```
                                10        20        30        40        50        60        70        80        90       100
AYTL1   Dog_1chr2    ---CAEAAAVAATVPGAGMGKSGLRPPMVPRQASFFPPPVPNPFVQQTRMGAARRLQIFFLGIILLPIRALLVALIILLAWPFAALSTACCPEK-LTHP-
        Cow_1chr18   MNRCADARAVAATVPGADVGNAGLRPPMVPRQASFFPPPVLNPFVQQT--------QIFFLGIILLPIRALLVAIILLLSWSLAAISTACCPEK-LTHPI
        Ms.Aytl1     MNRCAEAAAVAATVPGSGVGDAGLRPPMVPRQASFFPPPVPNPFVQQTTISASRRLQMFLLGIILLPVRALLVGIILLLAWPFAVISTACCPEK-LTHPI
        Opo_1chr1    ----------------------GLRPPMVPRQASFFPPPVPNPFVQDTRISASRR-------------------------------------------
        Opo_1chr2    ------------------------------------------------------------------------------------------------
AYTL2   Dog_2chr34   ------------------------------------------------------QIAFMTLTLFPIRLLLAVTMMLLAWPFTFFATLGSSEREPEQPP
        Ms.Aytl2     ----------MRLRGRGP-RAAPSSSSGAGDARRLTPPGRNPFVHELRLSALQKAQVAFMTLTLFPIRLLFAAFMMLLAWPFALLASLGPPDKEPEQPL
        Cow_2chr20   ----------------------------GDARRQAPPGRNPFVHELRLGALQKAQVAVMTLTLFPVRLLVVVLMMLLAWPLALVSSLGPAGREPEQPP
        Opo_2chr3    ------------------------------------------------------AFMTLTLFPIRLLFAAFMMLLAWPFAFVASLGSAEKELEKPL
AYTL3   Dog_3chr30   ------------------------------------------------------FCLLGALLAPIRVLLAFIVLFLLWPFAWLQVAGLTEEQLQEPI
        Cow_3chr10   ------------------M-SQGSPGDWAPLDPTPGPPAPPNPFVHELHLSRLQRVKFCLLGALLAPIRVLLAFIVLFLLWPFAWLQVAGLTEEQLQEPI
        Opo_3chr1    ------------------M-SQGSPGDWVPLDPTPGPPPPPNPFVHELHLSRLQRVKFCLLGALLAPIRVLLAFLVLFLLWPFAWLQVAGLSEEQLQEPI
        Ms.Agpat7    ------------------M-SQGSPGAWAPLDPTSGSSASPNPFVHELHLSGLQRVKFCLLGVLLAPIRVLLAFIVLFLLWPFAWLQVAGLTEEQLQEPI
                               110       120       130       140       150       160       170       180       190       200
AYTL1   Dog_1chr2    ----RNITQPILKFLGHAMFFSMGFI-VTVKGKVASPAEAPIFVAAPHSTFFDGIACVVAGLPSMVSRKENVQVPLIG-LLRALQPVLVSRIDPDSRKNT
        Cow_1chr18   TGWKRKITHPVLKFLGHAMFFSMGFV-VTVKGKIATPLEAPIFVVAPHSTFFDGIACVAAGLPSIVSRNENVQVPLVG-L-RALQPVLVSRVDPDSRKNT
        Ms.Aytl1     SNWRRKITRPALTFLARAMFFSMGFT-VTVKGKVASPLEAPIFVVAPHSTFFDGIACVVAGLPSLVSRNENAQTPLVGRLLRALQPVLVSRVDPDSRKNT
        Opo_1chr1    ----RKFTYPALKFLGRAMFFLMGFM-VKVKGNRANPNEAPIFIVAPHSTFFDGIACVAAGLPSIVSRTENAYVPLIG--LRAIQPVLVSRVDPDSRKTT
        Opo_1chr2    ------------------FFILGFL-VKVKGERATPSEAPIFVVAPHSSFFDNFVWVFTGLPSIVLRMETASIPLFGRIVLIGQPLLVSRWDPDSRKNT
AYTL2   Dog_2chr34   AMWRKVV-DILLKAIMRTMWFAGGFHWVVVKGQQASPPEAAILTLAPHSSYFDAIAVT-LTMSSIVMKAESRDIPIWG-LIKYIRPVFVSRSDQDSRRKT
        Ms.Aytl2     ALWRKVV-DFLLKAIMRTMWFAGGFHRVAVKGRQALPTEAAILTLAPHSSYFDAIPVT-MTMSSIVMKAESRDIPIWGTLIRYIRPVFVSRSDQDSRRKT
        Cow_2chr20   ALWR-VV-DVLLRAIMRTMWLAGGFHHVAVKGRRAPPTEAAILTLAPHSSYFDAIPVT-MTMSSVVMKAESRDIPIWG-LIKYIRPVFVSRTDQDSRRKT
        Opo_2chr3    ALWRKVV-DFLLKAIMRTMWFVGGFHWVTVKGRRALPTEAAILTLAPHSSYFDAIPVT-MTMSSIVMKAESRNIPIWG-LIKYIRPVFVSRSDQDSRRKT
AYTL3   Dog_3chr30   TGWRKTVCHNGVLGLSRLLFFLLGFLRIRVRGQRASRLQAPVLVAAPHSTFFDPIVLLPCDLPKVVSRAENLSVPVIGALLRFNQAILVSRHDPASRRRV
        Cow_3chr10   TGWRKTVCHHGVLGLSRLLFFLLGFLRIRVRGQRASRLQAPVLVAAPHSTFFDPIVLLPCDLPKVVSRAENLSVPVIGALLRFNQAILVSRHDPASRRRV
        Opo_3chr1    TGWRKTVCHSGVLGLSRLLFFLLGFLRIRVRGHRASCLEAPVLVAAPHSTFFDPIVLLPCDLPKVVSRAENLSVPVIGALLRFNQAILVSRHDPASRRKV
        Ms.Agpat7    TGWRKTVCHNGVLGLSRLLFFLLGFLRIRVRGQRASRLEAPVLVAAPHSTFFDPIVLLPCDLPKVVSRAENLSVPVIGALLRFNQAILVSRHDPASRRRV
                               210       220       230       240       250       260       270       280       290       300
AYTL1   Dog_1chr2    INEIVRRATSRGQWPQILVFPEGTCTNRSCLITFKPGAFIPGVPVQPVLLRYPNKL-------------------------------------------
        Cow_1chr18   INEIIRRATSGGEWPQILVFPEGTCTNRSCLITFKPGAFIPGVPVQPILLRYPNKL-------------------------------------------
        Ms.Aytl1     INEIKKRATSGGEWPQILVFPEGTCTNRSCLITFKPGAFIPGVPVQPVLLRYPNKLDTVTWTWQGYTFLQLCVLTFCQLFTKVEIEFMPVQAPSEEEKND
        Opo_1chr1    INEIRKRATSRGEWPQ-LVFPEGTCTNRTCLITFKPGAFIPGVPVQPILLRYPNKL-------------------------------------------
        Opo_1chr2    INEIKKRATSSGEWPQILIFPEATCTNRTCLITFKPGAFLPGVPVQPVLLQYPNEVDTVTWTWQGYSAPTLALLTLTRLFTKMELEFMPVYVPDNEEKKD
AYTL2   Dog_2chr34   VEQIRRRAQSNGKWPQVMIFPEGTCTNRTCLITFKPGAFIPGVPVQPVVLRYPNKL-----------LKILWLTLCQFHNRVEIEFLPVYSPSEEEKKD
        Ms.Aytl2     VEEIKRRAQSNGKWPQIMIFPEGTCTNRTCLITFKPGAFIPGVPVQPVVLRYPNKLDTITWTWQGPGALKILWLTLCQFQNQVEIEFLPVYCPSEEEKRN
        Cow_2chr20   VEEIKRRAQSGGKWPQIMIFPEGTCTNRTCLITFKPGAFIPGVPVQPVVLRYPNKL---------------------------FLPVYTPSEEEKRD
        Opo_2chr3    VEEIKRRAQSNGKWPQIMIFPEGTCTNRTCLITFKPGAFIPGVPVQPVVLRYPNKL---------------------------IXFLPVYTPSEEEKKN
AYTL3   Dog_3chr30   VEEVRRRATSGGKWPQVLFFPEGTCSNKKALLKFKPGAFIAGVPVQPVLIQYPNSL-----------LKVLWLTASQPCSIVDVEFLPVYHPSPEESGN
        Cow_3chr10   VEEVRRRATSGGKWPQVLFFPEGTCSNKKALLKFKPGAFIAGVPVQPVLIRYPNSL-----------LKVLWLTASQPCSIVDVEFLPVYRPSPEESRD
        Opo_3chr1    VEEVRRRATSRGKWPQVLFFPEGTCSNKKALLKFKPGAFIAGVPVQPVLIRYPNSL-----------LKVLWLTASQPCSLVDVEFLPVYQPSPEESSN
        Ms.Agpat7    VEEVRRRATSGGKWPQVLFFPEGTCSNKKALLKFKPGAFIAGVPVQPVLIRYPNSLDTTSWAWRGPGVLKVLWLTASQPCSIVDVEFLPVYQPSLEESKD
                               310       320       330       340       350       360       370       380       390       400
AYTL1   Dog_1chr2    -------------LGIPVTDHTYEDCRLMISAGQLTLPMEAGLVEFTKISRKLKLDWDGIRKHLDEYATIASSSKGGRIGIEEFAEYLKLPVSDVLRQ
        Cow_1chr18   -------------ALKIPVTDHTYEDCRLMISAGQLTLPMEAGLVEFTKISRKLKLDWDGIRKHLDEYAAIASSSKGGRIGIEEFAEYLKLPVSDVLRQ
        Ms.Aytl1     PVLFASRIRNLMAEALEIPVTDHTYEDCRLMISAGQLTLPMEAGLVEFSKISRKLKLDWDGIRKHLDEYASIASSSKGGRIGIEEFAEYLKLPVSDVLRQ
        Opo_1chr1    -------------ALGVPVTDHTYEDCRLMISAGQLTLPMEAGLVEFTKISQKLKLDWEGIRKHLDEYAAIATASKGGRIGIEEFAEYLKLPISDVLRQ
        Opo_1chr2    PSLFARRVRNVMANALQLPVTDHTFEDCRLMISAGKLTLPMETGLVAFTKITQKMQLDWDTIRKHLIEYTLIASSSKGGTIGIEEFASYLMLPVSDSLKQ
AYTL2   Dog_2chr34   PALYASNVRRVMA-ALGISVTDYTFEDCQLALAEGQLRLPADTCLLEFARLVRALGLKPETLEKDLDKYSESARMQRGGRMGLPEFAEYLGVPVSDTLED
        Ms.Aytl2     PALYASNVRRVMAKALGVSVTDYTFEDCQLALAEGQLRLPADTCLLEFARLVRGLGLKPENLEKDLDKYSESARMKRGEKIRLPEFAAYLEVPVSDALED
        Cow_2chr20   PALYASNVRRVMA-ALGVAVTDYTFEDCQLALAEGQLRLPADTCLLEFARLLRGLG-------------------------------------------
        Opo_2chr3    PALYANNVRSVMAKALGVSVTDYTFEDCQLALAEGQLRLPSNTCLLEFAKLVRSLGLKPEKLEKDLDRYSESAKMKNGEKINLSEFAEYMEVPVSDTLGD
AYTL3   Dog_3chr30   PTLYANNVQRVMAQALGIPATECEFVGSLPVIVVGRLKVALEPQLWELGKVLRKAGLSPGRVD-------AGAEPGRSRRINREEFAKQLQLSDPQTAAG
        Cow_3chr10   PTLYANNVQRVMAQALGIPATECEFVESLPVIVVGRLKVALEPQLWELGRVLRKAGLSPGCVD-------AGTEPGQSRRISQEEFAKQLQLSDSQTVAG
        Opo_3chr1    PSLYANNVQRVMAQALGIPATECEFVGNLPVTVVGQLKVALEPQLWELGKVLRKAGLSPGCVD-------AGAEPGRSRMISKEEFAKQLQLSDPHTVAG
        Ms.Agpat7    PTLYANNVQRVMAQALGIPATECEFVGSLPVIVVGQLKVALEPQLWELAKVLQKAGLSPGFVD-------MGAEPGRSRMISQEAFAQQLQLSDPQTVAG
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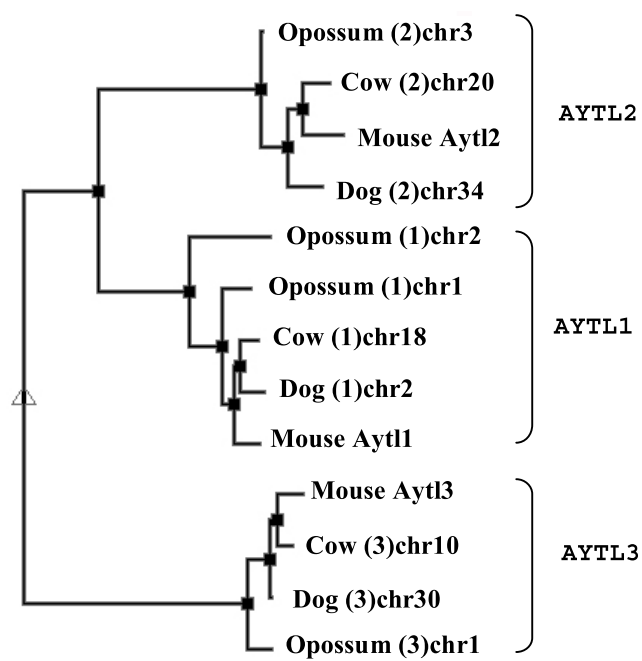
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                                410       420       430       440       450       460       470       480       490       500
AYTL1   Dog_1chr2    LFALFD-NHDGSIDFREYVIGLAVLCNPANTEDIIQVAFKLFDVDE----DGYITEEEFSTILQAALGVPDLDVSGLFKEIAQGDS---VSYEEFKSFAL
        Cow_1chr18   LFALFDRNHDGSIDFREYVIGLAVLCNPANTEEIIQVAFKLFDVDE----DGFITEEEFSTILQASLGVPDLDVSGLFKEIAQGDS---VSYEEFKSFAL
        Ms.Aytl1     LFALFDRNNDGSIDFREYVIGLAVLCNPANTEEIIQVAFKLFDVDE----DGYITEEEFCTILQASLGVPDLNVSGLFREIAQRDS---VSYEEFKSFAL
        Opo_1chr1    LFALFDRNHDGSIDFREYVIGLAVLCNPANTEELIQVAFKLFDVDE----DGYITEGEFTTILQASLGVPDLNVSGLFREIAKGDS-------EFKSFAL
        Opo_1chr2    LFGLFDRNHDGTIDFREYVIGLSVLCNPANPEELVKLAFKLFDIDE----DGYITEEEFARILEASFGVRNLEVSALFQEIA----------------
AYTL2   Dog_2chr34   MFSLFDE-GDGKMDPREYVVALSVVCRPSQTLDTIQLAFK----------DGYIHEGTLSSILKTALGVTELSVTSLFQAIDQEGTGR-ITF------AE
        Ms.Aytl2     MFSLFDESGGGEIDLREYVVALSVVCRPSQTLATIQLAFKMYGSPE----DGSIDEANLSCILKTALGVSELTVTDLFQAIDQEDKGR-ITFDDFCGFAE
        Cow_2chr20   --------GGGEVDLREYVVALSVVCRPARTLDTIQLAFK----------DGSVEEHALSSILKTALGVAELTVTDLFRAIDQERKGR-IAFD-FKRFAE
        Opo_2chr3    MFALFDE---GKIDLREYVIALSVVCRPSKTLETIQLAFK----------------------------------------------------------
AYTL3   Dog_3chr30   AFSYFQQDAEGLVDFRDVALALAALDGGRSLEELMRLAFELFAEEQVEEAGRLLYKDGFSTILHLLLGSPRPAAATLHAELCQAGPRQGLSLC-------
        Cow_3chr10   AFSYFQQDADGLVDFRDVALALAALSGGRSLEELTRLAFE--AEEQAKGPGRLLYKDGFSTILHLLLGSPRPAARTLHAELCQAG----------------
        Opo_3chr1    AFDYFQQDSSGSVDFRSVALALAALDGGRNLEELTRLAFELFAEEEPEGTGRLLYKDGFGTILHLLLGSPRPSTETLHAKLCQSTSTQGLSLCQFQNFSL
        Ms.Agpat7    AFSYFQQDAKGLVDFRNVALALAALDGGRSLEELTRLAFELFAEEQAEGSDRLLYKDGFSTILHLLLGSPRPAATTLHAELCQPGCSQGLSLCQFQNFSL
                               510       520       530       540       550
AYTL1   Dog_1chr2    KHPEYAKIFTTYLDLQTCHVFSLPKEVQPAPSVASNKVSPENHDESTSD--KKD-
        Cow_1chr18   KHPEYAKIFTTYLDLQTCHVFSLPKEVQATPSVVSNKVSPESHEESTSD--KKDD
        Ms.Aytl1     KHPEYAKIFTTYLDLQTCHVFSLPEEVQTAPSVASNKVSPESQEEGTSD--KKVD
        Opo_1chr1    KHPEYAKIFTTYLDLQTCHVFSLPKEDNVAPLVAHNKVSPEPAEDGTSD--KKDD
        Opo_1chr2    ----------------------------------------------------
AYTL2   Dog_2chr34   AFPNFAEEY--LYPKQTHPDTCAQTPPAPTPNGFCADFSPENSDIGRKPFRKKLD
        Ms.Aytl2     MYPDYAEDY--LYPDQTHFDSCAQTPPAPTPNGFCIDFSPENSDFGRKNSCKKAD
        Cow_2chr20   ANPDFAEEY--LYPEQTRPRSCARTPPAPTPNGFCADFSPENS------------
        Opo_2chr3    ----------------------------------------------------
AYTL3   Dog_3chr30   ----------------------------------------------------
        Cow_3chr10   --------------------SQTPPASSPGSTTTLANGTVQAPKQKGD-----
        Opo_3chr1    HDPLYGRLFSTYLRPP------------------------------------
        Ms.Agpat7    HDPLYGKLFSAYLRPPHKPRSTSQIPNASSPSSPTALANGTVQAPKQKGD-----
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