SUPPLEMENTAL FIGURES AND LEGENDS

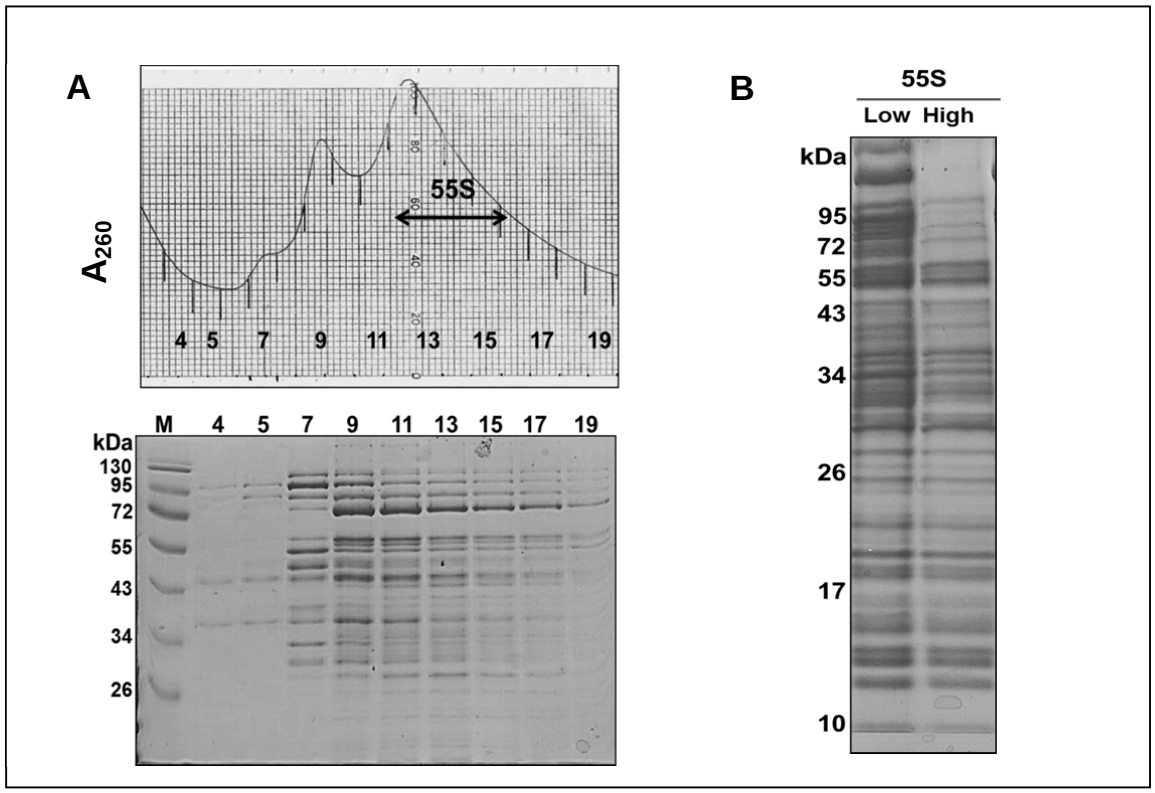
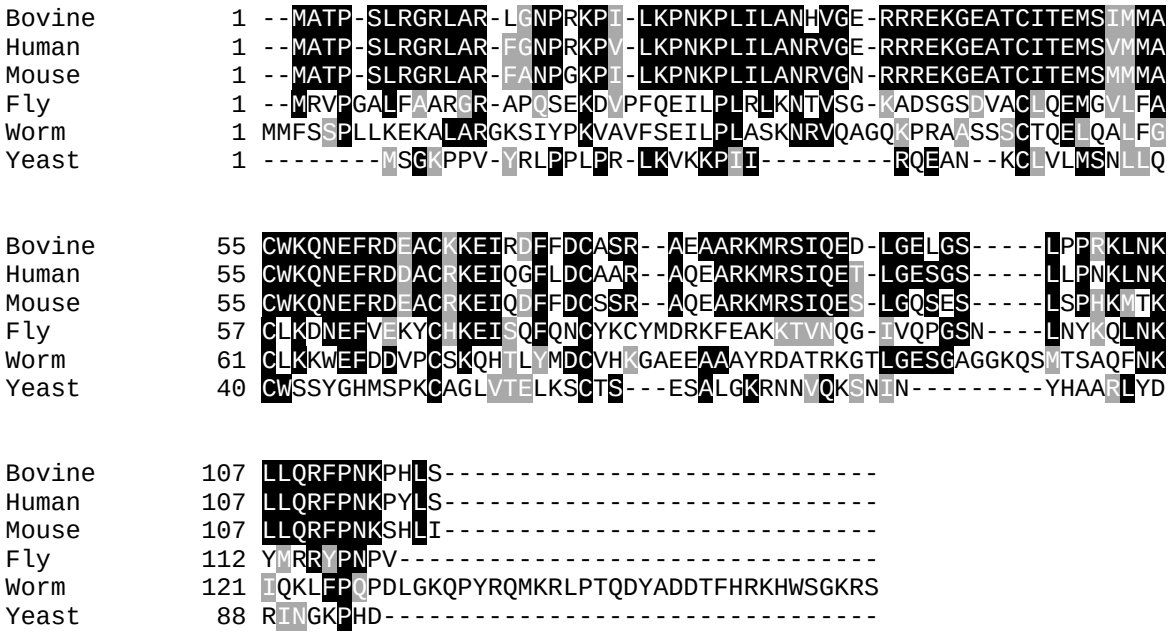


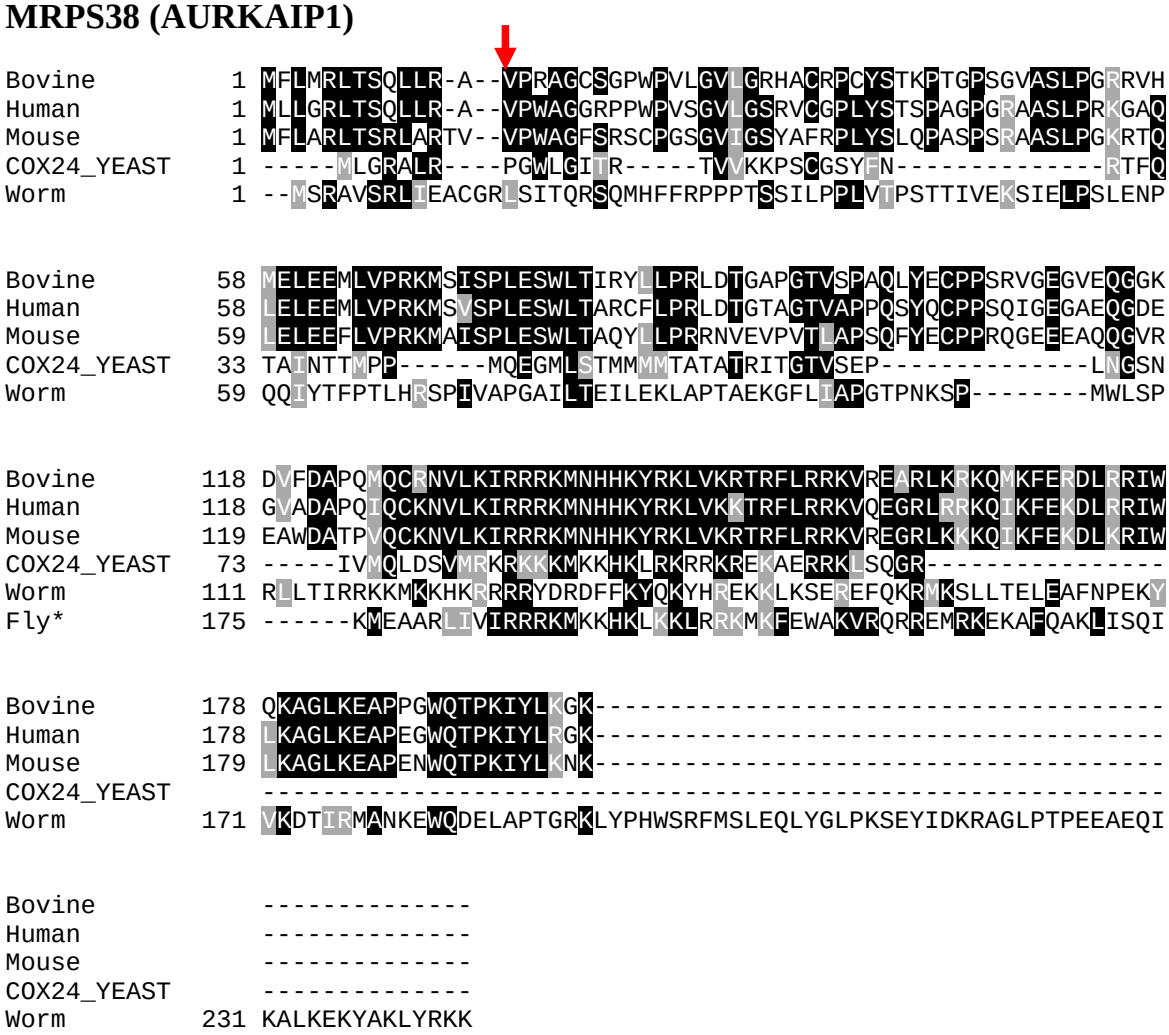
Figure S1. **A.** Approximately 50-60 A_{260} units of high salt and detergent preparations of crude ribosomes were separated on 10-30 % linear sucrose gradient to sediment purified 55S ribosomes (fractions containing purified 55S ribosomes are shown by an arrow). Different subsets of metabolic enzyme complexes were removed by sedimentations performed at high salt and detergent conditions; however, 55S fractions shown by the arrow mainly contained the components of the mitochondrial translation machinery. Sucrose gradient fractions were separated on 12 % SDS-PAGE. **B.** The gradient fractions (shown by the arrow) obtained from high and low salt and detergent preparations were collected as Low and High 55S subunits and 0.5 A_{260} units of each sample were separated on 14 % SDS-PAGE and stained with Coomassie Blue. Mitochondrial ribosomal proteins and ribosome-associated proteins were identified by analyses of in-gel tryptic digests of gel pieces by capLC-MS/MS (Tables S1 and S2). High salt 55S sample was fractionated further for the preparation of purified 28S and 39S subunits shown in Fig. 2A.

Figure S2- Alignment of primary sequences of new mitochondrial ribosomal proteins, MRPS37 (CHCHD1), MRPS38 (AURKAIP1), MRPS39 (PTCD3), MRPL58 (ICT1), and MRPL59 (CRIF1) among different species using ClustalW on Biology Workbench and BOXSHADE. The predicted signal peptide cleavage sites by MITOPROTII are shown by arrows (35).

MRPS37 (CHCHD1)

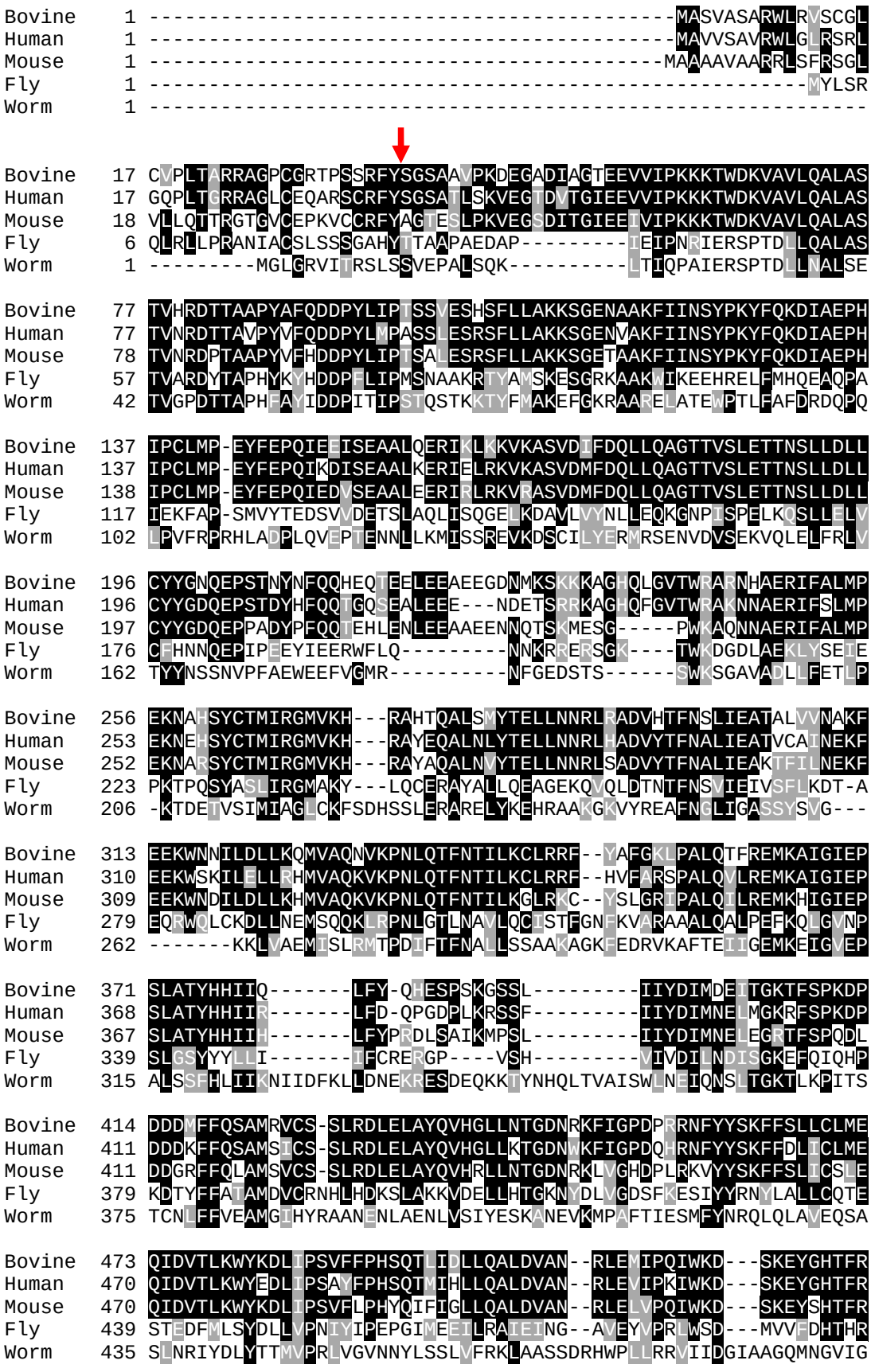


MRPS38 (AURKAIP1)



(*) Only residues 177-238 were aligned for the Fly homolog (Q8IML6) of AURKAIP1.

MRPS39 (PTCD3)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Human 1 ----------MAVVSAVRWLGLRSRL
Mouse 1 ----------MAAAAVAARRLSFRSGL
Fly 1 ----------MYLSR
Worm 1 ----------
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Human 17 GQPLTGRRAGLCEQARSCRFYSGSATLSKVEGTDVTGIEEVVIPKKKTWDKVAVLQALAS
Mouse 18 VLLQTTRGTGVCEPKVCCRFYAGTESLPKVEGSDITGIEEIVIPKKKTWDKVAVLQALAS
Fly 6 QLRLLPRANIACSLSSSGAHYTTAAPAEDAP---------IEIPNRIERSPTDLLQALAS
Worm 1 ---------MGLGRVITRSLSSVEPALSQK----------LTIQPAIERSPTDLLNALSE
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Human 77 TVNRDTTAVPYVFQDDPYLMPASSLESRSFLLAKKSGENVAKFIINSYPKYFQKDIAEPH
Mouse 78 TVNRDPTAAPYVFHDDPYLIPTSALESRSFLLAKKSGETAAKFIINSYPKYFQKDIAEPH
Fly 57 TVARDYTAPHYKYHDDPFLIPMSNAAKRTYAMSKESGRKAAKWIKEEHRELFMHQEAQPA
Worm 42 TVGPDTTAPHFAYIDDPITIPSTQSTKKTYFMAKEFGKRAARELATEWPTLFAFDRDQPQ
Bovine 137 IPCLMP-EYFEPQIEEISEAALQERIKLKKVKASVDIFDQLLQAGTTVSLETTNSLLDLL
Human 137 IPCLMP-EYFEPQIKDISEAALKERIELRKVKASVDMFDQLLQAGTTVSLETTNSLLDLL
Mouse 138 IPCLMP-EYFEPQIEDVSEAALEERIRLRKVRASVDMFDQLLQAGTTVSLETTNSLLDLL
Fly 117 IEKFAP-SMVYTEDSVVDETSLAQLISQGELKDAVLVYNLLEQKGNPISPELKQSLLELV
Worm 102 LPVFRPRHLADPLQVEPTENNLLKMISSREVKDSCILYERMRSENVDVSEKVQLELFRLV
Bovine 196 CYYGNQEPSTNYNFQQHEQTEELEEAEEGDNMKSKKKAGHQLGVTWRARNHAERIFALMP
Human 196 CYYGDQEPSTDYHFQQTGQSEALEEE---NDETSRRKAGHQFGVTWRAKNNAERIFSLMP
Mouse 197 CYYGDQEPPADYPFQQTEHLENLEEAAEENNQTSKMESG-----PWKAQNNAERIFALMP
Fly 176 CFHNNQEPIPEEYIEERWFLQ---------NNKRRERSGK----TWKDGDLAEKLYSEIE
Worm 162 TYYNSSNVPFAEWEEFVGMR----------NFGEDSTS------SWKSGAVADLLFETLP
Bovine 256 EKNAHSYCTMIRGMVKH---RAHTQALSMYTELLNNRLRADVHTFNSLIEATALVVNAKF
Human 253 EKNEHSYCTMIRGMVKH---RAYEQALNLYTELLNNRLHADVYTFNALIEATVCAINEKF
Mouse 252 EKNARSYCTMIRGMVKH---RAYAQALNVYTELLNNRLSADVYTFNALIEAKTFILNEKF
Fly 223 PKTPQSYASLIRGMAKY---LQCERAYALLQEAGEKQVQLDTNTFNSVIEIVSFLKDT-A
Worm 206 -KTDETVSIMIAGLCKFSDHSSLERARELYKEHRAAKGKVYREAFNGLIGASSYSVG---
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Human 310 EEKWSKILELLRHMVAQKVKPNLQTFNTILKCLRRF--HVFARSPALQVLREMKAIGIEP
Mouse 309 EEKWNDILDLLKHMVAQKVKPNLQTFNTILKGLRKC--YSLGRIPALQILREMKHIGIEP
Fly 279 EQRWQLCKDLLNEMSQQKLRPNLGTLNAVLQCISTFGNFKVARAAALQALPEFKQLGVNP
Worm 262 -------KKLVAEMISLRMTPDIFTFNALLSSAAKAGKFEDRVKAFTEIIGEMKEIGVEP
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Human 368 SLATYHHIIR-------LFD-QPGDPLKRSSF---------IIYDIMNELMGKRFSPKDP
Mouse 367 SLATYHHIIH-------LFYPRDLSAIKMPSL---------IIYDIMNELEGRTFSPQDL
Fly 339 SLGSYYYLLI-------IFCRERGP----VSH---------VIVDILNDISGKEFQIQHP
Worm 315 ALSSFHLIIKNIIDFKLLDNEKRESDEQKKTYNHQLTVAISWLNEIQNSLTGKTLKPITS
Bovine 414 DDDMFFQSAMRVCS-SLRDLELAYQVHGLLNTGDNRKFIGPDPRRNFYYSKFFSLLCLME
Human 411 DDDKFFQSAMSICS-SLRDLELAYQVHGLLKTGDNWKFIGPDQHRNFYYSKFFDLICLME
Mouse 411 DDGRFFQLAMSVCS-SLRDLELAYQVHRLLNTGDNRKLVGHDPLRKVYYSKFFSLICSLE
Fly 379 KDTYFFATAMDVCRNHLHDKSLAKKVDELLHTGKNYDLVGDSFKESIYYRNYLALLCQTE
Worm 375 TCNLFFVEAMGIHYRAANENLAENLVSIYESKANEVKMPAFTIESMFYNRQLQLAVEQSA
Bovine 473 QIDVTLKWYKDLIPSVFFPHSQTLIDLLQALDVAN--RLEMIPQIWKD---SKEYGHTFR
Human 470 QIDVTLKWYEDLIPSAYFPHSQTMIHLLQALDVAN--RLEVIPKIWKD---SKEYGHTFR
Mouse 470 QIDVTLKWYKDLIPSVFLPHYQIFIGLLQALDVAN--RLELVPQIWKD---SKEYSHTFR
Fly 439 STEDFMLSYDLLVPNIYIPEPGIMEEILRAIEING--AVEYVPRLWSD---MVVFDHTHR
Worm 435 SLNRIYDLYTTMVPRLVGVNNYLSSLVFRKLAASSDRHWPLLRRVIIDGIAAGQMNGVIG

MRPS39 (PTCD3) cont'd

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Bovine   528 SDLKEEILMLMARDQHPP------ELQAAFADCAADIKSTYESQDARQTASEWPANSLNY
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Mouse    525 DALREEVLMLMARDKHPP------ELQVAFADCAADIKSTYEDQSARQPAFDWPANPLQY
Fly      494 ESLLLYVLRILVDNKPNPDSPAQAQLPEQGAKVALDMFERVEEAIKRLRKVSFTGQMLGD
Worm     495 EEMRKQLCNVQLHTLGTSEREQFTSLVQKLVAVWVEFSQFTEERMRRLQRKLSPSQ-ISE

Bovine   582 IAILFLRAGRTQEAWKMLGLFRKHNK------------IPRNELLNEFMDSAKASSSPA
Human    579 IAILFLRAGRTQEAWKMLGLFRKHNK------------IPRSELLNELMDSAKVSNSPS
Mouse    579 IAVLFLRGGRSQEAWKMLELFKKHKK------------IPRNELLEEFMDTAKASGSTA
Fly      554 ILTLLVRGGSYEKATEVFAHIDKNQHRIPG---------TPSLNALIEFVDASVQEKSPS
Worm     554 CALLLTRIGEQQKAYELLDLLLDETASSGDEATVYPRGHARPWAMAELFEDALRKRDTYA

Bovine   629 QAVEVVKLANSFSLPICEGLTQRLTADFTLSQEQKEALGDLTALTSDSE----SDSDSDT
Human    626 QAIEVVELASAFSLPICEGLTQRVMSDFAINQEQKEALSNLTALTSDSDTDSSSDSDSDT
Mouse    626 LAIEVVKLASAFSLPIGESLAQRVVMDFTVDPEQKEALGNLTELNSSDG---ESSSDSDS
Fly      605 QALFALQYAVENNFDSRE-LAKRIHEGFTLNETHLSKLKSLVGESFLDK-----------
Worm     614 AATCLQIMSLTANRAKLEPLANRIFEKCNVNQEQVRIIQGFIRLRPQ------------

Bovine   685 SKDK
Dog      728 SEGI
Human    686 SEGK
Mouse    683 DDK-
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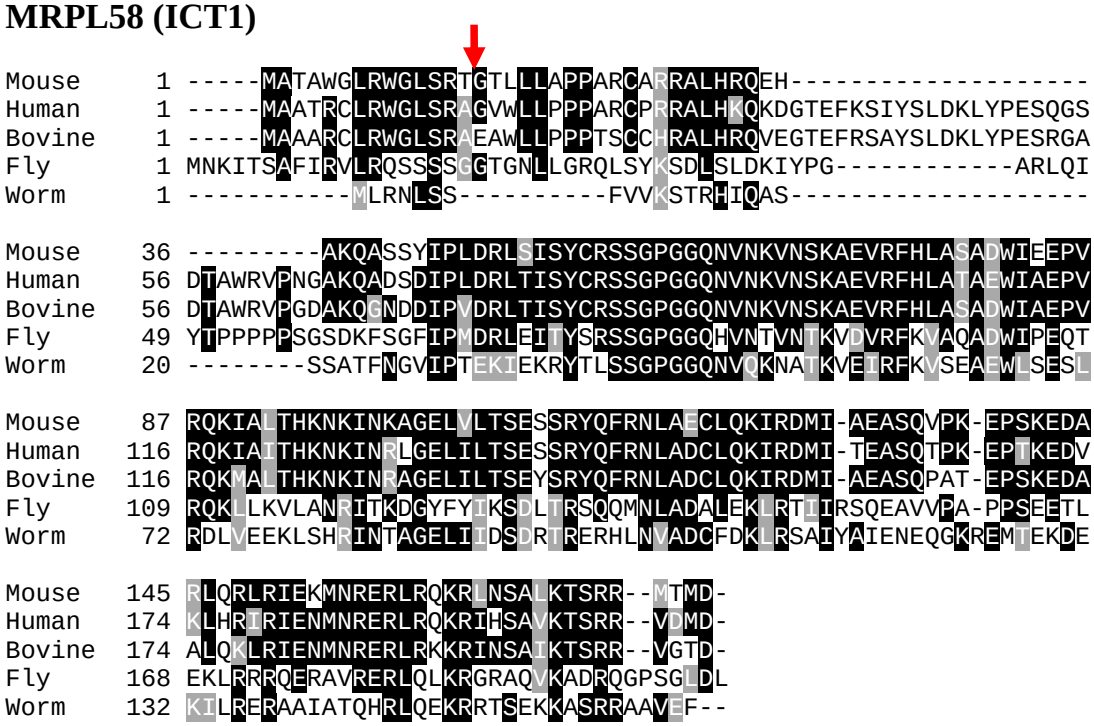
MRPL58 (ICT1)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Worm 1 -----------MLRNLSS----------FVVKSTRHIQAS--------------------
Mouse 36 ---------AKQASSYIPLDRLSISYCRSSGPGGQNVNKVNSKAEVRFHLASADWIEEPV
Human 56 DTAWRVPNGAKQADSDIPLDRLTISYCRSSGPGGQNVNKVNSKAEVRFHLATAEWIAEPV
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Fly 49 YTPPPPPSGSDKFSGFIPMDRLEITYSRSSGPGGQHVNTVNTKVDVRFKVAQADWIPEQT
Worm 20 --------SSATFNGVIPTEKIEKRYTLSSGPGGQNVQKNATKVEIRFKVSEAEWLSESL
Mouse 87 RQKIALTHKNKINKAGELVLTSESSRYQFRNLAECLQKIRDMI-AEASQVPK-EPSKEDA
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Fly 109 RQKLLKVLANRITKDGYFYIKSDLTRSQQMNLADALEKLRTIIRSQEAVVPA-PPSEETL
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Mouse 145 RLQRLRIEKMNRERLRQKRLNSALKTSRR--MTMD-
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Bovine 174 ALQKLRIENMNRERLRKKRINSAIKTSRR--VGTD-
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MRPL59 (CRIF1)