```
α2D       MFRQEQPLAEGSFAPMGSLQPDAGNASWNGTEAPGGARATE...YSLQVTLTLVCLAGLLMLFTVFGNVLVIIAVFTSRALKAPQNLFLVSLASADILV   97
α2B       ..................................MDHQEP...YSVQATAAIAAVITFLIIFTIFGNALVIIAVLTSRSLRAPQNLFLVSLASADILV   61
α2C       MASPALAAALAAAAAGPNASGAGDGGSGRVANGSGAPWGPPGQYSAGAVAGLAAVVGFLIVFTVVGNVLVVIAYLTSRALRPQNLFLVSLASADILV  100
Consensus                               p  ys        l ft  gn lv  av tsr l apqnlflvsla adilv

α2D       ATLVIPFSLANEVMGYWYFGKAWCEIYLALDVLFCTSSIVHLCAISLDRYWSITQAIEYNLKRTPRRIKAIIVTVWLSAVISFPPLISFEKKRGRSGQP  197
α2B       ATLIIPFSLANELLGYWYFWRTWCEVYLALDVLFCTSSIVHLCAISLDRYWSVRALEYNSKRTPRRIKFIILIVWLIAVISLPPLI...YKGDQGPQP  158
α2C       ATLVMPFSLANELMAYWYFGQVWCGVYLALDVLFCTSSIVHLCAISLDRYWSVTQAVEYNLKRTPRRVKATIAVWLISAVISFPPLVS....LYRRPDG  196
Consensus atl  pfslane  ywyf  wc  ylaldvlfctssivhlcaisldryw   a eyn krtprr k i  vw i avis ppl

α2D       SAFERCPINDQKWYVISSSIGSFFAPCLIMILVYVRIYQIAKR.RTEVPPSRRGEDAAAAELEG..GAERRPNGLGPERSGVGPVGAEVESLQVQLNGAP  294
α2B       IAKEQCKLNQEAWYILASSIGSFFAPCLIMLLVYLRIYLIAKRSHCRGPRAKGEGGRESKQEHPVPGEVSDSAKLPTLASQLATPGEANGCSQPHPAEK  258
α2C       AAVEQCGLNDETWYILSSCIGSFFAPCLIMGLVYARIYRVAKL.RTRTLSEKREEAGPDGASET......TENGLG..........AGENGHCVPARRPR  279
Consensus a p c  n  wy s igsffapclim lvy riy  ak   r         p        p

α2D       GEPAPAGRPDADALD....LEESSSSEHAERPPGSRRSERGPRAKGKARASQVKEGDSLPRRGEDATGPG.....APAAGPAEERSG.GAAKASRWRGR.  383
α2B       GEGQTPEAPGTPALPPSWPAIPKSGQGQKEGVCGSSPEEEAEEEGEEGCEPQALEAPPASACSPPLQQPQGLRVLATLRGQVLLGRGTGAAGAQWWRRT  358
α2C       ADVEPEDSSAAAERR......RRRGALRRGGRRRGAGEGAADAEGTGPGTVTAEEGALAARSPGPGGRLSR...ASSRSVEFFLSRRRRARSSVCRRKV  370
Consensus                        p              p        a      p        a       r

α2D       .QNREKRFTFVLAVVIGVFVVCWFPFFFTYTLTAIG...CSVPPTLFKFFFWIGYCNSSLNPVIYTIFNHDFRRAFKKILCRGDRKRIV  468
α2B       QLSREKRFTFVLAVVIGVFVLCWFPFFFSYSLGAICPLHCKVPHGLFQFFFWVGYCNSSLNPVIYTIFNQDFRRAFRRILCRQWTQTA.  446
α2C       AQAREKRFTFVLAVVMGVFVLCWFPFFFSYSLYGICREAQVPGPLFKFFFWIGYCNSSLNPVIYTVFNQDFRRSFKHILFRRRRGFR    459
Consensus  rekrftfvlavv gvfv cwfpfff y l i    c vp  lf fffw gycnsslnpviyt fn dfrr f  il r
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Supplementary figure S1. Amino acid sequence alignment of goat α2-adrenergic receptor subtypes. α2B, α2C and α2D subtypes.

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Human     MFRQEQPLAEGSFAPMGSLQPDAGNASWNGTEAPGGARATPYSLQVTLTLVCLAGLLMLFTVFGNVLVIIAVFTSRALKAPQNLFLVSLASADILVATL  100
Mouse     MFRQEQPLAEGSFAPMGSLQPDAGNSSWNGTEAPGGTRATPYSLQVTLTLVCLAGLLMLFTVFGNVLVIIAVFTSRALKAPQNLFLVSLASADILVATL  100
Cow       ..............MGSLQPDAGNASWNGTEAPGGARATPYSLQVTLTLVCLAGLLMLFTVFGNVLVIIAVFTSRALKAPQNLFLVSLASADILVATL   85
Goat      MFRQEQPLAEGSFAPMGSLQPDAGNASWNGTEAPGGARATPYSLQVTLTLVCLAGLLMLFTVFGNVLVIIAVFTSRALKAPQNLFLVSLASADILVATL  100
Consensus               mgslqpdagn swngteapggg ratpyslqvtltlvclagllml tvfgnvlviiavftsralkapqnlflvslasadilvatl

Human     VIPFSLANEVMGYWYFGKAWCEIYLALDVLFCTSSIVHLCAISLDRYWSITQAIEYNLKRTPRRIKAIIITVWVISAVISFPPLISIEKKGGGGGPQPAE  200
Mouse     VIPFSLANEVMGYWYFGKVWCEIYLALDVLFCTSSIVHLCAISLDRYWSITQAIEYNLKRTPRRIKAIIVTVWVISAVISFPPLISIEKKGAGGGQQPAE  200
Cow       VIPFSLANEVMGYWYFGKAWCEIYLALDVLFCTSSIVHLCAISLDRYWSITQAIEYNLKRTPRRIKAIIVTVWVISAVISFPPLISFEKKRGRSGQPSAE  185
Goat      VIPFSLANEVMGYWYFGKAWCEIYLALDVLFCTSSIVHLCAISLDRYWSITQAIEYNLKRTPRRIKAIIVTVWVISAVISFPPLISFEKKRGRSGQPSAE  200
Consensus vipfslanevmgywyfgk wceiylaldvlfctssivhlcaisldrywsitqaieynlkrtprrikaii tvwvisavisfppllis ekk    g  ae

Human     PRCEINDQKWYVISSCIGSFFAPCLIMILVYVRIYQIAKRRTRVPPSRRGPDAVAAP.PGGTERRPNGLGPERS.AGPGAEAEPLPTQLNGAPGEPAPA  298
Mouse     PSCKINDQKWYVISSCIGSFFAPCLIMILVYVRIYQIAKRRTRVPPSRRGPDACSAP.PGGADRRPNGLGPERG.AGPTGAEAEPLPTQLNGAPGEPAPA  298
Cow       PRCEINDQKWYVISSCIGSFFAPCLIMILVYVRIYQIAKRRTRVPPSRRGPDATAAELPGSAERRPNGLGPERSGVGPVGADVESLQVQLNGAPGEPAPA  285
Goat      PRCEINDQKWYVISSCIGSFFAPCLIMILVYVRIYQIAKRRTRVPPSRRGPDAAAELPGSAERRPNGLGPERSGVGPVGADVESLQVQLNGAPGEPAPA  300
Consensus p c indqkwyviss igsffapclimilvyvriyqiakrrtrvppsrrgpda  a  pg   rrpnglgper   gp gae e l  qlngapgepapa

Human     GPRDTDALDLEESSSSEHAERPPGPRRPERGPRCKGKARASQVKPGDSLPRRGPGATGIGTPAAGPGEER.VGAAKASRWRGRQNREKRFTFVLAVVIGV  397
Mouse     GPRDGDALDLEESSSSEHAERPPGPRRPDRGPARKGTRASQVKPGDSLPRRGPGATGGASGSGHGEER.GGAAKASRWRGRQNREKRFTFVLAVVIGV  397
Cow       G.AGADALDLEESSSSEHAERPPGSRRSERGPRAKGKARASQVKPGDSLPRRGPGATGLGAPTAGPAEERSGGAAKASRWRGRQNREKRFTFVLAVVIGV  384
Goat      GRPDADALDLEESSSSEHAERPPGSRRSERGPRAKGKARASQVKPGDSLPRRGPGATGPGAPAAGPAEERSGGAAKASRWRGRQNREKRFTFVLAVVIGV  400
Consensus g    daldleessss haerppg rr  rgpr kgk rasqvkpgdslprrgpga g g   g eer  g akasrwrgrqnrekrftfvlavvigv

Human     FVVCWFPFFFTYTLTAVGCSVPRTLFKFFFWFGYCNSSLNPVIYTIFNHDFRRAFKKILCRGDRKRI    464
Mouse     FVVCWFPFFFTYTLTAVGCEVPSQLNFFFWFGYCNSSLNPVIYTIFNHDFRRAFKKILCRGDRKRI    464
Cow       FVVCWFPFFFTYTLTAITGCEVPPTLFKFFFWFGYCNSSLNPVIYTIFNHDFRRAFKKILCRGDRKRI   451
Goat      FVVCWFPFFFTYTLTAITGCSVPPTLFKFFFWFGYCNSSLNPVIYTIFNHDFRRAFKKILCRGDRKRI   467
Consensus fvvcwfpffftytl a gc vp  lf fffwfgycnsslnpviytifnhdfrrafkkilcrgdrkri
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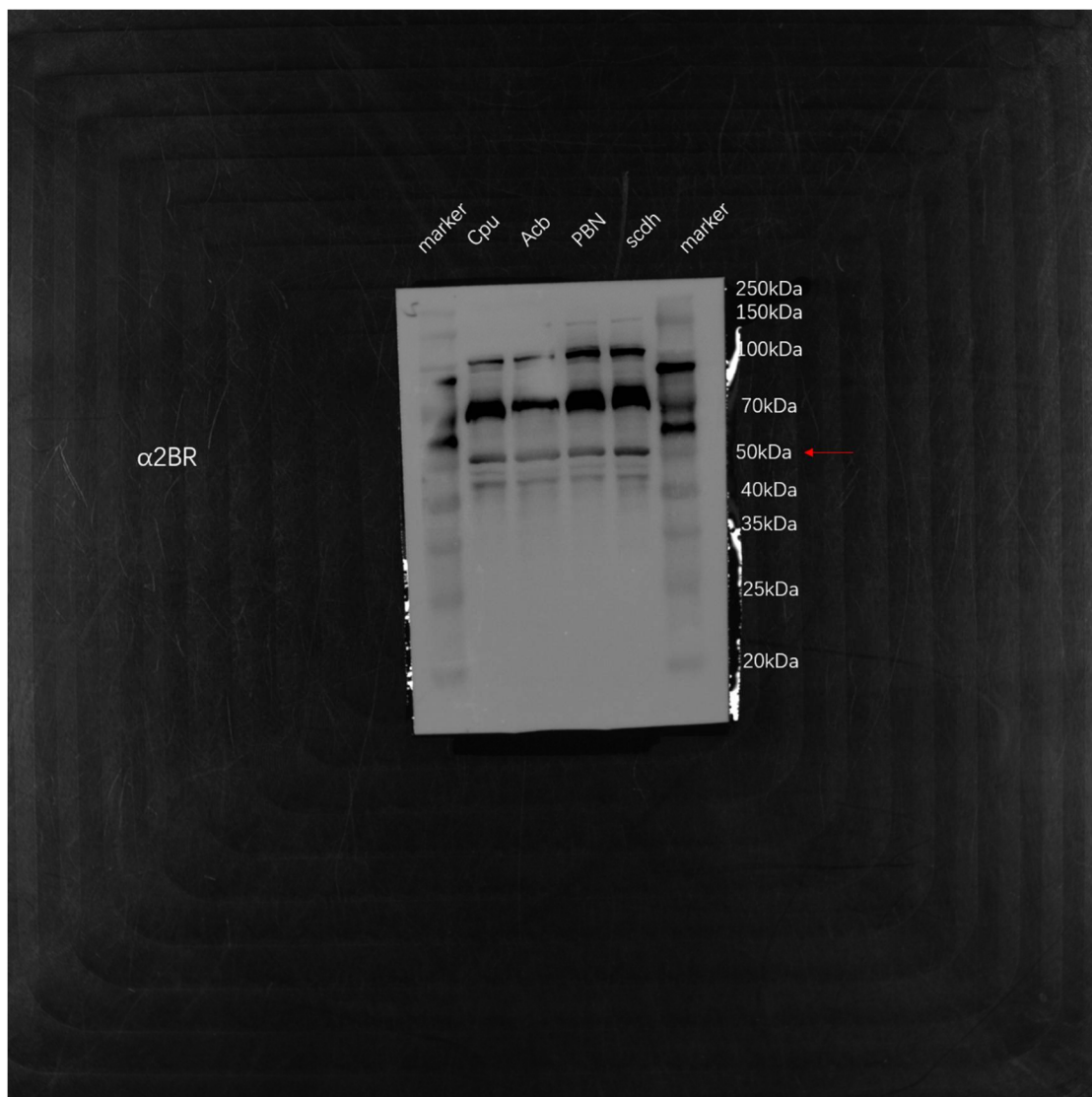
Supplementary figure S2. Amino acid sequence alignment of human (NP_000672.3), mouse (NP_031443.4), cattle (NP_776924.1), and goat (XP_017897206.1) α2A/D-adrenergic receptor subtypes.

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Human     MDHQDPYSVQATAAIAAAITFLILFTIFGNALVILAVLTSRSLRAPQNLFLVSLAAADILVATLIIPFSLANELLGYWYFRRWCEVYLALDVLFCTSSI   100
Mouse     MVHQDPYSVQATAAIASAITFLILFTIFGNALVILAVLTSRSLRAPQNLFLVSLAAADILVATLIIPFSLANELLGYWYFRAWCEVYLALDVLFCTSSI   100
Cow       MDHQDPYSVQATAAIAAVITFLILFTIFGNALVILAVLTSRSLRAPQNLFLVSLAAADILVATLIIPFSLANELLGYWYFWRWCEVYLALDVLFCTSSI   100
Goat      MDHQDPYSVQATAAIAAVITFLILFTIFGNALVILAVLTSRSLRAPQNLFLVSLAAADILVATLIIPFSLANELLGYWYFWRWCEVYLALDVLFCTSSI   100
Consensus  hq pysvqataaia  itflilftifgnalvilavltsrslrapqnlflvslaaadilvatliipfslanellgywyf r wcevylaldvlfctssi

Human     VHLCAISLDRYWAVSRALEYNSKRTPRRIKCIILTVWLIAAVISLPPLIYKGDQGPQERGPPQCKLNQEAWYILASSIGSFFAPCLIMILVYLRIYLIAK   200
Mouse     VHLCAISLDRYWAVSRALEYNSKRTPRRIKCIILTVWLIAAVISLPPLIYKGDQRPPHGLPQCLNQEAWYILASSIGSFFAPCLIMILVYLRIYVIAK   200
Cow       VHLCAISLDRYWAVSRALEYNSKRTPRRIKTIILTVWLIAAVISLPPLIYKGDQGPQPLARPQCKLNQEAWYILASSIGSFFAPCLIMILVYLRIYLIAK   200
Goat      VHLCAISLDRYWAVSRALEYNSKRTPRRIKTIILTVWLIAAVISLPPLIYKGDQGPQPLARPQCKLNQEAWYILASSIGSFFAPCLIMILVYLRIYLIAK   200
Consensus vhlcaisldrywavsraleynskrtprrik iil vwliaavislppliykgdq p p  pqc lnqeawyilassigsffapclimilvylriy iak

Human     RSNRRGPRAKGGPGQGESKQPRPDHGGALASAKLPALAS.VASAPEVNGHSKS.TGEKEEGETPEDTGTRALPESWAALENSGQGQKEGVCGASPEDEAE   298
Mouse     RSHGRGLGAKRGSGEGESKKPHEAAGGVPASAKVPTLVSPLSSVGEANGHPKP.PREKEEGETPEDPEARALPENWGALERSVQDQKEGTSGATAEKGAE   299
Cow       RSHGRGPRAKGGPGGRESKQPHVPGEVSDSAKLPTTASQLATPGEANGCSQPRPGEKGDGETPEAPGTPALPPSWAALEKSGQGQKEGVCGSSPEDEAE   300
Goat      RSHGRGPRAKGGPGGRESKQPHLVPGEVSDSAKLPTTASQLATPGEANGCSQPHPAEKGEGEQTPEAPGTPALPESWAALEKSGQGQKEGVCGSSPEDEAE  300
Consensus rs  rg  ak g g  esk p p  g   sak p l s    e ng     ek  g tpe    alpp w a ps q qk g  g  e  ae

Human     EEEEEEEEEEEECEPQAVEVSPASACSPPLQQPQGSRVLATLRGQVLLGRGVGAIGGQWWRRRAQLTREKRFTFVLAVVIGVFVLCWFPFFFSYSLGAICP  398
Mouse     EDEEV...EECEPQCTLPASPASVFNPPLQQPQTSRVLATLRGQVLLSKNVGVASGQWWRRRTQLSREKRFTFVLAVVIGVFVLCWFPFFFSYSLGAICP   396
Cow       EEEEEG.....CEPQALEASPASACSPPLQQPQGSLRVLATLRGQVLLGRGTGTAGAQWWRRRTQLSREKRFTFVLAVVIGVFVLCWFPFFFSYSLGAICP  395
Goat      EEGEEG.....CEPQALEAPPASACSPPLQQPQGSLRVLATLRGQVLLGRGTGAAGAQWWRRRTQLSREKRFTFVLAVVIGVFVLCWFPFFFSYSLGAICP  395
Consensus e  ee     cepq  p  pas   pplqqpq  rvlatlrgqvll      g    qwwrrr ql rekrftfvlavvigvfv cwfpfffsyslgaicp

Human     KHCKVPHGLFQFFFWIGYCNSSLNPVIYTIFNQDFRRAFRRILCREWTQTA   449
Mouse     QHCKVPHGLFQFFFWIGYCNSSLNPVIYTIFNQDFRRAFRRILCRQWTQTG   447
Cow       QHCKVPHGLFQFFFWIGYCNSSLNPVIYTVFNQDFRRAFRRILCREWTQTA   446
Goat      LHCKVPHGLFQFFFWIGYCNSSLNPVIYTIFNQDFRRAFRRILCRQWTQTA   446
Consensus  hckvphglfqfffwigycnsslnpviyt fnqdfrrafrrilcr wtqt
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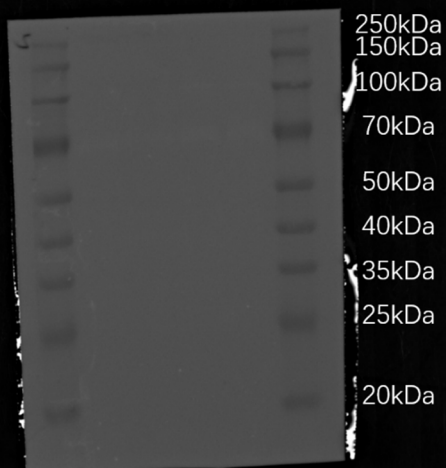
Supplementary figure S3. Amino acid sequence alignment of human, mouse, cattle, and goat α2B-adrenergic receptor subtypes.

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Human     MASPALAAALAVAAAAG.PNASGAGERGSGGVANASGASWGPPRGQYSAGAVAGLAAVVGFLIVFTVVGNVLVVIAVLTSRALRAPQNLFLVSLASADIL   99
Mouse     MASPALAAALAVAAAAEG.PNCSPAGEWGSGGGANASGTDWVPPEGQYSAGAVAGLAAVVGFLIVFTVVGNVLVVIAVLTSRALRAPQNLFLVSLASADIL  99
Cow       MASPALAAALAVAAAAAGPNASGAGDGGSGRVANCSGAPWGPPPGQYSAGAVAGLAAVVGFLIVFTVVGNVLVVIAVLTSRALRAPQNLFLVSLASADIL  100
Goat      MASPALAAALAVAAAAG.PNASGAGDGGSGRVANCSGAPWGPPPGQYSAGAVAGLAAVVGFLIVFTVVGNVLVVIAVLTSRALRAPQNLFLVSLASADIL   99
Consensus maspalaaala aaa  pn s ag  gsg  an sg  w pp gqysagavaglaavvgflivftvvgnvlvviavltsralrapqnlflvslasadil

Human     VATLVMPFSLANELMAYWYFGQVWCGVYLALDVLFCTSSIVHLCAISLDRYWSVTQAVEYNLKRTPRRVKATIVAVWLISAVISFPPLVSLYRQPDGAAY  199
Mouse     VATLVMPFSLANELMAYWYFGQVWCGVYLALDVLFCTSSIVHLCAISLDRYWSVTQAVEYNLKRTPRRVKATIVAVWLISAVISFPPLVSEYRRPDGAAY  199
Cow       VATLVMPFSLANELMAYWYFGQVWCGVYLALDVLFCTSSIVHLCAISLDRYWSVTQAVEYNLKRTPRRVKATIVAVWLISAVISFPPLVSLYRRPDGAAY  200
Goat      VATLVMPFSLANELMAYWYFGQVWCGVYLALDVLFCTSSIVHLCAISLDRYWSVTQAVEYNLKRTPRRVKATIVAVWLISAVISFPPLVSLYRRPDGAAY  199
Consensus vatlvmpfslanelmaywyfgqvwcgvylaldvlfctssivhlcaisldrywsvtqaveynlkrtprrvkativavwlisavisfpplvs yr pdgaay

Human     PQCGLNDETWYILSSCIGSFFAPCLIMGLVYARIYRVAKLRTRTLSEKRAPVGPDGASPTTENGLGAAAGAGENGHCAP...PPADVEPDESSAAAERRR  296
Mouse     PQCGLNDETWYILSSCIGSFFAPCLIMGLVYARIYRVAKLRTRTLSEKRGPAGPDGASPTTENGLG..KAAGENGHGAP...PRTEVEPDESS.AAERRR  293
Cow       PQCGLNDETWYILSSCIGSFFAPCLIMGLVYARIYRVAKLRTRTLSEKRGPAGPDGASPTTENGLG....AGENGHGVPARRPRADLEPEDSSAAAERRR  296
Goat      PQCGLNDETWYILSSCIGSFFAPCLIMGLVYARIYRVAKLRTRTLSEKRGPAGPDGASPTTENGLG....AGENGHGVPARRPRADVEPEDSSAAAERRR  295
Consensus pqcglndetwyilsscigsffapclimglvyariyrvaklrtrtlsekr p gpdgaspttenglg     agenghc  p   p  ep  ss aaerrr

Human     RRGALRRGGRRRAGAEGGAGGADGQGAGPGAAESGALTASRSPGPGGRLSRASSRSVEFFLSRRRRARSSVCRRKVAQAREKRFTFVLAVVMGVFVLCWF  396
Mouse     RRGALRRGGRRREGAEGGDTGSADGPGPG.LAAEGARTASRSPGPGGRLSRASSRSVEFFLSRRRRARSSVCRRKVAQAREKRFTFVLAVVMGVFVLCWF  392
Cow       RRGALRRGGRRRGAGEG.AADAEGTGPGTVTAEPGALAAARSPGPGGRLSRASSRSVEFFLSRRRRARSSVCRRKVAQAREKRFTFVLAVVMGVFVLCWF  395
Goat      RRGALRRGGRRRGAGEG.AADAEGTGPGTVTAEPGALAAARSPGPGGRLSRASSRSVEFFLSRRRRARSSVCRRKVAQAREKRFTFVLAVVMGVFVLCWF  394
Consensus rrgalrrggrrr  eg      a g g   ae ga a rspgpggrlsrassrsvefflsrrrrarssvcrrkvaqarekrftfvlavvmgvfvlcwf

Human     PFFFSYSLYGICREACQVPGPLFKFFFWIGYCNSSLNPVIYTVFNQDFRRSFKHILFRRRRRGFR   461
Mouse     PFFFSYSLYGICREACQLPGPLFKFFFWIGYCNSSLNPVIYTVFNQDFRRSFKHILFRRRRRGFR   457
Cow       PFFFTYSLYGICREACQVPGPLFKFFFWIGYCNSSLNPVIYTVFNQDFRRSFKHILFRRRRRGFR   460
Goat      PFFFTYSLYGICREACQVPGPLFKFFFWIGYCNSSLNPVIYTVFNQDFRRSFKHILFRRRRRGFR   459
Consensus pfff yslygicreacq p plfkfffwigycnsslnpviytvfnqdfrrsfkhilfrrrrrgfr
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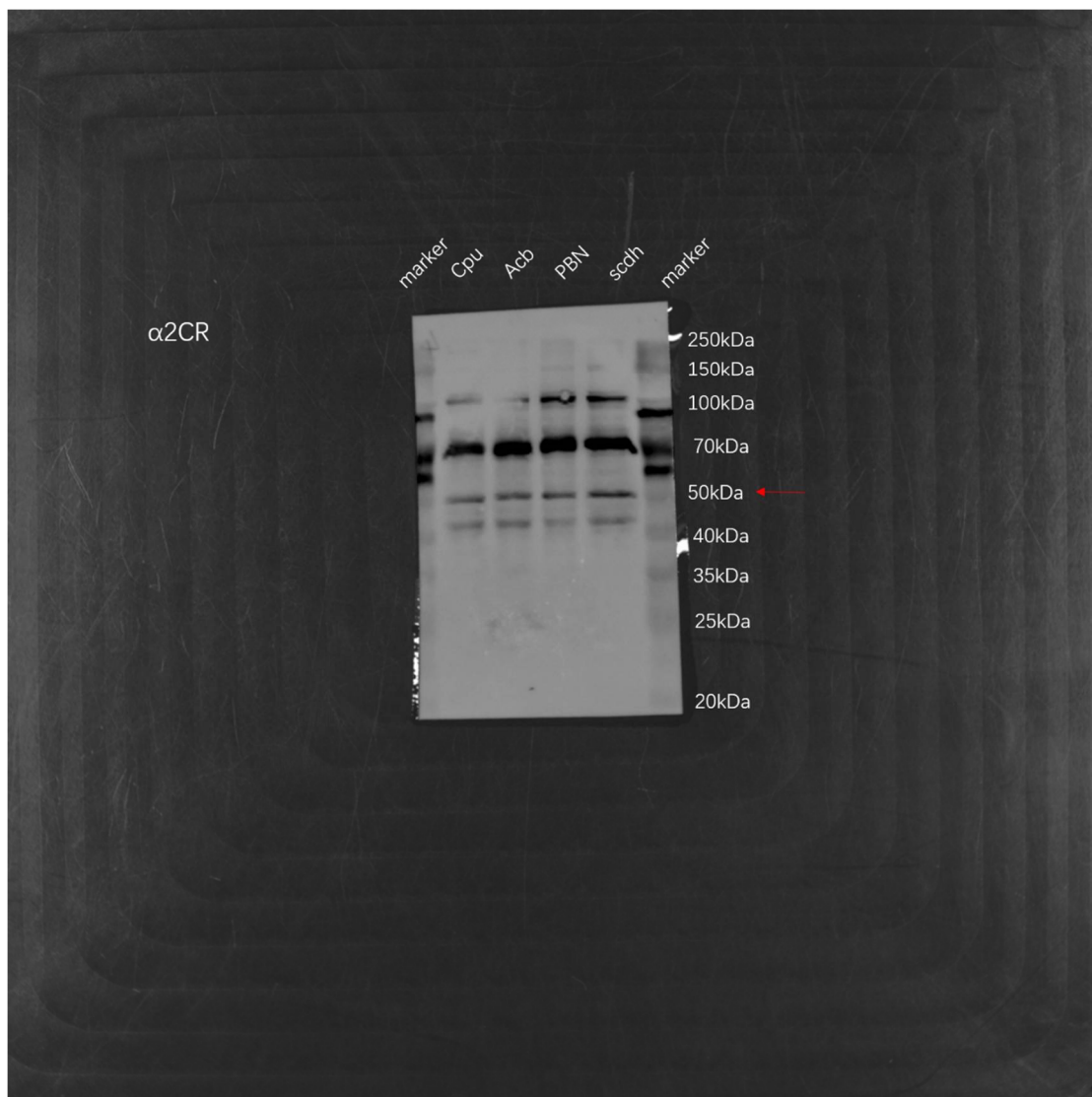
Supplementary figure S4. Amino acid sequence alignment of human, mouse, cattle, and goat α2C-adrenergic receptor subtypes.

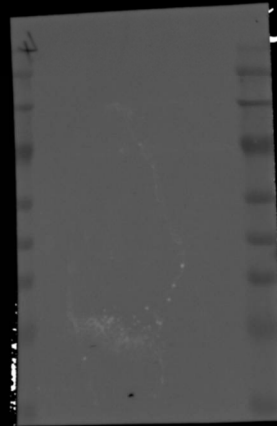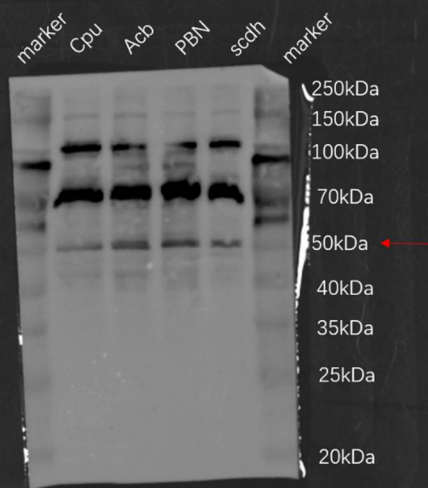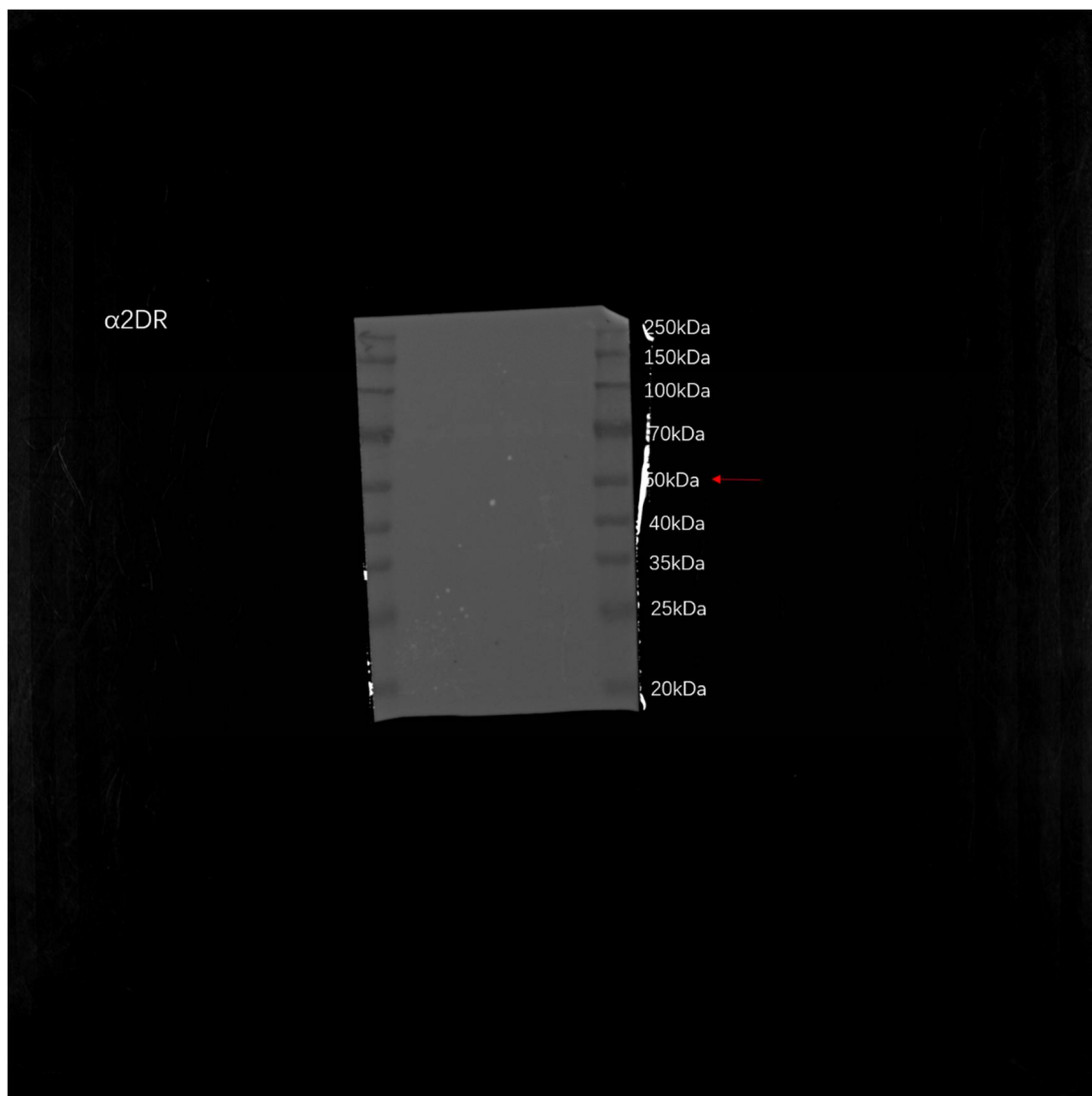Supplementary figure S5. Original western blot figure in Figure 3