

Supplemental Materials:

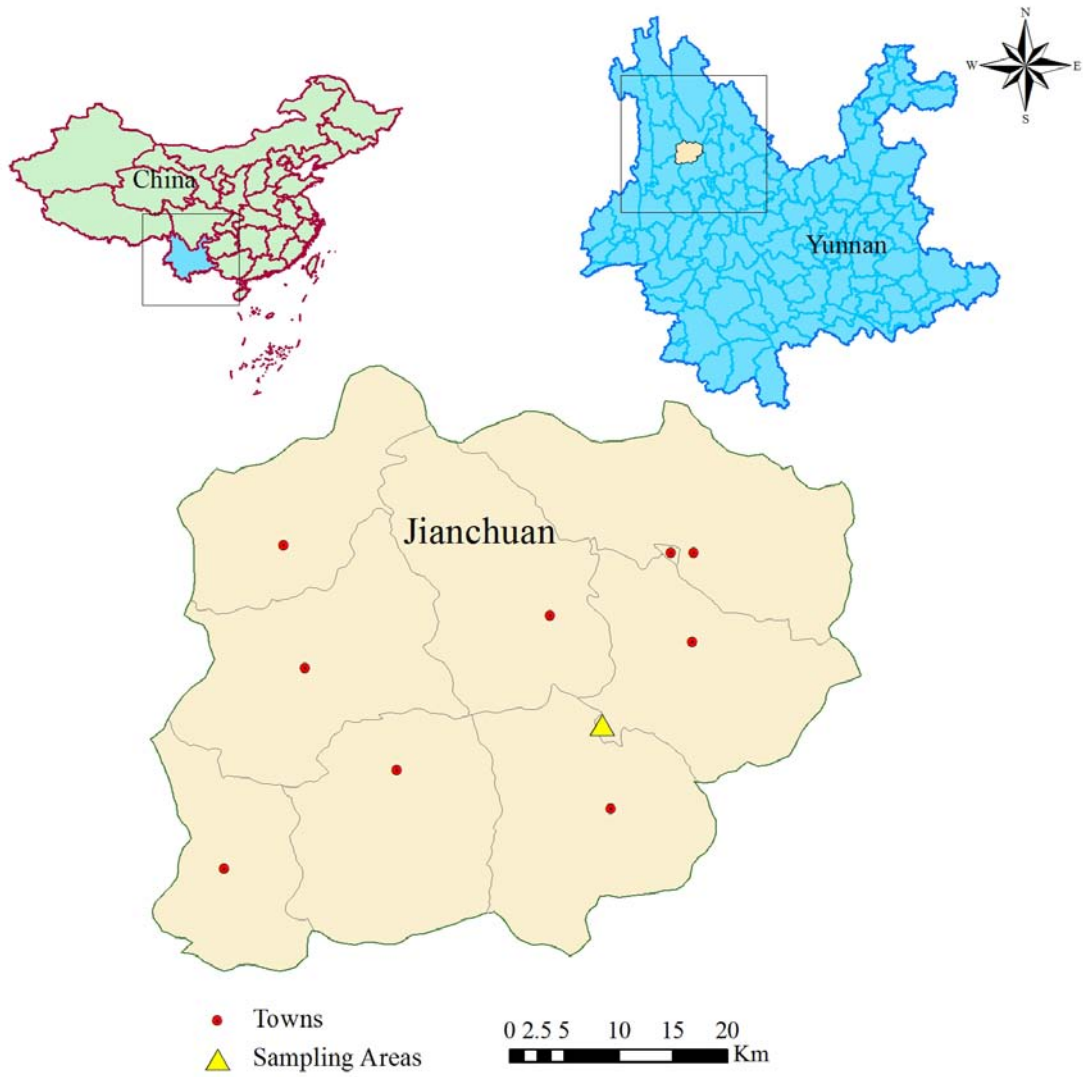
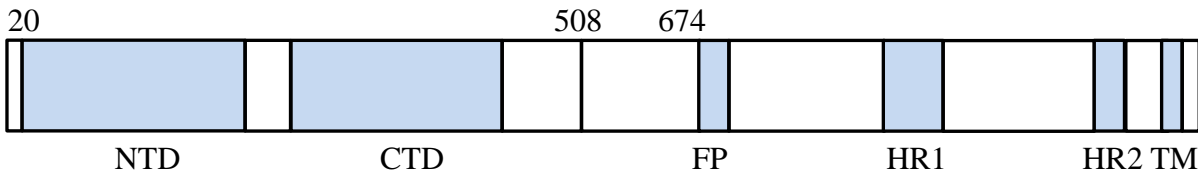


Fig S1. Geographical map of Jianchuan country and the sampling areas.

S1

S2



JC34 : -----AIIIEVEMLITLYRCPEVFLCQVQCVDQLRQOE-----VVIENAVSIAIYTAIAVETFR-----HHHCSSSNSTPGDNKF-----NGIIEIVVHRNHP----- 84
HKU2 : -----MKRIFIVEMLRKYCCEDVY-----DFRLNFGIFSTSS-----RGLSITHTVILGASITMKAKRFPCTMVGSRVPE-----VGIIEAQAQASYSBT-----GSSG 87
HKU1 : -----MLIEIIEIIFPTLAVIGDNCIMFAINDINIVTFRISSEYVVDVSYGLGTYIILDRVYLIAIILPGLKGRKSGANFRDL5LKGTLSTLYIQKPEI-----SDENNEISIRVKNLKLIV-----NKTL 117
MHV-JHM : -----MLVIEIIEIIFPSCGIYIGDERCIOTVNYNANASAPISISTEAVDVSKGLGTYIIVLDRVYLIAIILPGLKGRKSGANFRDL5LKGTLSTLYIQKPEI-----SEFNDSEIRVKNLKLIV-----PTGA 119
SARS-CoV : -----MPEIIEIIEIIFLITLSSGDDLRCTTFDDQVAENYVQHTS-----SMRGVYVTFDEIRFDTLHLTQDLDLFFYSNMTVSGEHTHTNHPTGMFV-----IFPKDSEIFAARKTS----- 95
MERS-CoV : MHSVIEIIEIIFLITLPTESVVDVGFPSVKSACIEVLIQVTFPDKTWFRPFDVSKADGIITYFQGRVYSLNITVYQGLIEVQGDHGMIVYSAGHATGTTPKLKVANYSDQVQKQAN-----GIVRIGAAANSTGVIIISFSTSATI 140

JC34 : -----NIIHPAAVPAAPTNIK-----TIIIEPWHR-----AAQASTVIVQVYQQAQAVDLISGPRCEAPTNPCCS-AIVNMAIECLIIISIFRP-----TTFSS-FSYVITVNISE 175
HKU2 : -----AGGTFSSPKHVMN-----TISGIVVHRP-IGANIANVTRVGRWQKFSFNE-AHFQAPGESS-----AFECVLYVGSFSS-----SQHGKMPGVVNIWD 173
HKU1 : -----YSESTIIGSSVYI-----SIVTIVQPHNGVLEITACQITVQIYFHTICK-----KGSRRNBSWHDKSBLCLCFKKNITFYVSTDFW-----LIFHFYQGRGLIYAYI 213
MHV-JHM : -----TSYIPTIIGSSVYI-----SIVTIVQPHNGVLEITACQITVQIYFHTICK-----KGSRRNBSWHDKSBLCLCFKKNITFYVSTDFW-----LIFHFYQGRGLIYAYI 217
SARS-CoV : -----NIVRGNVPSSTNNK-----CSVYIINNSTNVVTRACN-----SIVTIVQPHNGVLEITACQITVQIYFHTICK-----KGSRRNBSWHDKSBLCLCFKKNITFYVSTDFW 209
MERS-CoV : RKIIPAFVIGSSVYI-----SDGMRGRFNNHTLVLLPDGCGCTLLRAIYCLIEPRSGNHCAGNSITSPATYHTPATDCDGNVNRNASLNSKEYENLNRCNEMTYNITTEDELLEWFG-----ITQTAGVHLISRR 270

JC34 : IIAVHIGQRFSFYIE-----FLMSNASAFICYDANG-----CIENIPNTTSDIIVSTSSANINPFLVCFDYSKIKRNLVLEIEPAVHGA--AIESSSYVAVNDLADAFSFAIDFSDGTGNYGGLIHFVFN 303
HKU2 : VRIIPPTVFEIQLVD-----QWEYVQFTGEPVNAGRMTRKVVVTEISVILVITLQSSANRYRYSYADGFPSCIKRLEIDPEFVYVSN--EYVPAVAVVHVHMSVQQRPEYSYGS--NYCEKRVVFN 300
HKU1 : ADSGATTELESYIITLLSHYVPLTCAISNTDNETLQWVPLSKRQILKFNIRVAVDVAQSSPFSCHQKSKLLLENTVEVYVSN--EYVPAVAVVHVHMSVQQRPEYSYGS--NYCEKRVVFN 352
MHV-JHM : ADKPSATTELESYIITLLSHYVPLTCAISNTDNETLQWVPLSKRQILKFNIRVAVDVAQSSPFSCHQKSKLLLENTVEVYVSN--EYVPAVAVVHVHMSVQQRPEYSYGS--NYCEKRVVFN 354
SARS-CoV : PGGENTLKEIKVPLIINTNFRALITAFSPADQIWGSAAMVPLKLPPTNPKYIENSGDAVDVCSQNPPLADLRKSVKSPEDKSLDNTNFRVYVSGDQVRFPTNITLQFGEVFNATK-PBSVYVBRKIK 348
MERS-CoV : VBLVGNMFOEATLVYDYTIKYSIIPHSISIQSDRKAAMAAVYKLOPLTEGLDSEVSEIRRAILGDFNLDLHESYSEEDMSVLSVSEAKPSGSLVQAEQ-VEVCFSPILLSGTP--PQVYNRFLVFN 407

JC34 : VVWVIE-----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 383
HKU2 : VVWVIE-----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 366
HKU1 : NENSTLLRLVHTDYSQVMPDESKVYGCCKSTVLDKFAIENSRRDDQLGSSGPTQSSNYKIDTPTSSSCQVYSPAINVIVNINYPSSWNRVYGFNN--FNLSSHVYVSRVYCFVSNVNTFCPAKPSFASCKSH 488
MHV-JHM : NENSTLLRLVHTDYSQVMPDESKVYGCCKSTVLDKFAIENSRRDDQLGSSGPTQSSNYKIDTPTSSSCQVYSPAINVIVNINYPSSWNRVYGFNN--FNLSSHVYVSRVYCFVSNVNTFCPAKPSFASCKSH 493
SARS-CoV : VADSVLYNTEFSEIKYQVGSATKINDLCESSVYADSEVVGDDVRLQAPGQGVYADVNYKLPDDPFCQVLAINTRMIDALSTGVNIVKYRLEHGKLR----- 449
MERS-CoV : NYNPKLLSFSVNDIYCSQISPAALASNCSSVILIDYFSPYLSMKSDLSVSSAGPLSQNYKQSPSNPTCLLATPHNLTITPKPKYSYINRCSRLLS----- 508

JC34 : -----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 383
HKU2 : -----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 366
HKU1 : -----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 488
MHV-JHM : -----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 493
SARS-CoV : -----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 449
MERS-CoV : -----VFLCDDGLACIFNAIFSEVYINLQV-----DGL-----INPFLRCNGLDVIYIVKQCRAGVRYQLDFSDG-QEIPDAYTPEY----- 508

JC34 : LKVRCVITDEVPQGLHTSNANITTFHNLLYG--DMVSHVRIK-IVSIVSVCNS--FYYSVLK-TRSEVGLDLSGANVNS--DVVTFERRAK-----ARTLTDSSGCLLVQVLTNNTYTSYEGCN 540
HKU2 : TGVCHITHEKRVITQGLVYESNPTFAQYINVLVYGG--SOLKRVRIIG-KVIEVAQCFE--ASYDVLFRSSSFGLDLRFDFCNRIRISASRFAERLLP-----SHNGTAAQGLNATYAPNDTHVNTNQLDGE 531
HKU1 : TGVCHITHEKRVITQGLVYESNPTFAQYINVLVYGG--SOLKRVRIIG-KVIEVAQCFE--ASYDVLFRSSSFGLDLRFDFCNRIRISASRFAERLLP-----SHNGTAAQGLNATYAPNDTHVNTNQLDGE 531
MHV-JHM : TGVCHITHEKRVITQGLVYESNPTFAQYINVLVYGG--SOLKRVRIIG-KVIEVAQCFE--ASYDVLFRSSSFGLDLRFDFCNRIRISASRFAERLLP-----SHNGTAAQGLNATYAPNDTHVNTNQLDGE 531
SARS-CoV : KNCVMPNENFLCQGLVITPS-SKRPQPPQFGRDVSDFDTSVDRPTEIILDSVCSFGVGSVITPGTNAKSEVAVLQDVNCDTSTAIHADQLTPAWRI--YSTGNVVFQDQALIGAEHV--DTSYEDLFGCA 655
MERS-CoV : LKVRCVITDEVPQGLHTSNANITTFHNLLYG--DMVSHVRIK-IVSIVSVCNS--FYYSVLK-TRSEVGLDLSGANVNS--DVVTFERRAK-----ARTLTDSSGCLLVQVLTNNTYTSYEGCN 734

JC34 : LKADVNTGMFVGN-----FYIOPHDDYARPIILSPQ-----IISVDDHVINVRKQVOTSAERFDVYCBRIYIDVSVCKEILDAKYGCCPKVSDIKSSSLQIYVQVQKIKINLVVDVVK-----PDVD 658
HKU2 : LKADVNTGMFVGN-----FYIOPHDDYARPIILSPQ-----IISVDDHVINVRKQVOTSAERFDVYCBRIYIDVSVCKEILDAKYGCCPKVSDIKSSSLQIYVQVQKIKINLVVDVVK-----PDVD 647
HKU1 : LKADVNTGMFVGN-----FYIOPHDDYARPIILSPQ-----IISVDDHVINVRKQVOTSAERFDVYCBRIYIDVSVCKEILDAKYGCCPKVSDIKSSSLQIYVQVQKIKINLVVDVVK-----PDVD 647
MHV-JHM : LKADVNTGMFVGN-----FYIOPHDDYARPIILSPQ-----IISVDDHVINVRKQVOTSAERFDVYCBRIYIDVSVCKEILDAKYGCCPKVSDIKSSSLQIYVQVQKIKINLVVDVVK-----PDVD 647
SARS-CoV : LKADVNTGMFVGN-----FYIOPHDDYARPIILSPQ-----IISVDDHVINVRKQVOTSAERFDVYCBRIYIDVSVCKEILDAKYGCCPKVSDIKSSSLQIYVQVQKIKINLVVDVVK-----PDVD 647
MERS-CoV : LKADVNTGMFVGN-----FYIOPHDDYARPIILSPQ-----IISVDDHVINVRKQVOTSAERFDVYCBRIYIDVSVCKEILDAKYGCCPKVSDIKSSSLQIYVQVQKIKINLVVDVVK-----PDVD 647

JC34 : FGAENSMFES-----EPNG-----RSHEIDILEIYVITGEPFYQDYDCK--MNEIDILCKRYKGMVIEPVMDDTLTFSSAVAGSMTAGLSSGGQGVY-----SISAVAGRLNAGLQVATVNDVNR 778
HKU2 : TRDRNMQFPLPVQVSTSRPFS-----RSHEIDILEIYVITGEPFYQDYDCK--MNEIDILCKRYKGMVIEPVMDDTLTFSSAVAGSMTAGLSSGGQGVY-----SISAVAGRLNAGLQVATVNDVNR 775
HKU1 : VDNINRKSIVGCLGPHCGSS-----RSHEIDILEIYVITGEPFYQDYDCK--MNEIDILCKRYKGMVIEPVMDDTLTFSSAVAGSMTAGLSSGGQGVY-----SISAVAGRLNAGLQVATVNDVNR 1008
MHV-JHM : IDGNIPELPGCGTACBDGNGPSAIRGSAIEDLLEKVKLSVDFVBAANVCGGG--SEIRDLDCVSENGRVLPELLESQSGTAAATVAAHPPNAAAGVPE-----SISAVAGRLNAGLQVATVNDVNR 1025
SARS-CoV : FGGNPSQILPDLKPTR-----RSHEIDILEIYVITGEPFYQDYDCK--MNEIDILCKRYKGMVIEPVMDDTLTFSSAVAGSMTAGLSSGGQGVY-----SISAVAGRLNAGLQVATVNDVNR 905
MERS-CoV : GGDNIPELPGCGTACBDGNGPSAIRGSAIEDLLEKVKLSVDFVBAANVCGGG--SEIRDLDCVSENGRVLPELLESQSGTAAATVAAHPPNAAAGVPE-----SISAVAGRLNAGLQVATVNDVNR 997

JC34 : ANGFNNTQYVADGERTKISCAISAHOSVNNNAQCSQVQGTSENGFSAISNNFLVIAIRERLEAQMNDRLINGRMNIQNFVNYKISISESSQIILQSLVNECVVASSNRNGFCGCHTESMORAPDCTMFP 918
HKU2 : ANGFNNTQYVADGERTKISCAISAHOSVNNNAQCSQVQGTSENGFSAISNNFLVIAIRERLEAQMNDRLINGRMNIQNFVNYKISISESSQIILQSLVNECVVASSNRNGFCGCHTESMORAPDCTMFP 915
HKU1 : ARAFNNALISONGESANSAARATOSVNNNAQCSQVQGTSENGFSAISNNFLVIAIRERLEAQMNDRLINGRMNIQNFVNYKISISESSQIILQSLVNECVVASSNRNGFCGCHTESMORAPDCTMFP 1148
MHV-JHM : ARAFNNALISONGESANSAARATOSVNNNAQCSQVQGTSENGFSAISNNFLVIAIRERLEAQMNDRLINGRMNIQNFVNYKISISESSQIILQSLVNECVVASSNRNGFCGCHTESMORAPDCTMFP 1165
SARS-CoV : ANGFNNTQYVADGERTKISCAISAHOSVNNNAQCSQVQGTSENGFSAISNNFLVIAIRERLEAQMNDRLINGRMNIQNFVNYKISISESSQIILQSLVNECVVASSNRNGFCGCHTESMORAPDCTMFP 1045
MERS-CoV : ANGFNNTQYVADGERTKISCAISAHOSVNNNAQCSQVQGTSENGFSAISNNFLVIAIRERLEAQMNDRLINGRMNIQNFVNYKISISESSQIILQSLVNECVVASSNRNGFCGCHTESMORAPDCTMFP 1137

JC34 : HYLVEVNTTIDVETEGDLGN--NVCIAERDLELVKTIIRSDV--MHEITRNLNVCQATVNN-SVIWNGNFTSINQITBIEGEPETP--SEDESFEDLLNLELELOKKN--ITTEPPELLNLYIDRDEBLS 1048
HKU2 : HYLVEVNTTIDVETEGDLGN--NVCIAERDLELVKTIIRSDV--MHEITRNLNVCQATVNN-SVIWNGNFTSINQITBIEGEPETP--SEDESFEDLLNLELELOKKN--ITTEPPELLNLYIDRDEBLS 1046
HKU1 : HYLVEVNTTIDVETEGDLGN--NVCIAERDLELVKTIIRSDV--MHEITRNLNVCQATVNN-SVIWNGNFTSINQITBIEGEPETP--SEDESFEDLLNLELELOKKN--ITTEPPELLNLYIDRDEBLS 1046
MHV-JHM : HYLVEVNTTIDVETEGDLGN--NVCIAERDLELVKTIIRSDV--MHEITRNLNVCQATVNN-SVIWNGNFTSINQITBIEGEPETP--SEDESFEDLLNLELELOKKN--ITTEPPELLNLYIDRDEBLS 1046
SARS-CoV : HYLVEVNTTIDVETEGDLGN--NVCIAERDLELVKTIIRSDV--MHEITRNLNVCQATVNN-SVIWNGNFTSINQITBIEGEPETP--SEDESFEDLLNLELELOKKN--ITTEPPELLNLYIDRDEBLS 1046
MERS-CoV : HYLVEVNTTIDVETEGDLGN--NVCIAERDLELVKTIIRSDV--MHEITRNLNVCQATVNN-SVIWNGNFTSINQITBIEGEPETP--SEDESFEDLLNLELELOKKN--ITTEPPELLNLYIDRDEBLS 1046

JC34 : NVSGLHIVSEFENPKVQVTKHWYWIIAIFLVVILFSEFLMCCATCCGCGMLGSAONGCC-----TKPQTVEPKRHHVQ----- 1126
HKU2 : NVSGLHIVSEFENPKVQVTKHWYWIIAIFLVVILFSEFLMCCATCCGCGMLGSAONGCC-----TKPQTVEPKRHHVQ----- 1128
HKU1 : NVSGLHIVSEFENPKVQVTKHWYWIIAIFLVVILFSEFLMCCATCCGCGMLGSAONGCC-----TKPQTVEPKRHHVQ----- 1356
MHV-JHM : NVSGLHIVSEFENPKVQVTKHWYWIIAIFLVVILFSEFLMCCATCCGCGMLGSAONGCC-----TKPQTVEPKRHHVQ----- 1376
SARS-CoV : NVSGLHIVSEFENPKVQVTKHWYWIIAIFLVVILFSEFLMCCATCCGCGMLGSAONGCC-----TKPQTVEPKRHHVQ----- 1255
MERS-CoV : NVSGLHIVSEFENPKVQVTKHWYWIIAIFLVVILFSEFLMCCATCCGCGMLGSAONGCC-----TKPQTVEPKRHHVQ----- 1353

Fig. S2

Fig S2. Alignment and predicted domains and cleavage sites of AcCoV-JC34 spike protein. NTD, N-terminal domain; RBD, receptor-binding domain; HR, heptad repeat; TM, transmembrane anchor. The signal peptide corresponds to residues 1 to 19. The cleavage sites were indicated by arrows.