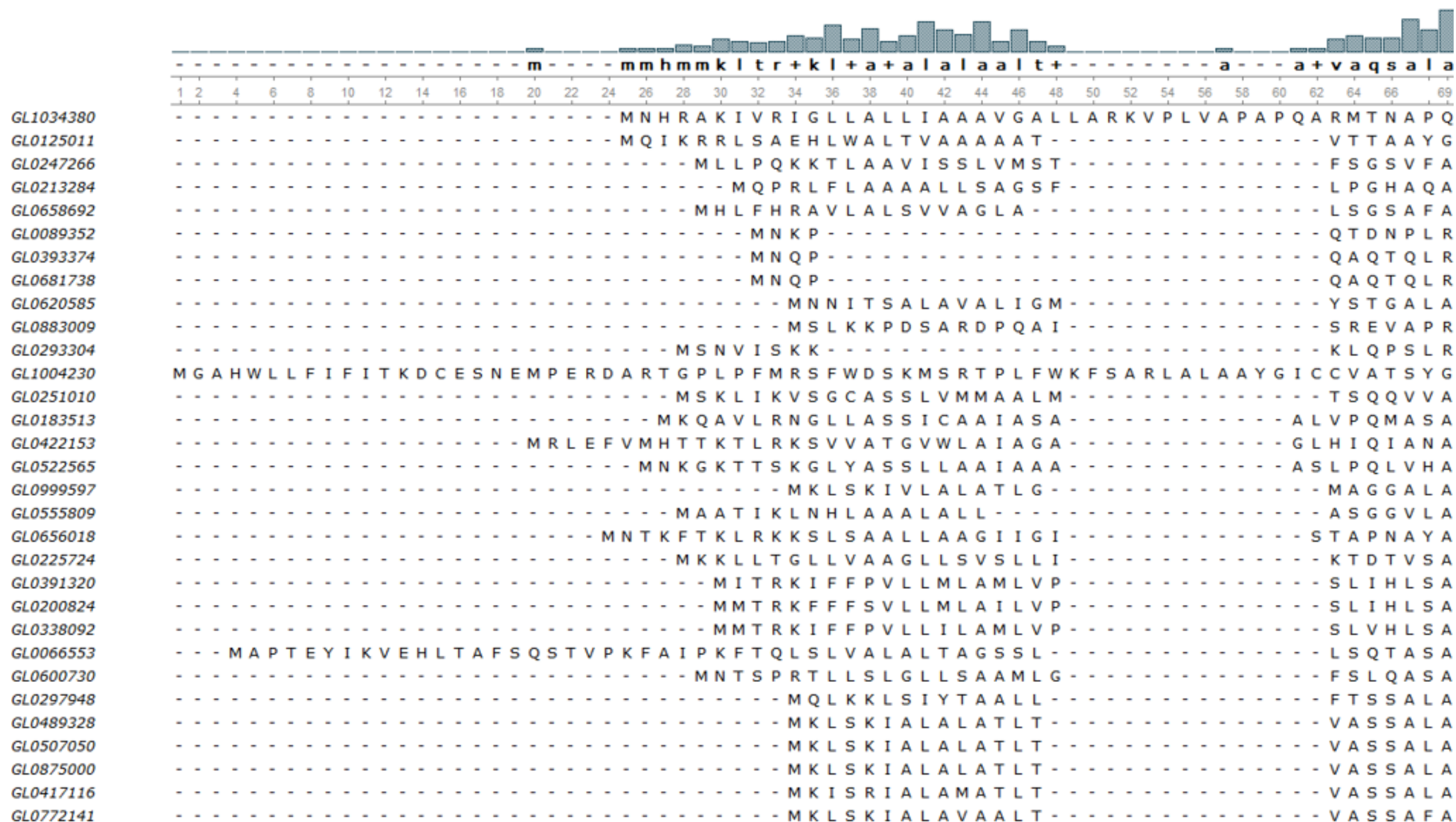
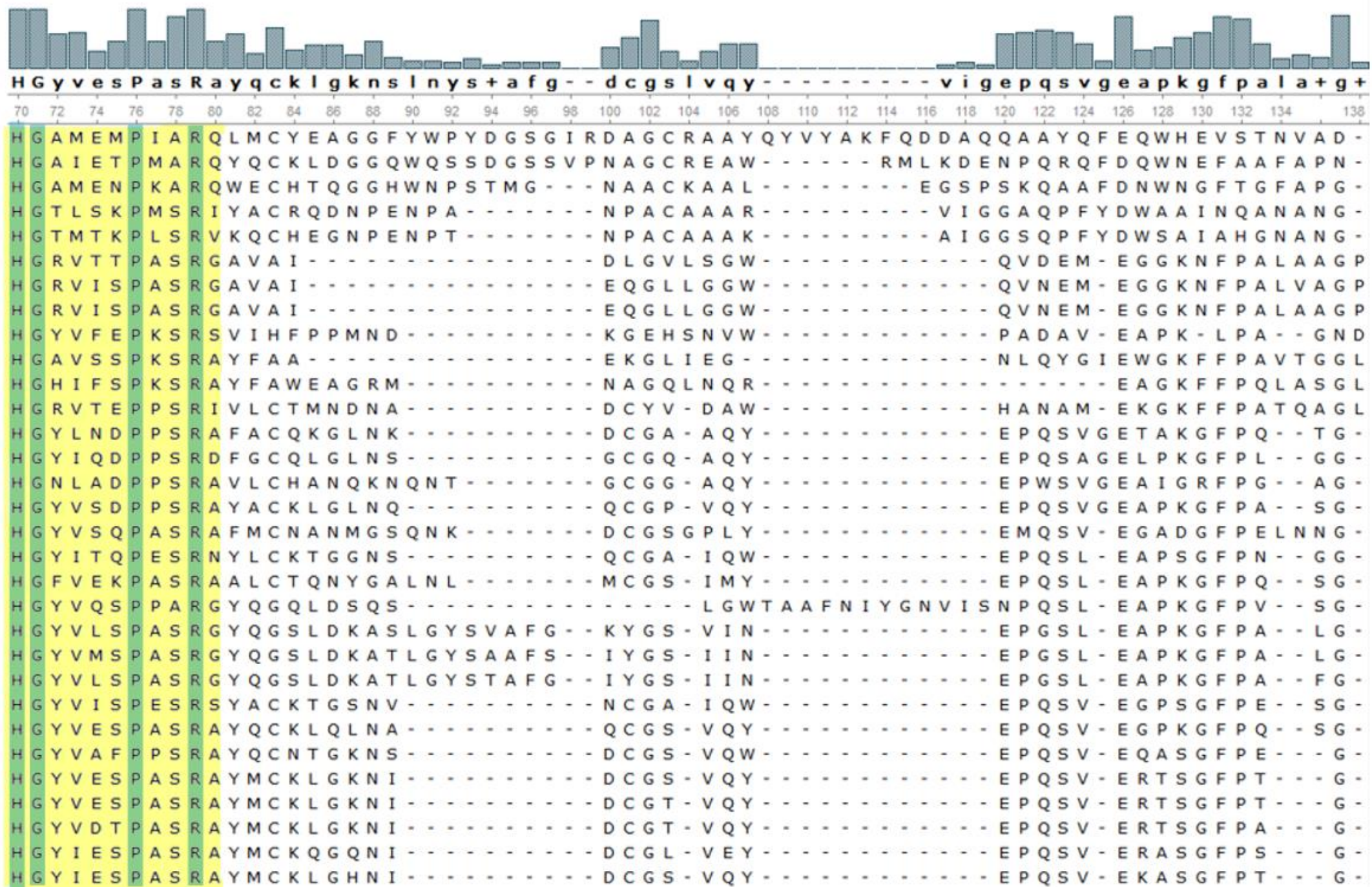


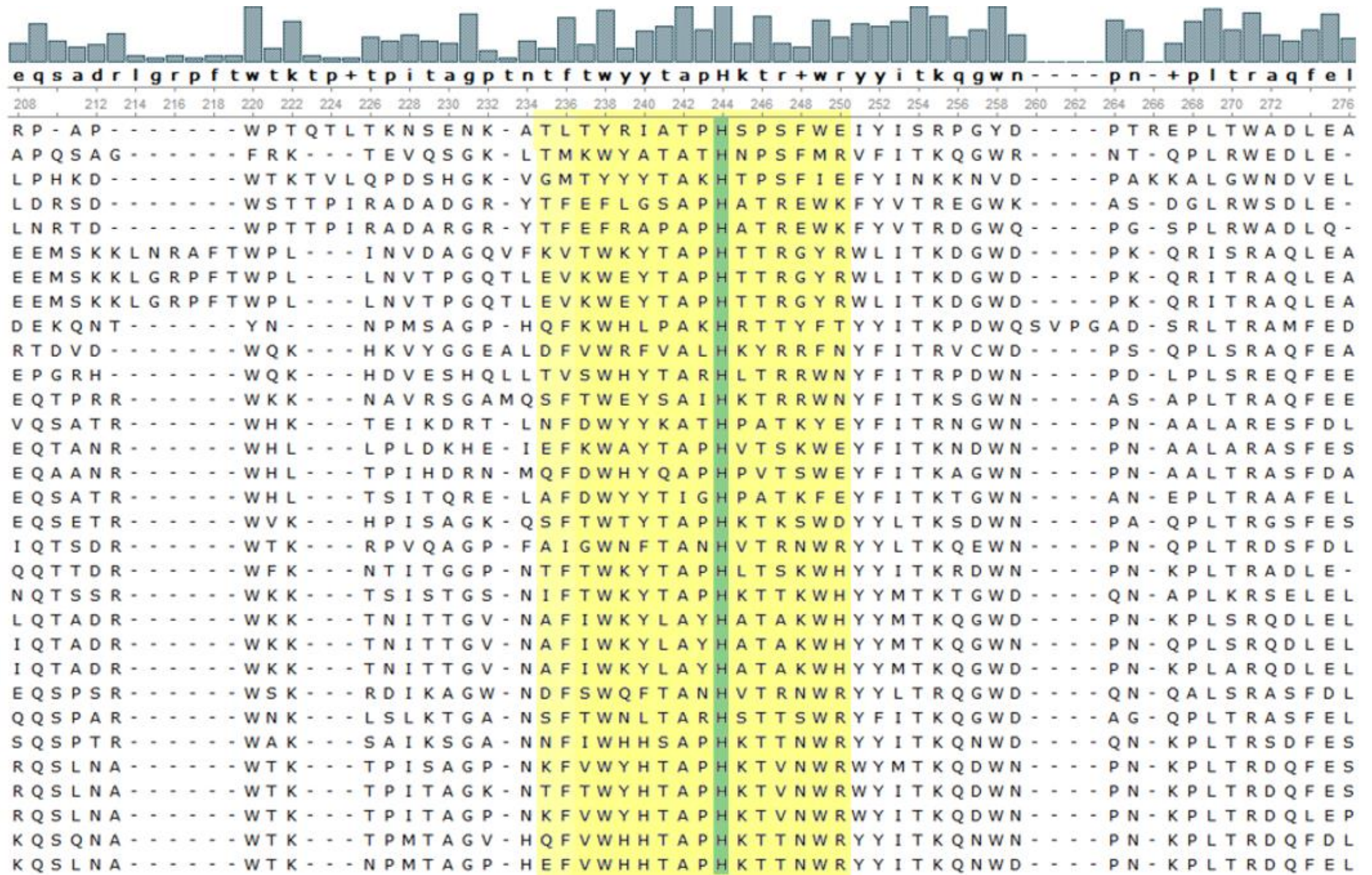
Supplemental Article S1. Comparison of 31 putative LPMOs



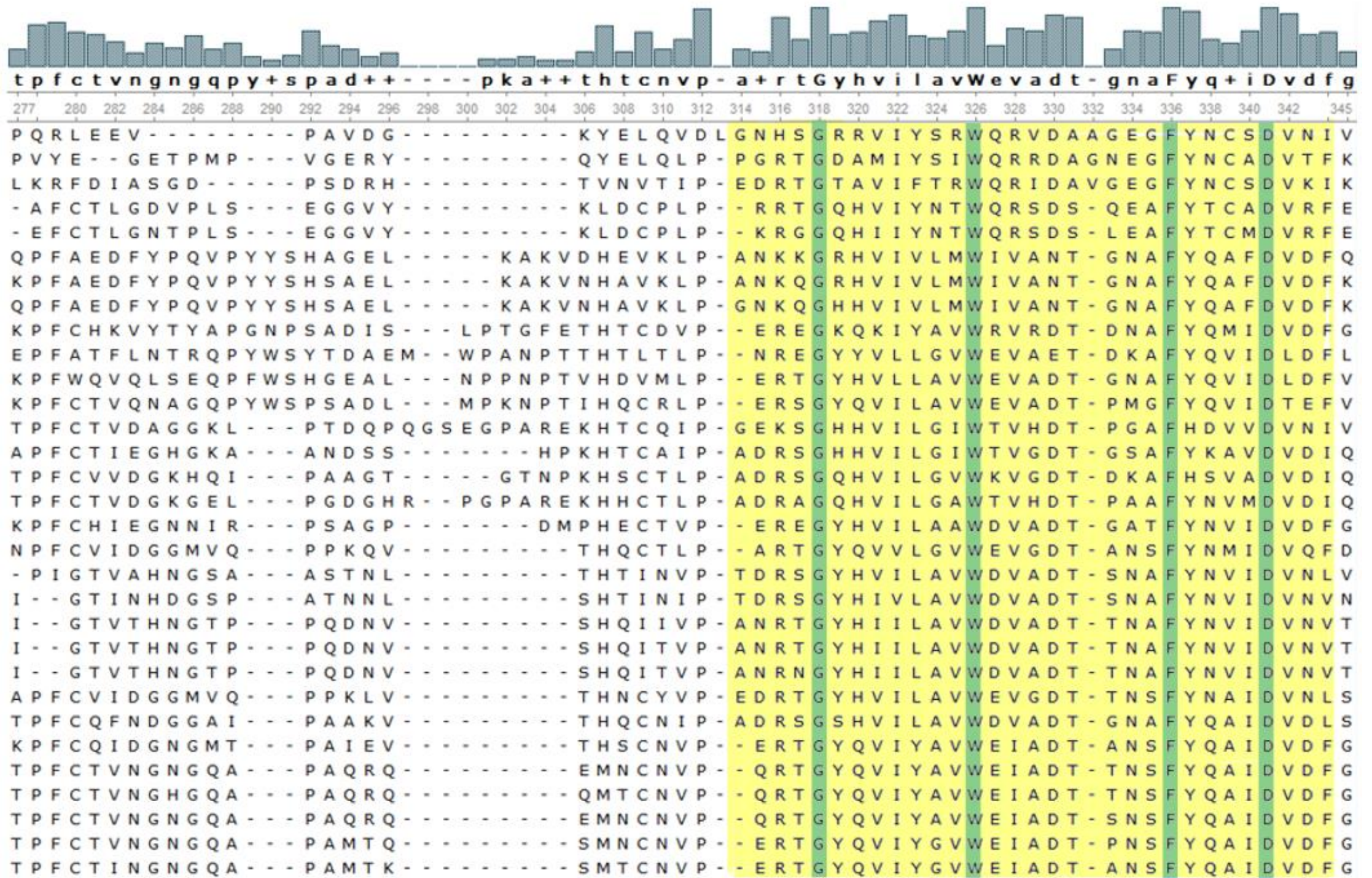


Region extracted to Figure 2

Motif Y[W]E[N]PQSV[L]E



Region extracted to Figure 2




Region extracted to Figure 2



<i>GL1034380</i>	- - - - -
<i>GL0125011</i>	D P V A P P Q A K I S G P S T V K - - - - - A G E T I T L T N E G T N N T T G Q H Y R Y D W H A H G F T P M N G T A S
<i>GL0247266</i>	A I S L D R Y T L A P I A T T T S G Y S Y A V T G S S D K S G V T W Q W K N V A G D G R I T A S P A N Q A K T Q I T V P G G V P A G T T A
<i>GL0213284</i>	- - - - - V Y L R P G H R F Q L D T K V P D P V D P V D P P
<i>GL0658692</i>	- - - - - N R V Y L K P G N R F Q L E T Q V P G P V D P V D P P
<i>GL0089352</i>	- - - - -
<i>GL0393374</i>	- - - - -
<i>GL0681738</i>	- - - - -
<i>GL0620585</i>	N A E K Y Q W T I V S G Q D I G A - - - - - L Q V A N G G E W V S T V H A A K A R A L I K P G K I G K V T Y R L T V T A K N G K T S
<i>GL0883009</i>	G G P I D G F I I Y R D G - - - - - N E V G R V P A S Q R T F T D D N L T P D T R Y R Y T V K A F D A Q G Q L S A S
<i>GL0293304</i>	V N A L Q G Y I V Y R D G - - - - - N E I S R L P A S Q L S Y L D T N V A P A N S Y R Y F V A A I D V Q G R L S V P
<i>GL1004230</i>	- - - - -
<i>GL0251010</i>	D S - - - G A S L S I Q A F D K T - - - - - V E L V K G R A T L P L T V L G N R T M N I E A T V F D A S H K A V G S A T R V M E P G
<i>GL0183513</i>	P D - - - A Y M H L H D L K S E - - - - - Y V L K D G E A T V G F S V M T N R S L E V T A T L F D A T N K Q V G F Q R Q Q V N S T
<i>GL0422153</i>	G E - - - P T T M H L H D V K P E - - - - - Y T I V D G K G G V D F S V M T N K A L T V T A R L F D S N N K Q V S Y S R Q N V N - G
<i>GL0522565</i>	V D - - - D A Y L H L H G I K P E - - - - - Y V L K D G K G A V D F S V M T N R K L Q V T S Q L F D E H N Q Q V G H A S Q L V D A S
<i>GL0999597</i>	- - - - -
<i>GL0555809</i>	P P A S D S I S V S - - G L E S E - - - - - Y L L D N G K V T L A F T V T A E G D L A V T N T L Y D H G G A A K G Q T S A D I K D S
<i>GL0656018</i>	N V A V D H Y V I Y R G S T K E Q - - - - - M T A V G T S T I T S F K D M N L Q S N T S Y I Y A V A A V D V A G N E S I K
<i>GL0225724</i>	- - - - -
<i>GL0391320</i>	T Q G I K N Y Q V F - - - - - E N G I K V G E T V Q T S F S R V G L A Q D T E Y L Y T V R S V A M N D Q I S D M
<i>GL0200824</i>	S Q G I K N Y Q I F - - - - - E N G I K V G E T M Q T N F L R T G L T Q D T E Y R Y T V K S V A M N D Q L S D A
<i>GL0338092</i>	S Q G I K N Y H V F - - - - - E N G I K V A E T V Q T T F L R T G L S Q D T E Y N Y T V R S V G M N D Q L S E V
<i>GL0066553</i>	A P - - - G N Q L N V T S L A D D - - - - - Y T I V D G V A Q V S F D V S T N A D M Q V S A Y L F S H D G T A A G Y V T Q A V N N T
<i>GL0600730</i>	- - - - -
<i>GL0297948</i>	E D D T A K E S L S L S N V A A T - - - - - P I E N G K A T V T F N A A A K G E M H L I A V V S D H A G A E K G S L Q Q T I D N R
<i>GL0489328</i>	A Q V S E D I A V T N V Q F S - - - - - K I K S G A A T V T F H V N T Q G N V N L E A R V M N H A G A E K G Y V K Q E M N N A
<i>GL0507050</i>	S Q V S E A I A V T N V K F S - - - - - K I K N G A A T V T F H V N T Q G N V N L E A R V M N H A G A E K G Y V K Q D M N N A
<i>GL0875000</i>	A Q V S E N I A V S N V K F S - - - - - K I A N G N A T V T F H V N T Q G N V N L E A R V M N H A G A E K G Y L K Q D M N N A
<i>GL0417116</i>	A V V N E S I A V T D L H Y S - - - - - K V T H G A A T V T F H V N T Q G D V N L E A H V L N H P G A E K G Y L K Q D M N N S
<i>GL0772141</i>	A E V H E T I A V S N L Q Y S - - - - - N I E N G K A T V T F H V N T K G D V N V E A H V M S H S G A E K G Y L K Q E M N N A



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GL0247266 TFEELTGKTANGTPGKATLK-----VTVQAPQVAPTPTSIA SDKKGGKFTAKANFDYSQGNVSYSSWSLL
GL0213284 -----PGDYDYVYPAG
GL0658692 -----GGDFDFVYPAG
GL0089352 -----
GL0393374 -----
GL0681738 -----
GL0620585 TDDITVTVKEAQQASDVQINTGNNQDTIVGSDVIAAAVVSKNND SLKGAKIEW S ALNHADKI QISSPNN
GL0883009 SNVHDAHTKPK-----EDGGDYRDWKL
GL0293304 GNVLTVTTLTQD-----NGGGDDNAEQG
GL1004230 -----
GL0251010 SATLEIALLSEPGAHQ-----IKLIGSTTDGRTTRQRLESLELTGEGG-----GQAYDAVYPEG
GL0183513 TSPFAVQASSVDGEHT-----LKIVGKNAD E E ILLQEDRPLKLM TQ-----DDAAYPTFPEG
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GL0999597 -----VGGDRVTW-----
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GL0772141 NQDVTMTLTDVTAGHHM-----LKYYASNKDGT LFDQDV L NLML ENNAADS-----TGQHDVIFPDG



g k i s r v d - i t p h g l q i - t f - n p - k n s m n i s r l q s g i y f v k i - y k d g - s i t k t i r k

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