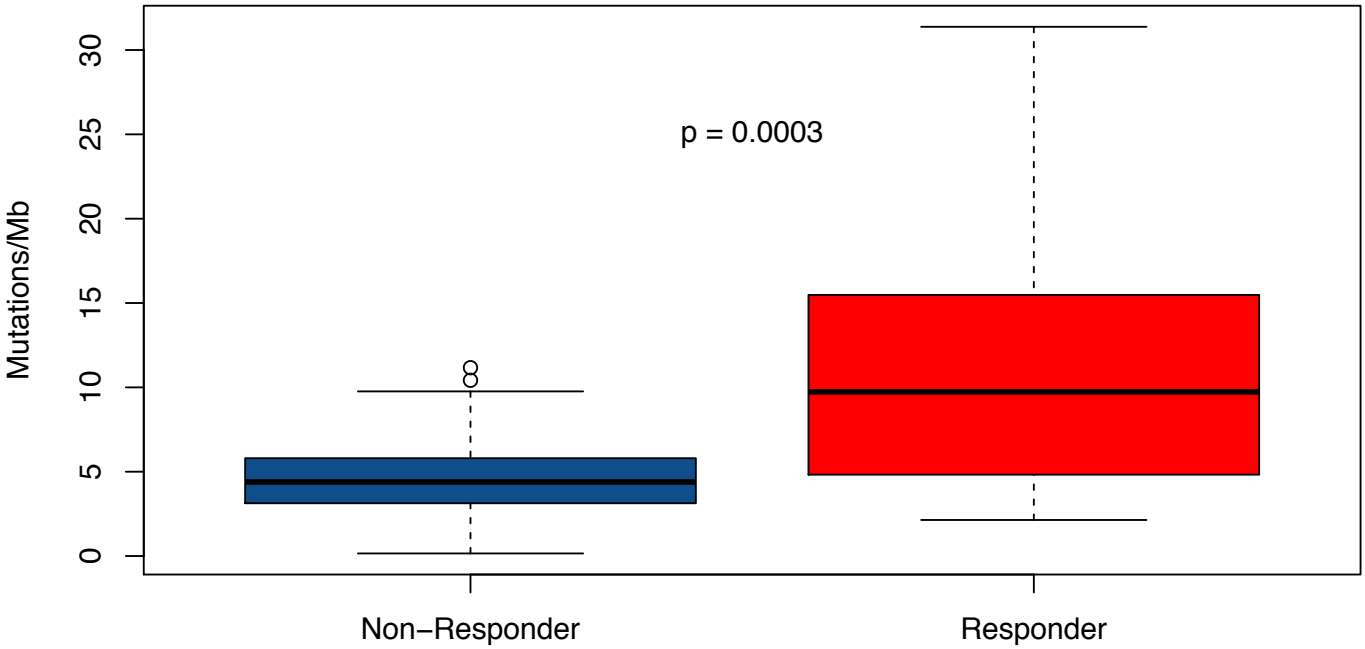
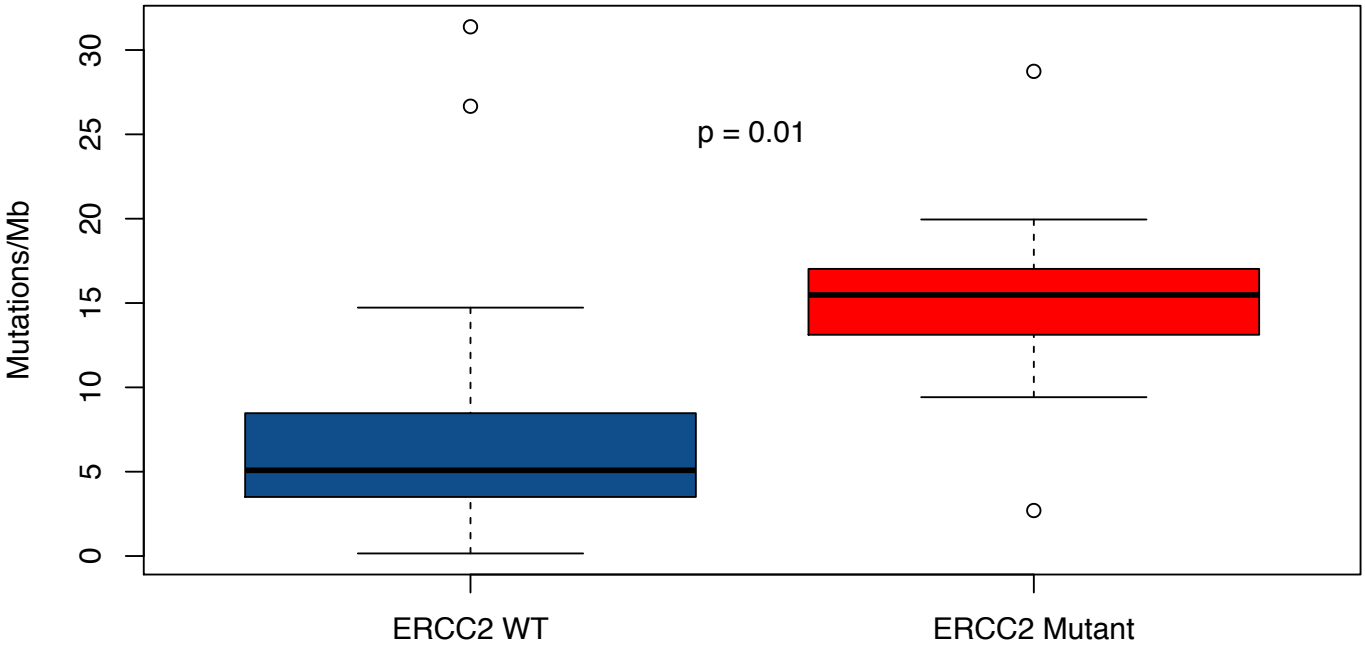
Supplementary Figure 1

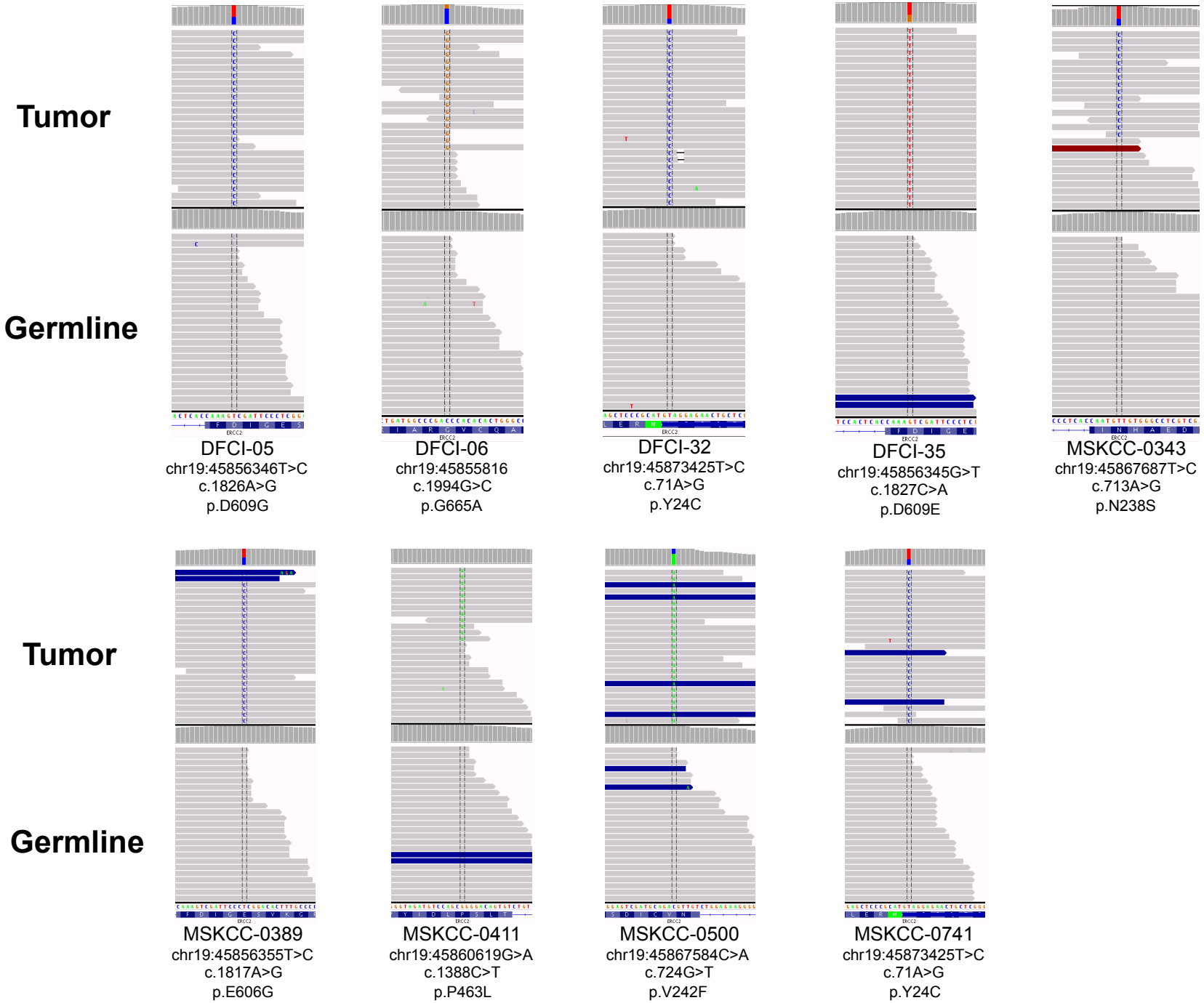
a



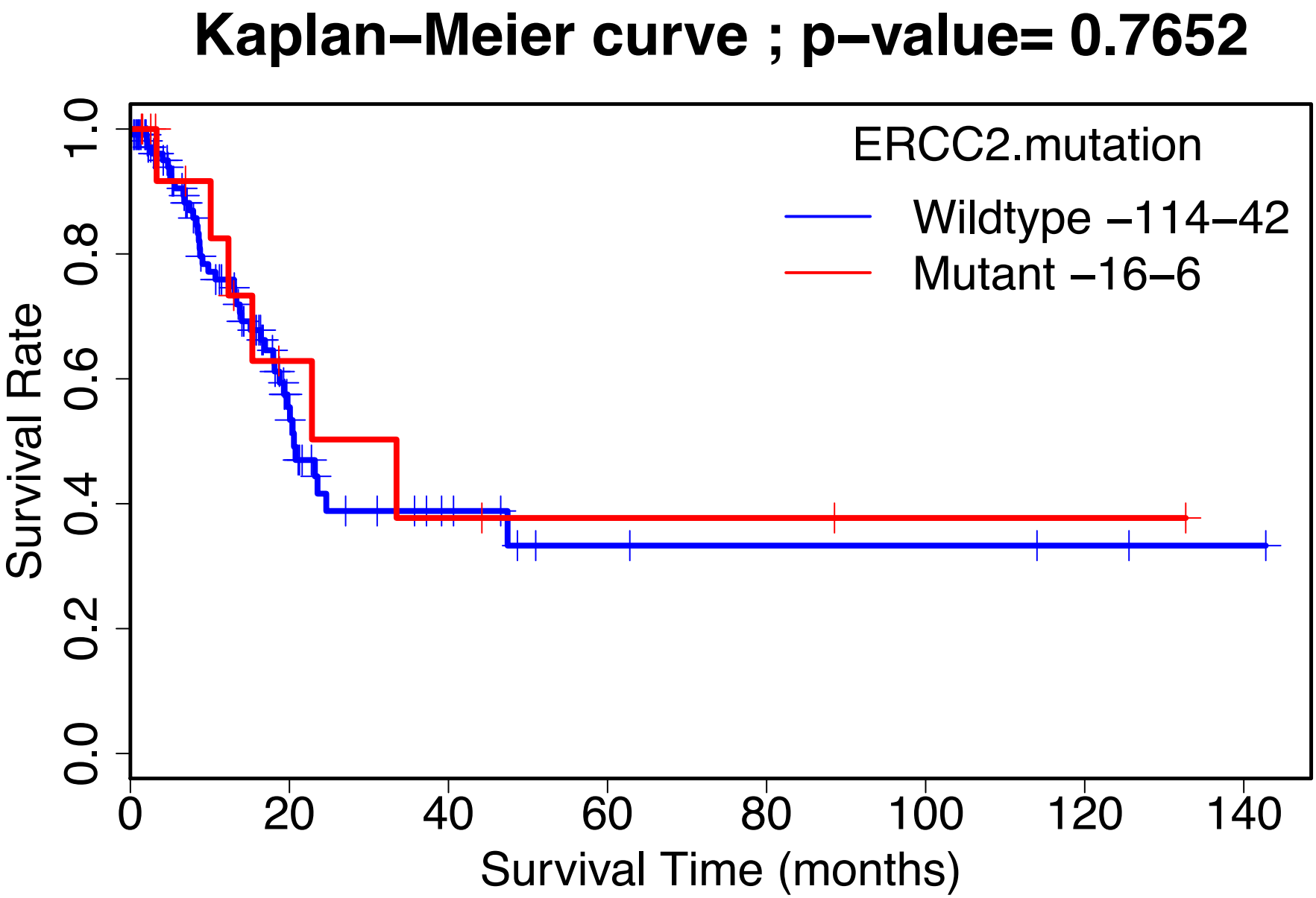
b



Supplementary Figure 2



Supplementary Figure 3



Supplememtary Figure 4

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H.sapiens      MKLNVDGLLVYFPYDYIYPEQFSYMRELKRTLDAKGHGVLEMPSGTGKTVSLLALIMAYQRAYPLEV 67
M.musculus     MKLNVDGLLVYFPYDYIYPEQFSYMLELKRTLDAKGHGVLEMPSGTGKTVSLLALIVAYQRAYPLEV 67
D.rerio        MKLNIDGLLVYFPYDYIYPEQYSYMLELKRTLDAKGHGVLEMPSGTGKTISLLSLIVAYQKTYPLEV 67
D.melanogaster MKLSVDGLLVYFPYEYIYPEQYAYMLELKRSLDAKGHCLLEMPSGTGKTATLLSLIVAYMVEHPETV 67
A.thaliana     MIFKIEDVTVYFPYDNIYPEQYEYMVELKRALDAKGHCLLEMPTGTGKTIALLSLITSYRLSRPDSP 67
S.cerevisiae   MKFYIDDLPVLFPYPKIYPEQYNYMCDIKKTLDVGGNSILEMPSGTGKTVSLLSLTIAYQMHYPEH- 66

H.sapiens      TKLIYCSRTVPEIEKVIEELRKLLNFYEKQEGEKLPFLGLALSSRKNLCIHPEVTPLRFGKDVDGKC 134
M.musculus     TKLIYCSRTVPEIEKVIEELRKLLSFYEQQEGEKLPFLGLALSSRKNLCIHPEVTPLRFGKDVDGKC 134
D.rerio        TKLVYCSRTVPEIEKVVEELRKLMDYYSKQTGVKNDFLALALSSRKNLCIHPEVSSLRFGKEVDGKC 134
D.melanogaster RKLIYCSRTVPEIEKVIAELQNLMVYYERHCPNPPPFTGLVLSSRKNMCIHPEVSKEREGKAVDGKC 134
A.thaliana     IKLVYCTRTVHEMEKTLGELKLLHDYQVRHLGTQAKILALGLSSRKNLCVNTKVLAAENRDSVDAAC 134
S.cerevisiae   RKIIYCSRTMSEIEKALVELENLMDYRTKELGYQEDFRGLGLTSRKNLCLHPEVSKERKGTVVDEKC 133

H.sapiens      HSLTASYVRAQYQHD--TSLPHCRFYEEFDAHGREVPLPAGIYNLDDLKALGRRQGWCPYFLARYSI 199
M.musculus     HSLTASYVRAQYQQD--ASLPHCRFYEEFDIHGRQMPLPAGIYNLDDLKALGQRQGWCPYFLARYSI 199
D.rerio        HSLTASYIRAQHQSN--PNQPVCQFYEEFDNVGRQVPIPPGIYNLDDLKDFGRRKGWCPYFLARYAL 199
D.melanogaster YGLTASYIRERHEMD--TETPICQYFEGFSLEGKESTLPVGVYSIDDLKEYGRSRNWCPYFLARYAI 199
A.thaliana     RKRTASWVRALSTEN--PNVELCDFFENYEKAAENALLPPGVYTLEDLRAFGKNRGWCPYFLARHMI 199
S.cerevisiae   RRMTNGQAKRKLEEDPEANVELCEYHENLYNIEVEDYLPKGVFSFEKLLKYCEEKTLCPYFIVRRMI 200

H.sapiens      LHANVVVYSYHYLLDPKIADLVSKELARKAVVVFDEAHNIDNVCIDSMSVNLTRRTLDRCQGNLETL 266
M.musculus     LHANVVVYSYHYLLDPKIADLVSKELARKAVVVFDEAHNIDNVCIDSMSVNLTRRTLDRCQSNLDTL 266
D.rerio        LHANIVVYSYHYLLDPKIADLVSKELAKKSVVVFDEAHNIDNVCIDSMSVNITRRTLDRCQTNVETL 266
D.melanogaster AHAHIVVYSYHYLLDPKIAQVVSKEMSRESCVVFDEAHNIDNVCIDSMSVKINRRTVERSTNALNHL 266
A.thaliana     QFANVIVYSYQYLLDPKVAGFISKELQKESVVVFDEAHNIDNVCIEALSVSVRRVTLEGANRNLNKI 266
S.cerevisiae   SLCNIIIYSYHYLLDPKIAERVSNEVSKDSIVIFDEAHNIDNVCIESLSLDLTTDALRRATRGANAL 267

H.sapiens      QKTVLRIKETDEQRLRDEYRRLVEGLREASAARET-DAHLANPVLPDEVLQEAVPGSIRTAEHFLGF 332
M.musculus     QKTVLRIKETDEQRLRDEYRRLVEGLREASVARET-DAHLANPVLPDEVLQEAVPGSIRTAEHFLGF 332
D.rerio        QNTISRIKETDAAKLREEYRRLVEGLKEANVARET-DIYLSNPVLPDEILQEAVPGSIRTAEHFVGF 332
D.melanogaster TKLVQDIREEDTNRLNEEYQRMVQGLKDASVQRDT-DMILANPVLPNDVLTEVVPGNIRNADHFLSF 332
A.thaliana     RQEIDRFKATDAGRLRAEYNRLVEGLALRGDLSGG-DQWLANPALPHDILKEAVPGNIRRAEHFVHV 332
S.cerevisiae   DERISEVRKVDSQKLQDEYEKLVQGLHSADILTDQEEPFVETPVLPQDLLTEAIPGNIRRAEHFVSF 334

H.sapiens      LRRLLEYVKWRLRVQHVVQESPPAFLSGLAQRVCIQRKPLRFCAERLRSLLHTLEITDLADFSPLTL 399
M.musculus     LRRLLEYVKWRLRVQHVVQESPPAFLSGLAQRVCIQRKPLRFCAERLRSLLHTLEIADLADFSPLTL 399
D.rerio        MKRFLEYLKARLRIHHVVQESAPQFLKDIFEKVCIDRKPLRFCAERLRSLLRTLEIADIADFSPITL 399
D.melanogaster LRRFIEYIKTRLRVHHVVQESPAGFLKDISSKICIERKPLRFCAERLSSLLRTLEISDLTEYGALTL 399
A.thaliana     LRRLLQYLGVRLDTENVEKESPVSFVSSLNSQAGIEQKTLKFCYDRLQSLMLTLEITDTDEFLPIQT 399
S.cerevisiae   LKRLIEYLKTRMKVLHVISETPKSFLQHLKQLTFIERKPLRFCSERLSLLVRTLEVTEVEDFTALKD 401

H.sapiens      LANFATLVSTYAKGFTIIIEPFDDRTPTIANPILHFSCMDASLAIKPVFERFQSVIITSGTLSPLDI 466
M.musculus     LANFATLVSTYAKGFTIIIEPFDDRTPTIANPVLHFSCMDASLAIKPVFERFQSVIITSGTLSPLDI 466
D.rerio        ISHFATLVSTYSKGFTIIIEPFEDKTPTIANPVLHFSCMDPSIAIKPVFGRFQTVIITSGTLSPLDI 466
D.melanogaster ITHFATLVSTYTKGFTIIIEPFDDKTPTVSNPILHFSCLDSSIAMAPVFSRFQTVVITSGTLSPMDM 466
A.thaliana     VCDFATLVGTYARGFSIIIEPYDERMPHIPDPILQLSCHDASLAIKPVFDRFQSVVITSGTLSPIDL 466
S.cerevisiae   IATFATLISTYEEGFLLIIEPYEIENAAVPNPIMRFTCLDASIAIKPVFERFSSVIITSGTISPLDM 468

H.sapiens      YPKILDFHPVTMATFTMTLARVCLCPMIIGRGNDQVAISSKFETREDIAVIRNYGNLLLEMSAVVPD 533
M.musculus     YPKILDFHPVTMATFTMTLARVCLCPMIIGRGNDQVAISSKFETREDIAVIRNYGNLLLEMSAVVPD 533
D.rerio        YPRILDFRPVTMASFTMTLARTCLCPLIVGRGNDQVAMTSKFETREDFAVIRNYGNLLLEMSAIVPD 533
D.melanogaster YPKILDFDPVVMSSFTMTLARPCLLPMIVSKGNDQVTISSKFETREDTAVIRNYGQLLVEVAKTVPD 533
A.thaliana     YPRLLNFTPVVSRSFKMSMTRDCICPMVLTRGSDQLPVSTKFDMRSDPGVVRNYGKLLVEMVSIVPD 533
S.cerevisiae   YPRMLNFKTVLQKSYAMTLAKKSFLPMIITKGSDQVAISSRFEIRNDPSIVRNYGSMLVEFAKITPD 535

H.sapiens      GIVAFFTSYQYMESTVASWYEQGILENIQRNKLLFIETQDGAETSVALEKYQEACENGRGAILLSVA 600
M.musculus     GIVAFFTSYQYMESTVASWYEQGILENIQRNKLLFIETQDGAETSVALEKYQEACENGRGAILLSVA 600
D.rerio        GIVAFFTSYMYMENIVASWYEQGILENIQRNKLIFIETQDAAETSMALEKYQEACENGRGAILLSVA 600
D.melanogaster GIVCFFTSYLYLESVVASWYDQGIVDTLLRYKLLFIETQDNAETSYALMNYVKACDCGRGAVLLAVA 600
A.thaliana     GVVCFFVSYSYMDGIIATWNETGILKEIMQQKLVFIETQDVVETTLALDNYRRACDCGRGAVFFSVA 600
S.cerevisiae   GMVVFFPSYLYMESIVSMWQTMGILDEVWKHKLILVETPDAQETSLALETYRKACSNGRGAILLSVA 602

H.sapiens      RGKVSEGIDFVHHYGRAVIMFGVPYVYTQSRILKARLEYLRDQFQIRENDFLTFDAMRHAAQCVGRA 667
M.musculus     RGKVSEGIDFVHHYGRAVIMFGVPYVYTQSRILKARLEYLRDQFQIRENDFLTFDAMRHAAQCVGRA 667
D.rerio        RGKVSEGIDFVHHFGRAVIMFGVPYVYTQSRILKARLEYLRDQFQIRENDFLTFDAMRHAAQCVGRA 667
D.melanogaster RGKVSEGVDFDHHYGRAVLMFGIPYVYTQSRILKARLDYLRDQFQIRENDFLTFDAMRHAAQCVGRA 667
A.thaliana     RGKVAEGIDFDRHYGRLVVMYGVPFQYTLSKILRARLEYLHDTFQIKEGDFLTFDALRQAAQCVGRV 667
S.cerevisiae   RGKVSEGIDFDHQYGRTVLMIGIPFQYTESRILKARLEFMRENYRIRENDFLSFDAMRHAAQCLGRV 669

H.sapiens      IRGKTDYGLMVFADKRFARGDKRGKLPRWIQEHLTDANLNLTVDEGVQVA                717
M.musculus     IRGKTDYGLMVFADKRFARADKRGKLPRWIQEHLTDSNLNLTVDEGVQVA                717
D.rerio        IRGKTDYGLMIFADKRYARADKRGKLPRWIQEHLTDGSLNLTIDETVQLS                717
D.melanogaster LRGKTDYGIMIFADKRFSRHDKRSRLPKWIQEHLVDSFCNLSTEEAVQLA                717
A.thaliana     IRSKADYGMMIFADKRYSRHDKRSKLPGWILSHLRDAHLNLSTDMAIHIA                717
S.cerevisiae   LRGKDDYGVMVLADRRFSR--KRSQLPKWIAQGLSDADLNLSTDMAISNT                717
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