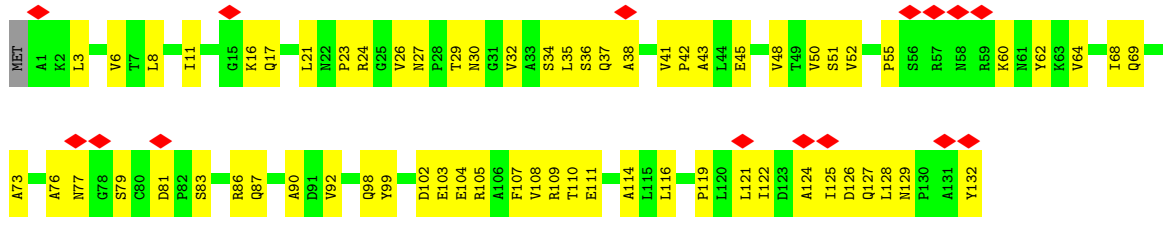
• Molecule 3: Capsid protein



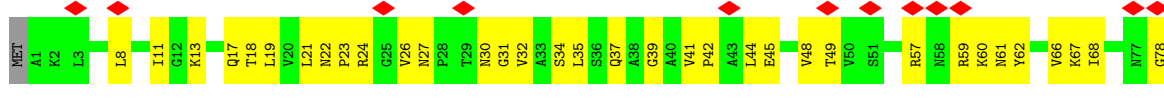
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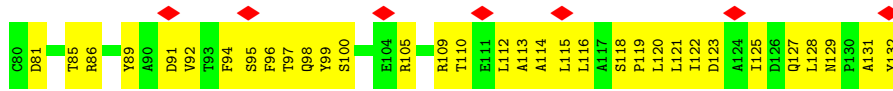


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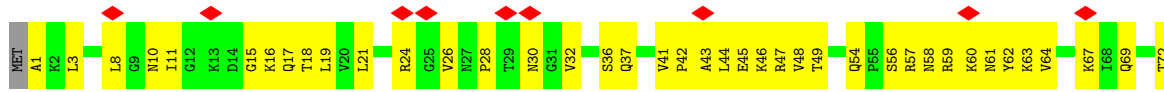


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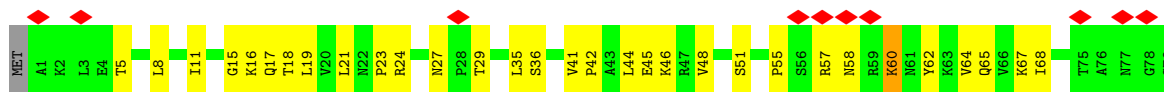




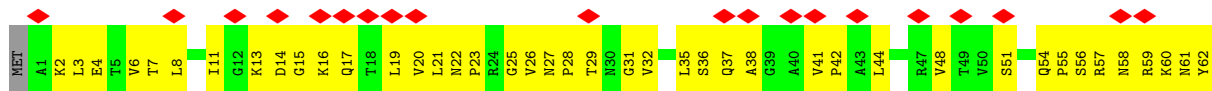
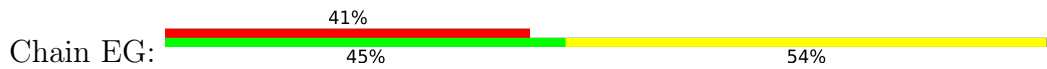
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

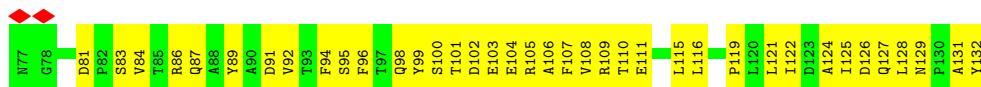
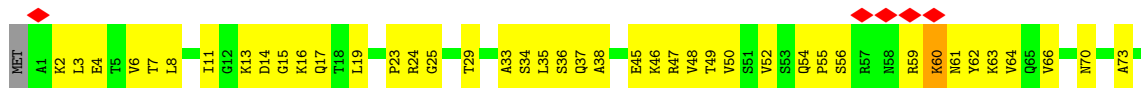


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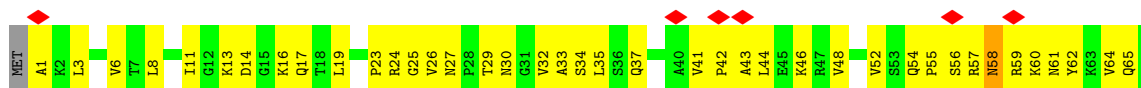




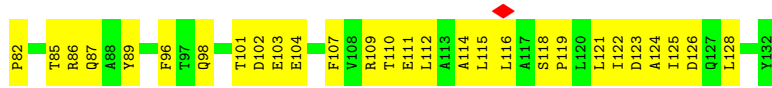
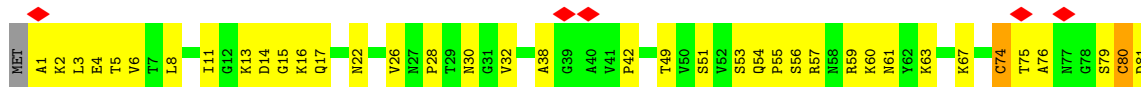
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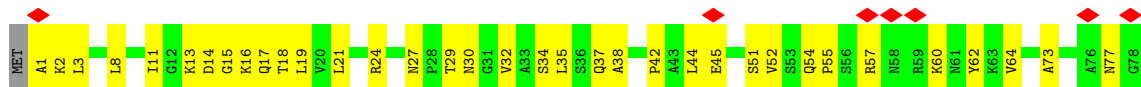
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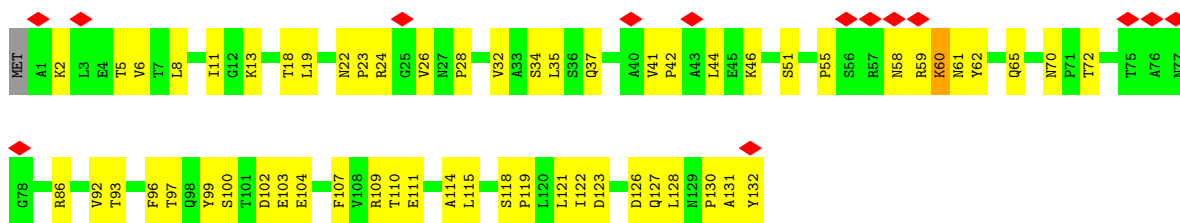
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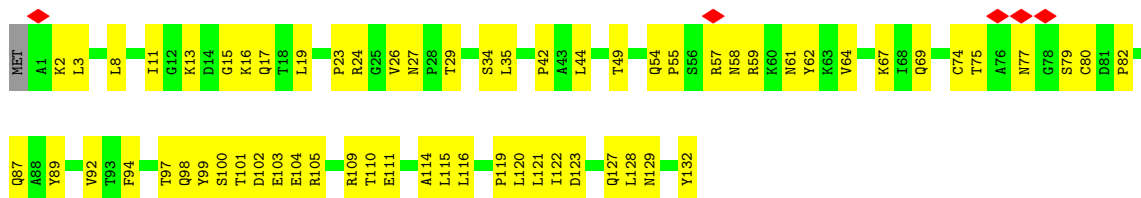
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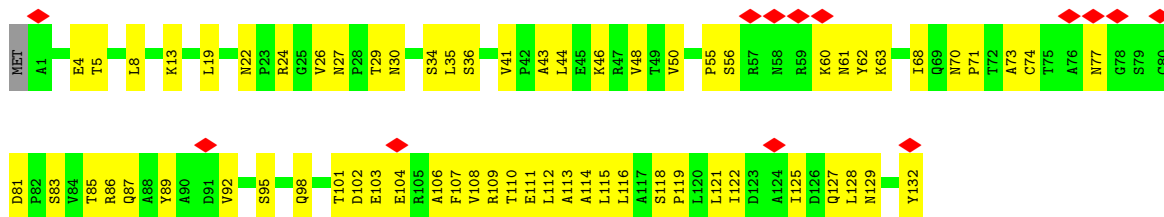
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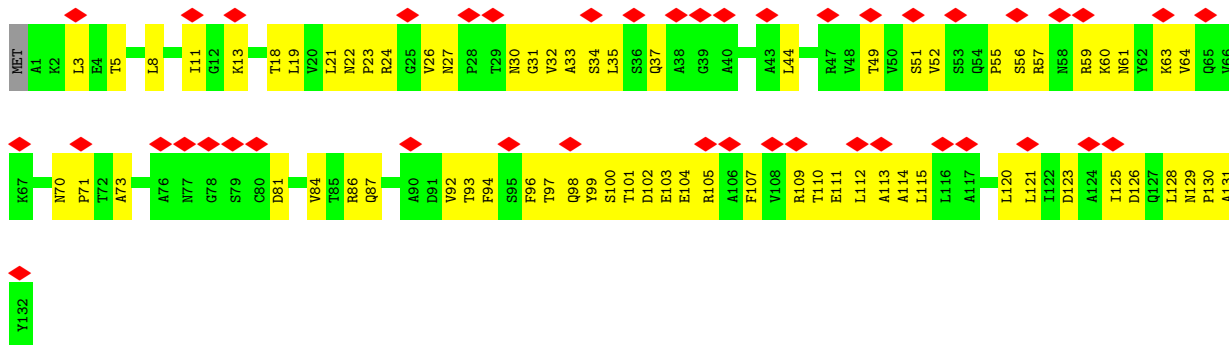
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• Molecule 3: Capsid protein

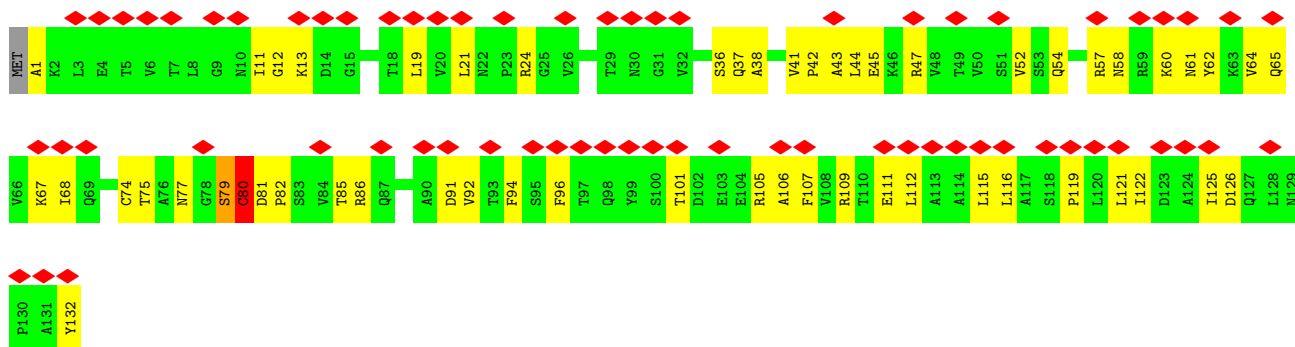


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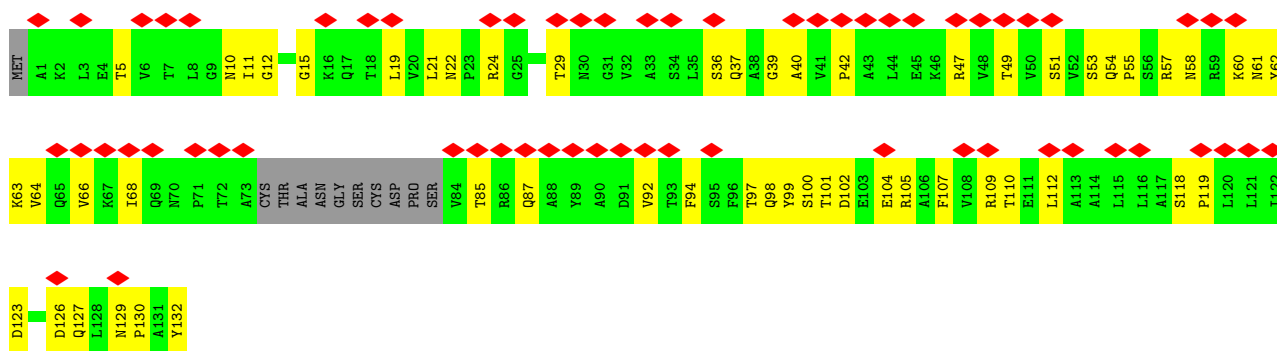


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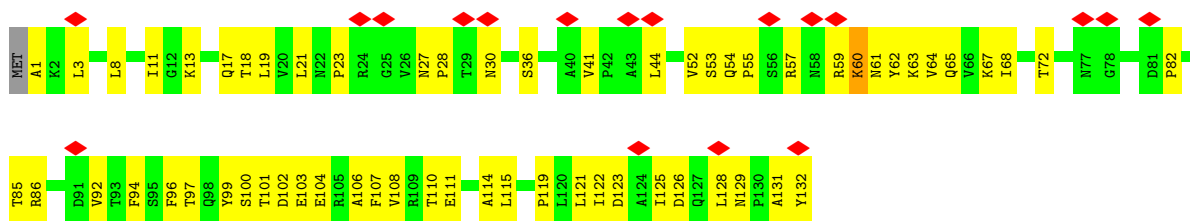




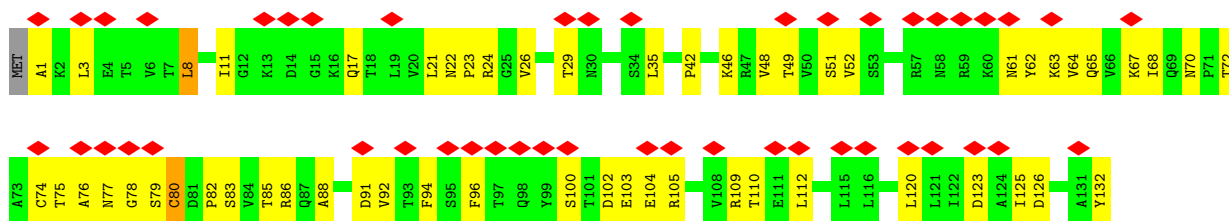
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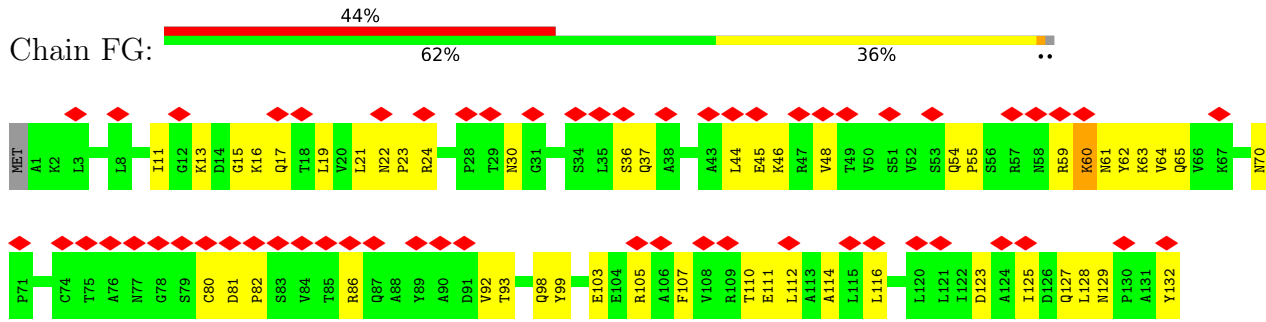
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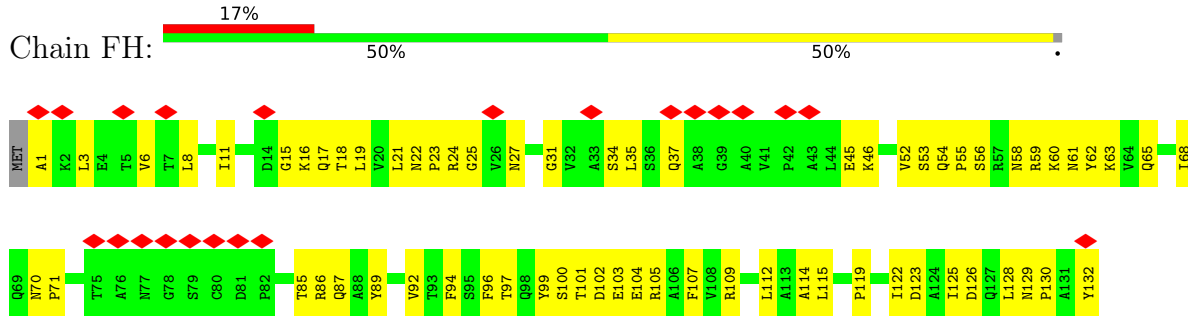
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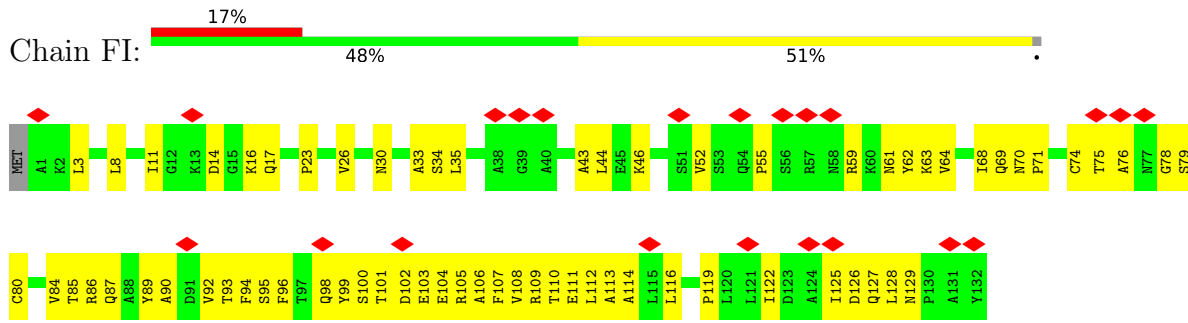
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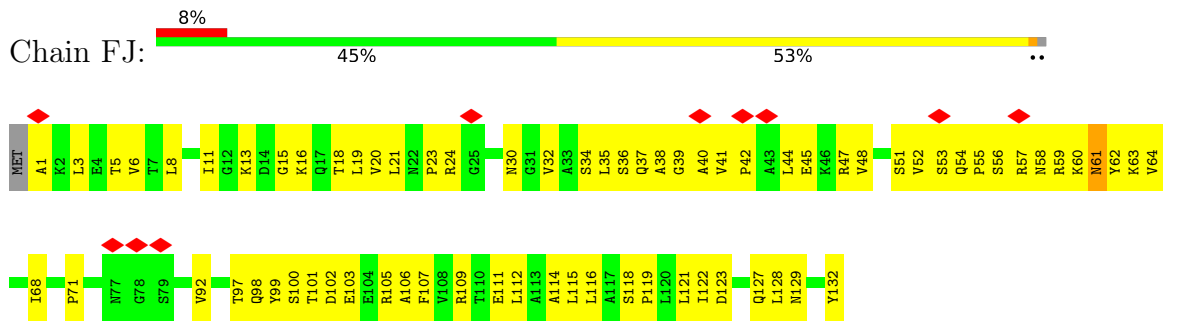
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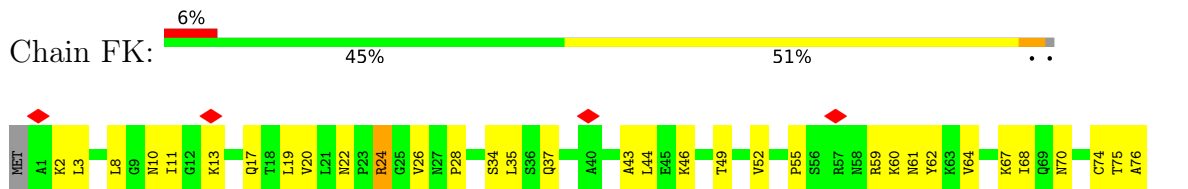
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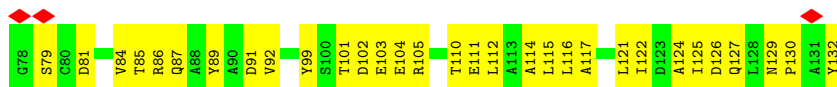


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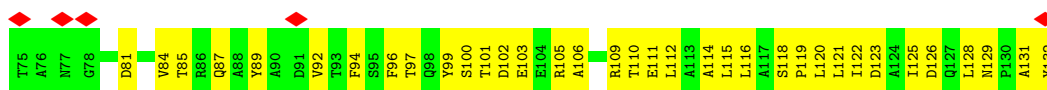
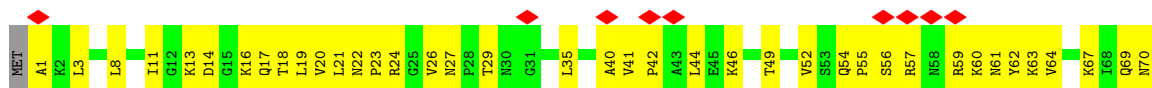




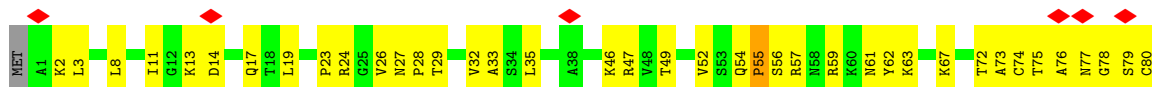
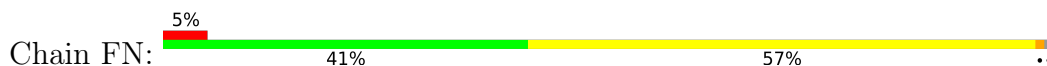
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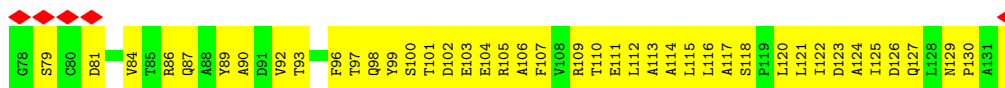
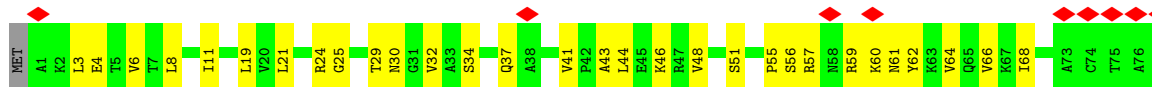
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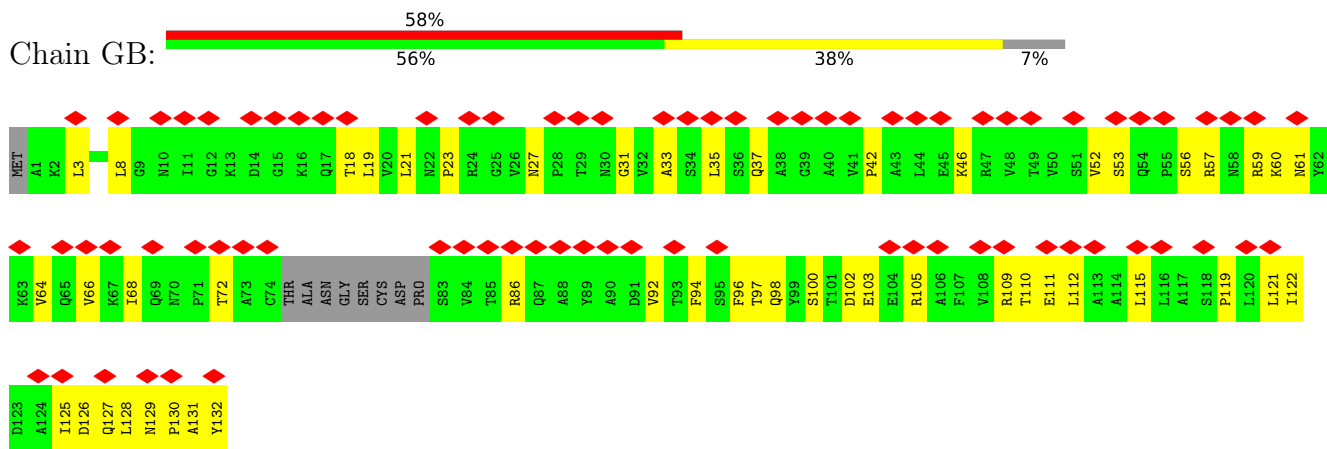
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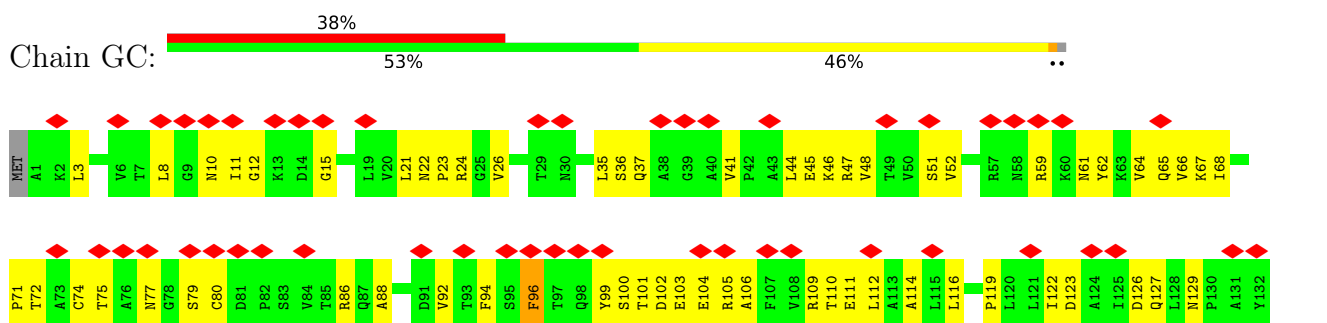
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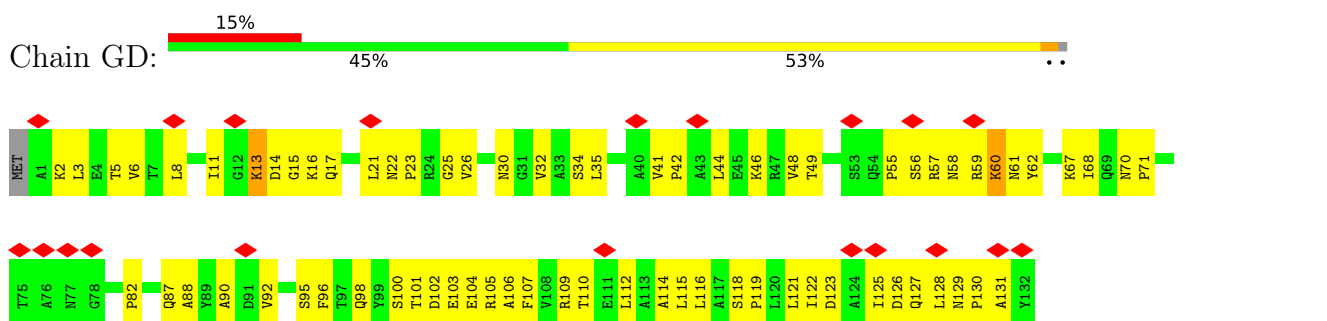
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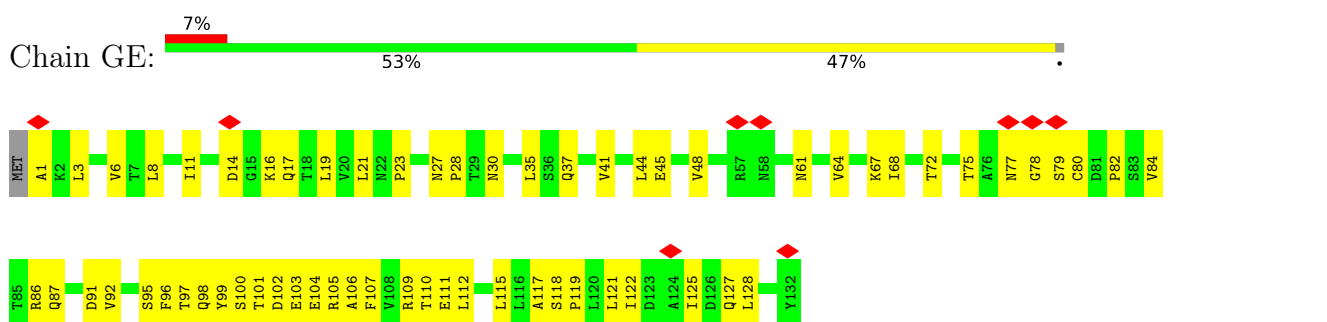
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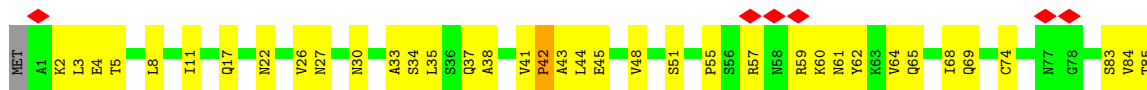


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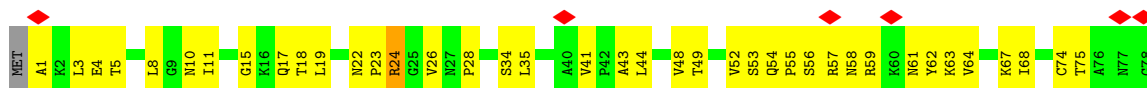




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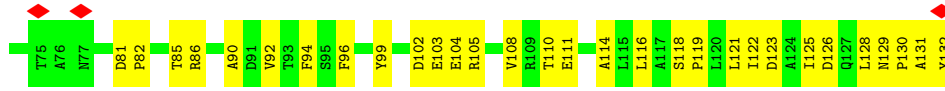


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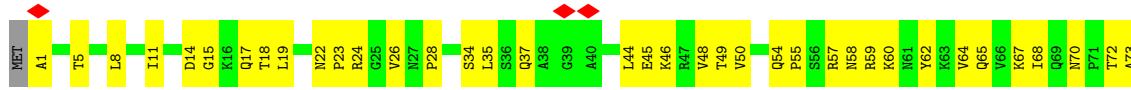
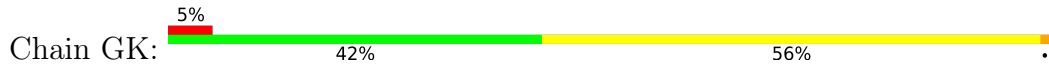


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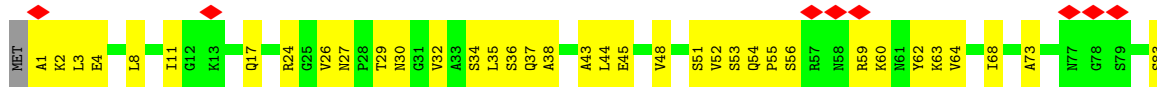




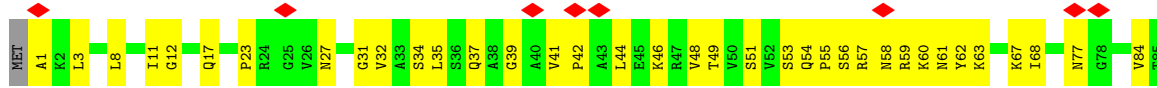
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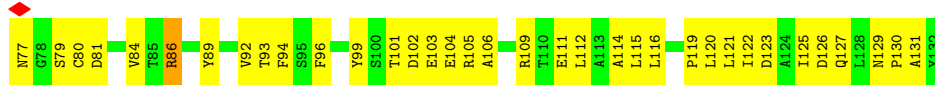
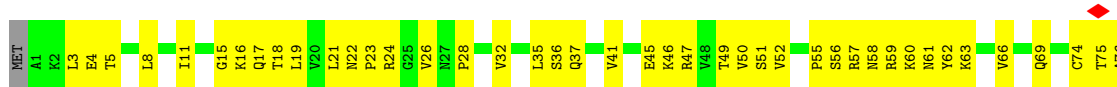
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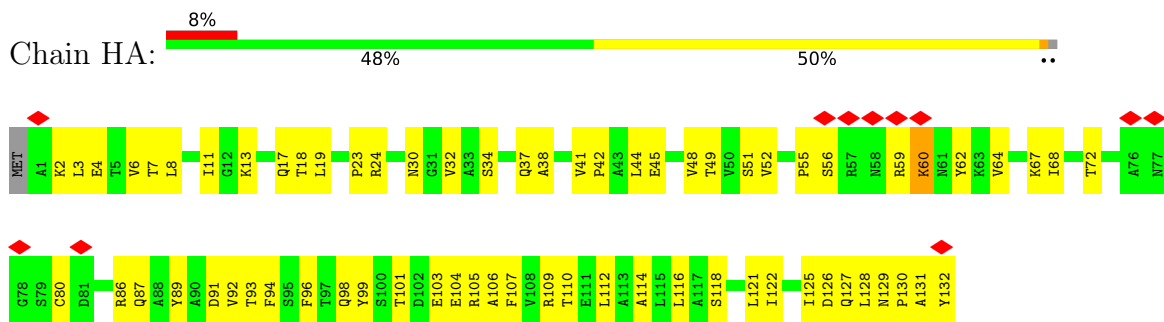
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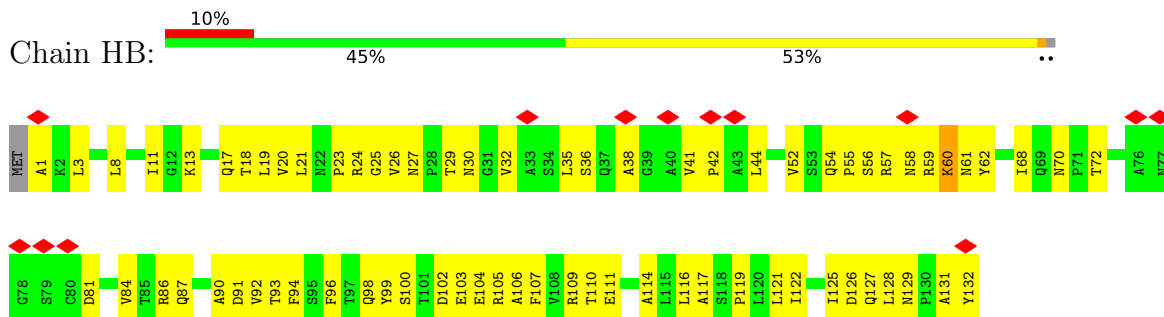
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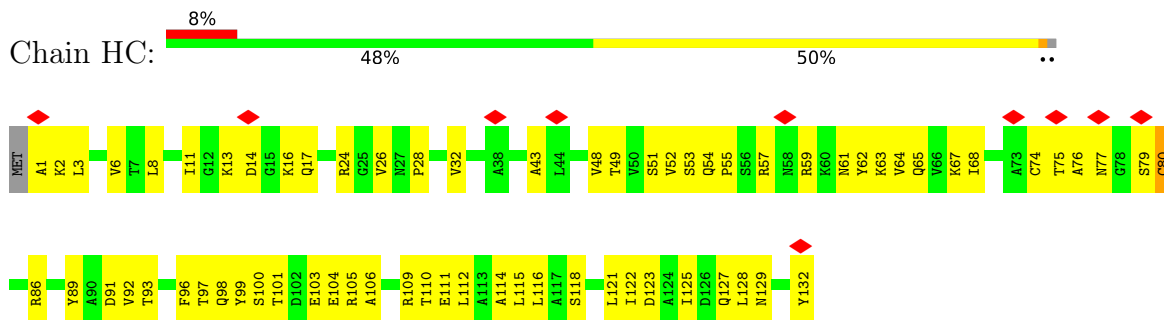
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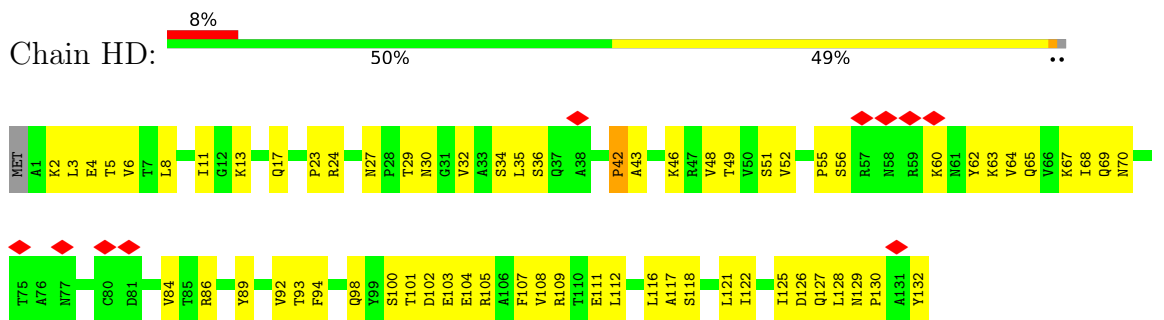
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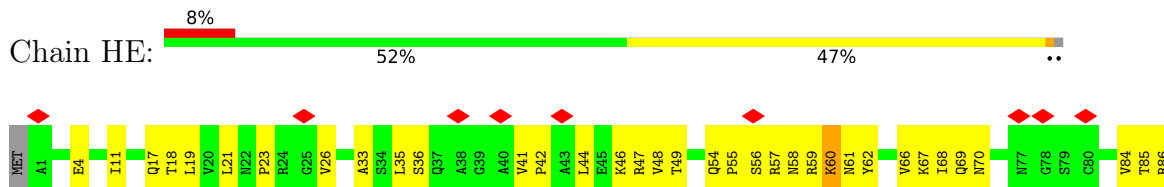
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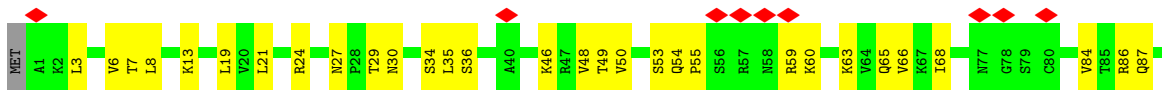




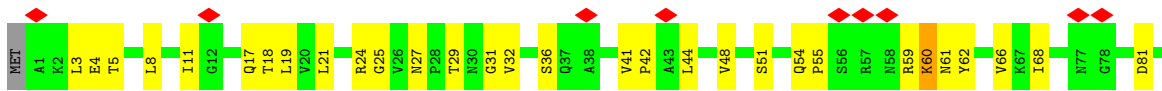
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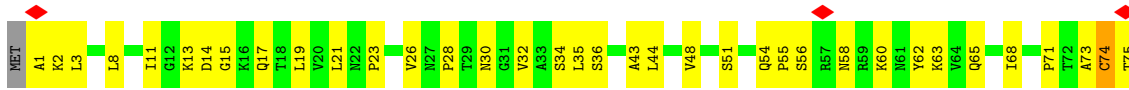
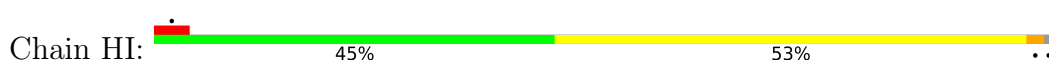
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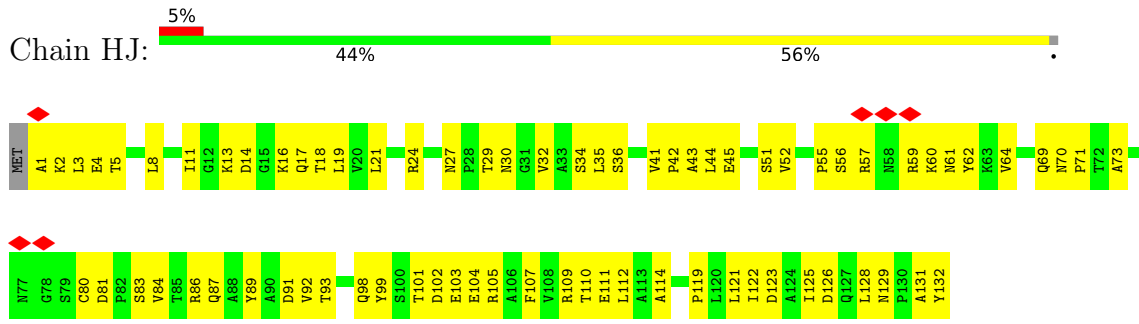


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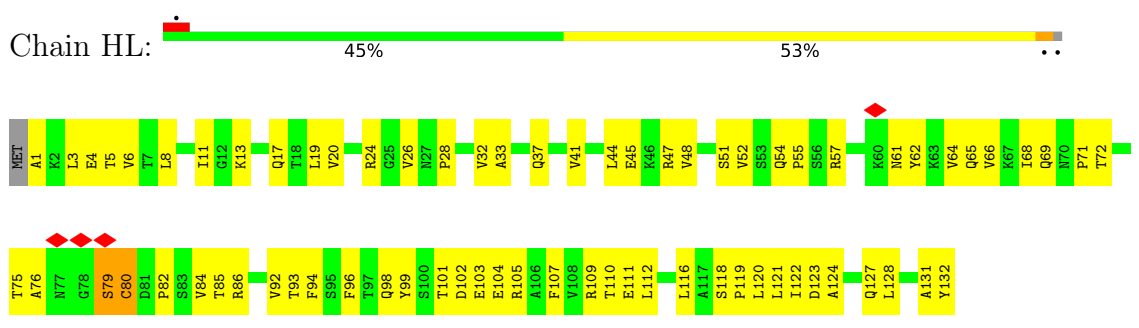




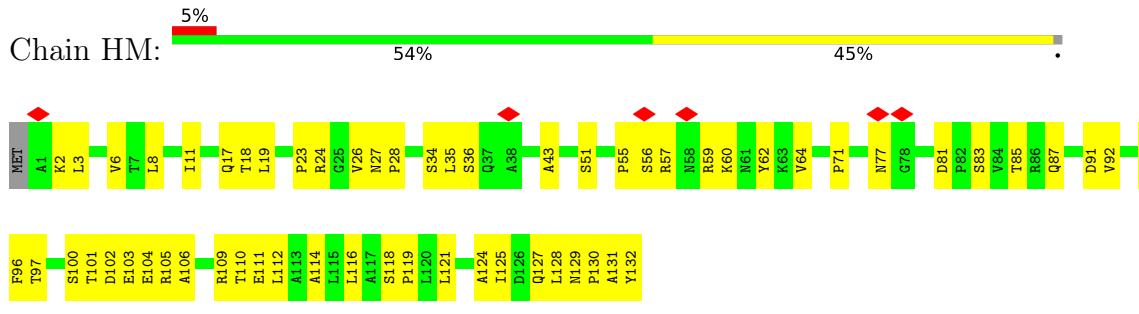
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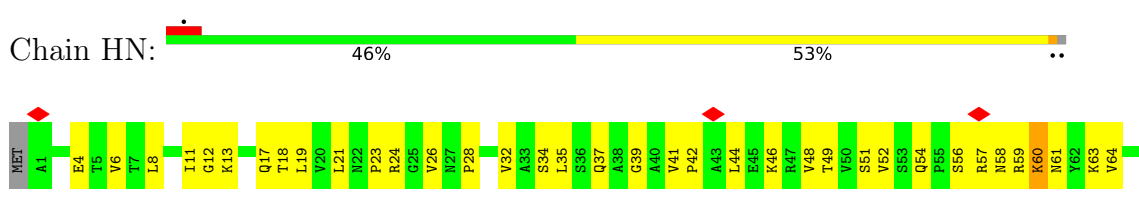
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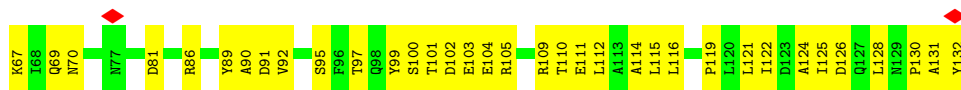


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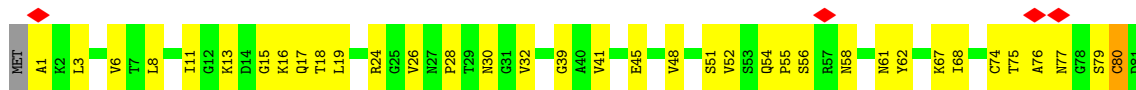


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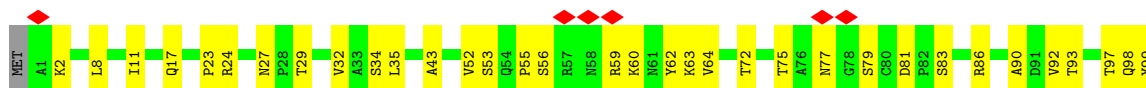




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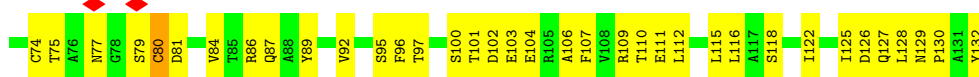
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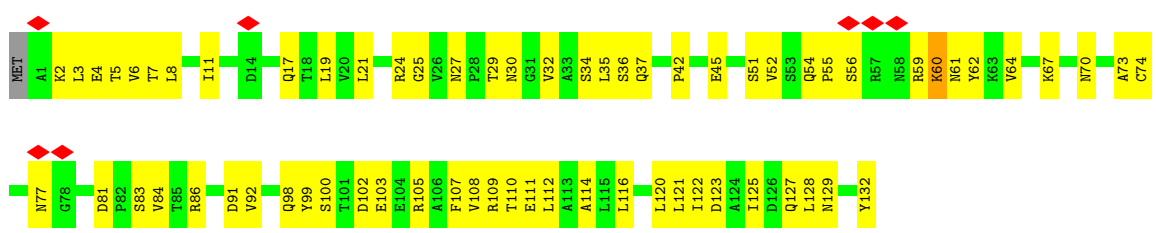
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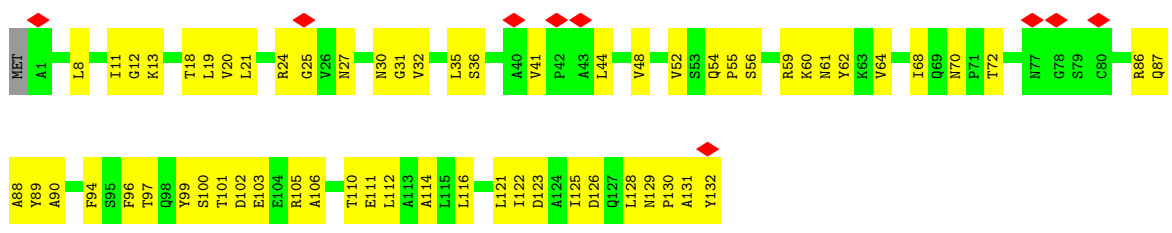
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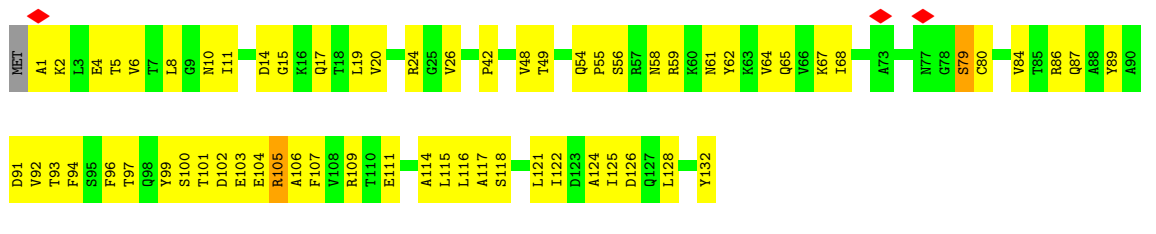
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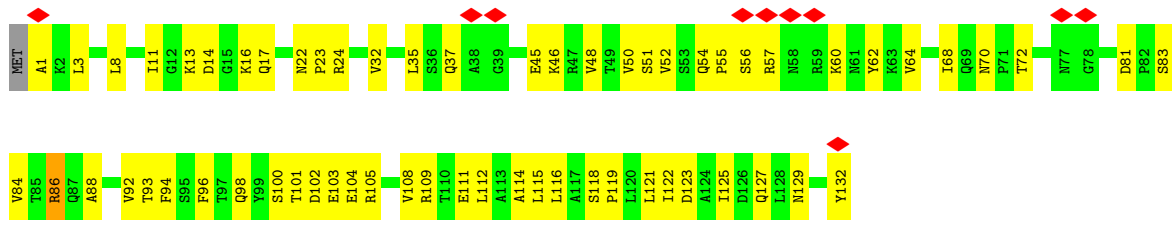
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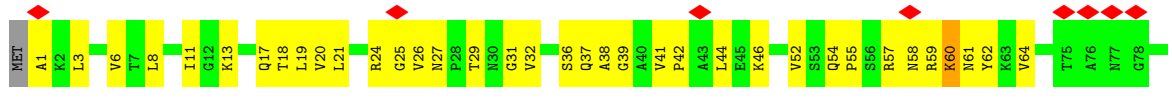
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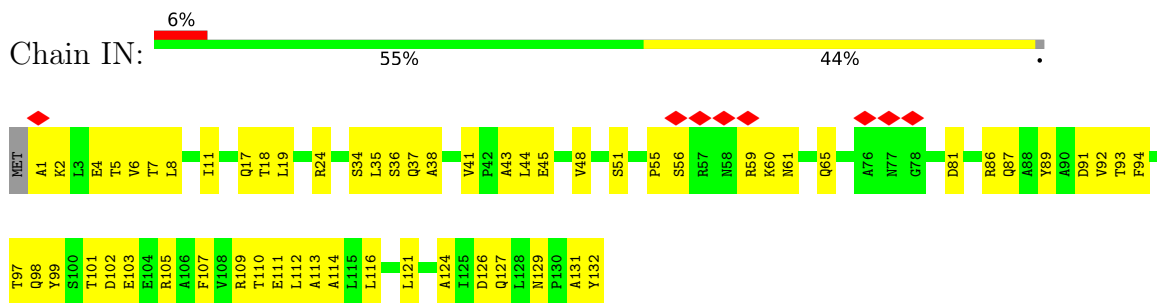


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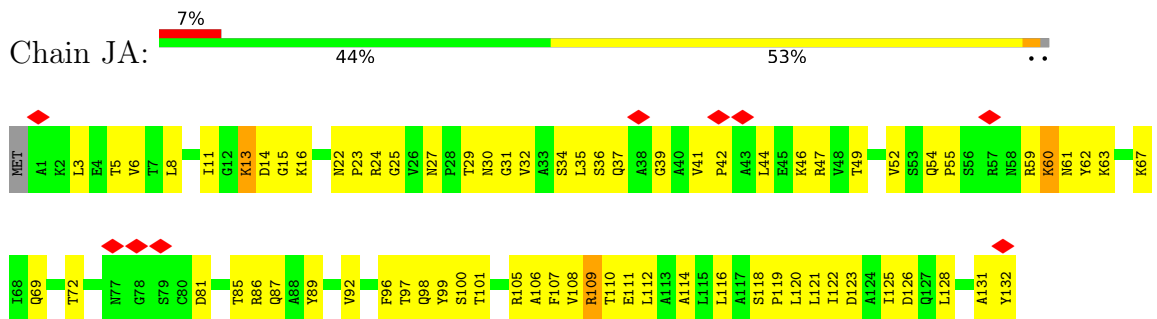


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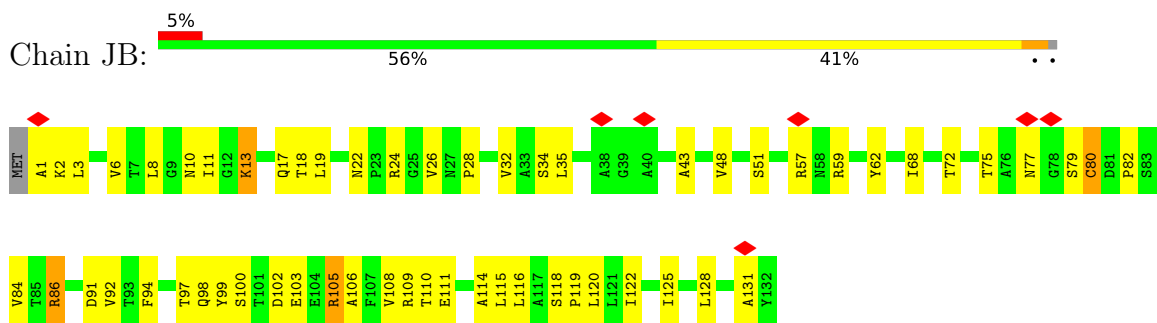




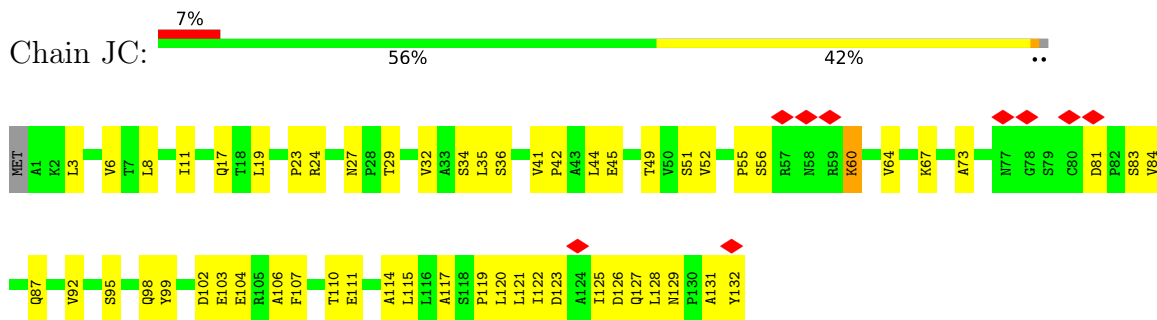
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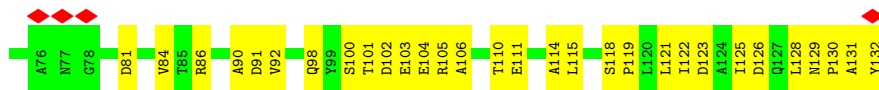


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• Molecule 3: Capsid protein





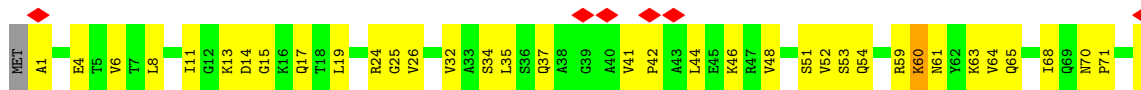
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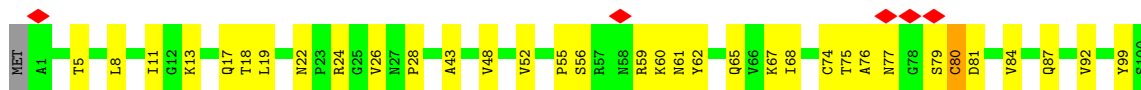
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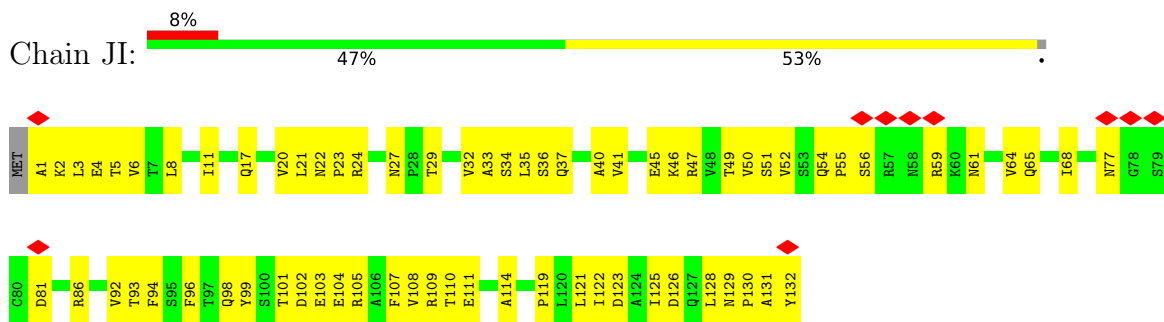
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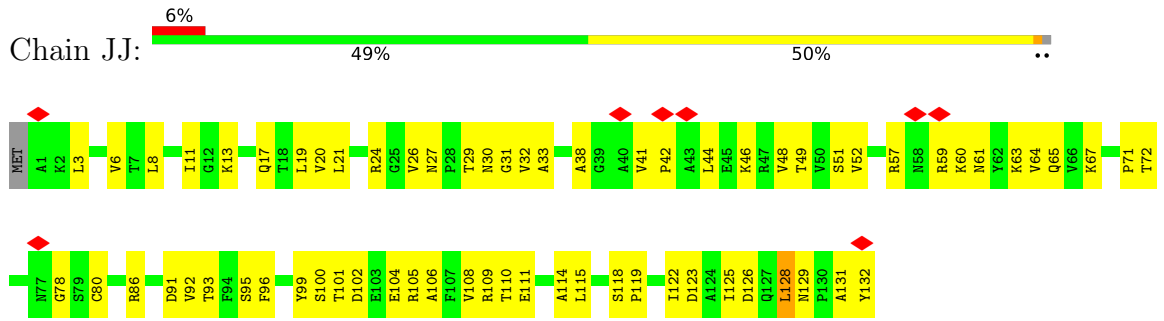
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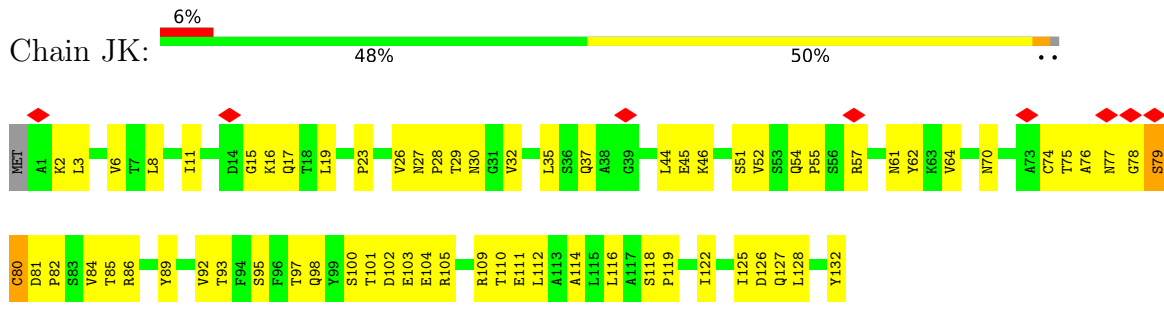
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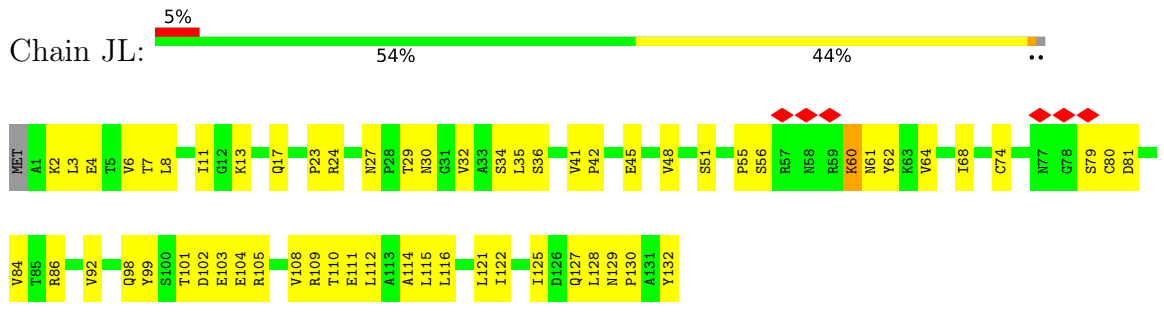
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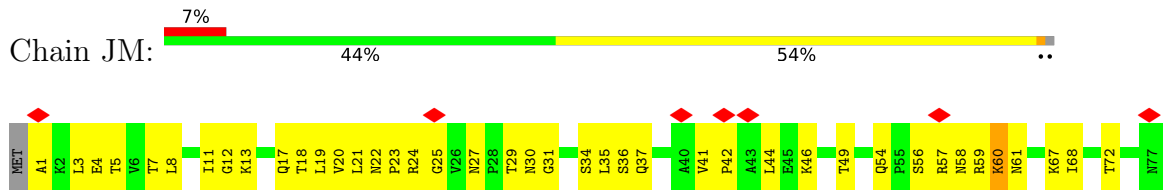
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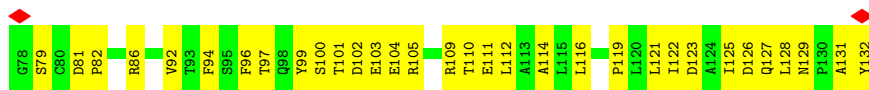


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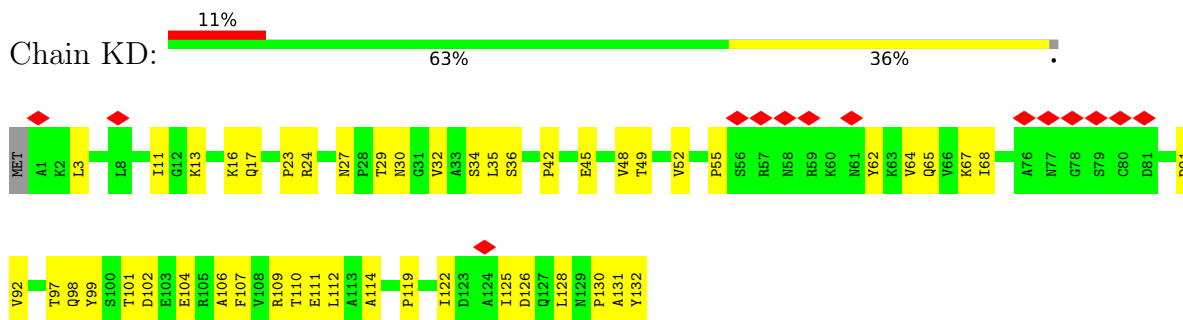
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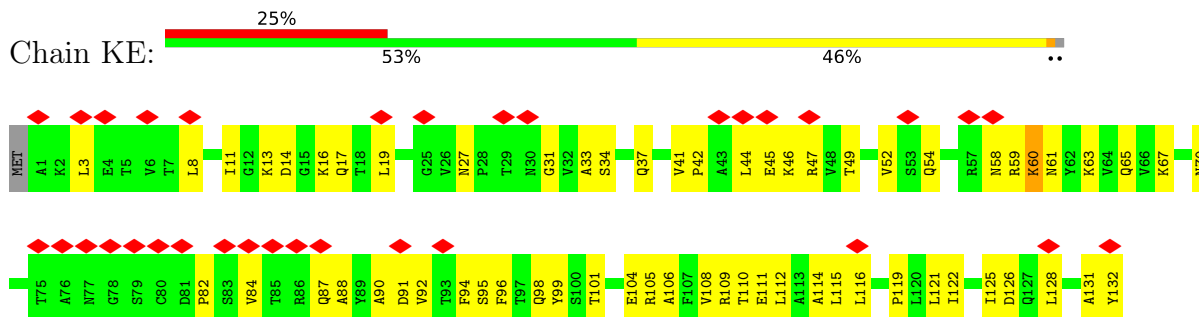
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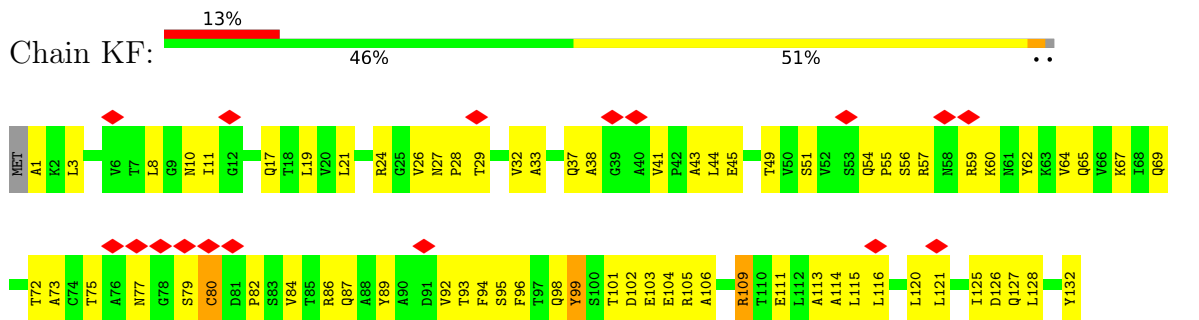
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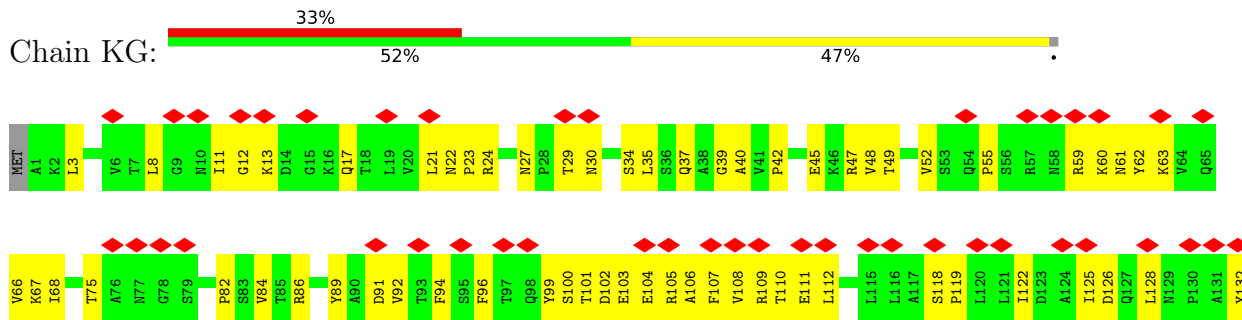
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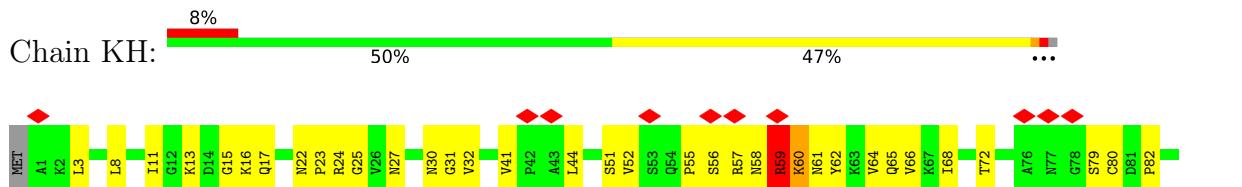
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

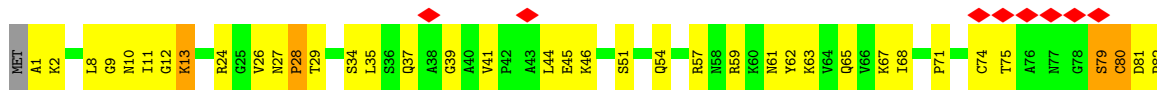


• Molecule 3: Capsid protein

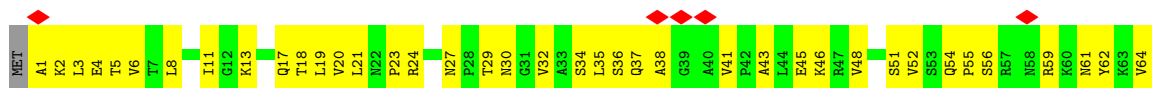
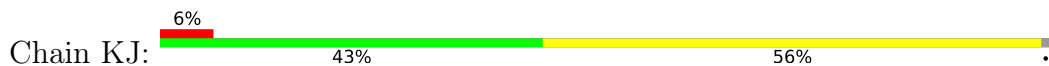




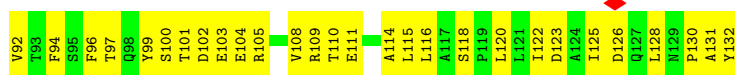
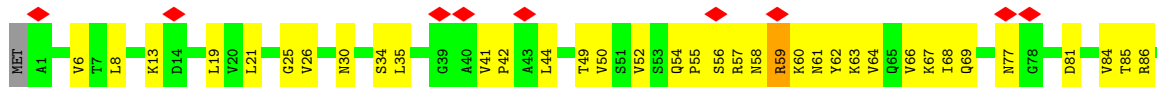
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein



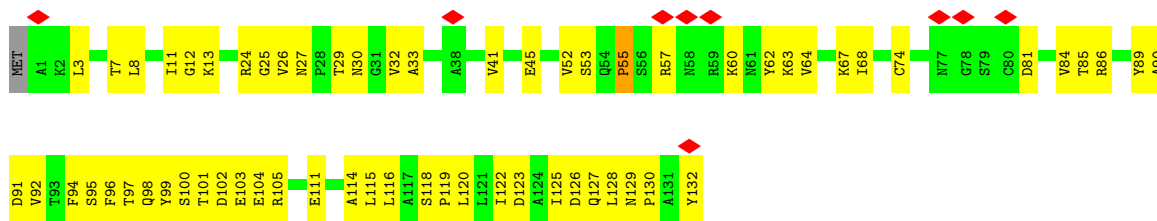
• Molecule 3: Capsid protein



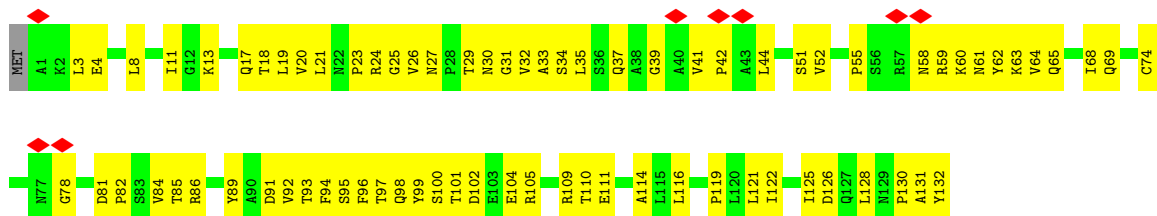
• Molecule 3: Capsid protein



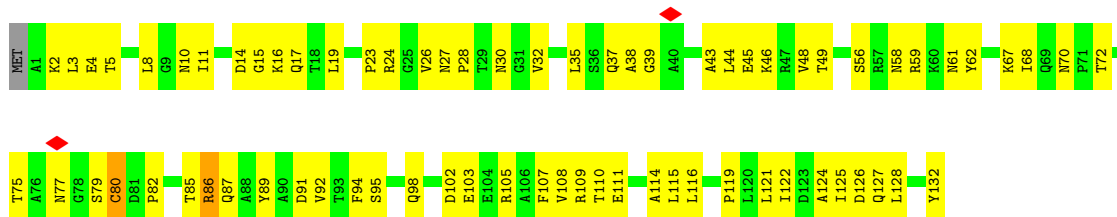
• Molecule 3: Capsid protein



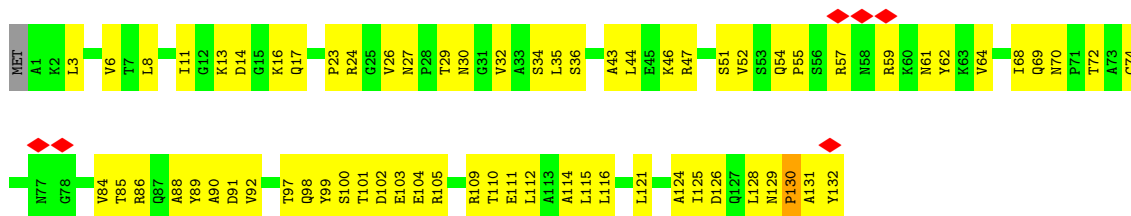
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

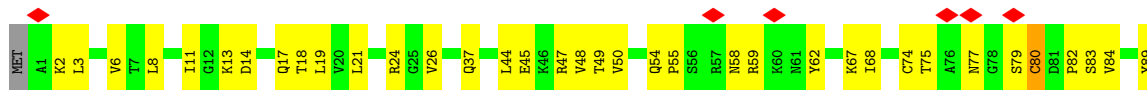


• Molecule 3: Capsid protein





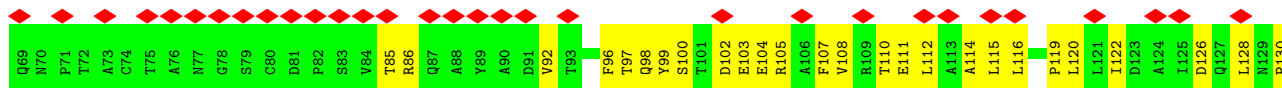
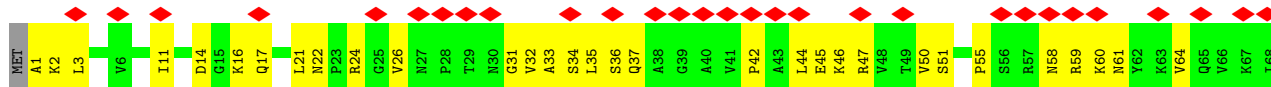
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

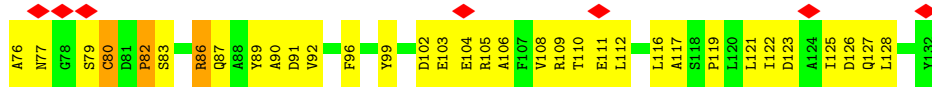


• Molecule 3: Capsid protein

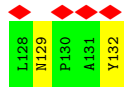
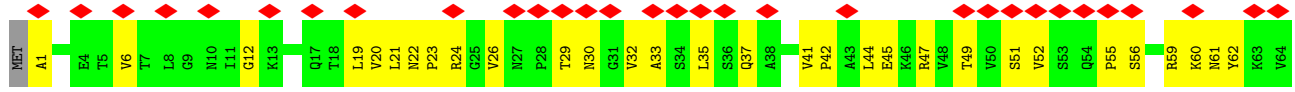


• Molecule 3: Capsid protein

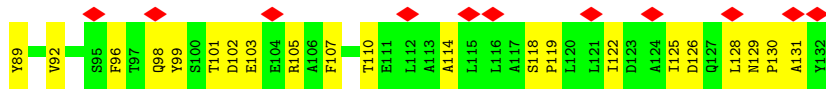
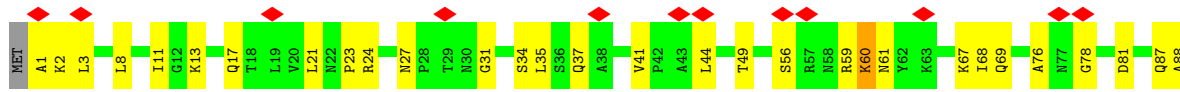




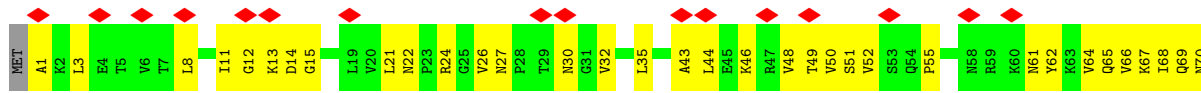
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

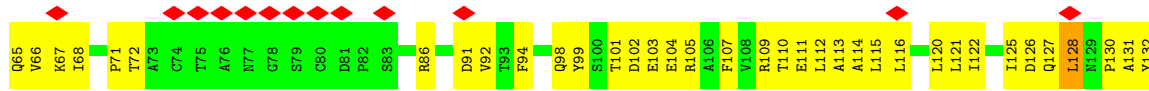


• Molecule 3: Capsid protein

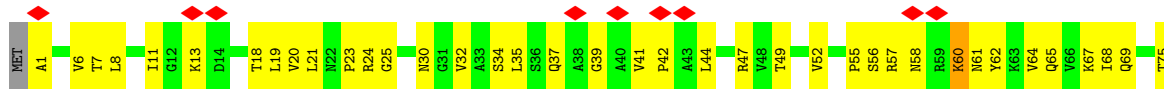


• Molecule 3: Capsid protein

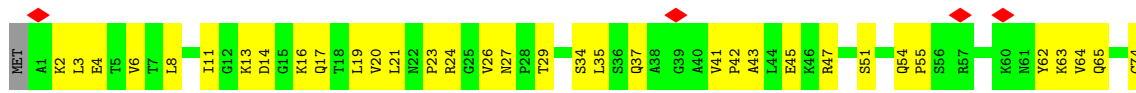




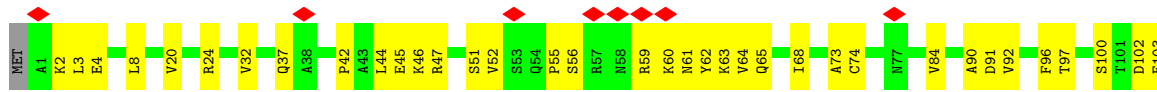
• Molecule 3: Capsid protein



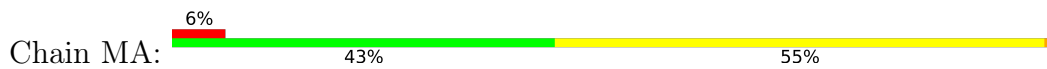
• Molecule 3: Capsid protein



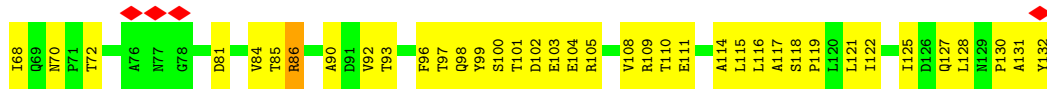
• Molecule 3: Capsid protein

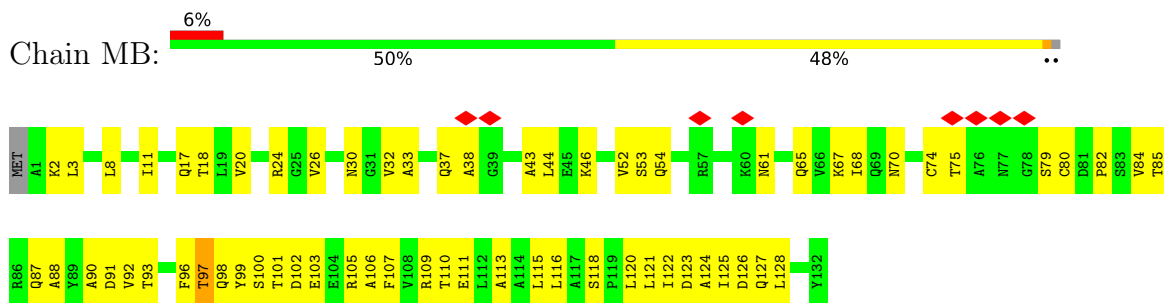


• Molecule 3: Capsid protein

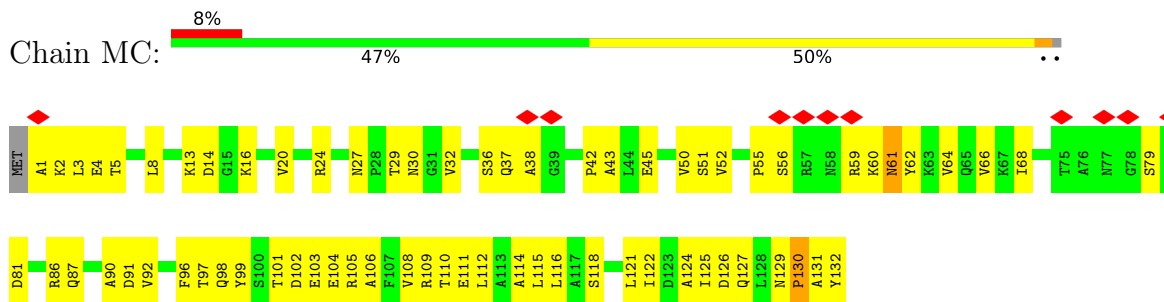


• Molecule 3: Capsid protein

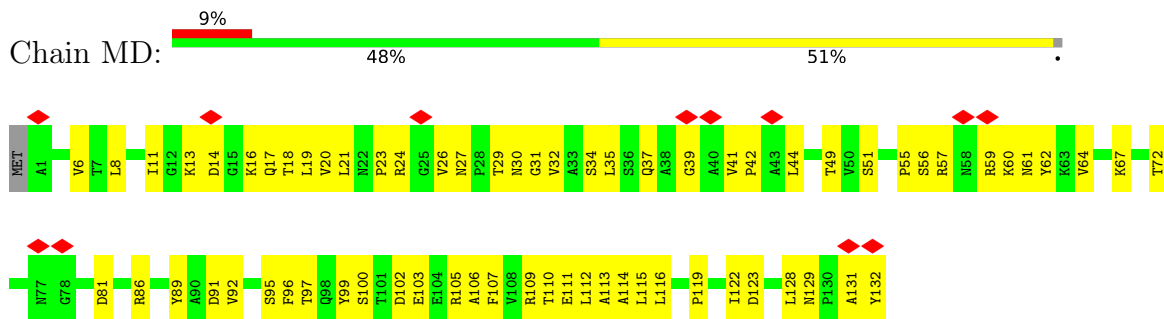




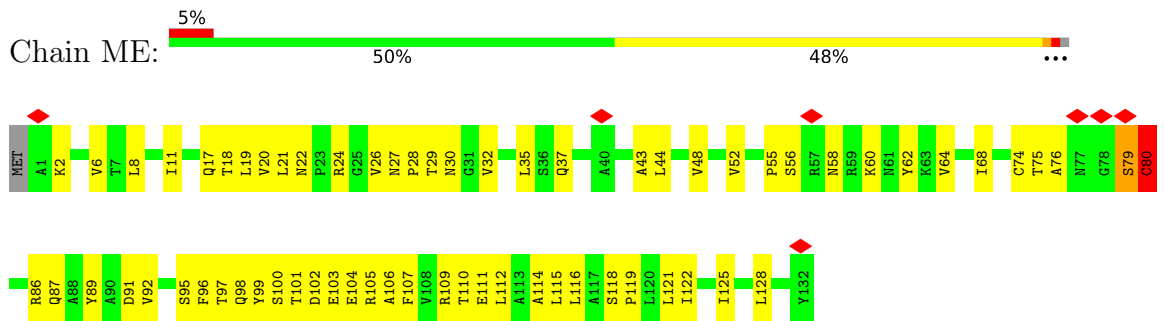
• Molecule 3: Capsid protein



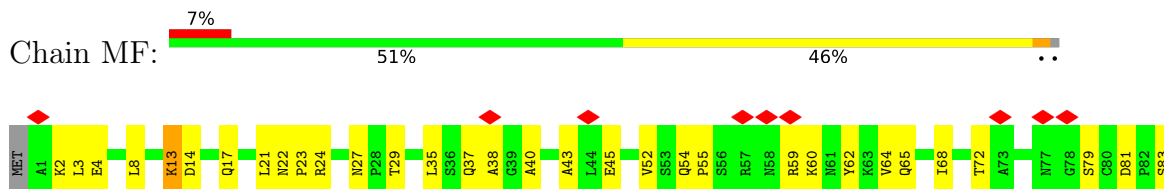
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

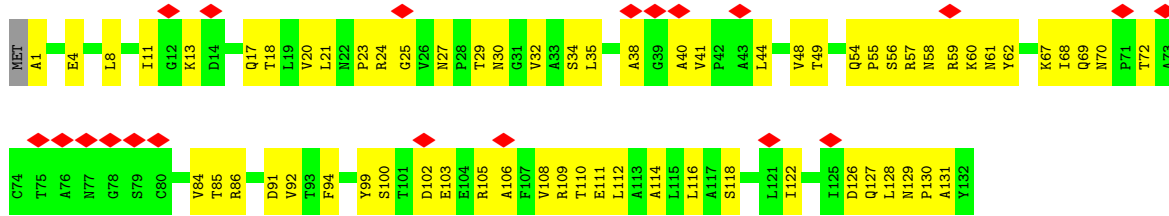


• Molecule 3: Capsid protein

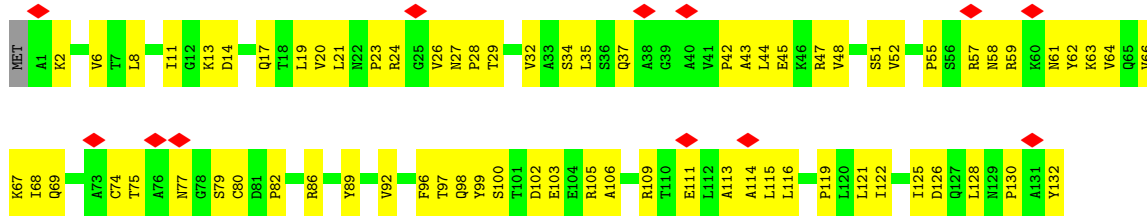




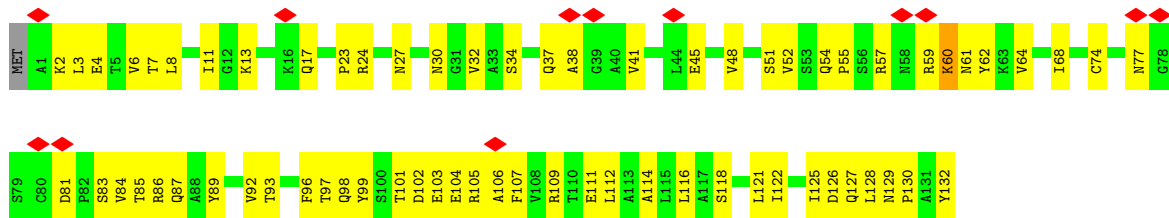
• Molecule 3: Capsid protein



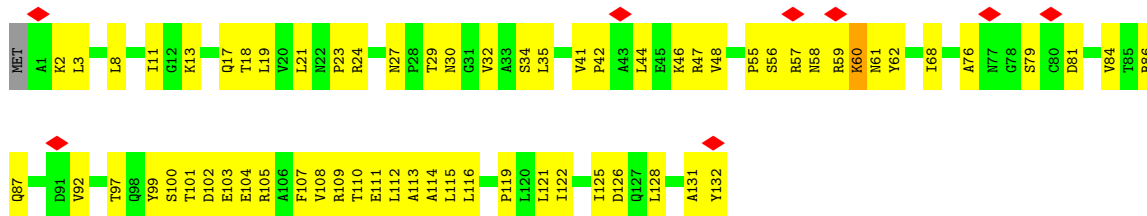
• Molecule 3: Capsid protein



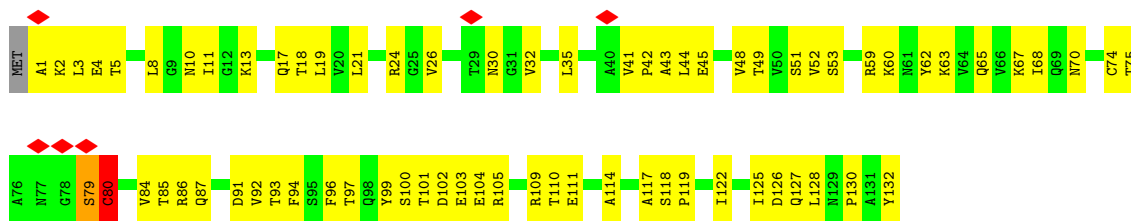
• Molecule 3: Capsid protein



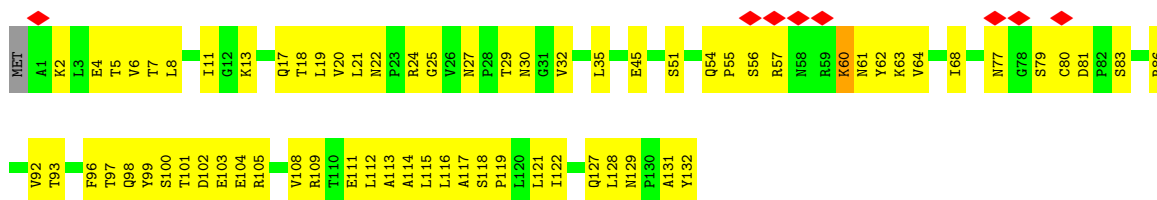
• Molecule 3: Capsid protein



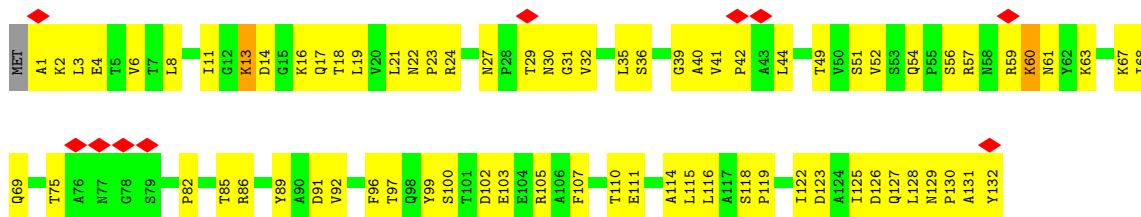
• Molecule 3: Capsid protein



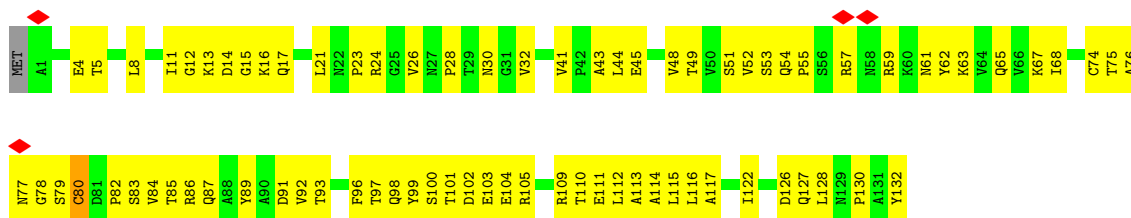
• Molecule 3: Capsid protein



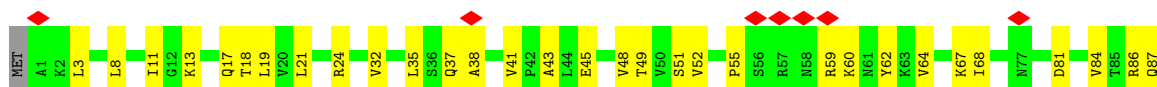
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein

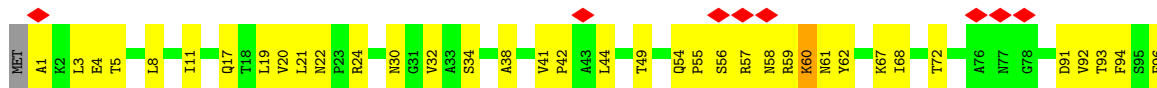


• Molecule 3: Capsid protein





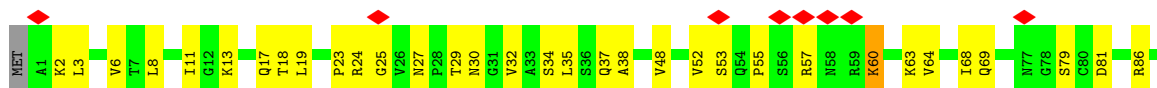
• Molecule 3: Capsid protein



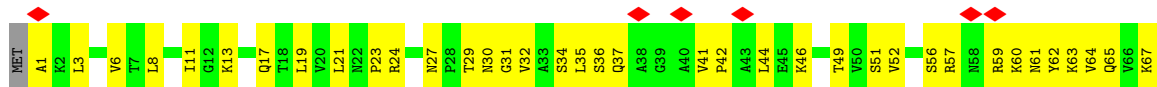
• Molecule 3: Capsid protein



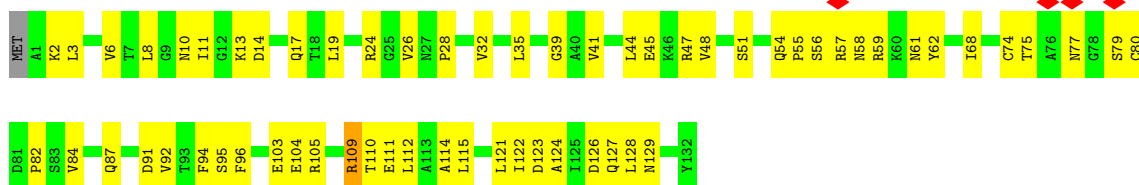
• Molecule 3: Capsid protein



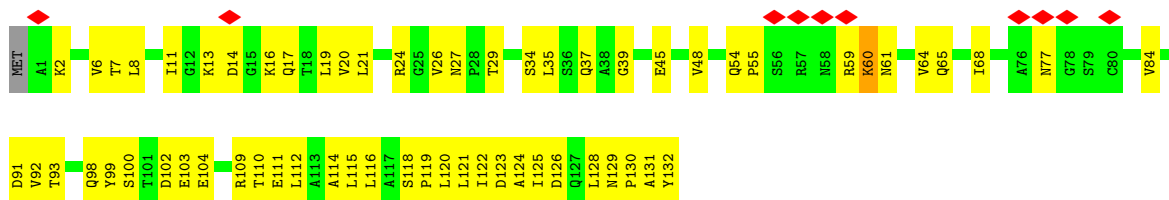
• Molecule 3: Capsid protein



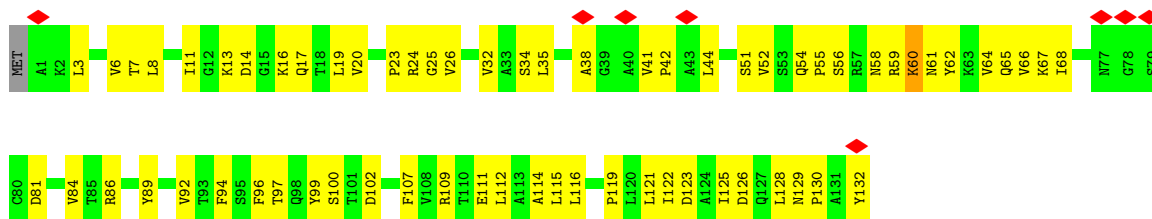
• Molecule 3: Capsid protein



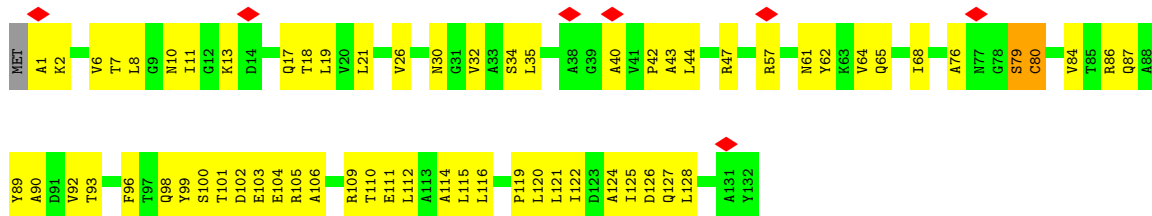
• Molecule 3: Capsid protein



• Molecule 3: Capsid protein



• Molecule 3: Capsid protein



• Molecule 3: Capsid protein



T85	R86	Q87	A88	Y89	A90	D91	V92	T93	F94	T97	Q98	Y99	S100	T101	D102	E103	E104	R105	A106	R109	T110	E111	L112	S118	L121	I122	I125	D126	Q127	L128	M129	P130	A131	Y132
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	86081	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL 3200FSC, FEI TECNAI F20	Depositor
Voltage (kV)	300, 200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30, 30	Depositor
Minimum defocus (nm)	Not provided, Not provided	Depositor
Maximum defocus (nm)	Not provided, Not provided	Depositor
Magnification	Not provided, Not provided	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k), GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.079	Depositor
Minimum map value	-0.041	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.018	Depositor
Map size (\AA)	400.0, 400.0, 400.0	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.25, 1.25, 1.25	Depositor

5 Model quality i

5.1 Standard geometry i

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.39	0/99732	0.91	51/155312 (0.0%)
2	M	0.32	0/3532	0.47	0/4790
3	B	0.31	0/1007	0.49	0/1371
3	BA	0.43	0/1007	0.59	0/1371
3	BB	0.52	0/1007	0.70	2/1371 (0.1%)
3	BC	0.46	0/1007	0.52	0/1371
3	BD	0.46	0/1007	0.63	0/1371
3	BE	0.42	0/1007	0.55	0/1371
3	BF	0.46	0/1007	0.63	1/1371 (0.1%)
3	BG	0.44	0/1007	0.60	0/1371
3	BH	0.46	0/1007	0.64	1/1371 (0.1%)
3	BI	0.45	0/1007	0.57	0/1371
3	BJ	0.48	1/1007 (0.1%)	0.65	1/1371 (0.1%)
3	BK	0.46	0/1007	0.57	0/1371
3	BL	0.42	0/1007	0.57	0/1371
3	BM	0.41	0/1007	0.58	0/1371
3	BN	0.42	0/1007	0.58	1/1371 (0.1%)
3	CA	0.44	0/1007	0.57	0/1371
3	CB	0.44	0/1007	0.64	1/1371 (0.1%)
3	CC	0.51	0/1007	0.69	3/1371 (0.2%)
3	CD	0.40	0/1007	0.60	1/1371 (0.1%)
3	CE	0.46	0/1007	0.64	0/1371
3	CF	0.45	0/1007	0.60	1/1371 (0.1%)
3	CG	0.50	0/1007	0.65	1/1371 (0.1%)
3	CH	0.44	0/1007	0.61	0/1371
3	CI	0.45	0/1007	0.56	0/1371
3	CJ	0.46	0/1007	0.67	2/1371 (0.1%)
3	CK	0.42	0/1007	0.56	0/1371
3	CL	0.47	0/1007	0.59	0/1371
3	CM	0.42	0/1007	0.61	0/1371
3	CN	0.46	0/1007	0.58	0/1371
3	D	0.31	0/1007	0.54	2/1371 (0.1%)
3	DA	0.48	0/1007	0.60	0/1371
3	DB	0.49	0/1007	0.61	0/1371

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	DC	0.41	0/1007	0.59	0/1371
3	DD	0.48	0/1007	0.60	0/1371
3	DE	0.46	0/1007	0.61	0/1371
3	DF	0.47	0/1007	0.62	0/1371
3	DG	0.48	0/1007	0.65	2/1371 (0.1%)
3	DH	0.52	1/1007 (0.1%)	0.66	3/1371 (0.2%)
3	DI	0.43	0/1007	0.57	0/1371
3	DJ	0.45	0/1007	0.57	0/1371
3	DK	0.44	0/1007	0.59	0/1371
3	DL	0.44	0/1007	0.60	0/1371
3	DM	0.45	0/1007	0.68	2/1371 (0.1%)
3	DN	0.42	0/1007	0.56	0/1371
3	EA	0.41	0/1007	0.64	0/1371
3	EB	0.46	0/1007	0.63	1/1371 (0.1%)
3	EC	0.44	0/1007	0.57	0/1371
3	ED	0.38	0/1007	0.62	0/1371
3	EE	0.43	0/1007	0.59	0/1371
3	EF	0.41	0/1007	0.58	0/1371
3	EG	0.38	0/1007	0.56	0/1371
3	EH	0.43	1/1007 (0.1%)	0.62	2/1371 (0.1%)
3	EI	0.46	0/1007	0.56	0/1371
3	EJ	0.52	0/1007	0.68	0/1371
3	EK	0.43	0/1007	0.58	1/1371 (0.1%)
3	EL	0.46	0/1007	0.59	0/1371
3	EM	0.44	0/1007	0.59	0/1371
3	EN	0.47	0/1007	0.55	0/1371
3	FA	0.44	0/1007	0.59	0/1371
3	FB	0.41	1/1007 (0.1%)	0.60	0/1371
3	FC	0.36	0/1007	0.58	1/1371 (0.1%)
3	FD	0.33	0/942	0.53	0/1280
3	FE	0.40	0/1007	0.62	0/1371
3	FF	0.40	0/1007	0.58	1/1371 (0.1%)
3	FG	0.39	0/1007	0.55	0/1371
3	FH	0.43	0/1007	0.64	0/1371
3	FI	0.45	0/1007	0.58	0/1371
3	FJ	0.48	0/1007	0.64	0/1371
3	FK	0.48	0/1007	0.67	1/1371 (0.1%)
3	FL	0.42	0/1007	0.57	0/1371
3	FM	0.42	0/1007	0.60	0/1371
3	FN	0.46	0/1007	0.67	2/1371 (0.1%)
3	GA	0.42	0/1007	0.57	0/1371
3	GB	0.30	0/954	0.54	0/1296
3	GC	0.43	0/1007	0.62	1/1371 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	GD	0.40	0/1007	0.61	1/1371 (0.1%)
3	GE	0.42	0/1007	0.56	0/1371
3	GF	0.42	0/1007	0.57	1/1371 (0.1%)
3	GG	0.48	0/1007	0.65	0/1371
3	GH	0.47	0/1007	0.63	1/1371 (0.1%)
3	GI	0.44	0/1007	0.57	0/1371
3	GJ	0.46	0/1007	0.64	1/1371 (0.1%)
3	GK	0.50	0/1007	0.61	0/1371
3	GL	0.45	0/1007	0.58	0/1371
3	GM	0.48	0/1007	0.68	1/1371 (0.1%)
3	GN	0.49	0/1007	0.63	1/1371 (0.1%)
3	HA	0.43	0/1007	0.57	0/1371
3	HB	0.42	0/1007	0.58	0/1371
3	HC	0.45	0/1007	0.57	0/1371
3	HD	0.47	1/1007 (0.1%)	0.65	2/1371 (0.1%)
3	HE	0.42	0/1007	0.60	0/1371
3	HF	0.44	0/1007	0.57	0/1371
3	HG	0.44	0/1007	0.57	0/1371
3	HH	0.44	0/1007	0.58	0/1371
3	HI	0.47	0/1007	0.61	1/1371 (0.1%)
3	HJ	0.47	0/1007	0.60	0/1371
3	HK	0.47	1/1007 (0.1%)	0.60	0/1371
3	HL	0.45	0/1007	0.59	0/1371
3	HM	0.48	0/1007	0.58	0/1371
3	HN	0.46	0/1007	0.58	0/1371
3	IA	0.47	0/1007	0.59	0/1371
3	IB	0.46	0/1007	0.57	0/1371
3	IC	0.50	1/1007 (0.1%)	0.61	0/1371
3	ID	0.48	0/1007	0.58	0/1371
3	IE	0.55	1/1007 (0.1%)	0.58	0/1371
3	IF	0.45	0/1007	0.59	0/1371
3	IG	0.49	0/1007	0.60	1/1371 (0.1%)
3	IH	0.46	0/1007	0.59	1/1371 (0.1%)
3	II	0.49	0/1007	0.63	1/1371 (0.1%)
3	IJ	0.49	0/1007	0.64	2/1371 (0.1%)
3	IK	0.44	0/1007	0.57	0/1371
3	IL	0.46	0/1007	0.62	0/1371
3	IM	0.45	0/1007	0.58	1/1371 (0.1%)
3	IN	0.42	0/1007	0.54	0/1371
3	JA	0.49	0/1007	0.74	4/1371 (0.3%)
3	JB	0.47	0/1007	0.66	3/1371 (0.2%)
3	JC	0.44	0/1007	0.57	0/1371
3	JD	0.46	0/1007	0.60	0/1371

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	JE	0.48	0/1007	0.67	2/1371 (0.1%)
3	JF	0.45	0/1007	0.58	0/1371
3	JG	0.44	0/1007	0.64	1/1371 (0.1%)
3	JH	0.43	0/1007	0.58	0/1371
3	JI	0.44	0/1007	0.59	0/1371
3	JJ	0.52	1/1007 (0.1%)	0.66	1/1371 (0.1%)
3	JK	0.45	0/1007	0.56	0/1371
3	JL	0.43	0/1007	0.55	0/1371
3	JM	0.44	0/1007	0.60	0/1371
3	JN	0.50	0/1007	0.59	1/1371 (0.1%)
3	KA	0.47	1/1007 (0.1%)	0.57	0/1371
3	KB	0.44	0/1007	0.63	0/1371
3	KC	0.42	0/1007	0.57	0/1371
3	KD	0.44	0/1007	0.56	0/1371
3	KE	0.38	0/1007	0.60	0/1371
3	KF	0.54	1/1007 (0.1%)	0.67	2/1371 (0.1%)
3	KG	0.36	0/1007	0.53	0/1371
3	KH	0.45	0/1007	0.66	0/1371
3	KI	0.45	0/1007	0.63	2/1371 (0.1%)
3	KJ	0.41	0/1007	0.55	0/1371
3	KK	0.44	0/1007	0.60	0/1371
3	KL	0.44	0/1007	0.56	0/1371
3	KM	0.41	0/1007	0.57	1/1371 (0.1%)
3	KN	0.47	0/1007	0.61	0/1371
3	LA	0.50	1/1007 (0.1%)	0.67	3/1371 (0.2%)
3	LB	0.45	0/1007	0.63	1/1371 (0.1%)
3	LC	0.56	1/1007 (0.1%)	0.73	3/1371 (0.2%)
3	LD	0.50	0/1007	0.64	1/1371 (0.1%)
3	LE	0.41	0/1007	0.57	0/1371
3	LF	0.36	0/1007	0.59	0/1371
3	LG	0.46	0/1007	0.67	2/1371 (0.1%)
3	LH	0.34	0/1007	0.58	0/1371
3	LI	0.42	0/1007	0.59	0/1371
3	LJ	0.34	0/1007	0.55	0/1371
3	LK	0.41	0/1007	0.66	1/1371 (0.1%)
3	LL	0.41	0/1007	0.62	0/1371
3	LM	0.42	0/1007	0.57	1/1371 (0.1%)
3	LN	0.40	0/1007	0.58	0/1371
3	MA	0.49	0/1007	0.65	1/1371 (0.1%)
3	MB	0.45	0/1007	0.60	0/1371
3	MC	0.45	0/1007	0.62	1/1371 (0.1%)
3	MD	0.45	0/1007	0.59	0/1371
3	ME	0.46	0/1007	0.56	1/1371 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	MF	0.55	2/1007 (0.2%)	0.77	6/1371 (0.4%)
3	MG	0.48	0/1007	0.62	0/1371
3	MH	0.40	0/1007	0.55	0/1371
3	MI	0.46	0/1007	0.60	0/1371
3	MJ	0.41	0/1007	0.62	0/1371
3	MK	0.44	0/1007	0.57	1/1371 (0.1%)
3	ML	0.41	0/1007	0.57	0/1371
3	MM	0.45	0/1007	0.64	1/1371 (0.1%)
3	MN	0.43	0/1007	0.55	0/1371
3	NA	0.44	0/1007	0.57	0/1371
3	NB	0.48	0/1007	0.62	0/1371
3	NC	0.45	0/1007	0.64	2/1371 (0.1%)
3	ND	0.43	0/1007	0.54	0/1371
3	NE	0.48	0/1007	0.67	0/1371
3	NF	0.45	0/1007	0.60	0/1371
3	NG	0.45	0/1007	0.56	0/1371
3	NH	0.45	0/1007	0.58	0/1371
3	NI	0.43	0/1007	0.56	0/1371
3	NJ	0.59	2/1007 (0.2%)	0.82	6/1371 (0.4%)
All	All	0.43	17/284406 (0.0%)	0.73	148/406716 (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
3	BB	0	1
3	BD	0	1
3	BG	0	1
3	BH	0	1
3	BM	0	1
3	BN	0	1
3	CC	0	1
3	CH	0	1
3	CI	0	1
3	CJ	0	1
3	CK	0	1
3	CN	0	1
3	DC	0	1
3	DF	0	1
3	DI	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
3	DL	0	1
3	EB	0	1
3	EF	0	1
3	EI	0	1
3	EM	0	1
3	FC	0	1
3	FE	0	1
3	FG	0	1
3	FJ	0	1
3	FK	0	2
3	GD	0	1
3	GG	0	3
3	HA	0	1
3	HB	0	1
3	HE	0	1
3	HH	0	1
3	HK	0	1
3	HL	0	1
3	HN	0	1
3	IC	0	1
3	IE	0	1
3	IG	0	1
3	II	0	1
3	JA	0	1
3	JC	0	1
3	JF	0	1
3	JG	0	1
3	JK	0	1
3	JL	0	1
3	JM	0	1
3	JN	0	1
3	KB	0	1
3	KE	0	1
3	KH	0	2
3	KI	0	1
3	LI	0	1
3	LJ	0	1
3	LK	0	1
3	LL	0	1
3	MA	0	1
3	MB	0	1
3	ME	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
3	MF	0	1
3	MI	0	1
3	MK	0	1
3	ML	0	1
3	MM	0	1
3	NB	0	1
3	ND	0	1
3	NG	0	1
3	NH	0	1
3	NI	0	1
All	All	0	71

The worst 5 of 17 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	NJ	55	PRO	CG-CD	-10.72	1.15	1.50
3	LC	130	PRO	CG-CD	-9.12	1.20	1.50
3	IE	74	CYS	CB-SG	-9.02	1.67	1.82
3	DH	55	PRO	CG-CD	-7.64	1.25	1.50
3	MF	21	LEU	C-N	-7.22	1.17	1.34

The worst 5 of 148 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	LC	130	PRO	N-CD-CG	-12.04	85.14	103.20
3	NJ	55	PRO	N-CD-CG	-11.92	85.32	103.20
3	DH	55	PRO	N-CD-CG	-10.86	86.91	103.20
3	NJ	128	LEU	CA-CB-CG	10.80	140.14	115.30
3	HD	42	PRO	CA-N-CD	-10.64	96.60	111.50

There are no chirality outliers.

5 of 71 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	BB	79	SER	Peptide
3	BD	60	LYS	Peptide
3	BG	60	LYS	Peptide
3	BH	79	SER	Peptide
3	BM	60	LYS	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	89319	0	45162	3454	0
2	M	3438	0	3381	140	0
3	B	993	0	1008	41	0
3	BA	993	0	1006	110	0
3	BB	993	0	1006	126	0
3	BC	993	0	1006	111	0
3	BD	993	0	1006	120	0
3	BE	993	0	1006	98	0
3	BF	993	0	1006	95	0
3	BG	993	0	1006	98	0
3	BH	993	0	1006	101	0
3	BI	993	0	1006	121	0
3	BJ	993	0	1006	101	0
3	BK	993	0	1006	116	0
3	BL	993	0	1006	97	0
3	BM	993	0	1006	87	0
3	BN	993	0	1006	102	0
3	CA	993	0	1006	101	0
3	CB	993	0	1006	134	0
3	CC	993	0	1006	118	0
3	CD	993	0	1006	97	0
3	CE	993	0	1006	105	0
3	CF	993	0	1006	112	0
3	CG	993	0	1006	100	0
3	CH	993	0	1006	112	0
3	CI	993	0	1006	112	0
3	CJ	993	0	1006	108	0
3	CK	993	0	1006	104	0
3	CL	993	0	1006	94	0
3	CM	993	0	1006	114	0
3	CN	993	0	1006	113	0
3	D	993	0	1008	38	0
3	DA	993	0	1006	104	0
3	DB	993	0	1006	122	0
3	DC	993	0	1006	106	0
3	DD	993	0	1006	114	0
3	DE	993	0	1006	131	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	DF	993	0	1006	128	0
3	DG	993	0	1006	132	0
3	DH	993	0	1006	100	0
3	DI	993	0	1006	101	0
3	DJ	993	0	1006	98	0
3	DK	993	0	1006	113	0
3	DL	993	0	1006	115	0
3	DM	993	0	1006	102	0
3	DN	993	0	1006	82	0
3	EA	993	0	1006	98	0
3	EB	993	0	1006	123	0
3	EC	993	0	1006	111	0
3	ED	993	0	1006	113	0
3	EE	993	0	1006	120	0
3	EF	993	0	1006	93	0
3	EG	993	0	1007	106	0
3	EH	993	0	1006	95	0
3	EI	993	0	1006	135	0
3	EJ	993	0	1006	158	0
3	EK	993	0	1006	104	0
3	EL	993	0	1006	128	0
3	EM	993	0	1006	95	0
3	EN	993	0	1006	98	0
3	FA	993	0	1006	105	0
3	FB	993	0	1006	101	0
3	FC	993	0	1006	81	0
3	FD	930	0	955	63	0
3	FE	993	0	1006	109	0
3	FF	993	0	1006	94	0
3	FG	993	0	1006	78	0
3	FH	993	0	1007	118	0
3	FI	993	0	1006	122	0
3	FJ	993	0	1006	132	0
3	FK	993	0	1006	128	0
3	FL	993	0	1006	88	0
3	FM	993	0	1006	110	0
3	FN	993	0	1006	116	0
3	GA	993	0	1006	117	0
3	GB	942	0	965	67	0
3	GC	993	0	1006	106	0
3	GD	993	0	1006	134	0
3	GE	993	0	1006	96	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	GF	993	0	1006	105	0
3	GG	993	0	1006	129	0
3	GH	993	0	1006	127	0
3	GI	993	0	1006	95	0
3	GJ	993	0	1006	134	0
3	GK	993	0	1006	120	0
3	GL	993	0	1006	115	0
3	GM	993	0	1006	129	0
3	GN	993	0	1006	118	0
3	HA	993	0	1006	91	0
3	HB	993	0	1006	116	0
3	HC	993	0	1006	123	0
3	HD	993	0	1006	98	0
3	HE	993	0	1006	109	0
3	HF	993	0	1006	107	0
3	HG	993	0	1006	101	0
3	HH	993	0	1006	109	0
3	HI	993	0	1006	119	0
3	HJ	993	0	1006	129	0
3	HK	993	0	1006	106	0
3	HL	993	0	1006	111	0
3	HM	993	0	1006	106	0
3	HN	993	0	1006	100	0
3	IA	993	0	1006	107	0
3	IB	993	0	1006	97	0
3	IC	993	0	1006	106	0
3	ID	993	0	1006	124	0
3	IE	993	0	1006	122	0
3	IF	993	0	1006	94	0
3	IG	993	0	1006	107	0
3	IH	993	0	1006	108	0
3	II	993	0	1006	132	0
3	IJ	993	0	1006	113	0
3	IK	993	0	1006	95	0
3	IL	993	0	1006	121	0
3	IM	993	0	1006	78	0
3	IN	993	0	1006	86	0
3	JA	993	0	1006	130	0
3	JB	993	0	1006	115	0
3	JC	993	0	1006	100	0
3	JD	993	0	1006	99	0
3	JE	993	0	1006	139	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	JF	993	0	1006	90	0
3	JG	993	0	1006	108	0
3	JH	993	0	1006	89	0
3	JI	993	0	1006	100	0
3	JJ	993	0	1006	117	0
3	JK	993	0	1006	113	0
3	JL	993	0	1006	90	0
3	JM	993	0	1006	100	0
3	JN	993	0	1006	98	0
3	KA	993	0	1006	92	0
3	KB	993	0	1006	114	0
3	KC	993	0	1006	117	0
3	KD	993	0	1006	75	0
3	KE	993	0	1007	115	0
3	KF	993	0	1006	120	0
3	KG	993	0	1006	87	0
3	KH	993	0	1006	130	0
3	KI	993	0	1006	106	0
3	KJ	993	0	1006	119	0
3	KK	993	0	1006	133	0
3	KL	993	0	1006	103	0
3	KM	993	0	1006	114	0
3	KN	993	0	1006	128	0
3	LA	993	0	1006	109	0
3	LB	993	0	1006	97	0
3	LC	993	0	1006	97	0
3	LD	993	0	1006	112	0
3	LE	993	0	1006	116	0
3	LF	993	0	1007	83	0
3	LG	993	0	1006	130	0
3	LH	993	0	1006	91	0
3	LI	993	0	1006	83	0
3	LJ	993	0	1006	93	0
3	LK	993	0	1006	107	0
3	LL	993	0	1006	112	0
3	LM	993	0	1006	102	0
3	LN	993	0	1006	115	0
3	MA	993	0	1006	143	0
3	MB	993	0	1006	116	0
3	MC	993	0	1006	117	0
3	MD	993	0	1006	110	0
3	ME	993	0	1006	103	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	MF	993	0	1005	121	0
3	MG	993	0	1006	125	0
3	MH	993	0	1006	114	0
3	MI	993	0	1005	136	0
3	MJ	993	0	1006	112	0
3	MK	993	0	1006	105	0
3	ML	993	0	1006	100	0
3	MM	993	0	1006	128	0
3	MN	993	0	1006	116	0
3	NA	993	0	1006	109	0
3	NB	993	0	1006	109	0
3	NC	993	0	1006	105	0
3	ND	993	0	1006	111	0
3	NE	993	0	1006	112	0
3	NF	993	0	1006	97	0
3	NG	993	0	1006	97	0
3	NH	993	0	1006	112	0
3	NI	993	0	1006	99	0
3	NJ	993	0	1006	136	0
All	All	271383	0	229537	16817	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 34.

The worst 5 of 16817 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)
3:BF:8:LEU:HD11	3:IN:114:ALA:HB1	1.24	1.14
3:DM:103:GLU:OE2	3:EM:13:LYS:NZ	1.82	1.13
3:BI:8:LEU:HD12	3:HM:114:ALA:HB1	1.25	1.11
3:GG:86:ARG:NH2	3:JE:99:TYR:O	1.83	1.11
3:JM:82:PRO:O	3:KA:99:TYR:OH	1.66	1.11

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	
2	M	417/420 (99%)	381 (91%)	36 (9%)	0	100	100
3	B	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	BA	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	BB	130/133 (98%)	114 (88%)	14 (11%)	2 (2%)	10	46
3	BC	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	BD	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	BE	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	BF	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	BG	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	BH	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	BI	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	BJ	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	BK	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	BL	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	BM	130/133 (98%)	108 (83%)	22 (17%)	0	100	100
3	BN	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	CA	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	CB	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	CC	130/133 (98%)	112 (86%)	17 (13%)	1 (1%)	19	60
3	CD	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	CE	130/133 (98%)	109 (84%)	21 (16%)	0	100	100
3	CF	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	CG	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	CH	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	CI	130/133 (98%)	112 (86%)	17 (13%)	1 (1%)	19	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	CJ	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	CK	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	CL	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	CM	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	CN	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	D	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	DA	130/133 (98%)	111 (85%)	18 (14%)	1 (1%)	19	60
3	DB	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	DC	130/133 (98%)	108 (83%)	22 (17%)	0	100	100
3	DD	130/133 (98%)	111 (85%)	18 (14%)	1 (1%)	19	60
3	DE	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	DF	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	DG	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	DH	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	DI	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	DJ	130/133 (98%)	108 (83%)	21 (16%)	1 (1%)	19	60
3	DK	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	DL	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	DM	130/133 (98%)	110 (85%)	19 (15%)	1 (1%)	19	60
3	DN	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	EA	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	EB	130/133 (98%)	108 (83%)	21 (16%)	1 (1%)	19	60
3	EC	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	ED	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	EE	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	EF	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	EG	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	EH	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	EI	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	EJ	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	EK	130/133 (98%)	111 (85%)	18 (14%)	1 (1%)	19	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	EL	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	EM	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	EN	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	FA	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	FB	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	FC	130/133 (98%)	115 (88%)	14 (11%)	1 (1%)	19	60
3	FD	118/133 (89%)	108 (92%)	10 (8%)	0	100	100
3	FE	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	FF	130/133 (98%)	118 (91%)	11 (8%)	1 (1%)	19	60
3	FG	130/133 (98%)	119 (92%)	11 (8%)	0	100	100
3	FH	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	FI	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	FJ	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	FK	130/133 (98%)	119 (92%)	10 (8%)	1 (1%)	19	60
3	FL	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	FM	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	FN	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	GA	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	GB	120/133 (90%)	107 (89%)	13 (11%)	0	100	100
3	GC	130/133 (98%)	108 (83%)	22 (17%)	0	100	100
3	GD	130/133 (98%)	109 (84%)	21 (16%)	0	100	100
3	GE	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	GF	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	GG	130/133 (98%)	109 (84%)	21 (16%)	0	100	100
3	GH	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	GI	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	GJ	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	GK	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	GL	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	GM	130/133 (98%)	109 (84%)	20 (15%)	1 (1%)	19	60
3	GN	130/133 (98%)	109 (84%)	21 (16%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	HA	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	HB	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	HC	130/133 (98%)	115 (88%)	14 (11%)	1 (1%)	19	60
3	HD	130/133 (98%)	119 (92%)	11 (8%)	0	100	100
3	HE	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	HF	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	HG	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	HH	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	HI	130/133 (98%)	113 (87%)	16 (12%)	1 (1%)	19	60
3	HJ	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	HK	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	HL	130/133 (98%)	111 (85%)	18 (14%)	1 (1%)	19	60
3	HM	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	HN	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	IA	130/133 (98%)	112 (86%)	16 (12%)	2 (2%)	10	46
3	IB	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	IC	130/133 (98%)	109 (84%)	21 (16%)	0	100	100
3	ID	130/133 (98%)	112 (86%)	17 (13%)	1 (1%)	19	60
3	IE	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	IF	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	IG	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	IH	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	II	130/133 (98%)	110 (85%)	20 (15%)	0	100	100
3	IJ	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	IK	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	IL	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	IM	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	IN	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	JA	130/133 (98%)	109 (84%)	21 (16%)	0	100	100
3	JB	130/133 (98%)	116 (89%)	13 (10%)	1 (1%)	19	60
3	JC	130/133 (98%)	116 (89%)	14 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	JD	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	JE	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	JF	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	JG	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	JH	130/133 (98%)	109 (84%)	20 (15%)	1 (1%)	19	60
3	JI	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	JJ	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	JK	130/133 (98%)	112 (86%)	17 (13%)	1 (1%)	19	60
3	JL	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	JM	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	JN	130/133 (98%)	113 (87%)	16 (12%)	1 (1%)	19	60
3	KA	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	KB	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	KC	130/133 (98%)	113 (87%)	16 (12%)	1 (1%)	19	60
3	KD	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	KE	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	KF	130/133 (98%)	105 (81%)	24 (18%)	1 (1%)	19	60
3	KG	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	KH	130/133 (98%)	110 (85%)	19 (15%)	1 (1%)	19	60
3	KI	130/133 (98%)	115 (88%)	14 (11%)	1 (1%)	19	60
3	KJ	130/133 (98%)	117 (90%)	12 (9%)	1 (1%)	19	60
3	KK	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	KL	130/133 (98%)	116 (89%)	13 (10%)	1 (1%)	19	60
3	KM	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	KN	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	LA	130/133 (98%)	114 (88%)	15 (12%)	1 (1%)	19	60
3	LB	130/133 (98%)	119 (92%)	11 (8%)	0	100	100
3	LC	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	LD	130/133 (98%)	115 (88%)	14 (11%)	1 (1%)	19	60
3	LE	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	LF	130/133 (98%)	117 (90%)	13 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	LG	130/133 (98%)	113 (87%)	16 (12%)	1 (1%)	19	60
3	LH	130/133 (98%)	120 (92%)	10 (8%)	0	100	100
3	LI	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	LJ	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	LK	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	LL	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	LM	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	LN	130/133 (98%)	117 (90%)	13 (10%)	0	100	100
3	MA	130/133 (98%)	115 (88%)	15 (12%)	0	100	100
3	MB	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	MC	130/133 (98%)	120 (92%)	9 (7%)	1 (1%)	19	60
3	MD	130/133 (98%)	111 (85%)	19 (15%)	0	100	100
3	ME	130/133 (98%)	112 (86%)	17 (13%)	1 (1%)	19	60
3	MF	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	MG	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	MH	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	MI	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	MJ	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	MK	130/133 (98%)	116 (89%)	13 (10%)	1 (1%)	19	60
3	ML	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	MM	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	MN	130/133 (98%)	109 (84%)	20 (15%)	1 (1%)	19	60
3	NA	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	NB	130/133 (98%)	109 (84%)	21 (16%)	0	100	100
3	NC	130/133 (98%)	112 (86%)	17 (13%)	1 (1%)	19	60
3	ND	130/133 (98%)	114 (88%)	16 (12%)	0	100	100
3	NE	130/133 (98%)	112 (86%)	18 (14%)	0	100	100
3	NF	130/133 (98%)	113 (87%)	17 (13%)	0	100	100
3	NG	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
3	NH	130/133 (98%)	116 (89%)	14 (11%)	0	100	100
3	NI	130/133 (98%)	118 (91%)	11 (8%)	1 (1%)	19	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	NJ	130/133 (98%)	118 (91%)	12 (9%)	0	100	100
All	All	23795/24360 (98%)	20848 (88%)	2902 (12%)	45 (0%)	50	81

5 of 45 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	BB	80	CYS
3	BH	80	CYS
3	CI	80	CYS
3	DE	61	ASN
3	FK	80	CYS

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	M	365/366 (100%)	364 (100%)	1 (0%)	92	95
3	B	110/111 (99%)	110 (100%)	0	100	100
3	BA	110/111 (99%)	110 (100%)	0	100	100
3	BB	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	BC	110/111 (99%)	110 (100%)	0	100	100
3	BD	110/111 (99%)	110 (100%)	0	100	100
3	BE	110/111 (99%)	110 (100%)	0	100	100
3	BF	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	BG	110/111 (99%)	110 (100%)	0	100	100
3	BH	110/111 (99%)	110 (100%)	0	100	100
3	BI	110/111 (99%)	110 (100%)	0	100	100
3	BJ	110/111 (99%)	110 (100%)	0	100	100
3	BK	110/111 (99%)	110 (100%)	0	100	100
3	BL	110/111 (99%)	110 (100%)	0	100	100
3	BM	110/111 (99%)	110 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	BN	110/111 (99%)	110 (100%)	0	100	100
3	CA	110/111 (99%)	110 (100%)	0	100	100
3	CB	110/111 (99%)	110 (100%)	0	100	100
3	CC	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	CD	110/111 (99%)	110 (100%)	0	100	100
3	CE	110/111 (99%)	110 (100%)	0	100	100
3	CF	110/111 (99%)	110 (100%)	0	100	100
3	CG	110/111 (99%)	110 (100%)	0	100	100
3	CH	110/111 (99%)	110 (100%)	0	100	100
3	CI	110/111 (99%)	110 (100%)	0	100	100
3	CJ	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	CK	110/111 (99%)	110 (100%)	0	100	100
3	CL	110/111 (99%)	110 (100%)	0	100	100
3	CM	110/111 (99%)	110 (100%)	0	100	100
3	CN	110/111 (99%)	110 (100%)	0	100	100
3	D	110/111 (99%)	110 (100%)	0	100	100
3	DA	110/111 (99%)	110 (100%)	0	100	100
3	DB	110/111 (99%)	110 (100%)	0	100	100
3	DC	110/111 (99%)	110 (100%)	0	100	100
3	DD	110/111 (99%)	110 (100%)	0	100	100
3	DE	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	DF	110/111 (99%)	110 (100%)	0	100	100
3	DG	110/111 (99%)	110 (100%)	0	100	100
3	DH	110/111 (99%)	110 (100%)	0	100	100
3	DI	110/111 (99%)	110 (100%)	0	100	100
3	DJ	110/111 (99%)	110 (100%)	0	100	100
3	DK	110/111 (99%)	110 (100%)	0	100	100
3	DL	110/111 (99%)	110 (100%)	0	100	100
3	DM	110/111 (99%)	110 (100%)	0	100	100
3	DN	110/111 (99%)	110 (100%)	0	100	100
3	EA	110/111 (99%)	110 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	EB	110/111 (99%)	110 (100%)	0	100	100
3	EC	110/111 (99%)	110 (100%)	0	100	100
3	ED	110/111 (99%)	110 (100%)	0	100	100
3	EE	110/111 (99%)	110 (100%)	0	100	100
3	EF	110/111 (99%)	110 (100%)	0	100	100
3	EG	110/111 (99%)	110 (100%)	0	100	100
3	EH	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	EI	110/111 (99%)	110 (100%)	0	100	100
3	EJ	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	EK	110/111 (99%)	110 (100%)	0	100	100
3	EL	110/111 (99%)	110 (100%)	0	100	100
3	EM	110/111 (99%)	110 (100%)	0	100	100
3	EN	110/111 (99%)	110 (100%)	0	100	100
3	FA	110/111 (99%)	110 (100%)	0	100	100
3	FB	110/111 (99%)	110 (100%)	0	100	100
3	FC	110/111 (99%)	110 (100%)	0	100	100
3	FD	102/111 (92%)	102 (100%)	0	100	100
3	FE	110/111 (99%)	110 (100%)	0	100	100
3	FF	110/111 (99%)	110 (100%)	0	100	100
3	FG	110/111 (99%)	110 (100%)	0	100	100
3	FH	110/111 (99%)	110 (100%)	0	100	100
3	FI	110/111 (99%)	110 (100%)	0	100	100
3	FJ	110/111 (99%)	110 (100%)	0	100	100
3	FK	110/111 (99%)	110 (100%)	0	100	100
3	FL	110/111 (99%)	110 (100%)	0	100	100
3	FM	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	FN	110/111 (99%)	110 (100%)	0	100	100
3	GA	110/111 (99%)	110 (100%)	0	100	100
3	GB	104/111 (94%)	104 (100%)	0	100	100
3	GC	110/111 (99%)	110 (100%)	0	100	100
3	GD	110/111 (99%)	110 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	GE	110/111 (99%)	110 (100%)	0	100	100
3	GF	110/111 (99%)	110 (100%)	0	100	100
3	GG	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	GH	110/111 (99%)	110 (100%)	0	100	100
3	GI	110/111 (99%)	110 (100%)	0	100	100
3	GJ	110/111 (99%)	110 (100%)	0	100	100
3	GK	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	GL	110/111 (99%)	110 (100%)	0	100	100
3	GM	110/111 (99%)	110 (100%)	0	100	100
3	GN	110/111 (99%)	110 (100%)	0	100	100
3	HA	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	HB	110/111 (99%)	110 (100%)	0	100	100
3	HC	110/111 (99%)	110 (100%)	0	100	100
3	HD	110/111 (99%)	110 (100%)	0	100	100
3	HE	110/111 (99%)	110 (100%)	0	100	100
3	HF	110/111 (99%)	110 (100%)	0	100	100
3	HG	110/111 (99%)	110 (100%)	0	100	100
3	HH	110/111 (99%)	110 (100%)	0	100	100
3	HI	110/111 (99%)	110 (100%)	0	100	100
3	HJ	110/111 (99%)	110 (100%)	0	100	100
3	HK	110/111 (99%)	110 (100%)	0	100	100
3	HL	110/111 (99%)	110 (100%)	0	100	100
3	HM	110/111 (99%)	110 (100%)	0	100	100
3	HN	110/111 (99%)	110 (100%)	0	100	100
3	IA	110/111 (99%)	110 (100%)	0	100	100
3	IB	110/111 (99%)	110 (100%)	0	100	100
3	IC	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	ID	110/111 (99%)	110 (100%)	0	100	100
3	IE	110/111 (99%)	110 (100%)	0	100	100
3	IF	110/111 (99%)	110 (100%)	0	100	100
3	IG	110/111 (99%)	110 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	IH	110/111 (99%)	110 (100%)	0	100	100
3	II	110/111 (99%)	110 (100%)	0	100	100
3	IJ	110/111 (99%)	110 (100%)	0	100	100
3	IK	110/111 (99%)	110 (100%)	0	100	100
3	IL	110/111 (99%)	110 (100%)	0	100	100
3	IM	110/111 (99%)	110 (100%)	0	100	100
3	IN	110/111 (99%)	110 (100%)	0	100	100
3	JA	110/111 (99%)	110 (100%)	0	100	100
3	JB	110/111 (99%)	110 (100%)	0	100	100
3	JC	110/111 (99%)	110 (100%)	0	100	100
3	JD	110/111 (99%)	110 (100%)	0	100	100
3	JE	110/111 (99%)	110 (100%)	0	100	100
3	JF	110/111 (99%)	110 (100%)	0	100	100
3	JG	110/111 (99%)	110 (100%)	0	100	100
3	JH	110/111 (99%)	110 (100%)	0	100	100
3	JI	110/111 (99%)	110 (100%)	0	100	100
3	JJ	110/111 (99%)	110 (100%)	0	100	100
3	JK	110/111 (99%)	110 (100%)	0	100	100
3	JL	110/111 (99%)	110 (100%)	0	100	100
3	JM	110/111 (99%)	110 (100%)	0	100	100
3	JN	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	KA	110/111 (99%)	110 (100%)	0	100	100
3	KB	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	KC	110/111 (99%)	110 (100%)	0	100	100
3	KD	110/111 (99%)	110 (100%)	0	100	100
3	KE	110/111 (99%)	110 (100%)	0	100	100
3	KF	110/111 (99%)	110 (100%)	0	100	100
3	KG	110/111 (99%)	110 (100%)	0	100	100
3	KH	110/111 (99%)	110 (100%)	0	100	100
3	KI	110/111 (99%)	110 (100%)	0	100	100
3	KJ	110/111 (99%)	110 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	KK	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	KL	110/111 (99%)	110 (100%)	0	100	100
3	KM	110/111 (99%)	110 (100%)	0	100	100
3	KN	110/111 (99%)	110 (100%)	0	100	100
3	LA	110/111 (99%)	110 (100%)	0	100	100
3	LB	110/111 (99%)	110 (100%)	0	100	100
3	LC	110/111 (99%)	110 (100%)	0	100	100
3	LD	110/111 (99%)	110 (100%)	0	100	100
3	LE	110/111 (99%)	110 (100%)	0	100	100
3	LF	110/111 (99%)	110 (100%)	0	100	100
3	LG	110/111 (99%)	110 (100%)	0	100	100
3	LH	110/111 (99%)	110 (100%)	0	100	100
3	LI	110/111 (99%)	110 (100%)	0	100	100
3	LJ	110/111 (99%)	110 (100%)	0	100	100
3	LK	110/111 (99%)	110 (100%)	0	100	100
3	LL	110/111 (99%)	110 (100%)	0	100	100
3	LM	110/111 (99%)	110 (100%)	0	100	100
3	LN	110/111 (99%)	110 (100%)	0	100	100
3	MA	110/111 (99%)	110 (100%)	0	100	100
3	MB	110/111 (99%)	110 (100%)	0	100	100
3	MC	110/111 (99%)	110 (100%)	0	100	100
3	MD	110/111 (99%)	110 (100%)	0	100	100
3	ME	110/111 (99%)	110 (100%)	0	100	100
3	MF	110/111 (99%)	110 (100%)	0	100	100
3	MG	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	MH	110/111 (99%)	110 (100%)	0	100	100
3	MI	110/111 (99%)	110 (100%)	0	100	100
3	MJ	110/111 (99%)	108 (98%)	2 (2%)	59	77
3	MK	110/111 (99%)	110 (100%)	0	100	100
3	ML	110/111 (99%)	110 (100%)	0	100	100
3	MM	110/111 (99%)	110 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	MN	110/111 (99%)	110 (100%)	0	100	100
3	NA	110/111 (99%)	110 (100%)	0	100	100
3	NB	110/111 (99%)	110 (100%)	0	100	100
3	NC	110/111 (99%)	110 (100%)	0	100	100
3	ND	110/111 (99%)	110 (100%)	0	100	100
3	NE	110/111 (99%)	110 (100%)	0	100	100
3	NF	110/111 (99%)	109 (99%)	1 (1%)	78	87
3	NG	110/111 (99%)	110 (100%)	0	100	100
3	NH	110/111 (99%)	110 (100%)	0	100	100
3	NI	110/111 (99%)	110 (100%)	0	100	100
3	NJ	110/111 (99%)	110 (100%)	0	100	100
All	All	20151/20346 (99%)	20131 (100%)	20 (0%)	93	96

5 of 20 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	KB	57	ARG
3	MJ	47	ARG
3	NF	109	ARG
3	MJ	60	LYS
3	EH	47	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 119 such sidechains are listed below:

Mol	Chain	Res	Type
3	HE	58	ASN
3	NA	30	ASN
3	IJ	69	GLN
3	MN	69	GLN
3	NJ	70	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	4216/4217 (99%)	868 (20%)	83 (1%)

5 of 868 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	4	G
1	A	10	C
1	A	11	U
1	A	12	U
1	A	29	A

5 of 83 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	3011	U
1	A	3798	A
1	A	3169	U
1	A	3555	U
1	A	3934	G

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
3	MF	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	MF	21:LEU	C	22:ASN	N	1.17

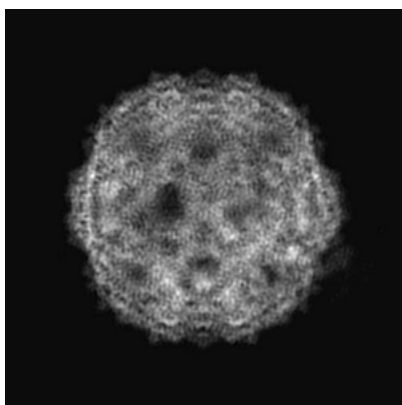
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23336. These allow visual inspection of the internal detail of the map and identification of artifacts.

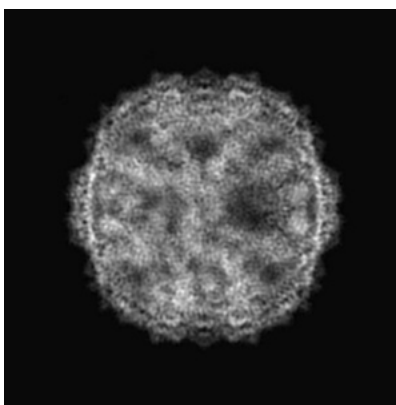
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

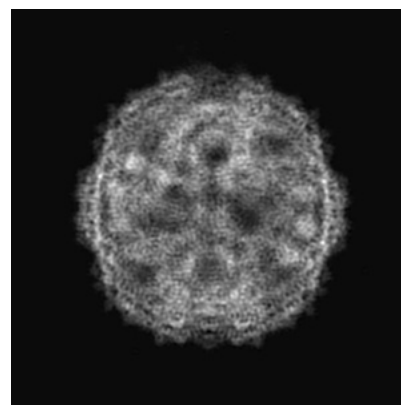
6.1.1 Primary map



X



Y

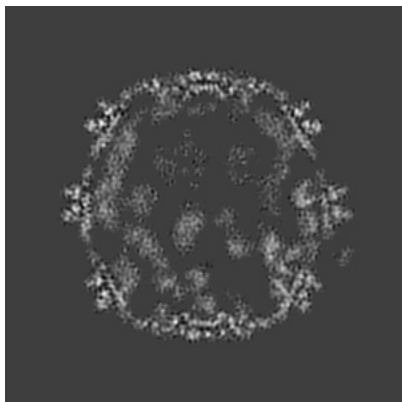


Z

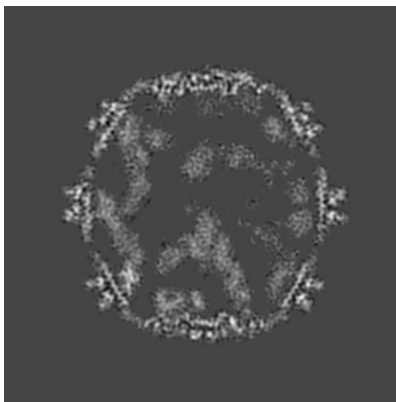
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

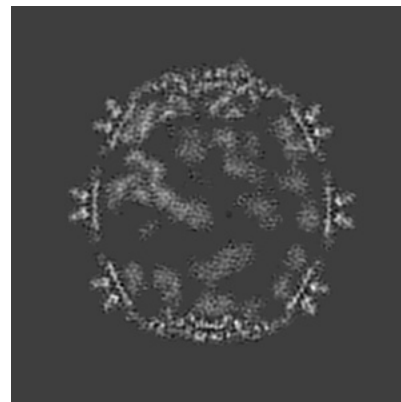
6.2.1 Primary map



X Index: 160



Y Index: 160

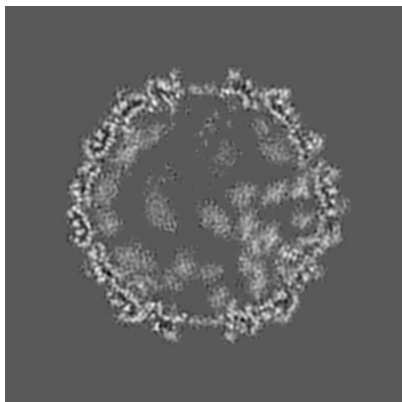


Z Index: 160

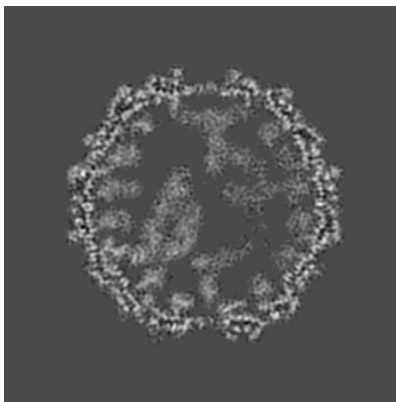
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

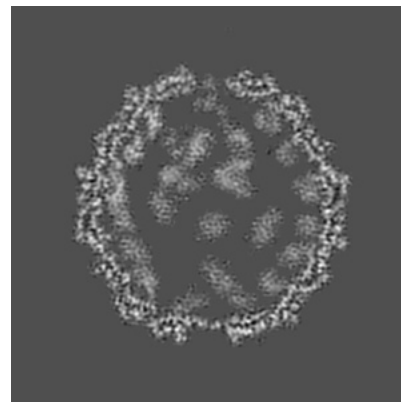
6.3.1 Primary map



X Index: 187



Y Index: 181

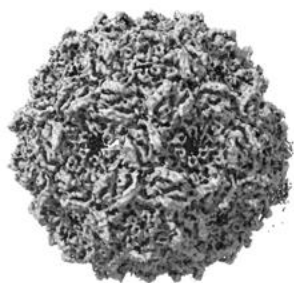


Z Index: 138

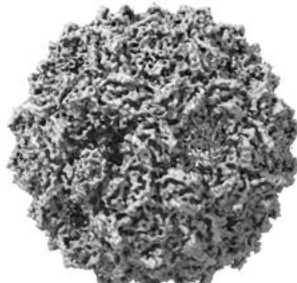
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

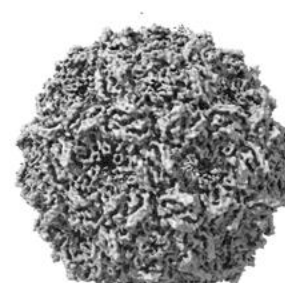
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.018. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

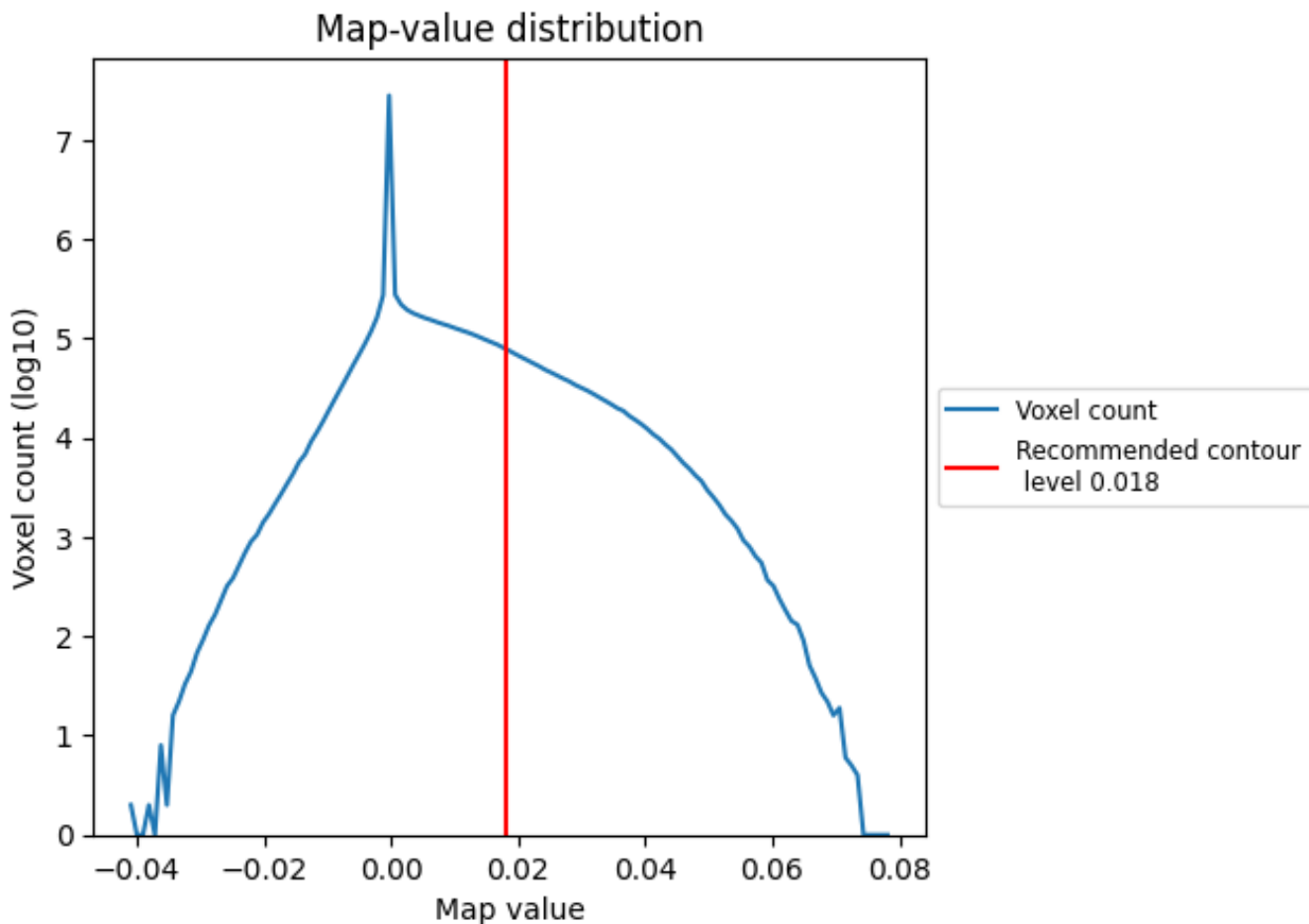
6.5 Mask visualisation

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

7 Map analysis [i](#)

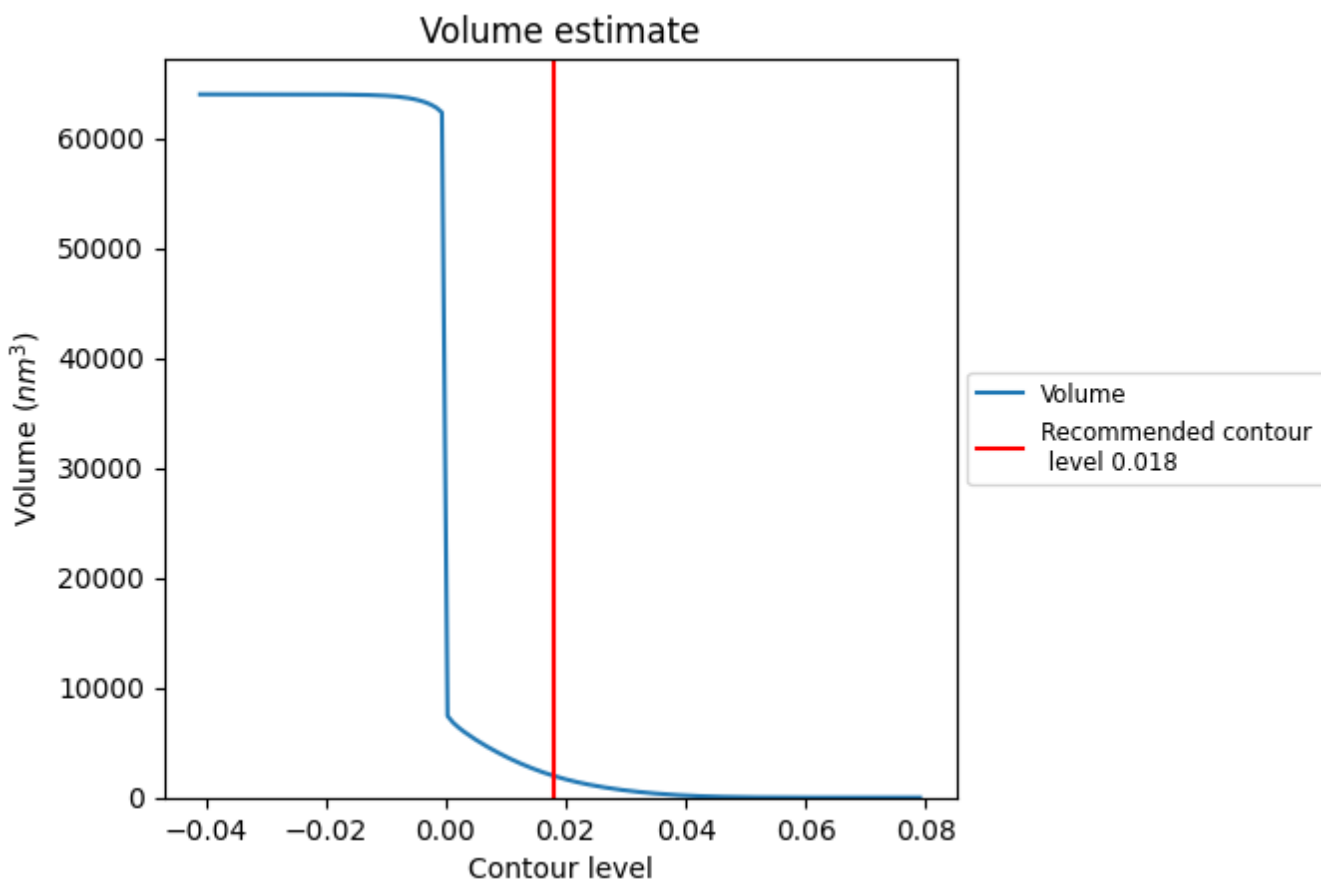
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

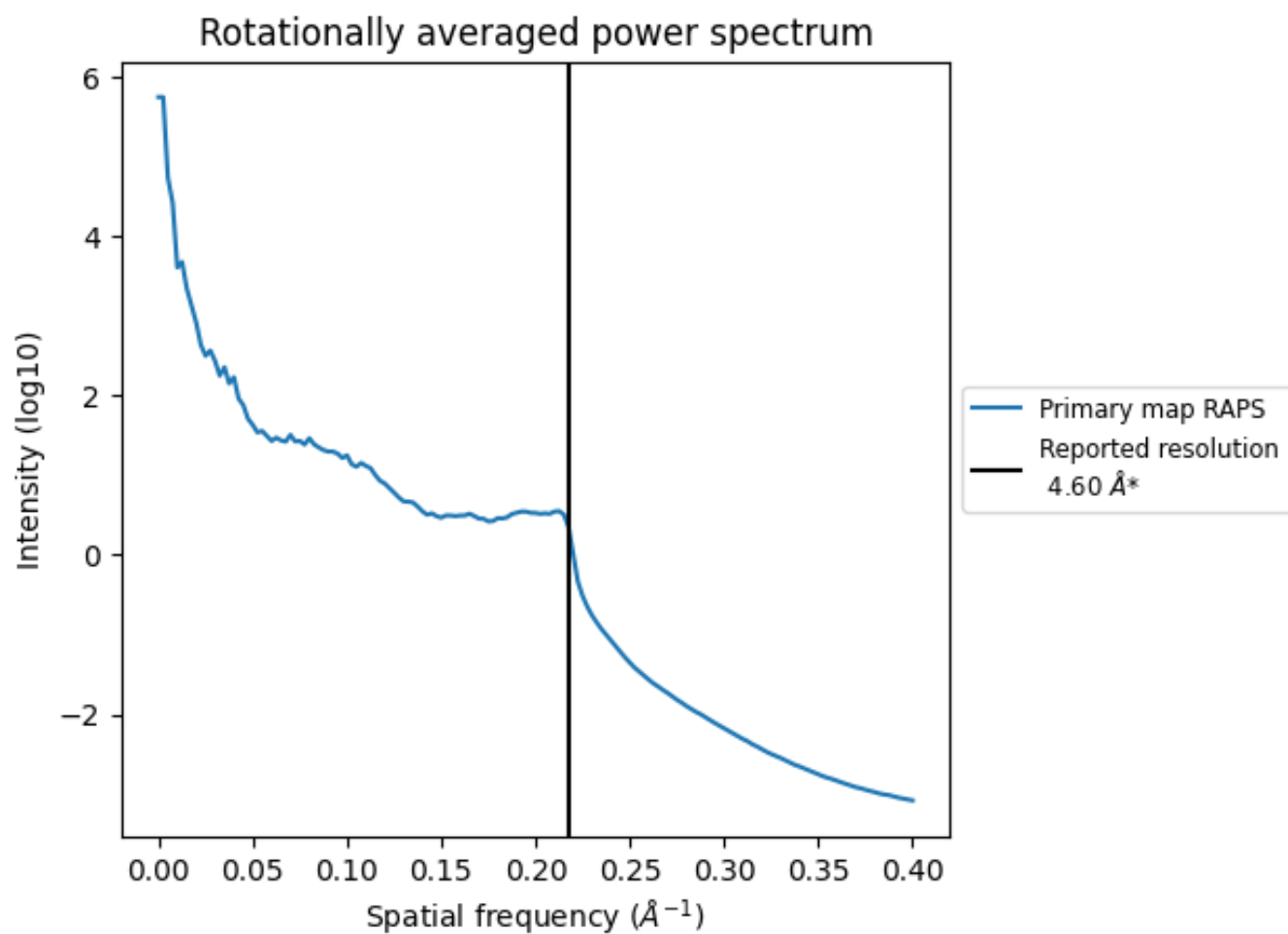
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1981 nm³; this corresponds to an approximate mass of 1790 kDa.

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

7.3 Rotationally averaged power spectrum [i](#)

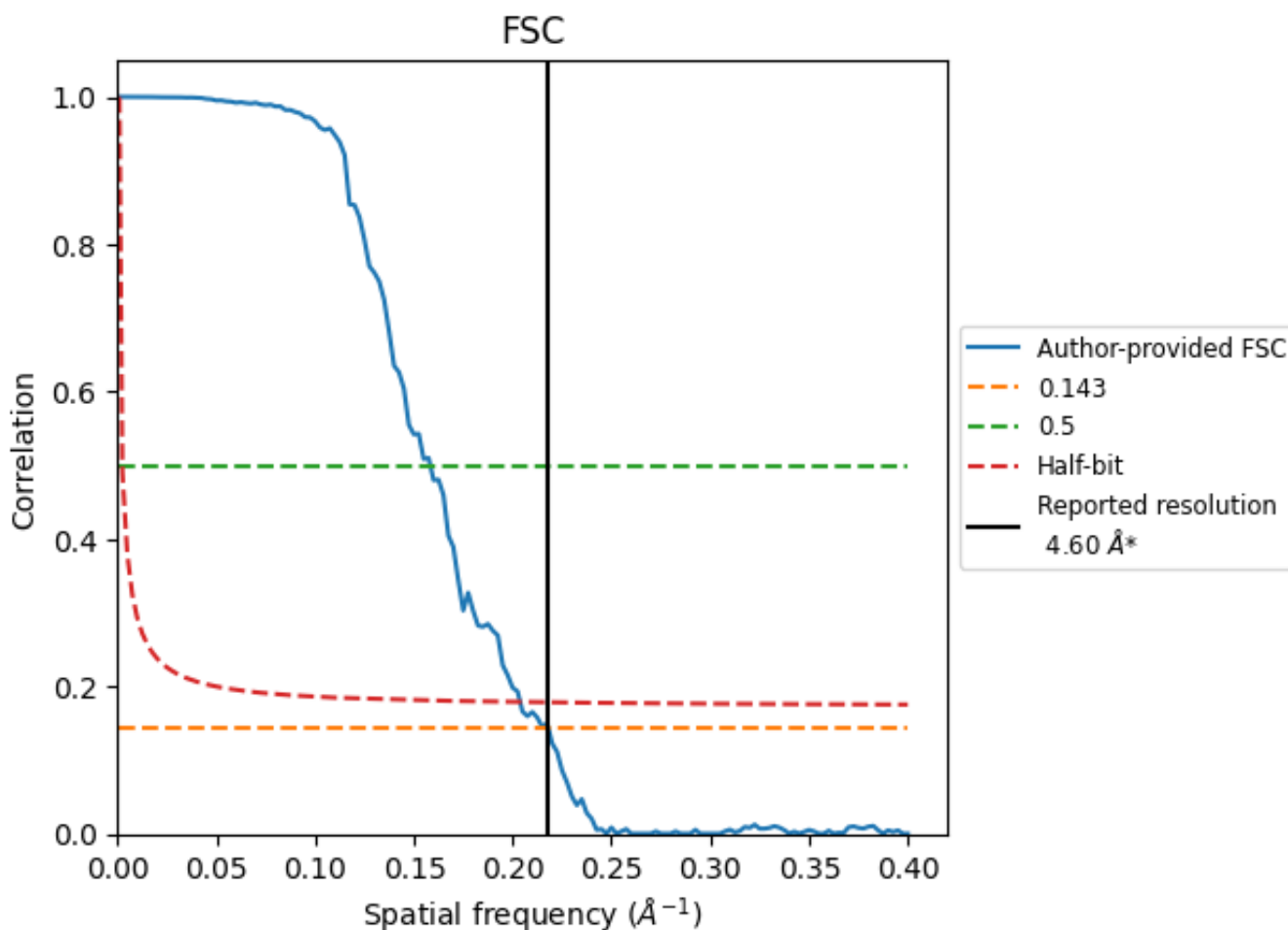


*Reported resolution corresponds to spatial frequency of 0.217\AA^{-1}

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.217 Å⁻¹

8.2 Resolution estimates [i](#)

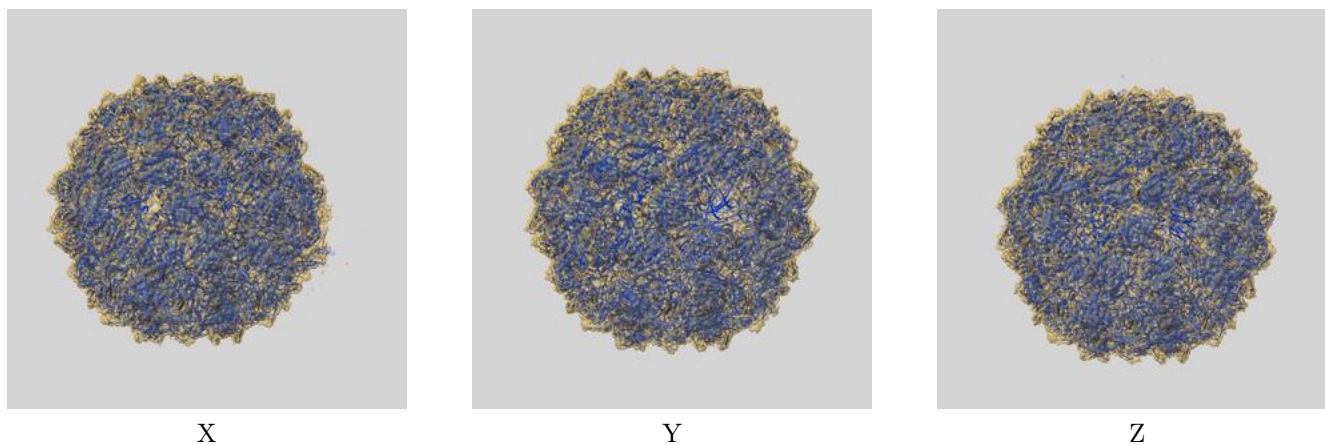
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.60	-	-
Author-provided FSC curve	4.59	6.32	4.91
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

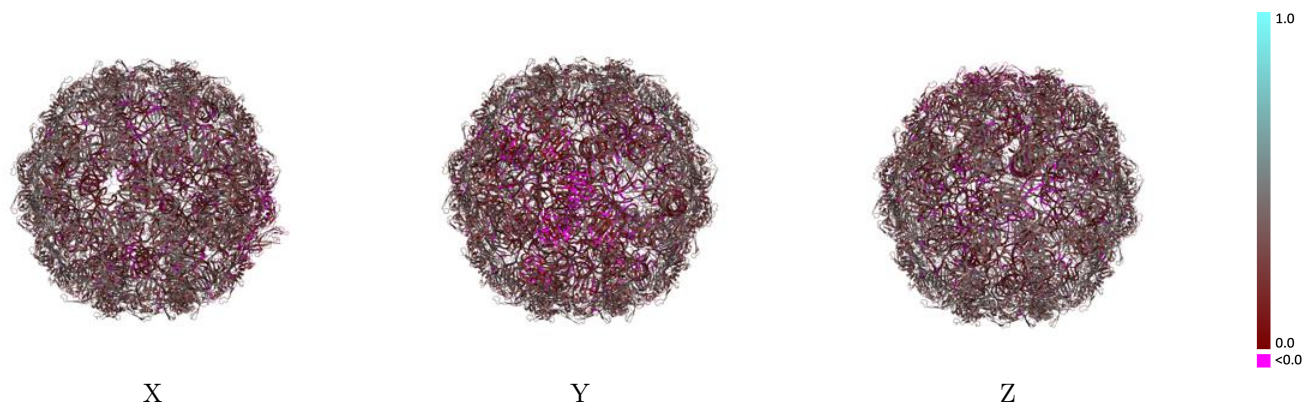
This section contains information regarding the fit between EMDB map EMD-23336 and PDB model 7LHD. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



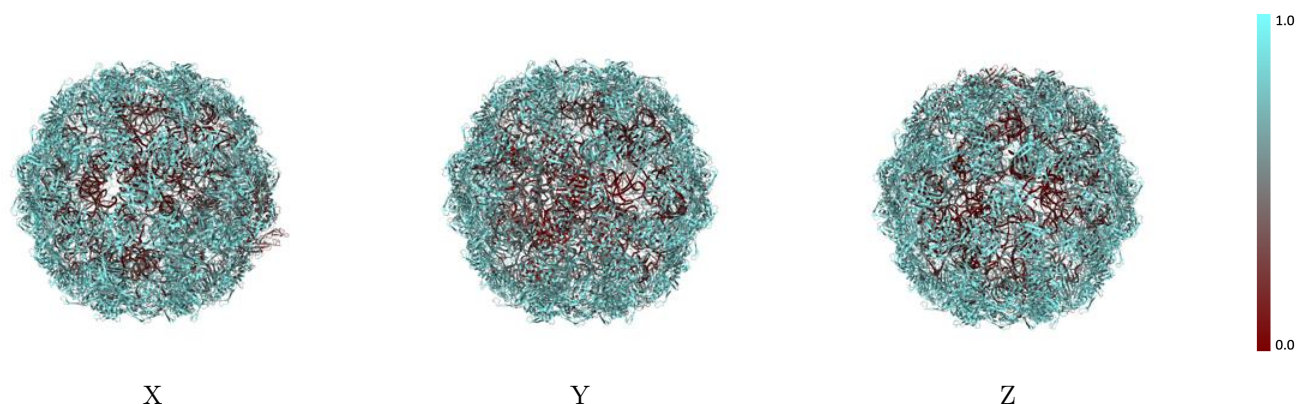
The images above show the 3D surface view of the map at the recommended contour level 0.018 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



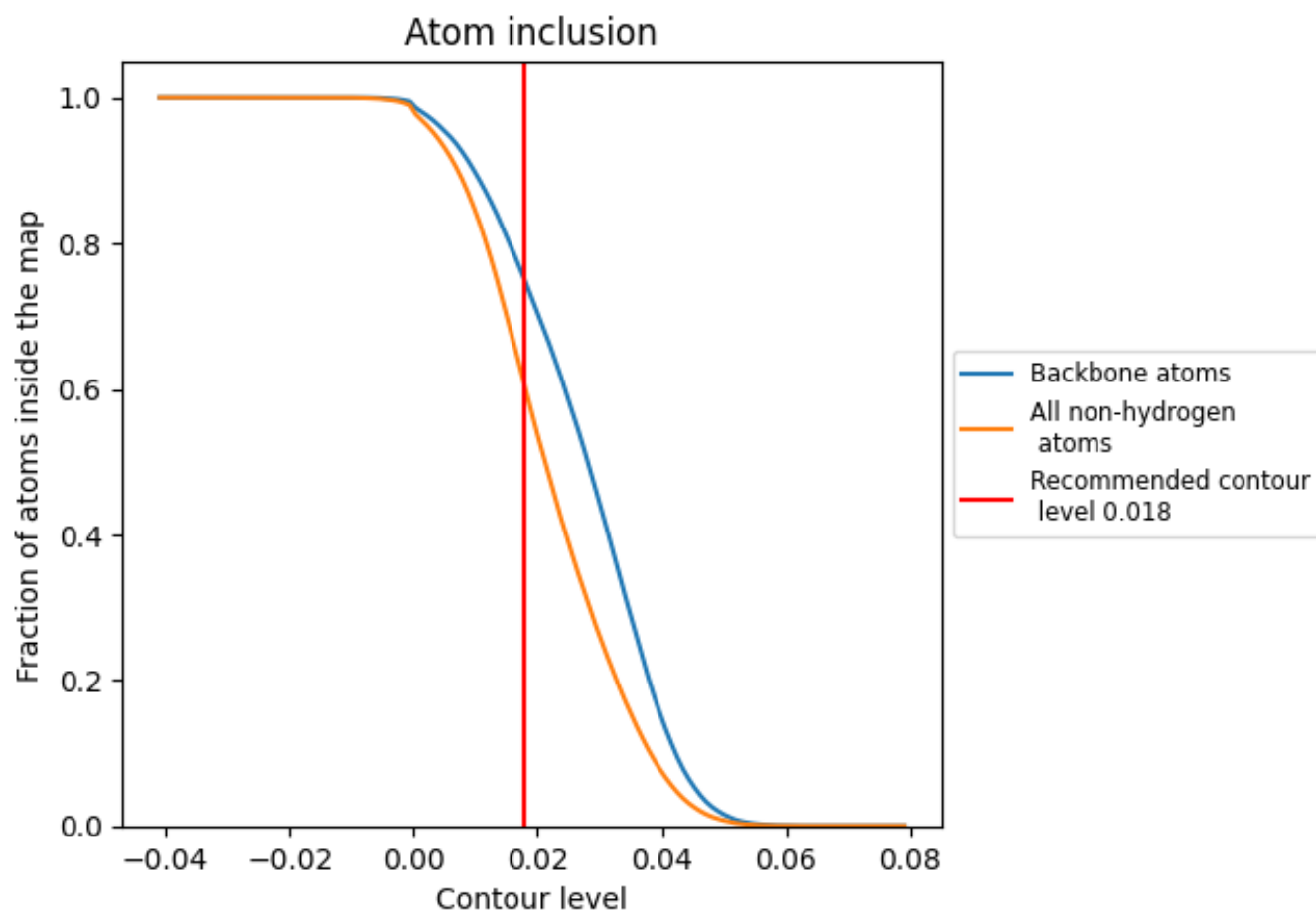
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.018).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 75% of all backbone atoms, 60% 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 (0.018) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6015	 0.2620
A	 0.3702	 0.1470
B	 0.1128	 0.0760
BA	 0.7344	 0.3420
BB	 0.7446	 0.3450
BC	 0.7549	 0.3500
BD	 0.7487	 0.3420
BE	 0.7713	 0.3540
BF	 0.7713	 0.3570
BG	 0.7662	 0.3570
BH	 0.7744	 0.3600
BI	 0.7241	 0.3490
BJ	 0.7569	 0.3310
BK	 0.7846	 0.3550
BL	 0.7415	 0.3510
BM	 0.7703	 0.3560
BN	 0.7815	 0.3680
CA	 0.7385	 0.3440
CB	 0.7672	 0.3370
CC	 0.7590	 0.3560
CD	 0.7621	 0.3600
CE	 0.7436	 0.3340
CF	 0.7651	 0.3520
CG	 0.7600	 0.3590
CH	 0.7744	 0.3490
CI	 0.8051	 0.3700
CJ	 0.7672	 0.3440
CK	 0.7590	 0.3430
CL	 0.7826	 0.3660
CM	 0.7323	 0.3440
CN	 0.7528	 0.3430
D	 0.1118	 0.0970
DA	 0.7518	 0.3480
DB	 0.7436	 0.3440
DC	 0.7487	 0.3360























































































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Chain	Atom inclusion	Q-score
DD	 0.7682	 0.3510
DE	 0.7395	 0.3280
DF	 0.7467	 0.3340
DG	 0.7600	 0.3560
DH	 0.7426	 0.3470
DI	 0.7631	 0.3480
DJ	 0.7836	 0.3420
DK	 0.7405	 0.3460
DL	 0.7549	 0.3310
DM	 0.7467	 0.3260
DN	 0.7097	 0.3230
EA	 0.7313	 0.3150
EB	 0.7723	 0.3330
EC	 0.7067	 0.3090
ED	 0.7015	 0.2550
EE	 0.6728	 0.2250
EF	 0.7087	 0.2960
EG	 0.5118	 0.1790
EH	 0.7200	 0.2670
EI	 0.7272	 0.3150
EJ	 0.7374	 0.3390
EK	 0.7395	 0.3390
EL	 0.7395	 0.3410
EM	 0.7231	 0.3020
EN	 0.7467	 0.3270
FA	 0.7210	 0.3140
FB	 0.5692	 0.1640
FC	 0.4308	 0.0920
FD	 0.4167	 0.1180
FE	 0.7026	 0.2800
FF	 0.5590	 0.1920
FG	 0.4913	 0.1460
FH	 0.6892	 0.2670
FI	 0.6708	 0.2610
FJ	 0.7538	 0.3320
FK	 0.7426	 0.3040
FL	 0.7251	 0.3090
FM	 0.7303	 0.3230
FN	 0.7600	 0.3400
GA	 0.7015	 0.2980
GB	 0.3247	 0.0850
GC	 0.5528	 0.1590





















































































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Chain	Atom inclusion	Q-score
GD	 0.6892	 0.2740
GE	 0.7354	 0.3300
GF	 0.7303	 0.3280
GG	 0.7559	 0.3300
GH	 0.7754	 0.3510
GI	 0.7456	 0.3440
GJ	 0.7569	 0.3360
GK	 0.7651	 0.3510
GL	 0.7415	 0.3450
GM	 0.7579	 0.3510
GN	 0.7815	 0.3530
HA	 0.7354	 0.3470
HB	 0.7128	 0.3190
HC	 0.7631	 0.3510
HD	 0.7282	 0.3190
HE	 0.7436	 0.3160
HF	 0.7549	 0.3430
HG	 0.7374	 0.3270
HH	 0.7641	 0.3440
HI	 0.7887	 0.3660
HJ	 0.7703	 0.3520
HK	 0.7559	 0.3490
HL	 0.7559	 0.3640
HM	 0.7682	 0.3660
HN	 0.7621	 0.3420
IA	 0.7856	 0.3720
IB	 0.7733	 0.3590
IC	 0.7631	 0.3540
ID	 0.7867	 0.3650
IE	 0.7590	 0.3570
IF	 0.7426	 0.3530
IG	 0.7764	 0.3670
IH	 0.7508	 0.3370
II	 0.7662	 0.3340
IJ	 0.7897	 0.3560
IK	 0.7641	 0.3440
IL	 0.7744	 0.3490
IM	 0.7774	 0.3720
IN	 0.7446	 0.3550
JA	 0.7579	 0.3350
JB	 0.7621	 0.3450
JC	 0.7415	 0.3470













































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Chain	Atom inclusion	Q-score
JD	 0.7497	 0.3440
JE	 0.7631	 0.3490
JF	 0.7374	 0.3380
JG	 0.7590	 0.3450
JH	 0.7528	 0.3390
JI	 0.7323	 0.3430
JJ	 0.7579	 0.3500
JK	 0.7826	 0.3590
JL	 0.7692	 0.3490
JM	 0.7610	 0.3490
JN	 0.7969	 0.3720
KA	 0.7436	 0.3510
KB	 0.7385	 0.3380
KC	 0.7559	 0.3390
KD	 0.7097	 0.3270
KE	 0.6041	 0.2110
KF	 0.7272	 0.2890
KG	 0.5713	 0.1930
KH	 0.7118	 0.3190
KI	 0.7323	 0.3110
KJ	 0.7221	 0.3270
KK	 0.7395	 0.3000
KL	 0.7528	 0.3400
KM	 0.7262	 0.3380
KN	 0.7610	 0.3540
LA	 0.7610	 0.3600
LB	 0.7456	 0.3410
LC	 0.7569	 0.3340
LD	 0.7590	 0.3510
LE	 0.7364	 0.3230
LF	 0.4677	 0.1430
LG	 0.6728	 0.2680
LH	 0.4195	 0.1080
LI	 0.6810	 0.2410
LJ	 0.5815	 0.1930
LK	 0.6687	 0.2710
LL	 0.7364	 0.3190
LM	 0.7508	 0.3360
LN	 0.7200	 0.2920
M	 0.4281	 0.2330
MA	 0.7559	 0.3340
MB	 0.7610	 0.3310

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Chain	Atom inclusion	Q-score
MC	 0.7282	 0.3280
MD	 0.7374	 0.3370
ME	 0.7579	 0.3600
MF	 0.7046	 0.3290
MG	 0.6913	 0.2760
MH	 0.7333	 0.3230
MI	 0.6985	 0.2980
MJ	 0.7579	 0.3150
MK	 0.7508	 0.3340
ML	 0.7415	 0.3370
MM	 0.7764	 0.3340
MN	 0.7549	 0.3440
NA	 0.7610	 0.3570
NB	 0.7497	 0.3520
NC	 0.7785	 0.3620
ND	 0.7354	 0.3370
NE	 0.7836	 0.3550
NF	 0.7703	 0.3590
NG	 0.7559	 0.3290
NH	 0.7446	 0.3390
NI	 0.7538	 0.3510
NJ	 0.7446	 0.3390