Full wwPDB EM Validation Report ⓘ

Jun 11, 2024 – 08:02 PM JST

PDB ID	:	7VOP
EMDB ID	:	EMD-32056
Title	:	Cryo-EM structure of Xenopus laevis nuclear pore complex cytoplasmic ring subunit
Authors	:	Tai, L.; Zhu, Y.; Sun, F.
Deposited on	:	2021-10-14
Resolution	:	8.70 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/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:

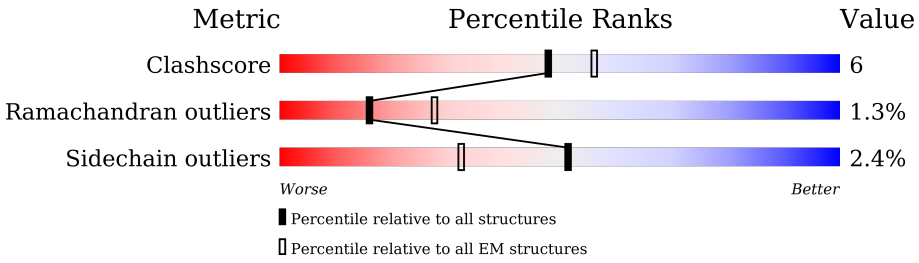
EMDB validation analysis	:	0.0.1.dev92
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

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 8.70 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

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

Mol	Chain	Length	Quality of chain
1	A	653	10% 83% 17% ·
1	J	653	19% 79% 19% ·
2	B	375	21% 72% 27% ·
2	K	375	29% 73% 25% ·
3	C	360	6% 74% 18% · 8%
3	L	360	11% 75% 14% · 10%
4	D	1414	28% 80% 18% ··
4	M	1414	53% 79% 19% ··

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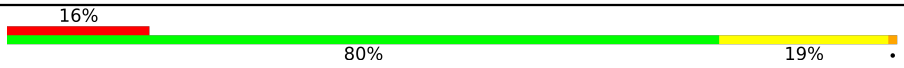
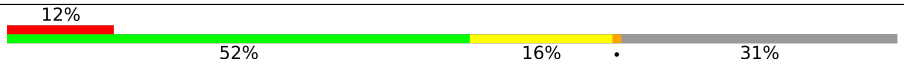
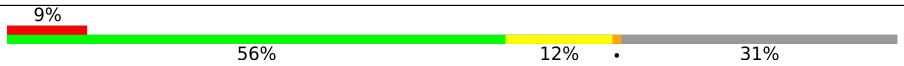
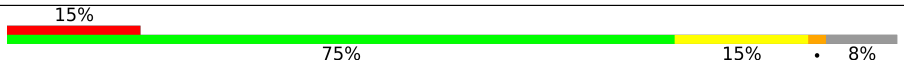
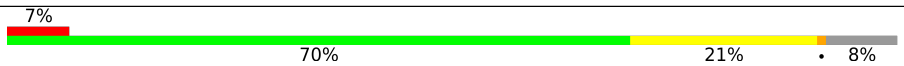
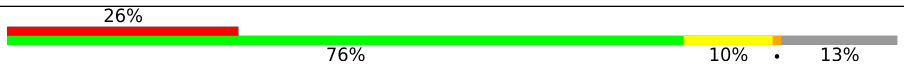
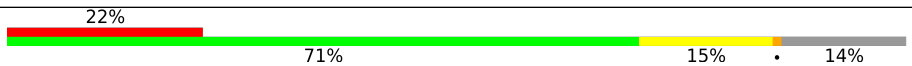
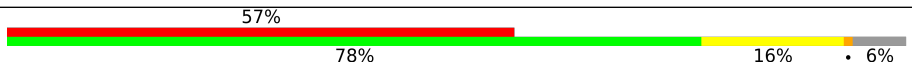
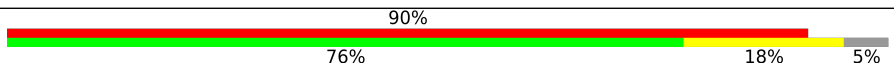
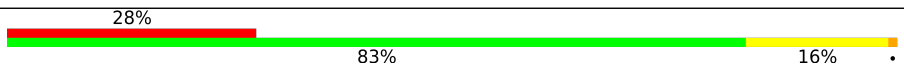
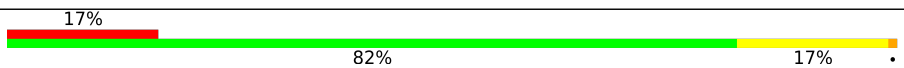
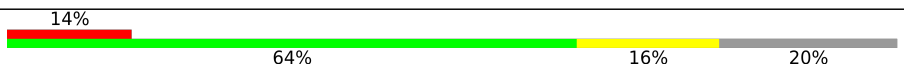
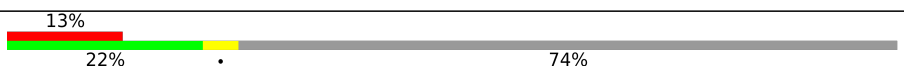
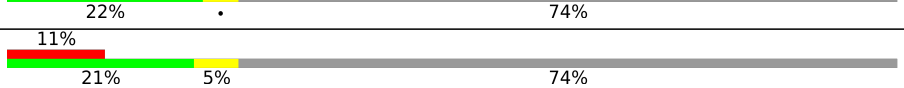
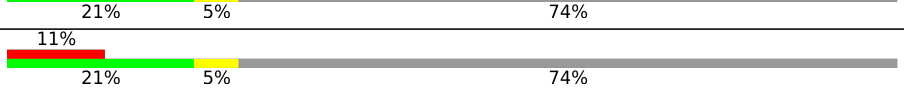
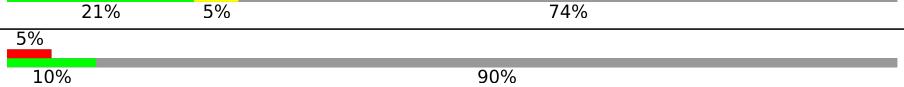
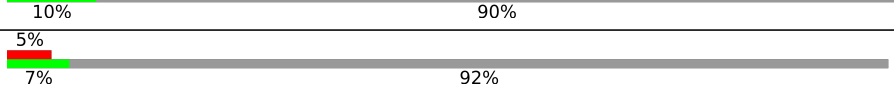
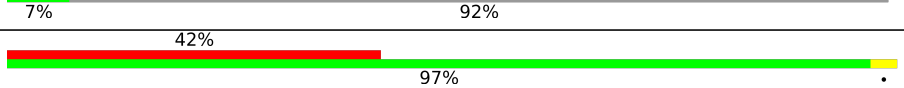
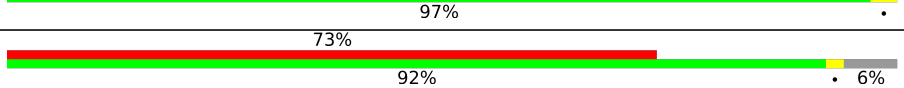
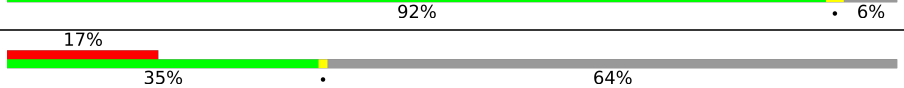
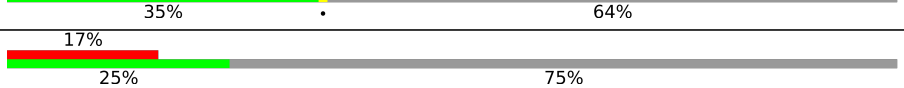
Mol	Chain	Length	Quality of chain
5	E	326	
5	N	326	
6	F	924	
6	O	924	
7	G	320	
7	P	320	
8	H	916	
8	Q	916	
9	I	1140	
9	R	1140	
10	S	2011	
10	T	2011	
11	U	820	
12	V	2931	
12	W	2931	
12	X	2931	
12	Y	2931	
12	Z	2931	
13	a	2037	
13	e	2037	
14	b	728	
14	d	728	
15	c	547	
15	f	547	

2 Entry composition (i)

There are 15 unique types of molecules in this entry. The entry contains 178773 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Nuclear pore complex protein Nup85.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	653	Total	C	N	O	S	0	0
			5268	3341	904	984	39		
1	J	653	Total	C	N	O	S	0	0
			5268	3341	904	984	39		

- Molecule 2 is a protein called MGC154553 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	375	Total	C	N	O	S	0	0
			2927	1813	524	571	19		
2	K	375	Total	C	N	O	S	0	0
			2927	1813	524	571	19		

- Molecule 3 is a protein called Nucleoporin SEH1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	333	Total	C	N	O	S	0	0
			2607	1632	466	491	18		
3	L	325	Total	C	N	O	S	0	0
			2546	1592	455	482	17		

- Molecule 4 is a protein called Nucleoporin 160kDa.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	1394	Total	C	N	O	S	0	0
			11118	7052	1912	2086	68		
4	M	1394	Total	C	N	O	S	0	0
			11118	7052	1912	2086	68		

- Molecule 5 is a protein called MGC83926 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	326	Total	C	N	O	S	0	0
			2573	1640	443	473	17		
5	N	326	Total	C	N	O	S	0	0
			2573	1640	443	473	17		

- Molecule 6 is a protein called Nuclear pore complex protein Nup96.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	638	Total	C	N	O	S	0	0
			5177	3287	912	949	29		
6	O	637	Total	C	N	O	S	0	0
			5168	3282	911	946	29		

- Molecule 7 is a protein called GATOR complex protein SEC13.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	294	Total	C	N	O	S	0	0
			2300	1454	394	440	12		
7	P	294	Total	C	N	O	S	0	0
			2300	1454	394	440	12		

- Molecule 8 is a protein called Nuclear pore complex protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	798	Total	C	N	O	S	0	0
			6494	4126	1096	1240	32		
8	Q	790	Total	C	N	O	S	0	0
			6430	4085	1087	1226	32		

- Molecule 9 is a protein called outer Nup133.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	1076	Total	C	N	O	S	0	0
			8482	5362	1409	1661	50		
9	R	1082	Total	C	N	O	S	0	0
			8536	5397	1420	1669	50		

- Molecule 10 is a protein called MGC83295 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	S	2011	Total	C	N	O	S	0	0
			15974	10112	2785	2978	99		

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Mol	Chain	Residues	Atoms					AltConf	Trace
10	T	2011	Total	C	N	O	S	0	0
			15974	10112	2785	2978	99		

- Molecule 11 is a protein called Nuclear pore complex protein Nup93.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	U	654	Total	C	N	O	S	0	0
			5260	3328	918	986	28		

- Molecule 12 is a protein called Nup358.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	V	772	Total	C	N	O	S	0	0
			6225	3966	1061	1166	32		
12	W	756	Total	C	N	O	S	0	0
			6100	3890	1040	1139	31		
12	X	767	Total	C	N	O	S	0	0
			6190	3944	1056	1158	32		
12	Y	761	Total	C	N	O	S	0	0
			6139	3912	1047	1149	31		
12	Z	758	Total	C	N	O	S	0	0
			6116	3898	1042	1145	31		

There are 130 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
V	2480	GLY	-	insertion	UNP A0A1L8HGL2
V	2481	PHE	-	insertion	UNP A0A1L8HGL2
V	2482	ASN	-	insertion	UNP A0A1L8HGL2
V	2483	PHE	-	insertion	UNP A0A1L8HGL2
V	2484	SER	-	insertion	UNP A0A1L8HGL2
V	2485	LEU	-	insertion	UNP A0A1L8HGL2
V	2486	PHE	-	insertion	UNP A0A1L8HGL2
V	2487	LYS	-	insertion	UNP A0A1L8HGL2
V	2488	SER	-	insertion	UNP A0A1L8HGL2
V	2489	ASN	-	insertion	UNP A0A1L8HGL2
V	2490	PRO	-	insertion	UNP A0A1L8HGL2
V	2491	ARG	-	insertion	UNP A0A1L8HGL2
V	2492	ALA	-	insertion	UNP A0A1L8HGL2
V	2493	PHE	-	insertion	UNP A0A1L8HGL2
V	2494	TRP	-	insertion	UNP A0A1L8HGL2
V	2495	THR	-	insertion	UNP A0A1L8HGL2

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Chain	Residue	Modelled	Actual	Comment	Reference
V	2496	CYS	-	insertion	UNP A0A1L8HGL2
V	2497	THR	-	insertion	UNP A0A1L8HGL2
V	2498	SER	-	insertion	UNP A0A1L8HGL2
V	2499	SER	-	insertion	UNP A0A1L8HGL2
V	2500	SER	-	insertion	UNP A0A1L8HGL2
V	2501	LYS	-	insertion	UNP A0A1L8HGL2
V	2502	PRO	-	insertion	UNP A0A1L8HGL2
V	2503	GLU	-	insertion	UNP A0A1L8HGL2
V	2504	VAL	-	insertion	UNP A0A1L8HGL2
V	2505	GLU	-	insertion	UNP A0A1L8HGL2
W	2480	GLY	-	insertion	UNP A0A1L8HGL2
W	2481	PHE	-	insertion	UNP A0A1L8HGL2
W	2482	ASN	-	insertion	UNP A0A1L8HGL2
W	2483	PHE	-	insertion	UNP A0A1L8HGL2
W	2484	SER	-	insertion	UNP A0A1L8HGL2
W	2485	LEU	-	insertion	UNP A0A1L8HGL2
W	2486	PHE	-	insertion	UNP A0A1L8HGL2
W	2487	LYS	-	insertion	UNP A0A1L8HGL2
W	2488	SER	-	insertion	UNP A0A1L8HGL2
W	2489	ASN	-	insertion	UNP A0A1L8HGL2
W	2490	PRO	-	insertion	UNP A0A1L8HGL2
W	2491	ARG	-	insertion	UNP A0A1L8HGL2
W	2492	ALA	-	insertion	UNP A0A1L8HGL2
W	2493	PHE	-	insertion	UNP A0A1L8HGL2
W	2494	TRP	-	insertion	UNP A0A1L8HGL2
W	2495	THR	-	insertion	UNP A0A1L8HGL2
W	2496	CYS	-	insertion	UNP A0A1L8HGL2
W	2497	THR	-	insertion	UNP A0A1L8HGL2
W	2498	SER	-	insertion	UNP A0A1L8HGL2
W	2499	SER	-	insertion	UNP A0A1L8HGL2
W	2500	SER	-	insertion	UNP A0A1L8HGL2
W	2501	LYS	-	insertion	UNP A0A1L8HGL2
W	2502	PRO	-	insertion	UNP A0A1L8HGL2
W	2503	GLU	-	insertion	UNP A0A1L8HGL2
W	2504	VAL	-	insertion	UNP A0A1L8HGL2
W	2505	GLU	-	insertion	UNP A0A1L8HGL2
X	2480	GLY	-	insertion	UNP A0A1L8HGL2
X	2481	PHE	-	insertion	UNP A0A1L8HGL2
X	2482	ASN	-	insertion	UNP A0A1L8HGL2
X	2483	PHE	-	insertion	UNP A0A1L8HGL2
X	2484	SER	-	insertion	UNP A0A1L8HGL2
X	2485	LEU	-	insertion	UNP A0A1L8HGL2

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Chain	Residue	Modelled	Actual	Comment	Reference
X	2486	PHE	-	insertion	UNP A0A1L8HGL2
X	2487	LYS	-	insertion	UNP A0A1L8HGL2
X	2488	SER	-	insertion	UNP A0A1L8HGL2
X	2489	ASN	-	insertion	UNP A0A1L8HGL2
X	2490	PRO	-	insertion	UNP A0A1L8HGL2
X	2491	ARG	-	insertion	UNP A0A1L8HGL2
X	2492	ALA	-	insertion	UNP A0A1L8HGL2
X	2493	PHE	-	insertion	UNP A0A1L8HGL2
X	2494	TRP	-	insertion	UNP A0A1L8HGL2
X	2495	THR	-	insertion	UNP A0A1L8HGL2
X	2496	CYS	-	insertion	UNP A0A1L8HGL2
X	2497	THR	-	insertion	UNP A0A1L8HGL2
X	2498	SER	-	insertion	UNP A0A1L8HGL2
X	2499	SER	-	insertion	UNP A0A1L8HGL2
X	2500	SER	-	insertion	UNP A0A1L8HGL2
X	2501	LYS	-	insertion	UNP A0A1L8HGL2
X	2502	PRO	-	insertion	UNP A0A1L8HGL2
X	2503	GLU	-	insertion	UNP A0A1L8HGL2
X	2504	VAL	-	insertion	UNP A0A1L8HGL2
X	2505	GLU	-	insertion	UNP A0A1L8HGL2
Y	2480	GLY	-	insertion	UNP A0A1L8HGL2
Y	2481	PHE	-	insertion	UNP A0A1L8HGL2
Y	2482	ASN	-	insertion	UNP A0A1L8HGL2
Y	2483	PHE	-	insertion	UNP A0A1L8HGL2
Y	2484	SER	-	insertion	UNP A0A1L8HGL2
Y	2485	LEU	-	insertion	UNP A0A1L8HGL2
Y	2486	PHE	-	insertion	UNP A0A1L8HGL2
Y	2487	LYS	-	insertion	UNP A0A1L8HGL2
Y	2488	SER	-	insertion	UNP A0A1L8HGL2
Y	2489	ASN	-	insertion	UNP A0A1L8HGL2
Y	2490	PRO	-	insertion	UNP A0A1L8HGL2
Y	2491	ARG	-	insertion	UNP A0A1L8HGL2
Y	2492	ALA	-	insertion	UNP A0A1L8HGL2
Y	2493	PHE	-	insertion	UNP A0A1L8HGL2
Y	2494	TRP	-	insertion	UNP A0A1L8HGL2
Y	2495	THR	-	insertion	UNP A0A1L8HGL2
Y	2496	CYS	-	insertion	UNP A0A1L8HGL2
Y	2497	THR	-	insertion	UNP A0A1L8HGL2
Y	2498	SER	-	insertion	UNP A0A1L8HGL2
Y	2499	SER	-	insertion	UNP A0A1L8HGL2
Y	2500	SER	-	insertion	UNP A0A1L8HGL2
Y	2501	LYS	-	insertion	UNP A0A1L8HGL2

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
Y	2502	PRO	-	insertion	UNP A0A1L8HGL2
Y	2503	GLU	-	insertion	UNP A0A1L8HGL2
Y	2504	VAL	-	insertion	UNP A0A1L8HGL2
Y	2505	GLU	-	insertion	UNP A0A1L8HGL2
Z	2480	GLY	-	insertion	UNP A0A1L8HGL2
Z	2481	PHE	-	insertion	UNP A0A1L8HGL2
Z	2482	ASN	-	insertion	UNP A0A1L8HGL2
Z	2483	PHE	-	insertion	UNP A0A1L8HGL2
Z	2484	SER	-	insertion	UNP A0A1L8HGL2
Z	2485	LEU	-	insertion	UNP A0A1L8HGL2
Z	2486	PHE	-	insertion	UNP A0A1L8HGL2
Z	2487	LYS	-	insertion	UNP A0A1L8HGL2
Z	2488	SER	-	insertion	UNP A0A1L8HGL2
Z	2489	ASN	-	insertion	UNP A0A1L8HGL2
Z	2490	PRO	-	insertion	UNP A0A1L8HGL2
Z	2491	ARG	-	insertion	UNP A0A1L8HGL2
Z	2492	ALA	-	insertion	UNP A0A1L8HGL2
Z	2493	PHE	-	insertion	UNP A0A1L8HGL2
Z	2494	TRP	-	insertion	UNP A0A1L8HGL2
Z	2495	THR	-	insertion	UNP A0A1L8HGL2
Z	2496	CYS	-	insertion	UNP A0A1L8HGL2
Z	2497	THR	-	insertion	UNP A0A1L8HGL2
Z	2498	SER	-	insertion	UNP A0A1L8HGL2
Z	2499	SER	-	insertion	UNP A0A1L8HGL2
Z	2500	SER	-	insertion	UNP A0A1L8HGL2
Z	2501	LYS	-	insertion	UNP A0A1L8HGL2
Z	2502	PRO	-	insertion	UNP A0A1L8HGL2
Z	2503	GLU	-	insertion	UNP A0A1L8HGL2
Z	2504	VAL	-	insertion	UNP A0A1L8HGL2
Z	2505	GLU	-	insertion	UNP A0A1L8HGL2

- Molecule 13 is a protein called Nucleoporin CAN.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	a	209	Total	C	N	O	S	0	0
			1738	1086	308	341	3		
13	e	155	Total	C	N	O	S	0	0
			1282	797	224	258	3		

- Molecule 14 is a protein called Nup88A protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	b	728	Total	C	N	O	S	0	0
			5787	3645	991	1119	32		
14	d	683	Total	C	N	O	S	0	0
			5414	3413	919	1051	31		

- Molecule 15 is a protein called IL4I1 protein.

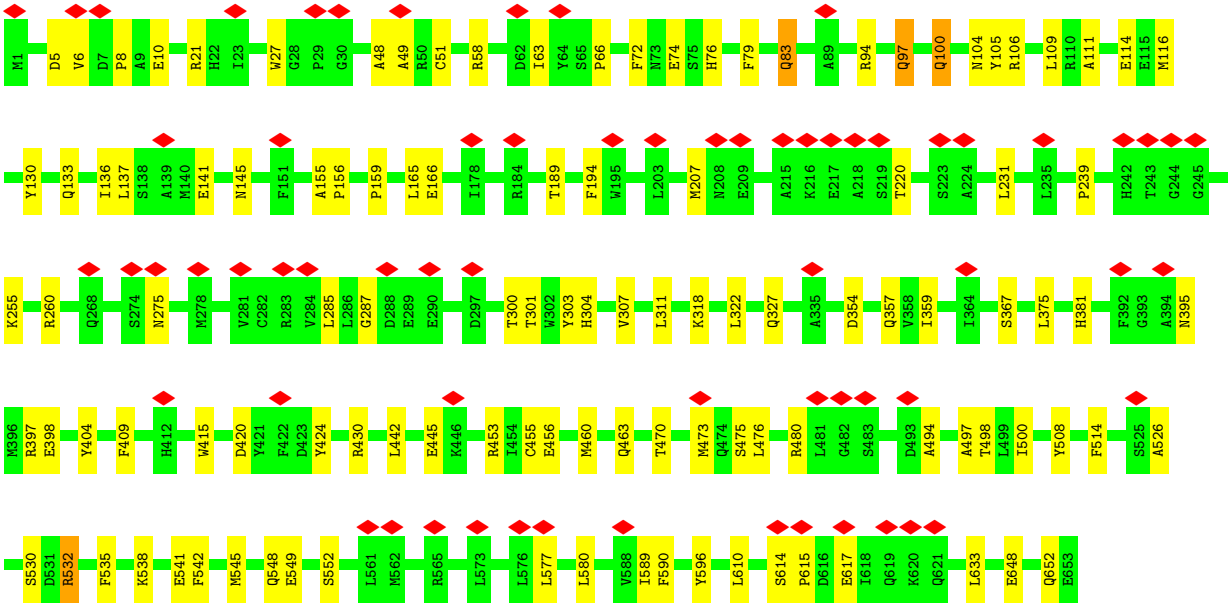
Mol	Chain	Residues	Atoms					AltConf	Trace
15	c	198	Total	C	N	O	S	0	0
			1621	1001	286	327	7		
15	f	138	Total	C	N	O	S	0	0
			1141	708	197	232	4		

3 Residue-property plots (i)

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

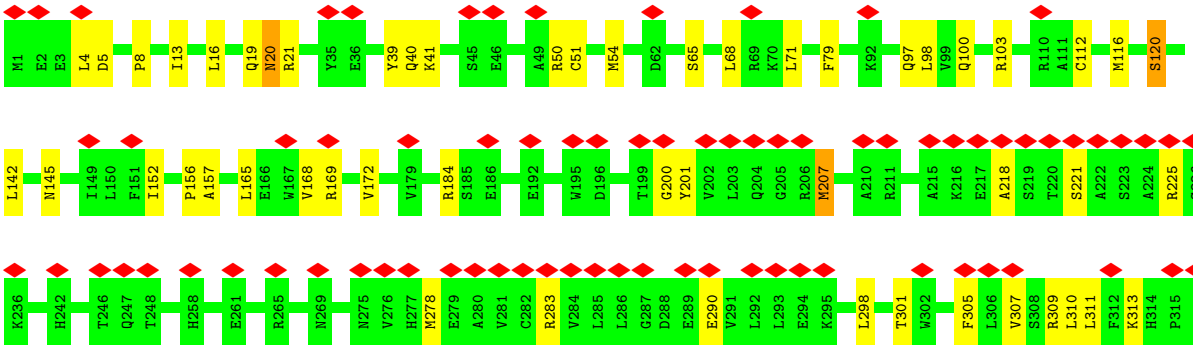
• Molecule 1: Nuclear pore complex protein Nup85

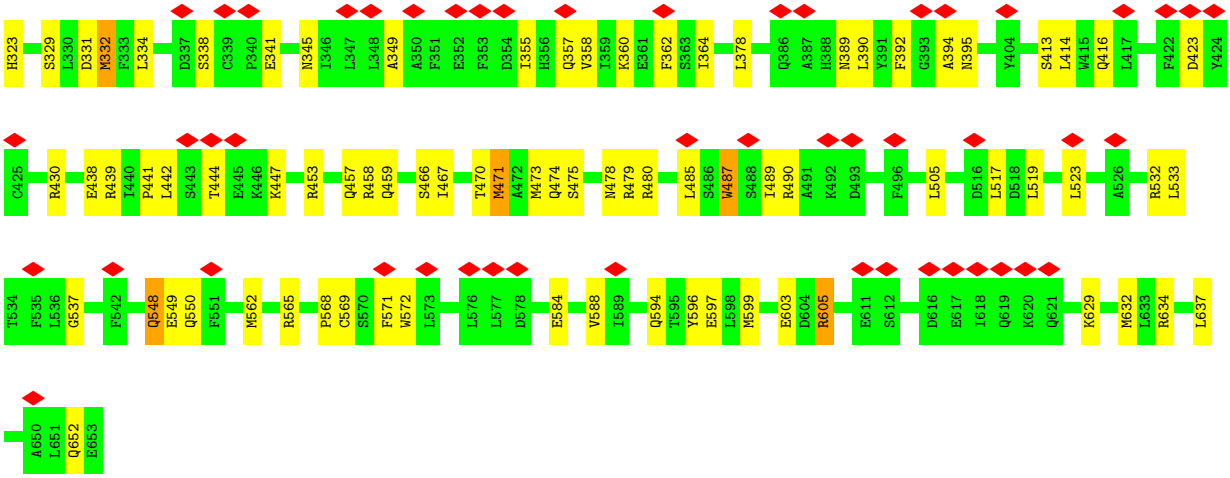
Chain A:



• Molecule 1: Nuclear pore complex protein Nup85

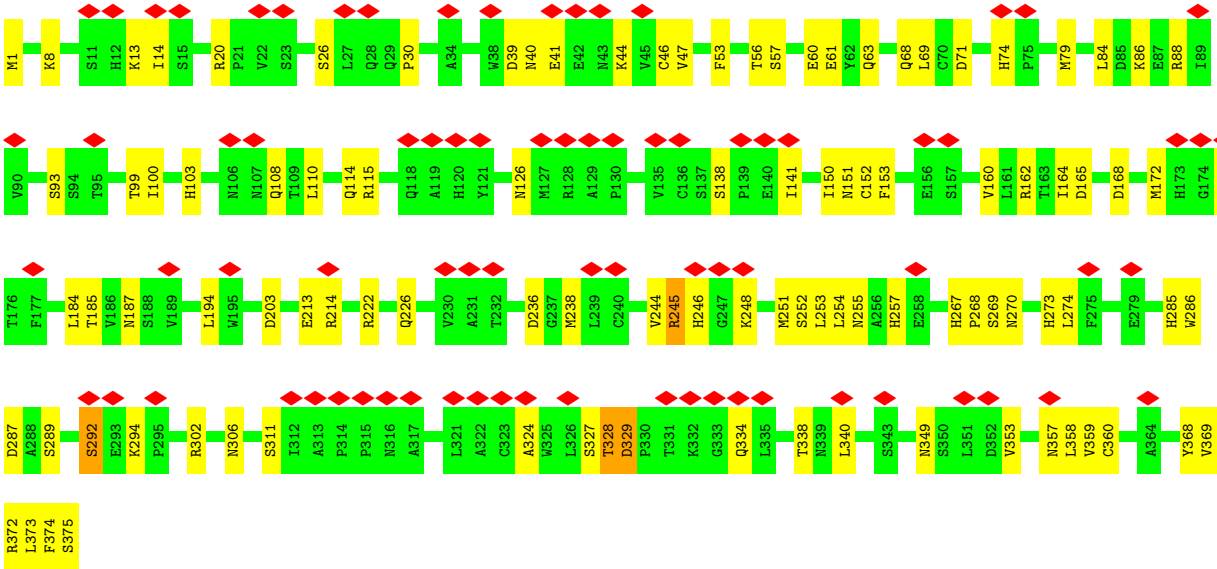
Chain J:





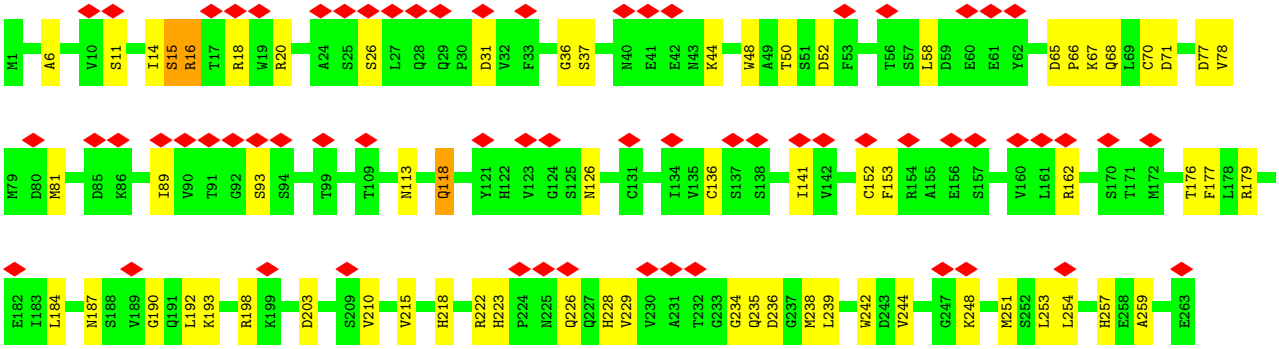
- Molecule 2: MGC154553 protein

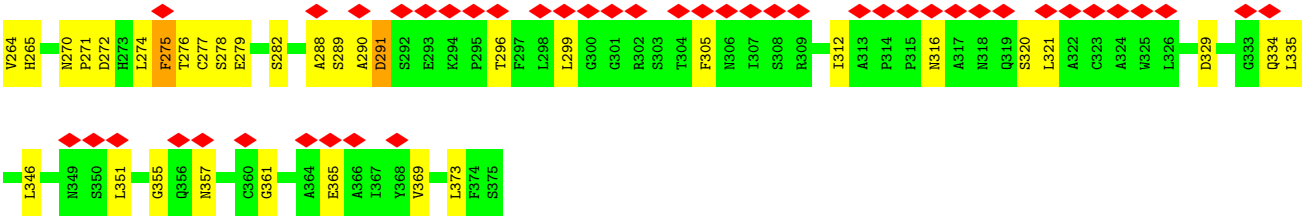
Chain B:



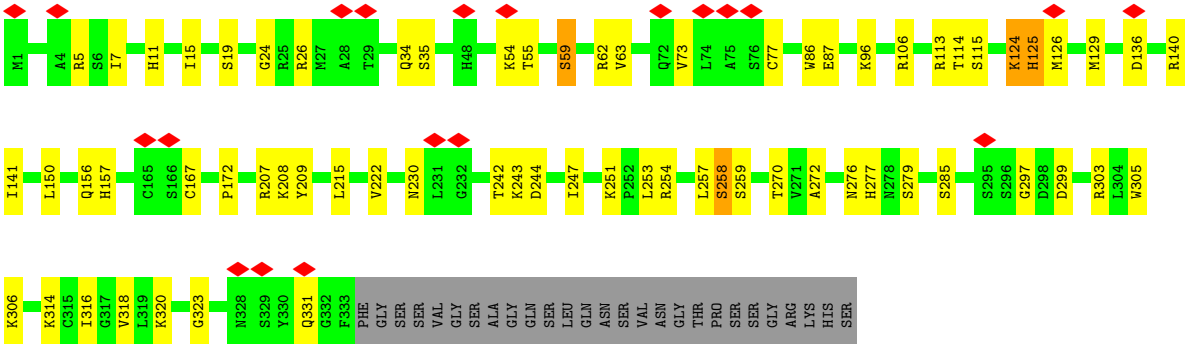
- Molecule 2: MGC154553 protein

Chain K:

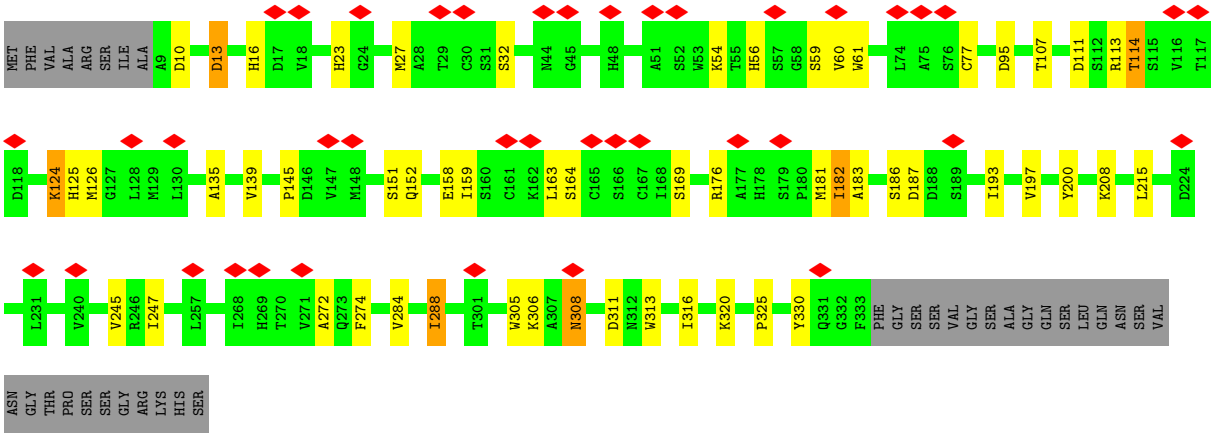




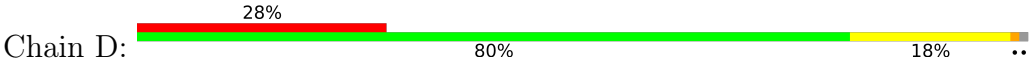
• Molecule 3: Nucleoporin SEH1-A

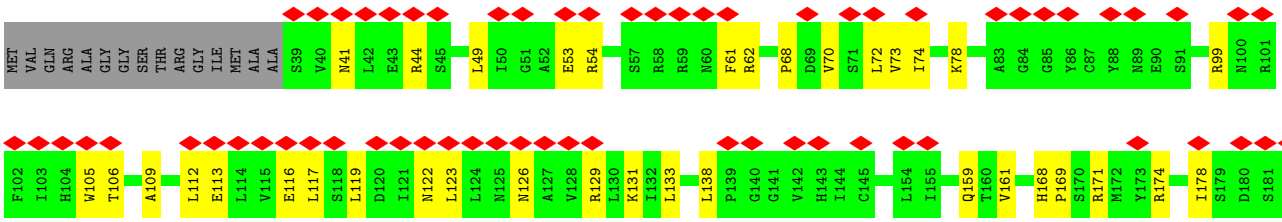


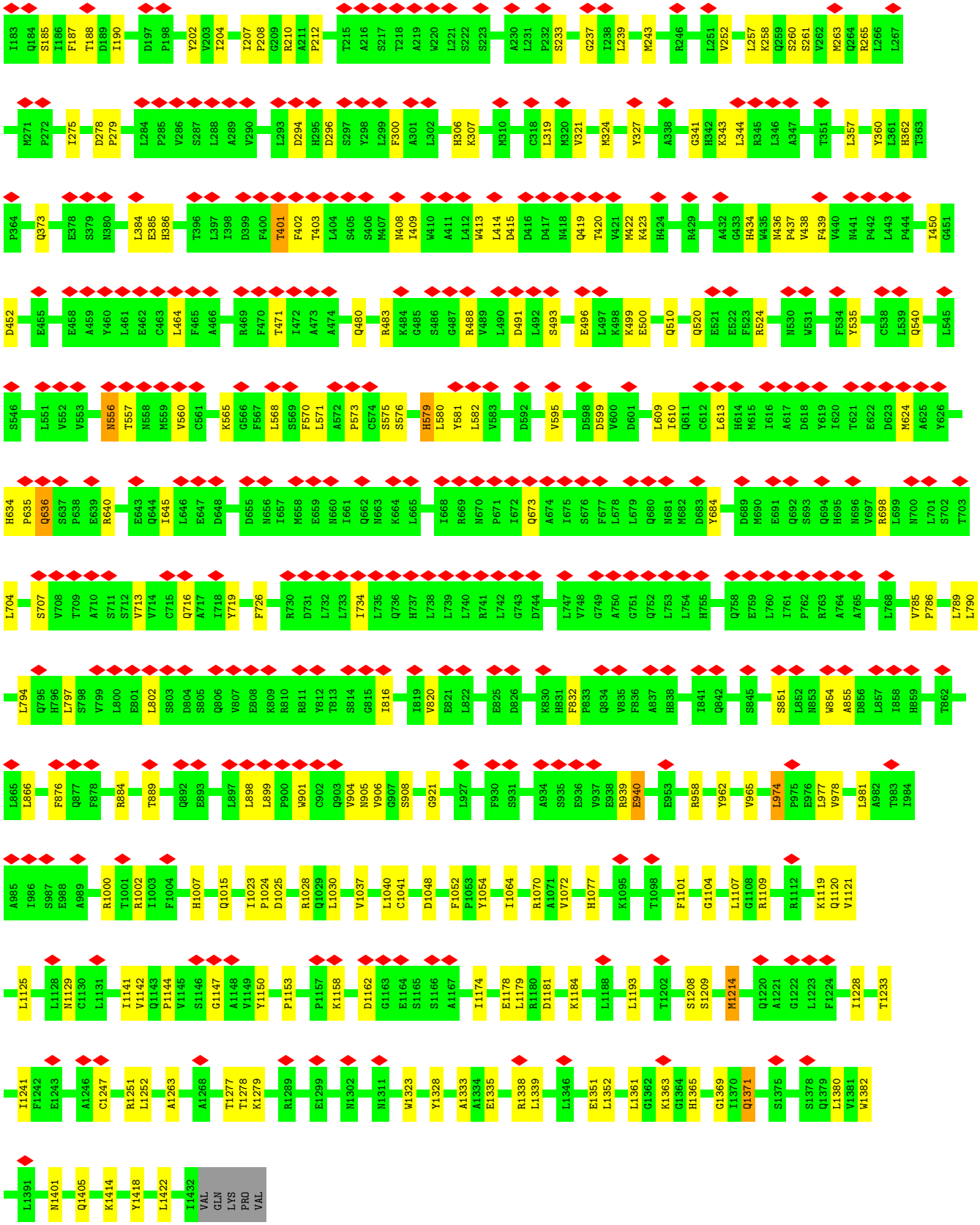
• Molecule 3: Nucleoporin SEH1-A



• Molecule 4: Nucleoporin 160kDa

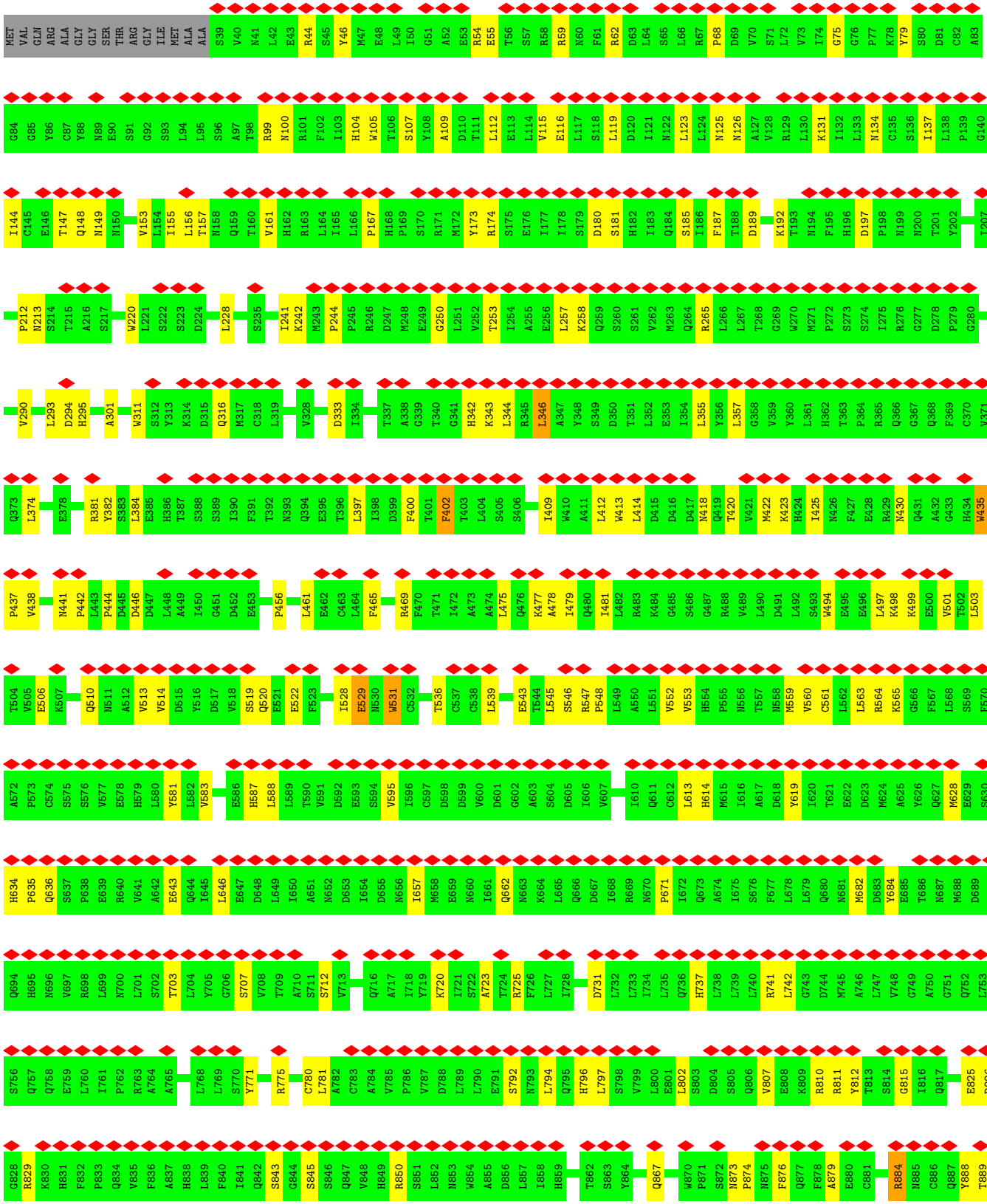


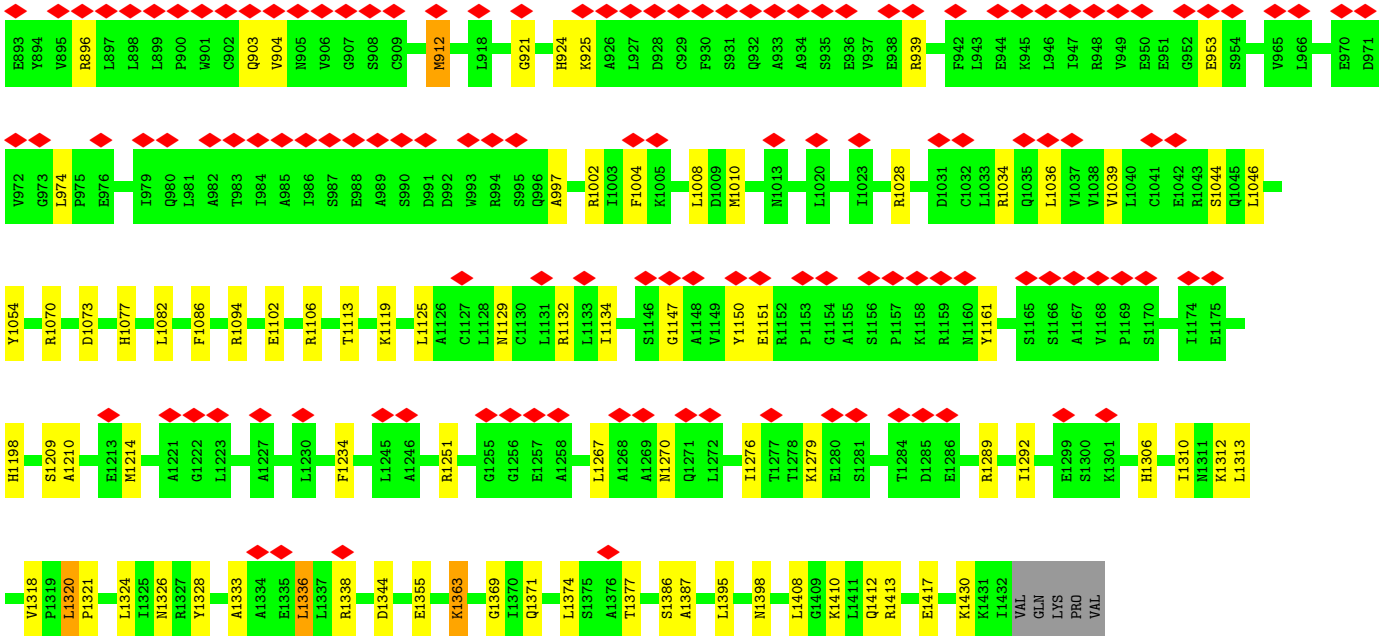




• Molecule 4: Nucleoporin 160kDa

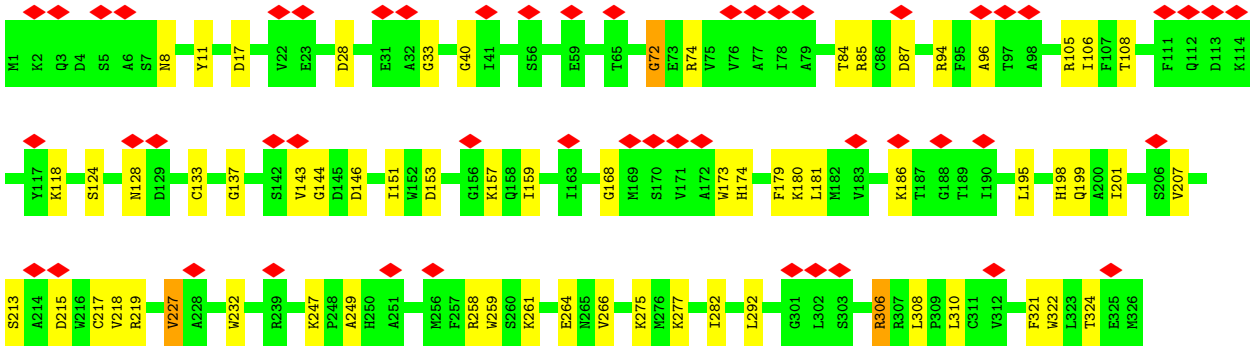
Chain M:





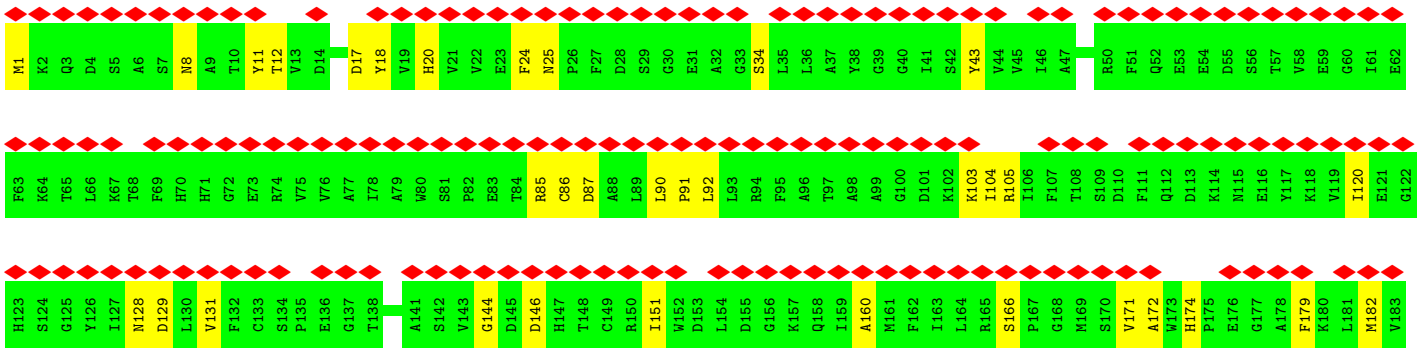
- Molecule 5: MGC83926 protein

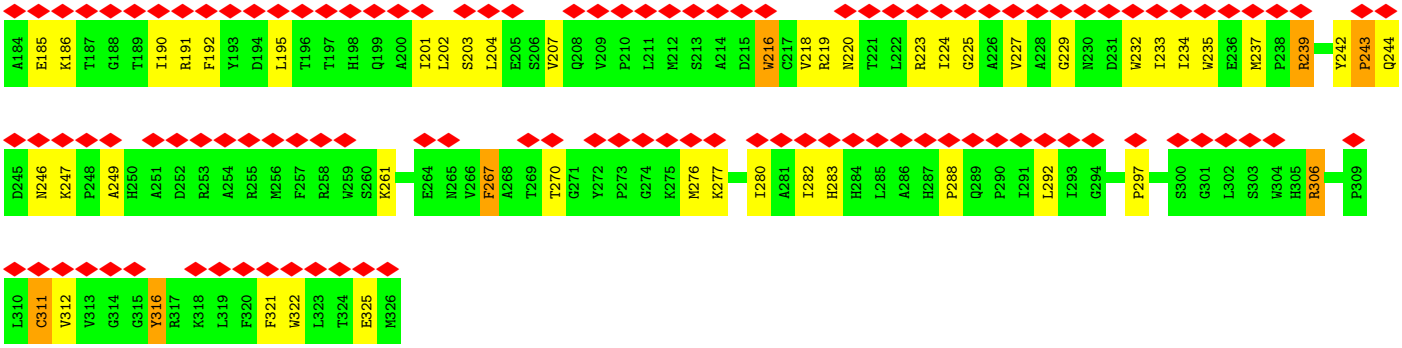
Chain E:



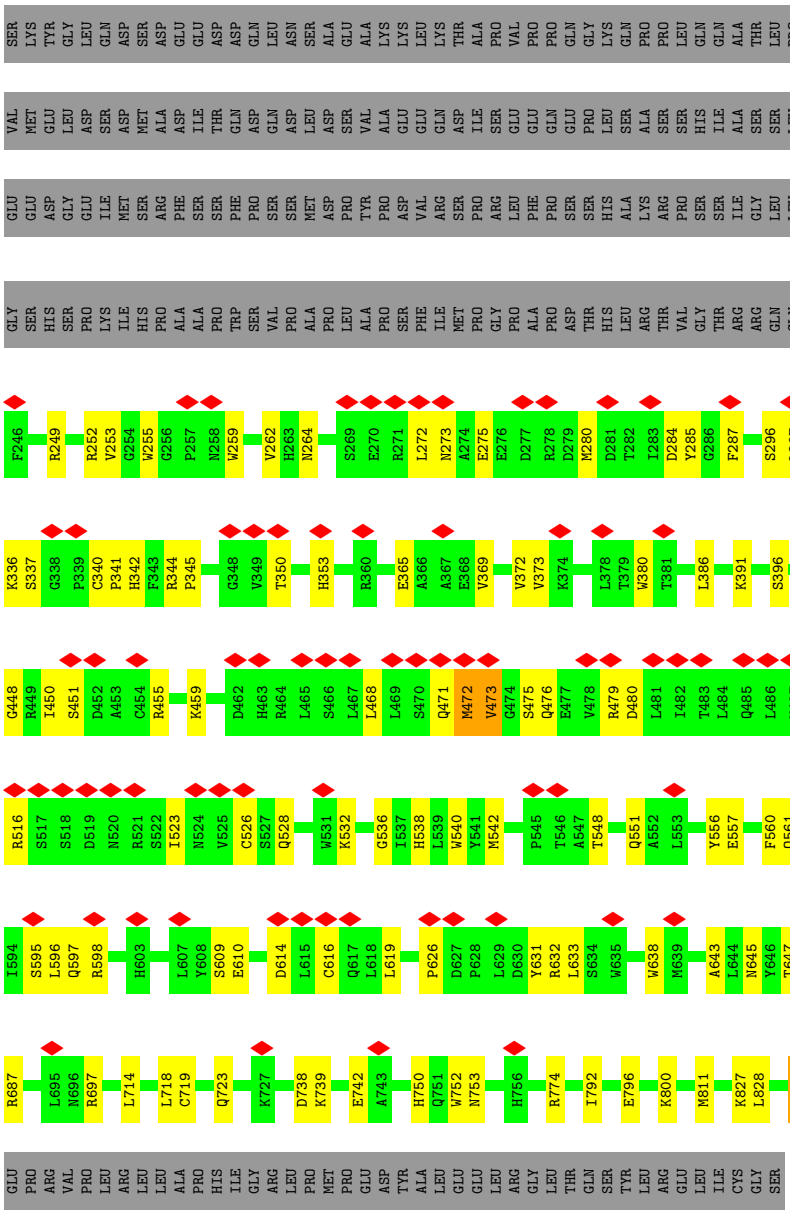
- Molecule 5: MGC83926 protein

Chain N:



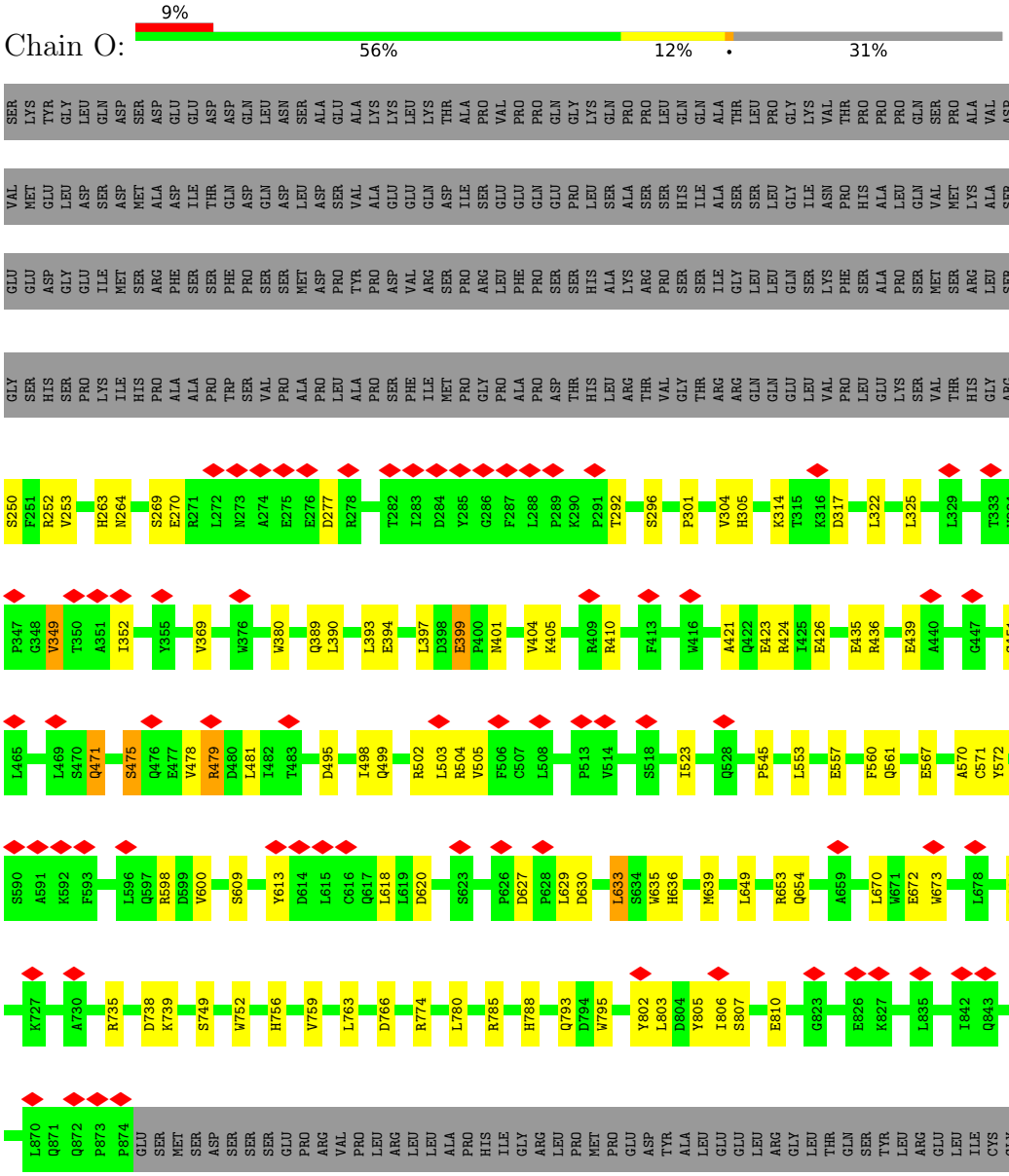


• Molecule 6: Nuclear pore complex protein Nup96



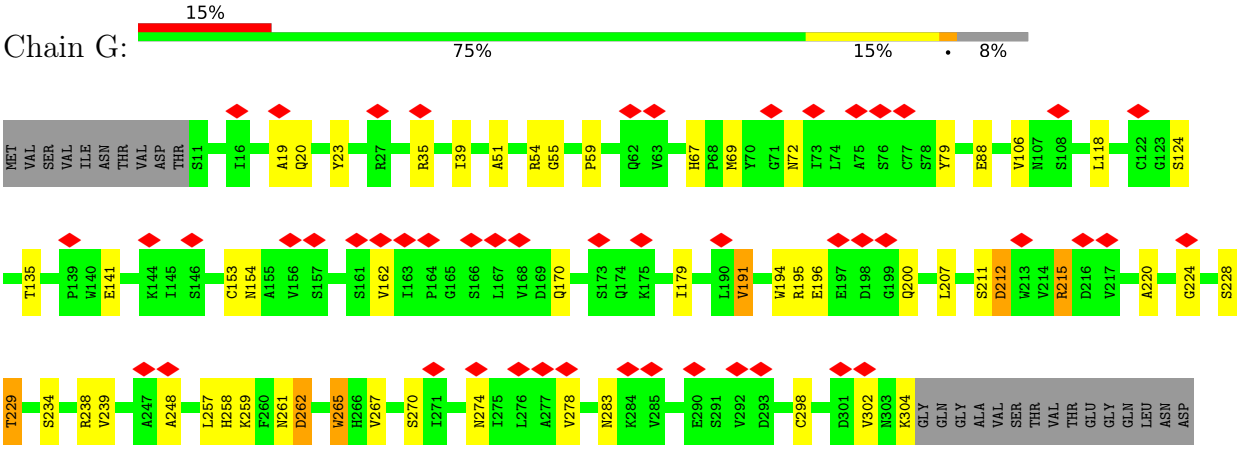
• Molecule 6: Nuclear pore complex protein Nup96

Chain O:

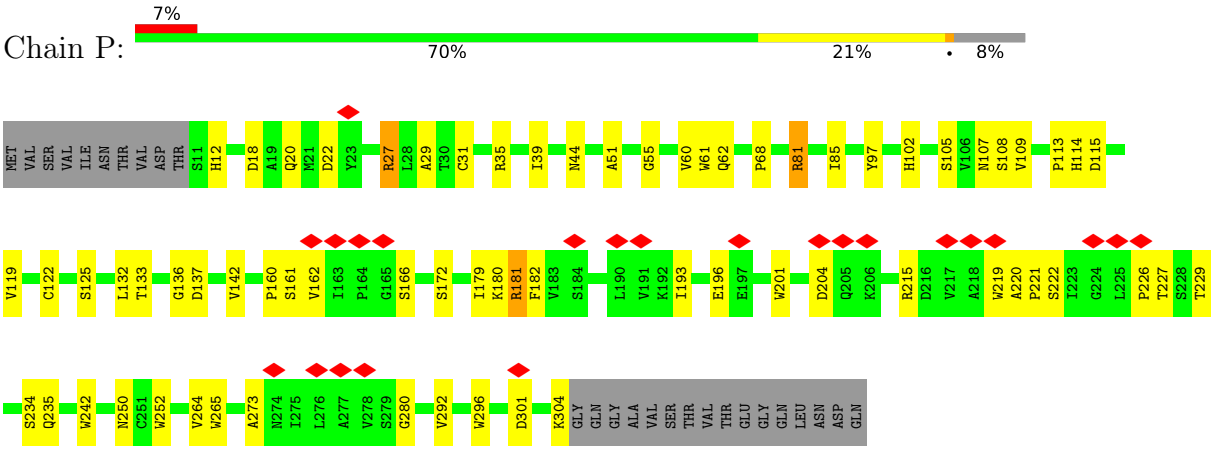


• Molecule 7: GATOR complex protein SEC13

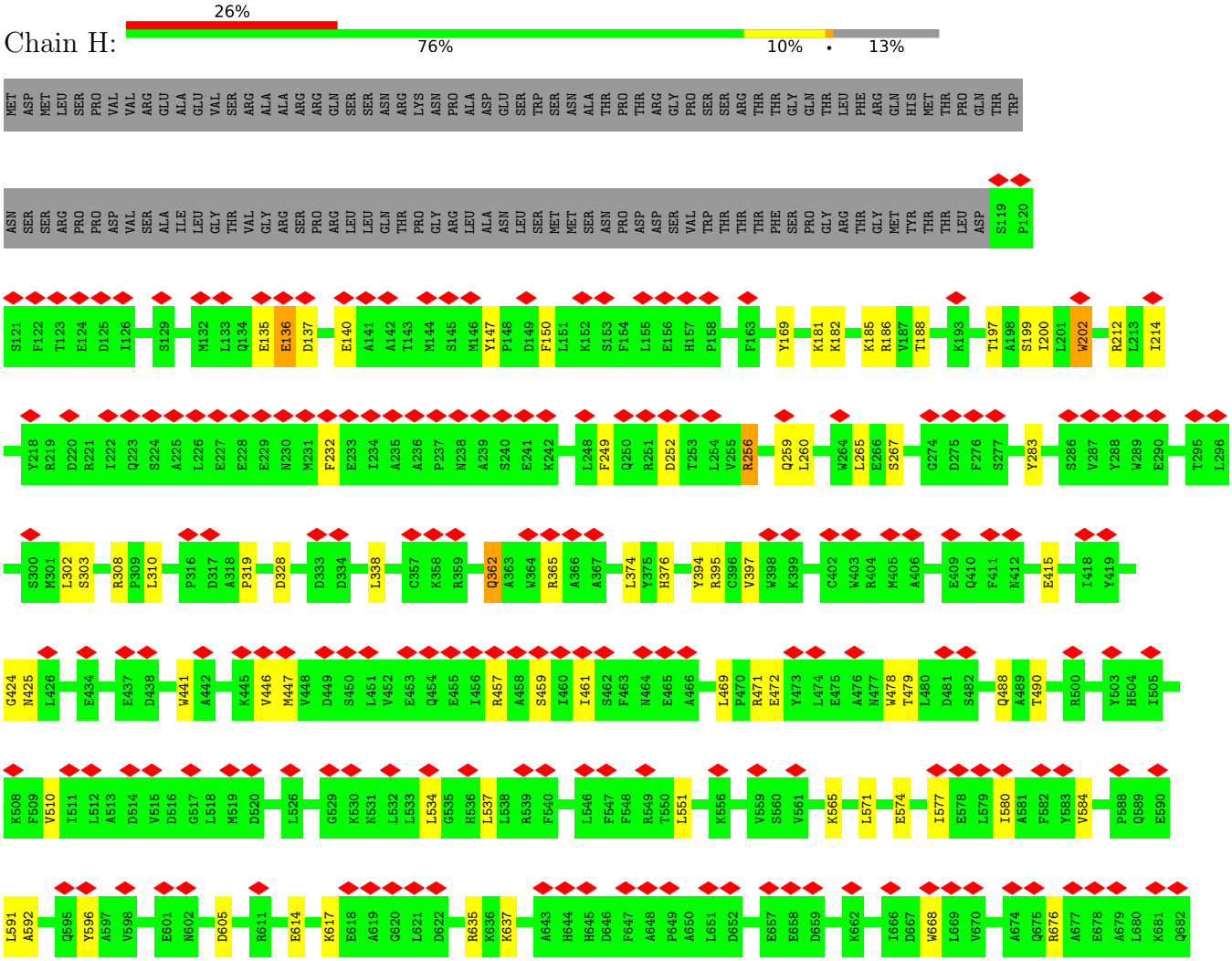
Chain G:

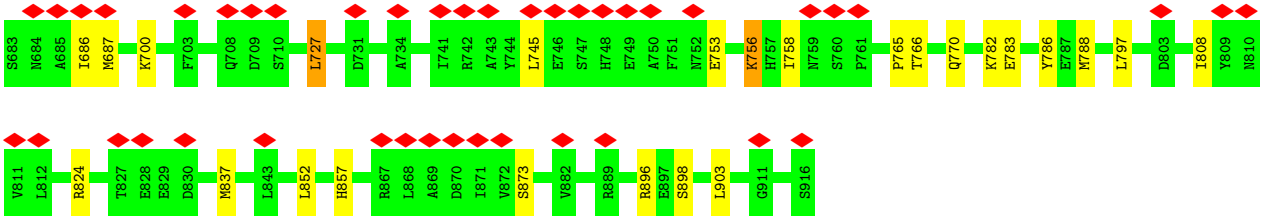


• Molecule 7: GATOR complex protein SEC13



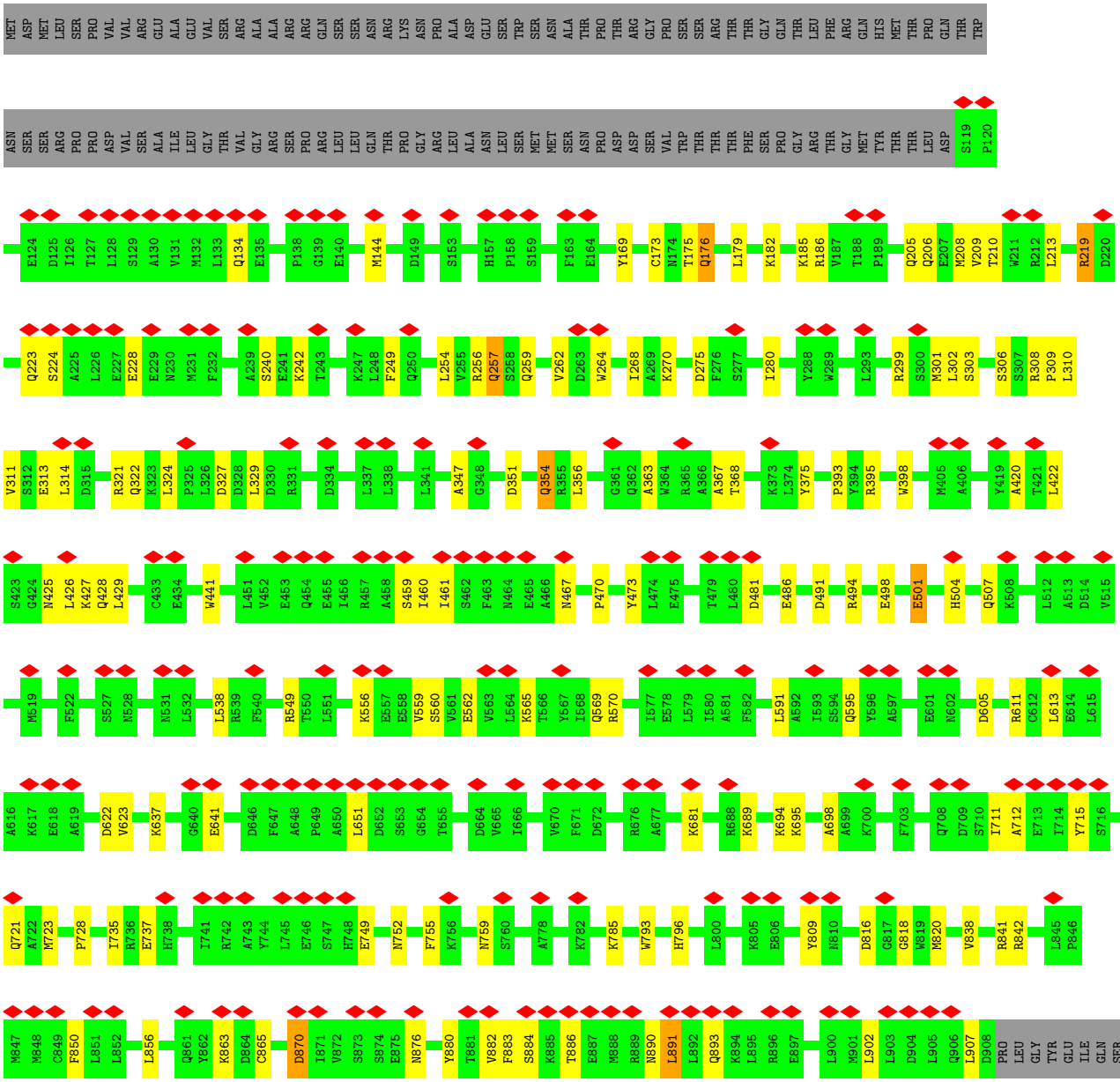
• Molecule 8: Nuclear pore complex protein





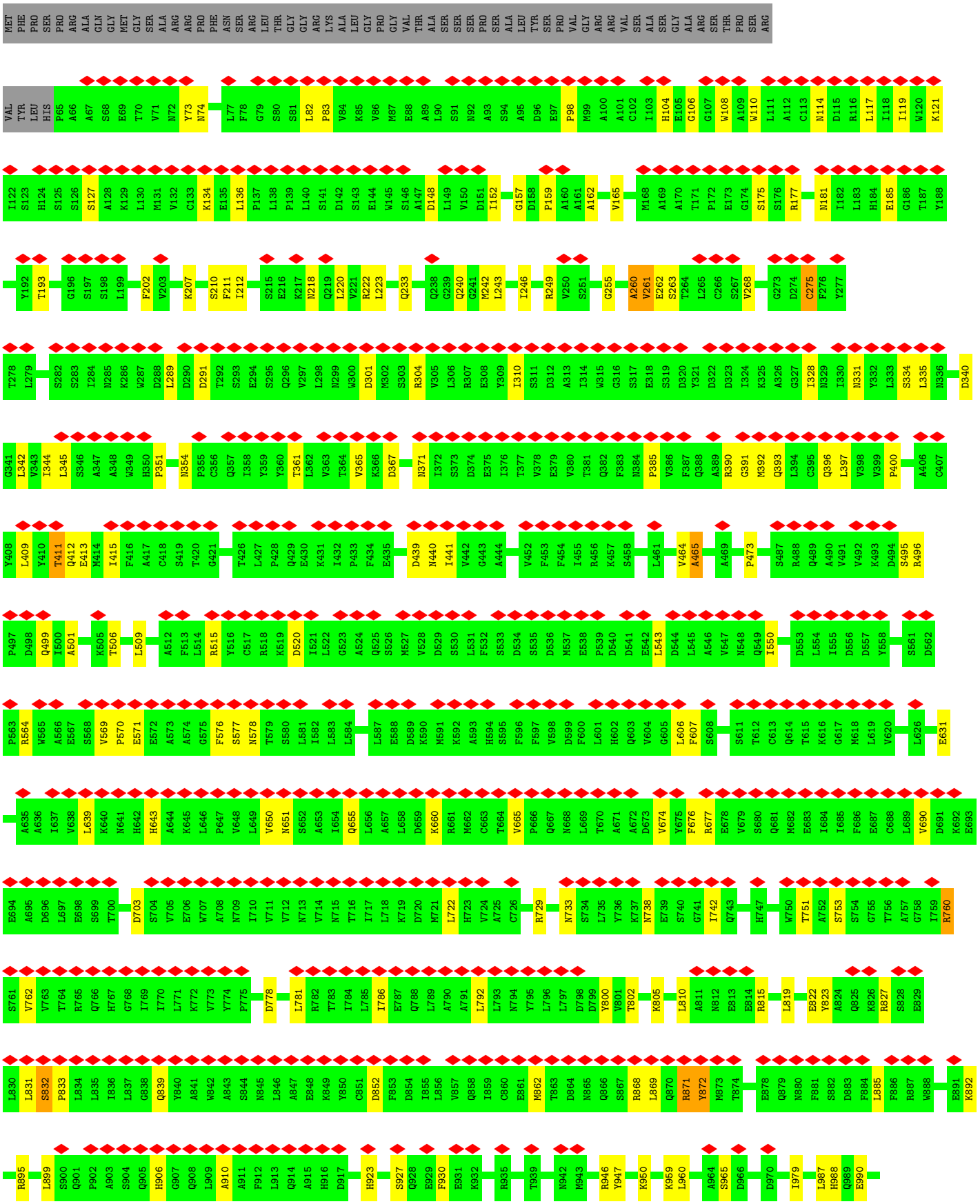
• Molecule 8: Nuclear pore complex protein

Chain Q:



• Molecule 9: outer Nup133

Chain I: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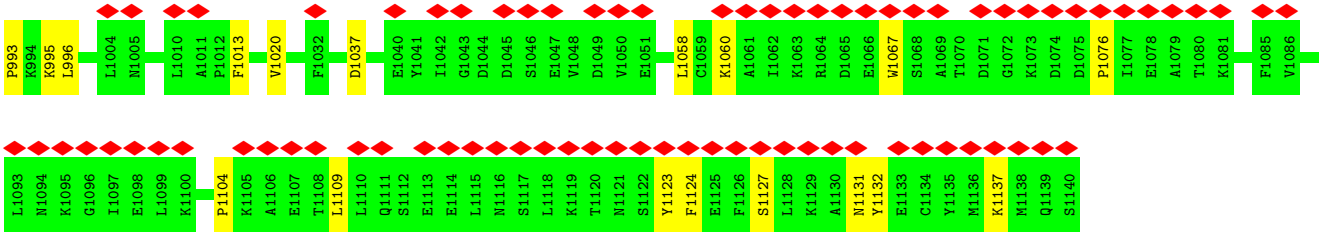
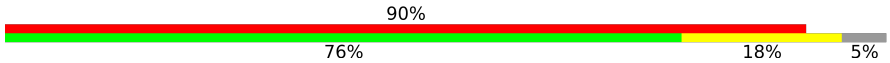
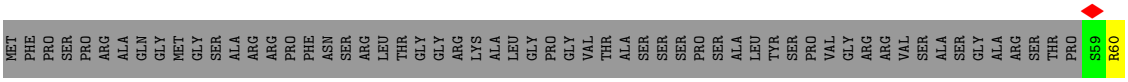
VAL TYR LEU HIS P65 A66 A67 S68 E69 T70 V71 N72 Y73 N74 L77 F78 G79 S80 S81 L82 P83 V84 K85 V86 H87 E88 A89 L90 S91 N92 A93 S94 A95 D96 E97 P98 M99 A100 A101 C102 I103 H104 E105 G106 G107 W108 A109 W110 L111 A112 C113 N114 D115 R116 L117 I118 I119 W120 K121
I122 S123 H124 S125 S126 S127 A128 K129 L130 M131 V132 C133 K134 E135 L136 P137 L138 P139 L140 S141 D142 S143 E144 W145 S146 A147 D148 L149 V150 D151 I152 G157 D158 P159 A160 A161 A162 V165 M168 A169 A170 T171 P172 E173 G174 S175 S176 R177 N181 I182 L183 H184 E185 G186 T187 Y188
Y192 T193 G196 S197 S198 L199 F202 V203 K207 S210 F211 I212 S215 E216 K217 N218 Q219 L220 V221 R222 L223 Q233 Q238 G239 Q240 G241 M242 L243 I246 R249 V250 S251 G255 A260 V261 E262 S263 T264 L265 C266 S267 V268 G273 D274 C275 F276 Y277
T278 L279 S282 S283 I284 N285 K286 W287 D288 L289 D290 D291 T292 S293 E294 S295 Q296 V297 L298 N299 W300 D301 M302 S303 R304 V305 L306 R307 E308 Y309 I310 S311 D312 A313 I314 W315 G316 S317 E318 S319 D320 Y321 D322 D323 I324 K325 A326 G327 I328 N329 I330 N331 Y332 L333 S334 L335 N336 D340
G341 L342 Y343 I344 L345 S346 A347 A348 W349 H350 P351 N354 P355 C356 Q357 I358 Y359 Y360 T361 L362 V363 T364 Y365 K366 D367 N371 I372 S373 D374 E375 I376 T377 V378 E379 V380 T381 Q382 F383 N384 P385 V386 F387 Q388 A389 R390 G391 M392 Q393 L394 C395 Q396 L397 V398 V399 P400 A406 C407
Y408 L409 Y410 T411 Q412 E413 M414 I415 F416 A417 C418 S419 T420 G421 T426 L427 P428 Q429 E430 K431 I432 P433 F434 E435 D439 N440 I441 V442 G443 A444 V452 F453 F454 I455 R456 K457 S458 L461 V464 A465 A469 P473 S487 R488 Q489 A490 V491 V492 K493 D494 S495 R496
P497 D498 Q499 I500 A501 K505 T506 L509 A512 F513 L514 R515 Y516 C517 R518 K519 D520 I521 L522 G523 A524 Q525 S526 M527 V528 D529 S530 L531 F532 S533 D534 S535 D536 M537 E538 P539 D540 D541 E542 L543 D544 L545 A546 V547 N548 Q549 I550 D553 L554 I555 D556 D557 Y558 S561 D562
P563 R564 W565 A566 E567 S568 V569 P570 E571 E572 A573 A574 G575 F576 S577 N578 T579 S580 L581 I582 L583 L584 L587 E588 D589 K590 M591 K592 A593 H594 S595 F596 F597 V598 D599 F600 L601 H602 Q603 V604 G605 L606 F607 S608 S611 T612 C613 Q614 T615 K616 G617 M618 L619 V620 L626 E631
A635 A636 I637 V638 L639 K640 N641 H642 H643 A644 K645 L646 P647 V648 L649 V650 N651 S652 A653 I654 Q655 L656 A657 L658 D659 K660 R661 M662 C663 T664 V665 P666 Q667 N668 L669 T670 A671 A672 D673 V674 Y675 F676 R677 E678 V679 S680 Q681 M682 E683 I684 I685 F686 E687 C688 L689 V690 D691 K692 E693
E694 A695 D696 L697 E698 S699 T700 D703 S704 V705 E706 W707 A708 N709 I710 V711 V712 N713 V714 N715 T716 I717 L718 K719 D720 M721 L722 H723 V724 A725 C726 R729 N733 S734 L735 Y736 K737 N738 E739 S740 G741 I742 Q743 H747 W750 T751 A752 S753 S754 G755 T756 A757 G758 I759 R760
S761 V762 V763 T764 R765 Q766 H767 G768 I769 I770 L771 K772 V773 Y774 P775 D778 L781 R782 T783 I784 L785 T786 E787 Q788 L789 A790 A791 L792 L793 N794 Y795 L796 L797 D798 D799 Y800 V801 T802 K805 L810 A811 N812 E813 E814 R815 L819 E822 Y823 A824 Q825 K826 R827 S828 E829
L830 L831 S832 P833 L834 L835 I836 L837 G838 Q839 Y840 A841 W842 A843 S844 N845 L846 A847 E848 K849 Y850 C851 D852 F853 D854 I855 L856 V857 Q858 I859 C860 E861 M862 T863 D864 N865 Q866 S867 R868 L869 Q870 R871 Y872 M873 T874 E878 Q879 N880 F881 S882 D883 F884 L885 F886 R887 W888 E891 K892
R895 L899 S900 Q901 P902 A903 S904 Q905 H906 G907 Q908 L909 A910 A911 F912 L913 Q914 A915 H916 D917 H923 S927 Q928 E929 F930 E931 K932 R935 T939 N942 M943 R946 Y947 K960 K959 L960 A964 S965 D966 D970 I979 L987 H988 Q989 E990

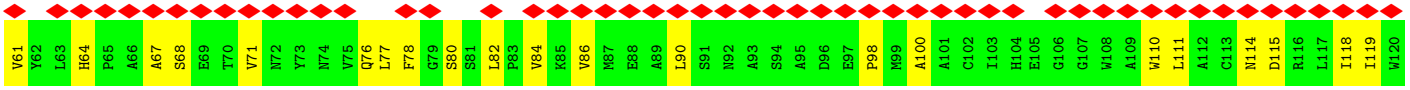


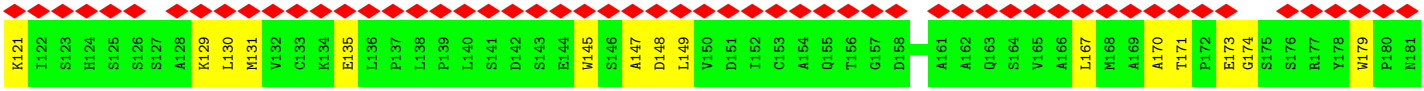
• Molecule 9: outer Nup133

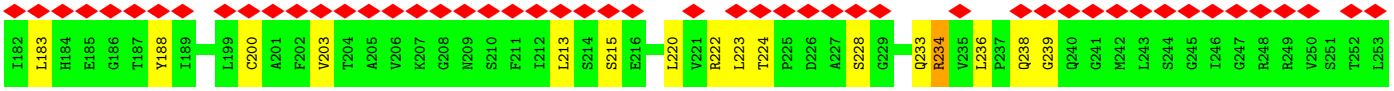
Chain R:

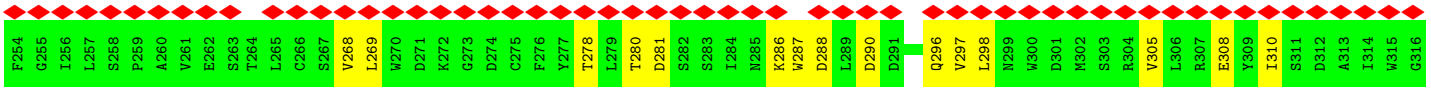


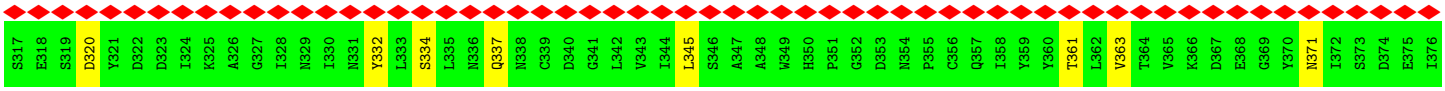


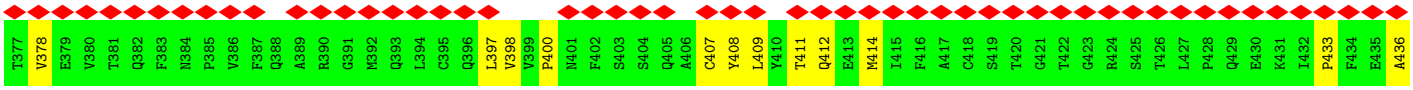


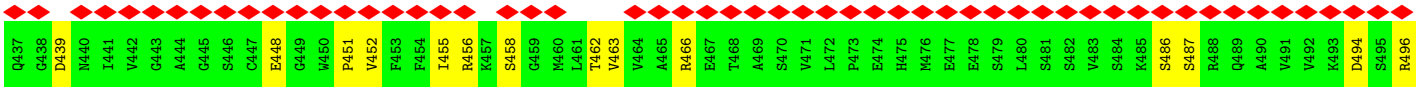


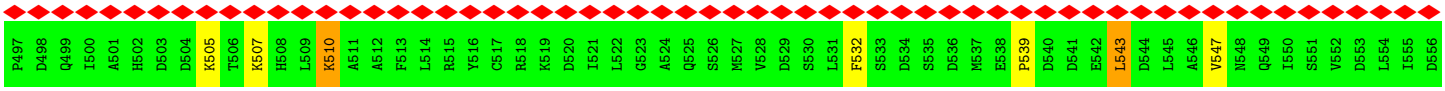


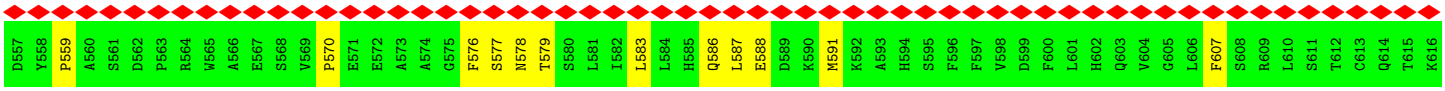


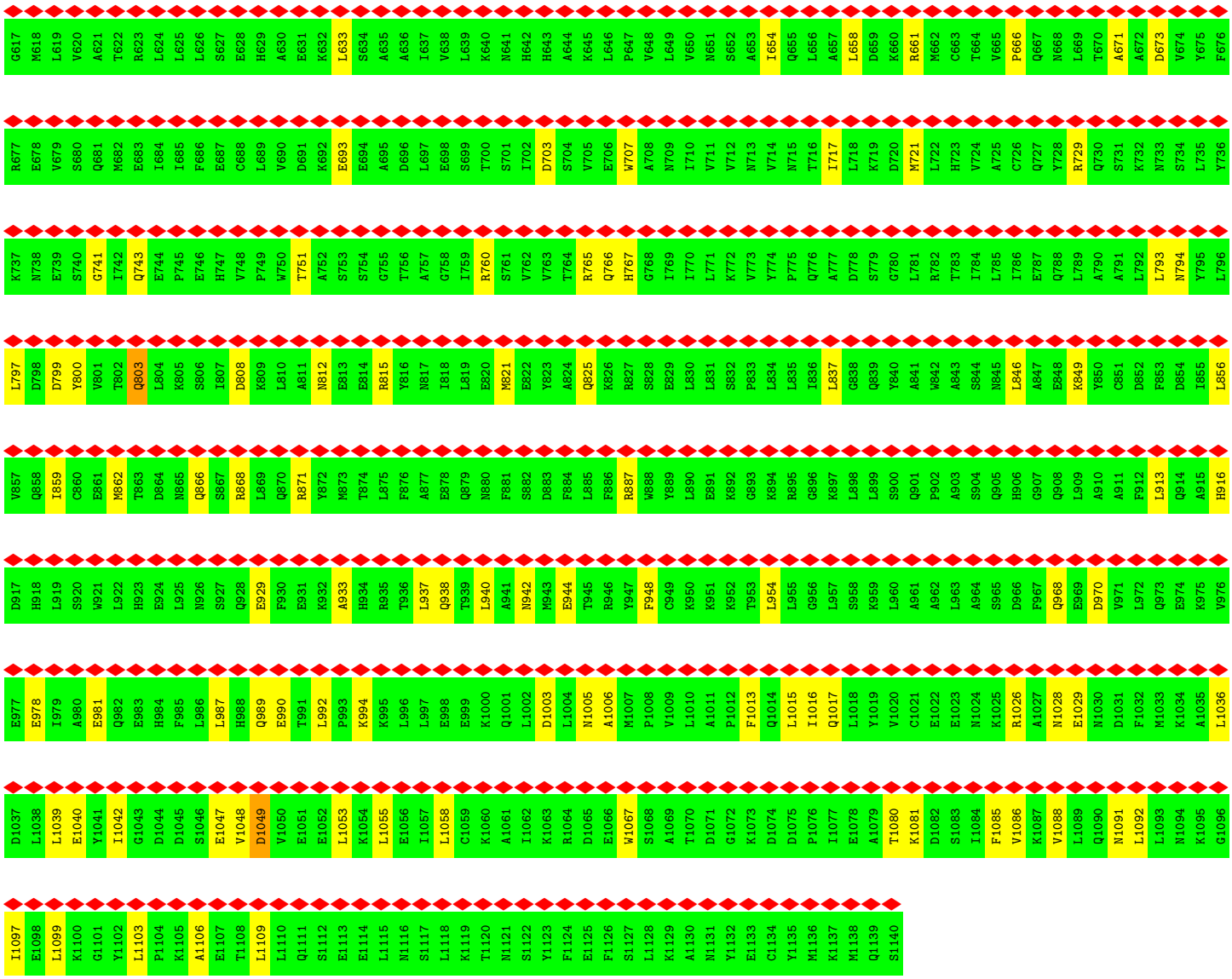






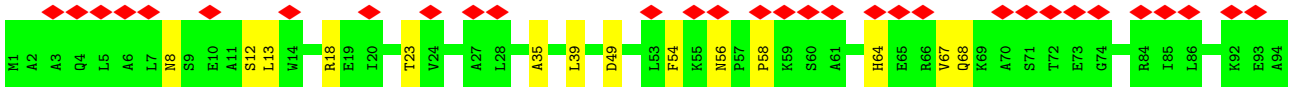


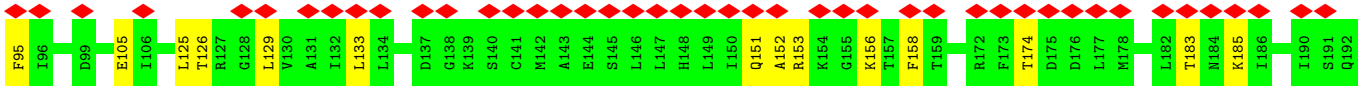


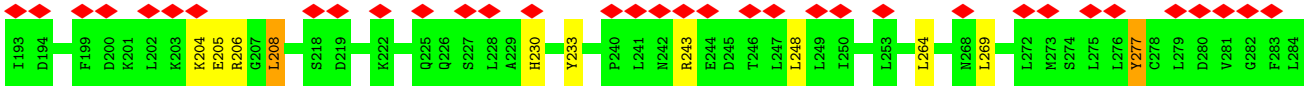


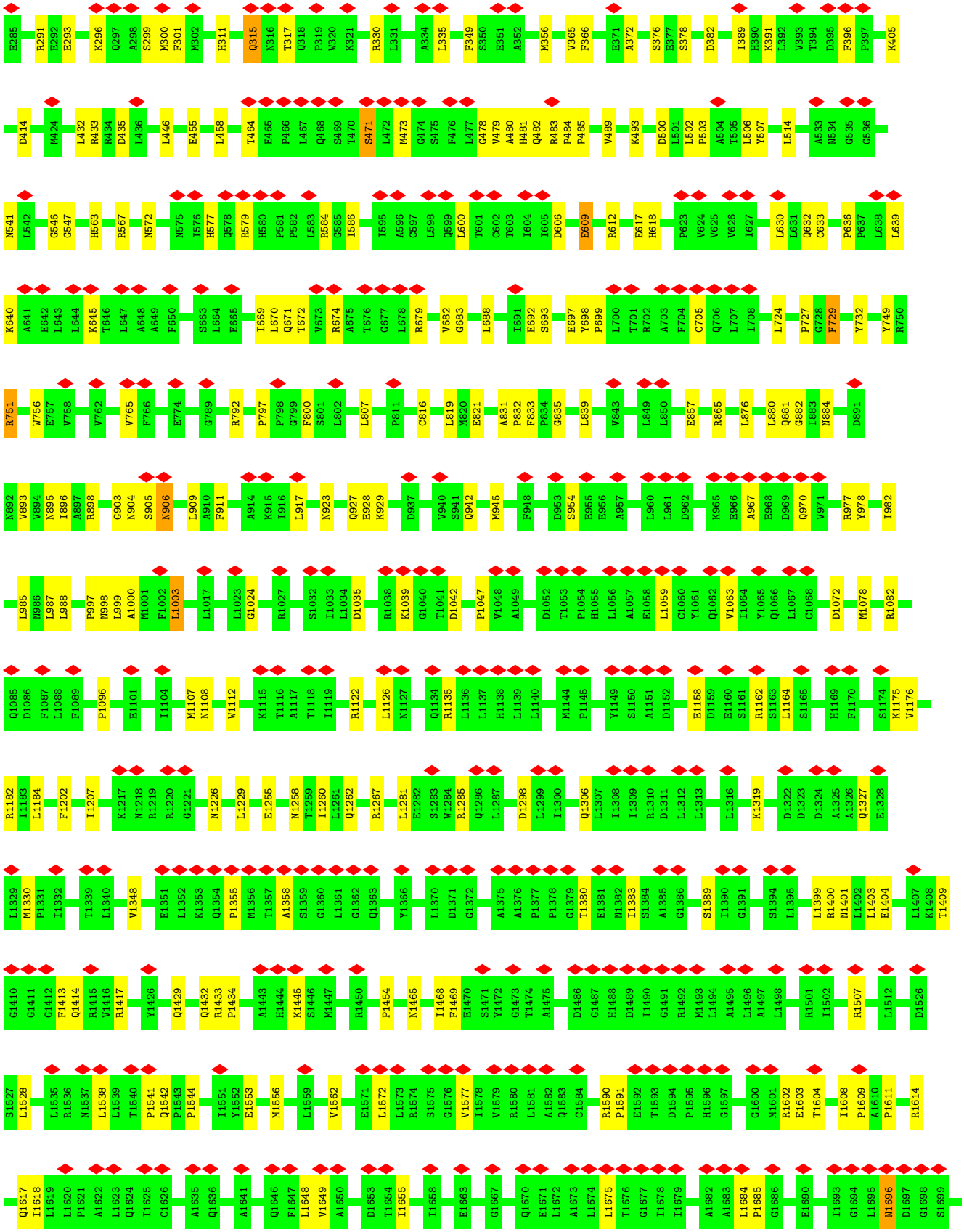
• Molecule 10: MGC83295 protein

Chain S:





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R1182 I1183 L1184 F1202 I1207 K1217 N1218 R1219 R1220 G1221 N1226 L1229 E1255 N1258 T1259 I1260 L1261 Q1262 R1267 L1281 E1282 S1283 W1284 R1285 Q1286 L1287 D1298 L1299 I1300 Q1306 L1307 I1308 I1309 R1310 D1311 L1312 L1313 L1316 K1319 D1322 D1323 D1324 A1325 A1326 Q1327 E1328
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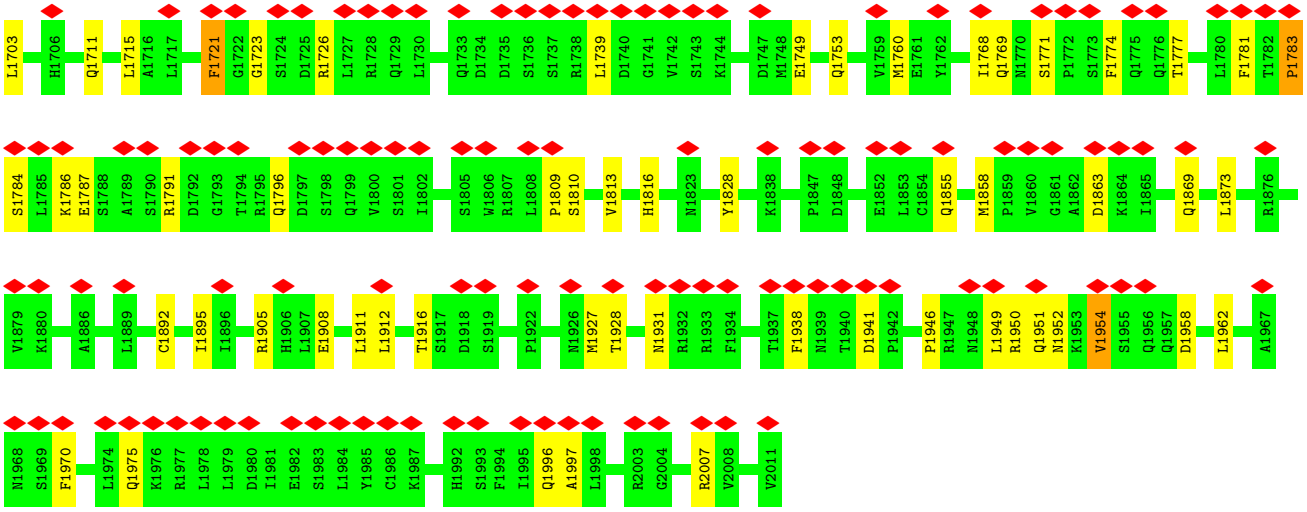
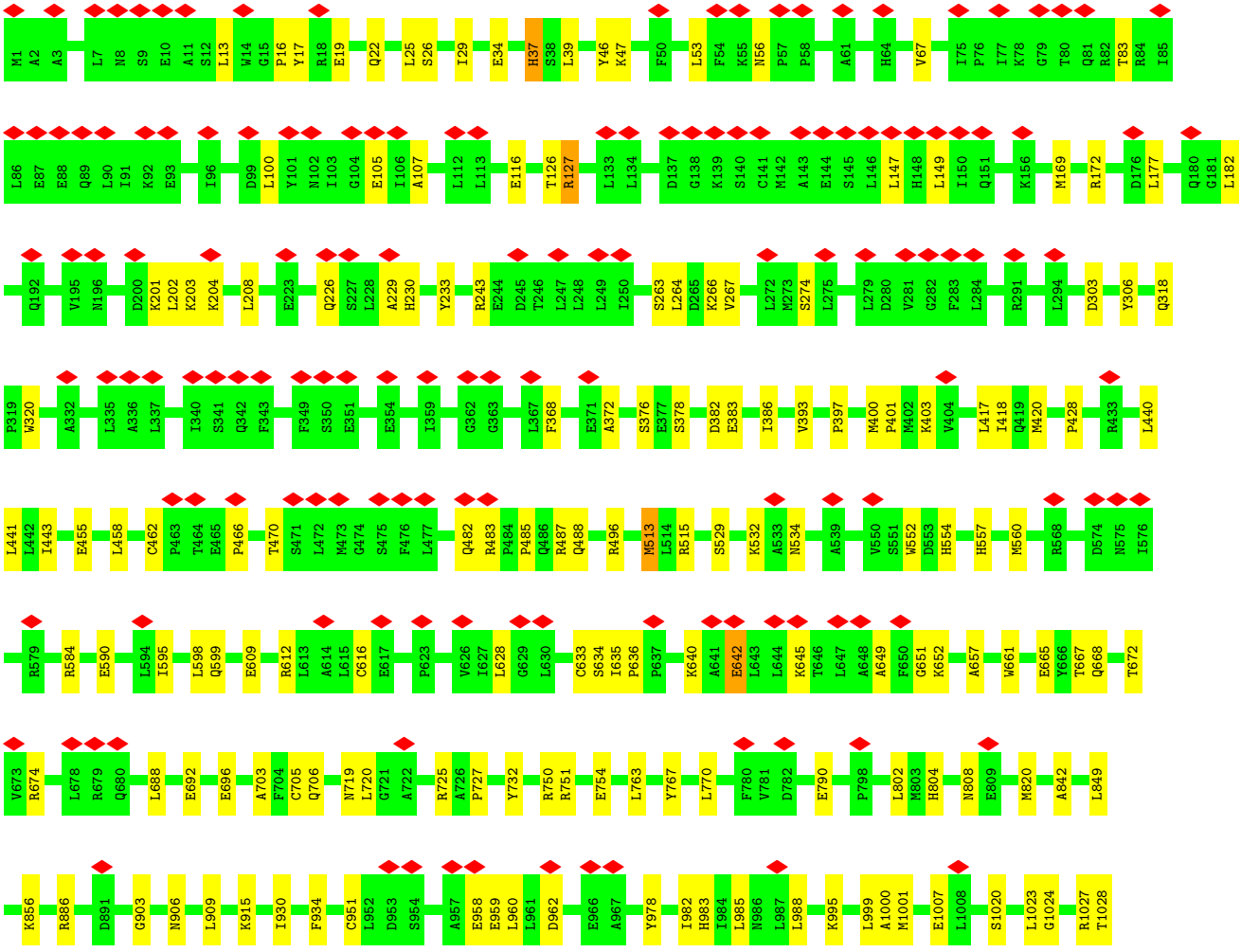


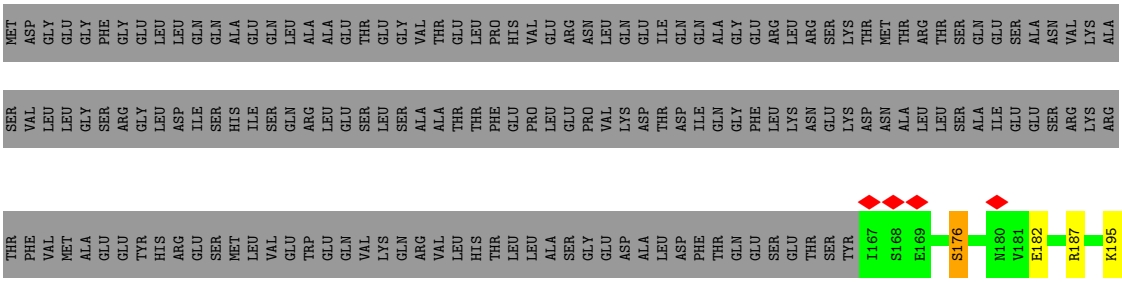
- Molecule 10: MGC83295 protein

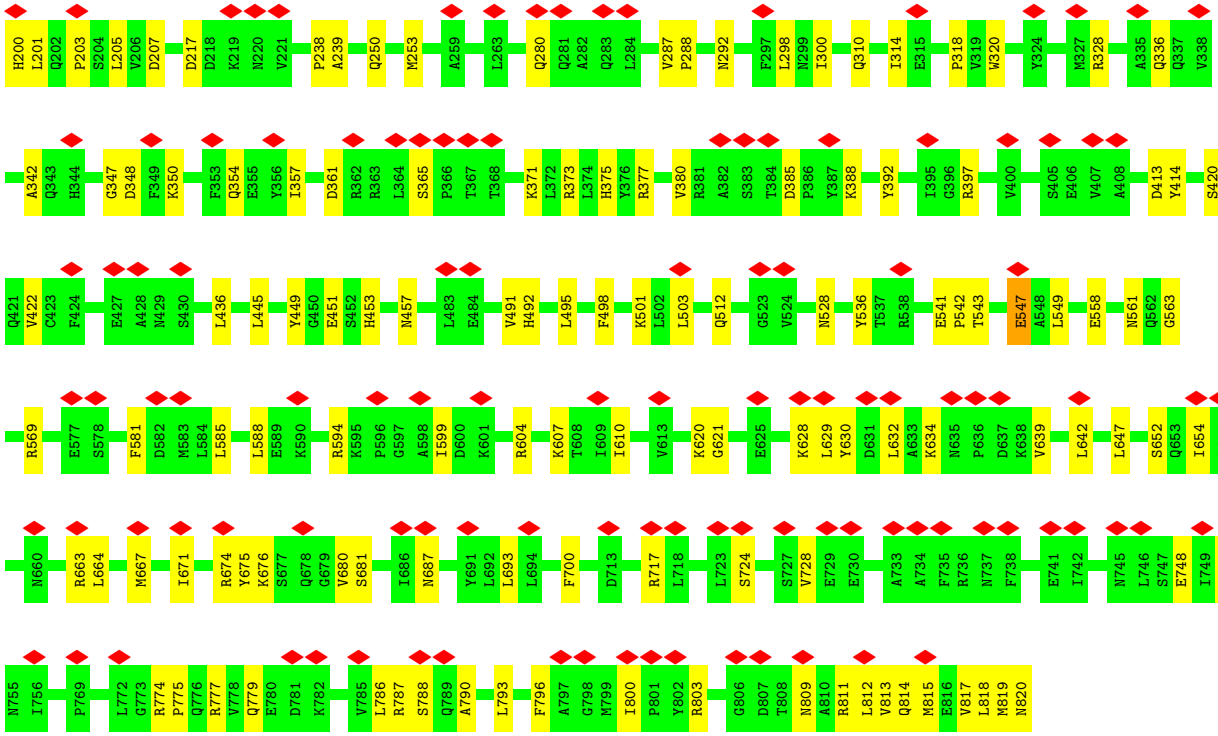
Chain T:



• Molecule 11: Nuclear pore complex protein Nup93

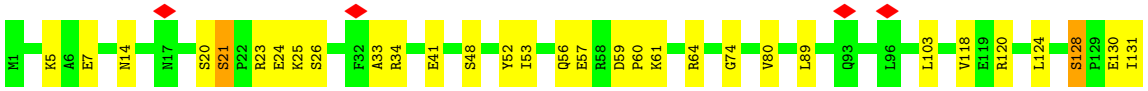
Chain U:

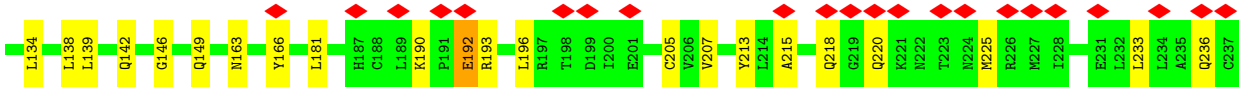


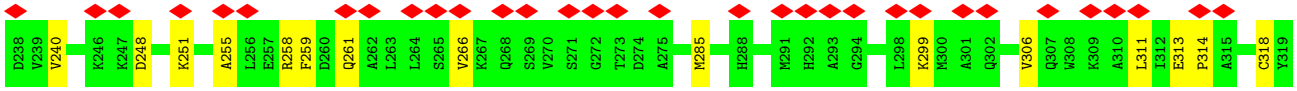


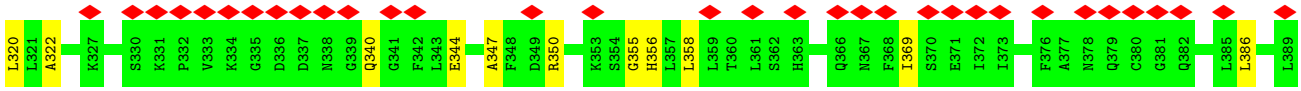
• Molecule 12: Nup358

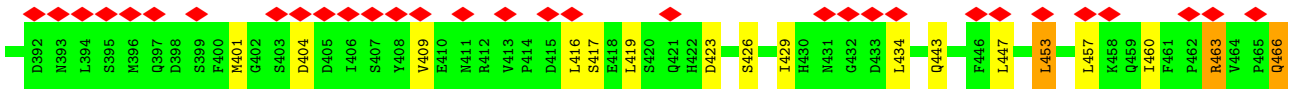
Chain V:

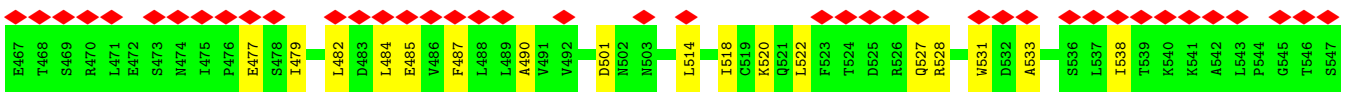


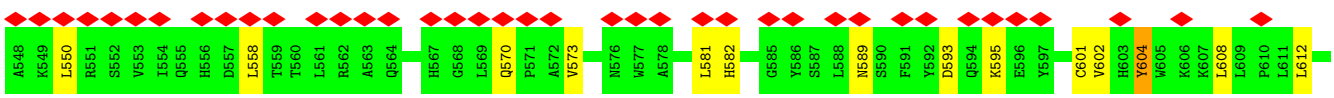


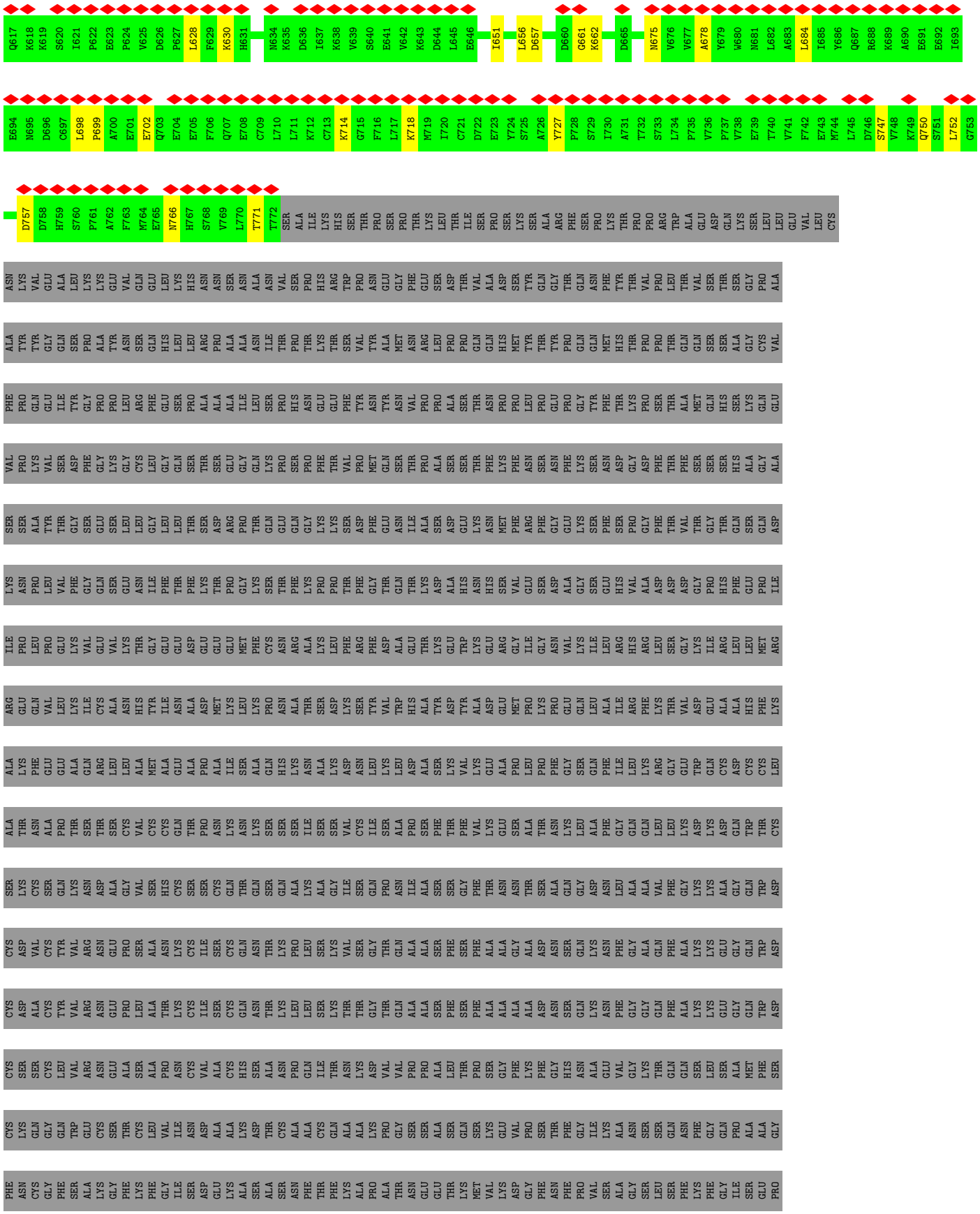








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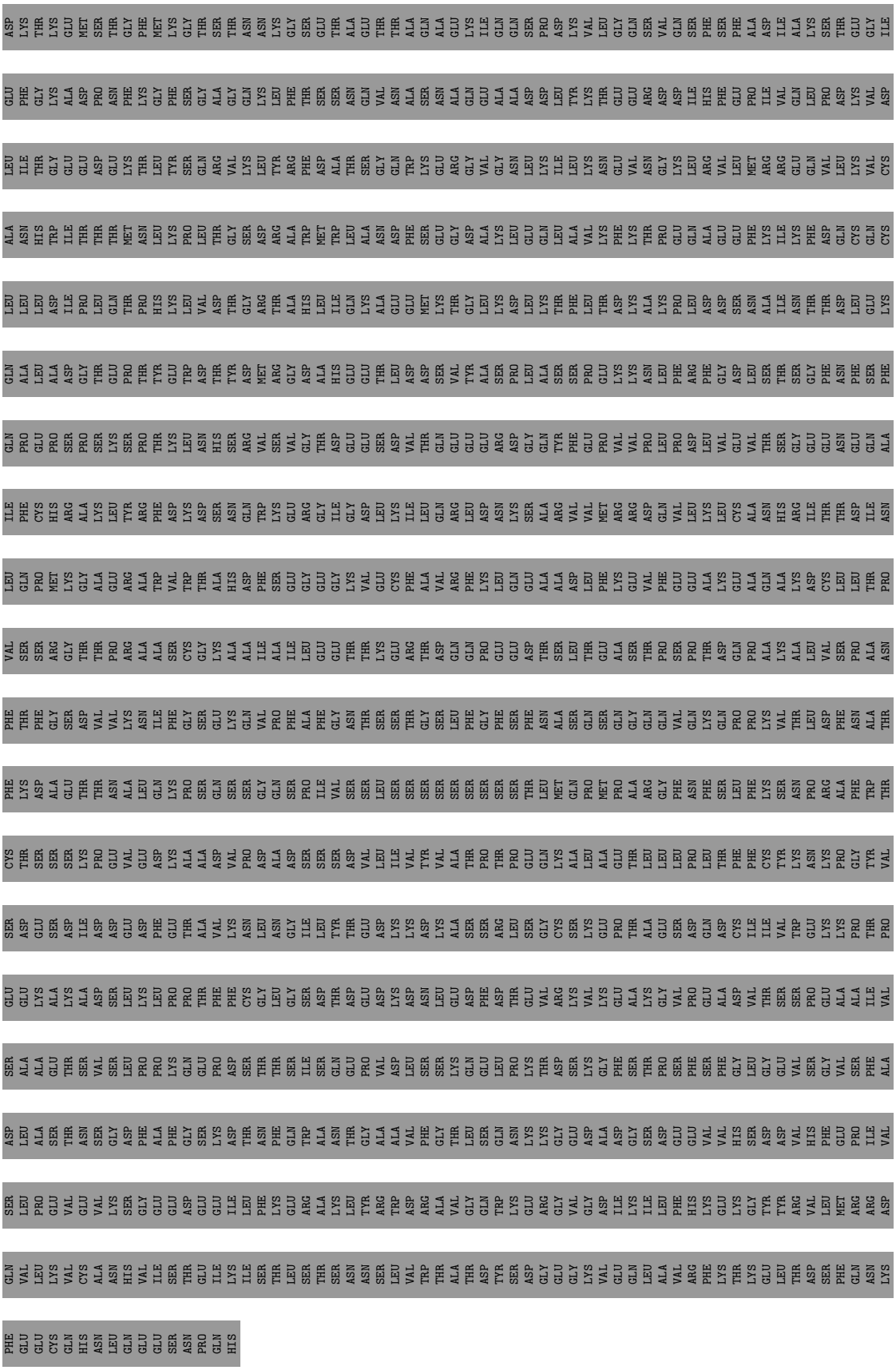
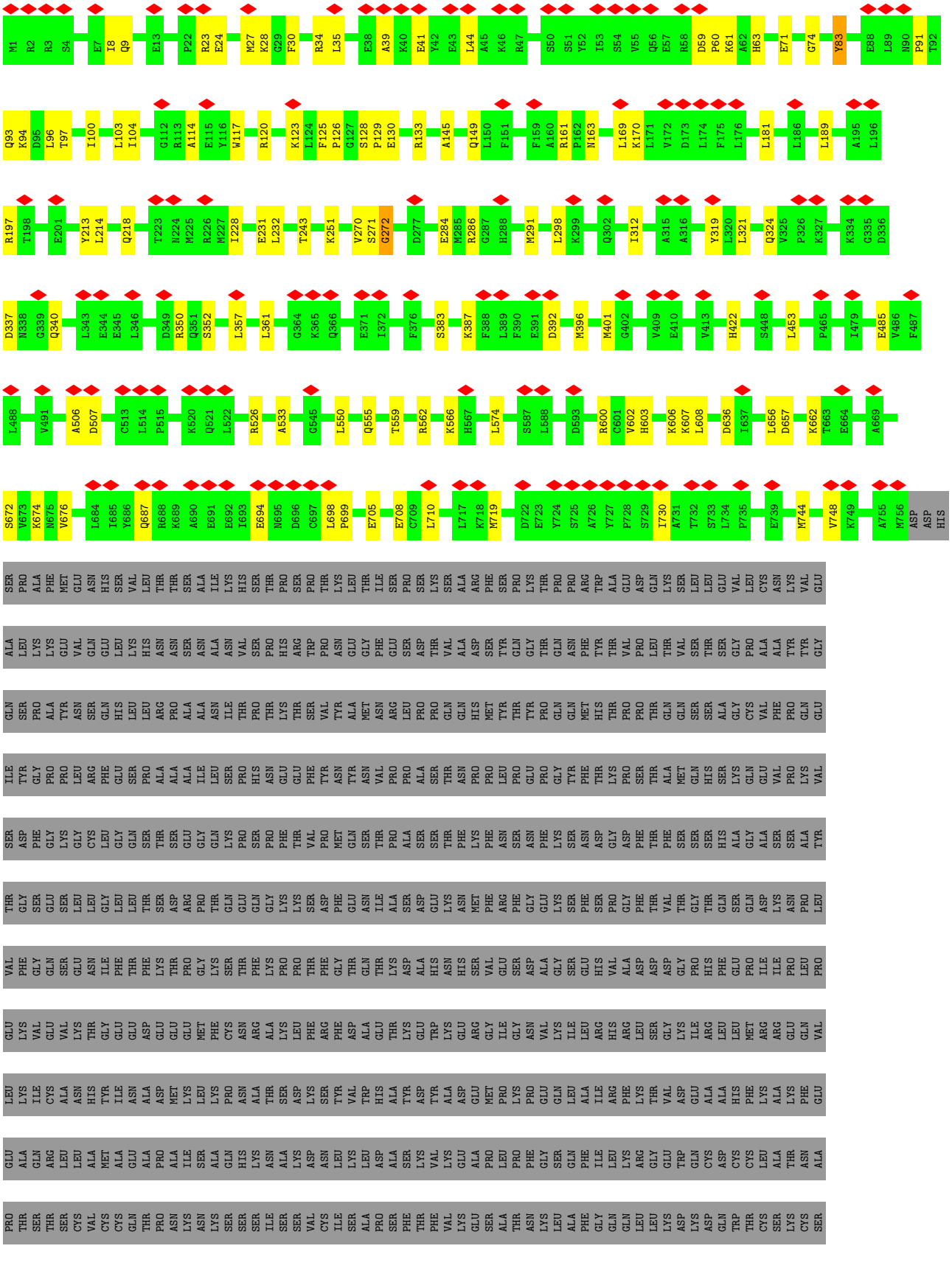
E694 N695 D696 C697 L698 P699 A700 E701 E702 Q703 E704 E705 F706 Q707 E708 C709 L710 L711 K712 C713 K714 G715 F716 L717 K718 M719 I720 C721 D722 E723 Y724 S725 A726 Y727 F728 S729 I730 A731 T732 S733 L734 P735 V736 P737 V738 E739 T740 V741 F742 E743 M744 L745 D746 S747 V748 K749 Q750 S751 L752 G753
D757 D758 H759 S760 P761 A762 F763 M764 E765 N766 H767 S768 V769 L770 T771 T772 SER ALA ILE LYS HIS SER THR PRO SER PRO THR LYS LEU THR ILE SER PRO SER LYS SER ALA ARG PHE SER PRO LYS THR PRO PRO ARG TRP ALA ALA GLU ASP GLN LYS SER LEU LEU GLU VAL LEU CYS
ASN LYS VAL GLU ALA LEU LYS LYS GLU VAL GLN GLU LEU LYS HIS ASN ASN SER ASN ALA ASN VAL SER PRO HIS ARG TRP PRO ASN GLU GLY PHE GLU SER ASP THR VAL ALA ASP SER TYR GLN GLY THR GLN ASN PHE TYR THR VAL PRO LEU THR VAL SER THR SER GLY PRO ALA
ALA TYR TYR GLY GLN SER PRO ALA TYR ASN SER GLN HIS LEU LEU LEU ARG PRO ALA ASN ILE THR PRO THR LYS THR SER VAL TYR ALA MET ASN ARG LEU PRO PRO GLN HIS MET TYR THR TYR PRO GLN GLN MET HIS THR PRO PRO THR GLN GLN SER SER ALA GLY CYS VAL
PHE PRO GLN GLU ILE TYR GLY PRO PRO PRO LEU ARG PHE GLU SER PRO ALA ALA ALA ILE LEU LEU SER PRO HIS ASN GLU GLU GLU PHE TYR ASN TYR ASN VAL PRO PRO ALA SER THR ASN PRO PRO LEU PRO GLU PRO PRO GLY TYR PHE PHE THR LYS PRO SER THR ALA MET GLN HIS SER LYS GLN GLU
VAL PRO LYS VAL SER ASP PHE GLY LYS GLY CYS LEU GLY GLN SER THR SER GLU GLY LYS PRO SER PRO SER PHE THR VAL PRO MET GLN SER THR PRO ALA SER SER SER THR PHE LYS PHE ASN SER ASN PHE LYS SER SER ASN ASP GLY ASP PHE THR PHE SER SER SER HIS ALA GLY ALA
SER SER ALA TYR THR GLY SER GLU SER LEU LEU LEU GLY LEU LEU THR SER ASP ARG PRO THR GLN GLU GLN GLY LYS LYS SER ASP PHE GLU ASN ILE ALA SER ASP GLU LYS ASN MET PHE ARG PHE GLY GLU LYS SER PHE SER PRO GLY PHE THR VAL THR GLY THR GLN ASP GLY
LYS ASN PRO LEU VAL PHE GLY GLN SER GLU ASN ILE PHE THR PHE LYS THR PRO GLY LYS SER THR PRO PHE GLY THR GLN THR LYS ASP ALA HIS ASN HIS SER VAL GLU SER ASP ALA GLY SER GLU HIS VAL ALA ASP ASP ASP GLY PRO HIS PHE GLU PRO ILE
ILE PRO LEU PRO GLU LYS VAL GLU VAL LYS THR GLY GLU GLU GLU ASP GLU GLU GLU MET PHE CYS ASN ARG ALA LYS LEU PHE ARG PHE ASP ALA GLU THR LYS GLU TRP LYS GLU ARG GLY ILE GLY ASN VAL LYS ILE LEU LEU ARG HIS ARG LEU SER GLY LYS ILE ARG LEU LEU MET ARG
ARG GLU GLN VAL LEU LYS ILE CYS ALA ASN HIS TYR ILE ASN ALA ASP MET LYS LEU LYS PRO ASN ALA ALA THR SER ASP LYS SER TYR VAL TRP HIS ALA TYR ASP TYR ALA ASP GLU MET PRO LYS PRO GLU GLN LEU ALA ALA ILE ARG PHE LYS THR VAL ASP GLU ALA ALA ALA HIS PHE LYS
ALA LYS PHE GLU GLU ALA GLN ARG LEU LEU ALA MET ALA GLU GLU ALA PRO ALA ILE SER ALA GLN HIS LYS ASN ALA LYS ASP ASN LEU LYS LEU ASP ALA SER LYS VAL LYS GLU ALA PRO LEU PRO PHE GLY SER GLN PHE ILE LEU LYS ARG GLY GLU TRP GLN CYS ASP CYS CYS LEU
ALA THR ASN ALA PRO THR SER THR SER CYS VAL CYS CYS GLN THR PRO ASN LYS ASN SER LYS SER SER ILE SER SER VAL CYS ILE SER ALA PRO SER PHE THR THR PHE VAL LYS GLU SER ALA THR ASN ASN LYS LEU ALA PHE GLY GLN GLN LEU LEU LYS ASP LYS ASP GLN TRP THR CYS
SER LYS CYS SER GLN LYS ASN ASP ALA GLY VAL SER HIS CYS SER SER CYS GLN THR GLN SER GLN ALA LYS ALA GLY ILE SER GLN PRO ASN ILE ALA SER SER GLY PHE THR ASN ASN THR SER ALA GLN GLY ASP ASN LEU ALA ALA PHE GLY LYS LYS ALA GLY GLN TRP ASP
CYS ASP VAL CYS TYR VAL ARG ASN GLU PRO SER ALA ASN LYS CYS ILE SER CYS GLN ASN THR LYS PRO LEU SER LYS VAL SER GLY THR GLN ALA ALA ALA SER PHE SER PHE ALA ALA GLY ALA ASP ASN SER GLN LYS ASN PHE GLY ALA GLN PHE ALA LYS LYS GLU GLY GLN TRP ASP
CYS ASP ALA CYS TYR VAL ARG ASN GLU PRO LEU ALA THR LYS CYS ILE SER CYS GLN ASN THR LYS LEU LEU SER LYS THR THR GLY THR GLN ALA ALA ALA SER PHE SER PHE ALA ALA GLY ALA ASP ASN SER GLN LYS ASN PHE GLY ALA GLN PHE ALA LYS LYS GLU GLY GLN TRP ASP
CYS SER SER CYS LEU VAL ARG ASN GLU ALA SER ALA PRO ASN CYS VAL ALA CYS HIS SER ALA ASN PRO GLN ILE THR ASN LYS ASP VAL VAL PRO PRO ALA LEU THR PRO SER GLY PHE LYS PHE GLY HIS ASN ALA GLU VAL GLY LYS THR GLN GLN SER LEU SER ALA MET PHE SER
CYS LYS GLN GLY GLN TRP GLU CYS SER THR CYS LEU VAL ILE ASN ASP GLU ALA ALA LYS ASP SER THR CYS ALA ALA ALA CYS GLN ALA ALA LYS PRO GLY CYS SER SER GLU VAL PRO SER THR PHE GLY ILE LYS ALA ASN SER GLN ASN PHE GLY GLN PRO GLU GLY
PHE ASN CYS GLY PHE SER ALA LYS GLY PHE ALA SER ALA SER ASN ALA PHE THR PHE LYS GLY PHE ALA ALA PRO ALA THR ASN GLU GLU THR LYS MET VAL LYS ASP GLY PHE ASN PHE PRO VAL SER ALA GLY SER LEU SER PHE LYS PHE GLY ILE SER GLU PRO



- Molecule 12: Nup358

Chain W:

5%
22%
74%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Q93 K94 D95 L96 T97 I100 L103 I104 G112 R113 A114 E115 Y116 W117 R120 K123 L124 F125 P126 G127 S128 P129 E130 R133 A145 Q149 L150 F151 F159 A160 R161 P162 N163 L169 K170 L171 V172 D173 L174 F175 L176 L181 L186 L189 A195 L196
R197 T198 E201 Y213 L214 Q218 T223 N224 M225 R226 M227 I228 E231 L232 T243 K251 V270 S271 G272 D277 E284 M285 R286 G287 H288 M291 L298 K299 Q302 I312 A315 A316 Y319 L320 L321 Q324 V325 P326 K327 K334 G335 D336
D337 N338 G339 Q340 L343 E344 E345 L346 D349 R350 Q351 S352 L357 L361 G364 K365 Q366 E371 I372 F376 S383 K387 F388 L389 F390 E391 D392 M396 M401 G402 V409 E410 V413 H422 S448 L453 P465 I479 E485 V486 F487
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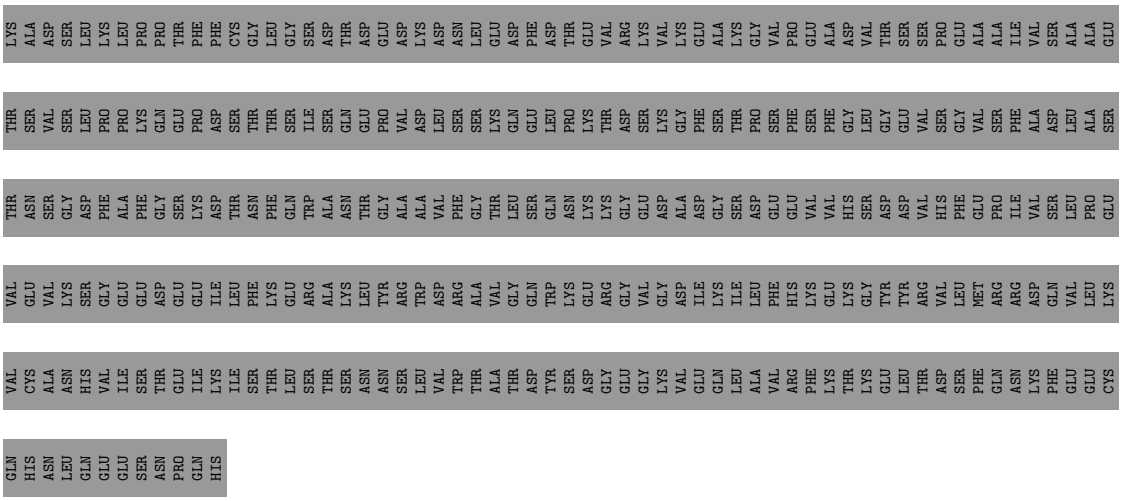
S672 V673 K674 N675 V676 L684 I685 Y686 Q687 R688 K689 A690 E691 E692 I693 E694 N695 D696 C697 L698 P699 E705 E708 C709 L710 L717 K718 M719 D722 E723 Y724 S725 A726 Y727 P728 S729 I730 A731 T732 S733 L734 P735 E739 M744 V748 K749 A755 M756 ASP ASP HIS
SER PRO ALA PHE MET GLU ASN HIS SER VAL LEU THR THR SER ALA ILE LYS HIS SER THR PRO SER PRO THR LYS LEU THR ILE SER PRO SER LYS SER ALA ARG PHE SER PRO LYS THR PRO PRO ARG TRP ALA GLU ASP GLN LYS SER LEU LEU GLU VAL LEU CYS ASN LYS VAL GLU
ALA LEU LYS LYS GLU VAL GLN GLU LEU LYS HIS ASN ASN SER ASN ALA ASN VAL SER PRO HIS ARG TRP PRO ASN GLU GLY PHE GLU SER ASP THR VAL ALA ASP SER TYR GLN GLY THR GLN ASN PHE TYR THR VAL PRO PRO LEU THR VAL SER THR SER GLY PRO ALA ALA TYR TYR GLY
GLN SER PRO ALA TYR ASN SER GLN HIS LEU LEU ARG PRO ALA ALA ASN ILE THR PRO THR LYS THR SER VAL TYR ALA MET ASN ARG LEU PRO PRO GLN GLN HIS MET TYR THR TYR PRO GLN GLN MET HIS THR PRO PRO THR GLN GLN SER SER ALA GLY CYS VAL PHE PRO GLN GLU
ILE TYR GLY PRO PRO LEU ARG PHE GLU SER PRO ALA ALA ILE LEU SER PRO HIS ASN GLU GLU PHE TYR ASN TYR ASN VAL PRO PRO ALA SER SER THR ASN PRO PRO LEU PRO GLU PRO GLY TYR PHE THR LYS PRO SER THR ALA MET GLN HIS SER LYS GLN GLU VAL PRO LYS VAL
SER ASP PHE GLY LYS GLY CYS LEU GLY GLN SER THR SER GLU GLY GLN LYS PRO SER PRO PHE THR VAL PRO MET GLN SER THR PRO ALA SER SER THR PHE LYS PHE ASN SER ASN PHE LYS SER ASN ASP GLY ASP PHE THR PHE SER SER HIS ALA GLY ALA SER SER ALA TYR
THR GLY SER GLU SER LEU LEU GLY LEU LEU THR SER ASP ARG PRO THR GLN GLU GLN GLY LYS LYS SER ASP PHE GLU ASN ILE ALA SER ASP GLU LYS ASN MET PHE ARG PHE GLY GLU LYS SER PHE SER PRO GLY PHE THR VAL THR GLY PHE SER GLN ASP LYS ASN PRO LEU
VAL PHE GLY GLN SER GLU ASN ILE PHE THR PHE LYS THR PRO GLY LYS SER THR PHE PRO PRO THR PHE GLY THR PHE ASP LYS ASP ALA HIS ASN HIS SER VAL GLU SER GLU HIS VAL ALA ASP ASP ASP GLY PRO HIS PHE GLU PRO ILE ILE PRO LEU PRO
GLU LYS VAL GLU VAL LYS THR GLY GLU GLU ASP GLU ASP ARG PHE ASP ALA GLU THR LYS GLU TRP LYS GLU GLY ARG GLY ILE GLY ASN VAL LYS ILE LEU ARG HIS ARG LEU SER GLY LYS ILE ARG LEU LEU MET ARG ARG GLU GLN VAL
LEU LYS ILE CYS ALA ASN HIS TYR ILE ASN ALA ASP MET LYS LEU LYS PRO ASN ALA THR SER ASP LYS SER TYR VAL TRP HIS ALA TYR ASP TYR ALA ASP GLU PRO GLN LEU ALA ILE ARG PHE LYS THR VAL LYS ASP GLU LYS ILE ARG GLU ALA ALA HIS PHE LYS ASP ALA
GLU ALA GLN ARG LEU GLU ALA PRO ALA ILE SER ALA GLN HIS LYS ASN ALA LYS ASP ASN LEU LYS LEU ASP SER LYS ASN VAL CYS ILE SER ALA PRO SER PHE THR PHE VAL LYS GLU SER ALA THR ASN LYS LEU ALA PHE ILE LEU LYS ARG GLY GLN GLN LEU LYS ASP LYS GLN TRP THR CYS SER LEU ALA THR ASN
PRO THR SER THR SER CYS VAL CYS CYS GLN THR THR PRO ASN LYS ASN LYS SER SER SER ILE SER SER VAL CYS ILE SER ALA PRO SER PHE THR PHE VAL LYS GLU SER ALA THR ASN LYS LEU ALA PHE GLY GLN GLN LEU LEU LYS ASP GLN TRP THR CYS SER LEU ALA THR ASN



• Molecule 12: Nup358

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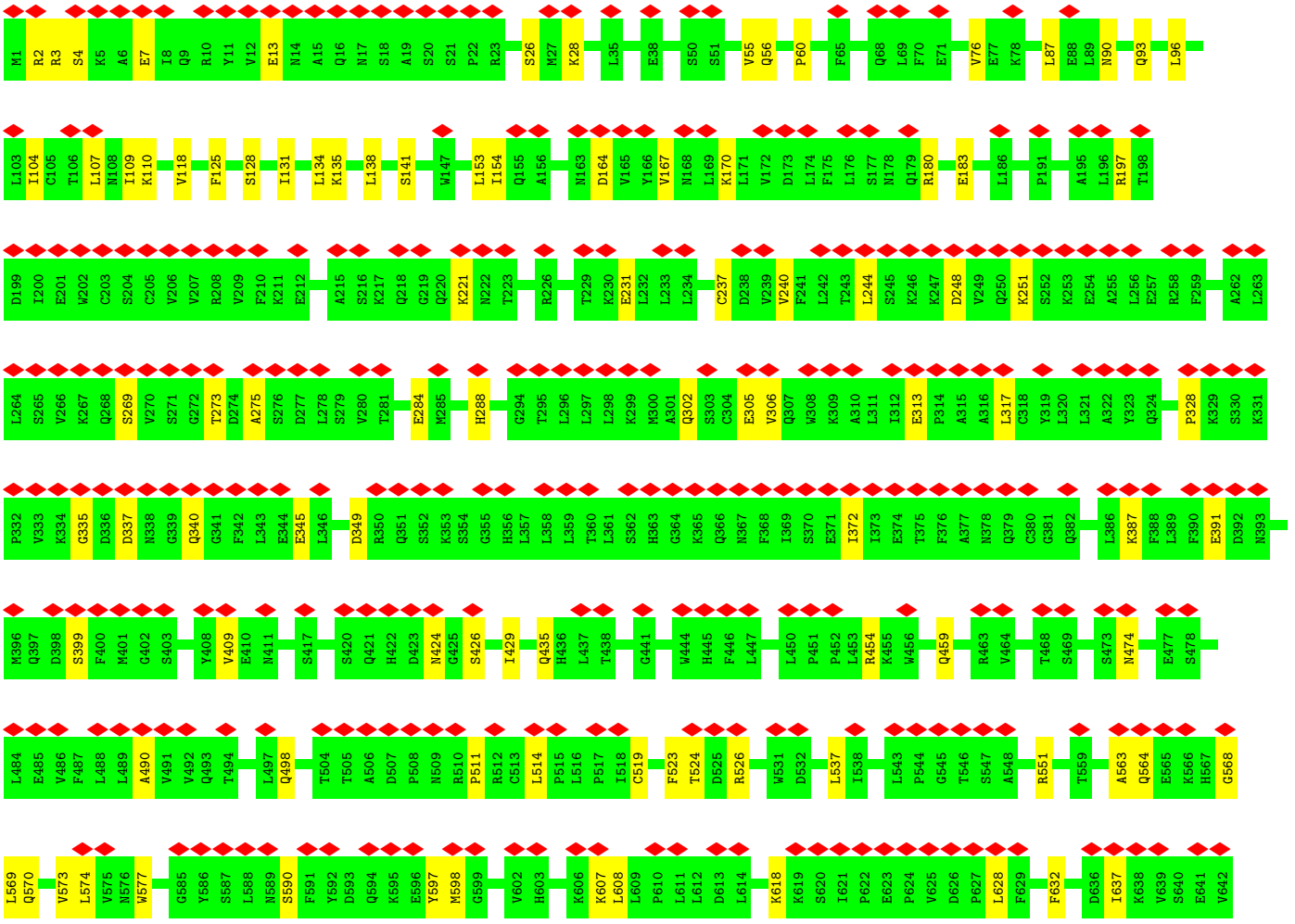

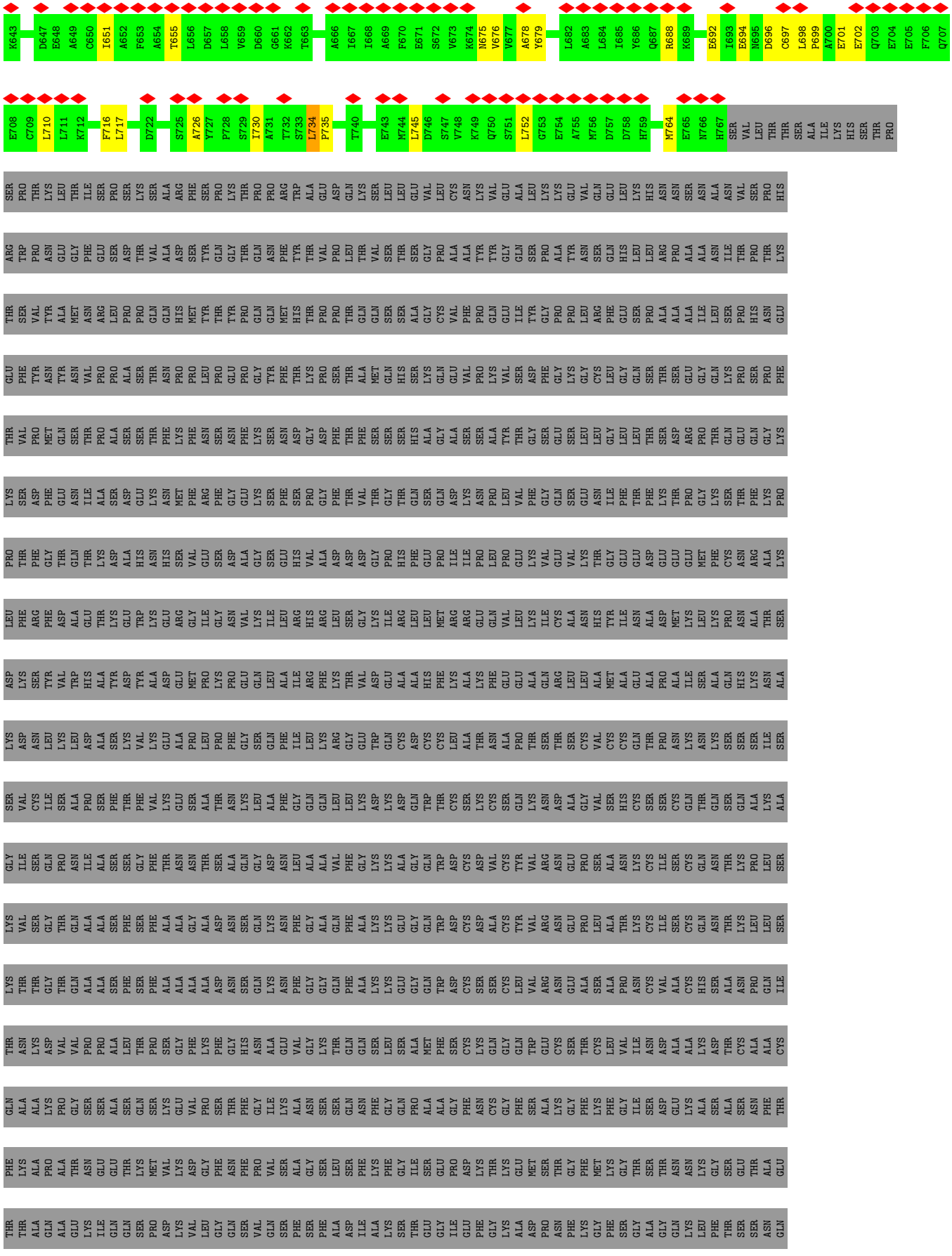
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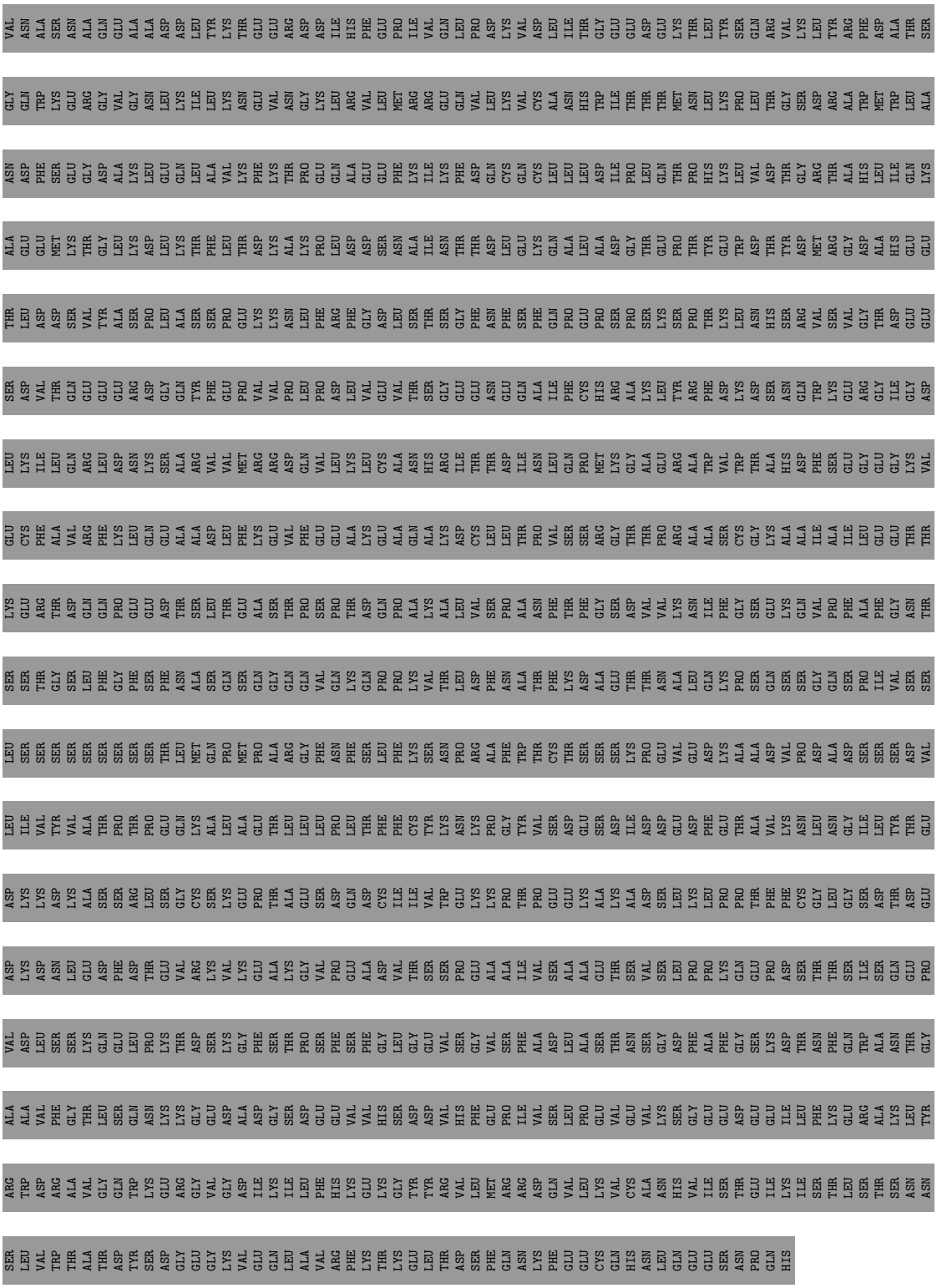
E708 C709 L710 L711 K712 F716 L717 D722 S725 A726 Y727 P728 S729 I730 A731 T732 S733 L734 P735 T740 E743 M744 L745 D746 S747 V748 K749 Q750 S751 L752 G753 E754 A755 M756 D757 D758 H759 M764 E765 N766 H767 SER VAL LEU THR THR SER ALA ILE LYS HIS SER THR PRO



• Molecule 12: Nup358

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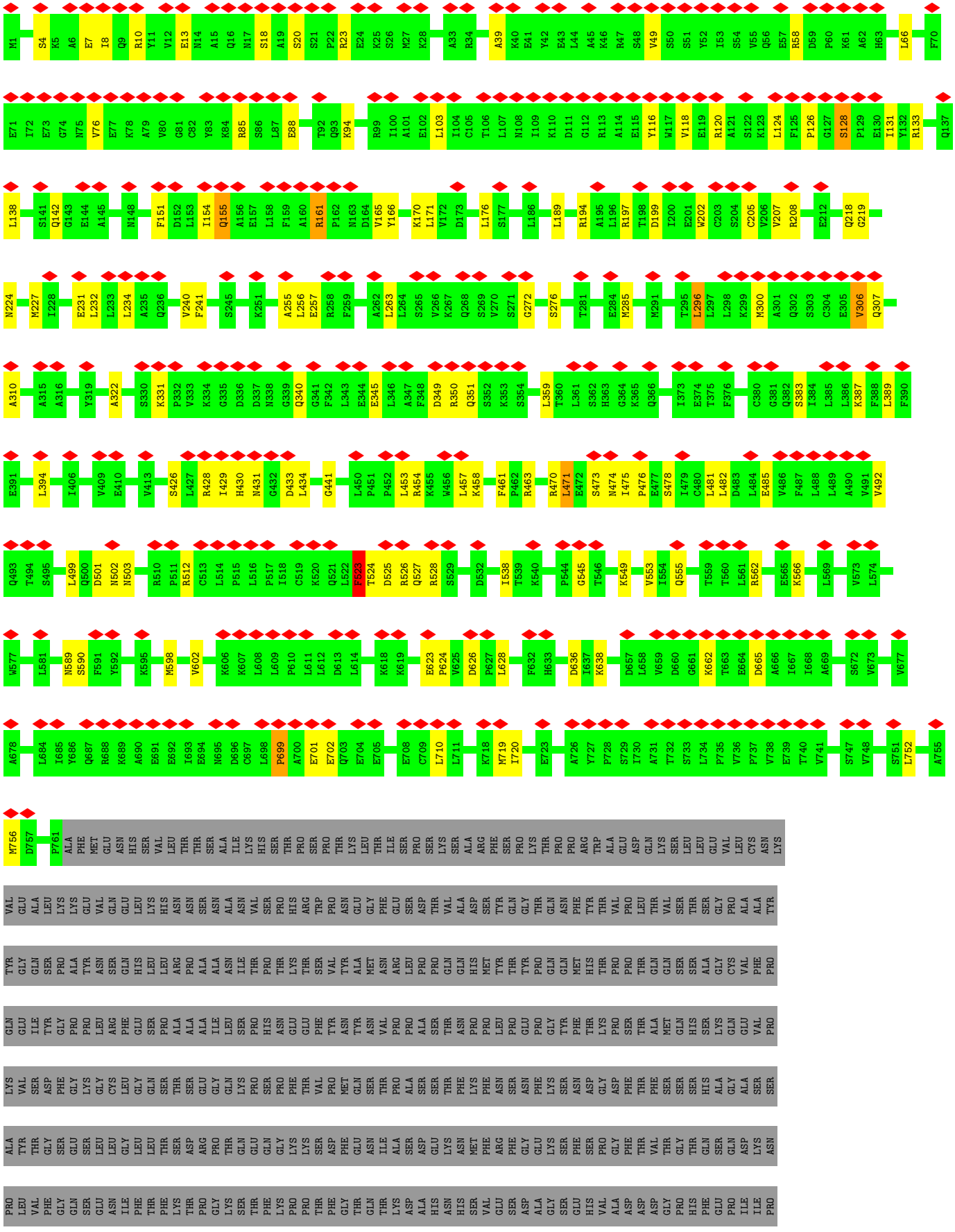
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E71 I72 E73 G74 N75 V76 E77 K78 A79 V80 G81 C82 Y83 K84 R85 S86 L87 E88 T92 Q93 K94 R99 I100 A101 E102 L103 I104 C105 T106 L107 N108 I109 K110 D111 G112 R113 A114 E115 Y116 W117 V118 E119 R120 A121 S122 K123 L124 F125 P126 G127 S128 P129 E130 T131 Y132 R133 Q137
L138 S141 Q142 G143 E144 A145 N148 F151 D152 L153 I154 Q155 A156 E157 L158 F159 A160 R161 P162 N163 D164 V165 Y166 K170 L171 V172 D173 L176 S177 L186 L189 R194 A195 L196 R197 T198 D199 I200 E201 W202 C203 S204 C205 V206 V207 R208 E212 Q218 G219
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A310 A315 A316 Y319 A322 S330 K331 P332 V333 K334 G335 D336 D337 N338 G339 Q340 G341 F342 L343 E344 E345 L346 A347 F348 D349 R350 Q351 S352 K353 S354 L359 T360 L361 S362 H363 G364 K365 Q366 I373 E374 T375 F376 C380 G381 Q382 S383 I384 L385 L386 K387 F388 L389 F390
E391 L394 I406 V409 E410 V413 S426 L427 R428 I429 H430 N431 G432 D433 L434 G441 L450 P451 P452 L453 R454 K455 W456 L457 K458 F461 P462 R463 R470 L471 E472 S473 N474 I475 P476 E477 S478 I479 C480 L481 L482 D483 L484 E485 V486 F487 L488 L489 A490 V491 V492
Q493 T494 S495 L499 Q500 D501 N502 N503 R510 P511 R512 C513 L514 P515 L516 P517 I518 C519 K520 Q521 L522 P523 T524 D525 R526 Q527 R528 S529 D532 I538 T539 K540 P544 G545 T546 K549 V553 I554 Q555 T559 T560 L561 R562 E565 K566 L569 V573 L574
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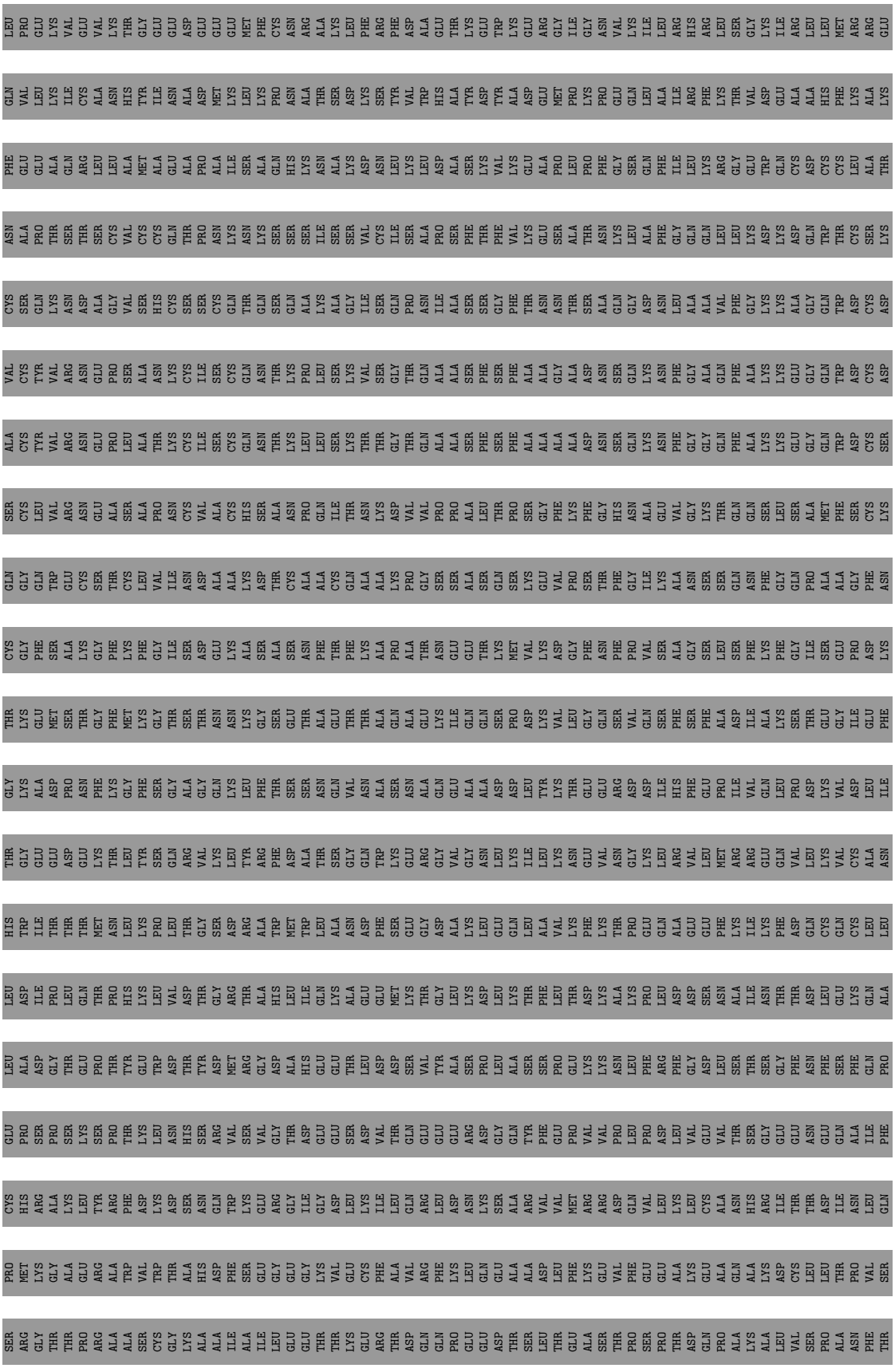
M756 D757 P761 ALA PHE MET GLU ASN HIS SER VAL LEU THR THR SER ALA ILE LYS HIS SER THR PRO SER PRO THR LYS LEU THR ILE SER PRO SER LYS SER ALA ARG PHE SER PRO LYS THR PRO PRO ARG TRP ALA GLU ASP GLN LYS SER LEU LEU GLU VAL LEU CYS ASN LYS
VAL GLU ALA LEU LYS LYS GLU VAL GLN GLU LEU LYS HIS ASN ASN SER ALA ASN VAL SER PRO HIS ARG TRP PRO ASN GLU GLY PHE GLU SER ASP THR VAL ALA ASP SER TYR GLN THR GLN ASN PHE TYR THR VAL PRO LEU THR VAL SER THR SER GLY PRO ALA ALA TYR
TYR GLY GLN SER PRO ALA TYR ASN SER GLN HIS LEU LEU ARG PRO ALA ALA ASN ILE THR PRO THR LYS THR SER VAL TYR ALA MET ASN ARG LEU PRO PRO GLN GLN HIS MET TYR THR TYR PRO GLN GLN MET HIS THR PRO PRO THR GLN GLN SER SER ALA GLY CYS VAL PHE PRO
GLN GLU ILE TYR GLY PRO PRO LEU ARG PHE GLU GLU SER PRO ALA ALA ALA ILE LEU LEU SER PRO HIS ASN GLU GLU PHE TYR ASN TYR ASN VAL PRO PRO ALA SER THR ASN PRO PRO GLU PRO GLY TYR PHE THR LYS PRO SER THR ALA MET GLN HIS SER LYS GLN LEU PRO VAL PRO
LYS VAL SER ASP PHE GLY LYS GLY CYS LEU GLY GLN SER THR SER GLU GLY GLN LYS PRO SER PRO PHE THR VAL PRO MET GLN SER THR PRO ALA SER SER THR PHE LYS PRO ASN SER ASN PHE LYS SER ASN ASP GLY ASP PHE THR THR PHE SER SER SER HIS ALA GLY LYS GLN GLU VAL PRO
ALA TYR THR GLY SER GLU SER LEU LEU LEU THR SER ASP ARG PRO THR LYS LYS SER ASP PHE GLU ASN ILE ALA SER ASP GLU LYS ASN MET PHE ARG PHE GLY GLU LYS SER PHE SER PRO GLY GLY PHE THR THR PHE SER GLN SER ILE GLY GLN
PRO LEU VAL PHE GLY GLN SER GLU ASN ILE PHE THR PHE LYS THR PRO GLY LYS SER THR PHE LYS PRO PRO THR PHE GLY THR GLN THR LYS ASP ALA HIS ASN HIS SER VAL GLU SER ASP ALA GLY SER GLU HIS VAL ALA ASP ASP GLY PRO HIS PHE GLU PRO ILE ILE PRO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GLN VAL LEU LYS ILE CYS ALA ASN HIS TYR ILE ASN ALA ASP MET LYS LEU LYS PRO ASN ALA THR SER ASP LYS SER TYR VAL TRP HIS ALA TYR ASP TYR ALA ASP GLU MET PRO LYS PRO GLU GLN LEU ALA ILE ARG PHE LYS THR VAL ASP GLU ALA ALA HIS PHE LYS ALA THR
PHE GLU GLU ALA GLN ARG LEU LEU ALA MET ALA GLU ALA PRO ALA ILE SER ALA GLN HIS LYS ASN SER ALA LYS ASP ASN LEU LYS LEU ASP ALA SER GLU ALA PRO LEU PRO PHE GLY SER GLN PHE ILE LEU LYS ARG GLY GLU TRP GLN CYS ASP CYS CYS LEU LEU ALA THR
ASN ALA PRO THR SER THR SER CYS VAL CYS CYS GLN THR PRO ASN LYS ASN LYS SER SER SER ILE SER ALA SER SER VAL CYS ILE SER ALA PRO SER PHE THR PHE VAL LYS GLU SER ALA THR ASN LYS LEU ALA PHE GLY GLN GLN LEU LEU LYS ASP LYS ASP GLN TRP THR ASP CYS SER LYS
CYS SER GLN LYS ASN ASP ALA GLY VAL CYS SER HIS CYS SER SER CYS GLN THR GLN SER GLN PRO ASN ILE ALA SER GLY ASP ALA ALA ALA VAL PHE GLY GLY LEU ALA PHE GLY GLN GLN LEU ALA LYS LYS LYS ALA GLY GLN TRP ASP CYS ASP
VAL CYS TYR VAL ARG ASN GLU PRO SER ALA ASN LYS CYS ILE SER CYS GLN ASN THR LYS PRO LEU SER SER LYS VAL SER GLN THR GLY PHE SER GLY GLN ALA ALA SER PHE SER PHE ALA ALA ASP ASN SER GLN LYS ASN PHE GLY ALA GLN PHE ALA LYS LYS GLU GLY GLN TRP ASP CYS ASP
ALA CYS TYR VAL ARG ASN GLU PRO LEU ALA THR LYS CYS ILE SER CYS GLN ASN THR LYS PRO LEU SER SER LYS THR THR GLY THR GLN ALA ALA SER PHE SER PHE ALA ASP ASN SER GLN LYS ASN PHE GLY GLY ALA GLN PHE ALA LYS LYS GLU GLY GLN TRP ASP CYS SER
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GLN GLY GLN TRP GLU CYS SER THR CYS LEU VAL ILE ASN ASP ALA ALA ALA LYS ASP THR CYS ALA ALA CYS GLN ALA ALA LYS PRO GLY SER SER GLN SER GLN LYS SER PHE GLY GLN PRO ALA ALA ASN SER SER GLN ASN PHE GLY ASN
CYS GLY PHE SER ALA LYS GLY PHE GLY ILE SER ASP GLU LYS ALA SER ALA SER ASN PHE THR PHE LYS ALA PRO ALA THR ASN GLU GLU THR LYS MET VAL LYS ASP GLY PHE ASN PHE PRO VAL SER ALA GLY SER LEU SER PHE LYS PHE GLY ILE SER GLU PRO ASP LYS
THR LYS GLU MET SER THR GLY PHE MET LYS GLY THR SER THR ASN ASN LYS GLY SER GLU THR ALA GLU THR THR ALA GLN ALA GLU LYS ILE GLN GLN SER PRO ASP LYS VAL LEU GLY GLN SER VAL GLN SER PHE SER PHE SER ALA GLU PHE
GLY LYS ALA ASP PRO ASN PHE LYS GLY PHE SER GLY ALA GLY GLN LYS LEU PHE THR SER SER ASN GLN VAL ASN ALA SER ASN ALA GLN GLU GLU PHE ASP ALA ALA ASP ASP ILE HIS PHE GLU PRO ILE ASP LEU ASP LYS
THR GLY GLU GLU ASP GLU LYS THR LEU TYR SER GLN ARG VAL LYS LEU TYR ARG PHE ASP ALA THR SER GLY GLN TRP LYS GLU GLY GLY VAL GLY ASN LEU LYS VAL ILE LEU LYS ASN GLU VAL ASN GLY LYS LEU ARG VAL CYS ALA ASN
HIS TRP ILE THR THR MET ASN LEU LYS PRO LEU THR GLY ASP ARG ALA TRP MET TRP LEU ALA ASN ASP PHE SER GLU GLY ASP ALA LYS LEU GLU GLN LEU ALA VAL LYS PHE LYS THR PRO GLU GLN GLU PHE LYS ILE ALA VAL PHE ASP GLN CYS GLN CYS ALA LEU
LEU ASP ILE PRO LEU GLN THR PRO HIS LYS LEU VAL ASP THR GLY ARG THR ALA LEU ILE ILE GLN LEU THR ALA HIS LEU ILE GLU GLU MET LYS THR GLY LEU LYS ASP LEU LYS THR PHE LEU THR ASP LYS ALA LYS PRO LEU ASP ASP SER ASN ALA ILE ASN THR THR ASP GLN LEU GLU GLU LYS GLN ALA
LEU ALA ASP GLY THR GLU PRO THR TYR ASP MET ARG GLY ASP ALA ALA HIS GLU GLU THR LEU ASP ASP SER VAL VAL TYR ALA SER PRO LEU ALA ALA SER SER PRO GLU PRO ARG PHE GLY ASP LEU SER THR SER GLY PHE ASN PHE SER PHE GLN PRO
GLU PRO SER PRO SER LYS LEU ASN HIS SER ARG VAL SER VAL GLY THR ASP GLU GLU SER ASP VAL THR GLN GLU GLU GLU ARG ASP GLY GLN TYR PHE GLU PRO VAL VAL PRO LEU PRO ASP LEU GLU VAL GLU VAL GLU GLU GLN GLN ALA ILE PHE
CYS HIS ARG ALA LYS LEU TYR ARG PHE ASP LYS ILE LEU GLN ARG LEU ASP ASN LYS SER ALA ARG VAL VAL MET ARG ARG ASP GLN VAL LEU CYS ALA ASN HIS ARG ILE THR THR ASP ILE ASN LEU GLN
PRO MET LYS GLY ALA GLU VAL ARG PHE LYS LEU GLN GLU GLU ASP ALA ALA ASP LEU PHE LYS GLU VAL PHE GLU GLU ALA LYS ASP CYS LEU LEU LEU THR PRO VAL SER
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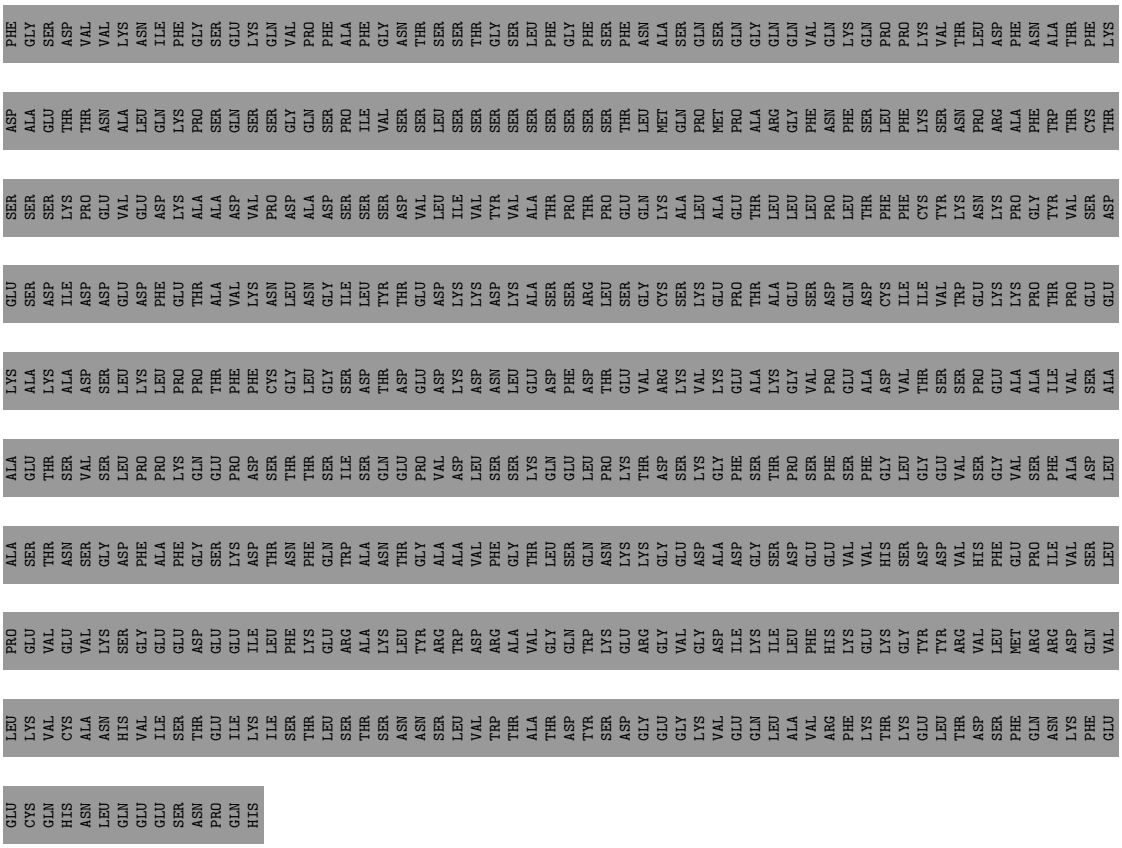

• Molecule 12: Nup358

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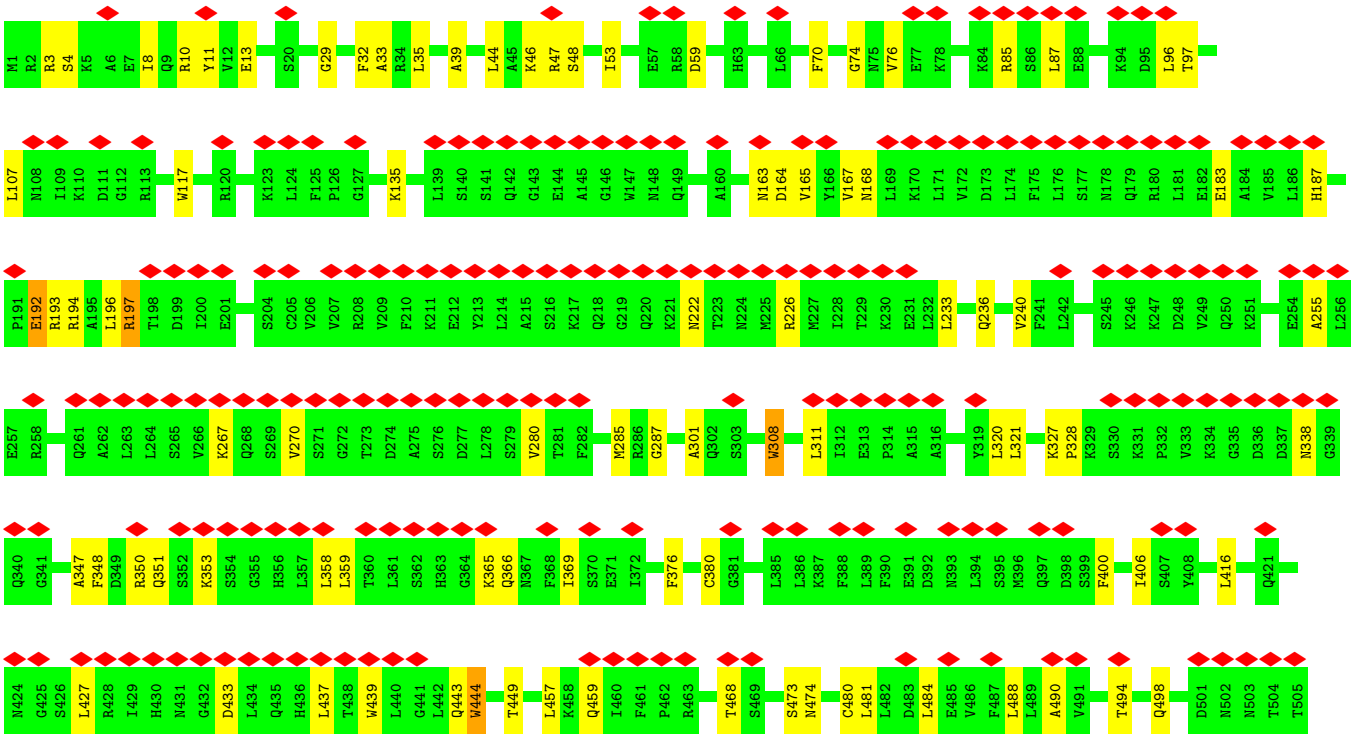

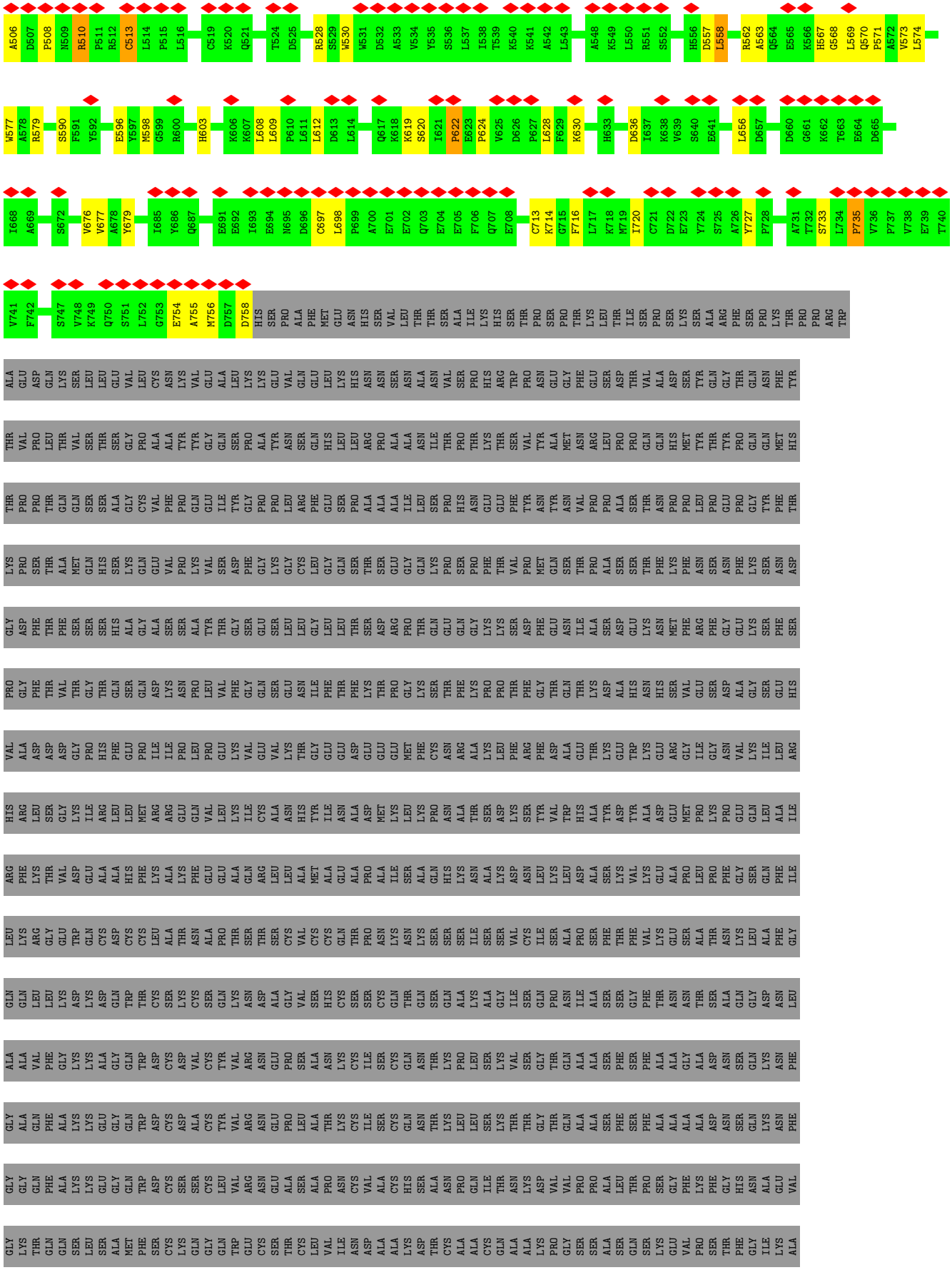
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V741 F742 S747 V748 K749 Q750 S751 L752 G753 E754 A755 M756 D757 D758 HIS SER PRO ALA PHE MET GLU GLN HIS SER VAL LEU THR THR SER ALA ILE LYS HIS SER THR PRO SER PRO THR LYS LEU THR ILE SER PRO SER LYS SER ALA ARG PHE SER PRO PRO PRO ARG TRP
ALA GLU ASP GLN LYS SER LEU LEU GLU VAL LEU CYS ASN LYS VAL GLU ALA LEU LYS LYS GLU VAL GLN GLU LEU LYS HIS ASN ASN SER ASN ALA ASN VAL SER PRO HIS ARG TRP PRO ASN GLU GLY PHE GLU SER ASP THR VAL ALA ASP SER TYR GLY THR ASN PHE TYR
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THR PRO PRO THR GLN GLN SER SER ALA GLY CYS VAL PHE PRO GLN GLU ILE TYR GLY PRO PRO LEU ARG PHE GLU SER PRO ALA ALA ALA ILE LEU SER PRO HIS ASN GLU GLU PHE TYR ASN TYR ASN VAL PRO PRO ALA SER THR ASN PRO PRO LEU PRO GLU PRO GLY TYR PHE THR
LYS PRO SER THR ALA MET GLN HIS SER LYS GLN GLU VAL PRO LYS VAL SER ASP PHE GLY LYS GLY CYS LEU GLY GLN SER THR SER GLU GLY GLN LYS PRO SER PRO PHE THR VAL PRO MET GLN SER THR PRO ALA SER SER SER THR PHE LYS PHE ASN SER ASN PHE LYS SER ASN ASP
GLY ASP PHE THR PHE SER SER HIS ALA GLY ALA SER SER GLU SER LEU LEU GLY LEU LEU THR SER ASP ARG PRO THR GLN GLU GLN GLY LYS LYS SER ASP PHE GLU ASN ILE ALA SER ASP GLU LYS ASN MET PHE ARG PHE GLY GLU LYS SER PHE SER
PRO GLY PHE THR VAL THR GLY THR GLN SER GLN ASP LYS ASN PRO LEU PRO GLU VAL LEU PHE GLY GLN SER GLU ASN ILE PHE THR PHE LYS THR PRO GLY LYS SER THR PHE LYS PRO PRO THR PHE GLY THR GLN THR LYS ASP ALA HIS ASN HIS SER VAL GLU GLN SER ASP ALA GLY SER GLU HIS
VAL ALA ASP ASP ASP GLY PRO HIS PHE GLU PRO ILE ILE PRO LEU PRO GLU GLU LYS VAL GLU VAL LYS THR GLY GLU GLU GLU GLU MET PHE CYS ASN ARG ALA LYS LEU PHE ARG PHE ASP ALA GLU GLU THR LYS GLU TRP LYS GLU ARG GLY ILE GLY ASN VAL LYS ILE LEU ARG
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ARG PHE LYS THR VAL ASP HIS PHE LYS ALA LYS PHE GLU GLU ALA GLN ARG LEU LEU ALA MET ALA GLU GLU ALA PRO ALA ILE SER ALA GLN HIS LYS ASN ALA LYS ASP ASN LEU LYS LEU ASP ALA ASP SER LYS VAL LYS GLU ALA PRO LEU PRO PHE GLY SER GLN LEU ILE
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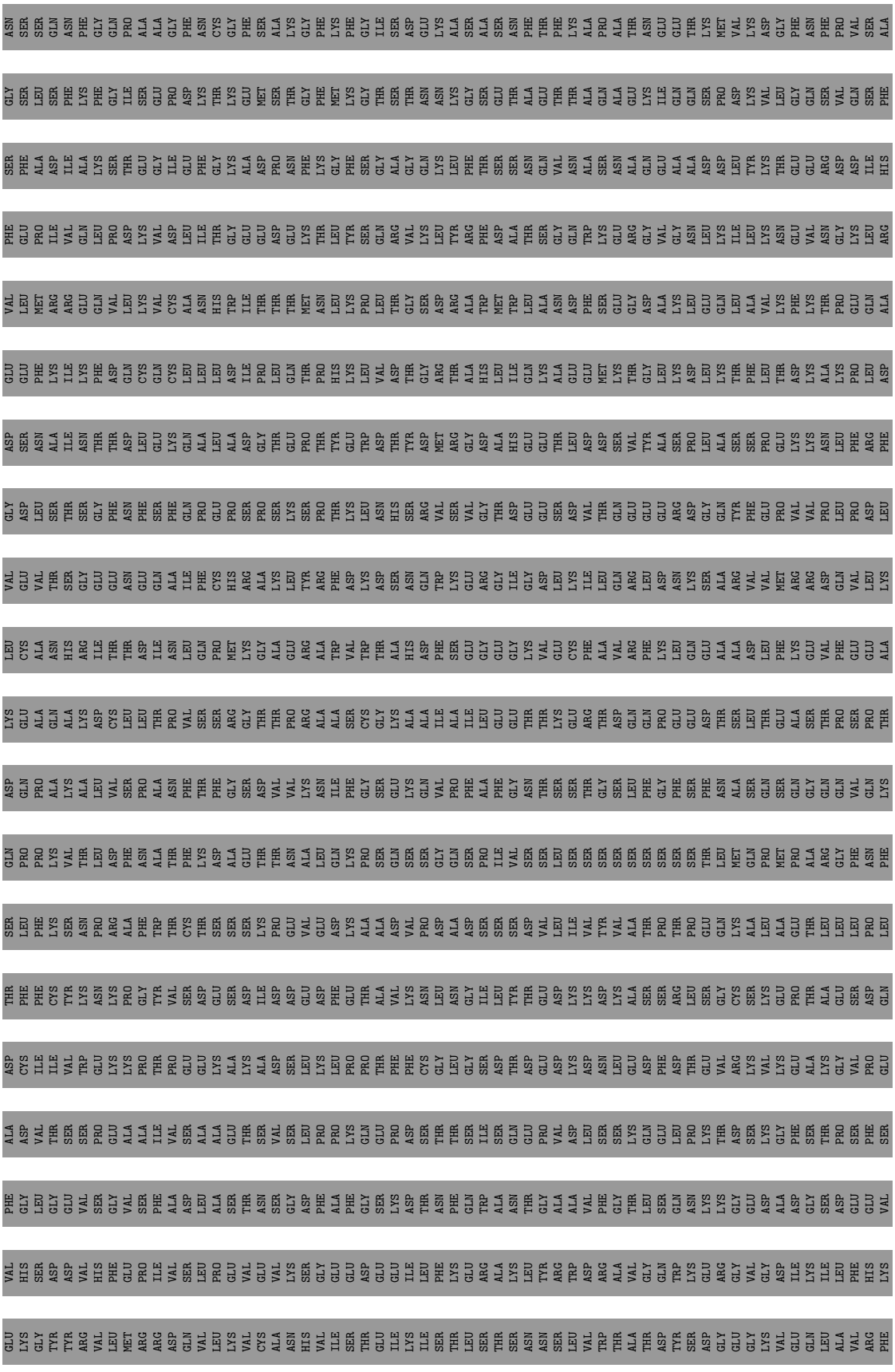
GLY ALA GLN PHE ALA LYS LYS GLU GLY GLN TRP ASP CYS ASP ALA CYS TYR VAL ARG ASN GLU PRO LEU ALA THR LYS CYS ILE SER CYS GLN ASN THR LYS LEU LEU SER LYS THR THR GLY THR GLN ALA ALA ALA SER PHE SER PHE ALA ALA ALA GLY ALA ASP ASN SER GLN LYS ASN PHE
GLY GLY GLN PHE ALA LYS LYS GLU GLY GLN TRP ASP CYS SER ALA CYS LEU VAL ARG ASN GLU ALA SER ALA CYS SER ALA PRO ASN CYS VAL ALA CYS HIS SER ALA ASN PRO GLN ILE THR ASN LYS ASP VAL PRO VAL PRO PRO ALA LEU THR PRO SER SER GLY PHE SER GLY PHE ALA LYS PHE GLY HIS ASN ALA GLU VAL
GLY LYS THR GLN SER LEU SER ALA MET PHE SER CYS LYS GLN GLY GLN TRP GLU CYS SER THR CYS LEU VAL ILE ASN ASP ALA ALA LYS ASP THR CYS GLN ALA ALA ALA CYS GLN ILE ALA ALA ALA SER ALA SER GLN SER LYS GLU VAL PRO SER LYS ILE LYS ALA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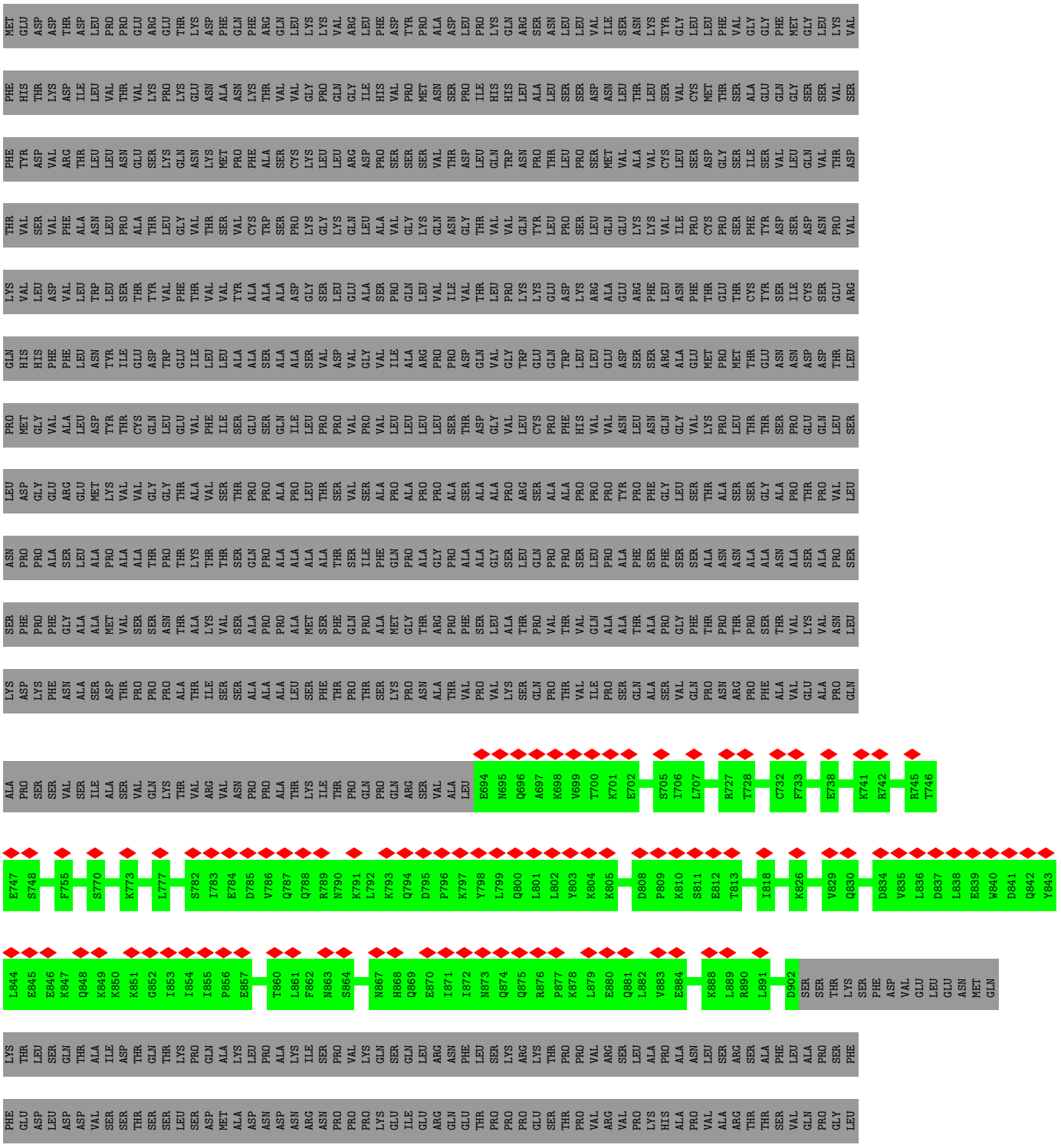
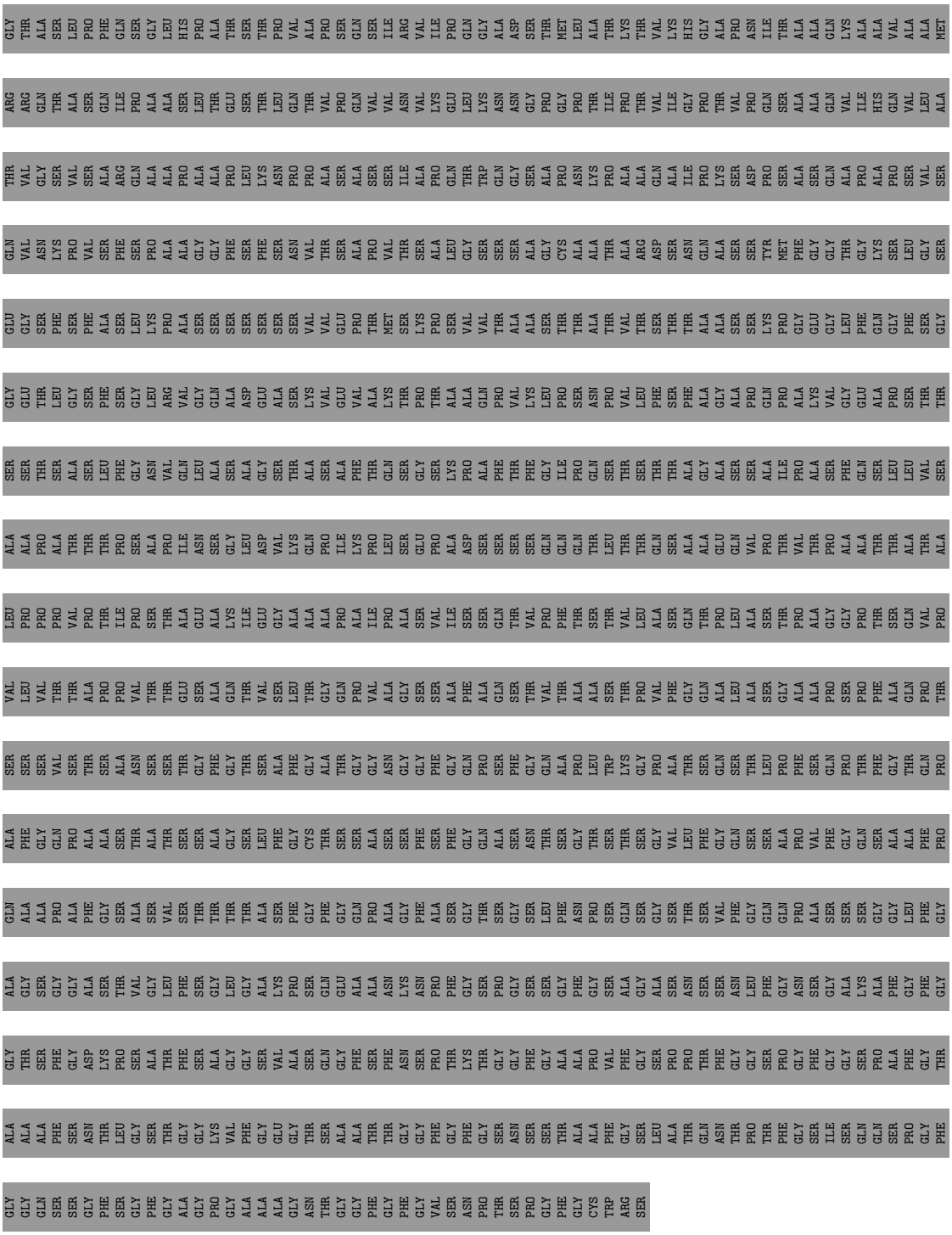
SER PHE ALA ASP ILE ALA LYS SER THR GLU GLY ILE GLU PHE GLY LYS ALA ASP PRO ASN PHE LYS GLY PHE SER GLY ALA GLY GLN LYS LEU PHE THR SER SER ASN GLN VAL ASN ALA SER ASN ALA GLN GLU ALA ALA ASP ASP LEU TYR LYS THR GLU GLU ARG ASP ASP ILE HIS
PHE GLU PRO ILE VAL GLN LEU PRO ASP LYS VAL ASP LEU ILE THR GLY GLU GLU ASP GLU LYS THR LEU TYR SER GLN ARG VAL LYS LEU TYR ARG PHE ASP ALA THR SER GLN TRP LYS GLU ARG GLY VAL GLY ASN LEU LYS ILE LEU LEU LYS ASN GLU VAL ASN GLY LYS LEU ARG
VAL LEU MET ARG ARG GLU GLN VAL LEU LYS VAL CYS ALA ASN HIS TRP ILE THR THR THR MET ASN LEU LYS PRO LEU THR GLY SER ASP ARG ALA TRP MET TRP LEU ALA ASN ASP PHE SER GLU GLY ASP ALA LYS LEU GLU LEU SER ASN PHE LYS THR PRO GLU GLN ALA
GLU GLU PHE LYS ILE LYS PHE ASP GLN CYS GLN CYS LEU LEU LEU ASP ILE PRO LEU GLN THR HIS LYS LEU VAL ASP THR GLY ARG THR ALA HIS LEU ILE GLN LYS ALA GLU GLU MET LYS THR GLY LEU LYS ASP LEU LYS THR PHE LEU THR ASP LYS ALA LYS PRO LEU ASP
ASP SER ASN ALA ILE ASN THR THR ASP LEU GLN GLU ALA ASP GLY THR GLU PRO THR TYR GLU TRP ASP THR TYR ASP MET ARG GLY ASP THR ALA HIS GLU GLU THR LEU ASP ASP SER VAL TYR ALA SER PRO LEU ALA SER SER PRO GLU LYS LYS ASN LEU PHE ARG PHE
GLY ASP LEU SER THR SER GLY PHE ASN PHE SER PHE GLN PRO GLU PRO SER PRO THR LYS LEU ASN HIS SER ARG VAL SER VAL GLY THR ASP GLU GLU SER ASP VAL THR GLN GLU GLU GLU ARG ASP GLY GLN TYR PHE GLU PRO VAL VAL PRO LEU PRO ASP LEU
VAL GLU VAL THR SER GLY GLU GLU ASN GLU GLN ALA ILE PHE CYS HIS ARG ALA LYS LEU TYR ARG PHE ASP LYS ASP SER ASN GLN TRP LYS ARG GLY ILE GLY ASP LEU LYS ILE LEU GLN ARG LEU ASP ASN ASN LYS SER ALA ARG VAL VAL MET ARG ARG ASP GLN VAL LEU LYS
LEU CYS ALA ASN HIS ARG ILE THR THR ASP ILE ASN LEU GLN PRO MET LYS GLY ALA GLU ARG ALA TRP VAL TRP THR HIS ASP PHE SER GLU GLU GLY LYS VAL GLU CYS PHE ALA VAL ARG PHE LYS LEU GLN GLU ALA ALA ASP LEU PHE LYS GLU VAL PHE GLU GLU ALA
LYS GLU ALA GLN ALA LYS ASP CYS LEU LEU THR PRO VAL SER SER ARG GLY THR THR PRO ARG ALA ALA SER CYS GLY LYS ALA ALA ILE ALA ILE GLU GLU GLU THR THR LYS GLU ARG THR ASP GLY GLU GLU ASP THR SER ALA GLU SER THR PRO SER PRO THR
ASP GLN PRO ALA LYS ALA LEU ASN ILE PHE GLY SER GLU LYS GLN VAL PRO PHE ALA PHE GLY ASN THR SER SER SER THR GLY SER LEU PHE GLY PHE SER PHE ASN ALA SER GLN SER SER GLN GLY GLN ARG VAL
GLN PRO PRO LYS VAL THR LEU ASP PHE ASN ALA THR PHE LYS ASP ALA GLU GLN LYS PRO SER GLN SER SER GLY GLN SER PRO ILE VAL SER SER LEU SER SER SER SER SER SER SER SER SER THR LEU MET GLN PRO MET PRO ALA ARG GLY PHE ASN PHE
SER LEU PHE LYS SER ASN PRO ARG PHE TRP THR CYS THR SER SER GLU SER LYS PRO GLU VAL GLU ASP LYS ALA ALA ASP VAL PRO ASP ALA ASP SER ASP VAL LEU ILE VAL TYR VAL ALA THR PRO THR PRO GLU GLN LYS ALA LEU ARG GLU LEU LEU PRO LEU
THR PHE PHE CYS TYR LYS ASN PRO GLY TYR VAL SER ASP GLU ASP PHE GLU THR ALA VAL LYS ASN LEU ASN GLY ILE LEU TYR THR GLU ASP LYS LYS ASP LYS ALA SER SER ARG LEU SER GLY CYS SER LYS GLU PRO THR ALA GLU ALA GLU THR LEU ASP GLN
ASP CYS ILE ILE VAL TRP GLU LYS LYS PRO THR PHE PHE CYS GLY LEU GLY SER ASP THR GLY ASP ASN LEU GLU ASP PHE ASP THR GLU VAL ARG LYS VAL LYS GLU PRO ALA ARG GLY VAL PRO GLU
ALA ASP VAL THR SER PRO GLU GLN GLU PRO THR THR PHE SER VAL SER LEU PRO PRO LYS GLN GLU PRO VAL ASP LEU SER SER LYS GLN GLU ASP SER PHE LYS THR LYS GLY PHE SER THR PRO PHE SER
PHE GLY LEU GLY VAL SER PHE ALA PHE GLY SER LYS ASP PHE ALA PHE GLY THR LEU SER ALA GLY PHE SER ASN ALA ALA ASP ASP LEU ASP ALA ASP GLY SER GLU VAL
VAL HIS SER ASP VAL HIS PHE GLU PRO ILE VAL SER LEU PRO GLU VAL GLU VAL LYS SER GLY VAL GLU ASP GLU GLU ILE LEU PHE LYS GLU ARG ALA LYS LEU TYR ARG TRP ASP ARG ALA VAL GLY GLN TRP LYS GLU ARG GLY VAL GLY ASP ILE LYS ILE LEU PHE HIS LYS
GLU LYS GLY TYR TYR ARG VAL LEU MET ARG ASP GLN VAL LEU PRO LYS VAL CYS ALA ASN HIS VAL ILE SER THR GLU ILE LYS ILE SER THR LEU SER ASN ASN SER LEU VAL TRP THR ALA THR ASP TYR SER ASP GLY GLU GLY LYS VAL GLU GLN LEU ALA VAL ARG PHE

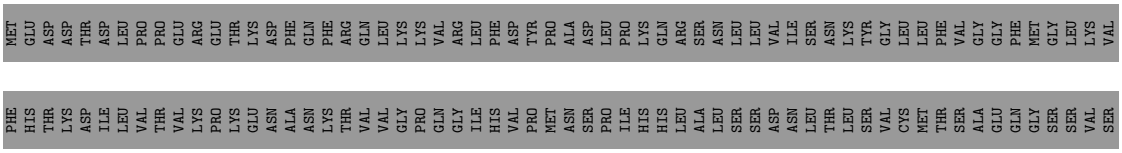
• Molecule 13: Nucleoporin CAN

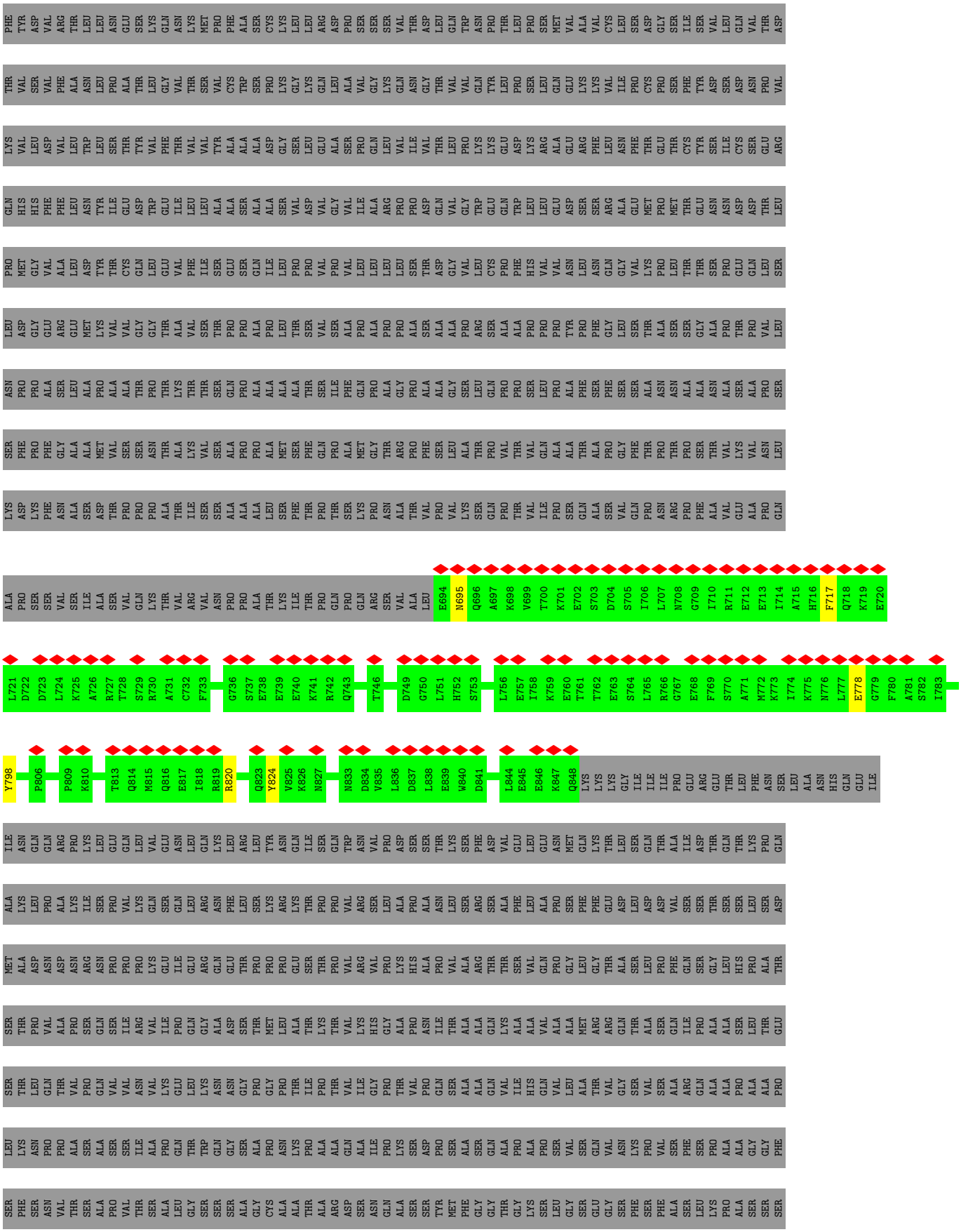




• Molecule 13: Nucleoporin CAN

Chain e:

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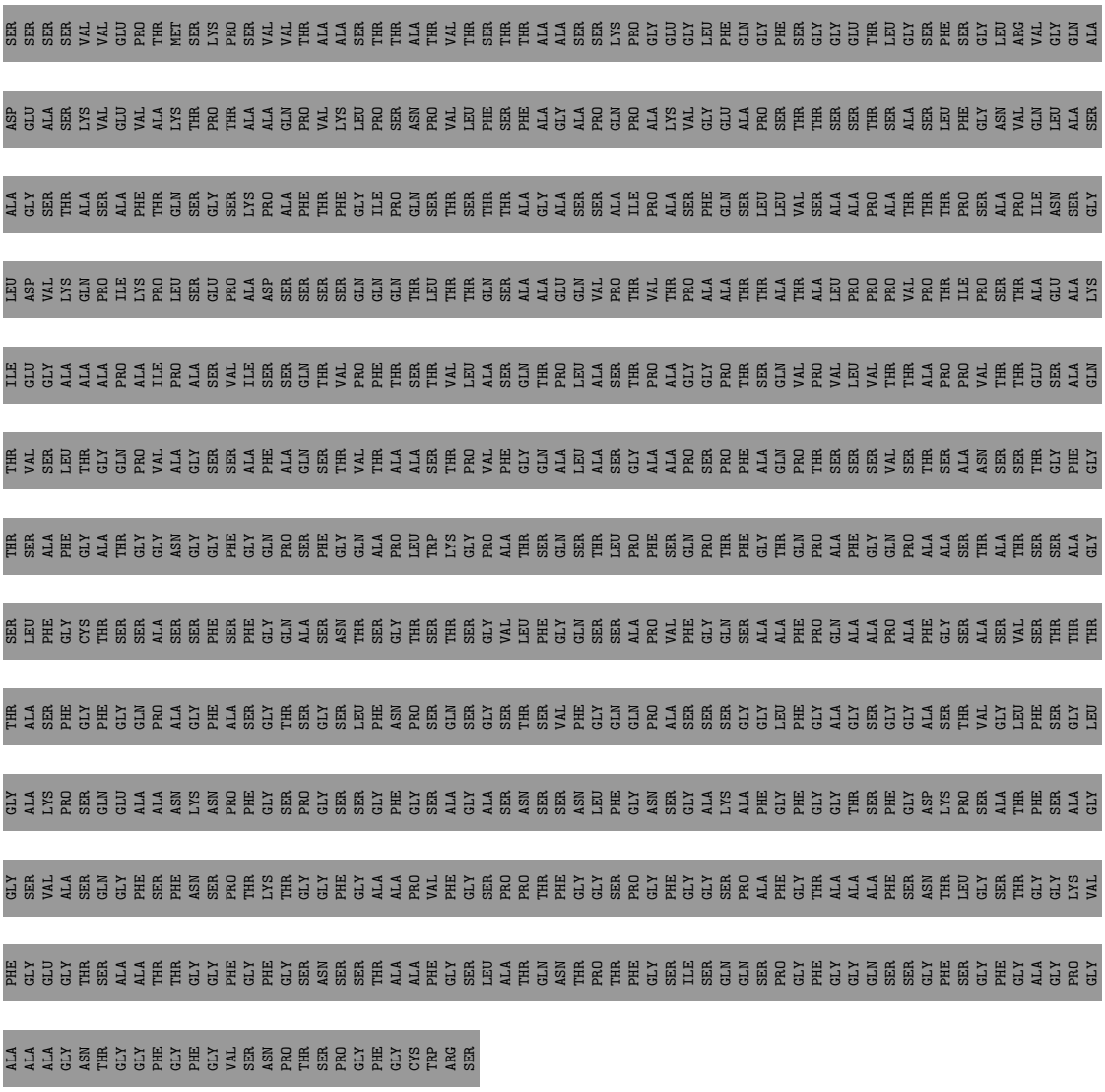
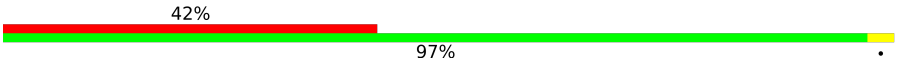
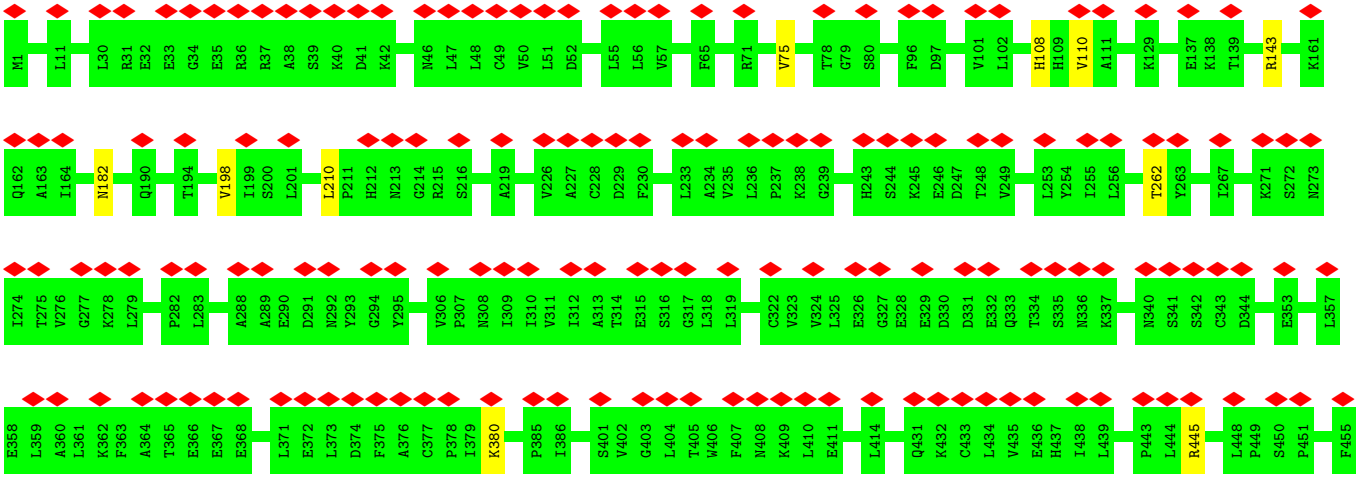
THR VAL SER VAL PHE ALA ASN LEU PRO ALA THR LEU GLY VAL THR SER VAL CYS TRP SER PRO LYS GLY LYS GLN LEU ALA VAL GLY LYS GLN ASN GLY THR VAL VAL CYS GLN TYR LEU PRO SER LEU GLN GLU LYS LYS VAL ILE PRO CYS PRO SER PHE TYR ASP SER ASP ASN PRO VAL
LYS VAL LEU ASP VAL LEU TRP LEU SER THR TYR VAL PHE THR VAL VAL TYR ALA ALA ASP GLY SER LEU GLU ALA SER PRO GLN LEU VAL ILE VAL THR LEU PRO LYS LYS GLU ASP LYS ARG ALA GLU ARG PHE LEU ASN PHE THR GLU THR CYS TYR SER ILE CYS SER GLU ARG
GLN HIS HIS PHE PHE LEU ASN TYR ILE GLU ASP TRP GLU ILE LEU LEU ALA ALA ALA SER ALA ALA ALA SER VAL ASP VAL GLY VAL ILE ALA ARG PRO PRO ASP GLN VAL GLY TRP GLU GLN TRP LEU LEU GLU ASP SER SER ARG ALA GLU MET PRO MET THR GLU ASN ASP ASP THR LEU
PRO MET GLY VAL ALA LEU ASP TYR THR CYS GLN LEU GLU VAL ALA VAL PHE ILE SER GLU SER GLN ILE LEU PRO PRO PRO VAL PRO VAL LEU LEU LEU LEU SER PRO VAL ASP PRO PRO PHE HIS VAL VAL ASN LEU ASN GLY GLY VAL LYS PRO LEU THR THR SER PRO PRO GLU GLN LEU SER
LEU ASP GLY GLU ARG GLU MET LYS VAL VAL GLY GLY THR ALA VAL SER THR PRO ALA PRO ALA PRO ALA ALA PRO ALA ALA SER VAL SER THR PRO PRO ALA ALA SER ALA ALA PRO ARG SER ALA PRO PRO TYR PRO PRO PHE GLY LEU SER THR ALA ALA ASN ASN SER SER GLY ALA PRO THR PRO VAL VAL LEU
ASN PRO PRO ALA SER LEU ALA ALA THR PRO ALA ALA THR LYS THR THR SER GLN PRO ALA ALA ALA ALA THR SER ILE PHE GLN PRO ALA GLY PRO ALA GLN PRO SER LEU PRO ALA PHE SER PHE SER SER PHE GLY SER ALA ASN ASN PRO SER
SER PHE PRO PHE GLY ALA ALA MET VAL SER SER ASN THR ALA LYS VAL SER ALA PRO PRO ALA MET SER PHE GLN PRO ALA MET GLY THR ARG PRO PHE SER LEU ALA THR PRO VAL THR VAL GLN ALA ALA THR ALA PRO GLY PHE THR PRO THR ALA ALA ASN LEU
LYS ASP LYS PHE ASN ALA SER ASP THR PRO PRO PRO PRO ALA THR ILE SER SER ALA ALA ALA LEU SER PHE THR PRO THR SER LYS PRO ASN ALA THR VAL PRO VAL LYS SER GLN PRO THR VAL ILE PRO SER GLN ALA SER VAL GLN PRO ALA ASN ARG PRO PHE ALA VAL GLU ALA PRO GLN
ALA PRO SER SER VAL ALA ILE ALA SER VAL ALA ARG VAL ASN PRO PRO ALA ALA LEU E694 N695 Q696 A697 K698 V699 T700 K701 E702 S703 D704 S705 I706 L707 N708 G709 I710 R711 E712 E713 I714 A715 H716 F717 Q718 K719 E720
L721 D722 D723 L724 K725 A726 R727 T728 S729 R730 A731 C732 F733 G736 S737 E738 E739 E740 K741 R742 Q743 T746 D749 G750 L751 H752 S753 L756 E757 I758 K759 E760 T761 T762 E763 S764 L765 R766 G767 E768 F769 S770 A771 M772 K773 I774 K775 N776 L777 E778 G779 F780 A781 S782 I783
Y798 P806 P809 K810 T813 Q814 M815 Q816 E817 I818 R819 R820 Q823 Y824 V825 K826 N827 N833 D834 V835 L836 D837 L838 E839 W840 D841 L844 E845 E846 K847 Q848 LYS LYS LYS GLY ILE ILE ILE PRO GLU ARG GLU THR LEU PHE ASN SER LEU ALA ASN HIS GLN GLU ILE
ILE ASN GLN GLN ARG PRO LYS LEU GLU GLN LEU LEU VAL GLU ASN LEU GLN LYS LEU ARG LEU TYR ASN GLN ILE SER GLN TRP ASN VAL PRO ASP SER SER THR LYS SER PHE ASP VAL GLU LEU GLU ALA PRO SER GLN LYS THR LEU SER GLN THR GLN THR LYS PRO GLN
ALA LYS LEU PRO ALA LYS ILE SER PRO VAL LYS GLN SER GLN LEU ARG ASN PHE LEU SER LYS ARG LYS THR PRO PRO VAL ARG SER LEU ALA PRO ALA ASN LEU SER ARG SER ALA PHE LEU GLU ALA PRO SER PHE PHE GLU ASP LEU ASP ASP VAL SER SER THR SER SER SER LEU SER ASP
MET ALA ASP ASN ASP ASN PRO PRO PRO LYS GLU ILE GLU ARG GLN GLU THR PRO PRO PRO GLU SER THR PRO VAL ARG VAL PRO LYS HIS ALA PRO VAL ALA ARG THR THR SER VAL GLN PRO GLY LEU GLY THR ALA SER LEU PRO PHE GLN SER GLY LEU HIS PRO ALA THR
SER THR PRO VAL ALA PRO SER GLN SER ILE ARG VAL ILE PRO GLN GLY ALA ASP SER THR MET LEU ALA ALA THR LYS THR VAL LYS HIS GLY ALA PRO ASN ILE THR ALA ALA GLN LYS ALA ALA VAL ALA ALA MET ARG ARG GLN THR ALA SER GLN ILE PRO ALA ALA ALA SER LEU THR GLU
SER THR LEU GLN VAL VAL ASN VAL LYS GLU LEU LYS ASN ASN GLY PRO GLY THR ILE PRO THR VAL ILE GLY PRO THR VAL PRO GLN SER ALA ALA GLN VAL LEU ALA THR VAL GLY SER VAL SER ALA ARG GLN ALA ALA ALA PRO ALA ALA PRO
LEU LYS ASN PRO THR TRP GLN GLY SER ALA PRO GLN THR ILE PRO ALA ALA SER ILE PRO LYS SER ASP PRO SER ALA SER GLN ALA PRO ALA PRO SER VAL SER GLN VAL ASN LYS PRO VAL SER PHE SER PRO ALA ALA GLY GLY PHE
SER PHE SER ASN VAL THR SER ALA PRO VAL THR GLY SER SER GLY ALA GLY CYS ALA ALA THR ALA ARG ASP SER ASN GLN ALA SER SER TYR MET PHE GLY GLY THR GLY LYS SER LEU GLY SER GLU GLY SER PHE SER PHE PHE SER LEU LYS PRO ALA SER SER

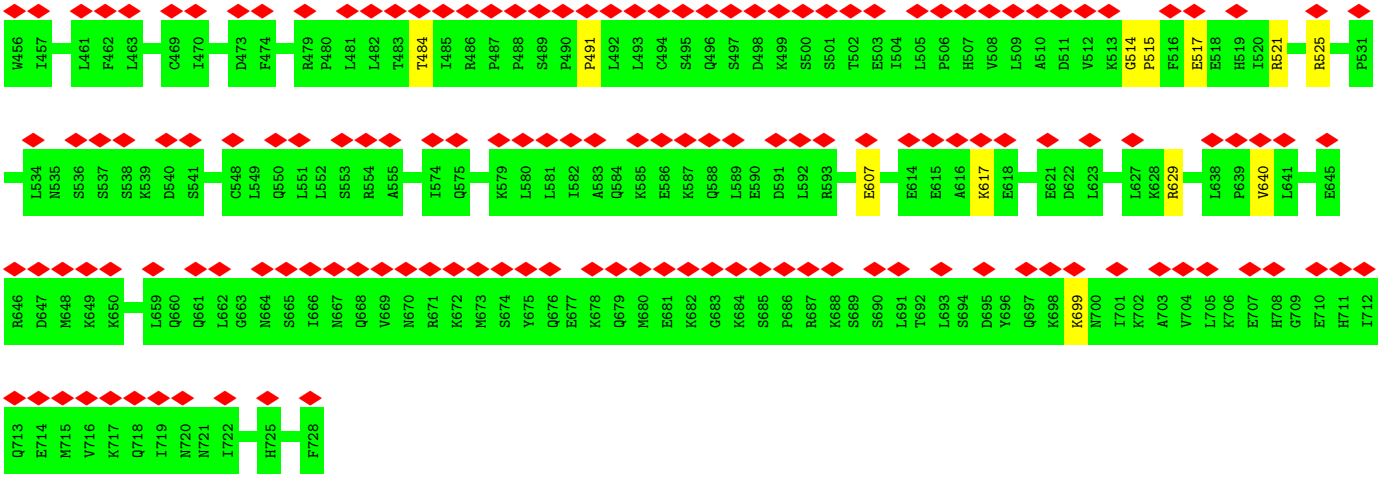


• Molecule 14: Nup88A protein

Chain b:

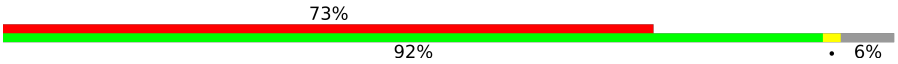


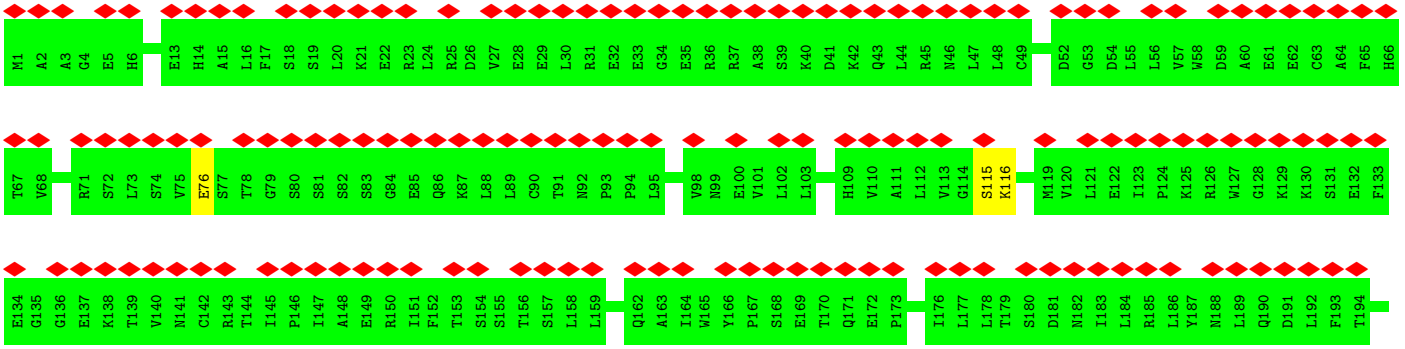


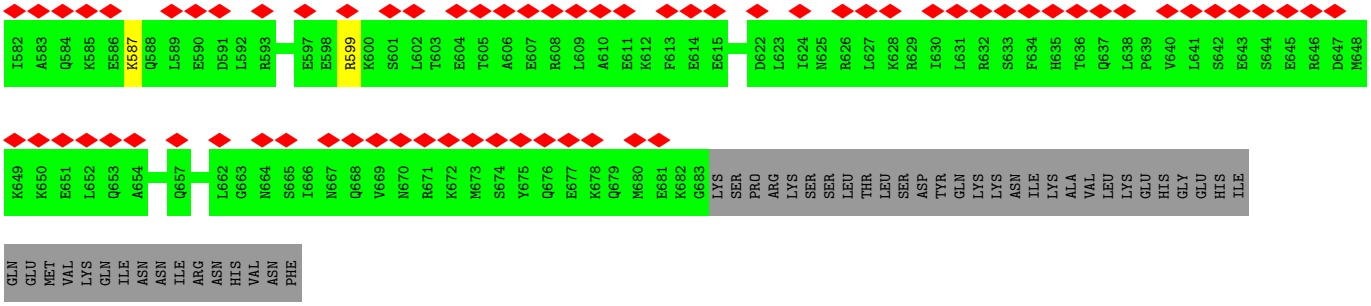


• Molecule 14: Nup88A protein

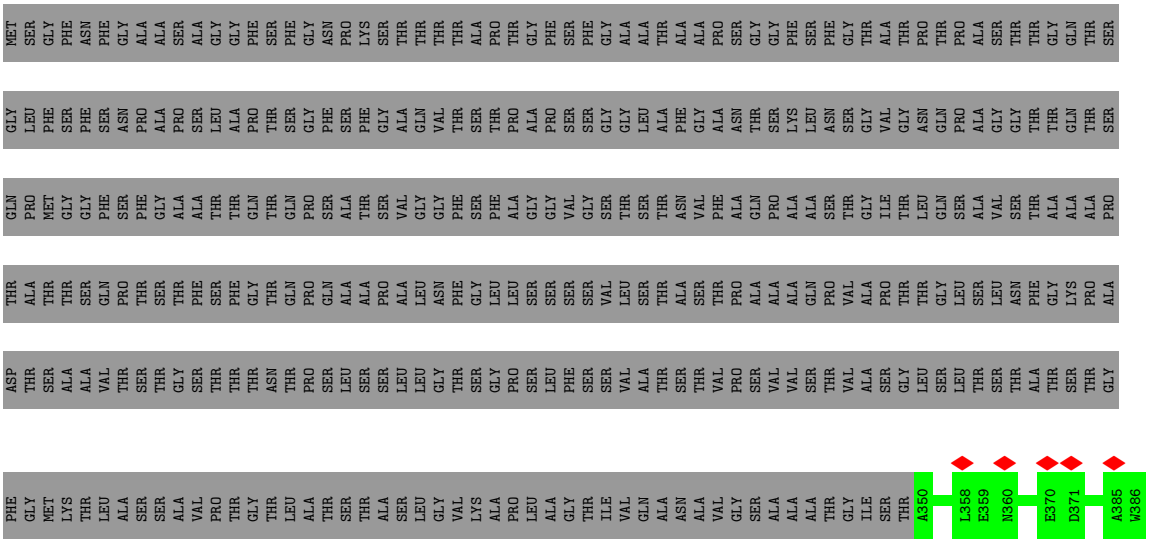
Chain d:



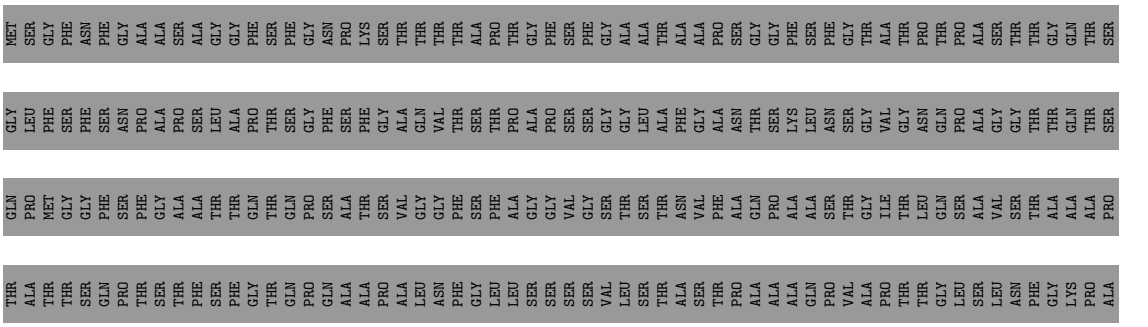


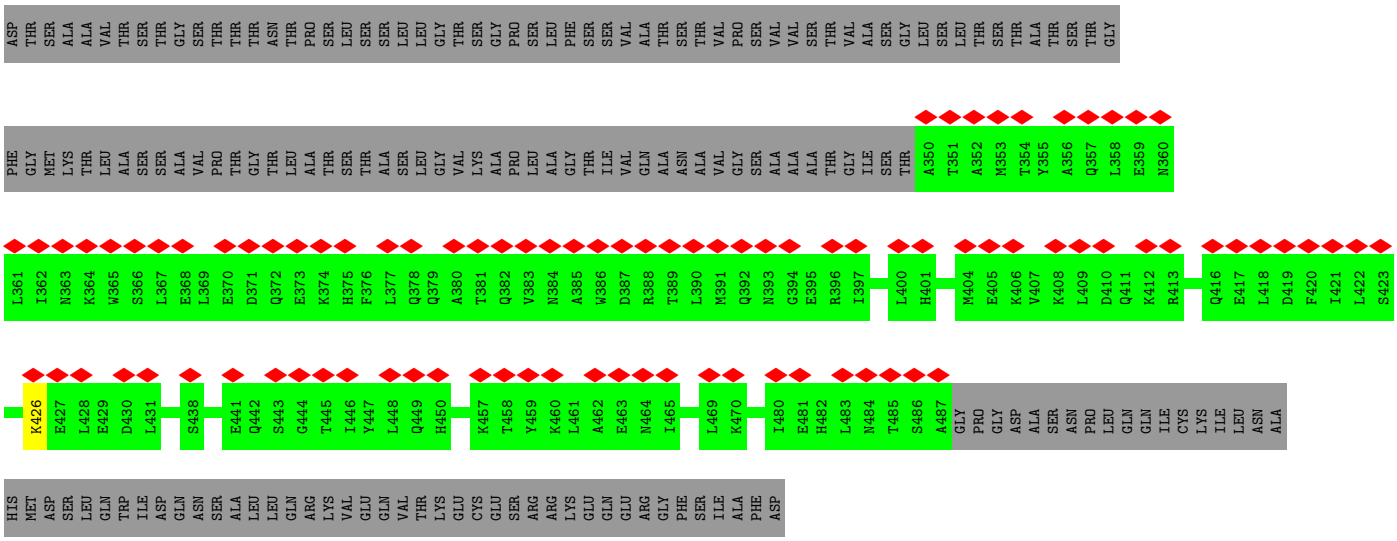


• Molecule 15: IL4I1 protein



• Molecule 15: IL4I1 protein

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PHE GLY MET LYS THR LEU ALA SER SER ALA VAL PRO THR GLY THR LEU ALA THR SER THR ALA SER LEU LEU GLY VAL LYS ALA PRO LEU ALA GLY THR ILE VAL GLN ALA ASN ALA VAL GLY SER ALA ALA ALA THR GLY ILE SER THR
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GLY PRO GLY ASP ALA SER ASN PRO LEU GLN GLN ILE CYS LYS ILE LEU ASN ALA
HIS MET ASP SER LEU GLN TRP ILE ASP GLN ASN SER ALA LEU LEU GLN ARG LYS VAL GLU GLN VAL THR LYS GLU CYS GLU SER ARG ARG LYS GLU GLN GLU ARG GLY PHE SER ILE ALA PHE ASP

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	354460	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	3.582	Depositor
Minimum map value	-2.369	Depositor
Average map value	0.010	Depositor
Map value standard deviation	0.112	Depositor
Recommended contour level	0.505	Depositor
Map size (Å)	716.8, 716.8, 716.8	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.24, 2.24, 2.24	Depositor

5 Model quality

5.1 Standard geometry

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	0.23	0/5377	0.44	0/7265
1	J	0.89	7/5377 (0.1%)	0.48	2/7265 (0.0%)
2	B	0.23	0/2996	0.47	0/4074
2	K	0.24	0/2996	0.48	0/4074
3	C	0.24	0/2674	0.48	0/3628
3	L	0.23	0/2612	0.46	0/3545
4	D	0.23	0/11349	0.43	0/15414
4	M	0.23	0/11349	0.43	0/15414
5	E	0.24	0/2643	0.46	0/3587
5	N	0.24	0/2643	0.47	0/3587
6	F	0.23	0/5308	0.43	0/7201
6	O	0.23	0/5299	0.44	0/7189
7	G	0.23	0/2367	0.44	0/3231
7	P	0.23	0/2367	0.45	0/3231
8	H	0.23	0/6628	0.41	0/8968
8	Q	0.23	0/6562	0.42	0/8879
9	I	0.23	0/8647	0.41	0/11720
9	R	0.23	0/8703	0.42	0/11797
10	S	0.23	0/16272	0.44	0/22021
10	T	0.23	0/16272	0.43	0/22021
11	U	0.24	0/5360	0.45	0/7239
12	V	0.23	0/6356	0.41	0/8594
12	W	0.23	0/6227	0.41	0/8417
12	X	0.23	0/6321	0.41	0/8545
12	Y	0.23	0/6268	0.40	0/8474
12	Z	1.17	8/6243 (0.1%)	0.52	4/8439 (0.0%)
13	a	0.23	0/1762	0.40	0/2365
13	e	0.23	0/1298	0.39	0/1738
14	b	0.23	0/5896	0.45	0/7976
14	d	0.23	0/5517	0.45	0/7471
15	c	0.23	0/1641	0.39	0/2206
15	f	0.23	0/1154	0.39	0/1553
All	All	0.35	15/182484 (0.0%)	0.44	6/247128 (0.0%)

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	Z	308	TRP	CE3-CZ3	61.34	2.42	1.38
1	J	487	TRP	CE3-CZ3	38.83	2.04	1.38
12	Z	308	TRP	CZ3-CH2	38.33	2.01	1.40
12	Z	308	TRP	CE2-CZ2	32.92	1.95	1.39
12	Z	308	TRP	CD2-CE2	27.05	1.73	1.41
1	J	487	TRP	CZ3-CH2	25.58	1.80	1.40
1	J	471	MET	SD-CE	24.05	3.12	1.77
1	J	487	TRP	CE2-CZ2	21.75	1.76	1.39
1	J	487	TRP	CD2-CE2	19.36	1.64	1.41
12	Z	308	TRP	CZ2-CH2	19.35	1.74	1.37
12	Z	308	TRP	CD2-CE3	18.74	1.68	1.40
12	Z	510	ARG	CD-NE	16.92	1.75	1.46
1	J	487	TRP	CD2-CE3	13.19	1.60	1.40
1	J	487	TRP	CZ2-CH2	13.13	1.62	1.37
12	Z	510	ARG	NE-CZ	11.96	1.48	1.33

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	Z	510	ARG	CD-NE-CZ	22.20	154.69	123.60
1	J	471	MET	CG-SD-CE	16.96	127.33	100.20
12	Z	510	ARG	NE-CZ-NH1	12.45	126.53	120.30
12	Z	308	TRP	CE3-CZ3-CH2	-8.84	111.47	121.20
12	Z	510	ARG	CG-CD-NE	6.80	126.08	111.80
1	J	487	TRP	CE3-CZ3-CH2	-5.06	115.63	121.20

There are no chirality outliers.

There are no planarity outliers.

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	5268	0	5226	61	0
1	J	5268	0	5226	100	0
2	B	2927	0	2800	63	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	K	2927	0	2800	48	0
3	C	2607	0	2513	40	0
3	L	2546	0	2444	32	0
4	D	11118	0	11035	144	0
4	M	11118	0	11035	166	0
5	E	2573	0	2503	36	0
5	N	2573	0	2503	50	0
6	F	5177	0	5086	81	0
6	O	5168	0	5080	67	0
7	G	2300	0	2180	30	0
7	P	2300	0	2180	38	0
8	H	6494	0	6413	52	0
8	Q	6430	0	6353	82	0
9	I	8482	0	8354	106	0
9	R	8536	0	8407	113	0
10	S	15974	0	16156	175	0
10	T	15974	0	16156	201	0
11	U	5260	0	5256	78	0
12	V	6225	0	6236	84	0
12	W	6100	0	6128	59	0
12	X	6190	0	6197	67	0
12	Y	6139	0	6155	83	0
12	Z	6116	0	6136	113	0
13	a	1738	0	1741	0	0
13	e	1282	0	1269	0	0
14	b	5787	0	5811	0	0
14	d	5414	0	5424	0	0
15	c	1621	0	1597	0	0
15	f	1141	0	1127	0	0
All	All	178773	0	177527	2026	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 6.

All (2026) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:487:TRP:CZ2	1:J:487:TRP:CE2	1.76	1.70
1:J:487:TRP:CH2	1:J:487:TRP:CZ3	1.81	1.63
12:Z:308:TRP:CZ2	12:Z:308:TRP:CE2	1.95	1.51
12:Z:510:ARG:CD	12:Z:510:ARG:NE	1.75	1.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Z:308:TRP:CZ3	12:Z:510:ARG:NE	1.73	1.47
12:Z:308:TRP:CZ3	12:Z:308:TRP:CH2	2.01	1.46
1:J:487:TRP:CZ3	1:J:487:TRP:CE3	2.04	1.43
12:Z:308:TRP:CE3	12:Z:510:ARG:NE	1.83	1.43
12:Z:308:TRP:CH2	12:Z:510:ARG:NE	1.96	1.34
1:J:471:MET:SD	1:J:487:TRP:CZ3	2.28	1.27
12:Z:308:TRP:CE2	12:Z:510:ARG:NE	2.07	1.23
1:J:471:MET:SD	1:J:487:TRP:CE3	2.30	1.23
12:Z:308:TRP:CD2	12:Z:510:ARG:NE	2.05	1.22
1:J:471:MET:SD	1:J:487:TRP:CE2	2.33	1.22
12:Z:308:TRP:CZ2	12:Z:510:ARG:NE	2.08	1.22
1:J:471:MET:SD	1:J:487:TRP:CD2	2.37	1.18
1:J:471:MET:SD	1:J:487:TRP:CH2	2.37	1.18
1:J:471:MET:SD	1:J:487:TRP:CZ2	2.38	1.17
12:Z:308:TRP:CE2	12:Z:510:ARG:CD	2.26	1.16
1:J:471:MET:CE	1:J:487:TRP:CD2	2.30	1.13
1:J:471:MET:CE	1:J:487:TRP:CE2	2.30	1.13
1:J:471:MET:CE	1:J:487:TRP:CE3	2.31	1.11
1:J:471:MET:CE	1:J:487:TRP:CZ3	2.34	1.09
12:Z:308:TRP:CE2	12:Z:510:ARG:CZ	2.38	1.06
12:Z:308:TRP:CZ3	12:Z:308:TRP:CE3	2.42	1.06
12:Z:308:TRP:CD2	12:Z:510:ARG:CD	2.41	1.03
1:J:471:MET:CE	1:J:487:TRP:CZ2	2.42	1.02
1:J:471:MET:CE	1:J:487:TRP:CH2	2.44	1.01
12:Z:308:TRP:CE2	12:Z:510:ARG:NH1	2.28	1.01
12:Z:308:TRP:CD2	12:Z:510:ARG:CZ	2.43	1.01
12:Z:308:TRP:CZ2	12:Z:510:ARG:CD	2.45	0.99
12:Z:308:TRP:CD2	12:Z:510:ARG:HD2	1.99	0.97
12:Z:308:TRP:CE3	12:Z:510:ARG:CZ	2.47	0.97
12:Z:308:TRP:CZ2	12:Z:510:ARG:HD3	2.00	0.97
12:Z:308:TRP:CE2	12:Z:510:ARG:HD3	1.96	0.96
12:Z:308:TRP:CZ2	12:Z:510:ARG:CZ	2.49	0.95
12:Z:308:TRP:CE3	12:Z:510:ARG:CD	2.51	0.93
12:Z:308:TRP:CZ3	12:Z:510:ARG:CZ	2.56	0.87
12:Z:308:TRP:CH2	12:Z:510:ARG:CZ	2.59	0.85
9:I:74:ASN:HB2	9:I:464:VAL:O	1.76	0.85
1:J:471:MET:HE3	1:J:487:TRP:CD2	2.10	0.84
1:J:471:MET:HE3	1:J:487:TRP:CE2	2.12	0.84
7:P:39:ILE:HB	7:P:51:ALA:HB3	1.62	0.82
12:Z:308:TRP:CH2	12:Z:510:ARG:CD	2.64	0.81
12:Z:308:TRP:CZ3	12:Z:510:ARG:CD	2.65	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:M:397:LEU:HD11	4:M:400:PHE:HB3	1.66	0.78
10:T:1909:TYR:O	10:T:1913:HIS:HB2	1.83	0.77
1:J:471:MET:HE2	1:J:487:TRP:CE3	2.19	0.76
1:J:471:MET:HE1	1:J:487:TRP:CH2	2.20	0.75
6:O:695:LEU:O	6:O:699:CYS:HB2	1.88	0.74
1:J:471:MET:HE2	1:J:487:TRP:CZ3	2.23	0.74
1:A:455:CYS:SG	1:A:463:GLN:NE2	2.61	0.73
12:V:747:SER:HB3	12:X:3:ARG:HB2	1.70	0.73
1:J:471:MET:HE1	1:J:487:TRP:CZ2	2.23	0.73
1:J:227:MET:HG2	1:J:278:MET:HG3	1.70	0.72
12:V:53:ILE:HG23	12:V:57:GLU:HG2	1.72	0.72
12:X:4:SER:H	12:X:7:GLU:HB2	1.56	0.71
12:Z:308:TRP:CZ2	12:Z:510:ARG:NH1	2.59	0.71
5:N:232:TRP:HD1	5:N:249:ALA:HB2	1.55	0.71
3:L:247:ILE:HB	3:L:272:ALA:HB3	1.73	0.70
10:T:633:CYS:SG	10:T:634:SER:N	2.65	0.70
10:S:125:LEU:HD22	10:S:208:LEU:HB2	1.74	0.69
6:O:389:GLN:HE21	6:O:393:LEU:HB2	1.58	0.69
12:W:602:VAL:HG21	12:W:656:LEU:HD22	1.75	0.69
5:N:11:TYR:HB2	5:N:321:PHE:HB2	1.75	0.69
6:O:759:VAL:HA	6:O:763:LEU:HB2	1.76	0.68
9:I:993:PRO:HG2	9:I:996:LEU:HB3	1.74	0.68
12:V:33:ALA:HB2	12:V:48:SER:HB2	1.74	0.68
9:R:90:LEU:HD13	9:R:456:ARG:HG3	1.76	0.68
3:C:247:ILE:HB	3:C:272:ALA:HB3	1.75	0.67
6:F:683:ASP:HB3	6:F:687:ARG:HB2	1.75	0.67
10:S:697:GLU:HG3	10:S:699:PRO:HD3	1.77	0.67
12:Z:308:TRP:CE3	12:Z:510:ARG:HD2	2.26	0.67
5:E:232:TRP:HD1	5:E:249:ALA:HB2	1.58	0.67
12:Y:257:GLU:HG2	12:Y:394:LEU:HD11	1.75	0.67
12:Y:199:ASP:HB3	12:Y:202:TRP:HB3	1.77	0.66
9:R:729:ARG:HH22	9:R:803:GLN:HB2	1.59	0.66
4:M:520:GLN:HB2	5:N:201:ILE:HG13	1.77	0.66
1:A:51:CYS:SG	3:C:5:ARG:NH1	2.68	0.66
6:F:557:GLU:O	6:F:561:GLN:HB2	1.95	0.66
4:M:116:GLU:O	4:M:126:ASN:ND2	2.29	0.66
1:A:354:ASP:HB3	1:A:357:GLN:HB2	1.77	0.66
12:Z:76:VAL:HG21	12:Z:107:LEU:HD13	1.77	0.66
2:B:175:VAL:HG12	2:B:185:THR:HG22	1.77	0.66
1:J:453:ARG:HD3	2:K:271:PRO:HD2	1.77	0.65
11:U:790:ALA:HB2	11:U:819:MET:HB2	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Z:481:LEU:HA	12:Z:484:LEU:HD12	1.78	0.65
7:G:298:CYS:SG	12:Y:23:ARG:NH2	2.69	0.65
2:K:215:VAL:HG11	2:K:236:ASP:HB2	1.77	0.65
6:F:714:LEU:HD23	6:F:718:LEU:HD12	1.78	0.65
9:R:167:LEU:HB2	9:R:179:TRP:HB2	1.78	0.65
12:W:129:PRO:HB3	12:W:170:LYS:HG3	1.79	0.65
10:S:1768:ILE:HA	10:S:1771:SER:HB2	1.78	0.65
12:X:164:ASP:HB3	12:X:167:VAL:HB	1.79	0.65
1:J:471:MET:CG	1:J:487:TRP:CD2	2.79	0.65
1:J:334:LEU:HA	1:J:338:SER:HB2	1.77	0.65
4:M:510:GLN:HE21	5:N:239:ARG:HB3	1.61	0.65
10:T:1302:THR:HB	10:T:1351:GLU:HG2	1.79	0.65
4:M:418:ASN:ND2	4:M:543:GLU:OE1	2.30	0.64
12:X:563:ALA:HB1	12:X:607:LYS:HD2	1.79	0.64
12:X:679:TYR:HB3	12:X:716:PHE:HB3	1.79	0.64
1:A:494:ALA:O	1:A:532:ARG:NH2	2.29	0.64
10:S:606:ASP:OD2	10:S:645:LYS:NZ	2.30	0.64
2:B:41:GLU:H	2:B:44:LYS:HZ1	1.45	0.64
4:D:78:LYS:H	9:I:390:ARG:HH22	1.45	0.64
6:O:478:VAL:HG13	8:Q:367:ALA:HB1	1.79	0.64
12:W:8:ILE:HD11	12:W:35:LEU:HD22	1.80	0.64
8:H:310:LEU:HD12	8:H:319:PRO:HG2	1.79	0.64
4:M:46:TYR:HB2	4:M:438:VAL:HG22	1.79	0.64
10:T:1028:THR:H	10:T:1031:HIS:HB2	1.61	0.64
6:O:389:GLN:HE22	6:O:394:GLU:HG3	1.62	0.64
12:V:26:SER:HB3	12:V:52:TYR:HD1	1.63	0.64
12:Y:207:VAL:HG22	12:Y:232:LEU:HG	1.78	0.64
2:B:88:ARG:HH11	3:C:96:LYS:HE3	1.63	0.64
4:M:258:LYS:HD2	4:M:265:ARG:HD3	1.79	0.64
10:T:513:MET:N	10:T:513:MET:SD	2.70	0.64
3:C:306:LYS:HB2	3:C:316:ILE:HD12	1.79	0.64
1:A:359:ILE:HD11	1:A:375:LEU:HD11	1.80	0.64
4:M:156:LEU:HG	4:M:161:VAL:HG12	1.79	0.64
12:Z:350:ARG:HH21	12:Z:351:GLN:HE22	1.45	0.64
10:T:719:ASN:HA	10:T:727:PRO:HG3	1.78	0.63
5:E:219:ARG:HB2	5:E:264:GLU:HB3	1.79	0.63
9:I:210:SER:HB2	9:I:222:ARG:HH12	1.63	0.63
9:R:794:ASN:HA	9:R:846:LEU:HD21	1.80	0.63
6:O:600:VAL:HG11	6:O:633:LEU:HD11	1.80	0.63
12:V:657:ASP:HB3	12:V:662:LYS:HB2	1.81	0.63
12:Z:480:CYS:SG	12:Z:481:LEU:N	2.72	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:447:MET:HG2	8:H:478:TRP:HB3	1.81	0.63
4:M:147:THR:O	4:M:149:ASN:N	2.30	0.63
9:R:451:PRO:HG2	9:R:463:VAL:HG23	1.80	0.63
1:A:116:MET:SD	1:A:133:GLN:NE2	2.69	0.63
8:H:903:LEU:HD11	9:I:895:ARG:HE	1.64	0.63
10:S:1648:LEU:HD23	10:S:1655:ILE:HD13	1.80	0.63
9:R:397:LEU:HD13	9:R:409:LEU:HG	1.81	0.62
1:J:471:MET:HG3	1:J:487:TRP:CD2	2.34	0.62
5:N:224:ILE:HD13	5:N:237:MET:HB3	1.80	0.62
10:T:532:LYS:HA	10:T:552:TRP:HE1	1.64	0.62
4:D:1104:GLY:O	4:D:1120:GLN:NE2	2.33	0.62
2:K:152:CYS:HB2	2:K:162:ARG:HB3	1.81	0.62
10:S:269:LEU:HD23	10:S:378:SER:HB3	1.82	0.62
8:H:584:VAL:HG13	8:H:592:ALA:HB1	1.81	0.62
8:Q:870:ASP:OD1	8:Q:870:ASP:N	2.32	0.62
3:L:16:HIS:HE1	3:L:59:SER:HB3	1.64	0.62
9:R:239:GLY:HA2	9:R:296:GLN:HE22	1.64	0.62
9:R:1047:GLU:HG2	9:R:1048:VAL:HG23	1.79	0.62
6:F:528:GLN:HE21	12:Y:10:ARG:HH22	1.47	0.62
10:T:1095:LEU:HG	10:T:1113:LEU:HD23	1.82	0.62
12:Z:679:TYR:HB3	12:Z:716:PHE:HB3	1.82	0.61
1:A:66:PRO:O	2:B:245:ARG:NH2	2.33	0.61
1:A:530:SER:OG	1:A:532:ARG:NH1	2.33	0.61
2:B:150:ILE:HB	2:B:164:ILE:HB	1.81	0.61
8:H:338:LEU:HD13	8:H:415:GLU:HB2	1.81	0.61
9:I:162:ALA:HB1	9:I:181:ASN:HD21	1.65	0.61
3:C:35:SER:HB3	3:C:54:LYS:HD3	1.83	0.61
4:M:355:LEU:HB3	4:M:374:LEU:HD12	1.83	0.61
10:S:928:GLU:HG3	10:S:997:PRO:HD2	1.82	0.61
10:T:1447:MET:SD	10:T:1450:ARG:NH1	2.74	0.61
2:K:20:ARG:HH12	2:K:89:ILE:HD13	1.66	0.61
6:O:292:THR:HB	10:T:674:ARG:HB2	1.82	0.61
9:R:559:PRO:O	9:R:586:GLN:NE2	2.33	0.61
11:U:288:PRO:HD2	12:Y:120:ARG:HH21	1.65	0.61
2:K:264:VAL:HG22	2:K:276:THR:HG23	1.83	0.61
9:R:455:ILE:HB	9:R:458:SER:HB2	1.82	0.61
10:T:418:ILE:HG23	10:T:428:PRO:HB3	1.81	0.61
1:J:444:THR:H	1:J:447:LYS:HE2	1.64	0.61
4:M:123:LEU:HB3	4:M:185:SER:HB2	1.82	0.61
4:M:423:LYS:HD3	4:M:435:TRP:HB3	1.82	0.61
8:Q:850:PHE:HB3	8:Q:891:LEU:HD22	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:R:937:LEU:HD22	9:R:954:LEU:HD22	1.82	0.61
10:T:393:VAL:HG21	10:T:443:ILE:HD13	1.82	0.61
4:D:794:LEU:HB2	4:D:884:ARG:HE	1.66	0.61
11:U:314:ILE:HD11	11:U:342:ALA:HB2	1.81	0.61
4:D:560:VAL:HB	4:D:571:LEU:HB2	1.82	0.61
6:F:249:ARG:HD3	6:F:252:ARG:HG2	1.83	0.61
6:O:389:GLN:HG2	6:O:393:LEU:HD12	1.83	0.61
10:S:1400:ARG:HH12	10:S:1468:ILE:HG21	1.65	0.61
10:S:1541:PRO:HG2	10:S:1603:GLU:HB2	1.83	0.61
2:K:296:THR:HG21	2:K:305:PHE:HB3	1.84	0.60
4:M:59:ARG:HD3	4:M:125:ASN:H	1.65	0.60
4:M:503:LEU:HD22	5:N:242:TYR:HA	1.81	0.60
4:M:1398:ASN:HD21	10:T:790:GLU:HG3	1.67	0.60
9:R:334:SER:HB2	9:R:345:LEU:HB3	1.84	0.60
9:R:1036:LEU:HA	9:R:1039:LEU:HD12	1.83	0.60
10:T:466:PRO:HG2	10:T:529:SER:HB3	1.83	0.60
6:F:532:LYS:NZ	6:F:580:ASP:OD1	2.33	0.60
1:J:523:LEU:HD12	2:K:58:LEU:HD22	1.84	0.60
7:G:220:ALA:HB2	7:G:229:THR:HG22	1.84	0.60
4:M:1113:THR:HB	10:T:470:THR:HG21	1.83	0.60
10:S:1399:LEU:HD13	10:S:1465:ASN:HD21	1.66	0.60
12:Y:322:ALA:O	12:Y:351:GLN:NE2	2.31	0.60
12:Z:570:GLN:NE2	12:Z:636:ASP:OD1	2.35	0.60
7:P:166:SER:HA	7:P:226:PRO:HG2	1.83	0.60
10:T:1938:PHE:HB2	10:T:1947:ARG:HG2	1.84	0.60
7:G:215:ARG:H	7:G:234:SER:HA	1.67	0.60
1:J:50:ARG:NH2	1:J:51:CYS:SG	2.74	0.60
4:M:104:HIS:HB2	4:M:563:LEU:HD21	1.84	0.60
9:I:117:LEU:HB3	9:I:136:LEU:HB2	1.84	0.60
9:I:823:TYR:CZ	9:I:827:ARG:HD2	2.37	0.60
1:J:389:ASN:HA	1:J:394:ALA:HA	1.82	0.60
10:T:1316:LEU:HD22	10:T:1340:LEU:HD22	1.84	0.60
9:I:1058:LEU:HD22	9:I:1104:PRO:HD2	1.83	0.60
12:V:23:ARG:HH12	12:V:56:GLN:HB3	1.67	0.60
12:Z:443:GLN:NE2	12:Z:513:CYS:SG	2.75	0.60
4:M:536:THR:HG21	9:R:80:SER:HA	1.84	0.59
4:M:1073:ASP:HB3	4:M:1151:GLU:HA	1.84	0.59
9:R:397:LEU:HD11	9:R:407:CYS:HB3	1.83	0.59
8:H:857:HIS:HE1	8:H:898:SER:HB3	1.67	0.59
1:J:65:SER:HB3	1:J:68:LEU:HB2	1.83	0.59
3:L:16:HIS:ND1	3:L:60:VAL:O	2.33	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:V:466:GLN:NE2	12:V:593:ASP:OD1	2.35	0.59
12:W:214:LEU:O	12:W:218:GLN:NE2	2.35	0.59
10:S:985:LEU:HD23	10:S:988:LEU:HD21	1.83	0.59
10:T:25:LEU:O	10:T:29:ILE:HB	2.02	0.59
10:T:47:LYS:HD2	10:T:172:ARG:HD3	1.85	0.59
12:X:180:ARG:HD2	12:X:183:GLU:HG3	1.84	0.59
12:Y:457:LEU:HB3	12:Y:481:LEU:HD22	1.84	0.59
6:F:336:LYS:HG3	6:F:719:CYS:HB3	1.84	0.59
12:Y:76:VAL:HG12	12:Y:103:LEU:HD22	1.84	0.59
4:M:1070:ARG:NH2	4:M:1102:GLU:OE2	2.35	0.59
12:Z:308:TRP:CZ3	12:Z:510:ARG:NH2	2.69	0.59
6:O:471:GLN:NE2	8:Q:368:THR:O	2.35	0.59
10:S:563:HIS:HB2	10:S:630:LEU:HD21	1.84	0.59
11:U:288:PRO:HB3	12:Y:124:LEU:HD11	1.85	0.59
4:D:116:GLU:O	4:D:126:ASN:ND2	2.35	0.59
8:Q:301:MET:HG3	8:Q:302:LEU:HG	1.85	0.59
12:X:302:GLN:NE2	12:X:511:PRO:O	2.36	0.59
3:C:62:ARG:HB2	3:C:77:CYS:HB2	1.84	0.59
4:D:131:LYS:HB2	9:I:354:ASN:HB3	1.84	0.59
1:J:423:ASP:OD1	1:J:430:ARG:NH2	2.35	0.59
10:T:767:TYR:HA	10:T:849:LEU:HD21	1.83	0.59
1:A:133:GLN:HA	1:A:136:ILE:HG12	1.84	0.59
4:D:889:THR:HG23	5:E:186:LYS:HG3	1.85	0.59
6:F:538:HIS:HA	6:F:542:MET:HG3	1.84	0.59
5:N:270:THR:HG22	5:N:280:ILE:HG22	1.83	0.59
6:O:735:ARG:NH1	7:P:68:PRO:O	2.35	0.59
9:R:100:ALA:HB3	9:R:147:ALA:H	1.68	0.58
12:X:313:GLU:HB3	12:X:372:ILE:HD11	1.85	0.58
4:M:539:LEU:HD21	9:R:130:LEU:HD12	1.86	0.58
4:M:1161:TYR:HB2	10:T:482:GLN:HB2	1.85	0.58
6:O:503:LEU:HD23	6:O:523:ILE:HG13	1.86	0.58
9:R:539:PRO:HA	9:R:543:LEU:HD22	1.85	0.58
5:E:282:ILE:HB	5:E:292:LEU:HB3	1.85	0.58
1:J:474:GLN:OE1	1:J:478:ASN:ND2	2.36	0.58
4:M:137:ILE:HG12	4:M:155:ILE:HD11	1.84	0.58
8:Q:420:ALA:HB1	8:Q:429:LEU:HG	1.84	0.58
12:V:215:ALA:O	12:V:218:GLN:NE2	2.36	0.58
12:Z:563:ALA:HB1	12:Z:608:LEU:HD13	1.84	0.58
9:I:1076:PRO:HB3	9:I:1123:TYR:HB3	1.85	0.58
12:V:356:HIS:HA	12:V:443:GLN:HE22	1.69	0.58
12:X:699:PRO:HD2	12:X:702:GLU:HB2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:T:1433:ARG:HH21	10:T:1445:LYS:HD2	1.68	0.58
12:V:487:PHE:HE1	12:V:527:GLN:HE21	1.50	0.58
9:I:832:SER:H	9:I:833:PRO:HD2	1.67	0.58
4:M:633:CYS:SG	4:M:896:ARG:NH1	2.76	0.58
9:R:729:ARG:NH2	9:R:799:ASP:O	2.36	0.58
11:U:422:VAL:HG13	11:U:436:LEU:H	1.69	0.58
1:A:94:ARG:NH2	1:A:381:HIS:O	2.37	0.58
6:F:337:SER:HB2	6:F:342:HIS:HB2	1.84	0.58
4:M:285:PRO:HB3	4:M:301:ALA:HB1	1.86	0.58
7:P:162:VAL:O	7:P:181:ARG:NH2	2.37	0.58
7:P:242:TRP:HB3	7:P:252:TRP:HB3	1.85	0.58
10:T:1439:THR:HB	10:T:1624:GLN:HG2	1.86	0.58
2:B:152:CYS:HB2	2:B:162:ARG:HB3	1.84	0.58
2:K:6:ALA:HB3	2:K:369:VAL:HB	1.85	0.58
6:O:399:GLU:O	6:O:405:LYS:NZ	2.36	0.58
3:C:34:GLN:HE22	3:C:59:SER:H	1.52	0.58
9:I:729:ARG:HH21	9:I:733:ASN:HA	1.68	0.58
8:Q:299:ARG:HE	8:Q:306:SER:HB2	1.68	0.58
12:Y:4:SER:H	12:Y:7:GLU:HB2	1.69	0.58
9:R:1099:LEU:HA	9:R:1103:LEU:HB2	1.85	0.58
12:Z:164:ASP:HB3	12:Z:167:VAL:HB	1.84	0.58
11:U:581:PHE:HB2	11:U:585:LEU:HB2	1.85	0.57
2:B:53:PHE:HB2	2:B:57:SER:HB3	1.84	0.57
10:S:636:PRO:HD2	10:S:639:LEU:HD12	1.85	0.57
10:T:1701:MET:SD	10:T:1704:GLN:NE2	2.77	0.57
5:E:72:GLY:H	5:E:105:ARG:HH12	1.51	0.57
9:I:218:ASN:ND2	9:I:263:SER:O	2.31	0.57
1:J:562:MET:SD	1:J:605:ARG:NE	2.76	0.57
9:R:286:LYS:NZ	9:R:288:ASP:OD1	2.37	0.57
10:S:389:ILE:HD12	10:S:446:LEU:HD21	1.86	0.57
4:M:553:VAL:HG22	4:M:560:VAL:HG13	1.84	0.57
4:M:1008:LEU:HD13	4:M:1039:VAL:HG21	1.86	0.57
9:R:436:ALA:HB3	9:R:439:ASP:HB2	1.86	0.57
9:R:751:THR:O	9:R:760:ARG:NH1	2.37	0.57
10:T:17:TYR:OH	10:T:56:ASN:ND2	2.37	0.57
11:U:610:ILE:HG23	11:U:629:LEU:HG	1.87	0.57
4:M:1313:LEU:HG	4:M:1318:VAL:HG13	1.86	0.57
7:P:280:GLY:O	7:P:304:LYS:NZ	2.37	0.57
12:Y:205:CYS:SG	12:Y:208:ARG:NH2	2.78	0.57
12:Y:699:PRO:HD2	12:Y:702:GLU:HB2	1.87	0.57
4:D:1000:ARG:HD3	4:D:1023:ILE:HG12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:504:ARG:NH1	6:F:507:CYS:SG	2.78	0.57
4:M:62:ARG:HH21	4:M:187:PHE:HB3	1.68	0.57
5:N:225:GLY:HA3	5:N:234:ILE:HD13	1.87	0.57
10:T:674:ARG:HH22	10:T:720:LEU:HD22	1.70	0.57
10:T:1310:ARG:NH1	10:T:1389:SER:O	2.38	0.57
11:U:292:ASN:ND2	12:Y:116:TYR:OH	2.37	0.57
1:A:109:LEU:HD23	1:A:141:GLU:HG2	1.87	0.57
8:H:181:LYS:O	8:H:185:LYS:HB3	2.05	0.57
9:I:506:THR:HG23	9:I:550:ILE:HG13	1.85	0.57
1:J:349:ALA:HB1	1:J:357:GLN:HE22	1.69	0.57
10:S:1358:ALA:HA	10:S:1869:GLN:HE22	1.70	0.57
10:T:202:LEU:HB3	10:T:208:LEU:HD11	1.87	0.57
2:B:238:MET:HG3	2:B:255:ASN:HA	1.87	0.57
2:K:118:GLN:HB3	2:K:126:ASN:H	1.68	0.57
12:W:27:MET:HG3	12:W:28:LYS:HG2	1.87	0.57
6:O:553:LEU:HD21	6:O:609:SER:HB3	1.87	0.57
8:Q:890:ASN:HB3	11:U:814:GLN:HG2	1.86	0.56
12:W:123:LYS:O	12:W:161:ARG:NH1	2.38	0.56
12:W:562:ARG:HA	12:W:600:ARG:HH22	1.70	0.56
4:D:119:LEU:HD23	4:D:713:VAL:HG21	1.87	0.56
9:I:246:ILE:H	9:I:249:ARG:HH12	1.54	0.56
2:K:277:CYS:HB3	2:K:351:LEU:HD22	1.86	0.56
5:N:128:ASN:H	5:N:144:GLY:HA2	1.69	0.56
10:T:1783:PRO:HA	10:T:1962:LEU:HD13	1.87	0.56
12:V:322:ALA:O	12:V:350:ARG:NH1	2.34	0.56
12:W:181:LEU:HD21	12:W:213:TYR:HA	1.87	0.56
3:C:156:GLN:HA	4:D:1323:TRP:HB3	1.87	0.56
6:F:436:ARG:HG3	6:F:440:ALA:HB2	1.85	0.56
6:F:510:SER:OG	6:F:511:GLY:N	2.39	0.56
6:F:616:CYS:SG	6:F:653:ARG:NH2	2.78	0.56
7:G:59:PRO:HD2	7:G:79:TYR:HB3	1.87	0.56
9:I:607:PHE:HE2	9:I:738:ASN:HB2	1.69	0.56
1:J:218:ALA:O	1:J:225:ARG:NH1	2.38	0.56
1:J:453:ARG:NH2	1:J:457:GLN:OE1	2.37	0.56
1:J:548:GLN:HE21	1:J:550:GLN:HB2	1.70	0.56
2:K:223:HIS:HB2	2:K:229:VAL:HB	1.86	0.56
4:M:144:ILE:HG12	4:M:153:VAL:HG22	1.88	0.56
9:R:86:VAL:HG22	9:R:118:ILE:HD12	1.86	0.56
11:U:750:LEU:HD13	11:U:812:LEU:HD21	1.87	0.56
12:V:501:ASP:OD2	12:V:630:LYS:NZ	2.38	0.56
12:W:91:PRO:O	12:W:120:ARG:NH2	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:203:ASP:N	2:B:203:ASP:OD1	2.38	0.56
7:G:195:ARG:NH1	7:G:196:GLU:O	2.39	0.56
4:M:547:ARG:NH1	9:R:135:GLU:OE1	2.38	0.56
4:M:583:VAL:HG13	4:M:587:HIS:HB3	1.87	0.56
4:M:826:ASP:OD2	4:M:884:ARG:NH2	2.39	0.56
2:K:226:GLN:OE1	2:K:228:HIS:NE2	2.38	0.56
9:R:236:LEU:O	9:R:238:GLN:NE2	2.38	0.56
9:R:767:HIS:HE1	9:R:793:LEU:HD12	1.71	0.56
10:S:1791:ARG:NH1	10:S:1813:VAL:O	2.39	0.56
11:U:680:VAL:HG13	12:Z:620:SER:HB2	1.88	0.56
2:B:311:SER:HB2	2:B:375:SER:H	1.70	0.56
4:D:483:ARG:NH2	4:D:500:GLU:OE1	2.38	0.56
4:D:1121:VAL:HG21	4:D:1193:LEU:HD13	1.88	0.56
10:T:243:ARG:NH1	10:T:303:ASP:OD2	2.38	0.56
10:T:263:SER:HB3	10:T:376:SER:HB2	1.88	0.56
1:A:155:ALA:HB1	1:A:159:PRO:HB2	1.88	0.56
7:G:153:CYS:SG	7:G:154:ASN:N	2.77	0.56
6:O:739:LYS:NZ	6:O:766:ASP:OD2	2.38	0.56
12:V:651:ILE:HG13	12:V:675:ASN:HB2	1.87	0.56
12:W:453:LEU:HB3	12:W:485:GLU:HG2	1.87	0.56
12:Z:192:GLU:OE2	12:Z:193:ARG:NH1	2.39	0.56
3:C:242:THR:OG1	3:C:243:LYS:N	2.38	0.56
4:D:1380:LEU:HA	4:D:1422:LEU:HD21	1.87	0.56
9:I:823:TYR:OH	9:I:827:ARG:NH1	2.39	0.56
10:S:821:GLU:OE1	10:S:895:ASN:ND2	2.36	0.56
11:U:594:ARG:HD2	11:U:607:LYS:HE2	1.86	0.56
7:G:67:HIS:HD2	7:G:69:MET:HB2	1.71	0.56
9:I:577:SER:OG	9:I:578:ASN:N	2.38	0.56
3:L:169:SER:HB2	3:L:183:ALA:HB3	1.87	0.56
5:N:282:ILE:HB	5:N:292:LEU:HB2	1.87	0.56
6:O:249:ARG:HH11	6:O:250:SER:H	1.54	0.56
9:R:411:THR:OG1	9:R:412:GLN:N	2.33	0.56
10:S:204:LYS:HG3	10:S:205:GLU:HG3	1.86	0.56
11:U:676:LYS:NZ	11:U:687:ASN:OD1	2.39	0.56
9:I:495:SER:HB2	9:I:501:ALA:HB1	1.88	0.56
9:I:947:TYR:HB3	9:I:950:LYS:HB2	1.87	0.56
10:T:1917:SER:HB2	10:T:1954:VAL:HG12	1.88	0.56
1:A:304:HIS:HA	1:A:307:VAL:HG22	1.88	0.55
2:B:353:VAL:HG22	2:B:358:LEU:HD13	1.87	0.55
1:J:360:LYS:HZ2	1:J:364:ILE:HD11	1.70	0.55
7:P:264:VAL:HA	7:P:280:GLY:HA3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:U:238:PRO:HG2	12:Y:474:ASN:HD21	1.71	0.55
12:V:482:LEU:HD21	12:V:581:LEU:HD11	1.88	0.55
4:D:1142:VAL:HB	4:D:1174:ILE:HD11	1.89	0.55
5:N:243:PRO:HB3	5:N:246:ASN:HB2	1.89	0.55
7:P:180:LYS:HB2	7:P:196:GLU:HG2	1.88	0.55
10:S:1696:ASN:OD1	10:S:1696:ASN:N	2.39	0.55
11:U:182:GLU:OE1	11:U:492:HIS:NE2	2.36	0.55
4:D:1107:LEU:HD22	4:D:1119:LYS:HD3	1.88	0.55
6:F:645:ASN:HB3	11:U:176:SER:HA	1.87	0.55
6:F:653:ARG:NH2	11:U:217:ASP:OD2	2.39	0.55
10:S:1753:GLN:NE2	10:S:1892:CYS:SG	2.80	0.55
10:T:958:GLU:HA	10:T:962:ASP:HB2	1.88	0.55
10:T:1655:ILE:HG23	10:T:1675:LEU:HD21	1.88	0.55
12:X:93:GLN:HB3	12:X:96:LEU:HB2	1.88	0.55
12:Y:527:GLN:NE2	12:Y:628:LEU:O	2.39	0.55
2:B:13:LYS:O	2:B:40:ASN:ND2	2.39	0.55
7:G:212:ASP:N	7:G:212:ASP:OD1	2.40	0.55
10:T:642:GLU:HA	10:T:645:LYS:HE2	1.88	0.55
11:U:647:LEU:HD11	11:U:693:LEU:HD13	1.87	0.55
2:B:46:CYS:HB3	2:B:68:GLN:HE22	1.71	0.55
4:M:867:GLN:O	4:M:873:ASN:ND2	2.40	0.55
6:O:421:ALA:HA	6:O:424:ARG:HE	1.72	0.55
10:T:383:GLU:HA	10:T:386:ILE:HD12	1.89	0.55
10:T:515:ARG:HD3	10:T:599:GLN:HB3	1.89	0.55
10:T:554:HIS:O	10:T:557:HIS:ND1	2.40	0.55
12:V:306:VAL:HB	12:V:311:LEU:HD11	1.89	0.55
12:Y:126:PRO:HB2	12:Y:161:ARG:HH12	1.70	0.55
4:D:105:TRP:HB2	4:D:112:LEU:HD11	1.89	0.55
6:F:341:PRO:O	6:F:687:ARG:NH2	2.39	0.55
2:K:289:SER:O	2:K:291:ASP:N	2.39	0.55
8:Q:856:LEU:HD22	8:Q:865:CYS:HB2	1.89	0.55
12:V:684:LEU:HD22	12:X:2:ARG:HH21	1.72	0.55
12:X:730:ILE:O	12:X:734:LEU:HB2	2.05	0.55
5:N:220:ASN:HD22	5:N:223:ARG:HH21	1.53	0.55
1:A:614:SER:HB2	1:A:617:GLU:HB2	1.89	0.55
9:R:111:LEU:HD23	9:R:118:ILE:HD11	1.89	0.55
10:S:1715:LEU:HD22	10:S:1809:PRO:HG2	1.87	0.55
10:T:22:GLN:NE2	10:T:959:GLU:OE1	2.40	0.55
11:U:195:LYS:HE2	11:U:200:HIS:HB3	1.88	0.55
12:Z:53:ILE:HG21	12:Z:85:ARG:HH22	1.72	0.55
4:D:965:VAL:HG12	4:D:981:LEU:HD21	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:T:628:LEU:HD11	10:T:667:THR:HG21	1.89	0.55
12:V:248:ASP:HB3	12:V:251:LYS:HB2	1.89	0.55
3:L:306:LYS:HG2	3:L:316:ILE:HG21	1.89	0.54
4:M:44:ARG:NH2	4:M:595:VAL:O	2.39	0.54
9:R:994:LYS:HE3	9:R:1005:ASN:HD21	1.72	0.54
11:U:361:ASP:OD1	11:U:361:ASP:N	2.40	0.54
12:Y:501:ASP:O	12:Y:503:ASN:N	2.38	0.54
1:A:94:ARG:HH22	1:A:381:HIS:HB3	1.73	0.54
6:F:796:GLU:HA	6:F:800:LYS:HD3	1.87	0.54
9:I:1058:LEU:HD23	9:I:1109:LEU:HD21	1.88	0.54
9:R:703:ASP:H	9:R:707:TRP:HZ3	1.55	0.54
12:W:197:ARG:HH22	12:W:231:GLU:HB3	1.73	0.54
4:M:75:GLY:O	4:M:213:ASN:ND2	2.40	0.54
7:P:31:CYS:HB2	7:P:60:VAL:HB	1.89	0.54
8:Q:538:LEU:HD12	8:Q:570:ARG:HG3	1.88	0.54
9:R:693:GLU:OE2	9:R:766:GLN:NE2	2.41	0.54
10:T:804:HIS:O	10:T:808:ASN:ND2	2.41	0.54
1:A:300:THR:OG1	1:A:301:THR:N	2.39	0.54
4:D:540:GLN:HG3	9:I:439:ASP:HA	1.88	0.54
6:F:476:GLN:HG2	6:F:479:ARG:HB3	1.88	0.54
9:I:869:LEU:HD11	9:I:885:LEU:HD21	1.90	0.54
5:N:166:SER:HB3	5:N:185:GLU:HB3	1.89	0.54
6:O:557:GLU:O	6:O:561:GLN:HB2	2.07	0.54
8:Q:470:PRO:HD2	8:Q:473:TYR:HD2	1.73	0.54
10:S:299:SER:O	10:S:301:PHE:N	2.41	0.54
10:S:473:MET:SD	10:S:483:ARG:NH2	2.81	0.54
12:V:347:ALA:HB1	12:V:350:ARG:HH21	1.72	0.54
12:V:582:HIS:NE2	12:V:601:CYS:SG	2.74	0.54
3:C:106:ARG:HG2	3:C:150:LEU:HB2	1.89	0.54
4:D:73:VAL:HG21	9:I:260:ALA:HB2	1.89	0.54
6:F:548:THR:HG23	6:F:551:GLN:H	1.72	0.54
1:J:97:GLN:HG2	2:K:320:SER:HB3	1.90	0.54
3:L:176:ARG:HH22	10:T:1233:VAL:HG22	1.71	0.54
9:R:286:LYS:HB3	9:R:298:LEU:HB3	1.88	0.54
9:R:414:MET:HG3	9:R:433:PRO:HA	1.88	0.54
10:S:1184:LEU:HD13	10:S:1319:LYS:HG2	1.89	0.54
10:T:1500:ASP:OD1	10:T:1561:ARG:NE	2.39	0.54
10:T:1767:MET:SD	10:T:1905:ARG:NH1	2.81	0.54
11:U:280:GLN:HG2	12:Y:88:GLU:HG3	1.89	0.54
12:X:284:GLU:HG3	12:X:328:PRO:HG3	1.89	0.54
12:Z:183:GLU:O	12:Z:187:HIS:ND1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Z:194:ARG:NH2	12:Z:338:ASN:OD1	2.41	0.54
12:Z:624:PRO:HB3	12:Z:630:LYS:HD3	1.89	0.54
4:D:1107:LEU:HD13	4:D:1119:LYS:HB3	1.90	0.54
6:O:325:LEU:HB3	6:O:673:TRP:HD1	1.73	0.54
10:S:671:GLN:HB2	10:S:732:TYR:HD1	1.71	0.54
10:T:635:ILE:HG22	10:T:640:LYS:HG3	1.90	0.54
12:Y:545:GLY:O	12:Y:549:LYS:NZ	2.37	0.54
4:M:1338:ARG:HH12	4:M:1387:ALA:HB2	1.73	0.54
7:P:20:GLN:HG2	7:P:29:ALA:HB3	1.90	0.54
7:P:62:GLN:HE21	7:P:108:SER:HB2	1.72	0.54
7:G:72:ASN:HB3	7:G:88:GLU:HB3	1.89	0.54
9:I:515:ARG:HB3	9:I:520:ASP:HB2	1.89	0.54
2:K:184:LEU:HD11	2:K:192:LEU:HD23	1.88	0.54
4:M:442:PRO:HD3	4:M:720:LYS:HE3	1.89	0.54
4:M:684:TYR:HB3	4:M:867:GLN:HG3	1.89	0.54
5:N:34:SER:HA	5:N:306:ARG:HH12	1.73	0.54
12:X:197:ARG:NH1	12:X:231:GLU:OE1	2.41	0.54
1:A:79:PHE:O	1:A:83:GLN:NE2	2.40	0.54
4:M:810:ARG:NH2	4:M:825:GLU:OE1	2.40	0.54
12:V:608:LEU:HG	12:V:612:LEU:HG	1.90	0.54
2:B:100:ILE:HB	2:B:114:GLN:HG2	1.90	0.54
2:B:328:THR:HG22	2:B:329:ASP:H	1.73	0.54
6:F:414:SER:HB3	6:F:540:TRP:HE1	1.73	0.54
9:I:722:LEU:HD12	9:I:792:LEU:HD11	1.89	0.54
9:I:827:ARG:HH21	5:N:1:MET:H2	1.56	0.54
5:N:277:LYS:HD2	5:N:297:PRO:HA	1.90	0.54
9:R:110:TRP:HB3	9:R:119:ILE:HG13	1.90	0.54
10:S:514:LEU:HD23	10:S:600:LEU:HD21	1.90	0.54
10:T:661:TRP:NE1	10:T:665:GLU:OE2	2.41	0.54
10:T:1488:HIS:O	10:T:1492:ARG:NH1	2.41	0.54
5:N:129:ASP:HB3	5:N:171:VAL:HG12	1.90	0.53
10:S:1184:LEU:HB3	10:S:1319:LYS:HE2	1.90	0.53
10:T:1687:VAL:HG13	10:T:1691:LEU:HD21	1.91	0.53
10:T:1722:GLY:HA3	10:T:1791:ARG:HH22	1.72	0.53
1:A:72:PHE:O	1:A:76:HIS:ND1	2.41	0.53
2:B:53:PHE:O	2:B:357:ASN:ND2	2.41	0.53
4:D:786:PRO:HD2	4:D:789:LEU:HD12	1.90	0.53
6:F:528:GLN:HE21	12:Y:10:ARG:NH2	2.06	0.53
2:K:113:ASN:ND2	3:L:95:ASP:OD2	2.41	0.53
8:Q:311:VAL:HA	8:Q:322:GLN:HE22	1.73	0.53
8:Q:712:ALA:HA	8:Q:715:TYR:CE2	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:S:264:LEU:HD22	10:S:372:ALA:HB1	1.91	0.53
2:B:372:ARG:NH2	2:B:374:PHE:O	2.41	0.53
9:I:211:PHE:H	9:I:223:LEU:HB3	1.71	0.53
4:M:107:SER:HB2	4:M:112:LEU:HD13	1.90	0.53
4:M:581:TYR:O	4:M:614:HIS:NE2	2.41	0.53
6:O:684:PRO:HG3	7:P:172:SER:H	1.74	0.53
10:S:489:VAL:HG12	10:S:493:LYS:HE2	1.91	0.53
11:U:512:GLN:O	11:U:528:ASN:ND2	2.39	0.53
12:Y:430:HIS:NE2	12:Y:433:ASP:OD2	2.41	0.53
3:L:158:GLU:OE2	4:M:1326:ASN:ND2	2.41	0.53
3:L:182:ILE:HG23	3:L:200:TYR:HB2	1.90	0.53
8:Q:759:ASN:OD1	11:U:803:ARG:NH2	2.41	0.53
10:S:1908:GLU:O	10:S:1912:LEU:HB2	2.07	0.53
12:X:60:PRO:HG2	12:X:90:ASN:HD21	1.74	0.53
1:A:5:ASP:HB2	3:C:314:LYS:HB3	1.91	0.53
9:I:334:SER:HB2	9:I:345:LEU:HB3	1.90	0.53
8:Q:565:LYS:O	8:Q:569:GLN:NE2	2.41	0.53
10:S:688:LEU:HA	10:S:692:GLU:HB2	1.90	0.53
10:S:1035:ASP:OD2	10:S:1039:LYS:NZ	2.41	0.53
12:Y:133:ARG:HH12	12:Y:166:TYR:HB3	1.72	0.53
8:H:252:ASP:O	8:H:256:ARG:NH1	2.41	0.53
9:I:631:GLU:OE2	9:I:729:ARG:NH1	2.42	0.53
1:J:471:MET:HG3	1:J:487:TRP:CG	2.43	0.53
4:M:1276:ILE:HB	10:T:1244:MET:HG3	1.89	0.53
6:O:560:PHE:HB3	6:O:570:ALA:HB3	1.89	0.53
10:T:1292:LEU:HB2	10:T:1343:HIS:HE1	1.74	0.53
12:W:93:GLN:HB3	12:W:96:LEU:HB2	1.90	0.53
12:Z:754:GLU:O	12:Z:756:MET:N	2.41	0.53
3:C:114:THR:OG1	3:C:115:SER:N	2.42	0.53
4:D:401:THR:OG1	4:D:402:PHE:N	2.41	0.53
4:D:414:LEU:HD12	4:D:420:THR:HB	1.91	0.53
9:I:643:HIS:HB2	9:I:650:VAL:HG11	1.91	0.53
4:M:546:SER:OG	4:M:564:ARG:NH1	2.42	0.53
5:N:151:ILE:HB	5:N:160:ALA:HB3	1.91	0.53
9:R:658:LEU:HA	9:R:661:ARG:HG2	1.91	0.53
10:S:985:LEU:HD22	10:S:1063:VAL:HG21	1.91	0.53
10:S:1931:ASN:HB3	10:S:1950:ARG:HB3	1.91	0.53
12:X:474:ASN:OD1	12:X:564:GLN:NE2	2.41	0.53
12:X:702:GLU:OE1	12:Y:454:ARG:NH2	2.42	0.53
2:B:251:MET:SD	2:B:252:SER:OG	2.61	0.53
4:M:811:ARG:HH21	4:M:829:ARG:HE	1.55	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:P:119:VAL:HG22	7:P:133:THR:HG23	1.90	0.53
7:P:215:ARG:H	7:P:234:SER:HA	1.72	0.53
12:V:233:LEU:HD13	12:V:285:MET:HG3	1.91	0.53
12:W:694:GLU:HA	12:W:698:LEU:HD21	1.91	0.53
4:M:422:MET:HB3	4:M:438:VAL:HB	1.91	0.53
10:T:1915:THR:HA	10:T:1952:ASN:HD22	1.74	0.53
12:V:118:VAL:HG21	12:V:138:LEU:HD11	1.91	0.53
12:X:514:LEU:HB2	12:X:519:CYS:HB2	1.90	0.53
12:Z:444:TRP:CD1	12:Z:449:THR:HG23	2.44	0.53
6:F:317:ASP:OD1	6:F:320:SER:OG	2.22	0.53
9:R:989:GLN:HB2	9:R:1015:LEU:HD11	1.89	0.53
12:X:574:LEU:HB3	12:X:608:LEU:HD22	1.91	0.53
12:Z:240:VAL:HG22	12:Z:255:ALA:HB1	1.90	0.53
4:D:296:ASP:OD1	4:D:296:ASP:N	3.07	0.52
1:J:599:MET:HB2	1:J:637:LEU:HD21	1.90	0.52
7:P:18:ASP:N	7:P:18:ASP:OD1	2.40	0.52
10:S:1726:ARG:NH2	10:S:1796:GLN:O	2.41	0.52
10:T:1910:TYR:O	10:T:1915:THR:OG1	2.26	0.52
12:Z:267:LYS:HD3	12:Z:400:PHE:HB2	1.91	0.52
9:I:106:GLY:O	9:I:121:LYS:NZ	2.38	0.52
3:L:245:VAL:HB	3:L:274:PHE:O	2.09	0.52
10:T:958:GLU:O	10:T:960:LEU:N	2.42	0.52
4:D:415:ASP:OD2	4:D:419:GLN:NE2	2.42	0.52
8:H:727:LEU:O	8:H:824:ARG:NH1	2.43	0.52
1:J:475:SER:HB3	1:J:480:ARG:HB2	1.91	0.52
6:O:498:ILE:HG12	8:Q:314:LEU:H	1.73	0.52
6:O:780:LEU:HD21	6:O:802:TYR:HB3	1.91	0.52
8:Q:549:ARG:NH2	8:Q:560:SER:OG	2.42	0.52
10:S:1787:GLU:HB3	10:S:1813:VAL:HG23	1.91	0.52
2:B:360:CYS:HB3	2:B:368:TYR:HB3	1.91	0.52
6:F:455:ARG:HE	6:F:459:LYS:HG2	1.74	0.52
9:I:499:GLN:NE2	4:M:180:ASP:OD2	2.42	0.52
9:I:906:HIS:CG	9:I:927:SER:HG	2.27	0.52
3:L:163:LEU:HB2	3:L:186:SER:HB3	1.90	0.52
6:O:462:ASP:OD1	8:Q:321:ARG:NH1	2.43	0.52
10:T:1896:ILE:HD13	10:T:1981:ILE:HD13	1.90	0.52
12:V:5:LYS:NZ	12:V:41:GLU:OE2	2.41	0.52
12:X:55:VAL:HG12	12:X:56:GLN:HG2	1.92	0.52
12:Y:128:SER:HB2	12:Y:131:ILE:HG22	1.91	0.52
4:D:408:ASN:OD1	4:D:408:ASN:N	2.43	0.52
8:H:425:ASN:HA	8:H:472:GLU:HG3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:S:1938:PHE:HB2	10:S:1951:GLN:HB3	1.92	0.52
10:T:400:MET:HB3	10:T:403:LYS:HB2	1.91	0.52
12:Z:679:TYR:HB2	12:Z:720:ILE:HD11	1.92	0.52
1:A:189:THR:OG1	1:A:220:THR:OG1	2.27	0.52
1:A:497:ALA:HB3	1:A:532:ARG:HH22	1.74	0.52
8:Q:591:LEU:O	8:Q:595:GLN:NE2	2.42	0.52
10:S:1941:ASP:N	10:S:1941:ASP:OD1	2.43	0.52
12:W:383:SER:OG	12:W:396:MET:SD	2.65	0.52
12:X:651:ILE:HG12	12:X:678:ALA:HB2	1.92	0.52
4:D:974:LEU:HD23	4:D:977:LEU:HD12	1.92	0.52
6:F:259:TRP:HZ3	6:F:667:ASN:HD21	1.58	0.52
6:F:273:ASN:ND2	6:F:275:GLU:OE1	2.43	0.52
7:G:39:ILE:HB	7:G:51:ALA:HB3	1.91	0.52
7:G:212:ASP:OD2	7:G:238:ARG:NH1	2.43	0.52
4:M:1338:ARG:NH2	4:M:1386:SER:OG	2.42	0.52
9:R:970:ASP:N	9:R:970:ASP:OD1	2.42	0.52
10:T:1842:VAL:HA	10:T:1845:LEU:HG	1.91	0.52
12:Z:301:ALA:HB2	12:Z:311:LEU:HD12	1.92	0.52
2:B:254:LEU:HD22	2:B:289:SER:HA	1.91	0.52
3:C:276:ASN:HB2	3:C:303:ARG:HH22	1.75	0.52
6:F:386:LEU:HD23	6:F:409:ARG:HH21	1.75	0.52
8:H:249:PHE:HE1	8:H:259:GLN:HG2	1.75	0.52
2:K:259:ALA:HB1	2:K:279:GLU:HG2	1.91	0.52
7:P:193:ILE:HG23	7:P:204:ASP:HB2	1.91	0.52
10:S:584:ARG:NH1	10:S:586:ILE:O	2.43	0.52
10:T:1697:ASP:O	10:T:1701:MET:N	2.42	0.52
12:Y:454:ARG:HH11	12:Y:458:LYS:HD2	1.74	0.52
4:D:161:VAL:HG23	4:D:204:ILE:HG12	1.92	0.52
8:H:766:THR:HB	8:H:782:LYS:HD2	1.90	0.52
2:K:265:HIS:ND1	2:K:351:LEU:O	2.42	0.52
4:M:147:THR:C	4:M:149:ASN:H	2.13	0.52
4:M:1102:GLU:HG2	4:M:1106:ARG:HE	1.75	0.52
8:Q:749:GLU:HA	8:Q:752:ASN:ND2	2.25	0.52
9:R:1055:LEU:HD23	9:R:1109:LEU:HD23	1.91	0.52
10:S:455:GLU:HB3	10:S:458:LEU:HB3	1.91	0.52
10:S:1528:LEU:HD11	10:S:1577:VAL:HG13	1.90	0.52
3:C:277:HIS:HE1	3:C:297:GLY:HA3	1.75	0.52
4:D:113:GLU:HG3	4:D:129:ARG:HG2	1.92	0.52
9:R:507:LYS:HA	9:R:510:LYS:HE3	1.92	0.52
9:R:1067:TRP:HE1	9:R:1080:THR:HG22	1.75	0.52
10:S:1403:LEU:HD13	10:S:1469:PHE:HE1	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Y:197:ARG:HH22	12:Y:231:GLU:HB3	1.74	0.52
4:D:1184:LYS:NZ	4:D:1233:THR:O	2.43	0.51
9:I:760:ARG:HH21	9:I:800:TYR:HE1	1.57	0.51
3:L:113:ARG:HH12	4:M:1363:LYS:HB3	1.74	0.51
10:T:1184:LEU:HB3	10:T:1319:LYS:HE2	1.91	0.51
11:U:809:ASN:O	11:U:813:VAL:HG23	2.10	0.51
12:X:598:MET:HG3	12:X:655:THR:HG21	1.91	0.51
4:D:1401:ASN:O	4:D:1405:GLN:NE2	2.43	0.51
6:F:255:TRP:O	7:G:20:GLN:NE2	2.44	0.51
6:F:340:CYS:SG	6:F:687:ARG:NH2	2.83	0.51
1:J:634:ARG:HH12	4:M:1132:ARG:HD3	1.75	0.51
4:M:258:LYS:O	4:M:311:TRP:NE1	2.40	0.51
4:M:499:LYS:O	4:M:503:LEU:HG	2.11	0.51
10:T:635:ILE:HG13	10:T:636:PRO:HD2	1.92	0.51
10:T:1535:LEU:HD22	10:T:1618:ILE:HD12	1.93	0.51
10:T:1541:PRO:HG3	10:T:1607:PHE:HA	1.92	0.51
4:D:210:ARG:HA	4:D:233:SER:HA	1.91	0.51
8:Q:210:THR:HG22	8:Q:507:GLN:HE21	1.75	0.51
8:H:212:ARG:NH2	8:H:267:SER:OG	2.44	0.51
9:I:331:ASN:OD1	9:I:390:ARG:NH2	2.44	0.51
1:J:355:ILE:HA	1:J:358:VAL:HG22	1.92	0.51
4:M:446:ASP:HB3	9:R:129:LYS:HD3	1.91	0.51
4:M:1289:ARG:HE	4:M:1292:ILE:HD12	1.74	0.51
10:T:1178:ARG:NH2	10:T:1315:ASP:OD2	2.43	0.51
10:T:1819:LYS:HE3	10:T:1977:ARG:HH22	1.75	0.51
4:M:244:PRO:HG2	4:M:250:GLY:H	1.76	0.51
4:M:780:CYS:SG	4:M:781:LEU:N	2.84	0.51
6:O:598:ARG:NH2	6:O:613:TYR:OH	2.43	0.51
9:R:987:LEU:HA	9:R:990:GLU:HB3	1.92	0.51
12:Z:193:ARG:O	12:Z:197:ARG:HG2	2.10	0.51
1:A:100:GLN:NE2	1:A:104:ASN:OD1	2.41	0.51
4:D:133:LEU:HD22	9:I:351:PRO:HB2	1.93	0.51
4:D:233:SER:HB2	4:D:239:LEU:HB2	1.92	0.51
4:M:412:LEU:HD13	4:M:422:MET:HG2	1.93	0.51
4:M:545:LEU:HA	4:M:565:LYS:HB3	1.91	0.51
10:S:967:ALA:HB1	10:S:970:GLN:HB2	1.92	0.51
10:T:177:LEU:HD13	10:T:182:LEU:HD13	1.91	0.51
10:T:1204:ARG:NH1	10:T:1205:SER:OG	2.44	0.51
12:V:142:GLN:HB2	12:V:146:GLY:HA3	1.92	0.51
12:W:533:ALA:HB2	12:W:550:LEU:HD22	1.91	0.51
12:X:131:ILE:HD13	12:X:134:LEU:HD21	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Z:165:VAL:HG22	12:Z:196:LEU:HD22	1.92	0.51
8:H:182:LYS:HA	8:H:185:LYS:HD3	1.92	0.51
1:J:320:THR:O	1:J:323:HIS:NE2	2.43	0.51
4:M:402:PHE:HB3	4:M:409:ILE:HG12	1.92	0.51
10:T:462:CYS:HA	10:T:488:GLN:HB3	1.92	0.51
10:T:1452:THR:HG22	10:T:1453:ALA:H	1.76	0.51
11:U:558:GLU:OE2	11:U:561:ASN:ND2	2.42	0.51
12:X:26:SER:HB3	12:X:55:VAL:HG21	1.93	0.51
2:K:14:ILE:HG21	2:K:361:GLY:HA3	1.93	0.51
4:M:220:TRP:CE2	4:M:290:VAL:HG21	2.46	0.51
7:P:62:GLN:NE2	7:P:109:VAL:O	2.41	0.51
7:P:301:ASP:N	7:P:301:ASP:OD1	2.44	0.51
8:Q:219:ARG:NH2	8:Q:223:GLN:OE1	2.44	0.51
10:S:1787:GLU:HB2	10:S:1810:SER:HB2	1.92	0.51
3:C:257:LEU:O	3:C:259:SER:N	2.44	0.51
5:E:213:SER:H	5:E:227:VAL:HG23	1.76	0.51
5:E:215:ASP:OD2	5:E:258:ARG:NH1	2.44	0.51
4:M:879:ALA:HB1	4:M:912:MET:HG2	1.92	0.51
4:M:1046:LEU:HD22	4:M:1082:LEU:HD11	1.93	0.51
8:Q:793:TRP:HD1	8:Q:796:HIS:CE1	2.29	0.51
12:V:60:PRO:HG3	12:V:89:LEU:HB3	1.92	0.51
12:V:386:LEU:HB2	12:V:401:MET:HB2	1.93	0.51
4:D:327:TYR:HB3	4:D:386:HIS:HB2	1.93	0.50
8:H:700:LYS:HD2	8:H:745:LEU:HD13	1.93	0.50
6:O:335:ASP:HB2	6:O:342:HIS:HB3	1.92	0.50
9:R:743:GLN:H	9:R:808:ASP:HB2	1.75	0.50
10:T:1034:LEU:HD12	10:T:1087:PHE:HZ	1.76	0.50
11:U:549:LEU:HD22	11:U:599:ILE:HD13	1.93	0.50
4:D:49:LEU:HD22	4:D:716:GLN:HB3	1.93	0.50
9:I:703:ASP:HB3	4:M:1150:TYR:HE2	1.77	0.50
1:J:100:GLN:NE2	2:K:321:LEU:O	2.43	0.50
9:R:310:ILE:HG23	9:R:361:THR:HG21	1.93	0.50
10:S:502:LEU:HD13	10:S:547:GLY:HA2	1.93	0.50
10:T:1300:ILE:HG13	10:T:1305:ARG:HG2	1.93	0.50
10:T:1683:ALA:HB1	10:T:1707:ILE:HG12	1.93	0.50
4:D:1369:GLY:O	4:D:1371:GLN:NE2	2.45	0.50
8:H:374:LEU:HD21	8:H:376:HIS:HB3	1.92	0.50
1:J:413:SER:OG	2:K:179:ARG:NH2	2.44	0.50
9:R:297:VAL:HG12	9:R:371:ASN:HD21	1.77	0.50
12:W:93:GLN:HG3	12:W:96:LEU:H	1.77	0.50
2:B:287:ASP:O	2:B:294:LYS:NZ	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:33:GLY:O	5:E:306:ARG:NH2	2.44	0.50
1:J:309:ARG:HB3	1:J:313:LYS:HE2	1.93	0.50
4:M:465:PHE:HB3	4:M:781:LEU:HD21	1.92	0.50
4:M:662:GLN:HG2	4:M:742:LEU:HD22	1.92	0.50
10:T:1447:MET:O	10:T:1449:GLU:N	2.44	0.50
12:Y:8:ILE:HG21	12:Y:39:ALA:HB2	1.94	0.50
1:A:552:SER:HA	1:A:589:ILE:HG21	1.93	0.50
4:D:343:LYS:HG3	4:D:360:TYR:HD2	1.77	0.50
5:E:259:TRP:HE1	5:E:264:GLU:HA	1.77	0.50
6:F:681:ILE:O	6:F:687:ARG:NH1	2.44	0.50
1:J:168:VAL:HG21	1:J:307:VAL:HG21	1.93	0.50
4:M:99:ARG:HB2	4:M:174:ARG:HH22	1.76	0.50
4:M:444:PRO:HA	4:M:469:ARG:HE	1.76	0.50
4:M:1209:SER:OG	4:M:1210:ALA:N	2.44	0.50
8:Q:134:GLN:HE21	11:U:512:GLN:HE21	1.58	0.50
9:R:223:LEU:HD22	9:R:233:GLN:HG3	1.92	0.50
9:R:821:MET:SD	9:R:825:GLN:NE2	2.85	0.50
10:T:1493:MET:HB2	10:T:1551:ILE:HG12	1.94	0.50
10:T:1541:PRO:HD3	10:T:1607:PHE:HD1	1.76	0.50
10:T:1623:LEU:HG	10:T:1678:ILE:HD12	1.93	0.50
11:U:445:LEU:HA	11:U:449:TYR:HB2	1.92	0.50
11:U:543:THR:OG1	11:U:547:GLU:OE2	2.29	0.50
12:Z:163:ASN:HA	12:Z:196:LEU:HD21	1.94	0.50
4:D:1158:LYS:HB3	10:S:291:ARG:HH21	1.76	0.50
6:F:837:LYS:HE2	12:V:89:LEU:HD23	1.94	0.50
4:M:682:MET:SD	4:M:725:ARG:NH2	2.73	0.50
8:Q:494:ARG:HE	8:Q:498:GLU:HG3	1.76	0.50
9:R:607:PHE:HD2	9:R:741:GLY:HA3	1.77	0.50
10:S:1135:ARG:HH22	10:S:1164:LEU:HD23	1.76	0.50
10:T:1180:ILE:HD12	10:T:1312:LEU:HD11	1.94	0.50
10:T:1228:LYS:O	10:T:1231:HIS:ND1	2.41	0.50
12:W:126:PRO:HG2	12:W:163:ASN:HB3	1.94	0.50
1:A:49:ALA:HB3	3:C:7:ILE:HD12	1.94	0.50
3:C:73:VAL:HG12	3:C:87:GLU:HG3	1.93	0.50
5:E:94:ARG:HH22	5:E:137:GLY:HA3	1.76	0.50
6:F:476:GLN:HB3	6:F:480:ASP:HB2	1.94	0.50
6:F:673:TRP:HA	6:F:676:PHE:HD1	1.75	0.50
9:I:987:LEU:HA	9:I:990:GLU:HB2	1.94	0.50
10:T:1787:GLU:OE2	10:T:1807:ARG:NH2	2.40	0.50
12:X:118:VAL:HG21	12:X:138:LEU:HD22	1.93	0.50
12:Z:676:VAL:HG12	12:Z:720:ILE:HG12	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:R:496:ARG:HH11	9:R:507:LYS:HB3	1.77	0.50
10:S:479:VAL:HG23	10:S:483:ARG:HB2	1.94	0.50
10:S:503:PRO:HG2	10:S:506:LEU:HD12	1.93	0.50
10:S:609:GLU:HA	10:S:612:ARG:HD2	1.93	0.50
10:S:1176:VAL:HG11	10:S:1182:ARG:HD3	1.92	0.50
10:T:440:LEU:HB3	10:T:513:MET:HG2	1.93	0.50
10:T:1614:ARG:NH1	10:T:1617:GLN:OE1	2.45	0.50
10:T:1989:ARG:HB2	10:T:1991:ARG:HH11	1.76	0.50
11:U:397:ARG:NH1	11:U:420:SER:O	2.45	0.50
12:Z:457:LEU:HB3	12:Z:481:LEU:HD22	1.94	0.50
6:F:417:LEU:HD13	6:F:536:GLY:HA2	1.94	0.50
1:J:439:ARG:HH12	3:L:288:ILE:HG23	1.76	0.50
1:J:603:GLU:OE2	4:M:1129:ASN:ND2	2.44	0.50
6:O:495:ASP:OD1	6:O:495:ASP:N	2.45	0.50
8:Q:711:ILE:HG21	8:Q:735:ILE:HA	1.94	0.50
9:R:743:GLN:HB2	9:R:808:ASP:H	1.77	0.50
12:V:457:LEU:HD23	12:V:460:ILE:HD11	1.93	0.50
12:W:243:THR:HG22	12:W:251:LYS:HD3	1.94	0.50
4:D:645:ILE:HG22	4:D:734:ILE:HD11	1.94	0.49
7:G:267:VAL:HG22	7:G:278:VAL:HG22	1.94	0.49
8:H:135:GLU:HA	10:T:1454:PRO:HD3	1.93	0.49
9:I:342:LEU:H	9:I:365:VAL:HB	1.77	0.49
9:I:674:VAL:HA	9:I:677:ARG:HH11	1.77	0.49
1:J:310:LEU:HD22	1:J:317:VAL:HG11	1.94	0.49
10:T:496:ARG:NH2	10:T:534:ASN:OD1	2.40	0.49
10:T:1593:THR:HA	10:T:1653:ASP:HB3	1.94	0.49
1:A:165:LEU:HD21	1:A:311:LEU:HD21	1.95	0.49
2:B:268:PRO:O	2:B:270:ASN:N	2.45	0.49
2:B:292:SER:OG	2:B:324:ALA:O	2.24	0.49
2:B:327:SER:O	2:B:327:SER:OG	2.26	0.49
3:C:244:ASP:OD1	3:C:244:ASP:N	2.46	0.49
3:C:258:SER:OG	3:C:259:SER:N	2.45	0.49
4:D:306:HIS:HB3	4:D:324:MET:HB2	1.94	0.49
9:I:651:ASN:O	9:I:655:GLN:NE2	2.45	0.49
9:R:812:ASN:OD1	9:R:815:ARG:NH2	2.45	0.49
10:S:1380:THR:HB	10:S:1433:ARG:HE	1.77	0.49
11:U:371:LYS:O	11:U:375:HIS:ND1	2.44	0.49
12:Y:475:ILE:HG23	12:Y:478:SER:H	1.77	0.49
12:Z:570:GLN:HB2	12:Z:573:VAL:HG23	1.94	0.49
5:E:94:ARG:HB2	5:E:108:THR:HG23	1.93	0.49
10:S:579:ARG:HD3	10:S:683:GLY:HA2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Y:151:PHE:O	12:Y:155:GLN:NE2	2.43	0.49
7:G:179:ILE:HG22	7:G:196:GLU:HB3	1.94	0.49
8:H:457:ARG:HH11	8:H:461:ILE:HG13	1.77	0.49
9:I:134:LYS:NZ	9:I:185:GLU:OE1	2.44	0.49
1:J:98:LEU:HG	1:J:378:LEU:HD22	1.94	0.49
3:L:139:VAL:HG22	3:L:159:ILE:HB	1.94	0.49
4:M:635:PRO:HG3	5:N:146:ASP:HB2	1.94	0.49
10:T:1842:VAL:HG23	10:T:1845:LEU:HD12	1.93	0.49
12:V:355:GLY:HA3	12:V:419:LEU:HD21	1.94	0.49
12:W:291:MET:HG3	12:W:350:ARG:HG3	1.95	0.49
12:W:657:ASP:HB3	12:W:662:LYS:HG3	1.94	0.49
12:X:490:ALA:HB2	12:X:577:TRP:CD1	2.47	0.49
12:Y:636:ASP:O	12:Y:638:LYS:NZ	2.44	0.49
2:B:39:ASP:N	2:B:39:ASP:OD1	2.46	0.49
4:D:62:ARG:HD2	4:D:190:ILE:HG13	1.92	0.49
4:D:99:ARG:HH22	4:D:704:LEU:HD21	1.78	0.49
5:E:179:PHE:HB3	5:E:195:LEU:HB2	1.94	0.49
1:J:459:GLN:HB3	10:T:1203:ASP:HB3	1.95	0.49
4:M:1004:PHE:HZ	4:M:1036:LEU:HB2	1.77	0.49
10:S:1306:GLN:HG3	10:S:1389:SER:HB2	1.93	0.49
8:H:469:LEU:O	8:H:471:ARG:NH1	2.45	0.49
9:I:110:TRP:CD1	9:I:119:ILE:HG23	2.48	0.49
7:P:220:ALA:HB3	7:P:229:THR:HG23	1.94	0.49
10:S:609:GLU:OE1	10:S:612:ARG:NH1	2.46	0.49
10:S:1355:PRO:HG3	10:S:1873:LEU:HD11	1.93	0.49
10:T:770:LEU:HD21	10:T:802:LEU:HD22	1.93	0.49
12:V:128:SER:HB2	12:V:131:ILE:HB	1.95	0.49
12:Z:187:HIS:O	12:Z:193:ARG:NE	2.42	0.49
4:D:904:VAL:HG12	4:D:905:ASN:H	1.76	0.49
9:I:83:PRO:HA	9:I:127:SER:HA	1.95	0.49
9:I:275:CYS:SG	9:I:371:ASN:ND2	2.86	0.49
9:I:815:ARG:HH12	9:I:819:LEU:HD13	1.77	0.49
1:J:471:MET:CG	1:J:487:TRP:CE2	2.96	0.49
9:R:859:ILE:HA	9:R:862:MET:HG2	1.94	0.49
10:S:688:LEU:O	10:S:693:SER:OG	2.26	0.49
10:S:1096:PRO:HG3	10:S:1182:ARG:HG2	1.95	0.49
10:T:116:GLU:HG3	10:T:127:ARG:HE	1.78	0.49
12:V:698:LEU:HD22	12:V:702:GLU:HB3	1.95	0.49
12:W:337:ASP:HA	12:W:340:GLN:HB2	1.94	0.49
2:B:287:ASP:OD2	2:B:338:THR:OG1	2.30	0.49
5:E:217:CYS:HG	5:E:259:TRP:HE1	1.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:77:ASP:HB2	2:K:93:SER:HB3	1.95	0.49
6:O:571:CYS:SG	6:O:572:TYR:N	2.86	0.49
8:Q:262:VAL:HG22	8:Q:441:TRP:HD1	1.77	0.49
10:T:26:SER:OG	10:T:959:GLU:OE2	2.31	0.49
10:T:226:GLN:HE21	10:T:230:HIS:CD2	2.31	0.49
4:D:1030:LEU:HG	4:D:1064:ILE:HD11	1.95	0.49
6:O:475:SER:O	6:O:479:ARG:NH1	2.45	0.49
10:S:692:GLU:HB3	10:S:698:TYR:HD1	1.78	0.49
10:T:978:TYR:CZ	10:T:982:ILE:HD11	2.48	0.49
10:T:1297:GLN:OE1	10:T:1305:ARG:NH1	2.45	0.49
10:T:1502:ILE:HA	10:T:1505:VAL:HG22	1.95	0.49
12:W:60:PRO:HA	12:W:63:HIS:HD2	1.78	0.49
12:Y:471:LEU:HB2	12:Y:562:ARG:HD3	1.94	0.49
1:A:498:THR:OG1	1:A:532:ARG:NH2	2.46	0.49
2:B:74:HIS:HE2	2:B:93:SER:HG	1.61	0.49
2:K:52:ASP:OD1	2:K:357:ASN:ND2	2.46	0.49
6:O:394:GLU:O	12:V:14:ASN:ND2	2.46	0.49
8:Q:556:LYS:HB2	8:Q:559:VAL:HG22	1.95	0.49
12:Y:154:ILE:HG21	12:Y:171:LEU:HD22	1.95	0.49
4:D:904:VAL:HG13	4:D:939:ARG:HE	1.78	0.48
4:M:105:TRP:HB2	4:M:112:LEU:HD11	1.94	0.48
4:M:167:PRO:HG3	4:M:192:LYS:HD2	1.95	0.48
4:M:374:LEU:HD22	4:M:382:TYR:HB3	1.94	0.48
4:M:413:TRP:HZ3	4:M:423:LYS:HD2	1.78	0.48
10:S:632:GLN:HE22	10:S:669:ILE:HG13	1.78	0.48
10:T:169:MET:SD	10:T:172:ARG:NH2	2.78	0.48
12:V:340:GLN:HE21	12:V:344:GLU:HG3	1.78	0.48
12:X:221:LYS:NZ	12:X:269:SER:O	2.42	0.48
12:Y:434:LEU:HD23	12:Y:528:ARG:HD3	1.95	0.48
3:C:125:HIS:O	4:D:1279:LYS:NZ	2.47	0.48
6:F:468:LEU:O	6:F:475:SER:OG	2.31	0.48
8:H:136:GLU:HG3	10:T:1454:PRO:HD2	1.95	0.48
9:I:1127:SER:O	9:I:1131:ASN:ND2	2.46	0.48
1:J:39:TYR:O	1:J:41:LYS:N	2.46	0.48
2:K:215:VAL:HG22	2:K:238:MET:HB2	1.94	0.48
5:N:267:PHE:CE2	5:N:283:HIS:HB2	2.48	0.48
2:B:71:ASP:OD1	2:B:71:ASP:N	2.42	0.48
4:D:402:PHE:HB3	4:D:409:ILE:HG23	1.94	0.48
1:J:596:TYR:O	1:J:599:MET:HG3	2.14	0.48
5:N:85:ARG:HB2	5:N:92:LEU:HB2	1.95	0.48
10:S:507:TYR:HB2	10:S:546:GLY:HA2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:S:954:SER:O	10:S:977:ARG:NE	2.46	0.48
10:S:1429:GLN:HE22	10:S:1434:PRO:HD3	1.78	0.48
10:T:229:ALA:HB2	10:T:267:VAL:HG13	1.95	0.48
12:X:337:ASP:HA	12:X:340:GLN:HB3	1.95	0.48
12:X:590:SER:O	12:X:688:ARG:NH1	2.42	0.48
10:T:1095:LEU:HD22	10:T:1183:ILE:HD11	1.95	0.48
12:Z:490:ALA:HB2	12:Z:577:TRP:HZ2	1.77	0.48
5:E:173:TRP:HZ3	5:E:179:PHE:HA	1.77	0.48
9:R:938:GLN:NE2	9:R:942:ASN:OD1	2.47	0.48
10:T:1581:LEU:HD11	10:T:1625:ILE:HD11	1.96	0.48
10:T:1753:GLN:HG3	10:T:1888:LEU:HD23	1.96	0.48
11:U:239:ALA:HA	12:Y:475:ILE:HD12	1.94	0.48
11:U:652:SER:HA	11:U:748:GLU:HG2	1.96	0.48
12:W:24:GLU:HA	12:W:27:MET:HG2	1.94	0.48
12:Z:347:ALA:O	12:Z:351:GLN:NE2	2.46	0.48
12:Z:568:GLY:HA3	12:Z:628:LEU:HD12	1.94	0.48
4:D:161:VAL:HB	4:D:202:TYR:HB3	1.95	0.48
5:E:106:ILE:HG23	5:E:118:LYS:HB2	1.94	0.48
6:F:811:MET:HB3	6:F:828:LEU:HD13	1.96	0.48
4:M:357:LEU:HD12	4:M:384:LEU:HD21	1.94	0.48
7:P:179:ILE:HG13	7:P:181:ARG:HH11	1.77	0.48
8:Q:459:SER:OG	12:V:34:ARG:NH2	2.47	0.48
10:S:1723:GLY:HA2	10:S:1816:HIS:HE1	1.79	0.48
10:T:67:VAL:HG21	10:T:105:GLU:HB3	1.95	0.48
10:T:1585:GLN:NE2	10:T:1588:ASP:OD2	2.46	0.48
11:U:788:SER:HB2	12:Z:506:ALA:HB2	1.96	0.48
12:V:520:LYS:O	12:V:528:ARG:NH1	2.46	0.48
12:Z:697:CYS:SG	12:Z:698:LEU:N	2.87	0.48
5:N:104:ILE:HB	5:N:120:ILE:HB	1.96	0.48
8:Q:749:GLU:HA	8:Q:752:ASN:HD21	1.79	0.48
10:S:670:LEU:HG	10:S:672:THR:H	1.76	0.48
10:T:100:LEU:HD13	10:T:201:LYS:HE2	1.94	0.48
12:X:692:GLU:HB3	12:Y:590:SER:HA	1.96	0.48
12:Y:499:LEU:HD11	12:Y:512:ARG:HB3	1.94	0.48
12:Z:233:LEU:HB3	12:Z:285:MET:HG3	1.95	0.48
12:Z:353:LYS:HA	12:Z:439:TRP:HH2	1.78	0.48
1:A:648:GLU:O	1:A:652:GLN:NE2	2.46	0.48
4:D:210:ARG:HB2	9:I:261:VAL:HG12	1.95	0.48
6:F:264:ASN:HD22	6:F:304:VAL:HG22	1.78	0.48
6:F:738:ASP:OD1	6:F:738:ASP:N	2.42	0.48
6:O:317:ASP:OD1	6:O:317:ASP:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:O:410:ARG:NH1	6:O:545:PRO:O	2.46	0.48
8:Q:420:ALA:HA	8:Q:428:GLN:HE22	1.79	0.48
12:V:356:HIS:HE1	12:V:419:LEU:HB3	1.79	0.48
12:Y:473:SER:HA	12:Y:555:GLN:HE22	1.78	0.48
12:Z:474:ASN:OD1	12:Z:603:HIS:NE2	2.42	0.48
6:F:450:ILE:HG13	6:F:451:SER:H	1.79	0.48
1:J:157:ALA:HB2	1:J:318:LYS:HD3	1.96	0.48
2:K:37:SER:HB2	2:K:44:LYS:H	1.77	0.48
4:M:514:VAL:HG21	9:R:68:SER:HB2	1.95	0.48
5:N:8:ASN:OD1	5:N:322:TRP:NE1	2.47	0.48
5:N:218:VAL:HG11	5:N:261:LYS:HD3	1.95	0.48
10:T:147:LEU:HD13	10:T:230:HIS:HB3	1.95	0.48
10:T:1001:MET:HB3	10:T:1007:GLU:HA	1.96	0.48
12:X:135:LYS:HD3	12:X:153:LEU:HD21	1.96	0.48
12:Y:194:ARG:HH12	12:Y:234:LEU:HD13	1.78	0.48
4:M:414:LEU:HD22	9:R:183:LEU:HG	1.96	0.48
6:O:752:TRP:HB3	6:O:756:HIS:CE1	2.49	0.48
8:Q:299:ARG:HH21	8:Q:306:SER:H	1.62	0.48
10:S:8:ASN:HD21	10:S:49:ASP:HB3	1.79	0.48
10:S:1783:PRO:HB2	10:S:1958:ASP:HB3	1.94	0.48
11:U:501:LYS:HZ2	12:Y:555:GLN:HE21	1.62	0.48
4:D:403:THR:OG1	4:D:408:ASN:OD1	2.31	0.47
4:D:439:PHE:HB2	4:D:582:LEU:HD11	1.96	0.47
9:I:831:LEU:HD22	5:N:1:MET:HB3	1.96	0.47
3:L:61:TRP:N	3:L:77:CYS:O	2.39	0.47
6:O:435:GLU:HG2	6:O:436:ARG:HD3	1.96	0.47
10:T:1760:MET:HB2	10:T:1898:THR:HG21	1.95	0.47
12:V:207:VAL:HG11	12:V:258:ARG:HH21	1.79	0.47
12:V:240:VAL:HG22	12:V:255:ALA:HB1	1.96	0.47
12:W:705:GLU:O	12:W:708:GLU:HG3	2.14	0.47
12:Z:287:GLY:HA3	12:Z:350:ARG:HH11	1.77	0.47
1:A:94:ARG:HH11	1:A:97:GLN:HE21	1.61	0.47
2:B:245:ARG:HH11	2:B:246:HIS:HB2	1.79	0.47
4:D:797:LEU:HD22	4:D:884:ARG:HA	1.96	0.47
6:F:588:ASP:OD1	6:F:588:ASP:N	2.44	0.47
8:H:150:PHE:O	8:H:169:TYR:OH	2.24	0.47
8:H:765:PRO:HB3	8:H:783:GLU:HG2	1.95	0.47
4:M:479:ILE:HD11	4:M:501:VAL:HG23	1.96	0.47
9:R:268:VAL:HG12	9:R:278:THR:HG22	1.96	0.47
12:V:190:LYS:HG3	12:V:193:ARG:HH21	1.78	0.47
12:V:533:ALA:HB1	12:V:550:LEU:HB3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:397:LEU:HD12	9:I:409:LEU:HD13	1.95	0.47
9:I:569:VAL:HG12	9:I:571:GLU:HG3	1.94	0.47
9:I:1067:TRP:HE1	9:I:1124:PHE:HB2	1.79	0.47
1:J:116:MET:O	1:J:120:SER:OG	2.32	0.47
2:K:270:ASN:O	2:K:272:ASP:N	2.46	0.47
6:O:785:ARG:HB2	6:O:788:HIS:CD2	2.49	0.47
10:S:12:SER:OG	10:S:13:LEU:N	2.46	0.47
10:S:671:GLN:HB3	10:S:674:ARG:HH21	1.78	0.47
10:S:1175:LYS:NZ	10:S:1176:VAL:O	2.47	0.47
10:T:672:THR:OG1	10:T:725:ARG:NH2	2.48	0.47
10:T:1656:GLN:OE1	10:T:1660:ARG:NH1	2.47	0.47
11:U:298:LEU:HD21	11:U:318:PRO:HG2	1.95	0.47
12:V:514:LEU:HB2	12:V:522:LEU:HD11	1.95	0.47
1:A:367:SER:HB2	3:C:331:GLN:HB3	1.96	0.47
2:B:245:ARG:NH1	2:B:246:HIS:HB2	2.29	0.47
6:F:344:ARG:NH2	6:F:682:GLN:OE1	2.47	0.47
8:H:534:LEU:H	8:H:537:LEU:HD12	1.79	0.47
6:O:653:ARG:HE	6:O:653:ARG:HB3	1.47	0.47
10:S:1454:PRO:HD3	10:S:1507:ARG:HH12	1.79	0.47
10:T:1591:PRO:HA	10:T:1602:ARG:HG2	1.95	0.47
4:D:275:ILE:HG13	4:D:278:ASP:H	1.79	0.47
7:G:270:SER:HB2	7:G:274:ASN:H	1.80	0.47
1:J:341:GLU:O	1:J:345:ASN:ND2	2.42	0.47
5:N:191:ARG:HA	5:N:203:SER:HA	1.96	0.47
8:Q:280:ILE:HG21	8:Q:356:LEU:HD12	1.96	0.47
10:S:1258:ASN:O	10:S:1262:GLN:NE2	2.48	0.47
12:Y:118:VAL:HG21	12:Y:138:LEU:HD22	1.96	0.47
1:A:239:PRO:HG3	1:A:255:LYS:HB3	1.97	0.47
1:J:505:LEU:HD23	1:J:532:ARG:HH11	1.79	0.47
4:M:845:SER:HB3	4:M:850:ARG:HB2	1.97	0.47
4:M:892:GLN:HG2	5:N:186:LYS:HE3	1.96	0.47
10:S:330:ARG:HE	10:S:356:MET:HG2	1.79	0.47
11:U:336:GLN:HE22	11:U:354:GLN:HG3	1.78	0.47
12:Z:677:VAL:HG22	12:Z:735:PRO:HD3	1.96	0.47
1:A:409:PHE:HD1	1:A:415:TRP:HB2	1.80	0.47
1:A:445:GLU:HB3	2:B:26:SER:HB3	1.96	0.47
2:B:153:PHE:HE1	2:B:160:VAL:HA	1.79	0.47
4:D:520:GLN:HB3	5:E:201:ILE:HD13	1.96	0.47
4:D:573:PRO:HD2	4:D:854:TRP:HB2	1.96	0.47
6:F:472:MET:HG2	6:F:473:VAL:HG23	1.96	0.47
6:F:479:ARG:HG3	6:F:509:LEU:HD13	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:697:ARG:HH21	7:G:23:TYR:HB3	1.80	0.47
7:G:135:THR:OG1	7:G:141:GLU:OE1	2.27	0.47
9:I:74:ASN:HD22	9:I:465:ALA:HA	1.79	0.47
9:I:988:HIS:HE1	9:I:1037:ASP:HB2	1.80	0.47
1:J:505:LEU:HD22	1:J:571:PHE:CE1	2.49	0.47
1:J:603:GLU:HB3	4:M:1125:LEU:HD22	1.96	0.47
1:J:652:GLN:HG3	4:M:1044:SER:HB3	1.97	0.47
2:K:176:THR:OG1	2:K:177:PHE:N	2.47	0.47
4:M:99:ARG:NH2	4:M:703:THR:O	2.47	0.47
5:N:179:PHE:HD1	5:N:195:LEU:HB2	1.80	0.47
5:N:227:VAL:HG12	5:N:232:TRP:HB3	1.96	0.47
6:O:292:THR:OG1	10:T:674:ARG:NH2	2.47	0.47
7:P:250:ASN:N	7:P:250:ASN:OD1	2.46	0.47
9:R:940:LEU:O	9:R:944:GLU:HB2	2.15	0.47
10:S:672:THR:HG23	10:S:729:PHE:HA	1.97	0.47
12:V:423:ASP:HA	12:V:426:SER:HB3	1.96	0.47
12:Y:476:PRO:HG3	12:Y:538:ILE:HG13	1.97	0.47
12:Z:376:PHE:HB3	12:Z:380:CYS:HB3	1.96	0.47
2:B:253:LEU:H	2:B:328:THR:HA	1.80	0.47
4:D:68:PRO:HG2	4:D:72:LEU:HD21	1.97	0.47
9:I:340:ASP:O	9:I:367:ASP:N	2.48	0.47
8:Q:695:LYS:HD2	8:Q:695:LYS:HA	1.74	0.47
12:Y:94:LYS:HB3	12:Y:124:LEU:HD13	1.96	0.47
4:D:123:LEU:HB3	4:D:185:SER:HB3	1.97	0.47
6:F:855:GLU:O	6:F:858:LYS:HG3	2.14	0.47
4:M:444:PRO:HB2	4:M:539:LEU:HD12	1.96	0.47
10:T:1435:ASP:HB2	10:T:1561:ARG:HH22	1.80	0.47
4:D:452:ASP:O	4:D:524:ARG:NH1	2.45	0.47
9:I:73:TYR:HB3	9:I:465:ALA:HB2	1.96	0.47
9:I:175:SER:HA	9:I:233:GLN:HG3	1.96	0.47
4:M:181:SER:OG	4:M:829:ARG:NH2	2.47	0.47
4:M:425:ILE:HD12	4:M:425:ILE:HA	1.80	0.47
6:O:756:HIS:CE1	6:O:788:HIS:HB3	2.50	0.47
9:R:222:ARG:HB3	9:R:234:ARG:HG3	1.97	0.47
10:S:942:GLN:O	10:S:945:MET:HG3	2.15	0.47
10:T:1831:ILE:HD13	10:T:1885:ARG:HH21	1.80	0.47
12:W:286:ARG:NH2	12:W:401:MET:SD	2.88	0.47
2:B:20:ARG:HB2	2:B:30:PRO:HG2	1.97	0.46
3:C:55:THR:HG23	3:C:86:TRP:HE1	1.80	0.46
4:D:719:TYR:HB2	4:D:820:VAL:HG21	1.97	0.46
4:D:1228:ILE:HG13	4:D:1241:ILE:HG21	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:753:GLU:O	8:H:756:LYS:HG3	2.15	0.46
1:J:438:GLU:OE2	1:J:466:SER:OG	2.30	0.46
4:M:1395:LEU:HD22	4:M:1408:LEU:HG	1.96	0.46
6:O:481:LEU:HD11	8:Q:363:ALA:HB1	1.96	0.46
9:R:115:ASP:OD1	9:R:115:ASP:N	2.47	0.46
9:R:363:VAL:HG22	9:R:378:VAL:HG22	1.97	0.46
9:R:948:PHE:HZ	9:R:990:GLU:HB2	1.80	0.46
9:R:992:LEU:O	9:R:994:LYS:NZ	2.37	0.46
10:S:335:LEU:HD11	10:S:396:PHE:HD1	1.80	0.46
11:U:724:SER:O	11:U:728:VAL:HG23	2.15	0.46
2:B:168:ASP:OD1	2:B:168:ASP:N	2.46	0.46
8:H:362:GLN:OE1	8:H:365:ARG:NH2	2.45	0.46
8:H:896:ARG:NH2	9:I:899:LEU:O	2.47	0.46
4:M:346:LEU:HB2	4:M:355:LEU:HD21	1.97	0.46
7:P:220:ALA:HB1	7:P:273:ALA:HB1	1.96	0.46
9:R:82:LEU:HD12	9:R:86:VAL:HB	1.96	0.46
9:R:1026:ARG:O	9:R:1028:ASN:ND2	2.48	0.46
10:T:1370:LEU:HD23	10:T:1392:ASP:HB3	1.96	0.46
10:T:1757:SER:HA	10:T:1760:MET:HG3	1.97	0.46
11:U:310:GLN:HB2	11:U:320:TRP:HZ2	1.81	0.46
11:U:664:LEU:O	11:U:667:MET:HG3	2.15	0.46
12:V:220:GLN:HA	12:V:225:MET:HG3	1.96	0.46
12:V:358:LEU:HG	12:V:369:ILE:HG12	1.97	0.46
12:Z:571:PRO:HA	12:Z:574:LEU:HD12	1.96	0.46
4:D:237:GLY:HA2	4:D:257:LEU:O	2.15	0.46
9:I:289:LEU:HG	9:I:291:ASP:H	1.80	0.46
2:K:218:HIS:HB2	2:K:234:GLY:HA2	1.98	0.46
2:K:254:LEU:HD23	2:K:335:LEU:HD13	1.97	0.46
5:N:247:LYS:HD2	5:N:288:PRO:HA	1.96	0.46
6:O:649:LEU:O	6:O:654:GLN:NE2	2.48	0.46
10:S:153:ARG:NH1	10:S:174:THR:OG1	2.41	0.46
10:S:705:CYS:HB3	10:S:765:VAL:HG11	1.96	0.46
10:T:34:GLU:HA	10:T:37:HIS:HD2	1.80	0.46
12:W:83:TYR:HB3	12:W:100:ILE:HG12	1.98	0.46
12:X:424:ASN:HB3	12:X:459:GLN:HG3	1.98	0.46
2:B:14:ILE:O	2:B:349:ASN:ND2	2.49	0.46
9:I:543:LEU:HD11	9:I:606:LEU:HD13	1.97	0.46
1:J:165:LEU:HD11	1:J:311:LEU:HD13	1.96	0.46
3:L:145:PRO:HD2	3:L:152:GLN:HG2	1.97	0.46
10:S:1355:PRO:HB3	10:S:1873:LEU:HD21	1.98	0.46
10:T:1822:ALA:HB1	10:T:1977:ARG:HD2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:U:787:ARG:HD3	11:U:820:ASN:HA	1.97	0.46
12:V:416:LEU:HD11	12:V:447:LEU:HD12	1.97	0.46
12:X:569:LEU:HB3	12:X:570:GLN:H	1.52	0.46
12:Y:471:LEU:HD12	12:Y:562:ARG:HB3	1.96	0.46
4:D:422:MET:HG3	4:D:438:VAL:HB	1.97	0.46
7:G:191:VAL:HG12	7:G:207:LEU:HB3	1.98	0.46
7:G:211:SER:HB2	11:U:300:ILE:HG23	1.97	0.46
8:H:181:LYS:HD3	8:H:181:LYS:HA	1.73	0.46
4:M:1267:LEU:HA	4:M:1270:ASN:HD22	1.81	0.46
9:R:578:ASN:N	9:R:673:ASP:OD2	2.47	0.46
10:S:405:LYS:HD3	10:S:405:LYS:HA	1.73	0.46
10:S:1327:GLN:HB3	10:S:1330:MET:HE2	1.97	0.46
12:V:482:LEU:HD11	12:V:581:LEU:HG	1.96	0.46
12:W:676:VAL:HG11	12:W:730:ILE:HG23	1.98	0.46
12:W:687:GLN:NE2	12:W:744:MET:SD	2.76	0.46
12:Y:383:SER:OG	12:Y:387:LYS:NZ	2.46	0.46
1:A:508:TYR:HB2	1:A:514:PHE:HD1	1.81	0.46
4:D:635:PRO:HG2	5:E:124:SER:HB2	1.97	0.46
4:D:1162:ASP:HA	10:S:479:VAL:HG21	1.97	0.46
9:I:819:LEU:O	9:I:822:GLU:HG3	2.16	0.46
5:N:242:TYR:O	5:N:244:GLN:N	2.48	0.46
7:P:22:ASP:HB2	7:P:27:ARG:HB3	1.97	0.46
10:S:264:LEU:HB3	10:S:376:SER:HB2	1.98	0.46
10:T:906:ASN:HB3	10:T:909:LEU:HD12	1.97	0.46
10:T:1231:HIS:CE1	10:T:1232:ARG:HG2	2.50	0.46
12:V:163:ASN:HA	12:V:196:LEU:HD21	1.98	0.46
12:V:718:LYS:HD3	12:V:718:LYS:HA	1.75	0.46
12:X:454:ARG:NH2	12:X:597:TYR:OH	2.48	0.46
12:Y:263:LEU:HD13	12:Y:285:MET:HB3	1.98	0.46
12:Z:437:LEU:HD13	12:Z:488:LEU:HD11	1.98	0.46
4:D:1181:ASP:N	4:D:1181:ASP:OD1	2.46	0.46
1:J:594:GLN:O	1:J:597:GLU:HG3	2.16	0.46
9:R:794:ASN:OD1	9:R:849:LYS:NZ	2.47	0.46
10:S:906:ASN:HD21	10:S:909:LEU:HD12	1.80	0.46
10:S:1602:ARG:HH11	10:S:1611:PRO:HB2	1.81	0.46
10:T:1317:HIS:HA	10:T:1320:ILE:HG12	1.98	0.46
11:U:777:ARG:H	11:U:777:ARG:HG2	1.61	0.46
3:C:141:ILE:HB	3:C:157:HIS:HB2	1.98	0.46
4:D:499:LYS:HA	5:E:207:VAL:HG11	1.98	0.46
8:H:394:TYR:HB2	8:H:397:VAL:HB	1.98	0.46
8:H:457:ARG:HD3	8:H:461:ILE:HD11	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:220:LEU:HB2	9:I:240:GLN:HG3	1.98	0.46
8:Q:175:THR:O	8:Q:179:LEU:HG	2.16	0.46
8:Q:467:ASN:OD1	8:Q:467:ASN:N	2.42	0.46
10:S:617:GLU:O	10:S:618:HIS:ND1	2.49	0.46
10:T:266:LYS:HG3	10:T:378:SER:HB3	1.98	0.46
12:W:145:ALA:O	12:W:149:GLN:NE2	2.49	0.46
2:B:69:LEU:HD13	2:B:108:GLN:HB3	1.96	0.46
6:F:596:LEU:O	6:F:598:ARG:NH1	2.49	0.46
4:M:397:LEU:HA	4:M:413:TRP:HD1	1.80	0.46
9:R:1106:ALA:HA	9:R:1109:LEU:HD12	1.98	0.46
10:T:554:HIS:HA	10:T:557:HIS:HD1	1.81	0.46
11:U:813:VAL:O	11:U:817:VAL:HG23	2.15	0.46
12:X:701:GLU:OE1	12:Y:463:ARG:NH2	2.49	0.46
12:Y:240:VAL:HG22	12:Y:255:ALA:HB1	1.98	0.46
12:Z:468:THR:OG1	12:Z:596:GLU:OE1	2.33	0.46
1:A:130:TYR:O	1:A:133:GLN:HG3	2.16	0.46
1:A:395:ASN:HB3	1:A:398:GLU:HB2	1.98	0.46
3:C:222:VAL:HA	3:C:242:THR:HG22	1.98	0.46
6:F:753:ASN:HD21	8:Q:491:ASP:HB2	1.81	0.46
9:I:242:MET:HB3	9:I:263:SER:HB3	1.97	0.46
4:M:119:LEU:O	4:M:707:SER:OG	2.32	0.46
4:M:189:ASP:OD1	4:M:189:ASP:N	2.49	0.46
4:M:423:LYS:HG2	4:M:437:PRO:HA	1.98	0.46
6:O:325:LEU:HB3	6:O:673:TRP:CD1	2.51	0.46
7:P:85:ILE:HB	7:P:97:TYR:HB3	1.97	0.46
12:V:190:LYS:HB2	12:V:193:ARG:HE	1.81	0.46
12:V:581:LEU:HD13	12:V:604:TYR:HE2	1.81	0.46
9:I:665:VAL:HG23	9:I:674:VAL:HG21	1.97	0.45
2:K:210:VAL:HG11	2:K:253:LEU:HD13	1.98	0.45
8:Q:863:LYS:HA	8:Q:863:LYS:HD3	1.73	0.45
9:R:452:VAL:HA	9:R:462:THR:HA	1.97	0.45
10:S:133:LEU:HD11	10:S:208:LEU:HD13	1.98	0.45
10:S:1927:MET:SD	10:S:1928:THR:OG1	2.72	0.45
10:T:202:LEU:HD22	10:T:208:LEU:HD21	1.98	0.45
12:W:710:LEU:HD22	12:W:748:VAL:HG22	1.98	0.45
12:X:526:ARG:HH21	12:X:628:LEU:HD22	1.82	0.45
4:D:243:MET:HG3	4:D:252:VAL:HG12	1.98	0.45
8:H:214:ILE:HD11	8:H:510:VAL:HG21	1.98	0.45
9:I:778:ASP:H	9:I:781:LEU:HD12	1.81	0.45
4:M:1374:LEU:O	4:M:1377:THR:OG1	2.34	0.45
7:P:222:SER:HA	7:P:273:ALA:HB3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:R:486:SER:HA	9:R:487:SER:HA	1.58	0.45
10:S:414:ASP:HB2	10:S:432:LEU:HB2	1.99	0.45
10:T:1145:PRO:O	10:T:1147:ARG:NH1	2.48	0.45
11:U:793:LEU:HD13	11:U:815:MET:HE3	1.99	0.45
12:W:574:LEU:HB3	12:W:608:LEU:HD11	1.97	0.45
12:W:603:HIS:HA	12:W:606:LYS:HD3	1.98	0.45
12:Z:619:LYS:HB3	12:Z:620:SER:H	1.59	0.45
4:D:464:LEU:HD21	4:D:535:TYR:HD1	1.80	0.45
8:H:565:LYS:HD3	8:H:591:LEU:HD22	1.97	0.45
8:H:758:ILE:HG22	8:H:797:LEU:HD11	1.99	0.45
9:I:310:ILE:HG12	9:I:361:THR:HG21	1.98	0.45
1:J:19:GLN:O	1:J:21:ARG:NH1	2.50	0.45
1:J:329:SER:HA	1:J:332:MET:SD	2.56	0.45
1:J:442:LEU:HD13	1:J:467:ILE:HG12	1.97	0.45
2:K:136:CYS:HB3	2:K:141:ILE:HG12	1.98	0.45
2:K:187:ASN:HD21	2:K:193:LYS:HE3	1.80	0.45
4:M:1279:LYS:HG3	10:T:1242:GLN:HE22	1.81	0.45
8:Q:299:ARG:NH1	8:Q:303:SER:O	2.50	0.45
8:Q:322:GLN:HG3	8:Q:324:LEU:HB2	1.97	0.45
10:S:567:ARG:NH1	10:S:633:CYS:SG	2.90	0.45
10:T:243:ARG:HD2	10:T:306:TYR:HB2	1.97	0.45
10:T:651:GLY:O	10:T:657:ALA:HB2	2.16	0.45
10:T:665:GLU:O	10:T:725:ARG:NH1	2.49	0.45
10:T:1151:ALA:HB3	10:T:1162:ARG:HD2	1.98	0.45
10:T:2004:GLY:HA2	10:T:2007:ARG:HE	1.81	0.45
12:X:104:ILE:HG12	12:X:109:ILE:HB	1.97	0.45
12:Z:8:ILE:HG13	12:Z:39:ALA:HB2	1.98	0.45
12:Z:87:LEU:HB2	12:Z:96:LEU:HD23	1.99	0.45
12:Z:569:LEU:HB3	12:Z:570:GLN:H	1.58	0.45
1:A:111:ALA:O	1:A:114:GLU:HG3	2.17	0.45
2:B:103:HIS:HB2	2:B:110:LEU:HA	1.98	0.45
2:B:151:ASN:HB3	2:B:153:PHE:CZ	2.52	0.45
3:C:320:LYS:HE3	3:C:323:GLY:H	1.82	0.45
4:D:1072:VAL:HG11	4:D:1153:PRO:HD3	1.97	0.45
4:D:1120:GLN:HG3	10:S:471:SER:HA	1.97	0.45
7:G:106:VAL:HA	7:G:124:SER:HB3	1.97	0.45
9:I:393:GLN:HA	9:I:396:GLN:HE21	1.82	0.45
9:I:569:VAL:O	9:I:571:GLU:N	2.50	0.45
2:K:179:ARG:HA	2:K:179:ARG:HD2	1.69	0.45
3:L:107:THR:HB	3:L:151:SER:HA	1.99	0.45
4:M:1408:LEU:O	4:M:1412:GLN:NE2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:N:311:CYS:SG	5:N:312:VAL:N	2.90	0.45
8:Q:460:ILE:HG22	8:Q:461:ILE:HG12	1.97	0.45
9:R:224:THR:OG1	9:R:234:ARG:NH2	2.49	0.45
10:S:881:GLN:HB3	10:S:929:LYS:HG2	1.97	0.45
10:S:1649:VAL:HG21	10:S:1703:LEU:HD23	1.99	0.45
10:S:1911:LEU:HD23	10:S:1911:LEU:HA	1.86	0.45
10:T:1027:ARG:HE	10:T:1031:HIS:HB3	1.82	0.45
12:Z:427:LEU:HB3	12:Z:459:GLN:HE22	1.82	0.45
3:C:172:PRO:O	3:C:230:ASN:ND2	2.49	0.45
9:I:104:HIS:HD2	9:I:152:ILE:HD12	1.82	0.45
9:I:335:LEU:HD13	9:I:344:ILE:HG12	1.97	0.45
9:I:786:ILE:HG21	9:I:839:GLN:HG3	1.97	0.45
8:Q:398:TRP:HH2	8:Q:422:LEU:HD13	1.82	0.45
10:S:1432:GLN:O	10:S:1433:ARG:NH1	2.47	0.45
11:U:451:GLU:O	11:U:453:HIS:ND1	2.48	0.45
11:U:787:ARG:NE	11:U:820:ASN:OXT	2.49	0.45
11:U:818:LEU:HB3	11:U:819:MET:HE2	1.98	0.45
12:V:61:LYS:HD2	12:V:64:ARG:HE	1.80	0.45
12:W:123:LYS:HD3	12:W:123:LYS:HA	1.77	0.45
12:W:284:GLU:HA	12:W:350:ARG:HH12	1.81	0.45
12:Z:76:VAL:HG11	12:Z:107:LEU:HB2	1.98	0.45
1:J:423:ASP:HA	1:J:430:ARG:HH22	1.81	0.45
4:M:444:PRO:HG3	4:M:469:ARG:HB2	1.99	0.45
5:N:87:ASP:N	5:N:87:ASP:OD1	2.48	0.45
8:Q:893:GLN:HB3	11:U:817:VAL:HG12	1.99	0.45
11:U:385:ASP:HB3	11:U:388:LYS:HB3	1.98	0.45
12:V:463:ARG:HH12	12:V:538:ILE:HG12	1.81	0.45
12:V:463:ARG:NH2	12:V:477:GLU:O	2.49	0.45
12:X:697:CYS:SG	12:X:698:LEU:N	2.89	0.45
1:A:8:PRO:HB3	3:C:318:VAL:HB	1.99	0.45
3:C:24:GLY:O	3:C:26:ARG:N	2.43	0.45
4:D:1361:LEU:HD21	4:D:1418:TYR:HB2	1.99	0.45
6:F:400:PRO:O	6:F:405:LYS:NZ	2.48	0.45
6:F:557:GLU:HA	6:F:560:PHE:CE1	2.52	0.45
8:H:265:LEU:HD13	8:H:441:TRP:HB2	1.98	0.45
3:L:54:LYS:NZ	3:L:56:HIS:O	2.42	0.45
8:Q:426:LEU:HA	8:Q:429:LEU:HB2	1.99	0.45
10:S:584:ARG:HG2	10:S:586:ILE:H	1.82	0.45
10:S:880:LEU:HA	10:S:884:ASN:HD21	1.82	0.45
10:S:927:GLN:HB3	10:S:998:ASN:HA	1.99	0.45
10:S:1538:LEU:HB3	10:S:1618:ILE:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:607:LYS:HA	12:W:607:LYS:HD3	1.74	0.45
12:X:110:LYS:NZ	12:X:141:SER:O	2.38	0.45
12:X:154:ILE:HD11	12:X:167:VAL:HG13	1.98	0.45
4:D:117:LEU:HD22	4:D:568:LEU:HD13	1.99	0.45
1:J:485:LEU:HD11	1:J:533:LEU:HD11	1.98	0.45
4:M:494:TRP:HE1	4:M:781:LEU:HG	1.82	0.45
4:M:1134:ILE:HD12	4:M:1134:ILE:HA	1.90	0.45
11:U:373:ARG:HH11	11:U:377:ARG:HH12	1.65	0.45
11:U:754:MET:SD	11:U:811:ARG:HB3	2.57	0.45
12:X:676:VAL:HG21	12:X:730:ILE:HG23	1.98	0.45
3:C:129:MET:SD	3:C:156:GLN:NE2	2.90	0.45
3:C:208:LYS:HB3	3:C:209:TYR:H	1.60	0.45
5:E:128:ASN:H	5:E:144:GLY:HA2	1.81	0.45
5:E:218:VAL:HG21	5:E:261:LYS:HA	1.98	0.45
6:F:369:VAL:HG23	6:F:373:VAL:HB	1.99	0.45
6:F:614:ASP:OD1	11:U:187:ARG:NH1	2.47	0.45
1:J:98:LEU:HD21	1:J:378:LEU:HD13	1.99	0.45
1:J:519:LEU:HD22	1:J:537:GLY:HA3	1.98	0.45
4:M:792:SER:O	4:M:796:HIS:ND1	2.46	0.45
4:M:1106:ARG:NH1	4:M:1147:GLY:O	2.46	0.45
7:P:105:SER:O	7:P:125:SER:OG	2.31	0.45
9:R:220:LEU:HB3	9:R:236:LEU:HD13	1.99	0.45
10:S:484:PRO:HA	10:S:485:PRO:HD3	1.91	0.45
10:S:724:LEU:HD23	10:S:792:ARG:HH12	1.82	0.45
10:T:16:PRO:O	10:T:19:GLU:HG3	2.17	0.45
12:V:589:ASN:HB2	12:X:2:ARG:HG2	1.99	0.45
5:E:232:TRP:CZ2	5:E:247:LYS:HB2	2.52	0.45
4:M:441:ASN:N	4:M:441:ASN:OD1	2.50	0.45
4:M:1320:LEU:HD23	4:M:1320:LEU:H	1.82	0.45
9:R:587:LEU:HB3	9:R:591:MET:HE1	1.98	0.45
9:R:978:GLU:O	9:R:981:GLU:HG3	2.17	0.45
9:R:1003:ASP:HB3	9:R:1006:ALA:HB3	1.99	0.45
9:R:1081:LYS:HD3	9:R:1086:VAL:HG11	1.98	0.45
10:S:1685:PRO:HD2	10:S:1769:GLN:HG3	1.98	0.45
10:T:1119:ILE:HD12	10:T:1119:ILE:HA	1.87	0.45
11:U:492:HIS:O	11:U:495:LEU:HG	2.17	0.45
11:U:588:LEU:HD21	11:U:632:LEU:HB2	1.98	0.45
12:V:80:VAL:HG12	12:V:103:LEU:HD13	1.98	0.45
6:F:249:ARG:HG3	7:G:265:TRP:CE2	2.51	0.44
4:M:1363:LYS:HA	4:M:1363:LYS:HD3	1.81	0.44
5:N:218:VAL:HG23	5:N:219:ARG:HG2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:O:567:GLU:HG2	12:W:91:PRO:HG2	1.98	0.44
10:S:18:ARG:HD3	10:S:18:ARG:HA	1.85	0.44
10:S:697:GLU:OE1	10:S:751:ARG:NH1	2.50	0.44
10:S:1226:ASN:HB3	10:S:1229:LEU:HB3	1.99	0.44
10:S:1401:ASN:O	10:S:1404:GLU:HG2	2.16	0.44
10:S:1739:LEU:HD21	10:S:1855:GLN:HB3	1.99	0.44
12:V:570:GLN:HB2	12:V:573:VAL:HG23	1.99	0.44
12:W:387:LYS:HD2	12:W:392:ASP:HA	1.97	0.44
4:D:636:GLN:HG2	4:D:640:ARG:HG2	1.99	0.44
5:E:174:HIS:HB3	5:E:180:LYS:HB2	1.99	0.44
5:E:198:HIS:O	5:E:199:GLN:NE2	2.50	0.44
4:M:583:VAL:HG12	4:M:588:LEU:HG	1.98	0.44
4:M:924:HIS:CD2	4:M:925:LYS:HG3	2.52	0.44
8:Q:256:ARG:O	8:Q:259:GLN:HG3	2.17	0.44
9:R:717:ILE:O	9:R:721:MET:HG2	2.17	0.44
9:R:856:LEU:HD23	9:R:859:ILE:HD11	1.98	0.44
9:R:1016:ILE:HG21	9:R:1053:LEU:HD22	1.99	0.44
10:T:233:TYR:HA	10:T:274:SER:HB2	1.98	0.44
4:D:307:LYS:HD2	4:D:321:VAL:HG12	1.99	0.44
4:D:1025:ASP:OD1	4:D:1025:ASP:N	2.49	0.44
5:E:266:VAL:HG21	5:E:324:THR:HG21	2.00	0.44
8:H:424:GLY:HA2	8:H:446:VAL:HG22	1.99	0.44
9:I:802:THR:HG23	9:I:805:LYS:HE3	1.98	0.44
4:M:257:LEU:HD22	4:M:316:GLN:HA	1.99	0.44
7:P:81:ARG:HB3	7:P:102:HIS:HB2	1.98	0.44
9:R:64:HIS:HB3	9:R:67:ALA:HB3	1.98	0.44
9:R:76:GLN:HE21	9:R:466:ARG:HH22	1.65	0.44
10:T:1292:LEU:HG	10:T:1293:THR:HG23	1.98	0.44
10:T:1619:LEU:HG	10:T:1623:LEU:HD13	2.00	0.44
12:Y:307:GLN:HG3	12:Y:310:ALA:H	1.83	0.44
12:Z:33:ALA:HB2	12:Z:48:SER:HB2	1.98	0.44
1:A:430:ARG:HH21	1:A:460:MET:HB3	1.81	0.44
1:J:489:ILE:HD11	2:K:26:SER:HB2	1.98	0.44
2:K:50:THR:HG22	2:K:66:PRO:HG3	1.99	0.44
4:M:420:THR:HG21	4:M:548:PRO:HG3	1.99	0.44
6:O:423:GLU:O	6:O:426:GLU:HG3	2.16	0.44
8:Q:876:ASN:OD1	8:Q:876:ASN:N	2.51	0.44
9:R:78:PHE:HZ	9:R:448:GLU:HB2	1.83	0.44
10:S:23:THR:HG21	10:S:39:LEU:HD22	1.98	0.44
10:S:391:LYS:HA	10:S:391:LYS:HD2	1.71	0.44
10:T:1406:ILE:HG12	10:T:1420:LEU:HD13	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:T:1783:PRO:HD3	10:T:1952:ASN:HA	1.99	0.44
12:X:125:PHE:HE2	12:X:128:SER:HG	1.65	0.44
12:Y:197:ARG:HG2	12:Y:202:TRP:HE1	1.82	0.44
12:Y:224:ASN:O	12:Y:227:MET:HG3	2.17	0.44
12:Y:349:ASP:HA	12:Y:426:SER:HB2	2.00	0.44
12:Y:662:LYS:HB3	12:Y:665:ASP:HB2	2.00	0.44
12:Z:3:ARG:HB2	12:Z:4:SER:H	1.59	0.44
12:Z:308:TRP:CZ3	12:Z:510:ARG:CG	3.00	0.44
1:A:260:ARG:NH1	1:A:285:LEU:O	2.51	0.44
4:D:556:ASN:ND2	4:D:851:SER:OG	2.41	0.44
4:D:898:LEU:HD12	4:D:901:TRP:HE1	1.81	0.44
4:D:1007:HIS:CE1	4:D:1015:GLN:HB3	2.53	0.44
5:E:143:VAL:HB	5:E:168:GLY:HA3	1.99	0.44
8:H:140:GLU:HG2	8:H:200:ILE:HG13	2.00	0.44
4:M:634:HIS:HD1	4:M:636:GLN:HG3	1.83	0.44
10:S:151:GLN:HE22	10:S:158:PHE:HB3	1.83	0.44
10:S:230:HIS:HA	10:S:233:TYR:HB3	1.99	0.44
10:S:1760:MET:HE1	10:S:1895:ILE:HG23	1.99	0.44
10:T:485:PRO:HB2	10:T:488:GLN:HG2	1.98	0.44
11:U:336:GLN:HG2	11:U:357:ILE:HG21	1.99	0.44
12:V:602:VAL:HG21	12:V:656:LEU:HD22	1.99	0.44
12:W:100:ILE:HG21	12:W:117:TRP:HD1	1.83	0.44
1:A:610:LEU:HD23	1:A:615:PRO:HD3	2.00	0.44
2:B:244:VAL:HG22	2:B:248:LYS:HA	2.00	0.44
2:B:273:HIS:CE1	2:B:374:PHE:HB2	2.52	0.44
4:D:434:HIS:NE2	4:D:436:ASN:OD1	2.51	0.44
4:D:609:LEU:O	4:D:613:LEU:HG	2.16	0.44
6:F:647:THR:HB	6:F:648:HIS:H	1.66	0.44
9:I:509:LEU:HB3	9:I:550:ILE:HD11	1.98	0.44
1:J:458:ARG:NH2	10:T:1205:SER:OG	2.50	0.44
6:O:301:PRO:HB2	7:P:12:HIS:HB3	1.99	0.44
6:O:389:GLN:NE2	6:O:390:LEU:O	2.51	0.44
8:Q:270:LYS:HA	8:Q:347:ALA:HB1	1.99	0.44
10:T:203:LYS:HD3	10:T:203:LYS:HA	1.83	0.44
12:X:170:LYS:HA	12:X:170:LYS:HD2	1.80	0.44
12:X:569:LEU:HD12	12:X:573:VAL:HG21	2.00	0.44
12:Z:222:ASN:O	12:Z:226:ARG:HG2	2.18	0.44
1:A:442:LEU:HD23	1:A:442:LEU:HA	1.90	0.44
4:D:624:MET:HG3	4:D:645:ILE:HG23	1.99	0.44
4:D:898:LEU:HD12	4:D:901:TRP:NE1	2.33	0.44
4:D:1247:CYS:SG	4:D:1251:ARG:NH2	2.88	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:11:TYR:HB2	5:E:321:PHE:HB2	2.00	0.44
6:F:400:PRO:HB2	6:F:404:VAL:HB	2.00	0.44
4:M:478:ALA:HA	4:M:481:ILE:HG22	2.00	0.44
4:M:794:LEU:HD13	4:M:807:VAL:HG13	1.99	0.44
6:O:636:HIS:HA	6:O:639:MET:HG2	2.00	0.44
9:R:171:THR:O	9:R:173:GLU:N	2.49	0.44
10:S:1553:GLU:O	10:S:1556:MET:HG3	2.17	0.44
10:T:397:PRO:HG2	10:T:487:ARG:HH22	1.83	0.44
10:T:1199:LEU:HB2	10:T:1207:ILE:HG12	1.99	0.44
10:T:1200:ASP:N	10:T:1200:ASP:OD1	2.50	0.44
12:Z:8:ILE:HG23	12:Z:35:LEU:HB3	1.99	0.44
12:Z:97:THR:HB	12:Z:117:TRP:HB3	2.00	0.44
12:Z:321:LEU:HD21	12:Z:406:ILE:HG12	2.00	0.44
3:C:253:LEU:HG	3:C:254:ARG:HG2	2.00	0.44
3:C:299:ASP:OD1	3:C:299:ASP:N	2.51	0.44
8:H:551:LEU:HD23	8:H:551:LEU:HA	1.85	0.44
9:I:1123:TYR:HD1	9:R:577:SER:HB3	1.82	0.44
4:M:1413:ARG:NH2	4:M:1417:GLU:OE2	2.50	0.44
5:N:18:TYR:CE2	5:N:20:HIS:HB3	2.53	0.44
8:Q:213:LEU:HB2	8:Q:264:TRP:CZ2	2.52	0.44
8:Q:491:ASP:N	8:Q:491:ASP:OD1	2.49	0.44
8:Q:622:ASP:OD1	8:Q:622:ASP:N	2.47	0.44
10:T:1317:HIS:HD2	10:T:1320:ILE:HD11	1.83	0.44
11:U:207:ASP:OD2	12:Y:549:LYS:NZ	2.44	0.44
12:X:87:LEU:HD13	12:X:96:LEU:HD23	1.98	0.44
12:Z:29:GLY:HA2	12:Z:32:PHE:HB2	1.99	0.44
12:Z:233:LEU:HD22	12:Z:285:MET:HG3	2.00	0.44
9:I:862:MET:SD	9:I:892:LYS:NZ	2.91	0.44
6:O:862:ASN:O	6:O:865:ARG:HG3	2.17	0.44
10:S:1414:GLN:O	10:S:1417:ARG:HG3	2.17	0.44
10:S:1721:PHE:HA	10:S:1726:ARG:HG3	1.99	0.44
10:S:1777:THR:HG23	10:S:1905:ARG:HH21	1.82	0.44
11:U:775:PRO:O	11:U:779:GLN:HG2	2.18	0.44
12:V:320:LEU:HD21	12:V:409:VAL:HG11	1.99	0.44
12:Z:598:MET:HE3	12:Z:598:MET:HB3	1.88	0.44
4:D:1252:LEU:HD21	4:D:1263:ALA:HB3	1.99	0.43
9:I:753:SER:O	9:I:760:ARG:NH2	2.51	0.43
9:I:1020:VAL:HG22	9:I:1060:LYS:HG3	2.00	0.43
1:J:416:GLN:OE1	2:K:226:GLN:NE2	2.51	0.43
9:R:110:TRP:CD1	9:R:147:ALA:HB1	2.53	0.43
10:S:64:HIS:NE2	10:S:105:GLU:OE2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:U:328:ARG:HE	11:U:413:ASP:HA	1.83	0.43
11:U:634:LYS:HZ3	11:U:675:TYR:HE1	1.66	0.43
12:V:651:ILE:HG23	12:V:678:ALA:HB2	2.00	0.43
1:A:21:ARG:HH12	1:A:48:ALA:HB2	1.83	0.43
1:A:577:LEU:HD12	1:A:633:LEU:HD11	2.00	0.43
2:B:184:LEU:HD12	2:B:194:LEU:HB2	2.00	0.43
4:D:53:GLU:OE1	4:D:471:THR:OG1	2.30	0.43
5:E:8:ASN:O	5:E:322:TRP:NE1	2.35	0.43
5:E:146:ASP:N	5:E:146:ASP:OD1	2.51	0.43
4:M:79:TYR:OH	4:M:212:PRO:O	2.36	0.43
4:M:797:LEU:HD22	4:M:802:LEU:HD12	2.00	0.43
6:O:397:LEU:HD23	12:V:7:GLU:HG3	2.00	0.43
10:S:126:THR:HG23	10:S:129:LEU:H	1.83	0.43
10:S:1614:ARG:O	10:S:1617:GLN:HG3	2.18	0.43
10:S:1863:ASP:OD1	10:S:1863:ASP:N	2.49	0.43
10:T:915:LYS:HG2	10:T:983:HIS:CE1	2.53	0.43
10:T:1020:SER:HA	10:T:1031:HIS:CE1	2.53	0.43
12:V:233:LEU:HB3	12:V:285:MET:HG3	1.99	0.43
12:V:417:SER:HB3	12:X:13:GLU:HG3	2.00	0.43
12:V:757:ASP:OD1	12:V:757:ASP:N	2.51	0.43
12:W:41:GLU:HG2	12:W:44:LEU:HD12	1.99	0.43
12:X:337:ASP:N	12:X:337:ASP:OD1	2.50	0.43
3:C:251:LYS:HE3	3:C:251:LYS:HB3	1.90	0.43
4:D:599:ASP:HB2	4:D:673:GLN:HG3	1.99	0.43
4:D:1048:ASP:HB3	4:D:1052:PHE:HE1	1.83	0.43
8:H:873:SER:HB3	9:I:960:LEU:HB2	2.01	0.43
5:N:86:CYS:HA	5:N:91:PRO:HB3	2.00	0.43
7:P:137:ASP:N	7:P:137:ASP:OD1	2.51	0.43
8:Q:562:GLU:HA	8:Q:565:LYS:HG2	2.00	0.43
9:R:148:ASP:O	9:R:203:VAL:N	2.50	0.43
10:S:1035:ASP:O	10:S:1039:LYS:HG2	2.18	0.43
10:S:1784:SER:H	10:S:1962:LEU:HB2	1.83	0.43
10:T:417:LEU:O	10:T:420:MET:HG3	2.18	0.43
10:T:584:ARG:HD3	10:T:590:GLU:HB3	2.00	0.43
10:T:649:ALA:HA	10:T:652:LYS:HG3	1.99	0.43
10:T:688:LEU:HA	10:T:692:GLU:HB2	2.00	0.43
11:U:796:PHE:O	11:U:800:ILE:HG12	2.18	0.43
2:B:115:ARG:HH21	6:O:277:ASP:HB3	1.81	0.43
4:D:116:GLU:HB3	4:D:126:ASN:HB2	1.99	0.43
4:D:977:LEU:HA	4:D:977:LEU:HD23	1.83	0.43
6:F:626:PRO:HB2	12:Y:20:SER:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:470:THR:O	1:J:473:MET:HG2	2.19	0.43
5:N:131:VAL:HG11	5:N:172:ALA:HA	2.01	0.43
9:R:220:LEU:HB2	9:R:236:LEU:HB2	2.00	0.43
10:S:277:TYR:HD1	10:S:277:TYR:HA	1.73	0.43
10:S:500:ASP:O	10:S:541:ASN:ND2	2.41	0.43
10:S:1122:ARG:HE	10:S:1126:LEU:HG	1.84	0.43
12:W:104:ILE:HG13	12:W:114:ALA:HB2	2.00	0.43
12:W:130:GLU:O	12:W:133:ARG:HG3	2.18	0.43
12:X:248:ASP:HB2	12:X:251:LYS:HB2	2.00	0.43
12:Y:300:MET:HE1	12:Y:389:LEU:HD23	2.01	0.43
6:F:391:LYS:HD3	6:F:391:LYS:HA	1.83	0.43
8:H:283:TYR:O	10:T:2000:ARG:NH1	2.52	0.43
2:K:278:SER:HB3	2:K:282:SER:HB2	2.01	0.43
4:M:100:ASN:HB3	4:M:119:LEU:HB2	2.01	0.43
10:S:129:LEU:HD22	10:S:208:LEU:HB3	1.99	0.43
10:T:1365:GLN:HG3	10:T:1367:VAL:H	1.83	0.43
10:T:1720:ARG:HG2	10:T:1801:SER:HB3	1.99	0.43
12:V:299:LYS:HB2	12:V:518:ILE:HG21	2.01	0.43
12:X:523:PHE:HB2	12:X:524:THR:H	1.61	0.43
12:Z:10:ARG:O	12:Z:13:GLU:HG3	2.19	0.43
9:I:639:LEU:HD23	9:I:676:PHE:HE1	1.82	0.43
3:L:208:LYS:HA	3:L:208:LYS:HD3	1.84	0.43
4:M:126:ASN:HA	4:M:187:PHE:HD2	1.82	0.43
4:M:131:LYS:HE3	4:M:131:LYS:HB3	1.78	0.43
4:M:888:TYR:O	4:M:892:GLN:NE2	2.51	0.43
5:N:297:PRO:HB3	5:N:316:TYR:CZ	2.53	0.43
8:Q:838:VAL:O	8:Q:841:ARG:HG2	2.19	0.43
8:Q:880:TYR:HA	8:Q:883:PHE:HD2	1.84	0.43
10:S:906:ASN:ND2	10:S:909:LEU:HD12	2.33	0.43
10:S:1108:ASN:HB3	10:S:1112:TRP:CZ3	2.54	0.43
10:T:264:LEU:HG	10:T:372:ALA:HB1	2.00	0.43
10:T:1317:HIS:HE1	10:T:1398:ILE:HG23	1.84	0.43
1:A:475:SER:HB3	1:A:480:ARG:HB2	2.00	0.43
2:B:172:MET:HA	2:B:187:ASN:HA	2.01	0.43
2:B:285:HIS:HB3	2:B:338:THR:HB	2.00	0.43
2:B:306:ASN:N	2:B:306:ASN:OD1	2.51	0.43
2:B:359:VAL:HG12	2:B:369:VAL:HG12	2.01	0.43
4:D:480:GLN:OE1	4:D:488:ARG:NH2	2.52	0.43
7:G:283:ASN:HA	7:G:304:LYS:HB2	2.01	0.43
9:I:868:ARG:O	9:I:871:ARG:HG3	2.18	0.43
2:K:71:ASP:OD1	2:K:71:ASP:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:275:PHE:HB3	2:K:351:LEU:HD11	2.00	0.43
8:Q:681:LYS:HD2	8:Q:681:LYS:HA	1.83	0.43
10:T:1796:GLN:HG2	10:T:1801:SER:HB2	2.00	0.43
12:W:555:GLN:O	12:W:559:THR:OG1	2.34	0.43
2:B:47:VAL:H	2:B:68:GLN:HE22	1.65	0.43
3:C:96:LYS:HA	3:C:96:LYS:HD3	1.78	0.43
3:C:136:ASP:N	3:C:136:ASP:OD1	2.52	0.43
4:D:49:LEU:HB2	4:D:570:PHE:HB3	2.00	0.43
4:D:575:SER:HA	4:D:855:ALA:HB1	2.00	0.43
6:F:752:TRP:HB3	6:F:792:ILE:HD13	2.00	0.43
9:I:193:THR:HA	9:I:233:GLN:HB2	2.01	0.43
1:J:599:MET:HB3	1:J:637:LEU:HD11	2.01	0.43
6:O:269:SER:OG	6:O:270:GLU:N	2.49	0.43
8:Q:785:LYS:HA	8:Q:785:LYS:HD3	1.81	0.43
9:R:200:CYS:HA	9:R:215:SER:HA	2.01	0.43
9:R:591:MET:HE2	9:R:633:LEU:O	2.19	0.43
10:S:67:VAL:HG21	10:S:105:GLU:HB3	2.00	0.43
10:S:831:ALA:O	10:S:833:PHE:N	2.51	0.43
10:T:1507:ARG:HG3	10:T:1508:GLN:HG2	2.00	0.43
11:U:380:VAL:HG11	11:U:392:TYR:HD2	1.84	0.43
12:V:714:LYS:HE3	12:V:752:LEU:HD22	2.01	0.43
12:X:391:GLU:OE1	12:X:399:SER:OG	2.29	0.43
12:Y:598:MET:HE3	12:Y:602:VAL:HG23	1.99	0.43
12:Z:528:ARG:HD3	12:Z:528:ARG:HA	1.84	0.43
12:Z:563:ALA:HA	12:Z:567:HIS:CE1	2.54	0.43
1:A:141:GLU:O	1:A:145:ASN:ND2	2.52	0.43
2:B:214:ARG:HA	2:B:214:ARG:HD3	1.81	0.43
1:J:569:CYS:HA	1:J:572:TRP:HB2	2.00	0.43
4:M:333:ASP:HA	9:R:228:SER:HB2	2.01	0.43
4:M:461:LEU:HG	4:M:531:TRP:HE1	1.83	0.43
4:M:477:LYS:HD3	9:R:84:VAL:HG21	2.01	0.43
4:M:529:GLU:HG3	9:R:77:LEU:HB3	2.00	0.43
10:S:903:GLY:O	10:S:905:SER:N	2.52	0.43
10:T:455:GLU:HB3	10:T:458:LEU:HG	2.01	0.43
10:T:763:LEU:HD12	10:T:842:ALA:HB1	2.01	0.43
10:T:1042:ASP:HB3	10:T:1090:SER:HB3	2.01	0.43
10:T:1235:VAL:HG22	10:T:1253:LEU:HD21	2.00	0.43
12:Z:598:MET:HG3	12:Z:656:LEU:HD13	2.01	0.43
1:A:27:TRP:HE1	3:C:285:SER:HB2	1.82	0.43
4:D:1277:THR:OG1	4:D:1278:THR:N	2.52	0.43
5:E:17:ASP:HB2	5:E:40:GLY:HA3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:28:ASP:HB3	5:E:85:ARG:HH22	1.84	0.43
6:F:262:VAL:HG11	7:G:19:ALA:HB3	2.01	0.43
6:F:574:LEU:HD22	6:F:583:PHE:H	1.83	0.43
8:H:302:LEU:HB3	8:H:303:SER:H	1.54	0.43
6:O:249:ARG:HH11	6:O:250:SER:N	2.17	0.43
8:Q:481:ASP:OD1	8:Q:481:ASP:N	2.52	0.43
9:R:121:LYS:HB3	9:R:131:MET:HB3	2.00	0.43
9:R:494:ASP:HB3	9:R:496:ARG:HH21	1.84	0.43
9:R:1092:LEU:HD22	9:R:1097:ILE:HG21	2.01	0.43
10:T:441:LEU:N	10:T:513:MET:HE3	2.34	0.43
12:V:453:LEU:HD21	12:V:485:GLU:HG2	2.01	0.43
12:Y:525:ASP:OD1	12:Y:525:ASP:N	2.52	0.43
12:Z:308:TRP:CD1	12:Z:508:PRO:HB2	2.54	0.43
1:A:535:PHE:O	1:A:538:LYS:HG2	2.19	0.42
2:B:8:LYS:HG2	2:B:63:GLN:HB3	2.00	0.42
4:D:1380:LEU:HD13	6:F:245:LEU:HD21	2.01	0.42
6:F:609:SER:OG	6:F:610:GLU:N	2.52	0.42
8:H:186:ARG:HD2	8:H:186:ARG:HA	1.83	0.42
2:K:36:GLY:HA3	2:K:78:VAL:HG11	2.01	0.42
5:N:232:TRP:CD1	5:N:249:ALA:HB2	2.45	0.42
7:P:219:TRP:HD1	7:P:220:ALA:H	1.66	0.42
9:R:320:ASP:OD1	9:R:320:ASP:N	2.49	0.42
9:R:929:GLU:HB3	9:R:933:ALA:HB2	2.01	0.42
10:S:1158:GLU:HB2	10:S:1162:ARG:HH21	1.84	0.42
10:S:1348:VAL:HG11	10:S:1383:ILE:HG23	2.01	0.42
10:T:703:ALA:O	10:T:706:GLN:HG3	2.19	0.42
10:T:995:LYS:HA	10:T:995:LYS:HD3	1.89	0.42
11:U:671:ILE:O	11:U:674:ARG:HG2	2.19	0.42
12:V:20:SER:HA	12:V:25:LYS:HE2	2.00	0.42
12:W:319:TYR:CZ	12:W:357:LEU:HD13	2.54	0.42
12:X:349:ASP:OD1	12:X:426:SER:OG	2.29	0.42
12:X:694:GLU:HA	12:X:698:LEU:HD21	2.01	0.42
12:Y:350:ARG:HE	12:Y:351:GLN:HE21	1.66	0.42
12:Z:490:ALA:HB2	12:Z:577:TRP:CZ2	2.54	0.42
4:D:899:LEU:HD11	4:D:906:VAL:HG13	2.01	0.42
4:D:1041:CYS:SG	4:D:1077:HIS:NE2	2.91	0.42
4:D:1141:ILE:HD12	4:D:1141:ILE:HA	1.86	0.42
7:G:262:ASP:OD1	7:G:262:ASP:N	2.50	0.42
9:I:564:ARG:HD2	9:I:564:ARG:HA	1.77	0.42
3:L:164:SER:OG	3:L:187:ASP:O	2.37	0.42
9:R:452:VAL:HG22	9:R:462:THR:HB	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:R:913:LEU:HD22	9:R:916:HIS:HB2	2.01	0.42
10:T:751:ARG:HB3	10:T:754:GLU:HG3	2.00	0.42
10:T:1555:LYS:HA	10:T:1555:LYS:HD2	1.81	0.42
10:T:1936:ASP:OD2	10:T:1947:ARG:NH2	2.52	0.42
12:X:537:LEU:HD11	12:X:551:ARG:HG3	2.01	0.42
12:Z:327:LYS:HA	12:Z:327:LYS:HD2	1.87	0.42
1:A:420:ASP:N	1:A:420:ASP:OD1	2.49	0.42
2:B:213:GLU:O	2:B:214:ARG:NH1	2.53	0.42
4:D:168:HIS:CG	4:D:169:PRO:HD2	2.55	0.42
6:F:581:CYS:HB3	12:Y:18:SER:HA	2.01	0.42
6:F:739:LYS:O	6:F:742:GLU:HG2	2.18	0.42
7:G:118:LEU:HD23	7:G:118:LEU:HA	1.85	0.42
9:I:212:ILE:HG12	9:I:222:ARG:HD2	2.01	0.42
1:J:441:PRO:HB3	3:L:23:HIS:HB3	2.01	0.42
4:M:344:LEU:HD21	4:M:357:LEU:HD22	2.01	0.42
4:M:560:VAL:HB	4:M:571:LEU:HB2	2.02	0.42
5:N:17:ASP:HB2	5:N:43:TYR:HE1	1.84	0.42
6:O:401:ASN:HB2	6:O:404:VAL:HB	2.00	0.42
7:P:234:SER:OG	7:P:235:GLN:N	2.48	0.42
8:Q:351:ASP:HA	8:Q:354:GLN:NE2	2.34	0.42
9:R:1013:PHE:O	9:R:1017:GLN:NE2	2.51	0.42
10:S:1749:GLU:OE1	10:S:1828:TYR:OH	2.37	0.42
10:T:1337:VAL:O	10:T:1341:THR:OG1	2.33	0.42
10:T:1638:LEU:HD22	10:T:1691:LEU:HD22	2.01	0.42
11:U:541:GLU:O	11:U:543:THR:N	2.52	0.42
12:V:236:GLN:O	12:V:240:VAL:HG23	2.19	0.42
12:W:270:VAL:O	12:W:272:GLY:N	2.52	0.42
12:W:312:ILE:HD12	12:W:361:LEU:HD22	2.02	0.42
12:X:717:LEU:HD13	12:X:745:LEU:HA	1.99	0.42
4:D:41:ASN:HB2	4:D:595:VAL:HG21	1.99	0.42
4:D:1109:ARG:HD2	10:S:483:ARG:HH12	1.85	0.42
5:E:151:ILE:HB	5:E:159:ILE:HB	2.01	0.42
9:I:243:LEU:HB3	9:I:262:GLU:HA	2.02	0.42
1:J:13:ILE:HG13	1:J:16:LEU:H	1.85	0.42
1:J:479:ARG:O	1:J:480:ARG:NE	2.49	0.42
3:L:311:ASP:N	3:L:311:ASP:OD1	2.52	0.42
4:M:613:LEU:HD22	4:M:731:ASP:HB3	2.01	0.42
8:Q:206:GLN:O	8:Q:209:VAL:HG12	2.20	0.42
10:S:293:GLU:HA	10:S:296:LYS:HE3	2.00	0.42
10:S:929:LYS:HE2	10:S:929:LYS:HB2	1.84	0.42
10:S:1562:VAL:HG12	10:S:1572:LEU:HD11	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:T:1137:LEU:HD13	10:T:1305:ARG:HH22	1.84	0.42
10:T:1382:ASN:OD1	10:T:1382:ASN:N	2.52	0.42
12:V:181:LEU:HB3	12:V:213:TYR:HD1	1.85	0.42
12:X:76:VAL:HB	12:X:107:LEU:HD21	2.00	0.42
12:Y:453:LEU:HB2	12:Y:485:GLU:HG2	2.02	0.42
12:Z:280:VAL:HG13	12:Z:328:PRO:HB3	2.01	0.42
2:B:84:LEU:HD13	2:B:141:ILE:HG13	2.01	0.42
4:D:908:SER:HB3	4:D:940:GLU:HB2	2.00	0.42
6:F:323:LEU:HB3	6:F:324:PRO:HD3	2.01	0.42
7:G:239:VAL:HG12	7:G:259:LYS:HD3	2.01	0.42
9:I:742:ILE:HA	9:I:810:LEU:HD11	2.01	0.42
1:J:221:SER:O	1:J:225:ARG:NH1	2.53	0.42
2:K:18:ARG:NH1	2:K:81:MET:O	2.53	0.42
4:M:54:ARG:HG2	4:M:712:SER:HB2	2.00	0.42
4:M:475:LEU:HD13	4:M:497:LEU:HD21	2.00	0.42
6:O:793:GLN:C	6:O:795:TRP:H	2.23	0.42
9:R:505:LYS:HD2	9:R:505:LYS:HA	1.70	0.42
9:R:1029:GLU:HG2	9:R:1088:VAL:HG23	2.01	0.42
9:R:1029:GLU:OE2	9:R:1091:ASN:ND2	2.46	0.42
10:S:54:PHE:HE2	10:S:185:LYS:HZ1	1.67	0.42
10:S:311:HIS:CG	10:S:315:GLN:HE22	2.37	0.42
11:U:320:TRP:CG	11:U:388:LYS:HB2	2.54	0.42
12:Z:494:THR:HG22	12:Z:498:GLN:HE21	1.83	0.42
2:B:257:HIS:O	2:B:334:GLN:NE2	2.50	0.42
4:D:237:GLY:HA3	4:D:258:LYS:HG2	2.02	0.42
4:D:258:LYS:HB3	4:D:279:PRO:HG2	2.02	0.42
4:D:300:PHE:HB3	4:D:344:LEU:HD21	2.02	0.42
4:D:576:SER:O	4:D:579:HIS:ND1	2.49	0.42
4:D:1208:SER:HB3	10:S:464:THR:HG22	2.02	0.42
4:D:1209:SER:OG	4:D:1214:MET:SD	2.63	0.42
6:F:578:LEU:HD11	6:F:626:PRO:HG3	2.01	0.42
1:J:200:GLY:HA3	1:J:298:LEU:HD11	2.00	0.42
1:J:629:LYS:O	1:J:632:MET:HG3	2.20	0.42
4:M:643:GLU:OE1	4:M:741:ARG:NH2	2.53	0.42
6:O:752:TRP:O	6:O:756:HIS:ND1	2.52	0.42
7:P:109:VAL:HG12	7:P:122:CYS:HA	2.00	0.42
8:Q:270:LYS:HE2	8:Q:270:LYS:HB3	1.91	0.42
8:Q:737:GLU:HG2	8:Q:820:MET:HG3	2.00	0.42
10:S:243:ARG:H	10:S:243:ARG:HG2	1.69	0.42
10:T:930:ILE:HG23	10:T:999:LEU:HD21	2.01	0.42
11:U:328:ARG:HA	11:U:328:ARG:HD2	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:636:ASP:OD1	12:W:636:ASP:N	2.50	0.42
12:X:651:ILE:HD11	12:X:675:ASN:HB3	2.02	0.42
1:A:318:LYS:O	1:A:322:LEU:N	2.43	0.42
2:B:1:MET:SD	2:B:1:MET:N	3.20	0.42
4:D:207:ILE:HA	4:D:208:PRO:HA	1.85	0.42
4:D:1125:LEU:HG	4:D:1129:ASN:HD21	1.84	0.42
6:F:345:PRO:HB2	6:F:643:ALA:HB2	2.01	0.42
9:I:136:LEU:HD13	9:I:136:LEU:HA	1.94	0.42
9:I:220:LEU:H	9:I:240:GLN:HG2	1.84	0.42
2:K:48:TRP:CE2	2:K:68:GLN:HB2	2.54	0.42
4:M:646:LEU:HD22	4:M:737:HIS:HB3	2.02	0.42
4:M:889:THR:HA	5:N:186:LYS:HD3	2.01	0.42
10:S:1916:THR:HG22	10:S:1954:VAL:HG13	2.01	0.42
10:T:598:LEU:HD12	10:T:598:LEU:HA	1.87	0.42
10:T:1902:ILE:O	10:T:1905:ARG:HG2	2.20	0.42
12:V:750:GLN:HA	12:V:771:THR:HG21	2.02	0.42
12:X:305:GLU:HB3	12:X:306:VAL:H	1.63	0.42
12:Y:345:GLU:HB3	12:Y:429:ILE:HG21	2.01	0.42
12:Z:433:ASP:OD1	12:Z:528:ARG:NH1	2.52	0.42
1:A:94:ARG:HD2	1:A:97:GLN:NE2	2.35	0.42
4:D:450:ILE:HD12	4:D:450:ILE:HA	1.90	0.42
4:D:575:SER:OG	4:D:576:SER:N	2.53	0.42
4:D:1028:ARG:HD2	4:D:1028:ARG:HA	1.85	0.42
6:F:396:SER:HA	12:Z:10:ARG:HE	1.84	0.42
8:H:249:PHE:CE1	8:H:259:GLN:HG2	2.54	0.42
6:O:502:ARG:HA	6:O:505:VAL:HG22	2.01	0.42
6:O:807:SER:O	6:O:810:GLU:HG3	2.20	0.42
8:Q:182:LYS:HA	8:Q:185:LYS:HG2	2.02	0.42
8:Q:641:GLU:H	8:Q:689:LYS:HD2	1.84	0.42
10:S:151:GLN:O	10:S:153:ARG:N	2.52	0.42
10:S:797:PRO:HG2	10:S:800:PHE:HB3	2.00	0.42
10:S:896:ILE:HD13	10:S:896:ILE:HA	1.89	0.42
10:T:1656:GLN:HG2	10:T:1710:PHE:HE1	1.85	0.42
11:U:563:GLY:O	11:U:569:ARG:NH2	2.53	0.42
12:W:97:THR:HG22	12:W:117:TRP:HB3	2.01	0.42
12:W:189:LEU:HD11	12:W:228:ILE:HD11	2.02	0.42
12:X:240:VAL:HG13	12:X:244:LEU:HD12	2.02	0.42
12:Z:308:TRP:CE3	12:Z:510:ARG:NH2	2.87	0.42
12:Z:359:LEU:HD12	12:Z:359:LEU:HA	1.92	0.42
4:D:260:SER:H	4:D:265:ARG:HE	1.66	0.42
4:D:341:GLY:HA3	4:D:362:HIS:HB3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:579:HIS:CE1	4:D:580:LEU:HG	2.54	0.42
9:I:411:THR:O	9:I:413:GLU:N	2.53	0.42
1:J:98:LEU:HD22	1:J:152:ILE:HG21	2.02	0.42
3:L:114:THR:HB	3:L:135:ALA:HB3	2.01	0.42
5:N:232:TRP:CZ2	5:N:247:LYS:HB2	2.54	0.42
6:O:499:GLN:H	8:Q:313:GLU:HG3	1.85	0.42
8:Q:613:LEU:HD13	8:Q:623:VAL:HG11	2.02	0.42
10:S:1042:ASP:OD1	10:S:1042:ASP:N	2.52	0.42
10:T:1043:VAL:HB	10:T:1044:ARG:H	1.67	0.42
10:T:1479:VAL:HG22	10:T:1482:ARG:HH21	1.84	0.42
10:T:1640:ALA:HA	10:T:1643:GLN:NE2	2.35	0.42
11:U:347:GLY:O	11:U:350:LYS:NZ	2.51	0.42
12:V:61:LYS:O	12:V:64:ARG:HG2	2.20	0.42
12:Z:558:LEU:HG	12:Z:562:ARG:HG2	2.01	0.42
12:Z:562:ARG:HD3	12:Z:562:ARG:HA	1.74	0.42
1:A:5:ASP:HB3	1:A:6:VAL:H	1.55	0.42
4:D:61:PHE:CD1	4:D:129:ARG:HG3	2.54	0.42
4:D:169:PRO:HD3	4:D:174:ARG:HB3	2.02	0.42
6:F:800:LYS:HB3	6:F:838:TRP:HZ3	1.85	0.42
3:L:320:LYS:HD3	3:L:320:LYS:HA	1.93	0.42
4:M:126:ASN:N	4:M:126:ASN:OD1	2.53	0.42
7:P:160:PRO:HG3	7:P:221:PRO:HA	2.01	0.42
10:S:865:ARG:HA	10:S:865:ARG:HD3	1.84	0.42
10:S:1655:ILE:HG23	10:S:1675:LEU:HD13	2.02	0.42
10:S:1970:PHE:O	10:S:2007:ARG:NH2	2.52	0.42
12:V:139:LEU:HD13	12:V:149:GLN:HG3	2.02	0.42
12:V:718:LYS:HZ2	12:V:766:ASN:H	1.67	0.42
12:X:237:CYS:SG	12:X:288:HIS:ND1	2.93	0.42
12:Z:44:LEU:O	12:Z:47:ARG:HG3	2.20	0.42
12:Z:530:TRP:CD1	12:Z:557:ASP:HB2	2.55	0.42
2:B:1:MET:HA	2:B:373:LEU:HA	2.00	0.41
6:F:684:PRO:HD2	7:G:170:GLN:NE2	2.35	0.41
8:H:808:ILE:HG21	8:H:852:LEU:HD13	2.02	0.41
9:I:910:ALA:HB2	9:I:923:HIS:HE1	1.84	0.41
9:I:959:LYS:HA	9:I:979:ILE:HD13	2.02	0.41
4:M:539:LEU:O	4:M:543:GLU:HG2	2.20	0.41
4:M:903:GLN:HG2	4:M:904:VAL:HG23	2.02	0.41
9:R:149:LEU:HD12	9:R:170:ALA:HB3	2.02	0.41
10:S:572:ASN:OD1	10:S:577:HIS:NE2	2.45	0.41
10:T:668:GLN:OE1	10:T:725:ARG:NH2	2.52	0.41
10:T:1697:ASP:HA	10:T:1700:MET:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:V:434:LEU:HB2	12:V:531:TRP:CG	2.55	0.41
12:Y:133:ARG:HH22	12:Y:166:TYR:HB3	1.85	0.41
12:Y:256:LEU:HD22	12:Y:296:LEU:HD13	2.02	0.41
12:Y:457:LEU:O	12:Y:461:PHE:HB2	2.20	0.41
2:B:285:HIS:HB2	2:B:340:LEU:HD11	2.01	0.41
4:D:49:LEU:HD12	4:D:570:PHE:HD2	1.86	0.41
4:D:491:ASP:N	4:D:491:ASP:OD1	2.53	0.41
4:D:540:GLN:OE1	9:I:440:ASN:ND2	2.53	0.41
4:D:978:VAL:HG12	4:D:1002:ARG:HH22	1.85	0.41
5:E:87:ASP:N	5:E:87:ASP:OD1	2.53	0.41
5:E:153:ASP:OD2	5:E:157:LYS:NZ	2.49	0.41
8:H:137:ASP:HB2	8:H:140:GLU:HG3	2.02	0.41
8:H:700:LYS:HD3	8:H:700:LYS:HA	1.92	0.41
9:I:177:ARG:HA	9:I:177:ARG:HD3	1.87	0.41
1:J:20:ASN:HD22	1:J:21:ARG:H	1.69	0.41
4:M:228:LEU:HD22	4:M:242:LYS:HG2	2.01	0.41
4:M:1054:TYR:HB2	4:M:1086:PHE:HZ	1.86	0.41
5:N:131:VAL:HG22	5:N:171:VAL:HG13	2.01	0.41
6:O:349:VAL:HG13	6:O:352:ILE:HD12	2.02	0.41
8:Q:755:PHE:CD2	11:U:809:ASN:HB3	2.55	0.41
10:S:917:LEU:HB3	10:S:987:LEU:HD13	2.02	0.41
10:T:906:ASN:HD22	10:T:909:LEU:HD12	1.85	0.41
10:T:1746:ASP:O	10:T:1749:GLU:HG2	2.19	0.41
10:T:1782:THR:HG1	10:T:1810:SER:HG	1.58	0.41
12:V:192:GLU:OE2	12:V:193:ARG:NH1	2.54	0.41
12:V:558:LEU:HD12	12:V:558:LEU:HA	1.89	0.41
12:W:298:LEU:HD12	12:W:298:LEU:HA	1.88	0.41
12:W:352:SER:HB2	12:W:422:HIS:HB3	2.01	0.41
12:W:507:ASP:OD1	12:W:507:ASP:N	2.53	0.41
12:Z:567:HIS:HB2	12:Z:622:PRO:HB3	2.02	0.41
12:Z:609:LEU:HD23	12:Z:612:LEU:HD12	2.02	0.41
1:A:303:TYR:O	1:A:307:VAL:HG13	2.20	0.41
2:B:126:ASN:N	2:B:126:ASN:OD1	2.53	0.41
4:D:1278:THR:HG23	4:D:1279:LYS:HG2	2.03	0.41
6:F:592:LYS:HE3	6:F:592:LYS:HB3	1.89	0.41
1:J:8:PRO:HB2	3:L:325:PRO:HB3	2.01	0.41
1:J:218:ALA:HB1	1:J:225:ARG:HA	2.02	0.41
3:L:163:LEU:HD11	3:L:193:ILE:HG21	2.02	0.41
4:M:116:GLU:OE2	4:M:185:SER:OG	2.37	0.41
10:T:1135:ARG:HB2	10:T:1157:MET:H	1.84	0.41
10:T:1614:ARG:HA	10:T:1614:ARG:HD3	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:U:604:ARG:HD2	12:Y:566:LYS:HE2	2.02	0.41
12:V:479:ILE:HG12	12:V:484:LEU:HG	2.03	0.41
12:V:595:LYS:HA	12:V:595:LYS:HD2	1.89	0.41
12:Y:441:GLY:HA3	12:Y:492:VAL:HG21	2.01	0.41
12:Y:710:LEU:HB3	12:Y:752:LEU:HG	2.02	0.41
1:A:453:ARG:O	1:A:456:GLU:HG3	2.21	0.41
4:D:1040:LEU:HD23	4:D:1040:LEU:HA	1.87	0.41
6:F:324:PRO:HG2	6:F:632:ARG:HD2	2.03	0.41
3:L:10:ASP:OD1	3:L:10:ASP:N	2.53	0.41
4:M:343:LYS:HG3	4:M:397:LEU:HD23	2.02	0.41
4:M:456:PRO:HG2	4:M:528:ILE:HB	2.01	0.41
4:M:843:SER:O	4:M:850:ARG:NH1	2.53	0.41
4:M:997:ALA:HB1	4:M:1028:ARG:HG3	2.02	0.41
4:M:1321:PRO:HD2	4:M:1324:LEU:HD13	2.02	0.41
7:P:160:PRO:O	7:P:181:ARG:NH2	2.52	0.41
8:Q:651:LEU:HD12	11:U:654:ILE:HD11	2.03	0.41
9:R:98:PRO:O	9:R:145:TRP:NE1	2.54	0.41
10:T:1847:PRO:HA	10:T:1850:ILE:HG12	2.02	0.41
10:T:1938:PHE:HD1	10:T:1938:PHE:HA	1.77	0.41
11:U:250:GLN:O	11:U:253:MET:HG3	2.21	0.41
12:X:498:GLN:HG2	12:X:632:PHE:HE1	1.84	0.41
12:X:710:LEU:HD13	12:X:752:LEU:HG	2.02	0.41
12:Z:579:ARG:NH2	12:Z:733:SER:OG	2.54	0.41
2:B:236:ASP:N	2:B:236:ASP:OD1	2.53	0.41
8:H:249:PHE:CZ	8:H:256:ARG:HG3	2.55	0.41
4:M:123:LEU:HB2	4:M:126:ASN:ND2	2.35	0.41
5:N:174:HIS:HA	5:N:216:TRP:HZ2	1.86	0.41
6:O:252:ARG:NH1	6:O:253:VAL:O	2.54	0.41
6:O:803:LEU:HA	6:O:806:ILE:HG12	2.01	0.41
8:Q:173:CYS:HA	8:Q:176:GLN:CD	2.41	0.41
10:S:1711:GLN:HE22	10:S:1946:PRO:HB3	1.84	0.41
12:X:317:LEU:HD22	12:X:409:VAL:HG11	2.01	0.41
12:X:696:ASP:OD1	12:Y:589:ASN:ND2	2.53	0.41
12:Y:49:VAL:HG11	12:Y:66:LEU:HD13	2.02	0.41
12:Y:306:VAL:HB	12:Y:307:GLN:H	1.68	0.41
12:Y:359:LEU:HD23	12:Y:359:LEU:HA	1.92	0.41
12:Z:358:LEU:HD11	12:Z:365:LYS:HE2	2.03	0.41
1:A:470:THR:O	1:A:473:MET:HG3	2.21	0.41
6:F:253:VAL:HG12	6:F:264:ASN:H	1.85	0.41
6:F:350:THR:O	6:F:353:HIS:NE2	2.53	0.41
6:F:631:TYR:HE2	6:F:660:SER:HG	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:207:MET:H	1:J:207:MET:HG3	1.62	0.41
4:M:242:LYS:HB2	4:M:253:THR:OG1	2.20	0.41
5:N:216:TRP:HB2	5:N:224:ILE:HG13	2.03	0.41
8:Q:264:TRP:CZ2	8:Q:268:ILE:HD11	2.56	0.41
10:S:898:ARG:HD2	10:S:898:ARG:HA	1.81	0.41
10:S:1781:PHE:O	10:S:1952:ASN:ND2	2.50	0.41
10:T:609:GLU:OE1	10:T:612:ARG:NH1	2.54	0.41
10:T:1023:LEU:HD12	10:T:1023:LEU:HA	1.93	0.41
12:W:94:LYS:NZ	12:W:125:PHE:O	2.41	0.41
12:W:103:LEU:HD23	12:W:103:LEU:HA	1.87	0.41
12:W:672:SER:O	12:W:674:LYS:NZ	2.43	0.41
4:D:44:ARG:HH22	4:D:403:THR:HG21	1.86	0.41
4:D:373:GLN:HG3	4:D:385:GLU:HB3	2.02	0.41
4:D:797:LEU:HG	4:D:802:LEU:HD12	2.03	0.41
6:F:574:LEU:HB3	6:F:582:GLY:HA3	2.02	0.41
6:F:592:LYS:NZ	6:F:597:GLN:O	2.38	0.41
4:M:293:LEU:O	4:M:295:HIS:N	2.53	0.41
5:N:192:PHE:CD1	5:N:202:LEU:HB3	2.56	0.41
7:P:196:GLU:HB3	7:P:201:TRP:CD2	2.55	0.41
8:Q:842:ARG:HG2	8:Q:883:PHE:HE1	1.86	0.41
10:S:480:ALA:O	10:S:482:GLN:N	2.54	0.41
10:S:1059:LEU:HD23	10:S:1059:LEU:HA	1.77	0.41
10:T:1578:ILE:HD11	10:T:1629:ILE:HD11	2.02	0.41
12:X:618:LYS:HE3	12:X:618:LYS:HB3	1.83	0.41
1:A:63:ILE:HD12	1:A:63:ILE:HA	1.90	0.41
1:A:535:PHE:HA	1:A:538:LYS:HD3	2.02	0.41
4:D:684:TYR:HB3	4:D:866:LEU:HD22	2.03	0.41
4:D:790:LEU:HD23	4:D:790:LEU:HA	1.95	0.41
4:D:1339:LEU:HD23	4:D:1339:LEU:HA	1.97	0.41
5:E:133:CYS:HB3	5:E:181:LEU:HD13	2.03	0.41
6:F:280:MET:HG2	6:F:305:HIS:HD2	1.86	0.41
8:H:571:LEU:HA	8:H:574:GLU:HG2	2.02	0.41
9:I:392:MET:O	9:I:396:GLN:NE2	2.53	0.41
9:I:415:ILE:HD11	9:I:441:ILE:HG12	2.03	0.41
1:J:548:GLN:NE2	1:J:550:GLN:HB2	2.35	0.41
2:K:274:LEU:HD13	2:K:334:GLN:NE2	2.36	0.41
4:M:55:GLU:HA	4:M:815:GLY:H	1.84	0.41
4:M:137:ILE:HA	4:M:157:THR:HG22	2.02	0.41
5:N:24:PHE:HB3	5:N:25:ASN:H	1.75	0.41
7:P:132:LEU:HD12	7:P:142:VAL:HG22	2.03	0.41
8:Q:902:LEU:HD13	8:Q:907:LEU:HD23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:T:318:GLN:O	10:T:320:TRP:N	2.54	0.41
10:T:403:LYS:HD3	10:T:403:LYS:HA	1.91	0.41
11:U:491:VAL:HG11	11:U:536:TYR:CZ	2.56	0.41
12:W:100:ILE:HG21	12:W:117:TRP:CD1	2.56	0.41
12:Y:523:PHE:HB2	12:Y:524:THR:H	1.61	0.41
12:Y:526:ARG:H	12:Y:526:ARG:HG2	1.72	0.41
1:A:542:PHE:HA	1:A:545:MET:HB2	2.02	0.41
2:B:162:ARG:HA	2:B:162:ARG:HD2	1.94	0.41
3:C:124:LYS:O	3:C:126:MET:N	2.54	0.41
4:D:413:TRP:HZ3	4:D:423:LYS:HB2	1.85	0.41
4:D:1070:ARG:NE	4:D:1147:GLY:O	2.48	0.41
4:D:1352:LEU:HD23	4:D:1352:LEU:HA	1.94	0.41
7:G:261:ASN:HB2	12:Y:58:ARG:HH11	1.86	0.41
9:I:301:ASP:HB3	9:I:304:ARG:HG2	2.01	0.41
9:I:495:SER:O	9:I:496:ARG:NE	2.54	0.41
9:I:852:ASP:OD1	9:I:852:ASP:N	2.54	0.41
9:I:930:PHE:HB3	9:I:965:SER:HA	2.03	0.41
1:J:4:LEU:HB3	1:J:5:ASP:H	1.68	0.41
1:J:71:LEU:HG	1:J:112:CYS:HB2	2.03	0.41
2:K:70:CYS:SG	2:K:71:ASP:N	2.94	0.41
2:K:242:TRP:HZ2	2:K:251:MET:HB2	1.86	0.41
4:M:619:TYR:HB2	4:M:657:ILE:HD13	2.03	0.41
4:M:1328:TYR:HD2	4:M:1336:LEU:HG	1.85	0.41
5:N:261:LYS:HB2	5:N:306:ARG:HA	2.01	0.41
6:O:670:LEU:HD12	6:O:673:TRP:HB2	2.03	0.41
6:O:672:GLU:HG2	6:O:714:LEU:HB2	2.03	0.41
7:P:115:ASP:HB3	7:P:161:SER:HB3	2.02	0.41
7:P:166:SER:HB2	7:P:227:THR:HA	2.03	0.41
8:Q:427:LYS:HA	8:Q:427:LYS:HD2	1.84	0.41
8:Q:501:GLU:OE2	8:Q:504:HIS:ND1	2.51	0.41
10:S:23:THR:HG23	10:S:35:ALA:HB1	2.03	0.41
10:S:183:THR:HB	10:S:248:LEU:HD11	2.03	0.41
10:S:807:LEU:HD23	10:S:876:LEU:HB2	2.03	0.41
10:S:1298:ASP:OD1	10:S:1298:ASP:N	2.41	0.41
10:S:1572:LEU:HD22	10:S:1577:VAL:HG21	2.02	0.41
10:S:1996:GLN:HG2	10:S:1997:ALA:N	2.35	0.41
10:T:13:LEU:HG	10:T:107:ALA:HB1	2.03	0.41
10:T:696:GLU:HB2	10:T:750:ARG:HE	1.85	0.41
10:T:930:ILE:HG21	10:T:999:LEU:HD11	2.03	0.41
10:T:1799:GLN:HB3	10:T:1800:VAL:H	1.56	0.41
11:U:287:VAL:HB	11:U:292:ASN:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:V:130:GLU:O	12:V:134:LEU:HG	2.21	0.41
12:V:313:GLU:HB2	12:V:314:PRO:HD3	2.03	0.41
12:W:71:GLU:HG3	12:W:103:LEU:HD21	2.02	0.41
12:Y:331:LYS:HD2	12:Y:340:GLN:HG2	2.03	0.41
12:Y:720:ILE:HD13	12:Y:720:ILE:HA	1.90	0.41
12:Z:267:LYS:HA	12:Z:270:VAL:HB	2.03	0.41
1:A:94:ARG:HA	1:A:97:GLN:NE2	2.35	0.41
3:C:11:HIS:CD2	3:C:15:ILE:HD13	2.55	0.41
4:D:54:ARG:HH12	4:D:816:ILE:HB	1.86	0.41
4:D:159:GLN:NE2	4:D:204:ILE:O	2.54	0.41
4:D:1178:GLU:HB3	4:D:1179:LEU:H	1.60	0.41
8:H:199:SER:HA	8:H:202:TRP:HD1	1.85	0.41
1:J:349:ALA:HB1	1:J:357:GLN:NE2	2.34	0.41
3:L:13:ASP:HB2	3:L:32:SER:HB2	2.03	0.41
3:L:124:LYS:O	3:L:126:MET:N	2.54	0.41
3:L:197:VAL:HB	3:L:215:LEU:HB2	2.03	0.41
4:M:510:GLN:HA	4:M:513:VAL:HG12	2.03	0.41
4:M:723:ALA:HA	4:M:775:ARG:HG3	2.03	0.41
4:M:1004:PHE:CZ	4:M:1036:LEU:HB2	2.56	0.41
4:M:1369:GLY:O	4:M:1371:GLN:NE2	2.54	0.41
6:O:344:ARG:HA	6:O:344:ARG:HD3	1.89	0.41
8:Q:695:LYS:HG3	8:Q:698:ALA:HB3	2.03	0.41
9:R:269:LEU:HD21	9:R:337:GLN:HB2	2.03	0.41
10:S:816:CYS:O	10:S:819:LEU:HG	2.21	0.41
10:T:988:LEU:HD23	10:T:1000:ALA:HA	2.02	0.41
11:U:639:VAL:O	11:U:642:LEU:HG	2.21	0.41
12:V:120:ARG:HE	12:V:124:LEU:HG	1.86	0.41
12:W:9:GLN:HG3	12:W:39:ALA:HB1	2.03	0.41
12:W:321:LEU:O	12:W:324:GLN:HG3	2.21	0.41
12:Y:307:GLN:HB3	12:Y:310:ALA:HB3	2.03	0.41
12:Z:320:LEU:HD21	12:Z:369:ILE:HG23	2.03	0.41
12:Z:714:LYS:NZ	12:Z:758:ASP:OD2	2.43	0.41
1:A:480:ARG:HH11	2:B:86:LYS:HZ3	1.69	0.40
2:B:20:ARG:HH21	2:B:30:PRO:HB3	1.86	0.40
3:C:19:SER:HB2	3:C:63:VAL:HG13	2.02	0.40
4:D:1125:LEU:O	4:D:1129:ASN:ND2	2.54	0.40
6:F:673:TRP:HA	6:F:676:PHE:CD1	2.55	0.40
8:H:283:TYR:HE1	10:T:1996:GLN:HB3	1.86	0.40
9:I:690:VAL:HG21	9:I:762:VAL:HG13	2.03	0.40
9:I:872:TYR:HD1	9:I:872:TYR:HA	1.76	0.40
2:K:329:ASP:OD1	2:K:329:ASP:N	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:M:1046:LEU:HD11	4:M:1077:HIS:CD2	2.56	0.40
6:O:253:VAL:HA	6:O:264:ASN:HB3	2.03	0.40
8:Q:254:LEU:HA	8:Q:257:GLN:NE2	2.35	0.40
8:Q:501:GLU:H	8:Q:501:GLU:HG2	1.61	0.40
9:R:654:ILE:HG22	9:R:671:ALA:HB1	2.03	0.40
10:S:579:ARG:HH21	10:S:640:LYS:HD3	1.86	0.40
10:S:1000:ALA:O	10:S:1003:LEU:HD23	2.20	0.40
10:T:1175:LYS:HA	10:T:1178:ARG:HD3	2.02	0.40
12:W:30:PHE:CZ	12:W:61:LYS:HB3	2.56	0.40
12:Y:170:LYS:HD3	12:Y:170:LYS:HA	1.88	0.40
1:A:106:ARG:HH22	1:A:141:GLU:HG2	1.85	0.40
3:C:303:ARG:HE	3:C:305:TRP:HZ2	1.68	0.40
4:D:122:ASN:HB2	4:D:707:SER:HB3	2.03	0.40
4:D:138:LEU:HD22	4:D:212:PRO:HG2	2.03	0.40
6:F:538:HIS:O	6:F:542:MET:HB2	2.21	0.40
7:G:257:LEU:HB3	7:G:258:HIS:H	1.65	0.40
8:H:614:GLU:HA	8:H:617:LYS:HG2	2.03	0.40
9:I:995:LYS:HD2	9:I:995:LYS:HA	1.91	0.40
1:J:218:ALA:HB2	1:J:228:CYS:HB2	2.03	0.40
4:M:519:SER:HB2	4:M:522:GLU:HG3	2.03	0.40
4:M:1306:HIS:CE1	4:M:1310:ILE:HD13	2.57	0.40
4:M:1430:LYS:HA	4:M:1430:LYS:HD3	1.91	0.40
5:N:190:ILE:HB	5:N:204:LEU:HB3	2.03	0.40
6:O:263:HIS:ND1	6:O:305:HIS:O	2.54	0.40
8:Q:375:TYR:HE2	8:Q:393:PRO:HD3	1.86	0.40
8:Q:611:ARG:HA	8:Q:611:ARG:HD2	1.87	0.40
10:S:857:GLU:OE2	10:S:923:ASN:ND2	2.54	0.40
10:S:1684:LEU:HB3	10:S:1769:GLN:HE21	1.86	0.40
10:T:985:LEU:HA	10:T:988:LEU:HD12	2.03	0.40
11:U:201:LEU:HB3	12:Y:553:VAL:HG22	2.03	0.40
11:U:786:LEU:HB3	11:U:819:MET:HB3	2.02	0.40
12:X:345:GLU:HG3	12:X:429:ILE:HG21	2.03	0.40
4:D:357:LEU:HD13	4:D:384:LEU:HD22	2.04	0.40
4:D:423:LYS:HG2	4:D:437:PRO:HA	2.02	0.40
4:D:493:SER:HB3	4:D:496:GLU:HB2	2.03	0.40
4:D:581:TYR:HA	4:D:610:ILE:HG23	2.02	0.40
4:D:958:ARG:NH2	4:D:962:TYR:OH	2.54	0.40
6:F:296:SER:O	6:F:298:THR:N	2.55	0.40
8:H:577:ILE:O	8:H:580:ILE:HG22	2.21	0.40
8:H:635:ARG:HH21	8:H:686:ILE:HG21	1.86	0.40
9:I:157:GLY:H	9:I:207:LYS:HA	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:187:ASP:N	3:L:187:ASP:OD1	2.53	0.40
4:M:241:ILE:HD13	4:M:241:ILE:HA	1.92	0.40
4:M:1344:ASP:OD1	6:O:296:SER:OG	2.26	0.40
5:N:103:LYS:HD3	5:N:103:LYS:HA	1.92	0.40
6:O:627:ASP:HB3	6:O:629:LEU:HD13	2.04	0.40
9:R:280:THR:OG1	9:R:281:ASP:N	2.54	0.40
9:R:579:THR:H	9:R:583:LEU:HD12	1.86	0.40
10:S:311:HIS:CD2	10:S:315:GLN:HE22	2.39	0.40
10:S:982:ILE:HD13	10:S:1059:LEU:HD12	2.03	0.40
10:S:1072:ASP:OD1	10:S:1072:ASP:N	2.41	0.40
10:S:1281:LEU:O	10:S:1285:ARG:HG2	2.21	0.40
10:T:39:LEU:HD21	10:T:149:LEU:HD21	2.03	0.40
10:T:1885:ARG:HD3	10:T:1885:ARG:HA	1.93	0.40
11:U:457:ASN:OD1	11:U:457:ASN:N	2.53	0.40
12:V:490:ALA:HB1	12:V:628:LEU:HD13	2.03	0.40
12:Y:623:GLU:HA	12:Y:624:PRO:HD3	1.98	0.40
12:Z:563:ALA:HA	12:Z:567:HIS:HE1	1.86	0.40
1:A:476:LEU:HD13	1:A:500:ILE:HG22	2.03	0.40
2:B:267:HIS:HB3	2:B:273:HIS:HB2	2.04	0.40
5:E:308:LEU:O	5:E:310:LEU:N	2.54	0.40
8:H:395:ARG:H	8:H:395:ARG:HG2	1.72	0.40
9:I:104:HIS:HB2	9:I:108:TRP:HB2	2.02	0.40
1:J:103:ARG:NH2	1:J:145:ASN:OD1	2.54	0.40
1:J:168:VAL:O	1:J:172:VAL:HB	2.20	0.40
2:K:11:SER:HA	2:K:365:GLU:HB3	2.02	0.40
4:M:104:HIS:NE2	4:M:115:VAL:HB	2.37	0.40
4:M:552:VAL:HB	4:M:561:CYS:HB2	2.04	0.40
8:Q:224:SER:O	8:Q:228:GLU:HG2	2.20	0.40
8:Q:721:GLN:HE21	8:Q:723:MET:HB3	1.85	0.40
9:R:1039:LEU:HA	9:R:1042:ILE:HD12	2.03	0.40
9:R:1058:LEU:HD13	9:R:1085:PHE:HE1	1.87	0.40
10:S:366:PHE:HE2	10:S:435:ASP:HB3	1.86	0.40
10:S:1949:LEU:HB2	10:S:1950:ARG:HH21	1.86	0.40
12:V:233:LEU:HD11	12:V:266:VAL:HG21	2.02	0.40
12:Y:566:LYS:HD3	12:Y:566:LYS:HA	1.87	0.40
12:Z:236:GLN:O	12:Z:240:VAL:HG23	2.22	0.40
2:B:13:LYS:HE2	2:B:13:LYS:HB2	1.95	0.40
5:E:96:ALA:HA	5:E:106:ILE:HA	2.03	0.40
6:F:325:LEU:HB3	6:F:673:TRP:CD1	2.56	0.40
6:F:686:VAL:HG22	7:G:162:VAL:HB	2.04	0.40
9:I:148:ASP:HB2	9:I:202:PHE:HD1	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:184:ARG:HD3	1:J:184:ARG:HA	1.92	0.40
2:K:15:SER:OG	2:K:16:ARG:N	2.50	0.40
3:L:305:TRP:HB3	3:L:313:TRP:HB3	2.03	0.40
4:M:1119:LYS:HA	4:M:1119:LYS:HD2	1.87	0.40
6:O:389:GLN:NE2	6:O:394:GLU:HG3	2.34	0.40
8:Q:210:THR:HG22	8:Q:507:GLN:HG2	2.03	0.40
8:Q:308:ARG:O	8:Q:310:LEU:N	2.54	0.40
9:R:200:CYS:HB3	9:R:213:LEU:HD11	2.04	0.40
9:R:398:VAL:HG12	9:R:408:TYR:HB2	2.04	0.40
10:S:1078:MET:SD	10:S:1082:ARG:NH2	2.94	0.40
12:V:21:SER:HB3	12:V:24:GLU:HB2	2.04	0.40
12:X:734:LEU:HD23	12:X:735:PRO:HD2	2.03	0.40
12:Y:189:LEU:HD23	12:Y:189:LEU:HA	1.91	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	651/653 (100%)	584 (90%)	60 (9%)	7 (1%)	14 52
1	J	651/653 (100%)	590 (91%)	53 (8%)	8 (1%)	13 50
2	B	373/375 (100%)	300 (80%)	64 (17%)	9 (2%)	6 33
2	K	373/375 (100%)	306 (82%)	53 (14%)	14 (4%)	3 24
3	C	331/360 (92%)	286 (86%)	40 (12%)	5 (2%)	10 46
3	L	323/360 (90%)	268 (83%)	49 (15%)	6 (2%)	8 38
4	D	1392/1414 (98%)	1227 (88%)	144 (10%)	21 (2%)	10 46
4	M	1392/1414 (98%)	1254 (90%)	125 (9%)	13 (1%)	17 57
5	E	324/326 (99%)	275 (85%)	46 (14%)	3 (1%)	17 57
5	N	324/326 (99%)	273 (84%)	45 (14%)	6 (2%)	8 38

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
6	F	636/924 (69%)	530 (83%)	91 (14%)	15 (2%)	6 33
6	O	635/924 (69%)	560 (88%)	68 (11%)	7 (1%)	14 52
7	G	292/320 (91%)	251 (86%)	35 (12%)	6 (2%)	7 36
7	P	292/320 (91%)	235 (80%)	50 (17%)	7 (2%)	6 33
8	H	796/916 (87%)	736 (92%)	53 (7%)	7 (1%)	17 57
8	Q	788/916 (86%)	704 (89%)	75 (10%)	9 (1%)	14 52
9	I	1074/1140 (94%)	926 (86%)	131 (12%)	17 (2%)	9 44
9	R	1080/1140 (95%)	957 (89%)	113 (10%)	10 (1%)	17 57
10	S	2009/2011 (100%)	1790 (89%)	193 (10%)	26 (1%)	12 48
10	T	2009/2011 (100%)	1815 (90%)	171 (8%)	23 (1%)	14 52
11	U	652/820 (80%)	593 (91%)	51 (8%)	8 (1%)	13 50
12	V	770/2931 (26%)	702 (91%)	59 (8%)	9 (1%)	13 50
12	W	754/2931 (26%)	690 (92%)	57 (8%)	7 (1%)	17 57
12	X	765/2931 (26%)	698 (91%)	62 (8%)	5 (1%)	22 63
12	Y	759/2931 (26%)	699 (92%)	49 (6%)	11 (1%)	11 46
12	Z	756/2931 (26%)	688 (91%)	58 (8%)	10 (1%)	12 48
13	a	207/2037 (10%)	202 (98%)	5 (2%)	0	100 100
13	e	153/2037 (8%)	149 (97%)	3 (2%)	1 (1%)	22 63
14	b	726/728 (100%)	653 (90%)	65 (9%)	8 (1%)	14 52
14	d	681/728 (94%)	609 (89%)	65 (10%)	7 (1%)	15 55
15	c	196/547 (36%)	192 (98%)	4 (2%)	0	100 100
15	f	136/547 (25%)	136 (100%)	0	0	100 100
All	All	22300/38977 (57%)	19878 (89%)	2137 (10%)	285 (1%)	16 48

All (285) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	D	178	ILE
4	D	565	LYS
9	R	837	LEU
11	U	203	PRO
12	W	271	SER
12	Z	197	ARG
14	b	515	PRO

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Mol	Chain	Res	Type
2	B	61	GLU
2	B	302	ARG
3	C	124	LYS
3	C	125	HIS
4	D	109	ALA
4	D	187	PHE
4	D	1363	LYS
6	F	297	LEU
6	F	508	LEU
6	F	684	PRO
9	I	159	PRO
9	I	385	PRO
9	I	400	PRO
9	I	473	PRO
1	J	588	VAL
2	K	235	GLN
2	K	299	LEU
2	K	355	GLY
3	L	124	LYS
3	L	125	HIS
4	M	68	PRO
4	M	109	ALA
4	M	148	GLN
4	M	294	ASP
4	M	874	PRO
4	M	1363	LYS
5	N	229	GLY
7	P	107	ASN
9	R	114	ASN
9	R	400	PRO
10	S	609	GLU
10	T	401	PRO
10	T	903	GLY
10	T	1047	PRO
10	T	1084	SER
10	T	1355	PRO
12	W	699	PRO
12	X	726	ALA
12	Y	142	GLN
12	Y	218	GLN
12	Z	735	PRO
14	b	640	VAL

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Mol	Chain	Res	Type
1	A	590	PHE
2	B	56	THR
2	B	60	GLU
2	B	269	SER
2	B	292	SER
3	C	258	SER
3	C	279	SER
4	D	261	SER
4	D	319	LEU
4	D	557	THR
4	D	636	GLN
5	E	275	LYS
5	E	277	LYS
6	F	448	GLY
6	F	523	ILE
6	F	526	CYS
7	G	248	ALA
8	H	136	GLU
9	I	751	THR
9	I	832	SER
1	J	40	GLN
1	J	156	PRO
2	K	248	LYS
3	L	13	ASP
3	L	288	ILE
4	M	953	GLU
5	N	239	ARG
8	Q	818	GLY
9	R	290	ASP
9	R	1049	ASP
10	S	156	LYS
10	S	382	ASP
10	S	481	HIS
10	S	904	ASN
10	S	1542	GLN
10	T	1024	GLY
10	T	1196	PRO
10	T	1448	TRP
10	T	1544	PRO
10	T	1988	VAL
10	T	1992	HIS
11	U	542	PRO

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Mol	Chain	Res	Type
11	U	621	GLY
12	V	74	GLY
12	V	661	GLY
12	W	506	ALA
12	X	568	GLY
12	Y	523	PHE
12	Y	626	ASP
12	Z	74	GLY
12	Z	473	SER
12	Z	755	ALA
14	b	491	PRO
14	b	525	ARG
14	d	115	SER
14	d	116	LYS
14	d	430	GLU
1	A	10	GLU
2	B	226	GLN
4	D	556	ASN
4	D	940	GLU
4	D	1371	GLN
6	F	284	ASP
6	F	285	TYR
6	F	595	SER
6	F	837	LYS
7	G	212	ASP
8	H	362	GLN
9	I	114	ASN
9	I	255	GLY
9	I	465	ALA
1	J	392	PHE
1	J	395	ASN
2	K	15	SER
2	K	203	ASP
2	K	257	HIS
2	K	290	ALA
2	K	316	ASN
3	L	111	ASP
5	N	276	MET
6	O	369	VAL
6	O	475	SER
6	O	738	ASP
7	P	44	ASN

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Mol	Chain	Res	Type
7	P	55	GLY
7	P	61	TRP
8	Q	240	SER
8	Q	309	PRO
8	Q	327	ASP
8	Q	501	GLU
8	Q	605	ASP
8	Q	884	SER
9	R	174	GLY
9	R	968	GLN
10	S	300	MET
10	S	317	THR
10	S	433	ARG
10	S	471	SER
10	S	478	GLY
10	S	835	GLY
10	T	53	LEU
10	T	382	ASP
10	T	1043	VAL
10	T	1243	GLY
10	T	1431	ALA
10	T	1696	ASN
11	U	176	SER
11	U	365	SER
11	U	503	LEU
12	V	59	ASP
12	V	128	SER
12	V	404	ASP
12	Y	128	SER
12	Y	502	ASN
12	Y	699	PRO
12	Z	59	ASP
12	Z	590	SER
14	d	76	GLU
14	d	420	ASP
1	A	156	PRO
1	A	275	ASN
1	A	549	GLU
2	B	138	SER
2	B	329	ASP
4	D	294	ASP
4	D	1144	PRO

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Mol	Chain	Res	Type
4	D	1333	ALA
6	F	287	PHE
6	F	511	GLY
8	H	188	THR
8	H	727	LEU
9	I	82	LEU
9	I	260	ALA
9	I	328	ILE
9	I	391	GLY
9	I	412	GLN
9	I	570	PRO
9	I	576	PHE
1	J	414	LEU
1	J	549	GLU
2	K	312	ILE
3	L	308	ASN
4	M	134	ASN
4	M	197	ASP
4	M	435	TRP
4	M	1333	ALA
5	N	316	TYR
6	O	339	PRO
6	O	630	ASP
7	P	113	PRO
7	P	114	HIS
7	P	136	GLY
8	Q	728	PRO
8	Q	816	ASP
10	S	152	ALA
10	S	206	ARG
10	S	1413	PHE
10	S	1544	PRO
10	S	1783	PRO
10	T	1294	ALA
10	T	1453	ALA
10	T	1939	ASN
11	U	681	SER
12	V	21	SER
12	V	466	GLN
12	W	59	ASP
12	Y	276	SER
12	Z	366	GLN

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Mol	Chain	Res	Type
12	Z	513	CYS
14	b	108	HIS
14	d	438	ILE
14	d	504	ILE
1	A	526	ALA
3	C	59	SER
4	D	171	ARG
4	D	1024	PRO
5	E	72	GLY
6	F	619	LEU
7	G	215	ARG
7	G	262	ASP
8	H	147	TYR
8	H	459	SER
8	H	605	ASP
1	J	568	PRO
2	K	31	ASP
2	K	288	ALA
5	N	90	LEU
5	N	243	PRO
6	O	451	SER
10	S	58	PRO
10	S	832	PRO
10	S	1609	PRO
12	V	699	PRO
12	W	272	GLY
12	X	275	ALA
12	Y	306	VAL
14	b	210	LEU
13	e	695	ASN
4	D	74	ILE
6	F	447	GLY
6	F	473	VAL
2	K	65	ASP
2	K	190	GLY
6	O	461	GLY
9	R	666	PRO
10	S	1024	GLY
10	T	1155	GLY
10	T	1861	GLY
12	W	128	SER
12	Y	219	GLY

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Mol	Chain	Res	Type
12	Y	272	GLY
12	Z	622	PRO
1	A	287	GLY
4	D	921	GLY
4	M	974	LEU
10	S	727	PRO
11	U	774	ARG
12	X	335	GLY
12	X	637	ILE
14	b	514	GLY
4	D	974	LEU
9	I	98	PRO
4	M	921	GLY
9	R	61	VAL
10	S	1047	PRO
10	S	1591	PRO
12	V	429	ILE
14	b	75	VAL
7	G	55	GLY
7	G	224	GLY
9	R	570	PRO
10	S	682	VAL
10	S	882	GLY
10	T	1793	GLY
12	W	74	GLY
4	D	70	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	580/580 (100%)	560 (97%)	20 (3%)	37	60
1	J	580/580 (100%)	557 (96%)	23 (4%)	31	55
2	B	329/329 (100%)	321 (98%)	8 (2%)	49	69
2	K	329/329 (100%)	317 (96%)	12 (4%)	35	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	C	288/309 (93%)	282 (98%)	6 (2%)	53	72
3	L	282/309 (91%)	275 (98%)	7 (2%)	47	68
4	D	1230/1244 (99%)	1206 (98%)	24 (2%)	55	74
4	M	1230/1244 (99%)	1198 (97%)	32 (3%)	46	66
5	E	275/275 (100%)	271 (98%)	4 (2%)	65	80
5	N	275/275 (100%)	264 (96%)	11 (4%)	31	55
6	F	564/816 (69%)	538 (95%)	26 (5%)	27	52
6	O	563/816 (69%)	542 (96%)	21 (4%)	34	58
7	G	250/272 (92%)	241 (96%)	9 (4%)	35	59
7	P	250/272 (92%)	242 (97%)	8 (3%)	39	61
8	H	712/816 (87%)	692 (97%)	20 (3%)	43	65
8	Q	705/816 (86%)	682 (97%)	23 (3%)	38	61
9	I	944/993 (95%)	931 (99%)	13 (1%)	67	80
9	R	950/993 (96%)	926 (98%)	24 (2%)	47	68
10	S	1779/1779 (100%)	1741 (98%)	38 (2%)	53	72
10	T	1779/1779 (100%)	1730 (97%)	49 (3%)	43	65
11	U	577/721 (80%)	566 (98%)	11 (2%)	57	75
12	V	692/2545 (27%)	682 (99%)	10 (1%)	67	80
12	W	677/2545 (27%)	669 (99%)	8 (1%)	71	83
12	X	687/2545 (27%)	681 (99%)	6 (1%)	78	87
12	Y	682/2545 (27%)	665 (98%)	17 (2%)	47	68
12	Z	679/2545 (27%)	667 (98%)	12 (2%)	59	77
13	a	195/1634 (12%)	195 (100%)	0	100	100
13	e	143/1634 (9%)	138 (96%)	5 (4%)	36	59
14	b	660/660 (100%)	646 (98%)	14 (2%)	53	72
14	d	617/660 (94%)	611 (99%)	6 (1%)	76	86
15	c	179/429 (42%)	174 (97%)	5 (3%)	43	65
15	f	126/429 (29%)	125 (99%)	1 (1%)	81	89
All	All	19808/33718 (59%)	19335 (98%)	473 (2%)	51	69

All (473) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	58	ARG
1	A	74	GLU
1	A	83	GLN
1	A	97	GLN
1	A	100	GLN
1	A	105	TYR
1	A	137	LEU
1	A	166	GLU
1	A	194	PHE
1	A	207	MET
1	A	231	LEU
1	A	327	GLN
1	A	397	ARG
1	A	404	TYR
1	A	424	TYR
1	A	532	ARG
1	A	541	GLU
1	A	548	GLN
1	A	580	LEU
1	A	596	TYR
2	B	79	MET
2	B	99	THR
2	B	165	ASP
2	B	222	ARG
2	B	245	ARG
2	B	274	LEU
2	B	286	TRP
2	B	328	THR
3	C	113	ARG
3	C	140	ARG
3	C	167	CYS
3	C	207	ARG
3	C	215	LEU
3	C	270	THR
4	D	106	THR
4	D	188	THR
4	D	263	MET
4	D	401	THR
4	D	510	GLN
4	D	579	HIS
4	D	634	HIS
4	D	698	ARG
4	D	726	PHE

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Mol	Chain	Res	Type
4	D	785	VAL
4	D	832	PHE
4	D	876	PHE
4	D	1037	VAL
4	D	1054	TYR
4	D	1101	PHE
4	D	1150	TYR
4	D	1214	MET
4	D	1328	TYR
4	D	1335	GLU
4	D	1338	ARG
4	D	1351	GLU
4	D	1365	HIS
4	D	1382	TRP
4	D	1414	LYS
5	E	74	ARG
5	E	84	THR
5	E	227	VAL
5	E	306	ARG
6	F	272	LEU
6	F	317	ASP
6	F	334	VAL
6	F	365	GLU
6	F	372	VAL
6	F	380	TRP
6	F	471	GLN
6	F	472	MET
6	F	490	ASN
6	F	502	ARG
6	F	503	LEU
6	F	516	ARG
6	F	556	TYR
6	F	593	PHE
6	F	633	LEU
6	F	638	TRP
6	F	657	LEU
6	F	661	TYR
6	F	676	PHE
6	F	723	GLN
6	F	750	HIS
6	F	774	ARG
6	F	827	LYS

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Mol	Chain	Res	Type
6	F	858	LYS
6	F	862	ASN
6	F	865	ARG
7	G	35	ARG
7	G	54	ARG
7	G	191	VAL
7	G	194	TRP
7	G	200	GLN
7	G	228	SER
7	G	229	THR
7	G	265	TRP
7	G	302	VAL
8	H	197	THR
8	H	202	TRP
8	H	232	PHE
8	H	256	ARG
8	H	260	LEU
8	H	308	ARG
8	H	328	ASP
8	H	479	THR
8	H	488	GLN
8	H	490	THR
8	H	596	TYR
8	H	637	LYS
8	H	668	TRP
8	H	676	ARG
8	H	687	MET
8	H	756	LYS
8	H	770	GLN
8	H	786	TYR
8	H	788	MET
8	H	837	MET
9	I	165	VAL
9	I	261	VAL
9	I	268	VAL
9	I	275	CYS
9	I	411	THR
9	I	660	LYS
9	I	760	ARG
9	I	871	ARG
9	I	872	TYR
9	I	946	ARG

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Mol	Chain	Res	Type
9	I	1013	PHE
9	I	1132	TYR
9	I	1137	LYS
1	J	20	ASN
1	J	54	MET
1	J	79	PHE
1	J	120	SER
1	J	142	LEU
1	J	169	ARG
1	J	201	TYR
1	J	207	MET
1	J	227	MET
1	J	283	ARG
1	J	290	GLU
1	J	301	THR
1	J	305	PHE
1	J	331	ASP
1	J	332	MET
1	J	362	PHE
1	J	390	LEU
1	J	490	ARG
1	J	517	LEU
1	J	548	GLN
1	J	565	ARG
1	J	584	GLU
1	J	605	ARG
2	K	16	ARG
2	K	67	LYS
2	K	118	GLN
2	K	153	PHE
2	K	198	ARG
2	K	222	ARG
2	K	239	LEU
2	K	244	VAL
2	K	275	PHE
2	K	291	ASP
2	K	346	LEU
2	K	373	LEU
3	L	27	MET
3	L	114	THR
3	L	181	MET
3	L	182	ILE

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Mol	Chain	Res	Type
3	L	284	VAL
3	L	308	ASN
3	L	330	TYR
4	M	173	TYR
4	M	342	HIS
4	M	346	LEU
4	M	381	ARG
4	M	402	PHE
4	M	430	ASN
4	M	498	LYS
4	M	506	GLU
4	M	529	GLU
4	M	531	TRP
4	M	559	MET
4	M	628	MET
4	M	671	PRO
4	M	771	TYR
4	M	812	TYR
4	M	876	PHE
4	M	884	ARG
4	M	912	MET
4	M	939	ARG
4	M	1002	ARG
4	M	1010	MET
4	M	1034	ARG
4	M	1094	ARG
4	M	1198	HIS
4	M	1214	MET
4	M	1234	PHE
4	M	1251	ARG
4	M	1312	LYS
4	M	1320	LEU
4	M	1336	LEU
4	M	1355	GLU
4	M	1410	LYS
5	N	12	THR
5	N	105	ARG
5	N	182	MET
5	N	207	VAL
5	N	216	TRP
5	N	233	ILE
5	N	235	TRP

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Mol	Chain	Res	Type
5	N	267	PHE
5	N	306	ARG
5	N	311	CYS
5	N	325	GLU
6	O	249	ARG
6	O	304	VAL
6	O	314	LYS
6	O	322	LEU
6	O	349	VAL
6	O	380	TRP
6	O	399	GLU
6	O	439	GLU
6	O	464	ARG
6	O	471	GLN
6	O	479	ARG
6	O	504	ARG
6	O	618	LEU
6	O	620	ASP
6	O	633	LEU
6	O	635	TRP
6	O	714	LEU
6	O	749	SER
6	O	774	ARG
6	O	805	TYR
6	O	856	MET
7	P	27	ARG
7	P	35	ARG
7	P	81	ARG
7	P	181	ARG
7	P	182	PHE
7	P	265	TRP
7	P	292	VAL
7	P	296	TRP
8	Q	144	MET
8	Q	169	TYR
8	Q	176	GLN
8	Q	186	ARG
8	Q	205	GLN
8	Q	208	MET
8	Q	219	ARG
8	Q	242	LYS
8	Q	249	PHE

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Mol	Chain	Res	Type
8	Q	257	GLN
8	Q	275	ASP
8	Q	329	LEU
8	Q	354	GLN
8	Q	395	ARG
8	Q	425	ASN
8	Q	486	GLU
8	Q	637	LYS
8	Q	694	LYS
8	Q	809	TYR
8	Q	870	ASP
8	Q	882	VAL
8	Q	886	THR
8	Q	891	LEU
9	R	60	ARG
9	R	71	VAL
9	R	188	TYR
9	R	234	ARG
9	R	287	TRP
9	R	305	VAL
9	R	308	GLU
9	R	332	TYR
9	R	510	LYS
9	R	532	PHE
9	R	543	LEU
9	R	547	VAL
9	R	576	PHE
9	R	588	GLU
9	R	765	ARG
9	R	797	LEU
9	R	800	TYR
9	R	803	GLN
9	R	866	GLN
9	R	868	ARG
9	R	871	ARG
9	R	887	ARG
9	R	1040	GLU
9	R	1049	ASP
10	S	56	ASN
10	S	68	GLN
10	S	95	PHE
10	S	208	LEU

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Mol	Chain	Res	Type
10	S	277	TYR
10	S	315	GLN
10	S	349	PHE
10	S	365	VAL
10	S	679	ARG
10	S	729	PHE
10	S	749	TYR
10	S	751	ARG
10	S	756	TRP
10	S	839	LEU
10	S	893	VAL
10	S	906	ASN
10	S	911	PHE
10	S	978	TYR
10	S	999	LEU
10	S	1003	LEU
10	S	1107	MET
10	S	1202	PHE
10	S	1207	ILE
10	S	1255	GLU
10	S	1260	ILE
10	S	1267	ARG
10	S	1409	THR
10	S	1445	LYS
10	S	1590	ARG
10	S	1604	THR
10	S	1608	ILE
10	S	1696	ASN
10	S	1721	PHE
10	S	1774	PHE
10	S	1786	LYS
10	S	1858	MET
10	S	1954	VAL
10	S	1975	GLN
10	T	37	HIS
10	T	46	TYR
10	T	83	THR
10	T	126	THR
10	T	127	ARG
10	T	204	LYS
10	T	368	PHE
10	T	483	ARG

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Mol	Chain	Res	Type
10	T	513	MET
10	T	560	MET
10	T	595	ILE
10	T	616	CYS
10	T	642	GLU
10	T	705	CYS
10	T	732	TYR
10	T	820	MET
10	T	856	LYS
10	T	886	ARG
10	T	934	PHE
10	T	951	CYS
10	T	1034	LEU
10	T	1038	ARG
10	T	1043	VAL
10	T	1044	ARG
10	T	1053	THR
10	T	1204	ARG
10	T	1231	HIS
10	T	1426	TYR
10	T	1432	GLN
10	T	1433	ARG
10	T	1451	LEU
10	T	1496	LEU
10	T	1626	CYS
10	T	1643	GLN
10	T	1660	ARG
10	T	1691	LEU
10	T	1704	GLN
10	T	1728	ARG
10	T	1752	MET
10	T	1760	MET
10	T	1762	TYR
10	T	1779	CYS
10	T	1782	THR
10	T	1826	PHE
10	T	1858	MET
10	T	1901	TYR
10	T	1938	PHE
10	T	1962	LEU
10	T	1991	ARG
11	U	205	LEU

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Mol	Chain	Res	Type
11	U	348	ASP
11	U	414	TYR
11	U	498	PHE
11	U	547	GLU
11	U	620	LYS
11	U	628	LYS
11	U	630	TYR
11	U	663	ARG
11	U	700	PHE
11	U	717	ARG
12	V	166	TYR
12	V	192	GLU
12	V	205	CYS
12	V	259	PHE
12	V	261	GLN
12	V	318	CYS
12	V	453	LEU
12	V	463	ARG
12	V	604	TYR
12	V	727	TYR
12	W	23	ARG
12	W	34	ARG
12	W	83	TYR
12	W	169	LEU
12	W	232	LEU
12	W	526	ARG
12	W	566	LYS
12	W	719	MET
12	X	28	LYS
12	X	273	THR
12	X	387	LYS
12	X	435	GLN
12	X	734	LEU
12	X	764	MET
12	Y	13	GLU
12	Y	85	ARG
12	Y	155	GLN
12	Y	161	ARG
12	Y	165	VAL
12	Y	176	LEU
12	Y	241	PHE
12	Y	296	LEU

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Mol	Chain	Res	Type
12	Y	428	ARG
12	Y	431	ASN
12	Y	470	ARG
12	Y	471	LEU
12	Y	482	LEU
12	Y	523	PHE
12	Y	701	GLU
12	Y	719	MET
12	Y	756	MET
12	Z	11	TYR
12	Z	46	LYS
12	Z	70	PHE
12	Z	135	LYS
12	Z	168	ASN
12	Z	192	GLU
12	Z	348	PHE
12	Z	416	LEU
12	Z	444	TRP
12	Z	558	LEU
12	Z	713	CYS
12	Z	727	TYR
14	b	110	VAL
14	b	143	ARG
14	b	182	ASN
14	b	198	VAL
14	b	262	THR
14	b	380	LYS
14	b	445	ARG
14	b	484	THR
14	b	517	GLU
14	b	521	ARG
14	b	607	GLU
14	b	617	LYS
14	b	629	ARG
14	b	699	LYS
15	c	391	MET
15	c	404	MET
15	c	472	MET
15	c	481	GLU
15	c	512	TRP
14	d	467	MET
14	d	479	ARG

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Mol	Chain	Res	Type
14	d	526	ARG
14	d	564	LEU
14	d	587	LYS
14	d	599	ARG
13	e	717	PHE
13	e	778	GLU
13	e	798	TYR
13	e	820	ARG
13	e	824	TYR
15	f	426	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (254) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	97	GLN
1	A	171	HIS
1	A	257	GLN
1	A	356	HIS
1	A	357	GLN
1	A	383	GLN
1	A	463	GLN
1	A	478	ASN
2	B	68	GLN
2	B	108	GLN
2	B	191	GLN
2	B	273	HIS
3	C	16	HIS
3	C	34	GLN
3	C	171	ASN
3	C	308	ASN
4	D	134	ASN
4	D	306	HIS
4	D	366	GLN
4	D	368	GLN
4	D	419	GLN
4	D	424	HIS
4	D	530	ASN
4	D	556	ASN
4	D	793	ASN
4	D	847	GLN
4	D	885	ASN
4	D	887	GLN

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Mol	Chain	Res	Type
4	D	1092	ASN
4	D	1122	ASN
4	D	1129	ASN
4	D	1260	GLN
4	D	1322	ASN
4	D	1400	ASN
5	E	115	ASN
5	E	263	ASN
5	E	283	HIS
6	F	258	ASN
6	F	406	ASN
6	F	528	GLN
6	F	538	HIS
6	F	654	GLN
6	F	750	HIS
6	F	751	GLN
6	F	813	ASN
7	G	67	HIS
7	G	154	ASN
8	H	134	GLN
8	H	206	GLN
8	H	507	GLN
8	H	633	ASN
8	H	675	GLN
8	H	684	ASN
8	H	757	HIS
8	H	857	HIS
9	I	74	ASN
9	I	181	ASN
9	I	329	ASN
9	I	338	ASN
9	I	371	ASN
9	I	384	ASN
9	I	440	ASN
9	I	548	ASN
9	I	651	ASN
9	I	655	GLN
9	I	803	GLN
9	I	870	GLN
9	I	988	HIS
1	J	20	ASN
1	J	304	HIS

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Mol	Chain	Res	Type
1	J	357	GLN
1	J	411	HIS
1	J	459	GLN
1	J	474	GLN
1	J	478	ASN
1	J	548	GLN
1	J	627	ASN
2	K	113	ASN
2	K	151	ASN
2	K	223	HIS
3	L	149	ASN
3	L	157	HIS
3	L	205	ASN
4	M	100	ASN
4	M	291	HIS
4	M	418	ASN
4	M	434	HIS
4	M	436	ASN
4	M	510	GLN
4	M	587	HIS
4	M	636	GLN
4	M	875	ASN
4	M	892	GLN
4	M	924	HIS
4	M	1013	ASN
4	M	1022	GLN
4	M	1077	HIS
4	M	1122	ASN
4	M	1270	ASN
4	M	1306	HIS
4	M	1307	HIS
4	M	1398	ASN
4	M	1412	GLN
5	N	3	GLN
5	N	20	HIS
6	O	389	GLN
6	O	493	GLN
6	O	642	GLN
6	O	788	HIS
6	O	813	ASN
7	P	114	HIS
8	Q	134	GLN

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Mol	Chain	Res	Type
8	Q	250	GLN
8	Q	322	GLN
8	Q	428	GLN
8	Q	507	GLN
8	Q	543	HIS
8	Q	569	GLN
8	Q	595	GLN
8	Q	684	ASN
8	Q	721	GLN
8	Q	861	GLN
9	R	296	GLN
9	R	371	ASN
9	R	525	GLN
9	R	586	GLN
9	R	641	ASN
9	R	667	GLN
9	R	709	ASN
9	R	767	HIS
9	R	825	GLN
9	R	938	GLN
9	R	942	ASN
9	R	1005	ASN
9	R	1017	GLN
9	R	1028	ASN
9	R	1094	ASN
9	R	1131	ASN
10	S	81	GLN
10	S	315	GLN
10	S	316	ASN
10	S	409	ASN
10	S	838	HIS
10	S	884	ASN
10	S	1016	ASN
10	S	1129	GLN
10	S	1213	ASN
10	S	1262	GLN
10	S	1268	ASN
10	S	1368	GLN
10	S	1396	HIS
10	S	1401	ASN
10	S	1488	HIS
10	S	1508	GLN

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Mol	Chain	Res	Type
10	S	1689	ASN
10	S	1704	GLN
10	S	1753	GLN
10	S	1754	GLN
10	S	1758	ASN
10	S	1764	GLN
10	S	1769	GLN
10	S	1832	HIS
10	S	1869	GLN
10	T	22	GLN
10	T	37	HIS
10	T	56	ASN
10	T	162	HIS
10	T	226	GLN
10	T	297	GLN
10	T	318	GLN
10	T	680	GLN
10	T	689	ASN
10	T	719	ASN
10	T	808	ASN
10	T	902	HIS
10	T	973	GLN
10	T	1031	HIS
10	T	1191	ASN
10	T	1213	ASN
10	T	1242	GLN
10	T	1317	HIS
10	T	1401	ASN
10	T	1414	GLN
10	T	1689	ASN
10	T	1711	GLN
10	T	1719	ASN
10	T	1764	GLN
10	T	1952	ASN
10	T	1956	GLN
10	T	1968	ASN
11	U	292	ASN
11	U	472	GLN
11	U	522	GLN
11	U	635	ASN
11	U	789	GLN
12	V	163	ASN

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Mol	Chain	Res	Type
12	V	340	GLN
12	V	421	GLN
12	V	436	HIS
12	V	443	GLN
12	V	527	GLN
12	V	675	ASN
12	W	149	GLN
12	W	218	GLN
12	W	382	GLN
12	W	393	ASN
12	W	422	HIS
12	W	435	GLN
12	X	16	GLN
12	X	108	ASN
12	X	302	GLN
12	X	351	GLN
12	Y	14	ASN
12	Y	393	ASN
12	Y	424	ASN
12	Y	431	ASN
12	Y	459	GLN
12	Y	466	GLN
12	Y	555	GLN
12	Y	675	ASN
12	Y	681	ASN
12	Y	759	HIS
12	Z	108	ASN
12	Z	351	GLN
12	Z	422	HIS
12	Z	424	ASN
12	Z	443	GLN
12	Z	459	GLN
12	Z	498	GLN
12	Z	567	HIS
13	a	827	ASN
13	a	863	ASN
13	a	894	GLN
14	b	14	HIS
14	b	66	HIS
14	b	86	GLN
14	b	109	HIS
14	b	182	ASN

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Mol	Chain	Res	Type
14	b	188	ASN
14	b	620	GLN
15	c	360	ASN
15	c	384	ASN
15	c	425	GLN
15	c	521	GLN
14	d	182	ASN
14	d	242	GLN
14	d	270	GLN
14	d	530	ASN
14	d	575	GLN
14	d	588	GLN
14	d	620	GLN
14	d	656	ASN
14	d	667	ASN
13	e	842	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

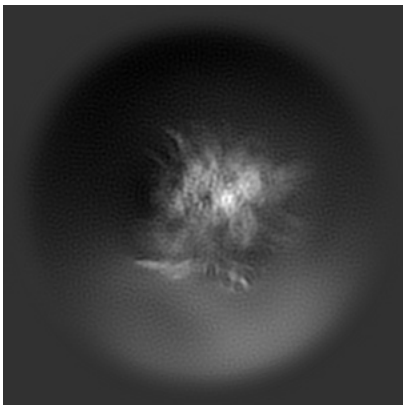
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-32056. These allow visual inspection of the internal detail of the map and identification of artifacts.

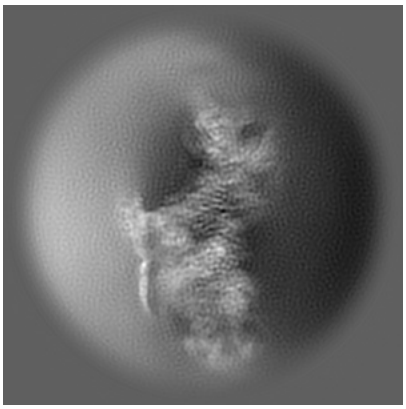
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

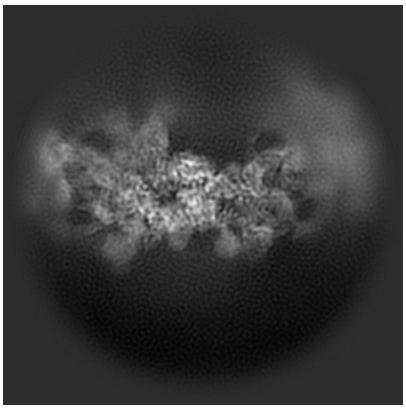
6.1.1 Primary map



X

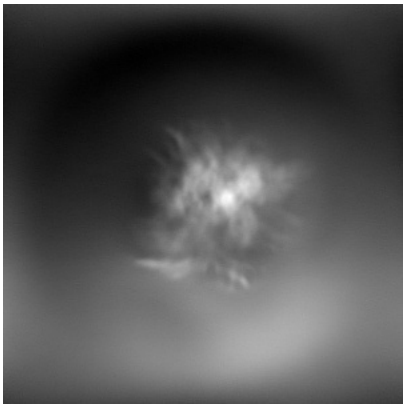


Y

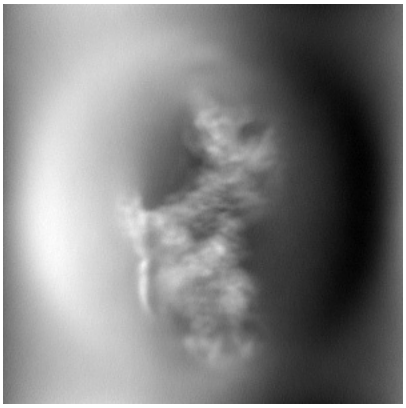


Z

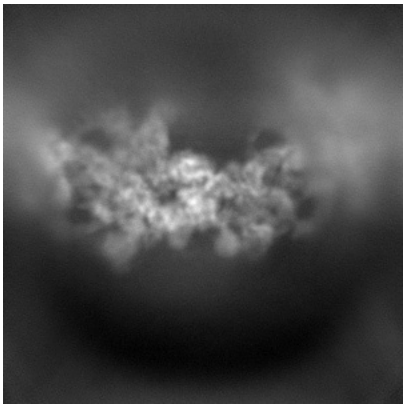
6.1.2 Raw map



X



Y

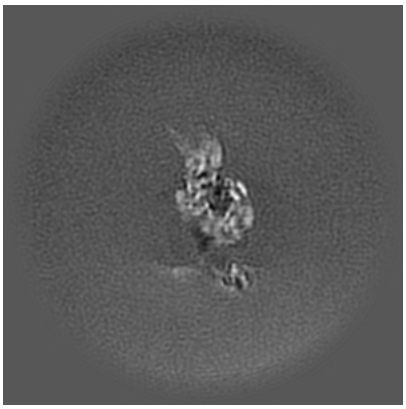


Z

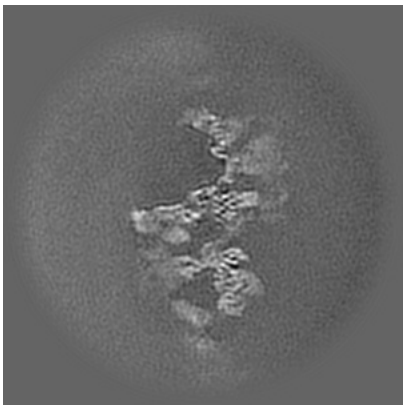
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

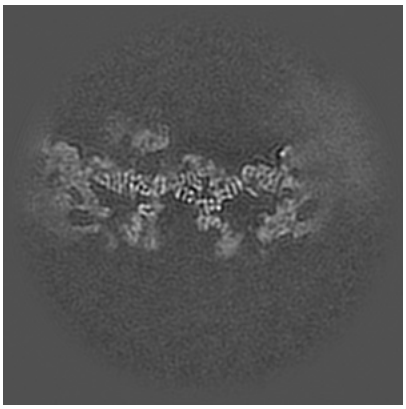
6.2.1 Primary map



X Index: 160

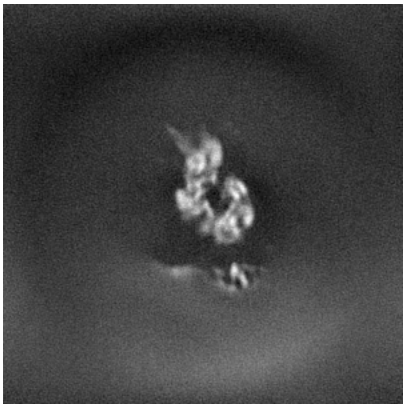


Y Index: 160

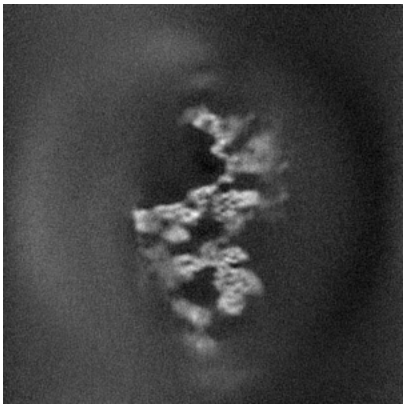


Z Index: 160

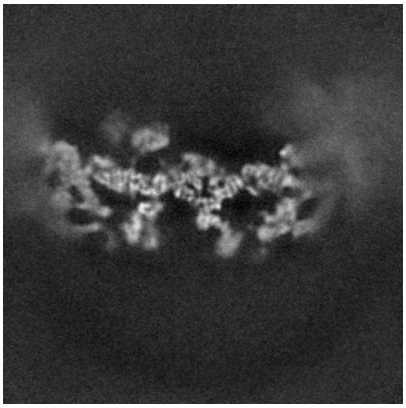
6.2.2 Raw map



X Index: 160



Y Index: 160

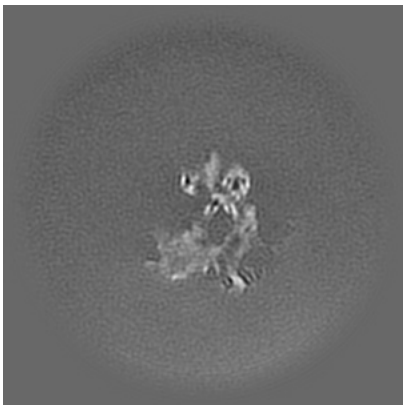


Z Index: 160

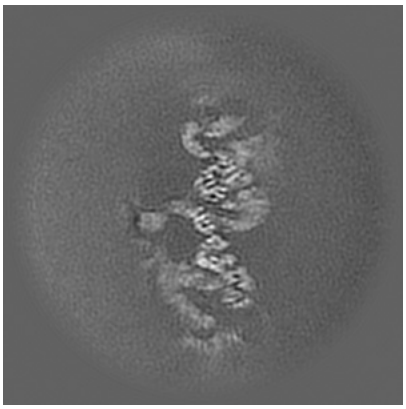
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

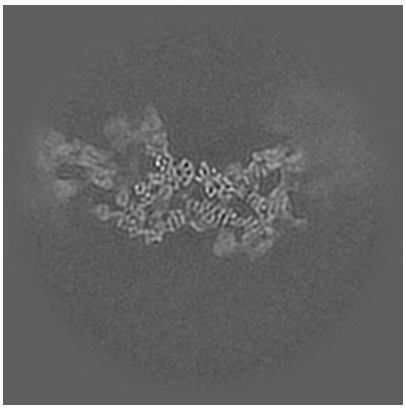
6.3.1 Primary map



X Index: 143

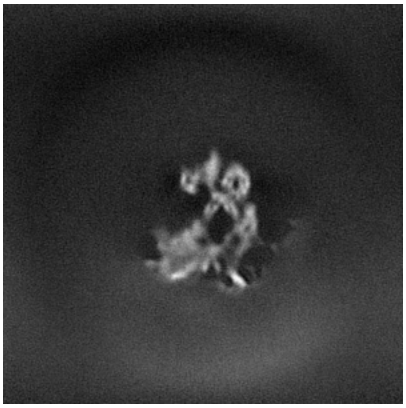


Y Index: 169

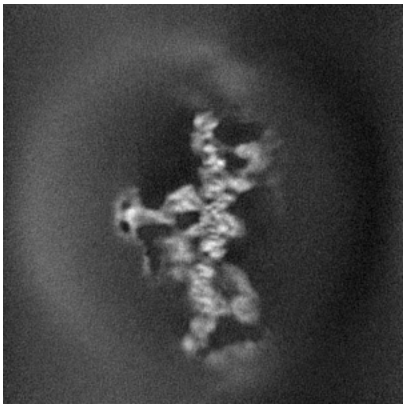


Z Index: 171

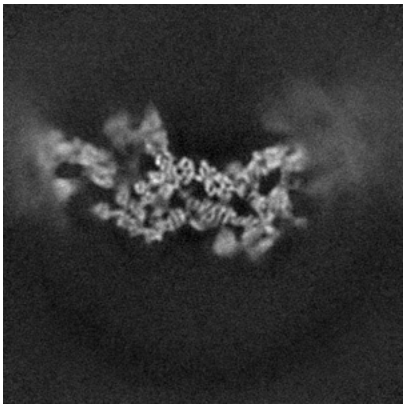
6.3.2 Raw map



X Index: 143



Y Index: 182

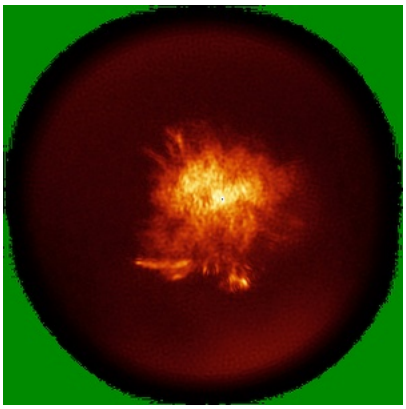


Z Index: 171

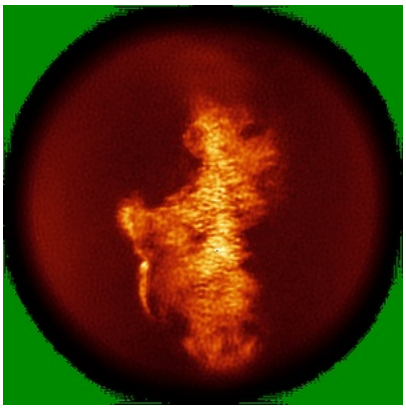
The images above show the largest variance slices of the map in three orthogonal directions.

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

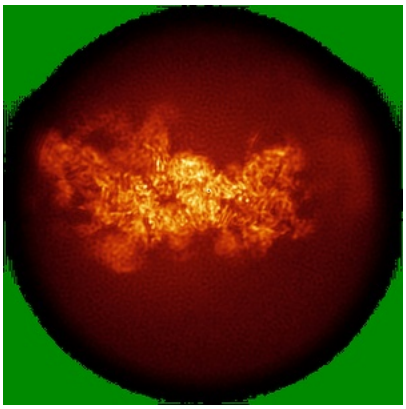
6.4.1 Primary map



X

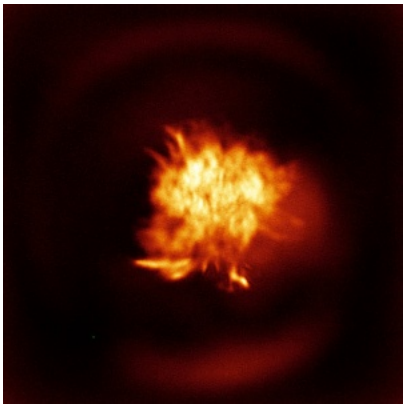


Y

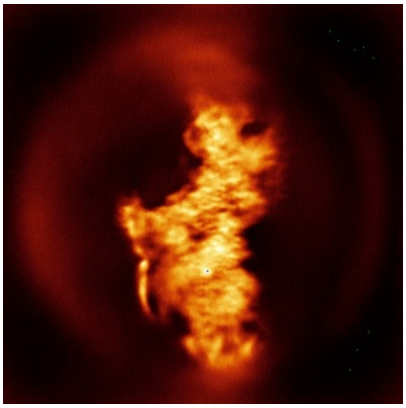


Z

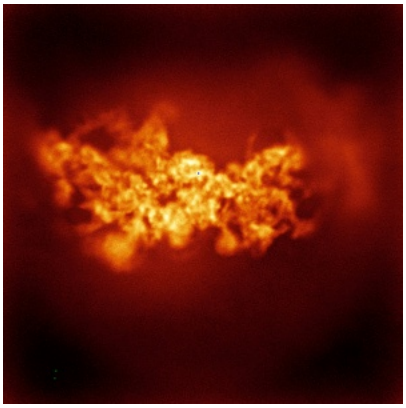
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X

Y

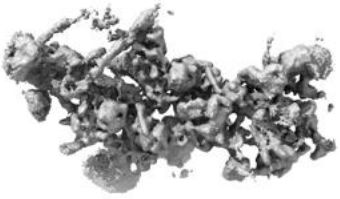
Z

The images above show the 3D surface view of the map at the recommended contour level 0.505. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X

Y



Z

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

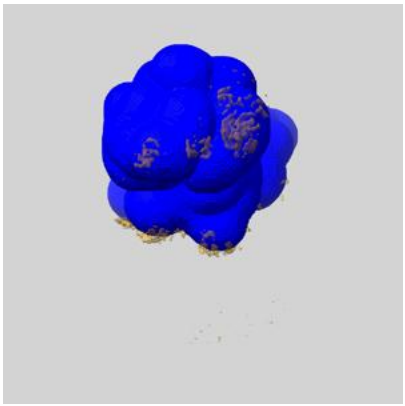
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

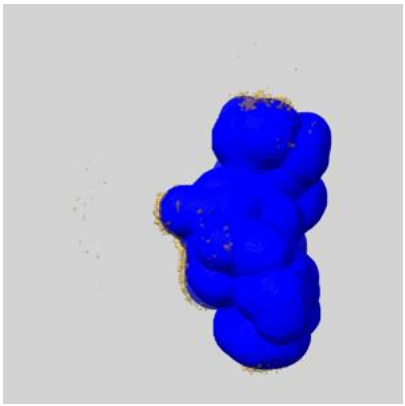
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

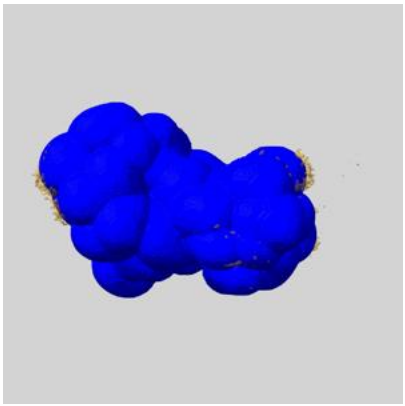
6.6.1 emd_32056_msk_1.map (i)



X



Y

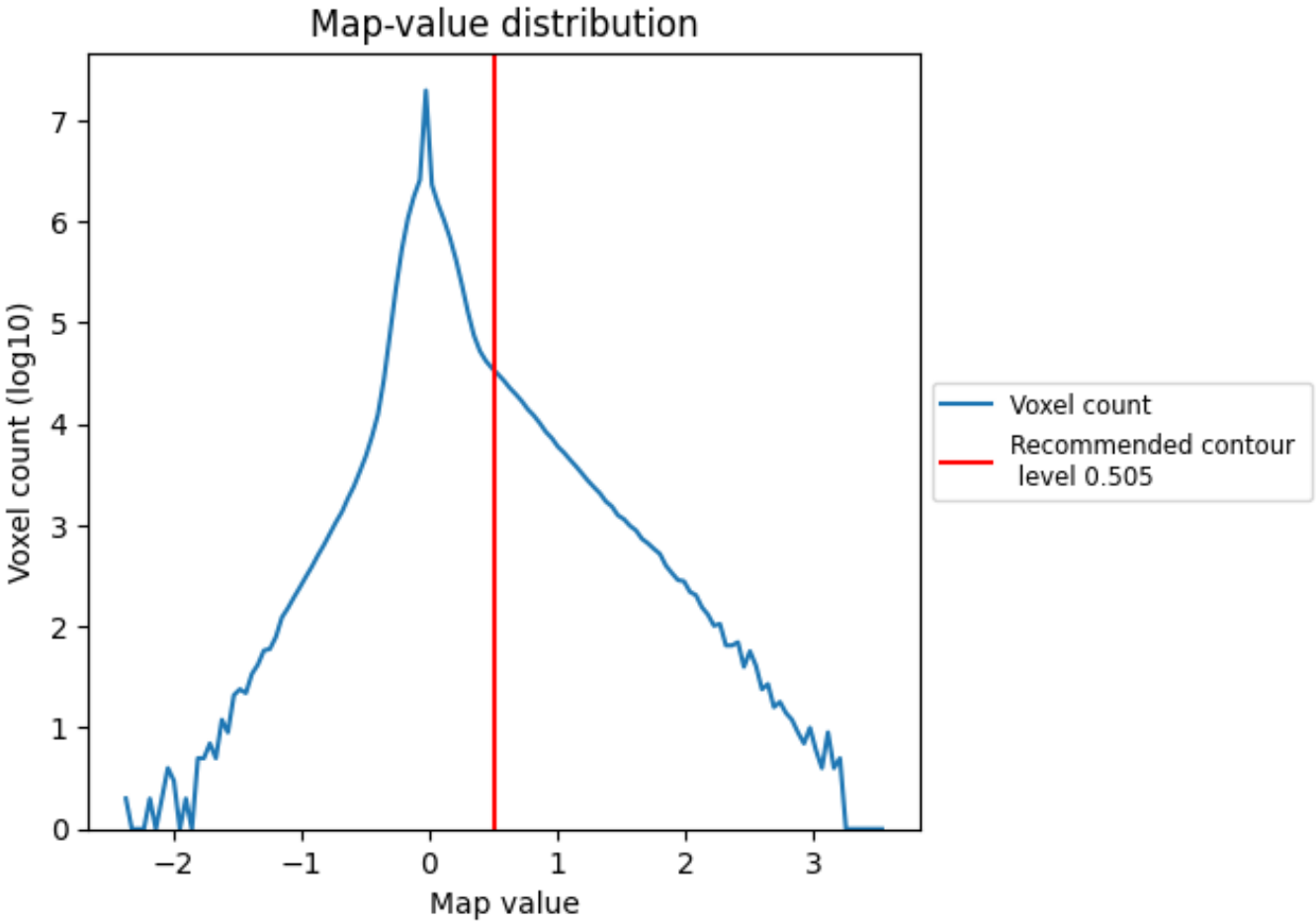


Z

7 Map analysis

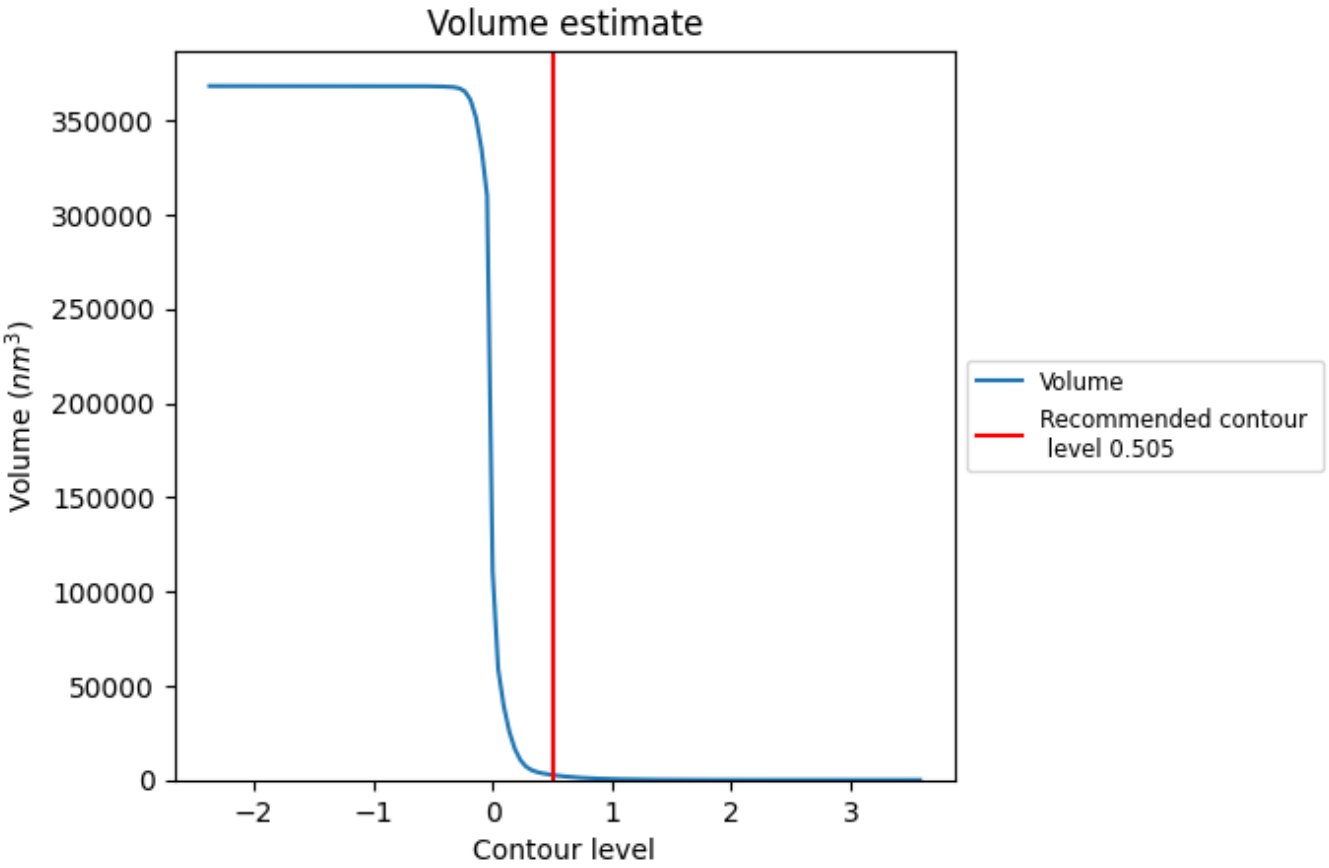
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

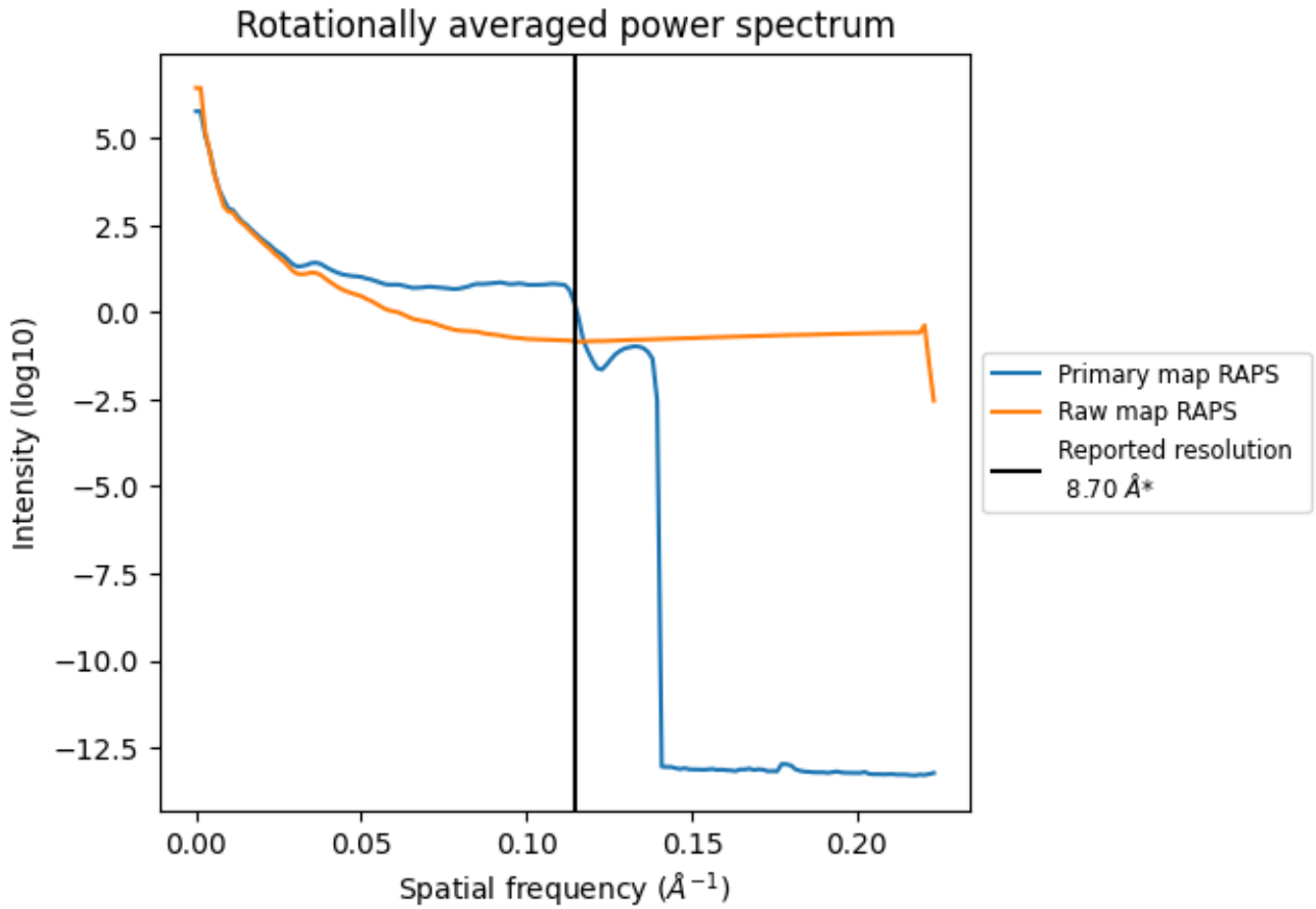
7.2 Volume estimate



The volume at the recommended contour level is 2642 nm^3; this corresponds to an approximate mass of 2387 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)

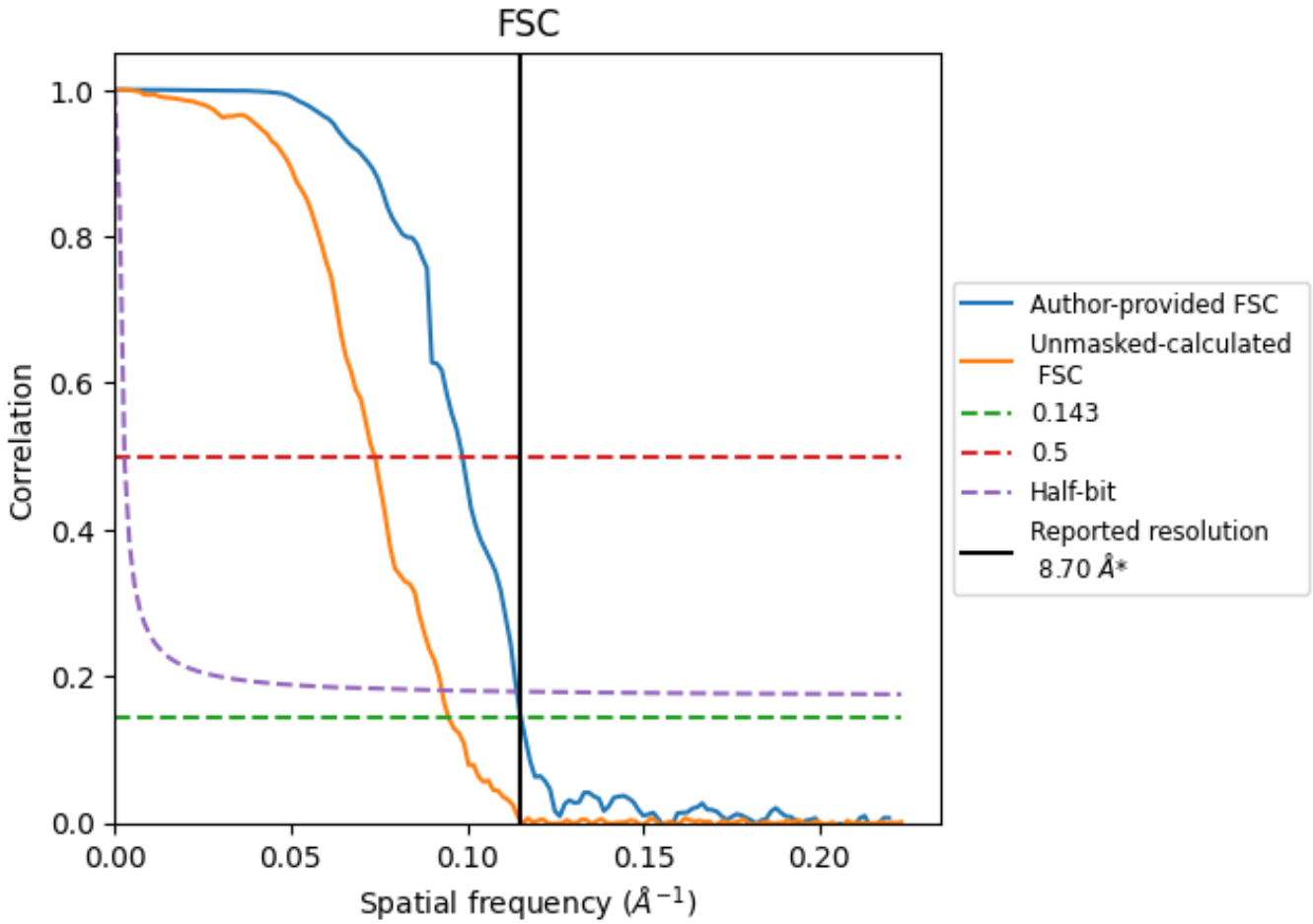


*Reported resolution corresponds to spatial frequency of 0.115 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.115 Å^{-1}

8.2 Resolution estimates (i)

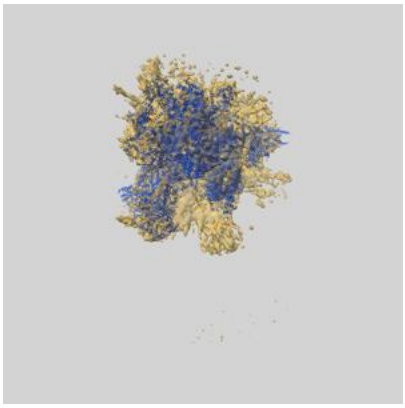
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	8.70	-	-
Author-provided FSC curve	8.68	10.14	8.76
Unmasked-calculated*	10.56	13.55	10.78

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 10.56 differs from the reported value 8.7 by more than 10 %

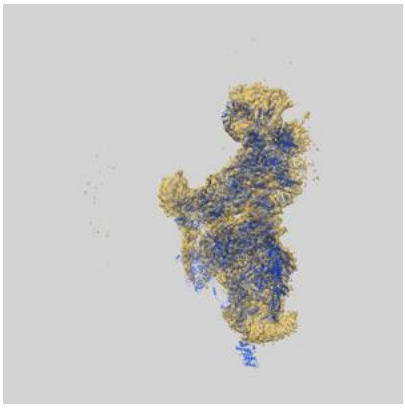
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-32056 and PDB model 7VOP. Per-residue inclusion information can be found in section 3 on page 11.

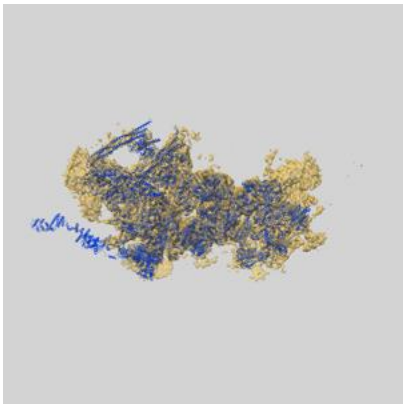
9.1 Map-model overlay



X



Y



Z

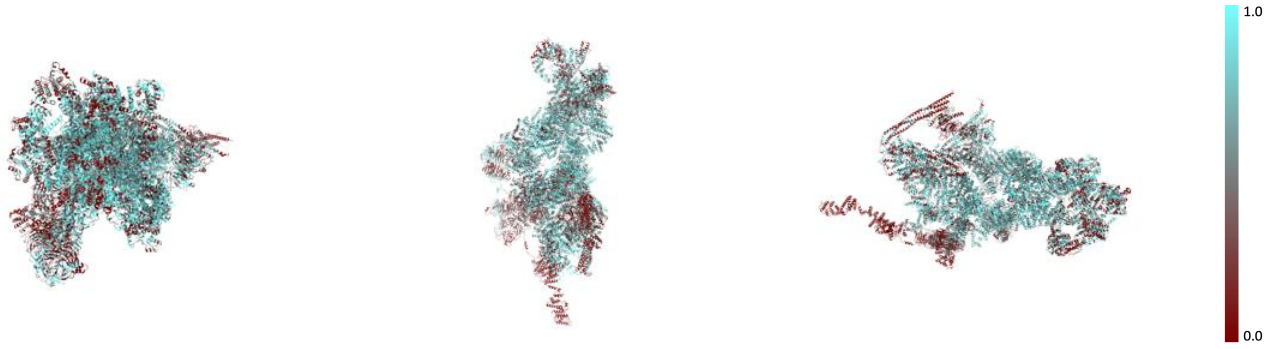
The images above show the 3D surface view of the map at the recommended contour level 0.505 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model (i)

X Y Z

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

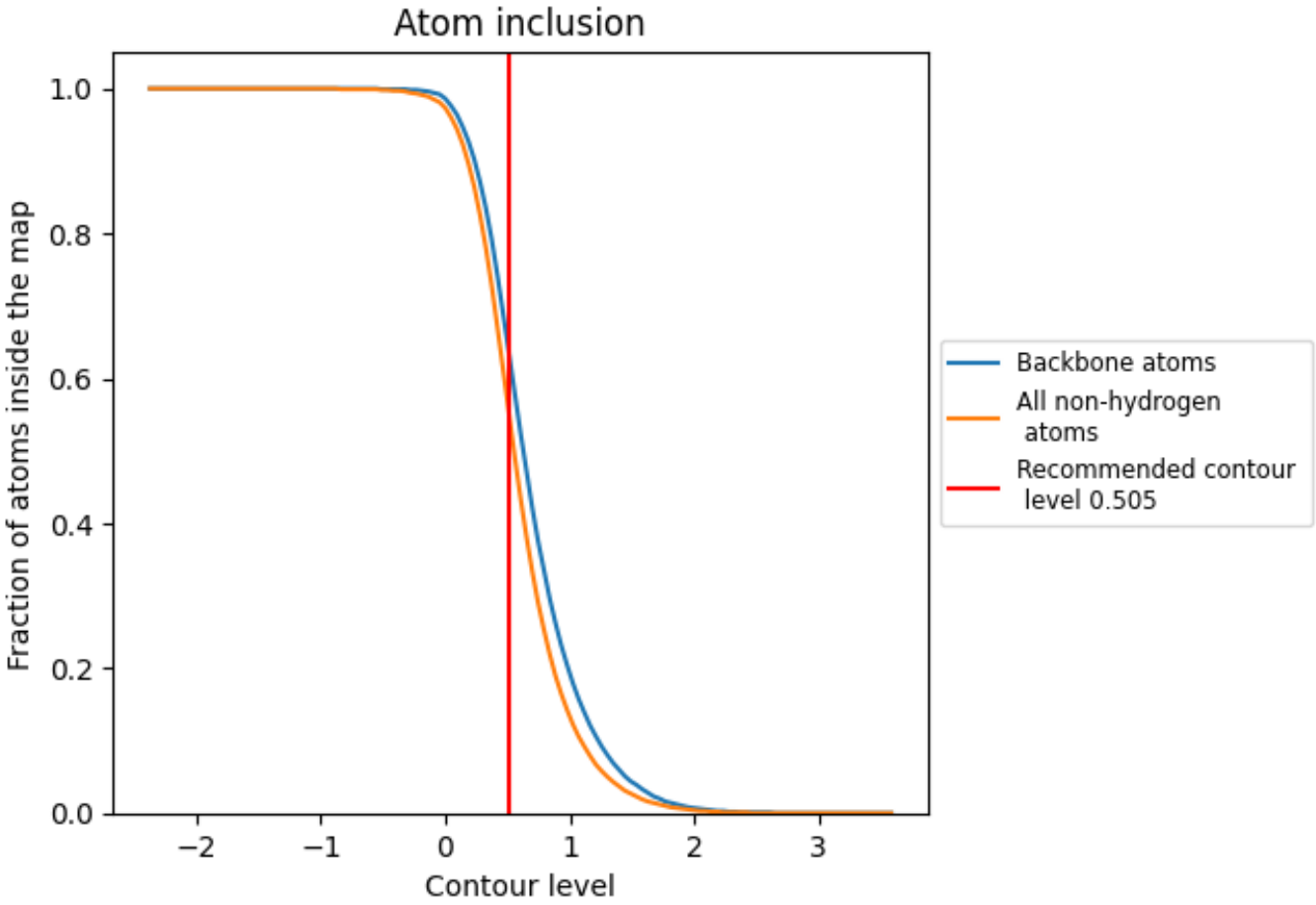
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.505).

9.4 Atom inclusion (i)



At the recommended contour level, 64% of all backbone atoms, 56% 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 (0.505) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5610	0.0860
A	0.7260	0.1500
B	0.6850	0.0950
C	0.8050	0.1310
D	0.6360	0.0820
E	0.7930	0.0860
F	0.7050	0.1140
G	0.7030	0.1080
H	0.6260	0.0910
I	0.3520	0.0610
J	0.6650	0.1240
K	0.6430	0.0790
L	0.7590	0.1190
M	0.4190	0.0550
N	0.1560	0.0390
O	0.7360	0.1380
P	0.8080	0.1180
Q	0.6300	0.1170
R	0.0450	0.0030
S	0.6450	0.1010
T	0.7120	0.1190
U	0.7090	0.1000
V	0.5220	0.0830
W	0.7180	0.1070
X	0.4620	0.0360
Y	0.5210	0.0410
Z	0.5150	0.0490
a	0.4520	0.1090
b	0.4980	0.0840
c	0.4480	0.1040
d	0.2060	0.0500
e	0.3420	0.0740
f	0.3160	0.0280