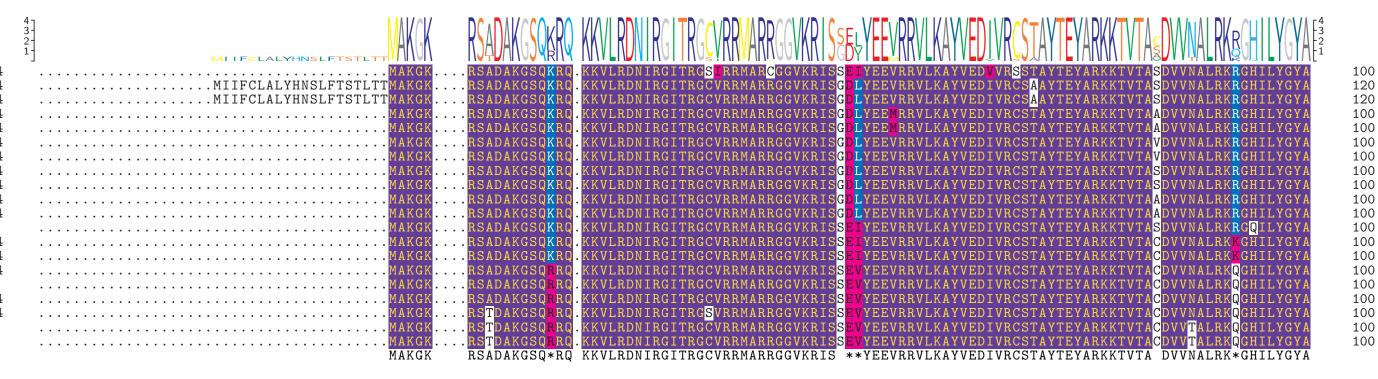
canonicalH4.fasta

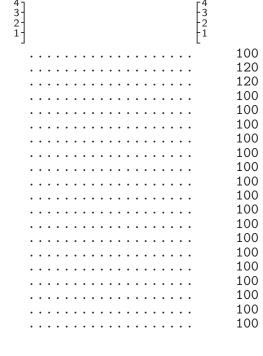
logo

259377427|Leishmania|canonicalH4 154338056 | Leishmania | canonical H4 134062301|Leishmania|canonicalH4 154344583 | Leishmania | canonical H4 134065570 | Leishmania | canonical H4 154331404|Leishmania|canonicalH4 134058838|Leishmania|canonicalH4 154331402|Leishmania|canonicalH4 134058837 | Leishmania | canonical H4 154334406|Leishmania|canonicalH4 134060471 | Leishmania | canonical H4 5738233|Leishmania|canonicalH4 146100782|Leishmania|canonicalH4 134073313|Leishmania|canonicalH4 146081771|Leishmania|canonicalH4 68235791|Leishmania|canonicalH4 134068431 | Leishmania | canonical H4 157866720 | Leishmania | canonical H4 71745884|Leishmania|canonicalH4 11022579|Leishmania|canonicalH4 consensus



logo

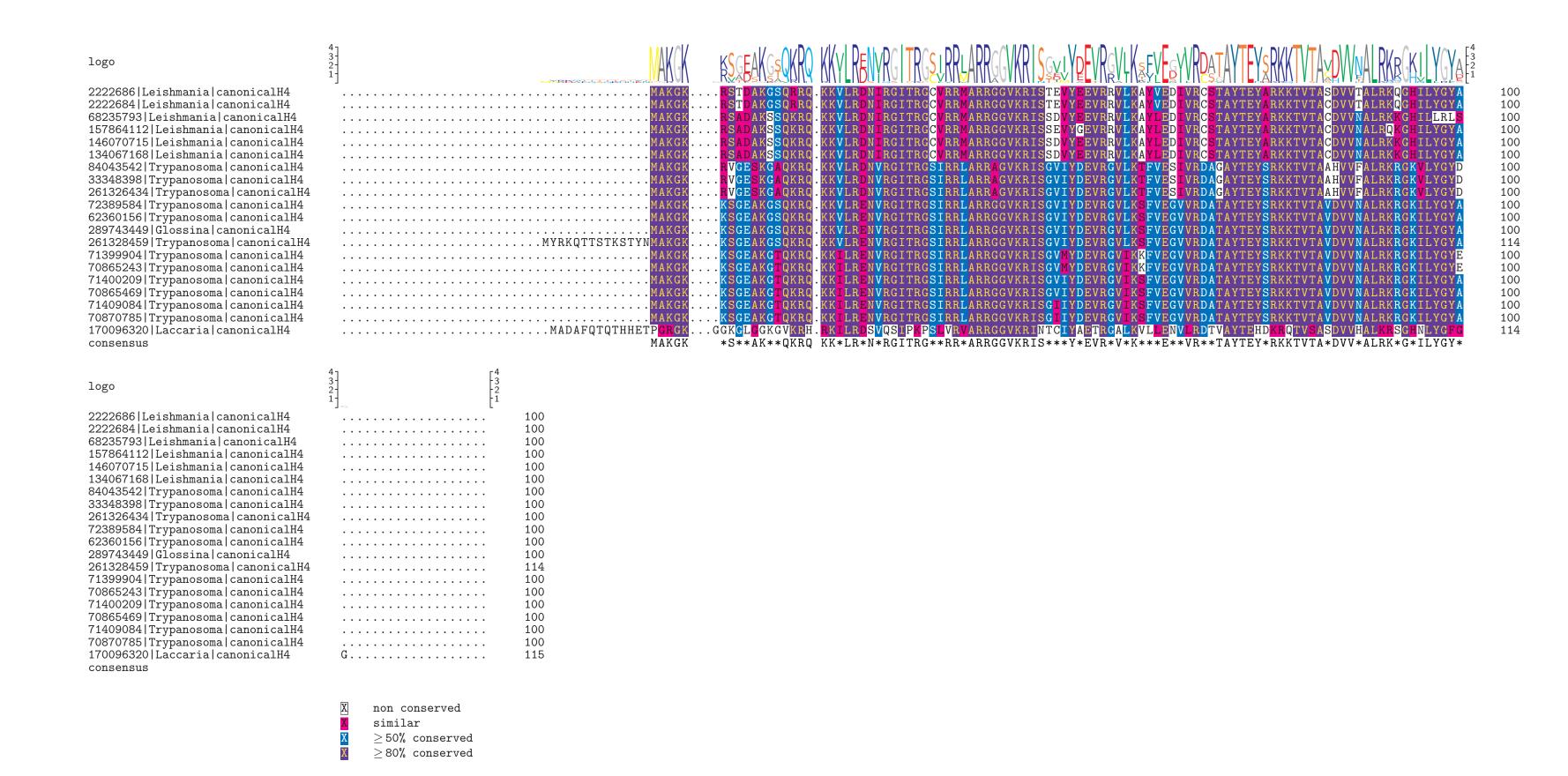
259377427|Leishmania|canonicalH4 154338056 | Leishmania | canonical H4 134062301 | Leishmania | canonical H4 154344583 | Leishmania | canonical H4 134065570 | Leishmania | canonical H4 154331404 | Leishmania | canonical H4 134058838|Leishmania|canonicalH4 154331402|Leishmania|canonicalH4 134058837 | Leishmania | canonical H4 154334406|Leishmania|canonicalH4 134060471 | Leishmania | canonical H4 5738233|Leishmania|canonicalH4 146100782|Leishmania|canonicalH4 134073313|Leishmania|canonicalH4 146081771|Leishmania|canonicalH4 68235791|Leishmania|canonicalH4 134068431 | Leishmania | canonical H4 157866720 | Leishmania | canonical H4 71745884|Leishmania|canonicalH4 11022579|Leishmania|canonicalH4 consensus



non conserved

 $ext{similar} \geq 50\%$ conserved

 $\geq 80\%$ conserved



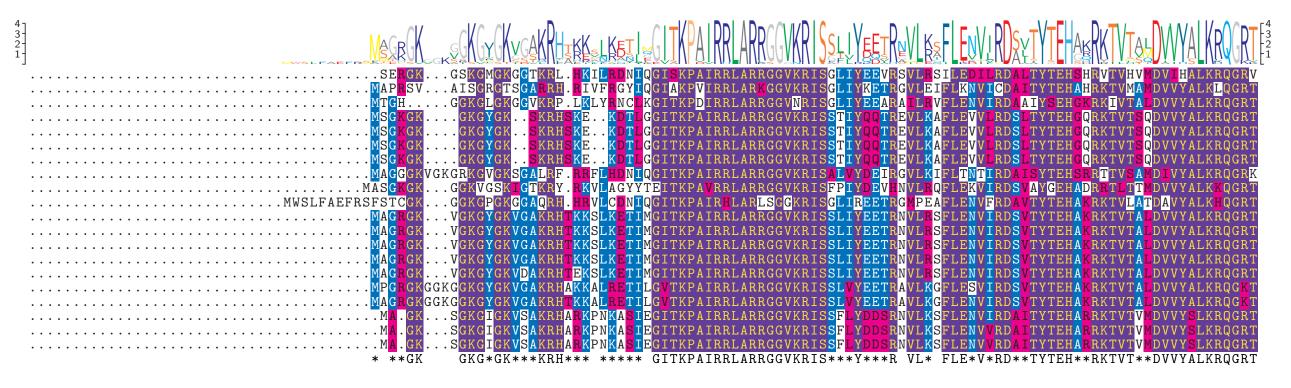


302833151|Volvox|canonicalH4 222631869|Oryza|canonicalH4 156547988|Nasonia|canonicalH4 159107432|Giardia|canonicalH4 6006741|Giardia|canonicalH4 253746255|Giardia|canonicalH4 308158292|Giardia|canonicalH4 190702301|Glyptapanteles|canonicalH4 281204874|Polysphondylium|canonicalH4 291385835 | Oryctolagus | canonical H4 51317326|Sterkiella|canonicalH4 51317327|Stylonychia|canonicalH4 21779951|Sterkiella|canonicalH4 21779954|Pleurotricha|canonicalH4 21779960|Stylonychia|canonicalH4 20141289 | Moneuplotes | canonical H4 21779945|Euplotes|canonicalH4 15430617|Paramecium|canonicalH4 145479773 | Paramecium | canonical H4 124392981 | Paramecium | canonical H4 consensus

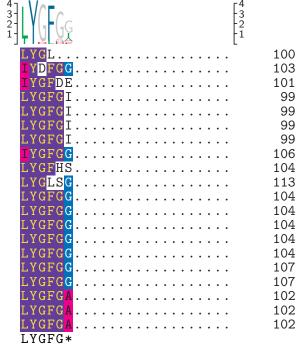
logo

consensus

302833151|Volvox|canonicalH4 222631869|Oryza|canonicalH4 156547988 | Nasonia | canonical H4 159107432|Giardia|canonicalH4 6006741|Giardia|canonicalH4 253746255|Giardia|canonicalH4 308158292|Giardia|canonicalH4 190702301|Glyptapanteles|canonicalH4 281204874|Polysphondylium|canonicalH4 291385835 | Oryctolagus | canonical H4 51317326|Sterkiella|canonicalH4 51317327|Stylonychia|canonicalH4 21779951|Sterkiella|canonicalH4 21779954|Pleurotricha|canonicalH4 21779960|Stylonychia|canonicalH4 20141289 | Moneuplotes | canonical H4 21779945|Euplotes|canonicalH4 15430617|Paramecium|canonicalH4 145479773|Paramecium|canonicalH4 124392981 | Paramecium | canonical H4



100



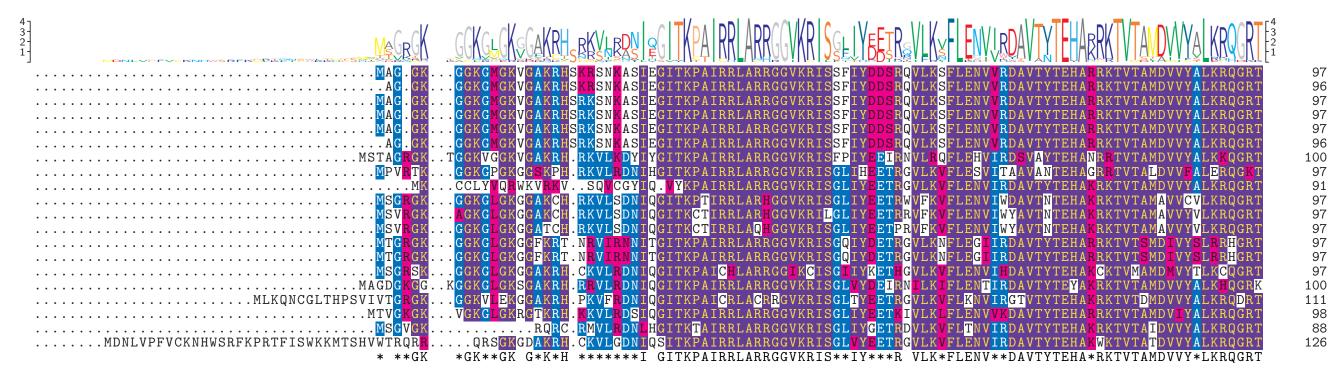
non conserved similar $\geq 50\%$ conserved

≥80% conserved

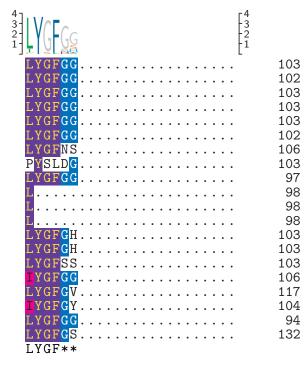
51317342|Tetrahymena|canonicalH4 352679|Tetrahymena|canonicalH4 118366755|Tetrahymena|canonicalH4 59799578|Tetrahymena|canonicalH4 89298360|Tetrahymena|canonicalH4 223273|Tetrahymena|canonicalH4 281211368 | Polysphondylium | canonical H4 294900087 | Perkinsus | canonical H4 194779418 | Drosophila | canonical H4 297677375 | Pongo | canonical H4 4504319|Homo|canonicalH4 55627896|Pan|canonicalH4 290994346|Naegleria|canonicalH4 284093411|Naegleria|canonicalH4 291407310|Oryctolagus|canonicalH4 190702440 | Glyptapanteles | canonical H4 193664731 | Acyrthosiphon | canonical H4 162606014|Guillardia|canonicalH4 292615682|Danio|canonicalH4 194672961|Bos|canonicalH4 consensus

logo

51317342|Tetrahymena|canonicalH4 352679|Tetrahymena|canonicalH4 118366755 | Tetrahymena | canonical H4 59799578|Tetrahymena|canonicalH4 89298360|Tetrahymena|canonicalH4 223273|Tetrahymena|canonicalH4 281211368|Polysphondylium|canonicalH4 294900087 | Perkinsus | canonical H4 194779418 | Drosophila | canonical H4 297677375 | Pongo | canonical H4 4504319|Homo|canonicalH4 55627896 | Pan | canonical H4 290994346|Naegleria|canonicalH4 284093411|Naegleria|canonicalH4 291407310|Oryctolagus|canonicalH4 190702440 | Glyptapanteles | canonical H4 193664731 | Acyrthosiphon | canonical H4 162606014|Guillardia|canonicalH4 292615682|Danio|canonicalH4 194672961|Bos|canonicalH4 consensus



98 88



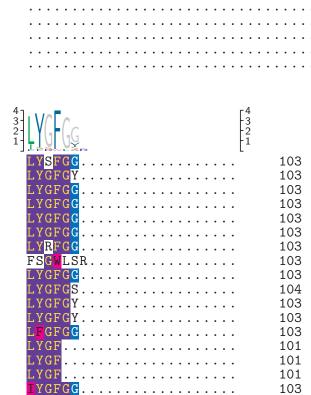
non conserved similar ≥50% conserved ≥80% conserved

logo

291397168|Oryctolagus|canonicalH4 300120449|Blastocystis|canonicalH4 66361758 | Cryptosporidium | canonical H4 67624013 | Cryptosporidium | canonical H4 54659467 | Cryptosporidium | canonical H4 209882272 | Cryptosporidium | canonical H4 156552551 | Nasonia | canonical H4 115741214|Strongylocentrotus|canonicalH4 159480384 | Chlamydomonas | canonical H4 160331031|Hemiselmis|canonicalH4 290977395|Naegleria|canonicalH4 284084992|Naegleria|canonicalH4 294879367 | Perkinsus | canonical H4 123431577 | Trichomonas | canonical H4 1360628|Trichomonas|canonicalH4 123469493 | Trichomonas | canonical H4 19112358|Schizosaccharomyces|canonicalH4 122103|Schizosaccharomyces|canonicalH4 213401635 | Schizosaccharomyces | canonical H4 170105463 Laccaria | canonical H4 consensus

logo

291397168|Oryctolagus|canonicalH4 300120449|Blastocystis|canonicalH4 66361758 | Cryptosporidium | canonical H4 67624013 | Cryptosporidium | canonical H4 54659467 | Cryptosporidium | canonical H4 209882272 | Cryptosporidium | canonical H4 156552551 | Nasonia | canonical H4 115741214|Strongylocentrotus|canonicalH4 159480384 | Chlamydomonas | canonical H4 160331031 | Hemiselmis | canonical H4 290977395|Naegleria|canonicalH4 284084992|Naegleria|canonicalH4 294879367 | Perkinsus | canonical H4 123431577 | Trichomonas | canonical H4 1360628|Trichomonas|canonicalH4 123469493 | Trichomonas | canonical H4 19112358|Schizosaccharomyces|canonicalH4 122103|Schizosaccharomyces|canonicalH4 213401635|Schizosaccharomyces|canonicalH4 170105463|Laccaria|canonicalH4 consensus

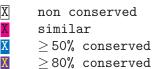


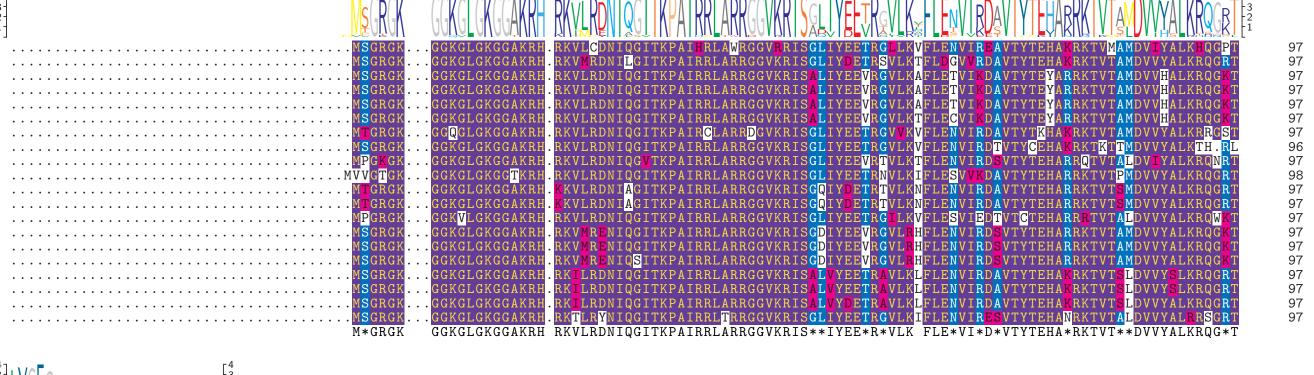
YGFGG.....

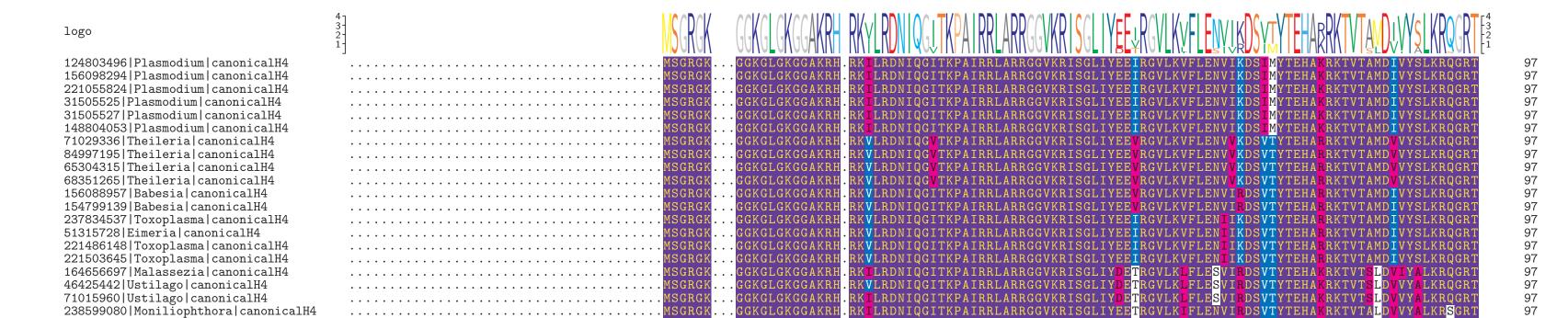
YGFG<mark>G</mark>.....

103

103





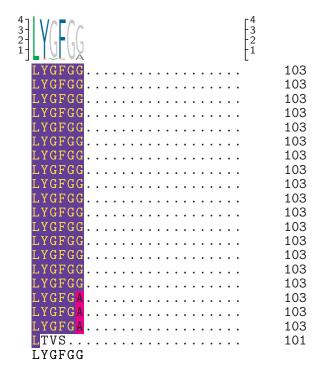


GGKGLGKGGAKRH RK*LRDNIQGITKPAIRRLARRGGVKRISGLIYEE*RGVLKVFLENVI*DS**YTEHA*RKTVTAMD*VYSLKRQGRT

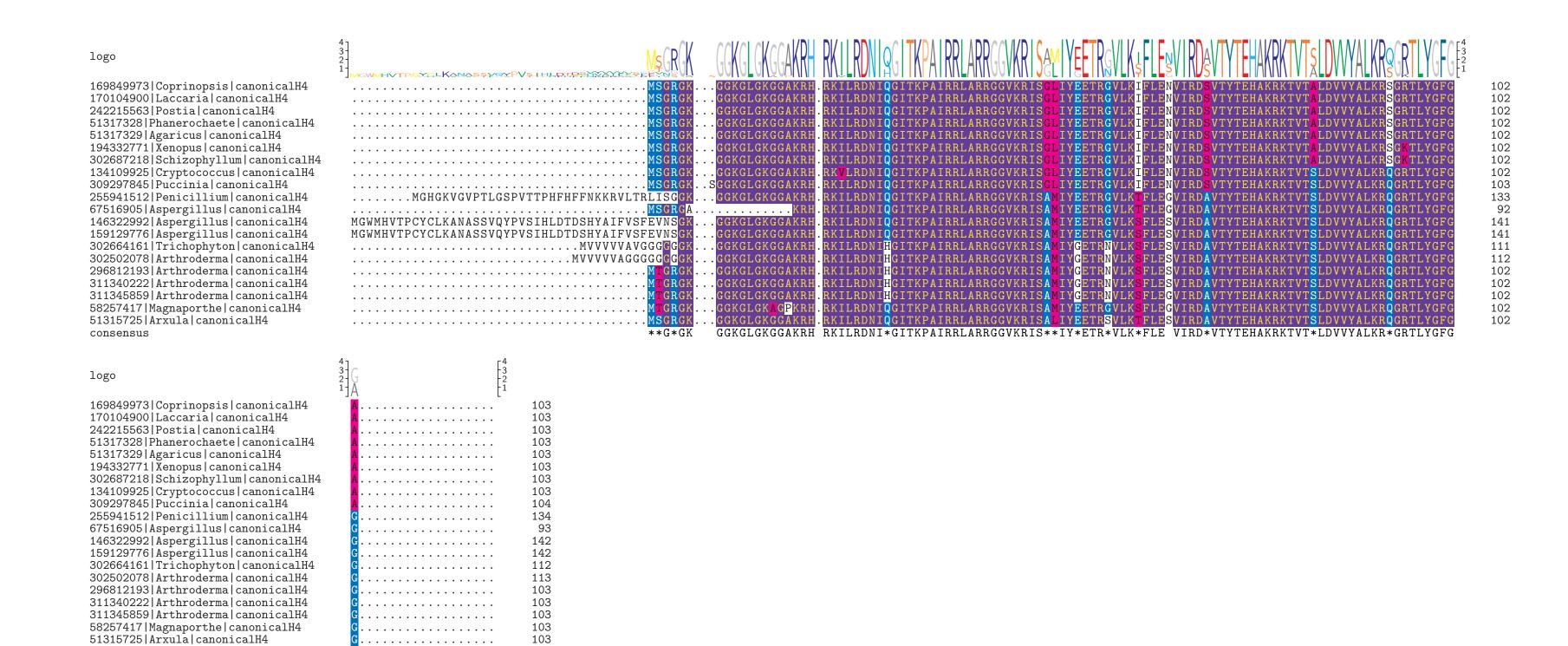
logo

consensus

124803496 | Plasmodium | canonical H4 156098294 | Plasmodium | canonical H4 221055824 | Plasmodium | canonical H4 31505525|Plasmodium|canonicalH4 31505527 | Plasmodium | canonical H4 148804053|Plasmodium|canonicalH4 71029336|Theileria|canonicalH4 84997195|Theileria|canonicalH4 65304315|Theileria|canonicalH4 68351265|Theileria|canonicalH4 156088957 | Babesia | canonical H4 154799139|Babesia|canonicalH4 237834537|Toxoplasma|canonicalH4 51315728|Eimeria|canonicalH4 221486148|Toxoplasma|canonicalH4 221503645|Toxoplasma|canonicalH4 164656697 | Malassezia | canonical H4 46425442|Ustilago|canonicalH4 71015960|Ustilago|canonicalH4 238599080|Moniliophthora|canonicalH4 consensus



non conserved similar $\geq 50\%$ conserved $\geq 80\%$ conserved

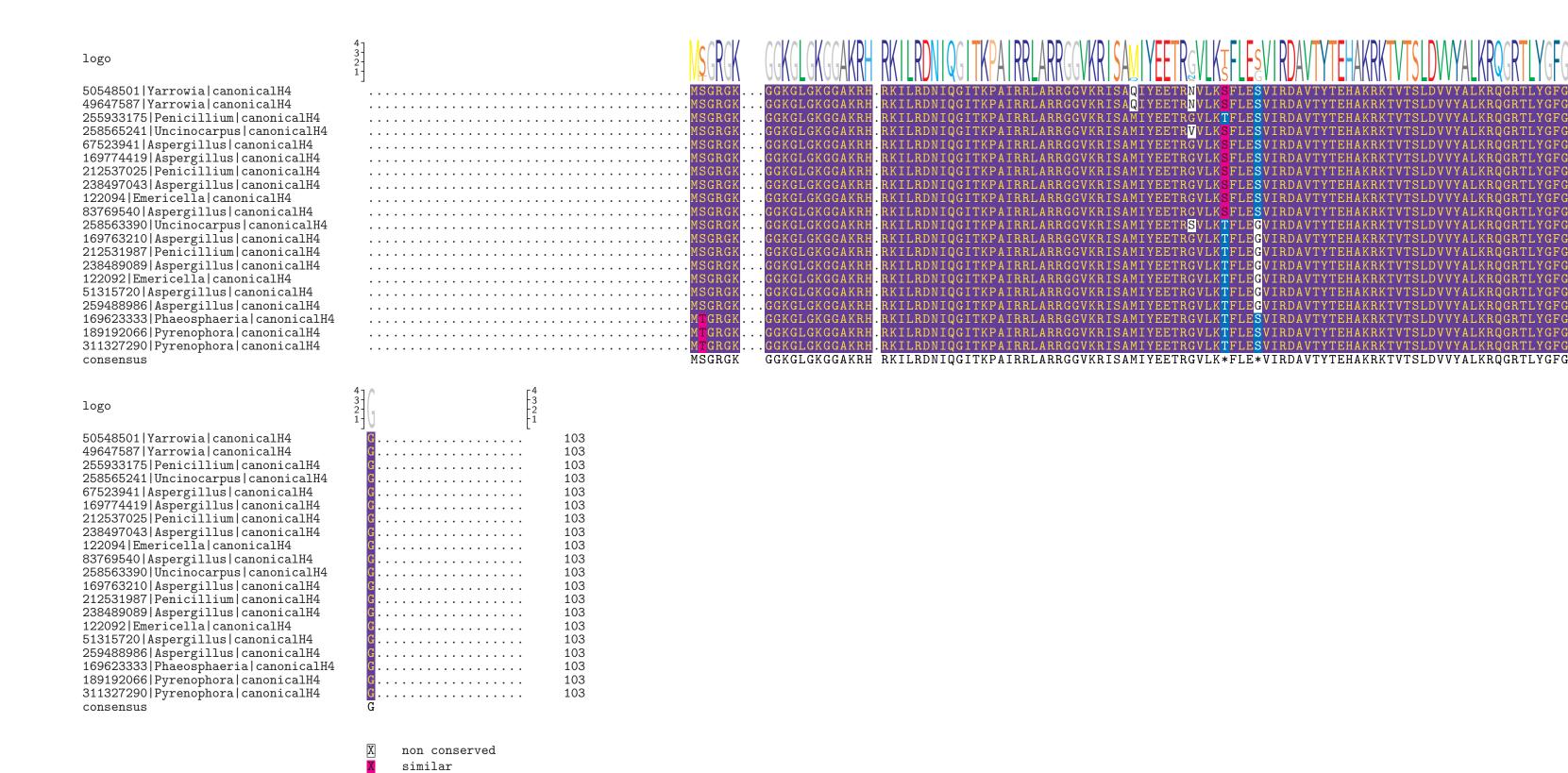


consensus

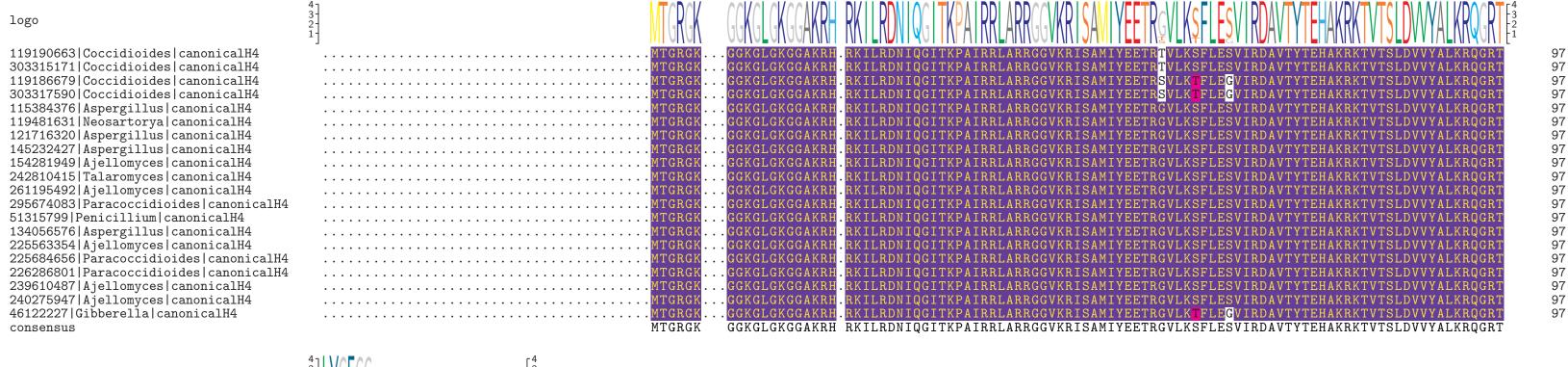
non conserved

 \geq 50% conserved \geq 80% conserved

similar



 \geq 50% conserved \geq 80% conserved

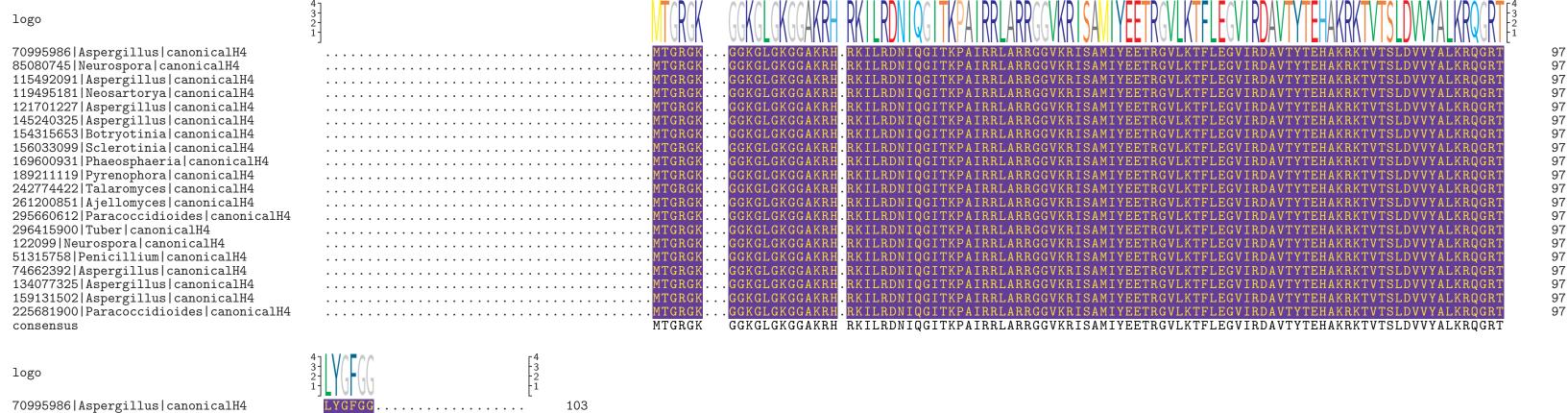


logo

119190663 | Coccidioides | canonical H4 303315171 | Coccidioides | canonical H4 119186679 | Coccidioides | canonical H4 303317590 | Coccidioides | canonical H4 115384376 | Aspergillus | canonical H4 119481631 | Neosartorya | canonical H4 121716320 | Aspergillus | canonical H4 145232427 | Aspergillus | canonical H4 154281949|Ajellomyces|canonicalH4 242810415|Talaromyces|canonicalH4 261195492|Ajellomyces|canonicalH4 295674083|Paracoccidioides|canonicalH4 51315799|Penicillium|canonicalH4 134056576 | Aspergillus | canonical H4 225563354|Ajellomyces|canonicalH4 225684656 | Paracoccidioides | canonical H4 226286801|Paracoccidioides|canonicalH4 239610487|Ajellomyces|canonicalH4 240275947 | Ajellomyces | canonical H4 46122227 | Gibberella | canonical H4 consensus

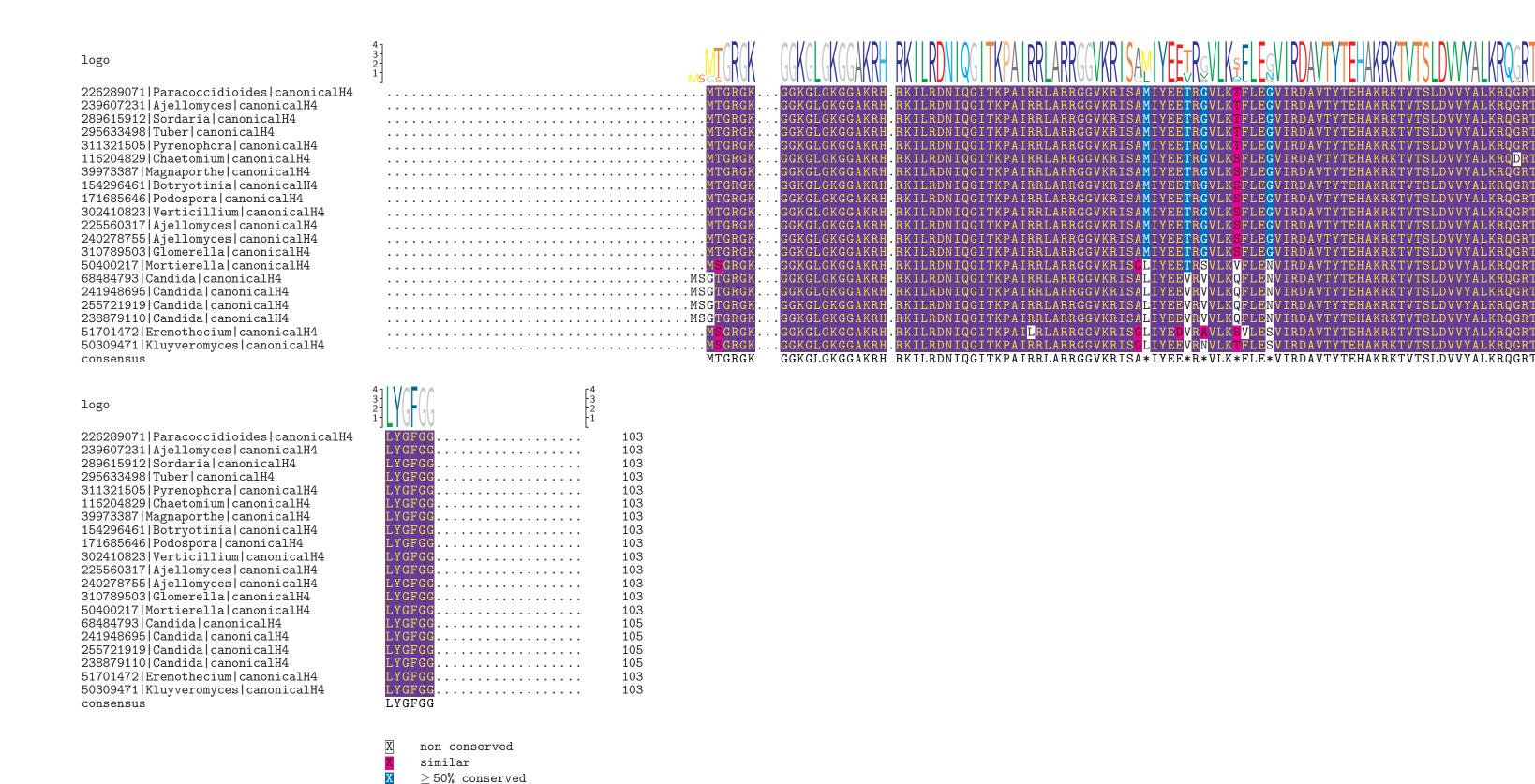
. 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 LYGFGG

non conserved similar $\geq 50\%$ conserved $\geq 80\%$ conserved

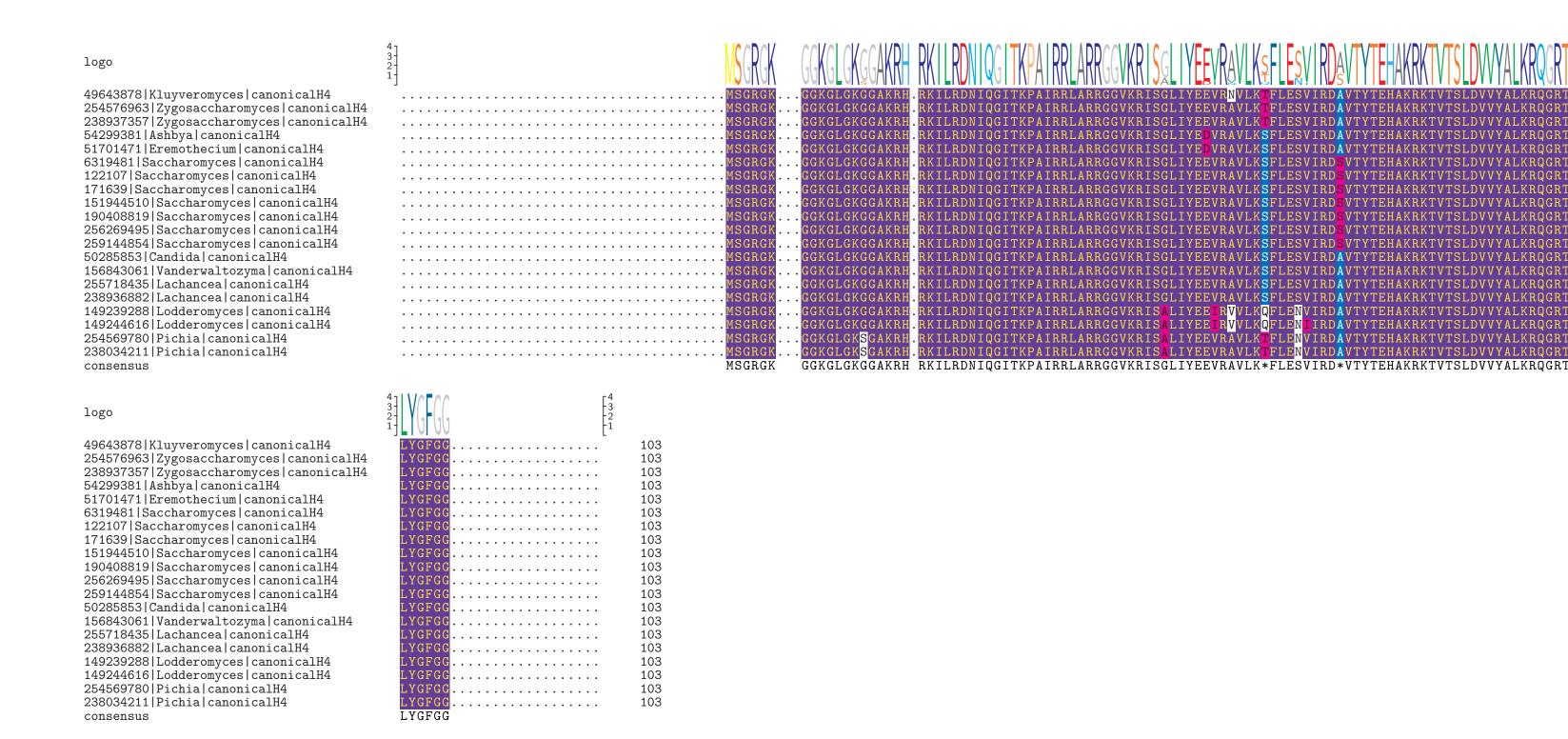


85080745|Neurospora|canonicalH4 103 115492091 | Aspergillus | canonical H4 103 119495181|Neosartorya|canonicalH4 103 121701227 | Aspergillus | canonical H4 103 145240325 | Aspergillus | canonical H4 103 154315653|Botryotinia|canonicalH4 103 156033099|Sclerotinia|canonicalH4 103 169600931 | Phaeosphaeria | canonical H4 103 189211119|Pyrenophora|canonicalH4 103 242774422|Talaromyces|canonicalH4 103 261200851 | Ajellomyces | canonical H4 103 295660612|Paracoccidioides|canonicalH4 103 296415900|Tuber|canonicalH4 103 122099 | Neurospora | canonical H4 103 51315758 | Penicillium | canonical H4 103 74662392|Aspergillus|canonicalH4 103 134077325|Aspergillus|canonicalH4 103 159131502 | Aspergillus | canonical H4 103 225681900|Paracoccidioides|canonicalH4 103 consensus

non conserved similar $\geq 50\%$ conserved $\geq 80\%$ conserved



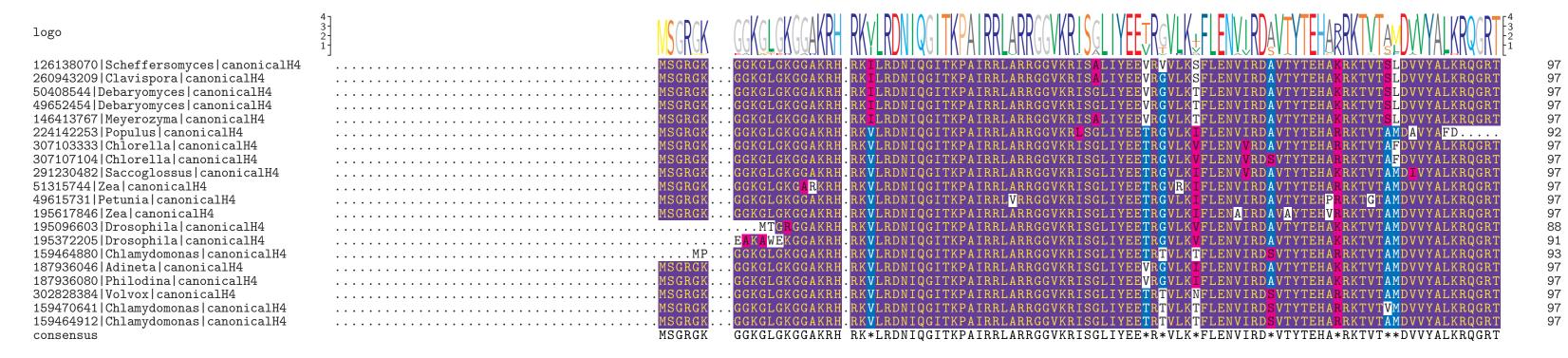
 \geq 80% conserved



non conserved

 \geq 50% conserved \geq 80% conserved

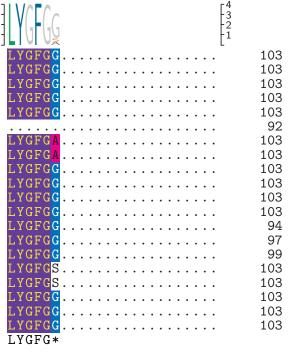
similar



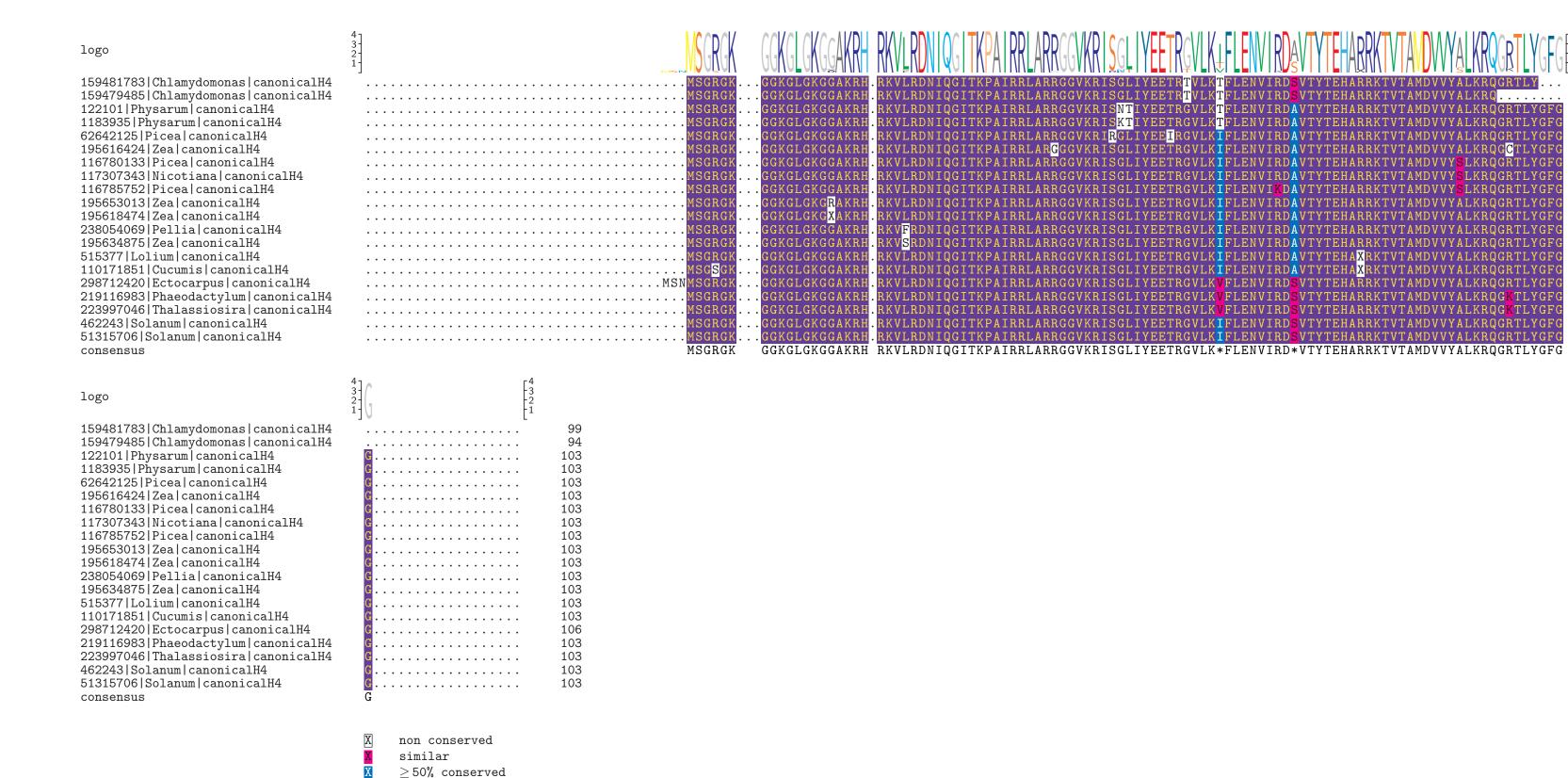


159464912 | Chlamydomonas | canonical H4

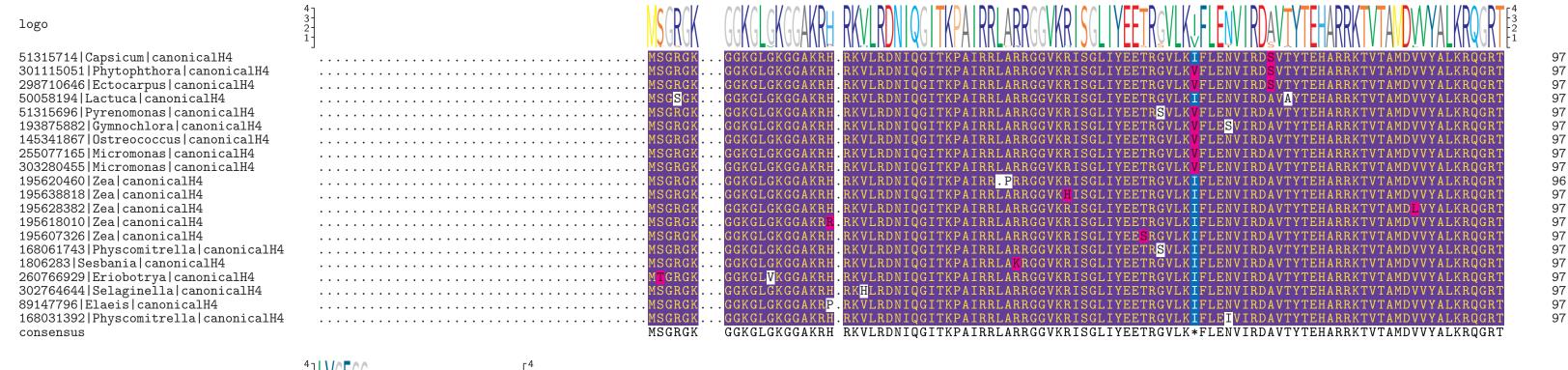
consensus



non conserved similar $\geq 50\%$ conserved $\geq 80\%$ conserved

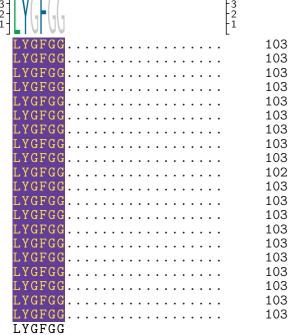


≥80% conserved

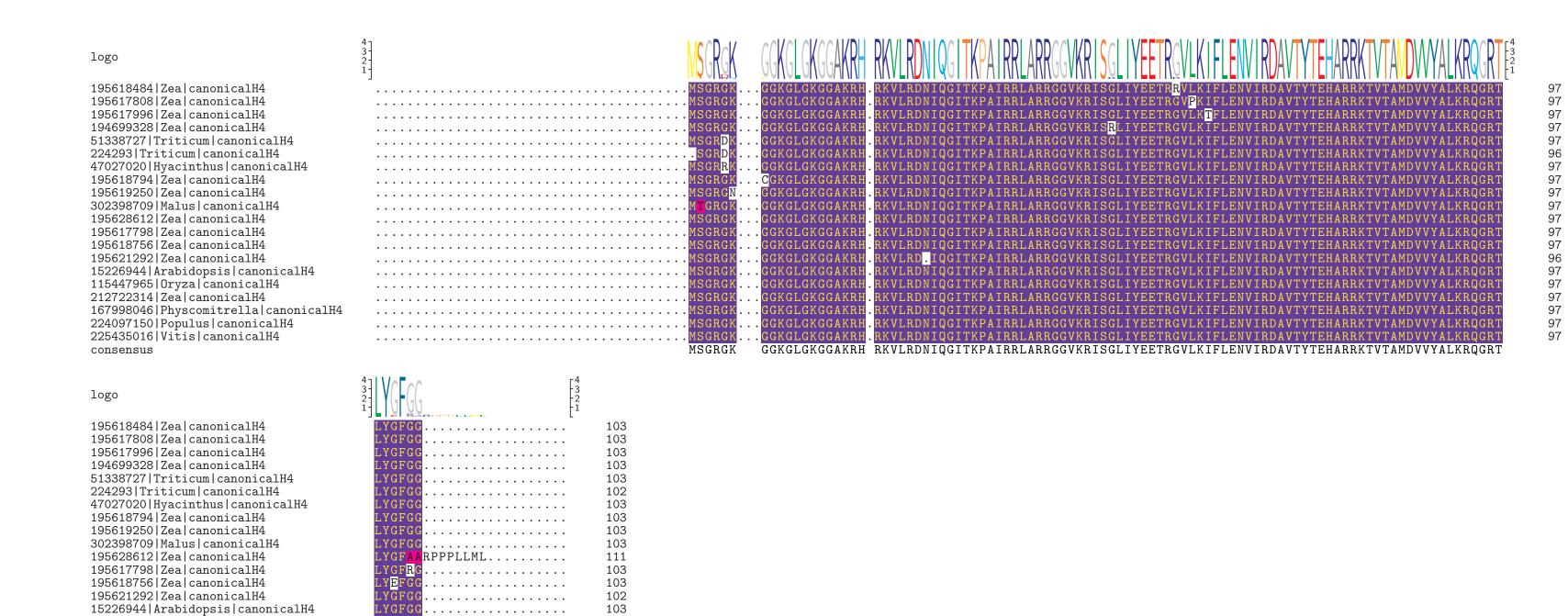


logo

51315714 | Capsicum | canonical H4 301115051|Phytophthora|canonicalH4 298710646 | Ectocarpus | canonical H4 50058194|Lactuca|canonicalH4 51315696 | Pyrenomonas | canonical H4 193875882 | Gymnochlora | canonical H4 145341867 | Ostreococcus | canonical H4 255077165|Micromonas|canonicalH4 303280455 | Micromonas | canonical H4 195620460 | Zea | canonical H4 195638818 | Zea | canonical H4 195628382 | Zea | canonical H4 195618010|Zea|canonicalH4 195607326 | Zea | canonical H4 168061743|Physcomitrella|canonicalH4 1806283|Sesbania|canonicalH4 260766929|Eriobotrya|canonicalH4 302764644|Selaginella|canonicalH4 89147796 | Elaeis | canonical H4 168031392|Physcomitrella|canonicalH4 consensus



non conserved similar \geq 50% conserved \geq 80% conserved



.

.

.

103

103

103

103

103

115447965|Oryza|canonicalH4

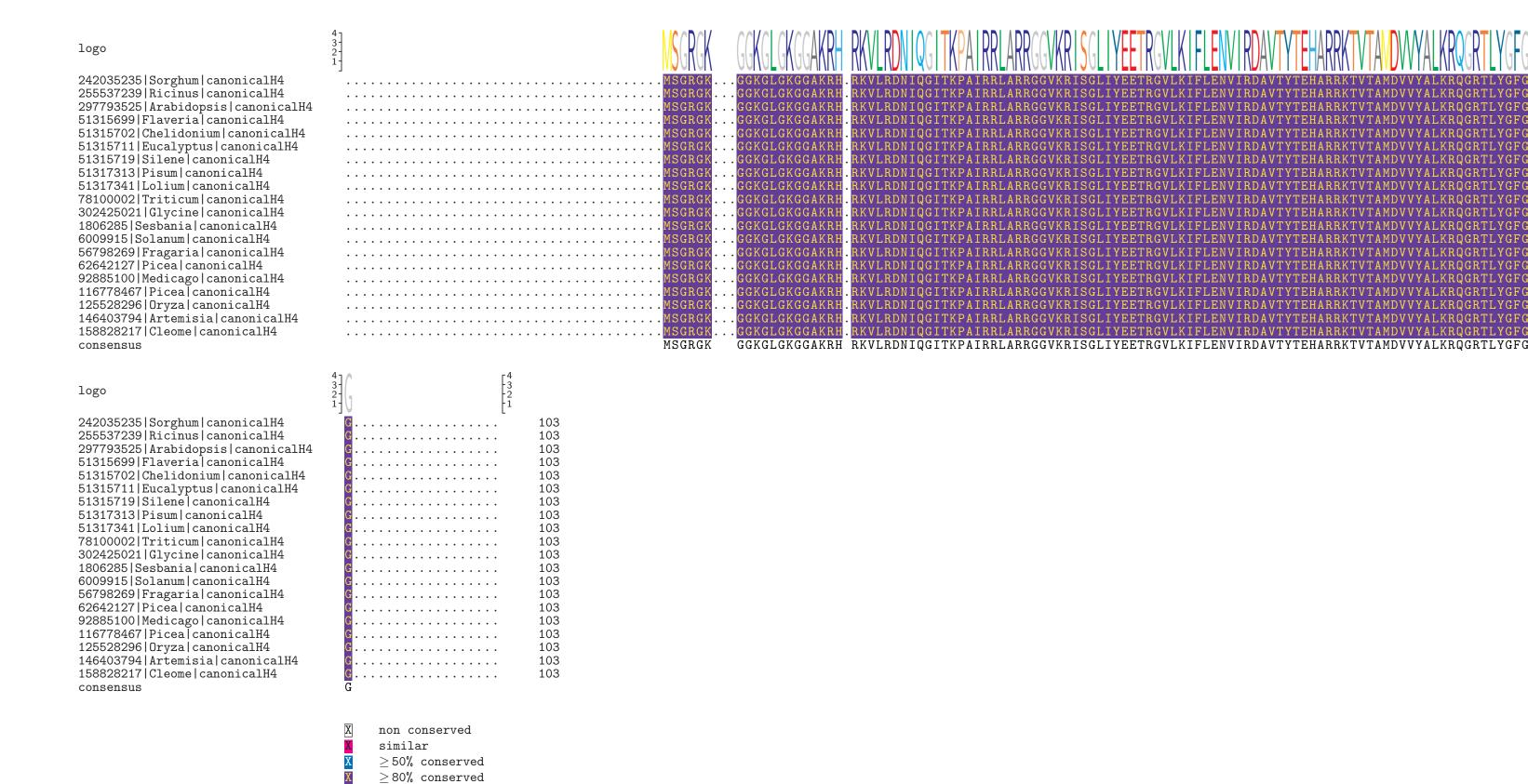
224097150|Populus|canonicalH4

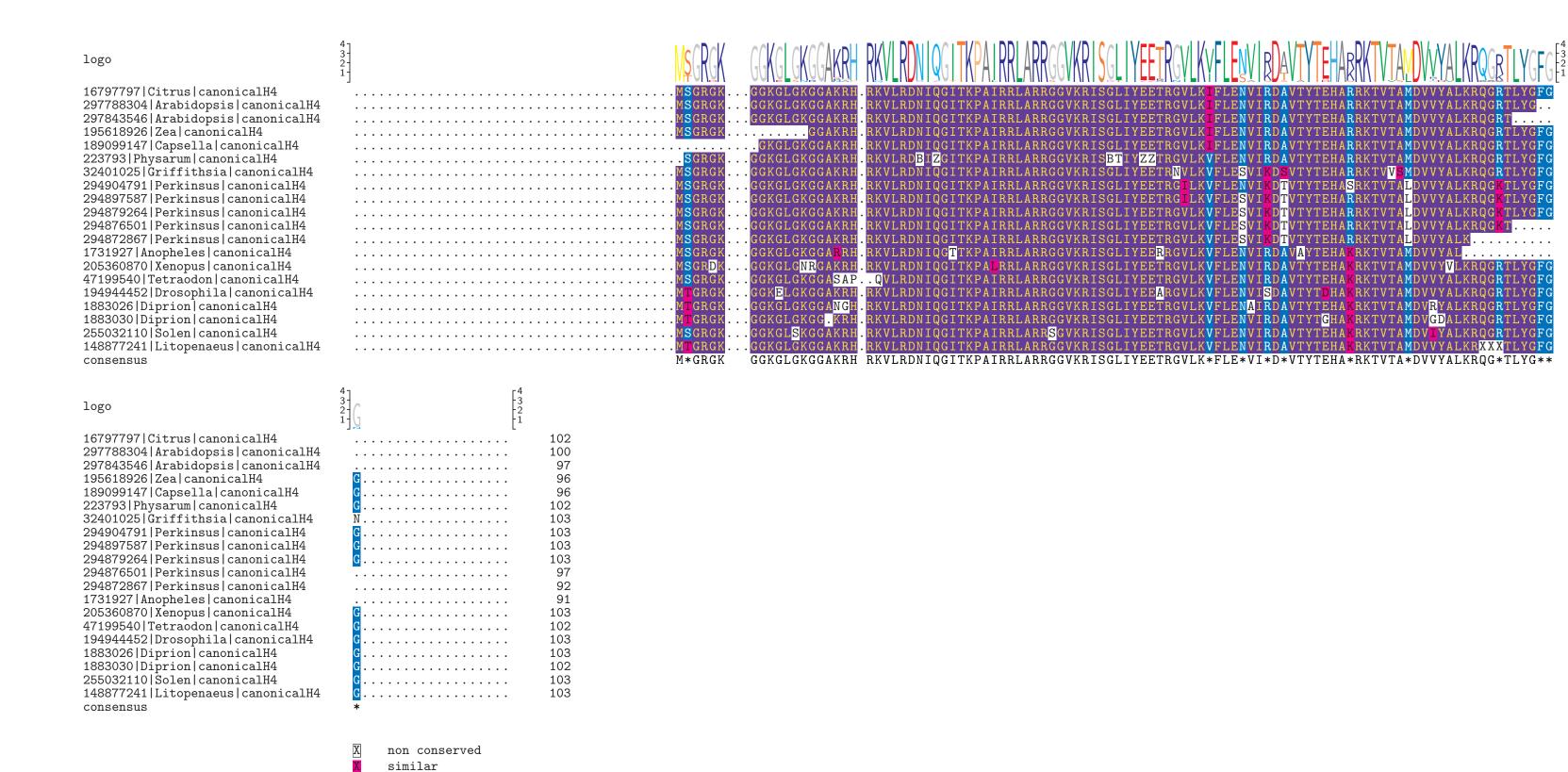
225435016|Vitis|canonicalH4

167998046|Physcomitrella|canonicalH4

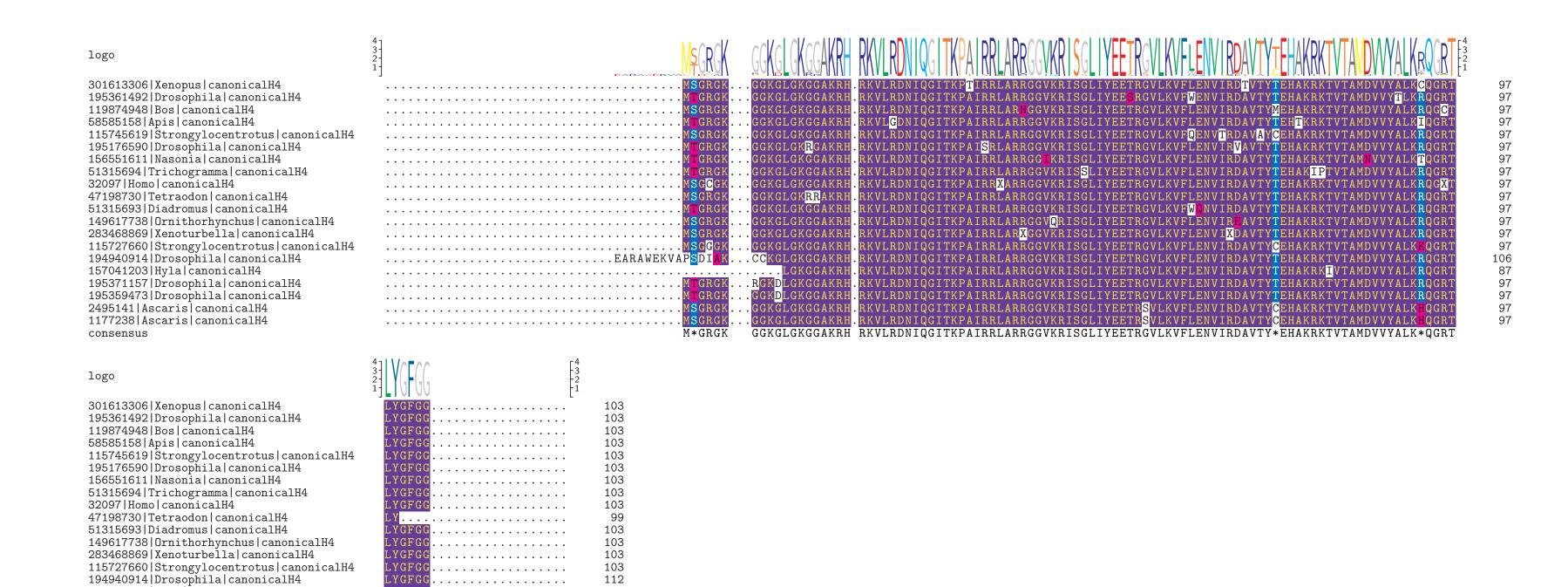
212722314 | Zea | canonical H4

consensus





 \geq 50% conserved \geq 80% conserved



157041203|Hyla|canonicalH4

2495141 | Ascaris | canonical H4

1177238 | Ascaris | canonical H4

consensus

195371157|Drosophila|canonicalH4

195359473 | Drosophila | canonical H4

.

.

.

.

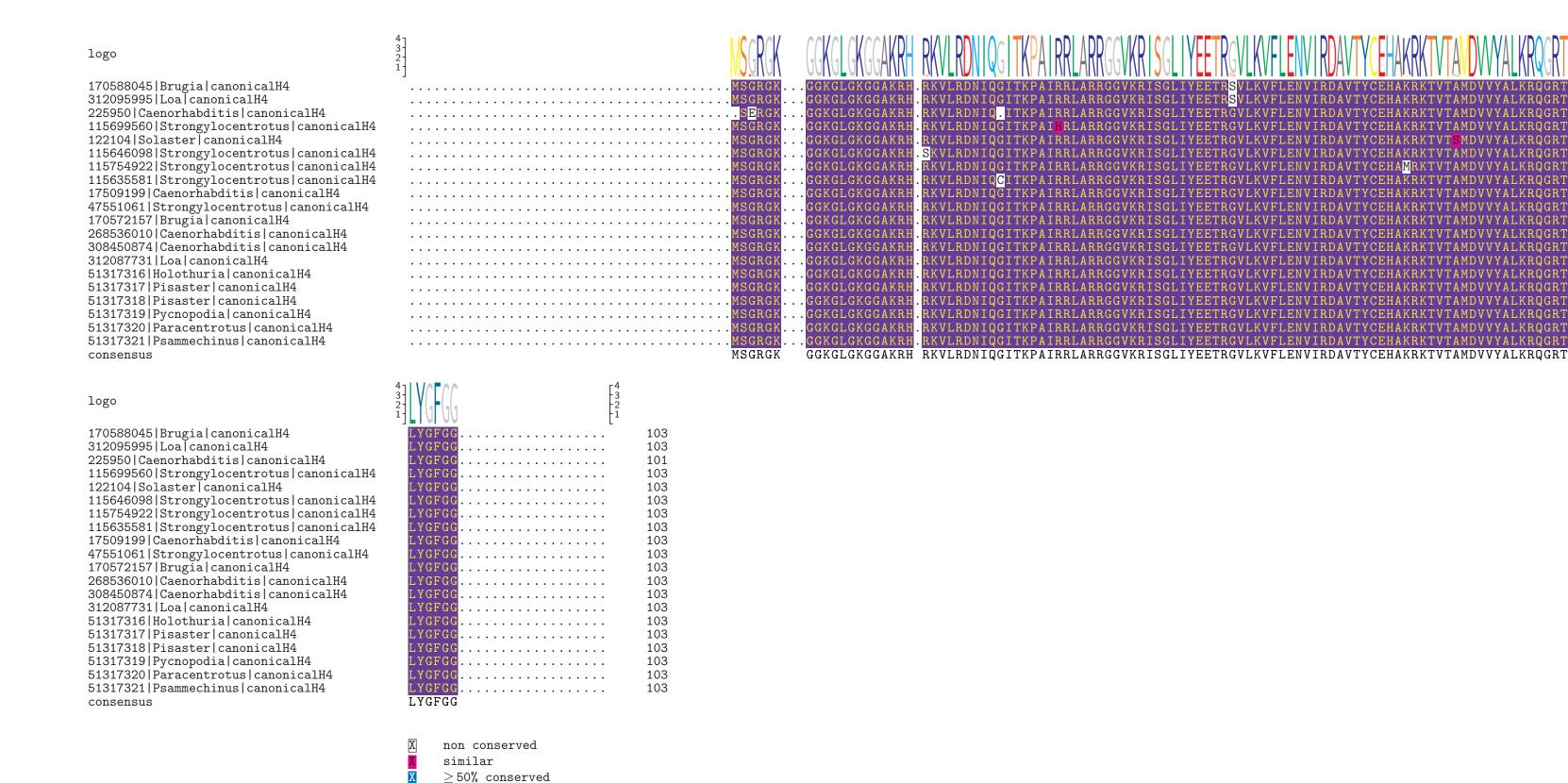
.

93

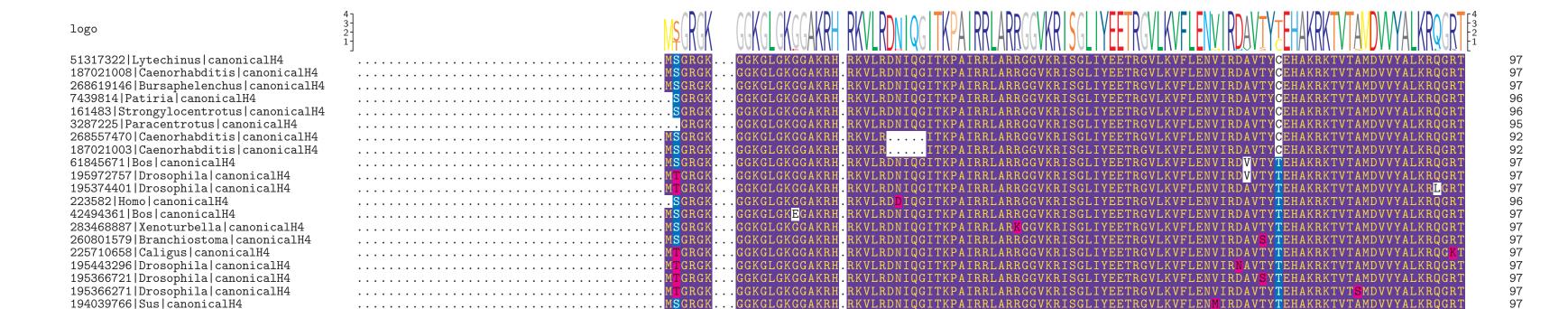
103

103

103



 \geq 80% conserved



GGKGLGKGGAKRH RKVLRDNIQGITKPAIRRLARRGGVKRISGLIYEETRGVLKVFLENVIRDAVTY*EHAKRKTVTAMDVVYALKRQGRT

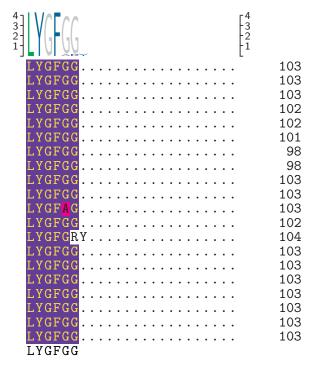
logo

consensus

51317322|Lytechinus|canonicalH4 187021008 | Caenorhabditis | canonical H4 268619146 | Bursaphelenchus | canonical H4 7439814|Patiria canonicalH4 161483|Strongylocentrotus|canonicalH4 3287225 | Paracentrotus | canonical H4 268557470 | Caenorhabditis | canonical H4 187021003 | Caenorhabditis | canonical H4 61845671|Bos|canonicalH4 195972757 | Drosophila | canonical H4 195374401|Drosophila|canonicalH4 223582|Homo|canonicalH4 42494361|Bos|canonicalH4 283468887 | Xenoturbella | canonical H4 260801579|Branchiostoma|canonicalH4 225710658 | Caligus | canonical H4 195443296 | Drosophila | canonical H4 195366721|Drosophila|canonicalH4 195366271 | Drosophila | canonical H4

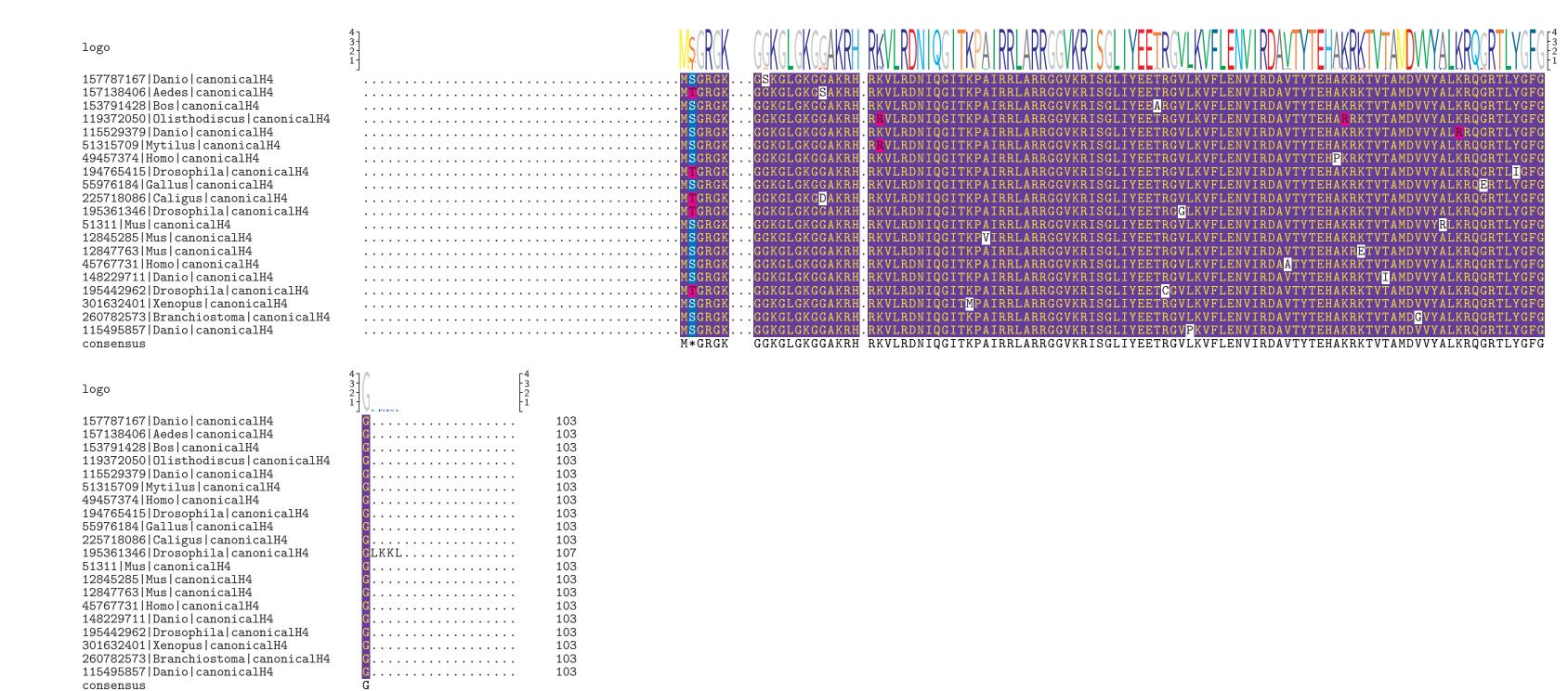
194039766|Sus|canonicalH4

consensus



non conserved similar $\geq 50\%$ conserved

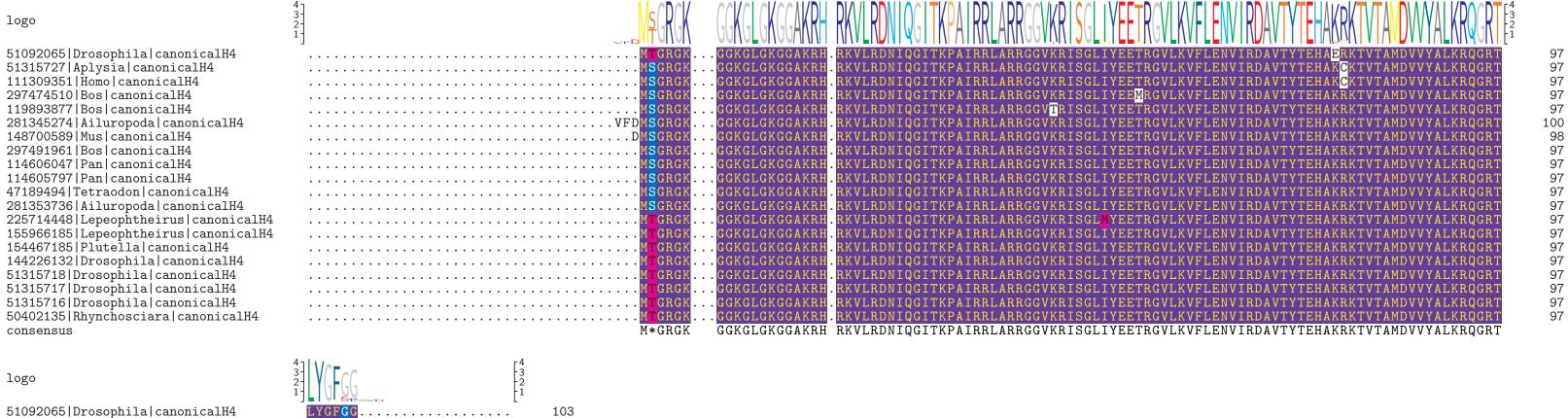
≥80% conserved

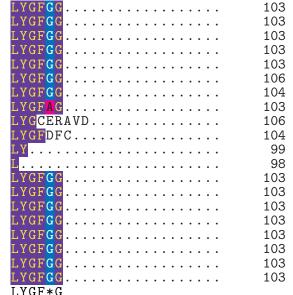


non conserved

 \geq 50% conserved \geq 80% conserved

similar





51315727 | Aplysia | canonical H4

281345274|Ailuropoda|canonicalH4

47189494|Tetraodon|canonicalH4

281353736 | Ailuropoda | canonical H4

144226132 | Drosophila | canonical H4

51315718|Drosophila|canonicalH4 51315717|Drosophila|canonicalH4

51315716|Drosophila|canonicalH4

consensus

50402135 | Rhynchosciara | canonical H4

225714448|Lepeophtheirus|canonicalH4 155966185|Lepeophtheirus|canonicalH4 154467185|Plutella|canonicalH4

111309351 | Homo | canonical H4

297474510|Bos|canonicalH4

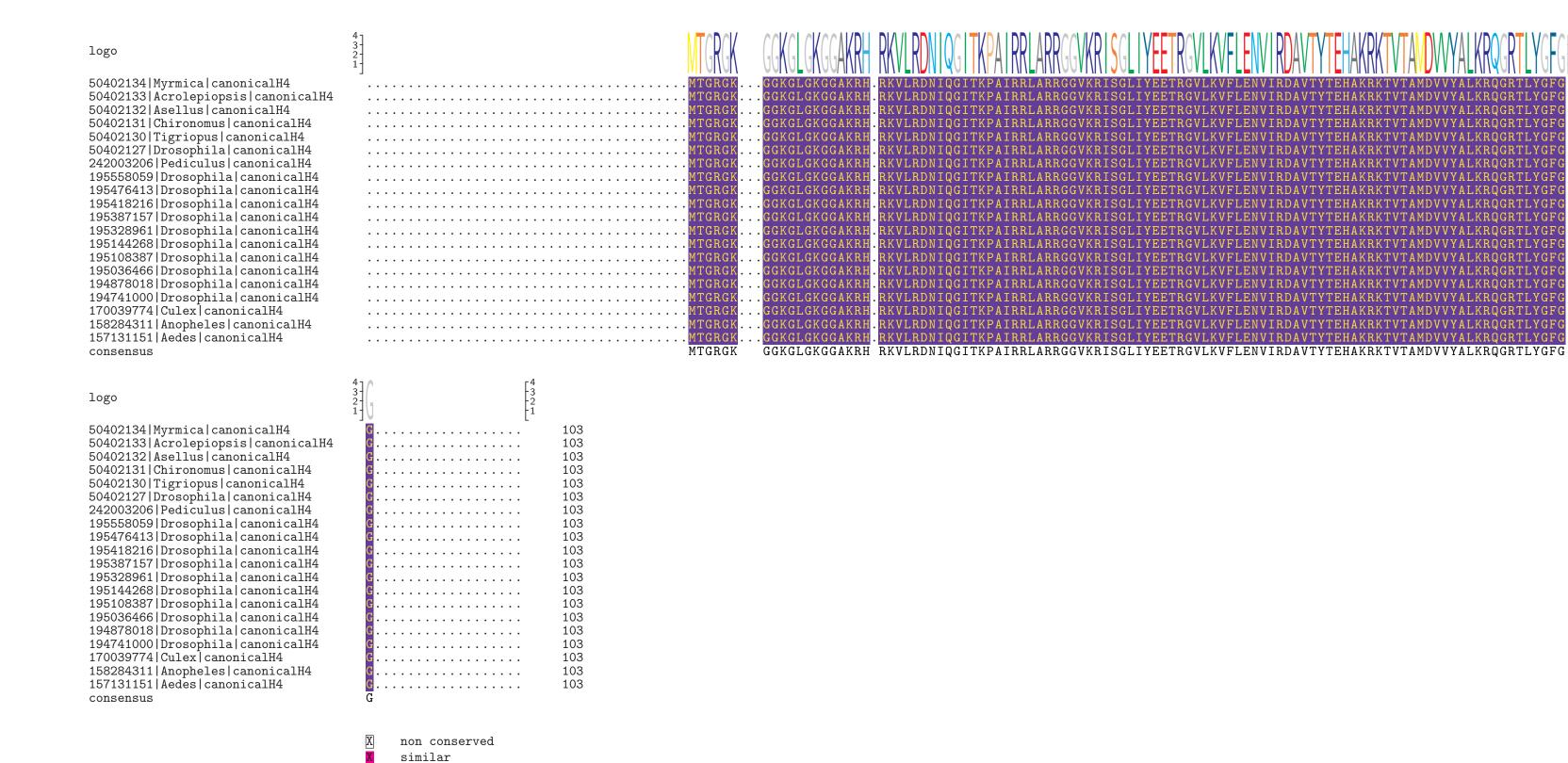
119893877|Bos|canonicalH4

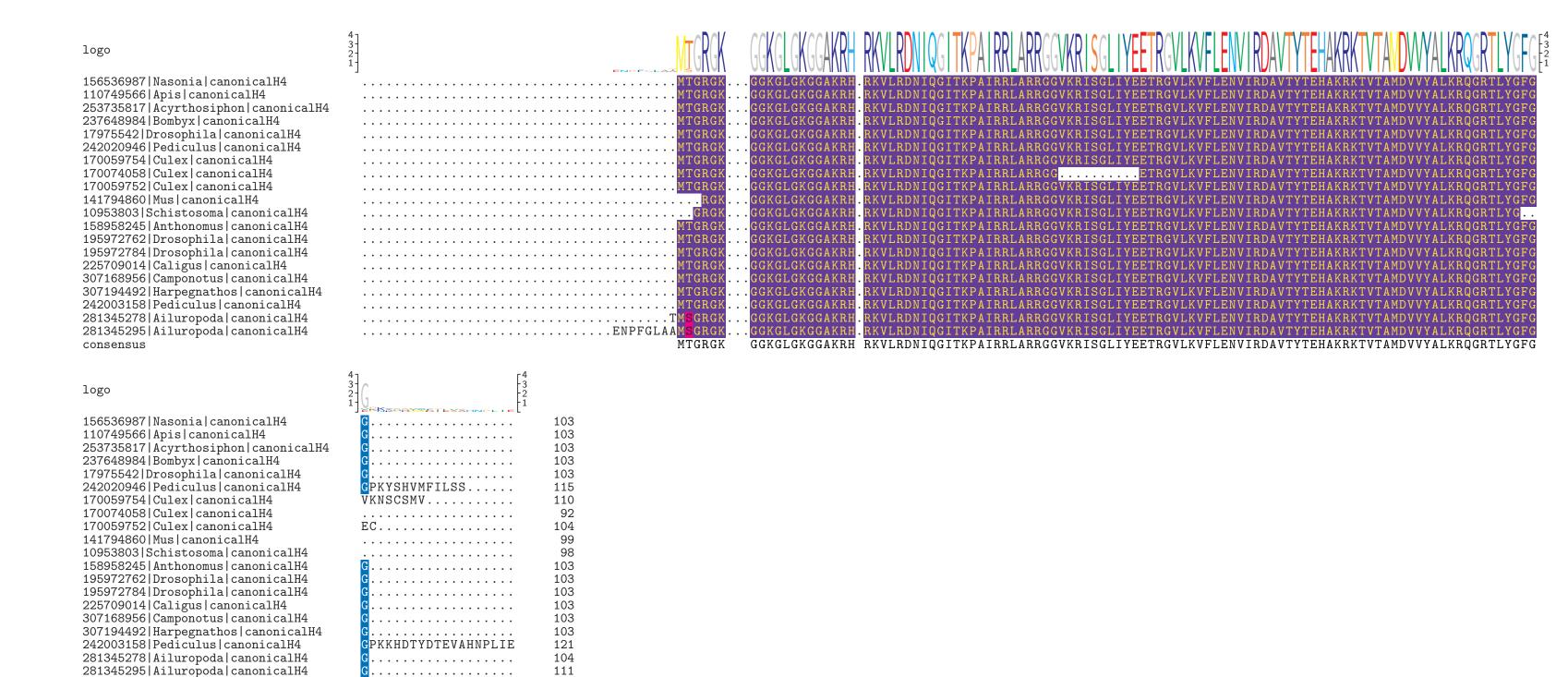
148700589 | Mus | canonical H4

297491961|Bos|canonicalH4

114606047 | Pan | canonical H4

114605797 | Pan | canonical H4



≥50% conserved ≥80% conserved 

.

non conserved

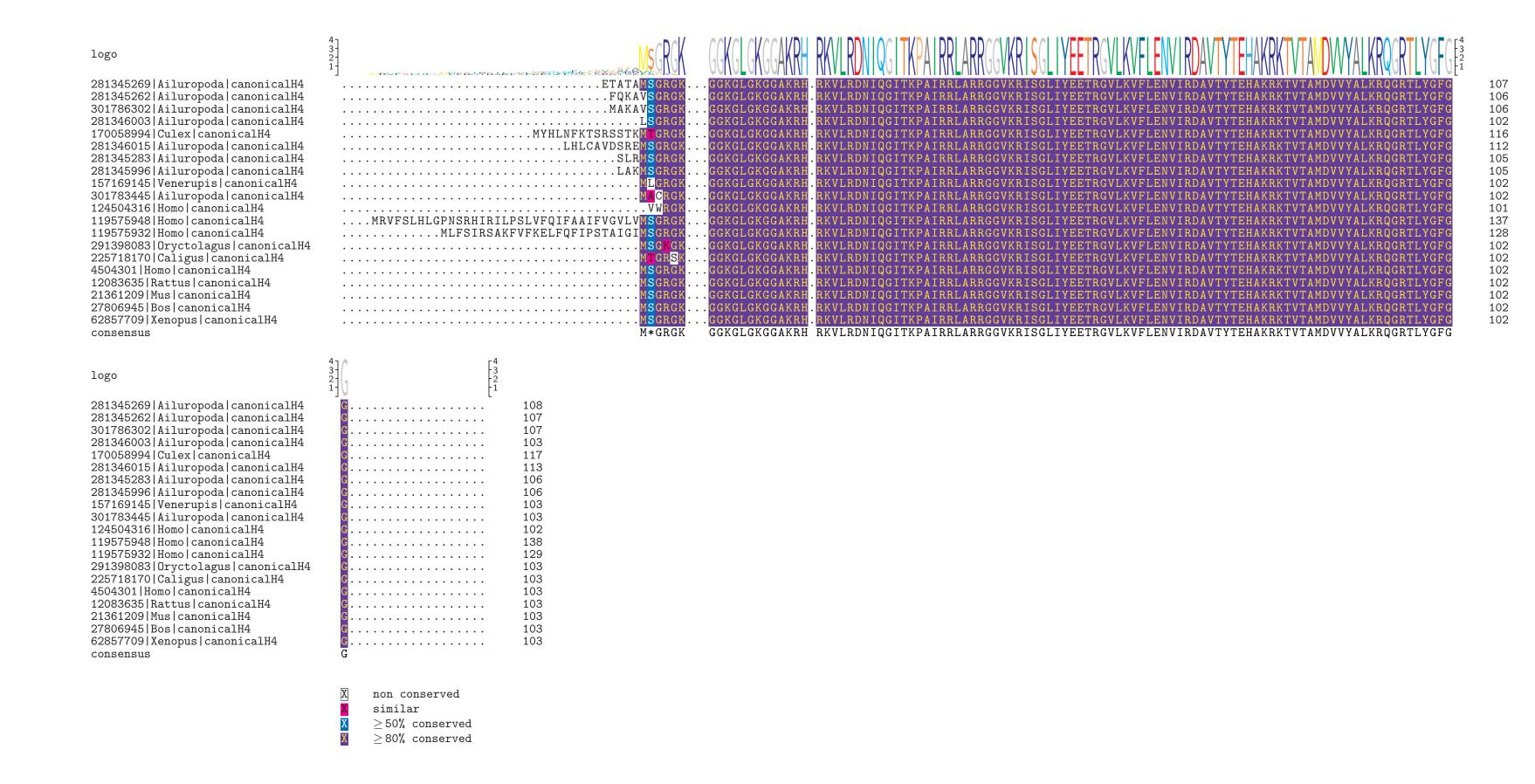
 \geq 50% conserved ≥80% conserved

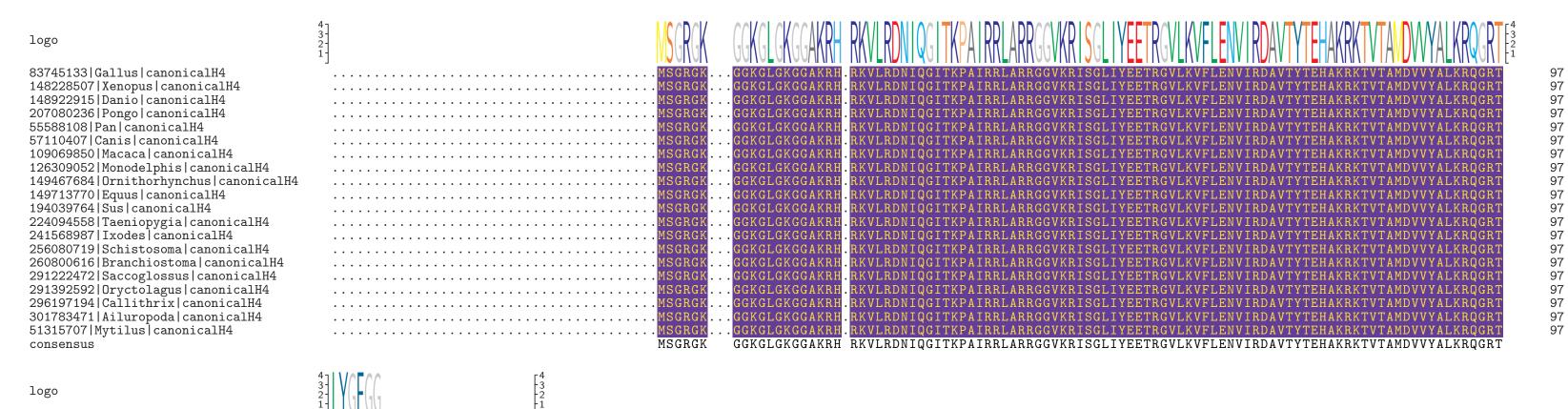
similar

102

102 102

102





83745133|Gallus|canonicalH4

148922915 | Danio | canonical H4

207080236 | Pongo | canonical H4

109069850 | Macaca | canonical H4

149713770 | Equus | canonical H4

194039764|Sus|canonicalH4

126309052 | Monodelphis | canonical H4

224094558|Taeniopygia|canonicalH4 241568987 | Ixodes | canonical H4

256080719|Schistosoma|canonicalH4

260800616|Branchiostoma|canonicalH4

291222472|Saccoglossus|canonicalH4

291392592|Oryctolagus|canonicalH4

296197194|Callithrix|canonicalH4

301783471|Ailuropoda|canonicalH4

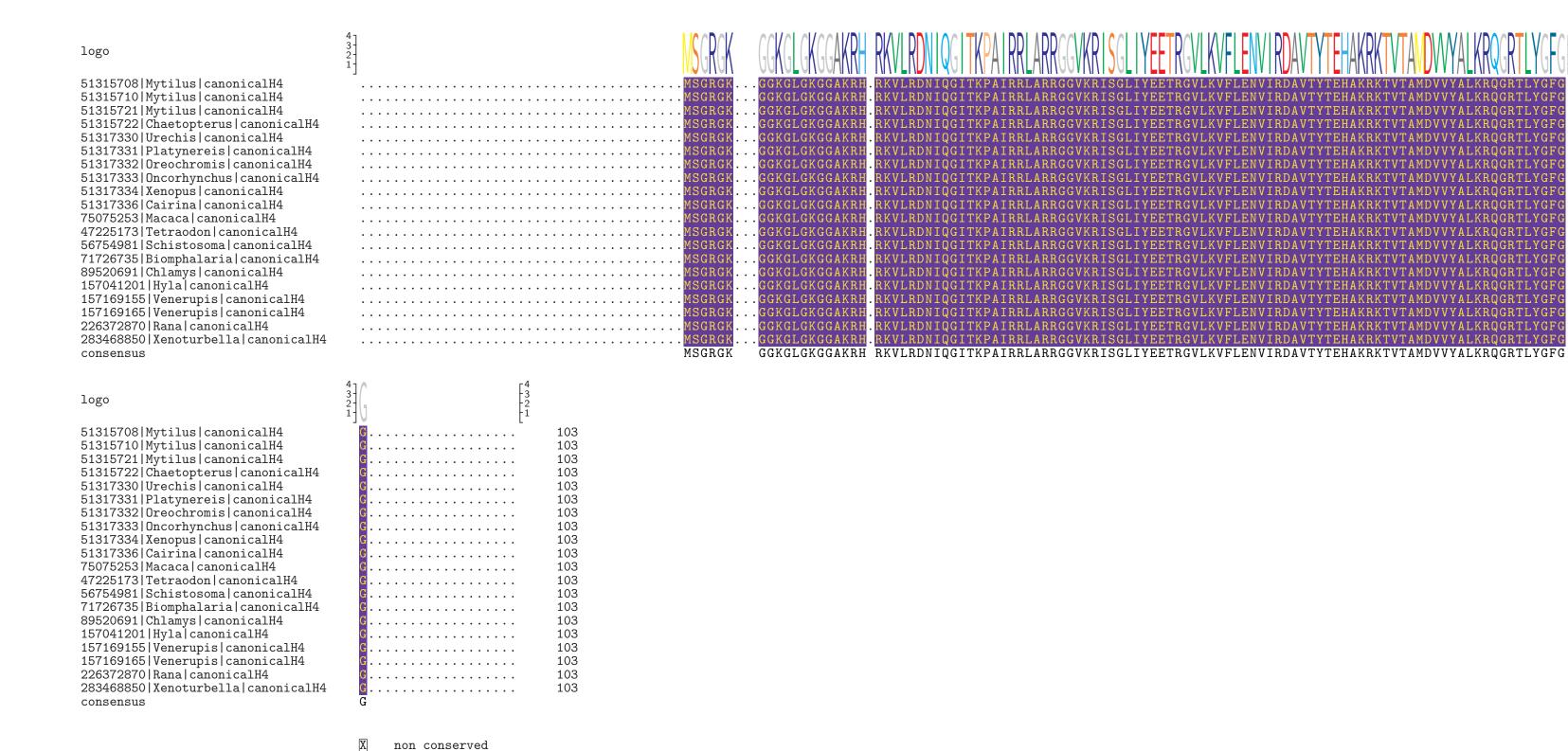
51315707 | Mytilus | canonical H4

consensus

55588108|Pan|canonicalH4 57110407|Canis|canonicalH4

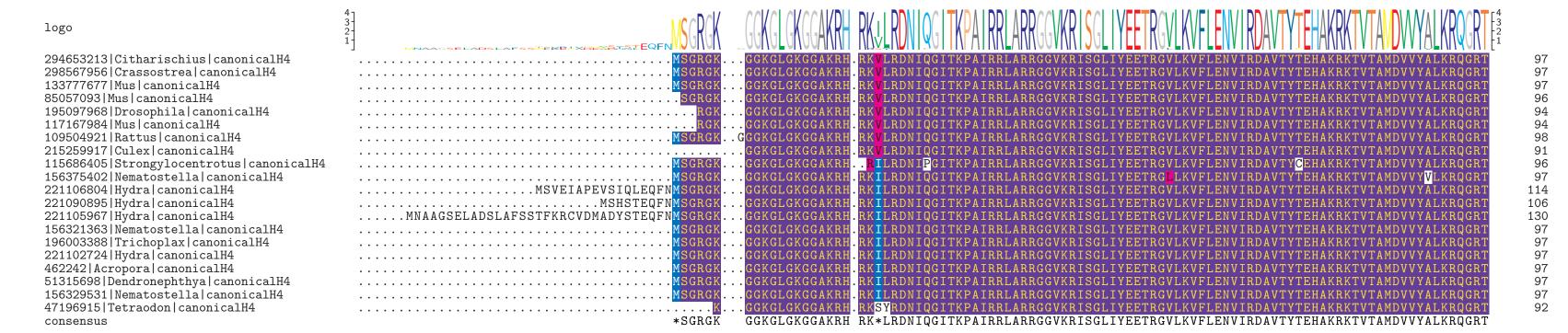
148228507 | Xenopus | canonical H4

non conserved similar ≥50% conserved ≥80% conserved



similar

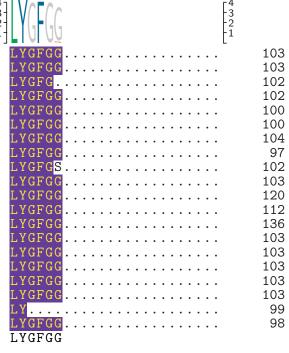
≥ 50% conserved
≥ 80% conserved



logo

consensus

294653213 | Citharischius | canonical H4 298567956 | Crassostrea | canonical H4 133777677 | Mus | canonical H4 85057093|Mus|canonicalH4 195097968|Drosophila|canonicalH4 117167984|Mus|canonicalH4 109504921 | Rattus | canonical H4 215259917 | Culex | canonical H4 115686405|Strongylocentrotus|canonicalH4 156375402|Nematostella|canonicalH4 221106804|Hydra|canonicalH4 221090895|Hydra|canonicalH4 221105967 | Hydra | canonical H4 156321363 | Nematostella | canonical H4 196003388|Trichoplax|canonicalH4 221102724|Hydra|canonicalH4 462242 | Acropora | canonical H4 51315698 | Dendronephthya | canonical H4 156329531 | Nematostella | canonical H4 47196915 | Tetraodon | canonical H4



non conserved similar $\geq 50\%$ conserved $\geq 80\%$ conserved

