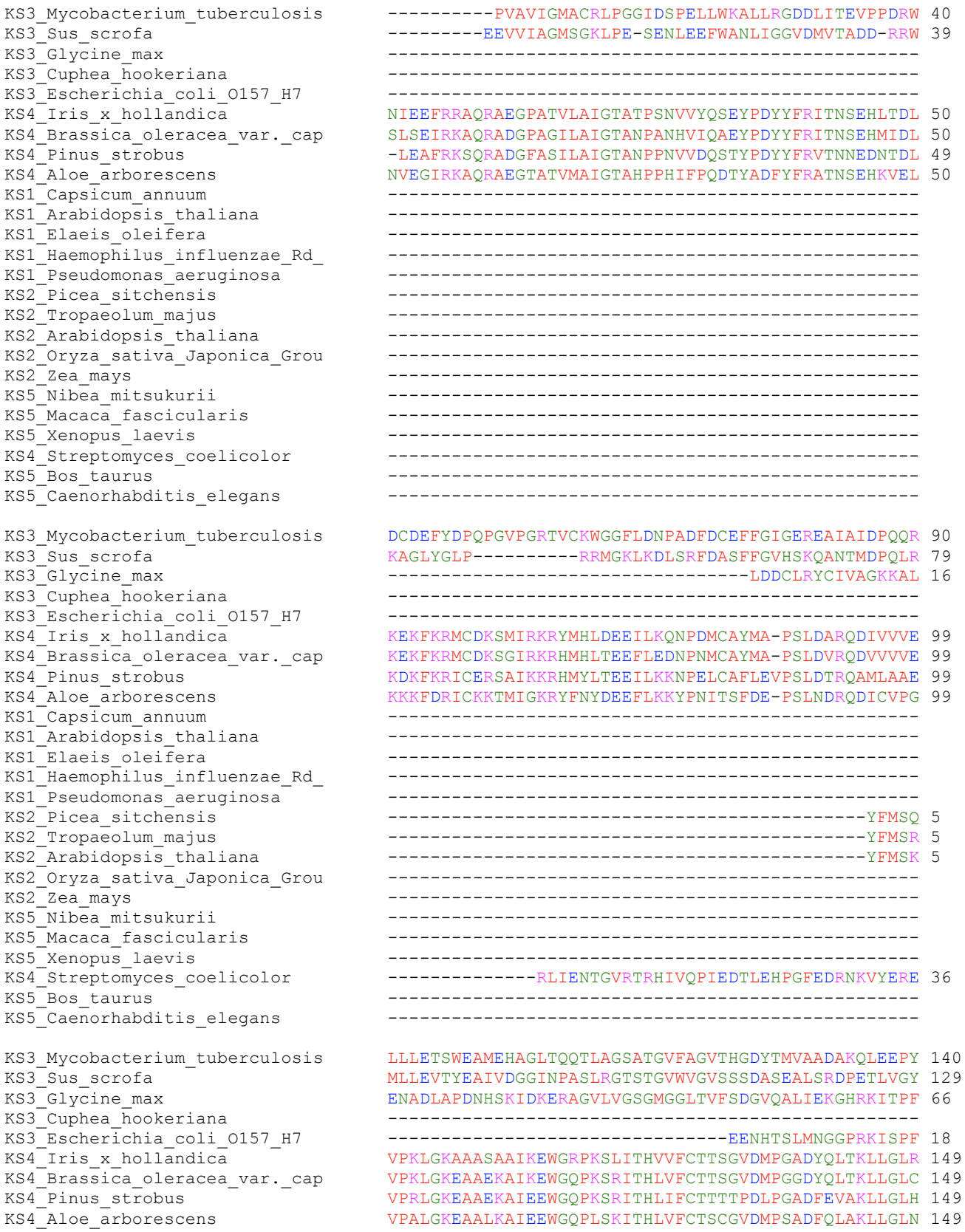
Figure S2. Multiple sequence alignment of KS1–KS5 sequences by ClustalX 2.0.12.



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KS1_Capsicum_annuum                 ----------------------------------DITAACSGFLLGLFSA 16
KS1_Arabidopsis_thaliana            ----------------------------------DITAACSGFVLGLVSA 16
KS1_Elaeis_oleifera                 ----------------------------------DATAAYSGFVVGLVTA 16
KS1_Haemophilus_influenzae_Rd_      ----------------------------------DLAAACTGFVYALSVA 16
KS1_Pseudomonas_aeruginosa          ------------------------------------AQCSGLLYGLQMA 13
KS2_Picea_sitchensis                PRSVYLVDFACFKPSDELKVSKEEFISLAKKSG-HFDDASLEFQKRILER 54
KS2_Tropaeolum_majus                PRSIYLIDFACYRAHDDLKVTKAEFIEQARKSG-KFDEASLDFQQRILES 54
KS2_Arabidopsis_thaliana            PRTVYLVDYSCYKPPVTCRVPFSSFMEHSRLIL-KDNPKSVEFQMRILER 54
KS2_Oryza_sativa_Japonica_Grou      ---VYLVDYGCFLGEPRHRVPFATALEHGRLMTNLLDEESTNFMVRLHAK 47
KS2_Zea_mays                        --PVYLLNYSCHLPDAERQVNLEVCEYFGLKCR-RYSDDIADFMRLVYSK 47
KS5_Nibea_mitsukurii                ----------ETFNHKLNTYLESWMGPRDQRVRGWLLLDN-YPPTFALT 38
KS5_Macaca_fascicularis             ---------------------------------------------PTFICS 6
KS5_Xenopus_laevis                  --------------------------KDADPRVEDWPLMSSPILQTIIIG 24
KS4_Streptomyces_coelicolor         AKSRVPAVIQRALDDAELLATDIDVIIYVSCTGFMMPSLTAWLINEMGFD 86
KS5_Bos_taurus                      --------------------------EKQFNENEAIQWMQENWKKSFLFS 24
KS5_Caenorhabditis_elegans          ------------------------------------------------- 

KS3_Mycobacterium_tuberculosis      GYLGNSFSMASGRVAYAMRLHGPAITVDTACSSGLTAVHMACRSLHEGES 190
KS3_Sus_scrofa                      SMIGCQRAMMANRLSFFFDFKGPSITIDTACSSSLLALQSAYQAIRGGEC 179
KS3_Glycine_max                     FIPYAITNMGSALLGIDLGFMGPNYSISTACATSNYCFYAAANHIRRGEA 116
KS3_Cuphea_hookeriana               ----STTNMGSAILAMDLGWMGPNYSISTACATSNFCILNAANHIIKGEA 46
KS3_Escherichia_coli_O157_H7        FVPSTIVNMVAGHLTIMYGLRGPSISIATACTSGVHNIGHAARIIAYGDA 68
KS4_Iris_x_hollandica               PSVNRLMMYQQGCFAGGTVLRVAKDLAENNRGARVLVVCSEVTAVTFRGP 199
KS4_Brassica_oleracea_var._cap      PSVKRLMMYQQGCFAGATVLRLAKDLAENNRGARVLVVCSEIIALFFRGP 199
KS4_Pinus_strobus                   PSVKRVGVFQHGCFAGGTVLRLAKDLAENNRGARVLVVCSENTAVTFRGP 199
KS4_Aloe_arborescens                TNVNKYCVYMQGCYAGGTVLRYAKDLAENNRGSRVLVVCAELTIIGLRGP 199
KS1_Capsicum_annuum                 SCYIKAGGFKNVLVIGADAV--SRFIDWTDRGS--CILFGDAAGAVLVQA 62
KS1_Arabidopsis_thaliana            ACHIRGGGFKNVLVIGADSL--SRFVDWTDRGT--CILFGDAAGAVVVQA 62
KS1_Elaeis_oleifera                 TRFIKGGGFQNVLVIGADAL--SRYVDWTDRGT--CILFGDAAGAVLVQA 62
KS1_Haemophilus_influenzae_Rd_      DQFIRAGKVKKALVIGSDLN--SRKLDETDRST--VVLFGDGAGAVILEA 62
KS1_Pseudomonas_aeruginosa          RGQILAGLARHVLVVCGEVL--SKRMDCSDRGRNLSILLGDGAGAVVVSA 61
KS2_Picea_sitchensis                SGVGDETYLPKAVMGPGLCS-TMKEGRAEAEMVMFGALDELFEKCK--VR 101
KS2_Tropaeolum_majus                SGIGDETYIPKSVMSTEVNSSTMSEGRLEATTVMFDALDELFEKTK--VR 102
KS2_Arabidopsis_thaliana            SGLGEETCLPPAIHYIPPTP-TMESARNEAQMVIFTAMEDLFKNTG--LK 101
KS2_Oryza_sativa_Japonica_Grou      SGIGEETSVPDSFRYIPPES-GIEASREEAELVIFSAVDKAFAAATGLVP 96
KS2_Zea_mays                        SGLGQETFAPPFIYSGKFEK-TLAFAIQEAEEGLFAVVEQLLAKSD--VS 94
KS5_Nibea_mitsukurii                VMYLVIVWMGPKYMKHRQPYSCRGLLVLYNLGLTLLSFYMFYELVTAVWH 88
KS5_Macaca_fascicularis             VIYLLIVWLGPKYMRNKQPFSCRGILVVYNLGLTLLSLYMFCELVTGVWE 56
KS5_Xenopus_laevis                  AYIYFVTSLGPRIMENRKPFALKEIMACYNLFMVLFSVYMCYEFLMSGWA 74
KS4_Streptomyces_coelicolor         STTRQIPIAQLGCAAGGAAINRAHDFCTAYPEANALIVACEFCSLCYQPT 136
KS5_Bos_taurus                      ALYAAFVFGGRHLMNKRAKFELRKPLVLWSLTLAVFSIFGALRTGAYMVY 74
KS5_Caenorhabditis_elegans          --YIATIFGLKYYMKDRKAFDLSTPLNIWNGILSTFSLLGFLFTFPTLLS 48

KS3_Mycobacterium_tuberculosis      DVALAGGVALMLEPRKAAAGS--ALGMLS-----PTGRCRAFDVAADGFV 233
KS3_Sus_scrofa                      SAAVVGGLNVLLKPNSSLQFM--KLGMLS-----QDGTCRSFDAEGTGYC 222
KS3_Glycine_max                     DLMIAGGTEAAIIPIGLGGFV--ACRALSQRNDDPKTASRPWDKERDGFV 164
KS3_Cuphea_hookeriana               DMMLCGGSDAAVLPVGLGGFV--ACRALSQRNNDPTKASRPWDSNRDGFV 94
KS3_Escherichia_coli_O157_H7        DVMVAGGAEKASTPLGVGGFG--AARALSTRNDNPQAASRPWDKERDGFV 116
KS4_Iris_x_hollandica               SETHLDSLVGQALFGDGAAAM--IIGSDPDVSV-ERPLFQLMYAQQTIVP 246
KS4_Brassica_oleracea_var._cap      SDTHLDSLLGQALFSDGAAAL--VVGSDPDISVGEKPIFEMVSAAQTILP 247
KS4_Pinus_strobus                   SETHLDGLVGLALFGDGASAL--IVGADP-IPQVEKPCFEIVWTAQTVVP 246
KS4_Aloe_arborescens                NESHLDNAIGNSLFGDGAAAL--IVGADP-IVGIEKPIFEIVCAKQTVIP 246
KS1_Capsicum_annuum                 CDIGEDGLFGFDLHSDGDGKR--HLISTFKENETDDASNENHSVT-SFPP 109
KS1_Arabidopsis_thaliana            CDIEDDGLFSFDVHSDGDGRR--HLNASVKESQNDGESSSNGSVFGDFPP 110
KS1_Elaeis_oleifera                 CSSEEDGLLGFDFHSDGHGQK--HLNATVKDGETELISNNNGAPL--FPP 108
KS1_Haemophilus_influenzae_Rd_      S--EQEGIISTHLHASADKNN--ALVLAQPERGIE--------------- 93
KS1_Pseudomonas_aeruginosa          GESLEDGLLDLRLGADGNYFD--LLMTAAPGSASPTFLDEN--------V 101
KS2_Picea_sitchensis                PKDVGILVVNCSLFNPTPSLS--AMIINHYKMRGNILSFNLGGMGCSAGI 149
KS2_Tropaeolum_majus                PKDVGVLVVNCSIFNPTPSLS--AMIINHYKMRGNILSYNLGGMGCSAGI 150
KS2_Arabidopsis_thaliana            PKDIDILIVNCSLFSPTPSLS--AMIINKYKLRSNIKSYNLSGMGCSASL 149
KS2_Oryza_sativa_Japonica_Grou      ADDIGTVILACSFTTPTPSLA--DVVVRRYGLRADVRSVNLSGMGCSGAL 144
KS2_Zea_mays                        PSDISVLVVACSMFSPMPSLA--SMIMHRFNMRPDVKSYSVAGMGCSAGT 142
KS5_Nibea_mitsukurii                GGYNFYCQDIHSAQE-VDNKI--INVLWWYYFSKLIEFMDTFFFILRKNN 135
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KS5_Macaca_fascicularis              GKYNFFCQGTRTAGE-SDMKI--IRVLRWYYFSKLIEFMDTFFFILRKNN 103
KS5_Xenopus_laevis                   TGYSFRCDIVDYSQSPQALRM--AWTCWLFYFSKFIELLDTVFFVLRKKN 122
KS4_Streptomyces_coelicolor          DLGVGSLLCNGLFGDGIAAAV--VRGRGGTGVRLERNGSYLIPKTEDWIM 184
KS5_Bos_taurus                       TVMTKGLKHSVCDQGFYNGPVS-KFWAYAFVLSKAPELGDTIFIILRK-- 121
KS5_Caenorhabditis_elegans           VIRKDGFSHTYSHVSELYTDSTSGYWIFLWVISKIPELLDTVFIVLRK-- 96

KS3_Mycobacterium_tuberculosis       SGEGCAVVVLKRLPDALADGDRILAVIRGTSANQDGHTVN-------IAT 276
KS3_Sus_scrofa                       RAEAVVAVLLTKK----SLARRVYATILNAGTNTDGSKEQG------VTF 262
KS3_Glycine_max                      MGEGAGVLVMESLEHAMKRGAPIIAEYLGGAVNCDAYHMT-------DPR 207
KS3_Cuphea_hookeriana                MGEGAGVLLLEELEHAKKRGATIYAEFLGGSFTCDAYHMT-------EPH 137
KS3_Escherichia_coli_O157_H7         LGDGAGMLVLEEYEHAKKRGAKIYAELVGFGMSSDAYHMT-------SPP 159
KS4_Iris_x_hollandica                DSQGAIDGHLREVGLTFHLLKDVPGLISKNIEKSLVEAFGPLGIS---DW 293
KS4_Brassica_oleracea_var._cap       NSDGAINLQLREAGLTFHLLKHVPRLISKNIEKSLHEAFKPLGIS---DW 294
KS4_Pinus_strobus                    NSDGAISGKLREVGLTFQLKGAVPDLISTNIEKCLVEAFSQFNIS---DW 293
KS4_Aloe_arborescens                 DSEDVIHLHLREAGLMFYMSKDSPETISNNVEGCLVDIFKSVGMTPPADW 296
KS1_Capsicum_annuum                  KCSSYSYLQMNGKEIFKFAVRVVPQSIEAALEKAGLDGSN---------- 149
KS1_Arabidopsis_thaliana             KQSSYSCIQMNGKEVFRFAVKCVPQSIESALQKAGLPAS---------- 149
KS1_Elaeis_oleifera                  KRSSFSCIQMNGKEVFRFAVRCGPQSIEAALLEAGLTSS---------- 147
KS1_Haemophilus_influenzae_Rd_       -KSGY--IEMQGNETFKLAVRELSNVVEETLLANNLDKK---------- 129
KS1_Pseudomonas_aeruginosa           LREGGGEFLMRGRPMFEHASQTLVRIAGEMLAAHELTLD---------- 140
KS2_Picea_sitchensis                 ISLDLARDMLQAHP-NSYAIVVSTEMITFNWYTGAERSML---------- 188
KS2_Tropaeolum_majus                 IGVDLARDMLEANP-NNYAVVVSTEMVGYNWYPGQDRSML---------- 189
KS2_Arabidopsis_thaliana             ISVDVARDLLQVHP-NSNAIIISTEIITPNYYKGNERAML---------- 188
KS2_Oryza_sativa_Japonica_Grou       IAIGLAKNLLRVAPPGSRVLIVATEILSSMLYTGRKREML---------- 184
KS2_Zea_mays                         VGIDTAARSLRSRRTPGYALVVVTENTSLNWYFGKNKHML---------- 182
KS5_Nibea_mitsukurii                 HQITFLHIYHHASMLNIWWFVMNWVPCGHSYFGASLNSFV---------- 175
KS5_Macaca_fascicularis              HQITVLHVYHHASMLNIWWFVMNWVPCGHSYFGATLNSFI---------- 143
KS5_Xenopus_laevis                   SQITFLHVYHHSIMPWTWWFGVKFAPGGLGTFHALVNCVV---------- 162
KS4_Streptomyces_coelicolor          YDVKATGFHFLLDKRVPATMEPLAPALKELAGEHGWDASD---------- 224
KS5_Bos_taurus                       QKLIFLHWYHHITVLLYSWYSYKDMVAGGGWFMTMNYSVH---------- 161
KS5_Caenorhabditis_elegans           RPLIFMHWYHHALTGYYALVCYHEDAVHMVWVVWMNYIIH---------- 136

KS3_Mycobacterium_tuberculosis       PSQPAQVAAYRAALAAGGVDAATVGMVEAHGPGTPIGDPIEYASVSEVYG 326
KS3_Sus_scrofa                       PSGDVQEQLIRSLYAPAGPDPESLEYIEAHGTGTKVGDPQELNGIVNALC 312
KS3_Glycine_max                      SDGLGVSTCIQSSLEDAGVSPEEVNYINAHATSTLAGDLAEINAIKKVFK 257
KS3_Cuphea_hookeriana                PEGAGVILCIEKALAQSGVSREDVNYINAHATSTPAGDIKEYQALAHCFG 187
KS3_Escherichia_coli_O157_H7         ENGAGAALAMANALRDAGIEASQIGYVNAHGTSTPAGDKAEAQAVKTIFG 209
KS4_Iris_x_hollandica                NSIFWVAHPGGPAILDAVEDKLGLEKAKMGATREVLKEYGNMSSACVIFI 343
KS4_Brassica_oleracea_var._cap       NSLFWIAHPGGRAILDEVEKKLGLKAEKMRATRHVLSEYGNMTSACVLFI 344
KS4_Pinus_strobus                    NQLFWIAHPGGHAILDQVEASLNLDPTKLRATRHVMSEYGNMSSACVHFI 343
KS4_Aloe_arborescens                 NSLFWIPHPGGRAILDEVEARLKLRPEKFRATRHVLWEYGNMVSACVLYI 346
KS1_Capsicum_annuum                  NFDWLLLHQANQRIIDGIATRLEVPSERVISN---LANYGNTSAASIPLA 196
KS1_Arabidopsis_thaliana             AIDWLLLHQANQRIIDSVATRLHFPPERVISN---LANYGNTSAASIPLA 196
KS1_Elaeis_oleifera                  SIDWLLLHQANQRIIDAVATRLQMPPNKVISN---LANYGNTSAASIPLA 194
KS1_Haemophilus_influenzae_Rd_       DLDWLVPHQANLRIITATAKKLEMDMSQVVVT---LDKYANNSAATVPVA 176
KS1_Pseudomonas_aeruginosa           DIDHVICHQPNLRILDAVQEQLGIPQHKFAVT---VDRLGNMASASTPVT 187
KS2_Picea_sitchensis                 MPNCFFRMGGAAILLSNKRRDRRRAKYSLSHIVRTHKGADDRSFRCVYQQ 238
KS2_Tropaeolum_majus                 IPNCYFRMGCSAVLLSNRRGDYRRAKYSLQHLVRTHKGADDRSFRCIYQE 239
KS2_Arabidopsis_thaliana             LPNCLFRMGGAAILLSNRRSDRWRAKYKLCHLVRTHRGADDKSYNCVMEQ 238
KS2_Oryza_sativa_Japonica_Grou       VPNVLFRMGAAAIIMSNSPE---KARFRLGPIVRTLTAARDGDYRCAFQE 231
KS2_Zea_mays                         VTNCIFRVGSAAALVTDVPSRRPDAKYELVRTLRTHHGADDAAFNAALQM 232
KS5_Nibea_mitsukurii                 -HVVMYSYYGLSAI-PAMRPYLWWKRYITQLQLVQFFLTMSQTMCAVVWP 223
KS5_Macaca_fascicularis              -HVLMYSYYGLSSV-PSMRPYLWWKKYITQGQLLQFVLTIIQTSCGVIWP 191
KS5_Xenopus_laevis                   -HVIMYSYYGLSALGPAYQKYLWWKKYMTSIQLTQFLM------------ 199
KS4_Streptomyces_coelicolor          -LDFYIVHAGGPRILDDLSTFLEVDPHAFRFSRATLTEYGNIASAVVLDA 273
KS5_Bos_taurus                       --SVMYSYYALRAAGFRVSRKFAMFITLSQIIQMLIGCVINYLVFQWMQH 209
KS5_Caenorhabditis_elegans           --AFMYGYYLLKSLKVPIPPSVAQAITTSQMVQFAVAIFAQVHVSYKHYV 184

KS3_Mycobacterium_tuberculosis       VDG--P-CALASVKTNFGHTQSTAGVLGLIKVVLALKHGVVPRNLH---- 369
KS3_Sus_scrofa                       ATRREP-LLIGSTKSNMGHPEPASGVAALIKVLLSLEHGVWAPNLH---- 357
KS3_Glycine_max                      DTSG---IKINATKSMIGHCLGAAGGLEAIATVKAITTGWLHPTIN---- 300
KS3_Cuphea_hookeriana                QNSE---LRVNSTKSMIGHLLGGAGGVEAVAVVQAIRTGWI--------- 225
KS3_Escherichia_coli_O157_H7         EAAS--RVLVSSTKSMTGHLLGAAGAVESIYSILALRDQAVPPTIN---- 253
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KS4_Iris_x_hollandica              LDEMRKRSAEGGKATYGEG--LDMGVLFGFGPGLTVECVVLKGCP----- 386
KS4_Brassica_oleracea_var._cap     LDEMRRKSAEDGVATTGEG--LEWGVLFGYGPGLTVETVVLHSVP----- 387
KS4_Pinus_strobus                  LDETRKASRQNGCSTSGGG--FQMGVLFGFGPGLTVETVVLKSIP----- 386
KS4_Aloe_arborescens               LDEMRNKSAADGLGTYGEG--LEWGVLLGFGPGMTVETILLHSLP----- 389
KS1_Capsicum_annuum                LDEAVQDGKVQPGHV---------IAAAGFGAGLTWASAIFRW------- 230
KS1_Arabidopsis_thaliana           LDEAVRSGKVKPGHT---------IATSGFGAGLTWGSAIMRW------- 230
KS1_Elaeis_oleifera                LDEAVRSGKVQAGNT---------IAAAGFGAGVTWGCAILRW------- 228
KS1_Haemophilus_influenzae_Rd_     LDEAIRDGRIQRGQL---------LLLEAFGGGWTWGSALVRF------- 210
KS1_Pseudomonas_aeruginosa         LAMFWPD--IQPGQR---------VLVLTYGSGATWGA------------ 214
KS2_Picea_sitchensis               EDDKRKKGLSVSKDLLEIGGHALKANITTLGPLVLPLSEQLLFLATLIGR 288
KS2_Tropaeolum_majus               EDEEGYKGLKVSKELMEIGGDALKTNITTLGPLVLPFSEQLIFFATLIWR 289
KS2_Arabidopsis_thaliana           EDKNGNVGINLSKDLMTIAGEALKANITTIGPLVLPASEQLLFLSSLIGR 288
KS2_Oryza_sativa_Japonica_Grou     EDDEGITGINLSKDLPVVAANALKGHLVAFGLAVLPTSELLRVAISFINH 281
KS2_Zea_mays                       EDEEGNLGVALTKDLVRVAGAALRRHITTLGPQVLPVSEMLRY------- 275
KS5_Nibea_mitsukurii               CGFPMGWLYFQISYMVTLIFLFSNFYVQTYKKHSVSLKKE---------- 263
KS5_Macaca_fascicularis            CTFPLGWLYFQIGYMISLIALFTNFYIQTYNKKGASRRKDHLKDH----- 236
KS5_Xenopus_laevis                 --------------------------------------------------
KS4_Streptomyces_coelicolor        LRRLFDEGGVEEGAR---------GLLAGFGPGITAE------------- 301
KS5_Bos_taurus                     DQCYSHFQNIFWSSLMYLS----------------------------- 228
KS5_Caenorhabditis_elegans         EGVEGLAYSFRGTAIGFFMLTTYFYLWIQFYKEHYLKNGGK--------- 225

KS3_Mycobacterium_tuberculosis     --
KS3_Sus_scrofa                     --
KS3_Glycine_max                    --
KS3_Cuphea_hookeriana              --
KS3_Escherichia_coli_O157_H7       --
KS4_Iris_x_hollandica              --
KS4_Brassica_oleracea_var._cap     --
KS4_Pinus_strobus                  --
KS4_Aloe_arborescens               --
KS1_Capsicum_annuum                --
KS1_Arabidopsis_thaliana           --
KS1_Elaeis_oleifera                --
KS1_Haemophilus_influenzae_Rd_     --
KS1_Pseudomonas_aeruginosa         --
KS2_Picea_sitchensis               KV 290
KS2_Tropaeolum_majus               NL 291
KS2_Arabidopsis_thaliana           KI 290
KS2_Oryza_sativa_Japonica_Grou     KI 283
KS2_Zea_mays                       --
KS5_Nibea_mitsukurii               --
KS5_Macaca_fascicularis            --
KS5_Xenopus_laevis                 --
KS4_Streptomyces_coelicolor        --
KS5_Bos_taurus                     --
KS5_Caenorhabditis_elegans         --
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