

Supplementary Figure 1. Phylogenetic analysis alignment. Regions rich in gaps located in the positions 150-220 for TLRs not belonging to the three main clades are marked in magenta. In cyan, we mark the positions 349-354 characteristic from clades β and γ ; and the gaps corresponding for these positions for the TLRs belonging to clade α .

>Mme-TLR β 3

NYQTIKNMVYLDLSDNKISIIP----NDIFYQMVKMSHLNLIGNQIVSLDNNMFLYNANL
QSLYLSNNRLTTFDSKLLNHCKALERLMISQNKISLFDVEFVNEIDSLRSVRIDENPFDC
SCGQLFFQSWVQRSKK----KFGQDLQCVQPSNLLNQKISEY---QPQQCV-KWVVDGVA
----LVGLVLIIVTYQLRWYLTNIPYTRSMRY-----RQQDECHYDAMVIFSNDKTDW
V-KELMRELEEDRENKIYIRVRDDISGTITFEESKVMNQSRKIILILSNSFLAETECIS
EVEFAGNELFSTANGRVMILVLEELQESRIDL-VRSLMIEANVIELLESTRKMRREVWQKL
KKFVNHQKP

>Mme-TLR β 4

NFKTIKHLTYLDLSDNSLPSIP----NDLFDNMPKLKTLKMISNLISSLDRRQFIHNSQL
RTLDMTKNLLETFHVSVFANDTLIKALSLRTNKISMFDFTQFVSTLTYLRIENNSFDC
SCGQLYFQKWANSSKK----QYGDKLICHSPGQLRNQRIVY---QLFDCY----WVLVG
LA--LVGIITTVLLMYRFRWYLAHLRFALSVAE-RLVDIKQQDQCKYDAMVLFSDDEETNW
V-KRLIELEEDRENLIYIRARDDITGDVNFDSCCKIMKQSRKIILVLSNSFLREDECIS
EATFAGSELFSTAKERILVLEELQEPL-NP-VSSLLVETHYIDLYETTRKMRRAIWQKL
RRFVSHRAN

>Mme-TLR α

-LTAFPNIKI-----AMEELSLSHNTITELPEDPFYWLRHV
VHLNIQHNELTPQNIPIFDRLGKISYFLAYNNIVYFPPSIR---KNFKALSITGNKITC
-CNGHWMKTWLQEQNE--TIWNSLTAHCKD---QAHPIQLDPDGFS-CP-LYLAPIII
SIALTIATMMTSVAVYVYSFELKIILFKLNLHPR---SV-DSESLDYDLYLMYNYADSPW
ATEKLLPGLE-
KFGYRVYVPERDMGIGEITAEARANAFASHTRVLVVVSQKFIDSGESMK
EFFHAHEHENSTTRRYLVLVKLEKI--NRD-IFKKYMSTNFFVSVKS-----KFWYNL
RYWLPREST

>Mme-TLR β 5

LFHGMKNLKTLLLMHNHLGLSFSDDYTGFLSRLPRLMVVNMSSNGITVLPKQMISNTS
AL
EVLDLGMNHIYSWDSQTFQGAVGLKKLLLNTNRLALFNETSFSDLKNLTVLDLGNNPF
AC
TCDMRWFRDWLKT--KVHVNNSTHTYCTSPAQMGGTHLIEFELTTLQ-
CVPVWIVSGCF
IS--LLLILIMVCVLYRYRWRIRFALYKCSKSCKAYQRLPQTDRPLYA AFFSFCSEDENI
IEEQILPNIDNDAGVYPLIHRIKYDPSRTYLDCEKALLTSPATVVMCLCQHYKEDRQCEL
ELAAS----LQEEDRRIILVLDIVQRKLPVALRVMLNRNEAIEWHREQQQARMLKGKL
AEALED---

>Mme-TLR β 2

NFKAISNLEYLDLDTNNLT FIR----NHTFDHMPNLNTLILSANNLKHIDDQAFIHNYNL
ATLLLQANKFSVFNVTLLLEGPKNLRLKLCISTNLITHFDSSFVKFMGTLQTVKIANNPFDC
SCGRKFFSDWLNRTKL----HESVGLECTTPENMAQKKVYNY---EDLECT-PLIWSAVV
LC-LIIVTIMIAVPCYRYRWYISHMVIMQAVKD-RAMDIKHSDECKYDAMILSSEADMKF
V-KTLLLHLEEDRSNRLYHSLRDAIPGTYRFESLCEVMRQSRKIIIVISNSYLSNSECMS
EAAFAGEELFGTKKEKIVVLVLEDLNEIDLMP-S-IAGLLTET-VIDLPE SKKTMAPVWDRL

KKFVENKP-

>Mme-TLR β 1

FYPQLKQLQKLDISGNSFKYLD----PNAFNEMKYLSSVIAQSNPLSILPDTIFISNMKL
VKVDFSNCFDELDTIVKSLPKLEHL YLKYNQFTSFAPSVISVVKALKTLSLLGNPFDC
DCNIGRLQDWLSETEK----IDVINITCGGPEHAADTSIFEY---PPPRCK----LPLII
GC-AVVGVFVLLILLCICSRWYISHRKILPELKG-ILKNIRYGYKCDYDAVVCYSDIDQQW
VGGRLVPALESKKA-RLYIYERDSTIGAECTVQIRDAMERSRNVIIVLSKSYLASEAFLP
EVDIVADV MRQNEKGRILL LALDDLDNRKMDP-IKLLTLTEKTLNVV-----

>Goc-TLR γ 23

SLSCWPRMRKLLLGNIELQQIFDHGNETIFNNCTYMKTIDLQNTGIKRLPQNTFLDMEN
V
QYINISNNKLTSLDI--LTSTKNL-TLNISSNLLDHLSNKMTQLLDQMEILDLSYNPIMC
GCPQIDFIVWLKNT--YVEIYNLNQYQCVYQDGTK--YINDISLSQLKQCN-IIIQAVCS
IGS-VVIGIISIIISYRHKLEYLLLIARHAAKSKKDKHNDKTFNFHGFVSYSSEDDLW
IVEQLHMKMEQDFGLKLCIHERDFLPGYFITENISSFMEASRKTIVIVLSNNYLKSKWCTF
EFELAKCKLIEATFNTMMILLHDL DQRKVSPALHKYLKQKTYLKWPKDSSQQPAFWL
RL

KEALDQKPE

>Goc-TLR γ 17

VLNCFPSLTEVRIGGNQL----NT-HIMMFANCTKLTHLDVSHNKLVSMPKDAFHETPNL
IHLNLSGNLFANLEIHEVTQLTKLQVLDLSYNRFQAIPESWRHTIQLLGKLYISGNPFMC
SCDTV DHLIWLQSI--QDLLDDPTHLCRDTNGKEY-TIMQIHIGRFKECIKSMVQAGCI
PSAIVLVIVGISLYIKRRFRFQYLALVARANIN--LHAPQIPDYTYDAFISYSSLDIEY
ML-TLYQKLEQEHN YELCIDMRNFRPGNPIDDEITNGIMDSHKIILVISQNFLRSGWCLY
EMQLAHGELAVRGGDGLLLILKEPRPQELITDKLQGLLDSRIYLEWSEEGDRQQVFWQ
RL

RDALGMPLQ

>Goc-TLR β 11

VLSNSTMIESVDLSGNLLFRYTDEF LCDLLKNLVNLEEISLFDNYLTHVPSC LFRASSRI
IGIYLSRNRIAYIQKGVFDSLYQLEELDLD DNSITFIDPSNFYNTPSLSWLT IENNRFS
DCRLTGFRDWTAEH--QDIIIEGP----CETPKQLKGEAVHAYTTTWLE-CNTVFIICGSL
----LFFLLVVTGLLFYFWKDIKYIKMVHRAKGKGYIPLNDNNQVLYDAFISYHPEKKFW
VEVDLIPTLEDDVQFNIMYDER-FDTG-SIFTLTEENIAQSRKILFVVS RGWIQAGWNQF
ELDMAMIKLIDDHRDMIIVLLMEHIPKKEMPDKLKMMVKYNKCLKWSDNEHKQRIFRRD
L

KLELGKE--

>Goc-TLR γ 16

VLNCFPSLTEVRIGGNQL----NT-HIMMFANCTKLTHLDVSHNKLVSMPKDAFHETPNL
IHLNLSGNLFANLEIHEVTQLTKLQVLDLSYNRFHVIPESWRHTEKILGKLYISGNPFMC
SCDTV DHLIWLQSI--QDLLDDPTHLCRDTNGKEY-TIMQIHIGRFKECIKSMVQAGCI
PSAIVLVIVGISLYIKRRFRFQYLALVARANIN--LHAPQIPDYTYDAFISYSSLDIEY
ML-TLYQKLEQEHN YELCIDMRNFRPGNPIDDEITNGIMDSHKIILVISQNFLRSGWCLY
EMQLAHGELAVRGGEGLLILKEPRPPELITDKLQGLLDSRIYLEWSEGDGKQQVFWQ
KL

RDALGMPLQ

>Goc-TLR α 2

-LHNLATYP-LNVSYNNLNKIEHCLIPYLFDSL YALESLDLSFNLLTSVPSQLFSSLISL
SALYLDHNDIRFLPQGMLFNSTHV GKLT LHQNKIETLQINIFQSLQFLTITLADNPWVC
NCSMDFDCKWLHSNWT--KVEDKSSLTCKNGSN-----LIQFT--YNCTCKQDN RIVLGI
CGSLITLLSIGLGLVYYYHDNLRFFLYLFGWRF----PVRNNGEAYFDIFICYSSKDNKY
VITKLLRYLETKPPYKVC IHERDFIPGDYIIDNIVRCINKSKTIILVLSNNFVN SMWCLG
EFQMAYHNAFENRHNNIIPILLGDLNLDHLDPTLRTFVGMNNYL RKDE-----LFLQRL
LVALPEPSN

>Goc-TLR γ 10

ALTCMESLEKLN IANNNF----NETDINIFENCTKLHILNLSYNELENIPKDTFNETTNL
ANLDLSGNKLSNIAF--LENQRNLTFLNLAGNSIQYISPLTQDISRLMKINLDDN FLRC
GCEDIVFIDWLKNN--EDQIINWEKLCIDDAGLY--NIQTINTEWTQQCNMNI IAMS I
MTGFILFTTIIACCLYRHRYKVHYLYLLFRSWFH---KPDDANQYNFDGFISSSLDKTW
ALETMYANLATKYGYNICVDERNFRPGQHLVDIIETINTSNKIMLVITQNFLRSGWCLY
EMKMARGELATRGRDCLILILKDPIPQELITPTLRQLLESRIYLEWSE **DRDRKALFWRKL**
CDALGEPRH

>Goc-TLR γ 9

ALTCMESLEKLN IANNNF----NETEINIFENC SKLHTLDLSYNELENIPKDTFNETKKL
VNLNLSGNKLSNIAF--LENQRNLTFLNLAGNSIQYISPLTQDISRLMKINLDDN FLRC
GCEDIVFIDWLKNN--EDQIINWEKLCIDDAGLY--NIQTINTEWTRQCNMNI IAMS I
MTGFILFTTIIACCLYRHRYKVHYLYLLFRSWFH---KPDDANQYNFDGFISSSLDKTW
ALETMYANLATKYGYNICVDERNFRPGQHLVDIIETINTSNKIMLVISQNFLRSGWCLY
EMKMARGELATRGRDCLILILKDPIPQELITPTLRQLLESRIYLEWSE **DRDRKALFWRKL**
CDALGEPRH

>Goc-TLR γ 3

SLDYFPSLKILLGSNGLGPLIHDNDGRLFANLSSVVS LDIADNSIQTISP NACSNMSNL
QFLNLSQNEMFTFHL--ISHIRSLKLLNLSNNRIHLFSQDTMDMFDDLATVDLTGNLFTC
GCSDL-YIIWLTD TMIRSRWLLYEHYTCLFNNG--TITLSQVDVSQLWDCHKPYIVMASM
II-

FALLVAVLVKLLHYHRWTLQYWYFMFKRAYRRQQE LEQNLVKTYDAFVSYHTNSAQW
VYEHLLP-LERDENLKL CIHQRDWIPGQFISEIIVESVKQSRKTLMVVTKEFAESKYCLY
EMQMARNVLFDEGVDALVVLIDEILSRINSTLRYLIQRKNYIQWPDE **EN**-----FVPKM
KAALARE--

>Goc-TLR γ 1

VMHYFPSLKYLNMANTNLKMHLKDTNGSFFSKLSNLQTLDISKNMETFSKKTFCHLT
KL

KHINLKSNNFVAFEL--MNSV-HFLQMDLSDNKISHLTKSNLRLFELMTTINLSDNAFMC
ACEEQEFLKWLKERRIVDIMQHYSKYDCLVTQTQNKVAIRSINMDEFNQCD-

AILMAKV

AGLVAILVGVLT KVIHYNRFTIRYWKFGIAWMWRRRRREEQDQVEYKYDAFVCFQND DI
DW

IYNELRPNIEQEGAFKLCIHHRDFSPGEFIIDNIVNAIEGSRYAILISKNFLKSGFTKL
EMQLAMKVMIMRQAEMIIPVMLDDVQHPDMYRALKYHIEKKT CITTNE-----HFWEKL
RAALKRE--

>Goc-TLR γ 5

VFDCLPKLKYLNLAN NKF----TNIELELFSNCSNLTYLDVSYNQLKTLPENLVAQTANL

QHLNLGGNQLRQFDV--
LVPVKTLSTLNVSNLLGYLKDEMCLQLSKMHRLDLGNNPWLC
TCDNVEFLRWVQQS--TNMLLKPDDELICNDPHGNFV-LMANINISKLSGCVTTTITVSA
TIVITLLIILLAVLAYRRRYKIQYIYLIRAKMRGFR---QDRQYTFDGFMSYSSLDCNW
VTGVLHKTLEDEL DYKICIDQRNFMPSYIAEAIAEGINESKKVILVITQNFLRSGWCTY
EYNMARGELANRGRDCILLIMKDPIPKEHITQTLQTMLESKIYLEWSEDDDKKQLFWRK
L
QDAIGEPQG
>Goc-TLR β 10
VMSNCRCLKIVNLKENLLFSY-EKELCRLFKWGKSLQKISIPSNYLAVLPKCIFRGLSQL
TSLYLEKNRHLHVIGKGLFTDLINLEFLDLSFNAITYMDSGNFLAMTRLKSLNLRNNFHC
TCQLLPFRNWIREK--VNLKNFRYNDTQCSLLDRKHVHVHNYTISWLE-CNKVFVVSASS
IGGIFIVVALIVTLLYNYWRDIKYRMVHKARRHDNRQE--IAEIEFDAYVSYHPEKELW
LRVDLINNLEDDISFKVTFDDR-LEPGRSVIGSMAEAIHKSRLKILFVSRGWLRATTQL
EIDMALVKMIDDHRDMIIVLLMEHIPKDEMPDKLKMMVKHNTCLKWSDNEKQQAQKFWR
DL
KLELGKH--
>Goc-TLR γ 20
LLHCRQNLTVLKFAQNDLSPVF-NSKQPIFAGCNNLKELDISRNSISEIPNNAFVDLKNV
EEIDLSGNELTNVVV--LENCKQLRVNLSSNPLTNLDDPTMTVLDKLTIDLSRITLGC
GCNDVAFVHWAQTT--RVKLFNSDTYKCTYLDSSR--ALMKVSIFSLRACMKDVIIASTV
PTITLILIFIAGLYVYHKRWRIQYHCLLLREVARRYE---QLDELTYDAFVCYCSQDEDW
VAEILRPKLEDELNFKLCIHEREFIPGMDIQDNIVSFMQDSRNTILVLSEHFVESRWCQW
ETRMARNKLLDSPRDNLIMILLQDVLKQKMNP TLKSLIEMKTYLRFPQKAEELPVFWLR
L
KNAMSEHVK
>Goc-TLR β 9
VLNHSNAISLINLKGNILFRY-DSQMCSMFKGRANLSHIDISNNYLFRLPSCIFKGLKNL
KTLYLQDNRLTYIQHDIFIDLYKLHRLNLSNNAITLISPITFAPLANLKVLRIGHNNFQC
YCEMKELRNWLGHN--IKKL-GHHKEKCSGPLTRQDEFIHSFTVSWME-
CNGLSTFGSIG
IISIVLLSVITFTVLRHYWRDIQYIKMVR RARKHKSHPEN-NCLIEYDAFVSYHSDKQIW
VIRDLVNELENDVTFRVMFDER-
IDLGTNIFTSMEEAIDKSRKMLFVVSARGWVAAAMNKL
EVDMALVKMIDDHRDMIIVLLMEHIPTNEMPDKLKMMVKHNTCLKWSDTERSRAKFWR
DL
KLELGKH--
>Goc-TLR β 8
VLNNSHDIYKINLKGNLLFHYFDYQLCDFQSKSNLSHIDISKNYLSRIPACMFTGLSKL
HILYLQENRLTYIHKDMFKDLHNLQRLNLSNNAITSIDASAFVPM TLLNRLWINQNNFDC
NCDMKGFRNWLGHN--KKILSGSIKEHCSHPLIRNEYIHNYNVPWME-CNGLSTISTIT
ISLMVVL SVATLTVLKYIWRDIQYIQMVR RARKHGNYPLG-DIQTEYDAFVSYHVDKQIW
VMRDLVNELENDIQFRIMFDER-
IELGRNIFTSMEEAIDKSRKMLFVVSARGWVAAAMNQ
EVDMALVKMIDDHRDMIIVLLMEHIPTNEMPDKLKMMVKHNTCLKWSDTERSRAKFWR
DL

KLELGKH--

>Goc-TLR α 5

-FSSLPALPKLHIANSTLTNIN-----DYFAKV
TLLDVSNNNSISHISQDVLQGMTVLKTLYLHGNKLQYIPEYMMNLK--LDHLSLSDNPWAC
DCKNAWIKPWLNNANVS--ITIGFEGIKCHGG---GKQLLHYD--FEAMCNL--VVIGVP
VF-IVIFIILMVAIVTNYRQVLTLMIRHHIF-----EEPAGKTWDAFLGYATDDVEY
VQNVIIPLLE--PKYKLCVHNRDFQPGVPIIDNIAEAVDKSQRTIMILSPNFLQSQWCLS
EFRIAHMQYLNHPSKLLIPILLDDFSPAECTA-IKCHLQAHTYLEAKD-----WFDRKL
LQQMPKVSL

>Goc-TLR β 6

LLEKSKDLIQLDLSDDMMLFTYSDNELCRIFSSQSKLEILTLAGNYFSSLPVCMFQNLHHL
KDLDLRKNRIPLIQRNLFSDLRNLSVLDLRENSITFIDVTDFLKLNKLTLYLKNLNFAC
TCDLRPFQSWVLGVSQ---KTDGPLRCSSPEQRKNNTVRNFTATWIE-CNELVMYLTIT
LSSILIITSIILLTYNFRNDIRYRRLQQVKRKYTKLQDA-AIKYDAYVSYHV-EKQW
FMEEISKKLEKEIQFNL-IHDDNIVAGESIFGSMKAINRSYNIIFVISRGWIHDPARAI
EIDEVNGILNREKRHNIILLIMEHIPPEQIPGNLKMMLRNNVVLWYNE**DPKRQR**IFWRDL
ILELGKTKD

>Goc-TLR γ 15

FINCFPSLVELNLSGNQ-----GMIDVVMFDNCTNLRVLDISNNKLASLPYDMLHHVPYL
EKLNMAGNFFTHLDILNFMETKTLQSLNISSNHWRTFPDTWQKVISGLVELDIHGNPLV
C
TCDTIDHLIWLQNI--QVALYKPSTLTCMDLYGQEH-NIMDINMYKYRDCL-PYLMAGFI
PCTVTLVLIGLILYAYRRRYRLLYWLELQAKLR--QPHAEERNFVYDCFISYSSNDIDW
MIEMFQKL--EQHNYKMCIDMKDFRPGSPLVDEINQGIIQSRKVILIITQSFLTSGWCNY
EMDIAHGELALRGEDCLILVLKEPRPQALITPALQRLLEERIYLEWSN**DHDRQA**VFWRR
V

QDALGEPLQ

>Goc-TLR γ 19

FLACRPNLTIALLSQNNLSPIFDTPKQTIFHGCSKLKVIDISENQIKTIPFSTFIDLIQV
EIINISGNYLRQLDV--LELCTSLNLLNLSSNLLTTLSSRMTSSLDTLQTLDLTHNSLMC
GCNDIAFIDWAQQT--NVRLHNGHRYTCTDKDSHQ--QLLDISVYHLSECKKEILIASIV
PSVGLVIIFSIGLLIYNKRWRLQYRYLVAREMVRGYV---EIINLPYDAFVCYCSQDQTW
VAEQLRTKLEDEFNFKLCIHDRDFIPGMDIQENIVKRLEESRNTILVMSQHFVESRWQC
W

EARLARNKLLDSPRDNLIMILLDDVLKGKMNRTLKSLLMKTYLQYPH**NEGEKQL**FWM
RL

RNVLMENRR

>Goc-TLR α 4

-LTQLPTIPPLLLSKNSVSRFE-----PYLANV
SVLDLSWNGLHEIVIEALNSTRDIEQLFDNNAITELPKSIKDMPPMLQLITMHGNHFR
ECESAWMKSWLQAQVDNGRVNSSLKIQCADTQT---EIIH-D--FHELCL-NFLVVGVP
LA-LVSLIVFAFAVLYKFREVIIILTIR---KK---PTEKPEGKLYDAFIGYATEDVLW
VQDVLIPILE--PQYKLCVHNRDFVPGTPILDNISEGIEKSQRSIMVLSPKFLDSHWCL
EFLQAHQRQYMAHSSQILIPILLDDFEPDNIVAYIRCYLQSHTYLQHAD-----LFARKL
RIHMPKLTV

>Goc-TLR γ 4

IFNCFTALRYLDIANNQL----KSKDSVFFANC SHVEHVDLSSCTIGEVPRHLLAQLPNI
TYFSLSGNRLRKLDI--LNK--KLNLLNVSSNLLSAISPGMLSQ LTHLHTLDMSSNPLQC
MCDTTTTFMTWVQQS--TELLHNPSDLLCMTSAGDMV-AIVHVDVAAIHQCILPTILATTL
TTTGILGIIIIISLLIYRKRYRIQYIYLIIRSKLS---ES-KQARFPF DAFISYSSLD SRW
VVNTLYSTLADTHAYNVCIDQRNFM PGAYIADAIVEGINDSNKVILVISQNF LRSGWCVF
EMNIANGELANRGRDCLILIIKDPIPQELITKTLQALLESKVYLEWSE **DPDRQR**VFWLKL
MNAIGPKRD

>Goc-TLR γ 6

----FPKLKTLQLRN NKV-----SNVEMFANCTALAHIDLSHNGIYSLPLQLFRHTPNV
NYVNLAGNKLHTLA-FEVVFLTNLALLNLSNNNIQILTRNFQENV DQMSFIDLDNNALIC
TCDNVDFVRW IQGS--WHFLLQSNQIECKDGGGVS-HSIIDIDVNH FHGCIIRSTLIASLV
PNVFFILCILLGVLFYRKRHKLHYLYLLARAQMRQRNV-
DRGNYCFDGFISYSSLD TDW
VIEHVYNELADHHGYNICIDVRNFM PGEFIADVIESINQSYKVILVISENFLRSGWCTY
ELNMARGELSIRGRDCLVLIFKQPIPRELITPTLRSLMETRVYLEWCH **EADKQQ**VFWRK
L
LDALGQPRQ

>Goc-TLR β 7

----MKENRLTYIHKDMFKDLHNLQRLNLSNNAITSIDASAFVPM TLLNRLWINQNNFDC
NCDMKGFRNWLGHN--KKILSGSIKEHCSHPLIRRNEYIHNYNVPWME-CNGLSTISTIT
ISLMVVL SVATLTVLKYIWRDIQYIQMVRRARKHGNYPLG-DIQTEYDAFVSYHVDKQIW
VMRDLVNELENDIQFRIMFDER-
IELGRNIFTSMEEAIDKSRKMLFVVSRGWVAAAMNKL
EVDMALVKMIDDHRDMIIVLLMEHIPTNEMPDKLKMMVKHNTCLKWSD **TERSRA**KFWR
DLKLELGKH--

>Goc-TLR β 4

FFTD FPSLKM LDM SNND FSFL-HQVLAKMILGFENLEILRLSNCQLSDVP-NFFDGGGEKV
TELDLSWNLIGHFRNGVLNKL RSLRKLYLQHNHITHIDPLNFERMNDLQYLDMTNNRFT
C
DCEQREFIN FVKGNQ-HRIIFHGRRTKCH-PDSAYNTFLLHYTSPWIE-CDGNFIMILSF
TIILVVIITCIFI FLYNYT-SIRYRSALCKIKCNQYKSL--GHQYDFDAYVIHHPTDISW
ILYELIPHVEQHFSFELCIEERNFLPGPFKTDNLARAILRSRRALLIISKDFLESDWFRL
ELEMAQLQH LNGREKYIIIIIFLDEIPASQLPMKLKCLMGFTTSFVWPK **NRSKRNE**FWRG
LLELNKKPP

>Goc-TLR γ 22

FFDHFPKLKTLLLGNNELGLLFASDDFLFFRNSTTLESIDLAGNNLSRIPPLLFKDTKNL
QYLNISNNYLD SFNI--LSTLSHLKYILLSNNKIRVLSSTTRHQINTLAHVDLSGNPLLC
DCNNLDFLHWLRDA--PLVFDNKDSYQCTGMNNFR--KVYDINVKDFEQCKINMIKTIAS
TAGTALITMAVVI AVYRKRYRLEYLWLVSKATVKKREGNDENGRIYIHGFVSYSGRDD
LW
ICDQLHIHMEQVMGLSLCLHDRDFIPGEFITDNIIKSMEASRKTIILSNNFLESRWCEF
ELQMAESRQAEMTYNTVITILLHDVNQNKIGPLLKKYLKQKTYLAWPR **DHHQRP**AFWL
RLKDAIDREPD

>Goc-TLR β 5

LFRS-SNLSEVSFSGTYVGHS DVTLLKDIFHGHHNLQTLRLDTTHIQELKSGTFWSLTRL

EVLILTSNHLKTLPTDIFQGLVSLQYLDLEDNDFIHLDPNMFTQLPNLKLLWISSNSYHC
GCDLRPYREWLNHS--KVVL---PPGRCYSPSKLNNQIVDEFSLPWLE-CDDTLLISGTL
AG--
LVIILSHGYAVWRFRFDMKYWYYITRAKRAAEQPLQDGGNIQWDAYVTCTPQDQKF
IYDHVIPNLEEDFKFKLCYGPRDFLGGSEI-GNRENALNNSHRAIFVISKEFMKNNWGKF
ELEMNTQLKLFDDHKYMTILFFMETIPKSEMPPELLKLLKRHSLCLYWKS**ENREQN**VLWK
RLKLDLKFARQ

>Goc-TLR γ 14

VVNCFPSLKYLYLSGNNV----QGHSPRMFENC SKLKVLDISQNKLVIPFHTFNETPNL
EEIHLSGNYFSDLEILDFKDTKSLRLLNLSHNQFHALPEFWKDTIAEFKHLDIHGNPLVC
SCDTVHLLWLQSI--RPLLYDADNLTCKNNQGRQ--FIMEINISEFKECIKPLLLAGCI
PSAIVITLTALCIYRRRYRLHYLTILRLARLRKYINSEQRQDFLYDSFISYSSLDVTW
MVDILYKNLSERLNYELCIDVQNFRPGEAIVDEILAGVLESKKIILVISQNFLRSGWCNY
ELKIANGELALRGEECLILILKEPLPKELITPTLRLLKSRIYIEWND**IEDRQQ**LFWRRQLD
AIGEPMA

>Goc-TLR β 3

SFKGLLSLEKLSLARNHLDNS-DGTIVTLLKSLPRIKELDLSWNHLTYIPKSSLD SMENL
TKLDVSGNRLTSFTVDKVRTNTKLNQLNVSRNALASIEALEIGKVTLNNDIRYNKFKC
GCELYLRNWLLEKNHKFSL---YSEKCFAPIEMINTSVMDFKINWIY-CDHLIISLSSA
GG-FLAILFCIVLSFVFYWDIKYWWALRRKGLGGYLPLDEESKLSYDAFVSYHTSSESW
VADKMVKNLEDDVNFKLCLHGRDFLPGRYIADNIIVTMRNSAKIIFIITQKFLESQWCGY
ELEQAHIRQFDEEKHLVILIFLEKIPKAKLPKKIRLLMRHVTYLEWDK**TSRAQN**LFWKKLK
LCLLDKPT

>Goc-TLR β 2

SFKGLANLEKLSLARNYIGSS-DDIIVMLLHLFPKVKDLDLSSNHLTWIPKTALDAMKDL
TILDFSVNRLTSFPLENVNHNTKLERLNVSRNALVNIAPQIKADTKLNNLDIRYNKFFC
GCDLRPV RDWLLAQRFK VSI---FSERCSAPTELRGTPILYYKINWIN-CDSLII SLST
GG-
FLVIVILCIVTVCIFYWDIKYWWALRKRGVRGYIPLDQQVQLSYDAFVSYQTSSQEW
VAEYMTKHLEDDVNFKLCFHGRDFLPGRYIADNIIVSMRNSAKIIFVITQQFLESQWCGY
ELEQAHIRQFDEEKHLVILIFLEKVPKSKLPKKIRLLMRHVTYLEWDN**SSRAQN**LFWKKL
KLSLLDKPT

>Goc-TLR β 1

SFQGLSSLKDLNLARNNLDFSVQSLLSKMFSALKTLKKLNVAFNHFMSLPGDVFDGLQ
SL
EYLDLSMNKLSFFGKRYIRNVKSLRVLNLRNMIIKFDMNILKPPYKLVLLNISENKFIC
SCDLRGFRDWLDSKPKHITI---FDQNCSDPDTMKTSRINDFTIPWID-CDNLTISFVSA
GG-FLIIFSVTVVVLVHFRWELKYWWFLRLSRRRNYIQL-
HDDGFQYDAFVSYHEESSRW
VYDYMPKELEDDMSFQLCFHGRDFIPGQSIQTNIANSSISQSRKIIFVITQGFLDSNWCTY
ELEMANIHQFDKKKNLIILIFLENIPKYKLPKKVKLLMKNVTYAEWEE**NNRSQR**IFWKRM
KMALMDQPT

>Goc-TLR γ 12

FFDCFEKLRVLNIANNDI----VNLTFTVFTGCNRLEYFDASYNNLKDIPTSAFQQVLNI
KQLVLSGNH LRDFDA--LQGLNNLQTLNLSDNILTNLPLQVRNSLDDIASIDLYGNRLSC
SCETIYFIEWLHNF--KENVYKYEGLCSYIDGVF--PVASVSIFRLWHCWAPLIMSIVS

----TIAAILFIFAIYKSRYKIQYRYLIVKGKFKRYQAAPSHDNINFDAFVSYSDDHDIW
SVETLYCKLAHEWRHNVCIEGRSYRPGGFRNEVVMEGINESNHILLVISQSFLKSGWC
AF

ETRIAHGELVHRGKSCVMLILKEPKPESLIGTVLRSLLDNGCYIEWSN**NPDKQRL**FWYK
LQDFLGEPIN

>Goc-TLRy2

AFCFLSNLKMLVLNDCKLNDILTDTETSLFKNLLMLESQRLRYNNLTYNVSHLNSLSHL
KHLDSLQNKLSKFDFAQVSK-PNFTNLDLSSNRFRMFSSDSMKSLDAIKTINLHDNILTC
ACNMLKFMLWMHNN--

KGHMVQYSTYQCVFSHNDTEMNLIDIDMVSFSECHKDYIIFSVI

SVIITLLCCLIGLILYKKRWTLRYWYFILRQSWRRRRDA-DVMHYHFDAFIVFHSDDYEW
ILNELLKQSEEPHGLKYCIHLRDWRPGNFVSENIVQSVERSRHTVLIVSKNFTKSKFCY
Y

EMNVARSLLTSHGRDVIIAILIDEIRKAGTTATLREILRQKTYLQWPS**EN**-----

FWERYHTMMDDNEE

>Goc-TLRy8

FLTCFESVETLIIGKNYV----NGREFNVFQNC SKLHYLDLSFNGLTGIPWRAFNETPSL
IALNLSGNQISYPRF--LEAASNLTSLDLSNNKIH YMDESMRTNIGTLM SLNLDNNILLC
NCNGITFIEWLQKY--KQNIWNWDK LKCIDSKGTEK-KLIDINITLKKECLMDIIASST

VSGIFLLVFIACVCTYRRRYKLQYL TLLLRAWCR---KPDDGDQYNFDCFISYSSLDRIW
TLETLYTTLATKHGYNICFDERNFM PGQHLVDIINESIFTSRKIILVITQNFLRSGWC LY
EMKMARGELAARGRDCLILIMKDPVPKDLITPTLRQLLDSRIYLEWNE**DVDRQQ**LFWR

KLRDVLGEARH

> Goc-TLRy21

VFHCWPNVKTLTGGNDLSHV FYEENIDYFENCTHLEVLDLANNKINKVSKNLVK TAIN
LRQLNISRNQLSMFDV--LDNNQQLELMNLSNNILGSLPISLTLTLDHINIVDLQNNP LLC
SCATLDFISWCQTT--KVHLNNLPSYTCTDGTQRQ--YLM DVSVSHVDKCKEPVVIAAVS

TSLITIIFVIIAITIYTKRWSLNY LLLSKIFLRRRNRYSENTSYRYDAFVSYS SNNDDDW
ILRNLHPILEDEHGLKLCLHQ RDFIVGNDIQDNIIESIEASRKTIVVLSNNFLESKWCYF
ELQMARNKVLDGKDLLVLVLLDD LAKDLVTATLRTLATKTYLRAPR**EPQQEA**LFWLK

LKDAISTDRS

>Goc-TLRa3

-LDKFPKLPTVNVVRDNHITLP-----SYMPMI

KVLDASYN SIHNINIDSLSNLTAL EIFLINDNDLNYLPNTWGSQTSSLKKLCYHDNPFHC

DCSSLWMEKWTTTTFED-LLCSE-D-IVCQNG-----RPITDQG--INEFCHI---FASVI

IGILVTTIIV-TFLLFYFRQVIVLWTRR---RC-----ADDPANKLYDAFVCYADDDFDW

VNDNII EHLE--PKWKMYIPDRDIQPGELRVILIQEVIETSQRTIMILSQNFLQCTELVN

TFRFAHQQYMVDP SKVLIPILAPNFEVGT MPLFVSCYLKAHTYLEASD-----FFMRKL

QLQMPKIRV

>Goc-TLRy13

VLNCFHSLIELNISGNVI----GQSKWKMFQNCTQMTRLDMSFNKLT SVPLGAFNELSGL

KDLSLAGNDLRSIDI--IQNNAELRFLNFSHNR LDTIPDKWREYLDEVKILDIRNNPFIC

SCQTIEYVEWFQRR--KSMIFQPNALSCVDITGKH--SLMDIDIAEYEECFHPFIIAGTI

PSVVIILLIALFIYKRRYRLQYLSLVLKAKMKNYVNAKESKTYLYDSFISYSSNDVYW

MVETLHNKLDDELGYKLCIDVRDFRPGNPIGDEIETGILQSRKIILVITESFLRSGWCTY

ELNIANGELALRGEECLILILREPRPEQLITPTLQRLLKSRIYLQWPEEEDKRLVFWQKL
QDALGQPYS

>Goc-TLR α 1

-LSSVPGLP-LNMTGNNFGNITNCYLNDVFNGIYNLKTLLKDNFITTLTSGPFKSLVFL
DTLDVSNILNTISDNAFSNVRLKHNMMVNNMTVLKPEVFNDLSKTGTMFSLGNPYN
C

-CESLPLKNWLNTHQA--QIIDIDITLCQKE--TDTVPIYSMA--DANTCDLTFYVIVII
LS--LLFIIICCILVVRFRQAIRLRLYWFKWRF---EAFEDDSKKKYDAFISYTGHDGDW
VREDLLNFLEG-NNFNICLHERDFRAGELIIDNIDRAIEDSKRSIIVLSNNFLNQDYTM
EFEASYRDWKLGLRDPVIVILYEALNKEKIAEHLQTHLNTRTYIDKSK-----YFWENL
LLAMPRQKH

>Goc-TLR γ 7

VFNCFEKIKIINF AQNKV----YNGDLELFLNCTYLEVLDLSFNALNSVPKNTFTNLVNL
KKLNLAGNKFIIHID-

FDLRRFWKLESLNMSRNSMDMLSVRTRKELTDLYTVDLHGHNHFSC
KCADIDFVEWIQNN--FGMVAMPDSLPCSDERYVKR-RIMLSVTHLRRCSHTILAAV
PVALLLLLLFVLLAYQRRYKIKYLYLLRAKLR---DHQDRQVYLFDFGLSYSSLDQNW
AVN-LCEKLEQDFGYNLCVDQRNFGGLGYQLVDLIVESINQSRKIILVISQNFLRSGWCLF
EMNMANGELAARGRDCLLLVLKDPVPQELISPSLRALLDTRLYLEWSQDPDQEQQLFW
QKL RDALGDPRP

>Goc-TLR γ 11

MLDCLQSLTVLKMRENQLEVVSNNLNNTLFNNCTQLEYVDLSFNGLTFLPKDSFIGTH
RMKTLNLSGNRLQHSDM--
FPKWQYLDALDLSMNYFTTIGEELRRQMEYLKTLNIQGNPFSCDCQSLDFIEWIQNT--
QVHVTNRDGLSCSLSNQINTIKVLSLNIGQAKKCWSPILAAVPCVILIVMITTITIIYRSR
HRIQYYYYLIIRAKLR---EQKVQDDYHFDAFLGYSSKDVGW
TIDILYKTLANEMGYNICIDQRNFRPGNYIADTIVASIAQSNKVILVITQNFLQSGWCNF
EMNMAHGELGARGRDCLILILKEPQPENLITPTLKALLGTRVYLEWSDPDRQRVFWR
LLQDALGQPKP

>Goc-TLR γ 18

VIHCLPNLKTLLVSENNLSSLFGKYNQTVFYGCSQLQTLDSLKTLIQAIPSDAFKDLLNI
EHLKIAGNDIQTFDV--LEQCKSLILLDLSSNLLSKLSERMMSRLDALQTVDLMHNPLSC
GCRDIAFITWFQNT--HVHFLNGQEYCTCTDENYKE--HLSDIYVFHLNECKMDIIASTV
PSVCLILIFSIGLLIYRKRWQLHYRYLIAREMVQAFT---TMGNYTYDAFVCYSSQDQTW
VYEQLWTTLEEKHGLKLCIHERDFMPGVDIQENIVQSLEESRNTILVLSKYFVESRWQC
WEARLARNKLLESPRDNLIMVLLDDVLKPKMNGTLRSLLEMKTYLQFPA CPDQQQLFW
MRLKNAISEERP

>Efe-TLR α

----FPNIHSIHFEGNALTTFMYNLDPYAFLPFPNIEFLSLNGNRITHLKFGTFAKLKKL
TNLYLHNNLIKEIDSSVFDDLHLLNQLTLHSNSLELLENDTMDLLSSLSNLTLDNPNWVC
PCDNATFKYWIQQHSE--IISPFLSKCNE----T---ILRI---DEDLCYKQYLTGPLY
TASLFCLLLLTLVLVYRYRYIIQVIVYKFELRR----KQQESESCAYDAIAVYDSSNLKW
IKDILIPRLE--PKFKLYILDRDMLPGSVQCNEVVENIKRSRRTLVLVLSGAEDLQE-IGF
GFDVAHHRVTQERHHRLKLILLHNVAKQDLHANFKAYLTGQYFSVVD-----LFWQKM
LYFLPR-PP

>Efe-TLR β 1

IFQPLLNLQTLNLAGNRLGRVITDIDGQLFRGLSKLRWLRLDNNEMRVMQYTMFSDLTS
L
QMLNLSNNYLSSWAPGIFNASGKLSIVDFSSNKISIVTEQELLTVPTNTSLNLTDPFAC
YCDLIWFRRWIHNS--STKLAHLQSYICNSPDQMAKKPLLEFNPDDIARCHLMWILLGAC
SG-VVAIMLFFGTMMYRYRWQLRLRLYYAQRIRIRGYIEVDEGYD--
YDIYVSYSDDREW
VRTELMPRFNLLGELRVFIEEADATFGFLEFDTLAEAIYKSKKIMLVVSDEYLHDGRRLF
EREWAIRSFEKQDDSIIVVCLEPDADV KVPVAVLLPIC-
RNQGLEWKQDEAGQE FFWRKL
ADVIQY-RD
>Efe-TLR β 8
IFQEAQNIEKINMSFSRI----ESNLIAPFHLLKLTDL DVSGTGISNLS-HMFADLPNL
KRLRLSRNPILT LERKDFEGIESLRDL DLSSGKLSTISFESLKVWKNLRVVD FSDNPFLC
DCNFIWLRRLWK RANAKVEVRGW D KYCQTSKG--QVNM FQLSPSID-
CFQHWLLTVRL
LTSLIWITATSASALHRFRWHLRYWYFMKT VHAQRFKDEE EPDFFAFDAFVGYS SSSDS
NW
VITQLLPRLEQECNLRLCIHERDWLPGRDIAENILESIDNSRK TLLIVSNAFAVSHWCHF
EMTMAQTKLFEDDRDNLILV LLEEIADCNMN PRLQLLMQN KTYIEWTD NNIGQQ LFWA
RLRQVLAKQSN
>Efe-TLR β 7
VFRGLSHLRVFNISRSKS-----KTIYPFYFRRIEVLILRDVGLRNLER--ARYNRRL
RYLDISQNEISVLMSSSLARL-KLEVLLVRDNWLSVIDLET LSTWTNLKRVD FSENTLNC
DCKIWFRRWLQNRQSNVTVENLHLTQCTAPAKAKDKPVH LLEPTDLE-
CFKPYMVAVFL
TAFAYLIAPTVSMLHRLRWILKYWYFKHKTKAKEYRDID DNKPYEFD AFISYSESDRN
W
VVSQLRPRLENEFGLRLCIHHRDWLVGRDIVDNVVD SIEHSRKTVLIVSNAFALSPWCH
F
ELTMAQTRLMEEDRDSLVLILLEE IADCNLTPRLQIQMQRR TYIEWTK QSVGQQ LFWA
NLKHALAKPSD
>Efe-TLR β 2
----F--LEPQYSSNNPLNN-----SMTSLDL SGTNLNTLLNGFIECYKAL
RTLNVNQNKLEILT IETFRNLPSLEELRAANNFLTQISESSLKLWTQLKTVDL SGNPFR
DCKLLKFSQWIKENNFKKLL---DNMQCVSYSSGKRQSIVS-AENRLKLCLEWFLWALTA
TVFVTSFLSTFASIVHRFRWNIRYWIFSHKIKTRRFKQVRDKKH YTYDAFISYSETDSRW
VILQLLPRLESEYHLRLCIHQRDWLAGRDIAENIVLSIEQSRKTVLIVSNAFAVSQWCHF
EMTMAQSRVFQDDRDNLILVMLEEIPDCNMSPRLRMLTERQTYVQWDD HALGQQ LFWA
WVKLQQALAKPAE
>Efe-TLR γ 2
LFR-ISNITSLVLINNDF----QN-----SLRPLDL SGGTSFIPKSMFSELSAL
QFLNLSRNIIESFQV--LPPSGNLSLLNLSDNSIRILTSEMISELES LQTIDLSRNPLSC
LCNATEFIAWLKSTK-KVSFENIEEYTCLHPNGTK--SVNSLNMTELM DCKKSFFIVPLI
IGLLLLLLGVALIVIYKRMDLRPYIMFIRYLS----PA-ESDNYEFDV FVYFHADDVLW
VRGALLEKLQ----HLKVITPDNFRIGASMA DA ILDGCRKSRVIVLV LSSSFKRDDWC--
-----TLRSYTSHPGSVIPVVINDTDLSDFEDDYSNLIATHS-IDLAD-----FIWNEF

TSRVDRQSS

>Efe-TLRy1

LFR-ISNITSLVLINNDNF----QN-----SLRPLDLSGSGTSFIPKSMFSELSAL
QFLNLSRNIIESFQV--LPPSGNLSLLNLSDNSIRILTSEMISELESLQTIDLSRNPLSC
LCNATEFIAWLKSTK-KVSFENIEEYTC LHPNGTK--SVNSLNMTELMDCR SYFIVPLI
IGLLLLLLGIALIVIKRRMDLRPYIMFIRYLS----PA-ESDSCEFDAFVYFQDDDEPW
VSRVLLEKLQ----HVKVITPDNFP LGAAMVDAILDGCRKSRVVVLVLSSSFKRDDWC--
-----TLRSYTSHPGSVIPVVINDTDLSDFEDDYSNLIATHS-IDLAD-----FIWNEF

TSRVDRQRS

>Efe-TLRβ6

IFNRVPNLITLNIARSRA-----KSLSLLFGLKRLEVLNMRATGVTS LPY--IAKRRHL
RILDVSENEINV LQSPVLQNL-KLEVLLLRDNWLSVINITTLDTWDR LTRVDFSENTLYC
DCQVWVFRRWLRKRK-NTTVENLHLTRCTGPAEVKDVPIHLLHPTDLE-CFSAYLLSVFI
AVFMTTLVTFLVAILHRLRWMLKYWYFRYKARAKEFRELLDQQHYEFDAFLSYSETNY
EW

VVDQLHPRLENEFGLRLCIHHRDWLGLSDIVDNIVNSIERSRKTVLIVSNAFAVSQWCH
F

EMTMAQTKLFEDDRDNLILVLL-----

>Efe-TLRβ5

LLWGIPKLKELNVSRSVG-----RSIAPLTNQTSLEVLSVRQDDLDFEDVNMLTNVPHL
RHLDLTDNNINVLNIPFHKLSLEVLLL GKNWLITVNATSLCTRTHLNRVDFSANPLIC
DCGIVWVFRRWLNTT--QVIVDNREDIRCSAPEEVKNRILSEIHPTDLE-CFQELLALGLI
LVQM VYLLSLIVSVLYRFRWRLKYWYFRHKTQGNEFENWIETPHYDYDAFISYNESDS
KW

IVTQLSPRLETEYHLRLCIRERDWLVGLDIVDNIVDSIEKSRKTVLIVSNAFALSPWCHF
ELTMAQTRLMEEDRDSLVLILLEEIADCNLTPRLQIQMQRRRTYIEWTKQSVGQQQLFWA
NLKHALAKPSD

>Efe-TLRβ4

IYEGMPNLEQLRLANSRR-----KAAIPFSSLSNLVELNLRGVGIRAVHLNITKNLPKL
RRDLSDNELSHVRASFFRNLELDILLRRNWISTISKTTFGMWSRLKEVDFSENPFYC
DCRMVWLRQWLRNKTRATAVRNKGRMVCIGPHEAKNTKLYLLKPTREE-
CFAYYRLAVLL

FTLVIWFLAPLLSIVHRYRWFLKYYYFKYKIQQRQLHDLLDKKQYSFADFISYSESDSKW
VINQLRPHLETEINLHLCIHHRDWLVGRDIVDNIVDSIEKSRKTVLIVSNAFALSPWCHF
ELTMAQTRLMEEDRDSLVLILLEEIADCNLTPRLQIQMQRRRTYIEWTKQSVGQQQLFWA
NLKHALAKPSD

>Efe-TLRβ3

VFNCIPNLEELLIN VQV-----SVRHPPFRNLTKLKKLNMGGTSLGDVEVKMIPDLRQL
EWLSLAHNTIQKLRRGMFQNFKTLKVLSLGNNRITTLNVTSLSLWKSLE RIDLSGNPFT
CDCQLVWFLHWLSTT--NVTVSDEKQYQCNSPAALKRKSLKKLHPNEVE-
CFEWWLLAVLL

ISITASASSTIGSVLYRFRWYVKYWYFKYKIQQRQEALSTDNHSYQYDAFVSYSKHDTK
WVVTELRRHLEIEEGLNLCIHDRDFLVGEDIVSNVISSIEQSRKVLFIVSNAFAASQWCH
FELIMVQTRMLENDRDNLVLILLEEID DATLSPRLKLQMEKQTYLEWTSSEVGRQLFWD
RLRQAVSRPPE

>Hro-TLR α 3

-LKTLP LLP-LTFSRNMISSMD-----FYLSST
TVLDLSYNELNQFDLSTLMFSTTLEELYLHSNNLVSVPEFLQKSPKLKVLTLHDNPWD
C
SYENKFLKSWMMNGNV--SLLHENSILCRTP--LSGKSIFVK--DEEANDP-RNRVILC
ILIPLFAIEIFALAIFLILKKFKVKLYLNIHPR----ECTDEYMEYDAFISCAFSDRCR
AIE-LVSTLEN-RGYKVCYPERDFIPGEPTTSFVSK----SRRVIYLLTDFVNTPRCLF
EFQISLQRNLEVKKHRIIVLLDSSLKVQLLPNDMFNFLTTHHCIDLLK-----NWTNQL
FYSLPIKPL

>Hro-TLR α 1

-YESLPLIPLLYFNKNLLTSFN-----HVFNDT
KILDSENKINEISPHTWVQLIQEDSVFLHNNLSYLPRILEKMNTS-KRVTLHGPNWSC
TCQNAWMLDWLKSHVH--VV-KPEKMVCAYP--HESKSLFEVDF-----CYS---ISCVT
VGIVVLIVAVT-----YVWYRRFGPQKK--PPVPPNPKLTNDVFIFCSDEEQVP
LVKEIIRWLENEHRFSTICGLRDFDSK-PKVVNINEALTTSKRIIFIVSKDFLKDNCIS
GTMSA-FSLVEDKRRFIVIFCGVHLQSTNIPVELEIYIRTYTYSFDD-----SFWKKL
LRAMPKE--

>Hro-TLR α 2

-MSNLPMLP-LTFSHNSIETID-----FYFNNT
VVLDLSYNKITKIDLQVFKSLKVLQELHLHSNFLTTPRDFLKNDRMLKHISLHNNSWDC
SCGNKW LKQWMMNQSI--TLLTPDSVLCRTP--LSGRSLFSVS--EECPKP--SRLLIS
LLIPLLTGVLLLLALFVLIKKFKVELNYLNIHLR----ECIGENMIYDAFVSCSYSDRRR
GIE-LVRLMEG-KGYHVCYHEKDFIGGQSIAANIVEAITFSKRVVCLLTSNFLKSTYCMF
EFQTSLHRNIELKRKR LIVLLDESVEVEVLPNDVHNFLTTHTYIELSS-----KWITHQL
FYSLPLNPI

>Hro-TLR γ 1

FLNFIS-LGELNVEKNELGEQMSDMFGLTFQCYSNLTILNLSNNKIKKLHKLSFKNLRQL
RILNLAENSLQTIE-FEISHMKYLQYLDLSRNLLVSLADDTCYVLSGLSSTSLYGNPLQC
NCETIKFMKWVQSK--KVTINNKNHTNCQNRSS-KFITLSNLAVNELRFCNLPLIIGGSL
VG-
LLIICSFLGFVLYKYRWDIRYFLMSMQKSKRRCTSFERNRYKYDAFVCYEKSDRRW
VTELLYNLEADDRFLLCIHDRDFELGLGIKHNIHMAHASRKTLVLTNNFLKSKWCRH
ELEMASLES LDREC NLVVPVFLEPV---ETWDSLSWLT KRYTYLEW-----FAYDKL
VVALN----

>Cgi-TLR γ 2

AFASLRKLEYLDISNNEH-----GLAVLGLNQTNIKVLKVNI-----
----LQRHHSYLDN-----TSLELSIATNRIETLEPCVLSRLKSIKRLSIARNRLIA
AAYVLEYHSLV-----NVEVINA-----SLRNFTIS---GCKE-----
---LILKNTVYHPALYRNRWKIRYMRYTLFQRAR---SSSSDDLFLYDAFVSYSKDRDF
VIKDMIQKLEQDNGVQLLIRDRSFIPGEFKCQQIVRSIQESRKTICVVS KRYLKS AWRDY
ELN MARVEGVEVRKRYVILILLPEVCSGGYPKISDFLKRDCFIEYPD **PAGYEEFWQR**
LCSALQENQD

>Cgi-TLR α 4

-LTKIPGFP-VSLDRNNISEIYHSTLNNSFIGLLQLKTLYLNNNELQEINRGVFNKLWNL
TELHLEYNNIAYIEEGAFSALTSLSTLFDHNLISLPQSATNHF--LSNIRLGENPWSC
SCDVMAFIPMVMNRSM--VISDYS DMFCKETGE--NFSMKDVLVK---RCTSNILKILVI

VAAIILTFFIIVICLWR---PIVLFHRKCKCR---RYPEDGDKSFDAFLAYSHKDDDY
VTREFIPRLENELKYRLCVYYRDFPIGGTIADTVASSINRSKRTILLVSKHFNDEHWNT
AFQHSFGGLFKQKDNHLIIVLLDDAKGMKLDRLQKVLVKSHHVISYRD-----CFWEQL
QYKMGSSKR

>Cgi-TLR α 3

-LYNIPSLRH-----WRLNFPKL
KVLDTNNHISDLIDHDPDSSDKGVINLQYNNLTSVSDNQLKNFHSF-YIDVQNNPFSC
GC--MRVKHFILNNTKSSEYSYLRGLKCQNP--VAGRELITLS--DADGCGSQ-SGPIII
LCVLVFLVCLVVIIRYRVEIKILAFRFNI---PCQQQDNLDNKKFADFVAYSQQDSDW
VLKNLVWQLETLQRFHLCLHQRDFTVGAPIAENIINSIERSRHTILVISSNFVRSEWCLM
EFRTAFHQSLIEKRRHMIIVMGDLPHGELDTDIKRCCLKTLTYLETHD-----LFWDKL
VYALSDKQR

>Cgi-TLR α 1

GFQDMPNLEMFGILDRKI-----NEIFGSFQKLHTANFSDANLEFIPANWFRQFRSL
RIIDLSHNRIKEIPYRR-NHFGKLIKILRHNNISRITKTIEKLSNM-AVDFSKNKFVC
ACESLEVLQFVRNQIEAINYHYLANETCYYPSSLQGMPLRSL---DSLLCPNSWTFQELY
IGLIVLTFITIVCLVVKFRKEIKILTYRLGIRF-PHR---SGRLKEYDAFVSYSALDESW
VMGTLCRLEG-PPLRLCLHHKHFLGACISDNIESVEKSRTIIVLSQNFLQSEWCLL
EFRKAFHQTLERRRHILVILMDQINLDTLEPEMNYFLQSHTYLRKD-----LFWDR
LYAVSDP--

>Cgi-TLR α 2

SFKNLQ-LETFLTESNRF-----ELRILNISHSSLYYPENWIIYFPKL
EYLDMSHNKIQDIVLSMYDPTSARLTDLTFNDIRQISVRFLEKIARL-YVIIDNNPINC
SCTDMRVLEYIRNSVK---QYIRDLKCQFPENIKGRRLRDL---DNDGCG-KMLPIIV
LSILICFLIFLFIIRYRLQIRLFCARLSGISN---DMAEKSFKFDALICHGLFDEEW
ARSTFIENRHK-
SHLKLGFYREDATDQKNNFEKLIDQMKSSKYVVVLLSRQFLEGEFLTP
GFQEALQQSNEHTRKRSILVLMDDIPTQEETICLRRSLQTFTCIHKND-----RFTDKF
LYLLSSK--

>Cgi-TLR δ 2

ILQGVKNIRQLRAVNVQFN--FNLISESLFKNLKYLTNLDISRNSLNFLPQSLRDQKLSL
KELNDHNMFFSSLS-SSLKQFTNLRKLYVRYNLISKINEKDQELFKSLTLIYIEGNPISC
TCSNIQSLKWMKDH--QHLFSDLSKTKCVGSNNL-TVELNEW-LLKFEICQADWLIFSIV
LIVSTLTMLIILAAIKKYHVHLEYVILRVKQRLMPVGHVCVEGDFQYDVYISYNDDDTSW
VANNLNPKLE---NIKAWFKEKDSIPGGWESEEIVNCINDSRKVMFIVSESFLDKGWHYSY
AVQMAITHAFHNQRRSIMVIKDGLPLERLPKEFKHIWWCIEHLRWPE**DETND**ETLLNL
SNVLVSE--

>Cgi-TLR δ 1

MFQGVRLHHLYVLDVGLNNTAHSISNSLFKNLKNLLTLDFSKNGLAFLPSLLMDQKHS
L
TEIRLDHNRFSAPV-SVLTELKELKTLYVRFNLISKFSRNDQRLFQSLSSIYIEGNPITC
ACTGVQSLKWMKAH--QNIFYDLNKVLCVESKIP-IVQLYEW--RKFENCQTDWLVSVC
LLFFTIVSLTIIASVKRYRVHLEYVILRLKNRWKGV-QKSNE DMFLYDVYISYNADCSW
VIETLYPKLE---NIKTWFGDKDSIPGRWKSEEIVGCINESRKVMFIMSESFLERGWHSY
AVQMAITHAFHNQRRSIVLIKDGLPLDRLPNEIKNIWWCIEHFRWPE**NEQHDE**MFSTL
SKILKPK--

>Cgi-TLR β 4

LFK-APNITNIELFDNQIS---GSTLKTLLWNLIKQLKLNQGGGINYLARGTFDRMPDL
RTIILKGNLSLYGWDPTMFNKLFLNLRALYLSGNSVAVVNRTSLIGKINLKFIDLADNPFAC
TCQQLWFRDWLKTAKNITVAFYPKRYVCRSPPKWDNTLVALFNYTEED-
CREPWILIGSV
LGSVVFVCMVVVIVYTHLPTVRNIIYLIRLRKGYVRLVNSEEYMFDCYVVSCETDEQW
VFQTLSSSTLEVKHSYRLCIPTRDFDIGASIADQIEEKMRECKKIIIVMSNDFFAQDEWCQF
QLEKAQERIRNQGEEAVVSIMLHDIDHKHMTSTIKNLLRKSSYATWVK**GKIVSK**LFWDIV
VAAIEK-PP

>Cgi-TLR β 3

LFNNTRNLRVLDMTGVQFSHNLEEKMFQLFKPLTGLEELTLKKTSLSTFPVSVFQFMP
NL
TKLSLQDCYFNQSYLRKLSAPASLKVILLDNNLITSINETNI---NNIDQMSLKSNNPFLC
TCDLVFFRKWIETNS-KRLLGWPNDYTCNLPQEWKGKNLADFHLSYLS-CHPPYIIMAIIS
ISFAVLAIATVSCIIYKKRWHIKYLYLLRAKKRGYEV-LGGDDFAYDVVFVAYNSDDRIW
VISEMIPRLENEEHLKLCLHHRDFQVGKLIVDNITDAMHRSRKILIILSNSFAQSHWCRF
ETMMAQLRSINHGENTVVVVILENILTKNMNNSLHMLLKSTTFIEWTN**ERA**AKEMFWTR
LVSSIKT---

>Cgi-TLR β 1

SFNHLQSLKHLKFDDNNLGGLISDNIGTLFAGLHKLETLSLSKNFLHNLPISIFKDLSSL
QTLTMKSNRISGWNNGLFKQTSALRSLDLSDNSISLVNSSSLADLSNFQMLNLSNNPL
ACTCDLRWFRDWVNQT--RVNIANVGNYVCNSPNVWKGKPFSLSFDRTKIN-CV-
LYFVVGVS
IA-SGLAVLVFCVIIYKKRWWILYRCYRLKNCC-RYQPIQDGGQELVFDAYISYADDDYKW
VLEQLLPDIDSKGEFKLYFHDRDSPGSSMISSISDNIEMSRKVIIVLTEKYLSSARHKF
EIDLAVMLKSQGVIDDIIVINVCVVSFACIPKSLQRKVSKEDEFLWKD**DVDAI**WLFKQRL
KAELKR---

>Cgi-TLR β 2

IFRYCRGLNVLDMTIRLTTYDGVMLYELLHHLTNLTKLVLQSTLVLTLPENLFSRMPFL
GSLHLDHCYLSQWKLGVFRNVASVKTLYLDHNEIAIINQTSFELLRGLKQLSLGYNPYL
CTCDMVWFREWGTGNT-KVMLNWPYAYKCKSPREWATKLFSDFSLSYSY-
CHPPYVIAAIS
TAAGVVLIVIVVGLFYHYRWHIKYFFYLMRARKRGYEPLPGDDDFIYDVVFVAYHSDDR
VWVISELIPCLERKEKLRLCLHHRDFEVGKLIVDNITEKINSSRKVLLLLSNNFIQNRWCKF
EMAMVHARNVEEDRSDIVVVILENIRTQNMSNSLHVLLKTTNFLEWSN**KKSAKE**LFWK
RLVASVK-PES

>Cgi-TLR γ 1

FFIPFVGLEILNLSNNALSQMFSDENGDFQSQRRLTDLDSLNRIAHLPGHVFQHNLSKI
SRLNLSFNLSLDFNV--INHMKHLSQLDLSHNQLTQLSKNVRASLDAIAKVYLLGNNLKC
ICGTDLFLKWLRDSK-SIYFVGINNYTCLFENA--AASFNEIIVQVLEKCSSTLIIVLMT
TLIIVTMTTTSRILYRYRWKLRYMYVVAKEKYKTHSEEKDRSSFRFADFISYAEERLF
VFK-LVKYLEEKCNLRLCIHHRDFIPGTGIADNITNAIHCSRHTVCFMTSHFLQSHWCMF
ELNMARMEAIYARQNVFLVALEK-
TMKHLPLQLMDLVDSNSYLEYPG**EESGIE**AFRTKLGETLAS-SD

>Obi-TLR β 5

IFKSCPQLTNLILKNVSN-----YPNDLLKPLTKLENLMITDGQVSKVPD--ICNMNNL

TELSIFYTTVSKWNNANCSVMRVLRLKLVLDKNKIIYVNPCLFSHLSNL-HIDLSRNPFCV
DCKALWFRDWSRKN--AGRLKNYRNYRCFSPNSLGHILRNFSLSWDY-
CENSIAIAGVS
VGVLAVMFVFLAILSYTKRWSIRFCIYQSLVRKRKYKALVNNGRYKYDAFICYCSTDVS
WVLNKLPIIEEENHFNLCLHDRDFLVGNDIVDNIVDSMQQSRKVVLVLSNDFQAQSSWC
QFEASIAQQKILEEHYDIIIPVLLNEIPSNLQTKRLGVLLKQKTYLEWPNDEQYEGMFWE
RFIGRLNANNE

>Obi-TLR α 2

-LTQL-GLP-IDLSGNKLNLYNSIVNKTFIKFTNLKKLYLQNNLIEALQQKSFEGLKNL
LELILYNNKIYIPENTFSETPKLKYLDLRNNKLQTITSEMF---KALQKIYLSDNPWSC
ECNDISFEKIFAKDTE--LLVNGEQIFCRKYDA---NIFNYGQE---FCQNVLISSVSA
VSSVILIFLITFLVYAYRQEIQLLLFHFGYRFB---LIIDEENKLYDAFVSFDNSLDLF
VLNELLPQLEQNPPFKLCVHFRDFEVGLQITENIINSIENSKRTILLITDNFLKSEWCKY
EFQTAHYDGLSQKMNTLIVVLFENINEELDPDLKLYLKTCTYLYKYDD-----WFWNKL
RFALPAKKD

>Obi-TLR β 4

IFKSCPQLTNLILKNVSN-----YPNDLLKPLTKLENLMITDGQFSKVPD--ICNMNNL
TELSICYTNVRKWNKPNCSSVMRVLQKLELKHNKIRYVNQELFSHLSNL-
NIDLSNPNFVC
DCKALWFRDWSREN--AGRLKNYRNYRCFIPDTFHHISLENFSLNWDY-CENFIAIFGGI
IAVLVVIFVFFAILSYEKQWSIGFCLYHSLVRKRKYKTLVNEVQYKHDALVCYCSADV
WVVKLLPIIEEENHFSLCLHERDVVVGNDTVDNIVDSMQQSRKVVLVLSNDFSQSSW
CQFEASIAQQKILKDHYDIIIPVLLNEIPSNLRTESLVDLMNQKTLKWPNEESKYE-----

>Obi-TLR β 2

LFR-FPSISLQLIVTTLLSD--SKSINQSLAFLPNLVTLQMSFSNLKTIP-KVICNMVNL
TSLNLKGNAIVWWDNTNCFVMKKLHFLSFSENRIIVGDKTFLLINNLRWDLSLNPFLC
NCENAWFKSWVEKNHQQFLYYPK-DFTCDTPADLRGKQLSDIDLGNLI-CGVVGITIGIV
LGSLMFVFFVVASISYYKRWALRYICYLLKSRKKQERSQQDEKSYVYDAFICYHNSDSK
YLLEKLQPKLEEENNFRLCIHDRDFVPGWDIVDNIVESIEKSHKIVLLLSNNFALSEWCQ
FESTMAQQRLFNEKKNTLIPILLEPIKIKNQTSRLTILLKEKTYLEWTDKNGQKLFWARL
LNTMRGP--

>Obi-TLR γ

FFFTFTGLRLLNIENNAIGQVAEEGFSAFLNLTNLEELYLSNNHIRYLSNNSLLQLKNL
RILNLHINLLESFDV--ISHMLNLSYLDLSKNILQELSENTFNAIEKISTVNIQSNNLKC
GCAQIRFLTWLHKVRNHLKI---MYSKCTHPNGTV--KLTDLIITYLNSCS-SFIITVA
CLIVLLGCFSGALVYHFRWKLRYLYYMIRERY-AYQRI-QTGEYLYDAFVSYAEEDRGC
VFEYLIPELEEKDTFKLNIHHRDFPAGKQIAENILSAIQSSRKCLILLSRSFLSSEWCMF
EYNMAKMECVHAERDLVIVIMLEELSVDILPLQLQHQIKMQSYICFPTTNPTSDVFWNN
LKKSIE---

>Obi-TLR β 1

FSKELTRIRKLYLDSNKLKGFLTDKKGFLLSG-----QLSKKIFQNNKHL
KYVYFRGNKITGWENNTFVTNLTLMELDVSNNFIFTFDSDSLKYINRKKKFNVTGNPFA
C
DCNLRWFRDWLNTT--TVDIVDKNGLTCNSPPDWQDKQLLDFTRSKID-
CTDLYYILGGV

GG-GFLLTVVIVLFAYTKRWYIRFKIFKLYQYVQEYEAI-PGDDMYFDGYISYSDKDADW
VEKYLMTFDNNGNFKLCFRNRDFAYGKYIIGMIESSLAVSKKMIMVLTPYYKKDKRCE
FELQLGIMKLNI---KNVMPIVLKNLQPNQIPNSLKEIFETNKFIEWDN**N**-----

>Obi-TLR β 3

IFNACRHITLLKFQAVSI----NASINELLMDLKNLEYLELTGNTMRNVPD--VCDMKRL
HTLILSRTWIRKWQTTNCTVMNILRVFSLSYNRIFNVNKTSFALFSNL-KWDLSHNSYIC
NCRILWFRDWMRQN--SARLHYPKSYLCSNPAPVRFLQIAKYYVSWDY-
CANPIAVSGCV
LGTLSVIFIITGLVSYIKRWSIRYWWYLFFARRRKYQLL-ETSEHNYDAFVCYCGSDVGW
VTKYLLPILEEENDLHLCLHDRDFAVGNDIVDNIVDSIQQSRKVVLVLSSDFAQSQWCQ
FETSLAQQRLFEEKKDIIVPILLEEIPTELQTMRLALLLKQKTYLEWSN**ETRGQML**FWER
LVEILLETKE

>Obi-TLR α 3

-ITVFPTMP-VWLQFNNITKLV-----PYLSQI
THLNLTKNSITSLNYTVMRNMVNLIKQMILDWNLLTTLPGIQNVQ--FEVLSINHNHFFC
DCTNIWLKKWLQKSRE--SILNWRRIVCNTV--DKVLDIVVVP--NDKICNPKTLTLGLS
LALAILLLVCLFLLIHYWLEIKVILYYLNIHPSLGSANTLNEQKKYDIFISYPDQTYQF
ATGPLLSTLQS-RGYSICLPDRDFVVGSAKEENILRAIKSSVRTLIVITKSHVEDEWQLF
TLRTAVQCSSLKKPFNYLLCILDG-VDKSKLDLETQAYVTSHVVIDKDD-----LLWKKL
FRSIPPART

>Obi-TLR α 1

-LSD-SMLP-IYLSGNRLISLSRSNINGTFMTLINLKQLYMHDNDLTILTKETFQGLENL
EVITLNSNSISYIAPGMFAPMPKLKIVDVSSNRLHILDNSFL---KYLESAIHNNPWIC
KCPFVMLQELYINKPD--LVVLSESVICDHEDV--AYPLFEF---DVQHCL-KVICALAI
FSAVFLTIIAVISIACYREELKVWLFQYGWRI---AKLDDSNRRYDVVFAYTSKNAMF
VEHELTPRLEREPPYQVCLTYRDYDVDISYAQNTINCIQNSKRTIMLVSNDFQTEWFR
YDFQINNHDILKTLSERLIVILMEKVDRKKLECDLMFYAKTKKFLKYQD-----HFWDKL
YYMLPKVRG

>Bgl-TLR γ 10

-----FENLSDLKKLHLI-----
-----QMRDI-----TVNGATLSV
-----IKI---SLSGDHAGDST-----
-----SLALPSSLFAFT-----QD---YKIDVFLGYSDTDYRF
PCQDLRAYLEDTLKLTTFLNDRDLLATLNKASGIVEAINSSWRVLLVCSEGFLKDEWSL
F
TMRSAMYAQSPANPGRVV-VMVHQRCLRLLPTELLSAVEEDNILV-----SEWK--

>Bgl-TLR γ 3

FFDSFPEVEVLVLDHCELDSEFSQHSYSLFRNLVKLKQLDLSYNALDILLPNTFSANLNL
RSLNLAFNRFR TIP-FDLSQTLGMNKLDMRQNSLETLSKDMALLDELQKLLISGNVLSC
GCEHIQFLQWLHLT--DVRLDENRNYTCINNQG--LSSTSAYNIEVLWECWGYFNIALGM
FAFVNIGFVVFMLTKNKTLIISGVLQLFT-EFKKRP--V---DYQYSVFIGYSDFDYQF
ACLTLRKFIEDDLKLSTFVGDRDLLPSIAMAEGIMAAMDSSWRIVLVNKS FVN NNWFL
F
MVRSAVFSVSPANPLRVV-ILVEECCLPRLPSELLSSVPEDNVFVV-----TEWK--

>Bgl-TLR α 2

-LTDVPKIP-LRLDGNNLPSLRNSTVNNTFKGMKSVRSLFLNNNLLTIISPGVFSGLENL
ERIFLQNNFISLIDPQAL--LPYLYLINLRENDLNTLPIDGLGFVRELKRFSLSQNPYSC
QLDFVCFVLFIRDSAD--CIEDISDIKCSSNSL--GFTLLDFQIE---LCSE--TYALIA
ACVVIAFGLALLIVAYMNRDFLQVLCFRFGLRVM---KATEDNDRPYDAFISYSSKDEDF
VIHQLAPRLENDKKFQLCVHYRDFPVGACIAETIVRSVEASKRTLVSNDNFLDSEWCR
FEFQTAHQQVLNERRNRVILILMHDLDTEKLDSTLKVYMRTRTYLKYDD-----WFWEKL
MFAMPDVQH

>Bgl-TLR γ 23

FFDTLSTLKKLNISNNLLGSFLVLVSPRIFSSLRNLTVLDLSENFIDFTCDLFSNLTSL
EYFNISKNALIRFEV--ISRMSNLIFLDFHLTRMTGLTSEFRDSIDRLSSIDMSNAPISC
NCKNYDFMTWMTSS--KAFSQGFKNYICVYPDQTGHV-
VNDFDMNLLNQCASVLLFSMIA
IAMIVVVGAVVGGIVYKYRWKLRYLYNAAYLQFKSSRRG-
EDDEFDYDAFISYDQEDGVF
VTQTLVPELEKR-EIHLCHASEFTAGEYISSNIVKAVNRSRKTVVVLTQNMLSSYWCNF
EIQMANMEALHTGRRVLVFLVDNIPTKDLGLELLYYIRSNTYIPFPKDFNGMSWLWDK
VANDIRND--

>Bgl-TLR γ 20

FFKNLPTLTLYNLNLSINLLSRCHNVKKKYIYEALVNLEVLDLGLNNIDEFTPHILDHLISL
KKFLDYNDPLKSFDV--ISNMPQLEYLSLRHSRLHRLSVYTMKAIDEITSIDMAFNPILC
ECSNLDFIRWMTAS--SAFDPKFESYFCMYS DGSMQF-IDDFTLMILSECASVIIFFSVS
SGTTFLIILILIALHRFRWKLKYMYYAAYLHYKSAR--DNGKAFSYDVFLCYHEDDES
VLDTLCVELEKR-
GLKTLVHKRDFVSGKPIVSNIVEAVNCSRKTLVVLTDNMARSKWQCF
EVQMATMEAVSYKRPVLIFLLMSDVPCIMGAELSYCVQNNTYLQYPSPSSEMDNFWI
KLVS DLKN---

>Bgl-TLR γ 19

FFENFASLEFLDLSANTFGRKVRKGSKPIFSSLKNLRELNLRFVDLITVDKNVFEGLENL
EILHLQLNGIYYFEV--VSYLKKLQFVNFSFTELTGLRPQVTNFFDSIATLDFSETPIHC
YCANLEFISWLSRALQYIRFQRLKWFKCVYEDTTEKY-FHDFLHQFLGECTPVTLFFIVT
SATFLLVCIIIALVVYRFRWKLKYFYYSAYLYFKSYKRFHDDKDFEFDVFVSFANEDERF
VLKEILPELTTR-GLKVHIHTTNFRAGEYITTNIVNAVQCSRRTLIVSSNLQKSQWCHF
ELQMANLESVHTGRPVMVFLLMESLPEDVLSREMLYHIQNNTYLQLPD EVRVMDIFWT
KLCSDLKD---

>Bgl-TLR α 3

-LEKVPEIP-VYLDGNSLNKLTRSYLDGLFDNCTSLHLRLDYNLYLISISKSLFDKLIEL
RSLYLNDNLINFIKAEAFANLNSVEIITLDKNRLIMLD-----SSLKSLTSGNPWQC
QCNTSTVLRVLHALND--IIVDRGNMCCYYVGTQVQ--KLSELDRTPYELCVDTLLVCLVV
AMFVLLLIVVVLVIIFKGR-EVQAWVYNLGVVRVK---DKTDAGNKYFDAFISYSNKDSEF
VSKVLVPALDE-KGYRLCVHYRDFPVGQNITDTIFRAIEESSRTIMLLSRHFVESEWCRF
EFQTAHYHILKEGSHRLVFILLDDLSDDELDPDLKVQLKSKTYLKFGD-----WFWEKL
FFALPDVRK

>Bgl-TLR γ 22

FFDSFTSIRELNLSNNLLGEFFQSNETLVFSKLKNLEILDSSNGIHLHFDLFDLMDLPRL

HHLNLA FNLT TTFGV--ITKLSKLMYLDLTKTGISKIPETARTFIDGL-SVFMGKCSISC
ECDNLDFLLWMVNS--KAFDKTFKNYMC FYMDSSS--PITDYTIEILRKCTSEMLFFMVG
CGTLFLFFLLFGIIRFRWKLRYLYYAAYLHYKKSGGE-GGAKFKYDAFVSYDHADEET
IVIHVCNELEARGLKLCVHGRDFRAGDYIASNVVKA VCSSRKTLVVLTKNLMNSYWCK
YELQMANMEAVHTGRQVLIFLLVENIPQGELGV ELLYNIRNNTYIPYPT **EPAFWD** DALWN
KLANDIRD---

>Bgl-TLRy21

FFSELSSLLHLNLSSNLLGSFFRYESETVFYPLTNLMTNLNLSFN DISELRPNIFANLINL
RQLQLQKNNLQKFDV--ITSLIKLVRLNLKLNRLSTMSSNITDHIDTLKVV DLSFSPISC
QCNNLAFINWMVNS--KAFHPNFINYQC VDSNTIQ--NITDYTVEKLNECSSVTIFLISS
GFSFVILCFVIGSVIYRFRWRIRYLYYAAYLYYSKTNSG-RDS DYKYDAFISYDQNDWKF
VVNKLMPEMEKR-RLKVCIH SKDFVAGDYIASNIVKAICSSSRTVVVLTRNMIKSYWCGY
EIQMANMEAVHTNRKVLLFLMMEDIPSS ELSVDLLYNIRNNTYLQYNQ **DGVHMS** SRLWD
KLAYDIKH---

>Bgl-TLRy18

FFNNLTSLKHLSL FQNLLGDCLNDKNGLIFS QLTELVNLNLSFNNLYYLGWEVFQGGQAD
IEVIDLSVNRLDHITF--VSHMRKLRHLDLHKNDIETLPTGLTDHIS SLKTLDMRQNPISC
GCENLDFLQWV VNT--
RVFGSDLYLYYCKFPDSDRAVRVPGYVVKRLVSCSSAVLYTVVS
CVTVLIMLILLA AVIYRFRWTLRYWYHAAKLISSNQQM-DSDQFKYDVFVSYASKDIDF
VVKELCPRLKER-
NITVYVHGEKFKVGCYIADNIYTGIRKCRKTLVVVTQNM LASRWCNY
ELQIAREQARNTGRNVLVFLFLEELPTSRMGMGVLTHIKSSTYIMYPK **LPQH**RGAFWD
KLADDLRSS--

>Bgl-TLRα4

-FLEMPIIPNLYLDHNP LQSLN-----PYLSRL
SEIYIDNCLLTTVMPSAIAALKNIRVMTLHNNLLQKLPTSTRNITEKATNITLHNNRWAC
SCESLWLPRWISRHKA--VLWKPGNILCDYFQK-----LEDVS--EADNCK-SAMDNFLT
VILFVLSTVATVILFFCYNTDICAIVYKLGIEFR----LYGDQYCPFDILISYGQDNYKW
VVDTLVPYLEKPGGYRVCLNHREFPSSDCVLETLP TAVRLSR SAILVLSKEFLQKEWC
ML
EVRVAIQRLLL VGS-KLLIICMDKVNVD ELSPEL RAYIHTHHYLR YDE-----DFWVKL
DLFLPRKLI

>Bgl-TLRα1

----IK-LRHLD ESVAKL-----VTLFDALYVLEHMNFSTIGITTFPREWRRFFPKL
TYIDLSNNFISQVQFQNFPS-KTVVTFNLQRNNITVINMDVLNSWEKL-EVDIRNNPIHC
GCELESFLPHLQDTTTLAPYEYVKEMECSTPDALKGRKLYSL---HSSPCP-VYQVALIA
LGVTL SFLVLVILVRYKFEIRILLYRLHVRL-PCDADE-RHSKTYDAFISYSNDDDSW
VFENLVKFLENEKPFRLCIHQRDFVPGKTIFDNIVDSIEASRHTIIVLSPSFMKSHWAME
ELRQAYRQSLVEKTRHLVLLLHKV---NL--N-----YCSF-----

>Bgl-TLRy16

FFMNFSSLDQLFLGHNTLGDFLSHYNITPFIYKQLTRLDLSYNGLT KVYRNLLSGLNAL
QELHMEENIMWDFNI--IDHMSNLRLIDLSHNQIKELPIHVREHIDNLKLIDLSFNPIRC
ECQYLYMILWMVSS--RAFNP AFENYMCVYPDGSYKI-IDDYTLQYLNACADYSVLLVVI
FSTLTMIILVIAGILYRFRWHLRYLYYAAYLKVKEGHHNQETR SYVYDVFVSYAHQDET F
VVQRLMPELSNR-GLNVFVHGRDFVVGHYIASNILT AIRESRKTLVVLTKNLINSTWCNY

ELQMANMESVHTGRQVLVFLIKDSLDTDLKTDLLYHIKNNTYIDYPH**GPLALN**LFWDKL
SLDLKN---

>Bgl-TLRy14

MFQYLDELQELRLRNNQLNFIK-TRKPVFQYLKQLKILDTNNALTVVQSSIFEELGSL
EIIDLSRNNMRHFNL--LTNMSSLNFLNLSHTQLSSLSVETRQNIIDLLTRVDMSRNPVRC
ECDNIDFLKWMVSS--RAFDVNLTDYMCQYKDTST-IVIKDYTLVYLARCADSTLFLVVL
SVTLCMVSFVVAADVYRFRWRLRYMYAAYLVVKGKRKDNEAELFRYDVFISYASEDE
EFILGKLLPEFDSR-

DLRVLVHGRDFAVGEFIASNIVTAVKESRKTLLVLTNRLLNSTWCNFELQMANMESIHT
GRPVLLFLIKESIPTTELTSDLLYHLNKNTYIVYPQ--**EITD**VFWDKLARDLLQ---

>Bgl-TLRy8

FFDGGFFGLEKLFLSKCELQRDFALHSSRVFQNLNLQSLDLSYNYLNDLSQGTLYYNP
KLVWLNLSDNQFNRIIP-

FDLKDTPNLLLELDVRNNAISTVSKSITTELDQLANFWLSGNILSCGCQDLNFLHWSST-
-MVTLDQGGNFTCMDRNG-ERSYTMRYHVDTLWECWGFLYLAIII

LCFYVTGVFLLVLVQRNKTFLVSFFLQLLG-NFKLKR--G---DYPIDVFGYSDEDYHF
PCRDRLYLEDVIKLKTFLNDRDLLASLSKASGIVDAINSSYRILLVCSESFLKDDWSLF
TMRAAMYAQSPANPSRVV-VVVHESCLHLLPTELLSVVNEENILVV-----SGWK--

>Bgl-TLRy7

FFDELTGLEYLALSKAGLNDRDFSSFSRRLFQNLNLTRLDLSSINYLNALSKGTFSPNSKL
QWDLDSGNQFKDIP-FDLQYTPNLLLELDVSSNALTIDDDIARDLDHLVHLSLGGNLSLSC
SCSDLRFLQWLNLT--SVTFDHSRNYTCLNKDG-EKAYTLFYDLDLWECWGFLYVAVII
VCLYVIGFFVILLLLRNKHFLVSYFLKILG-NIKLKR--T---DYPIHVYIAYSIDIEYKF
SCSDLREYIEGTLLKLNFLNDRDLISSLNSAADIVKAMNSSWKILLVCSASFNGDWAM
LTLRSAIYAQSPTNPARIM-VLVHQNDLILLPHDLLSVVDENMLII-----SEWK--

>Bgl-TLRy6

-----MENLALSNCRLERDFSQHSHVLFKNLTRLRQLDLSSNSLNYLSKNTFLFNHL
QFVNLSRNLFREIP-FTLRYTPELRALDLVNSLSSIDVSTTKDLHLVKLYLQGNVLSLSC
GCNDITFLQWMKTT--LVTFDLNGNFTCINEKG-ERTYILFHDLESLWECNGFLYLSVII
MCLYFIGLCIVFIIYRNKQFLISYLLQTFV-GFKSTR--K---DYKIDVYIGYSDRDYKF
PCKDLREFFENSLGYKTFLIDRDLIASVDKASGIVDALNDSWRILLVCSESFLKEDWSMF
TMRSAIYIQSPANPARVV-VLVHKDCLHLLPTTLIGSVNEEKIIV-----SEWK--

>Bgl-TLRy1

FFDDFSSLRYLILQSMMNEDFFRVSIDRIIQNMPELRYLDLTDNKLNFLPPNLFNRNSHI
THVILAKNRFSSFP-ITMDLVPNLKTLDLSGNAIYLTTEEETSSLTKHSYLLLAENNIAC
VCSQIKFLLWLNI---TF-LDNKGAYSCTSQDG-QLILTVLWDVLGIFYQCYGYFMISIVL
LLVMSFIFLMAYLVHRFRTAIEAYLVRIKAVRMKS--SD---YKTHVFIGYADEDVGF
VRHILLRYLEEDLKVSTFVHHRDLGPGYTDQQ-MFESISDSWRILLVITQRYLNLYLSDI
IMKYASHSMSPANEKRLV-LLVQESQLYNIPGYLYDVLEDSRIIV-----SDLSA-

>Bgl-TLRy5

YLDTLPALENLALANCQLDREFSIHSGRLFQNLTRLQQLDLSSNLLNYLSTDTFMYNKH
LKWLTAAQNQFREIP-FSLKYTPELEVLDLRQNSLNTIDMASIHQLENIVKLLLSGNDLSC

GCNDLQFLQWMRST--AVTFDQDGNFTCTNKDG-KTTYTLAYDIEYLWECTGYFYIVLIV
FCLYLIGCSIVFIMMKNKHFITVYILKRIF-GIEHTR--R---DYPIDVYIAYSDDTDYQF
PCNELRQFIEQSLGMTTFLIDRDLNASFDLALGIVNAINKSWRVLLVCSESFLREGWSM
FTFSSAIYAQSPANPARIV-ALVHRDCLPLPMELFGCINEDNILYV-----SEWA--

>Bgl-TLRy13

FFPQ-SSLISLNISNNILGEYFALGRKKIFLGLGYLRFLDISMNLIKLPRDFLSGLKSL
EVLLATKNRLQALNV--LSQMSSVWFMNFSQNSITWIDKVTRDDLDLLASLDISFNPLPC
TCDGIEILNWLAFT--NVRLVNQMYMKCQTSTG-ETVSLGDLRAQQVQACASAILVISI
SSTVVVTLMVSLATLYRFRWKLRYLRNIALTKY-GFRPKKTGKKFQHDAYILYEDQTIKF
VFRDFIQELEVKRGHRLLLVDRDIMP GTIMTTAILS AVQNSYKTIPVVTPTYFFDVWYSEY
AVQMAIMEEHYEP RQILHLCLYQATDPK DMPKDLLSVMKRNRYTEFPP**TEMV**KQFW
DQLSSTIQQE--

>Bgl-TLRy2

FFDSYPALELLALESCRIDGLLSQHSFRVFQNLHSLQSLDLSFNSLDMLSPQTFSTNPN
LTSLNLAGNRFRNVP-FDIKLT PNVKFLDIRQNALTTIDISSRKALDELNRLLLSGNILSC
GCENLLLLQWLQET--RVELDGNRNFTCMNIKG--
LSSTLAYNLDGLWECWGFFNL SMAL
LCFTLLAYILFFT WIKNKT VILSSILQIFT-DFK KKP--S---DYQSGVYLGYAESEYKF
PCSEL RQYIEDELCLNTFIRD RDLLPSLDIAQGVMDAINSSWRILLVINERFLHQDWFLF
TIRAAIYSISPANPSRVV-VLVEKNKVHSVPT ELLSSV PNENIIVVSQ-----

-----Q---

>Bgl-TLRy9

FFDGFSGLETLALSKCLIQRDFAFHSHRLFQNLKELRQLGLSFNSLNAFSNATFSFNSN
L
QFLNLSDNQFNYP-LFNLKHTPELRVFDVTNNSIITINVDARHELDRLARLFLRGNILSC
GCSDLLFLQWLKNT--LVELDQGGNFSCIDKDG-ERSYTLCHDLESLWPCWGFLSIAVII
VCLYVIVFFIVFLYIKRKTFIITYFLQLLG-HFHRSR--Q---DYKIDVFLGYSDDTDYRF
PCQDLRAYLEDTLKLT TFLNDRDLLATLNKASGIVEAINSSWRVLLVCSEGFLKDEWSL
F
TMRSAMYAQSPANPGRVV-VMVHQRCLRLLPTELLSAVEEDNILVV-----SEWK--

>Bgl-TLRy15

FFHNFPNLKKLMLGNNKLETYFNLPNYTLFSKLKKLKTLDLSDNAISKMPTDILAGLTS
KVLYFEHNTLWTFNL--LSHMMNLRYVYLRHSQVNSLSEDVRQHIDSIGRFDLSFNPIHC
DCENYDFLKWMMNS--RAFDPKFTNYMCQYPDSSYK-NITDYTLRILRKCTDSFIFLVL
AATFVMIAFVLAGIIRFRWKLRYIYYATYLR LKSVDEE-NSEQFRYDVFI SYAHQDEEF
ILKVLYPELGSR-GLNVHVHGRDFVAGEFIASNIVTAVRESRKT LVVLTLDLLKSKWCNY
EIQMANMESVHTGRQVLVFL LKDSLNNKQLGTELLFHIRNNTYIVYPQ**NDEEL**AVFWDK
LYKDLRK---

>Bgl-TLRy17

FFSCLNSLRNLTLSVNMLGDFIGSSKERLFENLSSLSYLDLSFN SIDKMQVYFFHGLSN
VTEIDLSRNKISEFNV--ITKMNQLRRLNLSDNKISR LFSNVTDQIDRIKQVDLSKNPIDC
TCANLEFLKWMVNW---VNVSQSQGYLCKQDDGSI--AMPDYTVLSLNQCASVVIFLII

GATLVLACVIVGMIIYRFRWSLRYWYHVAYLNYQQKRKSDRRQKFEYDVFISYVHNDE
TFVAQTLSTELEKR-
HVKVYMHGQKFVAGNYIASNIVQAVKSCRKTLVVLTNKYVRSQWCYY
EVQMANMEAISAGRPVLVFLIKEKIPNHKLG-EILTFIKTNTYIPYPQ**EDRELK**IFYDKL
ASDLL----

>Bgl-TLRy11

HITRLQLLDFSRNSITWITESTRDDLDALAELDTFNPLPC
TCSGIEFIKWLATT--KVKLIDQVNLRCRLKDG-GSTSVGDLMLLFLQSCISSWILSVSI
LSAVFMAVVLGLVLMYRYRWKLRYLNRNVAIAKF-
GFEPKKHQGLFKYDAFLVYDSDDMQFVLNECVQELEVRRGIKLCIGDRDFMPGTYVAS
DIVSAVQNSYRTVLLVTPEFYDDDYVEYAVNMAINEEIHSTRQVLYLCLYQPVALAEMP
RDLVAILKRNEFIEYPP**EEGLIEN**FWDQLTAAVRQE--

>Bgl-TLRy12

FFRP-NSLISLNISNNILGESFALDSGKVF SRLGYLRFLDISMNLLYRLPRGFLSGLKSL
EVLLATNKNKLQALNL--LSHMSSVWLMNFSQNSITWIDKVTRDDLDFLASLDISFNPLPC
TCDGVEVLNWMFAFT--NVRLVNQMYLKCQTNTG-EIVSFGDLRAEQVQACASAIVLVISI
SSAVVVTLMVTLALVYRFRWKLRYLNRNIALAKY-GFKPKKTGKKFQHDAYILYEDQNTNF
VFNDFIQELEVKRGHRLLLVDRDIMP GTYMTTAILSAVQNSYKTIPVVS PYFFDGLYSEY
AVKMAVMEEIYEPRPVLHLCLYQPTDHEGMSKDLLSIMQRNHYTEFPP**DEPELVKQFW**
DQLSNVIQQD--

>Bgl-TLRy4

FLDELYGLENLALSKCQFDRNFALKSARILQNITKLKVLDISNNSLNGLSKGTFSRNSEL
LYLSLSGNQFKDIP-FDLKFTP NLKILDSSNIITLTDTTDDALDLLNQLMLNGNILSC
GCHDLSFLQWLNST--LVSFDNNRNYTCMNKDG-
ERTNTLTFDLESLWQCWGFFYVAMITLCLYVTGAVLIFLMLKNKNFLVSYFLQIFG-
NFKHTR--S---DYKTDVYIGYSD EYRF
PCIELREHLERNLKLSTFIIDRDLLASLDKASGIVDAINSCWRVLLVCSKSFLKDEWSIF
TMRSA MYAQSPANPAKIV-LMVHTSCLSLLPADLLSVVNDENILVV-----SEWK--

>Ttr-TLRy4

FMSSFPNLKYLSLAYNNLGHMFDDVSKCVFLSLTELQTLDSLHNQIAKL PVDLFLNQHN
LKELILNHNKLKTMG---VASMASLQYMDLSYNEIRD--KSML---ESIATINLTKNVSC
TCLNVVFLTWLINT--HINISGKETVYCLQQQK----MLIHFNFN---DCKKDYVIIGSV
VG-LVLVLIVIAVIVSNDR--VKYHIYLLKYKLR---NISRN-TEEDRIFISYCSEDRIW
VLRKLKPELEA-MGYKLFIHELD FEVGNFIADNIVHAIDTCFKTILVLSDNFVSSGWCMF
ELKMTLAK----S-DCAIPIYYKPVTKKNNTLLKYL NKVKTYMKWPE**DDREQY**YFWQRL
KHALDKQED

>Ttr-TLRα5

-LTVMQPAP-LLLDNNNIEHLE-----YYLNDV
TKLILRHNAIADVPPNFVKLVTDMTLLDSYNRIRYIDDDVLSSLKPTLSIAINHNPLAC
DCHSHSLKQWVSDHRK--RIVNLADITCFGG--AGGISILEAS--DLSICLD---IILPS
VIVPVVFICILILLVYIFRNEIKVILYKFNLHLN----EEDETAVHDAFISYCSTDENW
VIKELANKLEMN--YKVCHHQKNFEPGVAIADNIVKSIDQSRRTILVLSNDFLNSDWCKY
EFQAAHYRALKNRQKYLIIVMLHKIDVSKLDNTLRLYVKTNGIIVNE-----LFWQKL
FYEMPIRTL

>Ttr-TLR β 3

LFEDLGLLKELVLKAADIANFRSKDIRAMLNVLIGLEHLNLEKVRLYSIPPTTFHHMHNL
SKLVLSDNFLSHLPEDLFFNLTNLKVQLNHNHRISQVSTKTFGLDSLESIDLSGNPFAC
GCSLHWFLQWMNSTNVKVVGSRFSYKCSSPPALRGKSLHEYYYKYRQNCPLIILVA
SVSGSCFLALLVSVICIVYRSRWYIRYLFYLLRARRKRQRKRNDEKDFAYDAFVCYNKD
DQDWVVRRLPELEYNGEFKLCLHDRDFMPGIDIIDNIIESMEQSRRTILILSNSFAQSQ
WCQWELSMAQHVKVLQDEGDILVLVLEQIRSDNMSLKLHYLMRTKTYIEWTDNEDGR
KLFWEKLGTLKAKPE

>Ttr-TLR δ

SLSGMEKLTTICLASNCLGSVP----PEIM-SARNLKQLDMSYNKISSIPP--IGGLKEL
RYLNMKSNRLRQLPN--LCQLKHLEIVCFSENTISDPNVDELDMISKIKMLCLHSNRIPA
N---K-VQNLLKKASRDIRLEN-----C-----VEETHVKYLLKKCL-----
-----AMDENAVHKWDVLILHDDKDEEI
IENEIRPKLEEEMDFRVCIPYRDETMGMSKVAERSNLINFSKTIMLVITEKFNSSK--IL
GLDEVMLNGLDSETKCLIPVLWSKV---QVPKELKGRTMVRR----DS--VQEKYFWQKI
RKAIQSH--

>Ttr-TLR α 2

-LNKIPKIS-IDLSGNNIPLIRHSHIDGSFTNMSNLLLLYLNNNNNLKVLSRYTFEALPVL
EELYLHGNKLTFIEDETFLGLKKLRIISLKSNIKTLPYTDF---SHLTSVSLAENPYDC
DCNFSRFKSWIFSSLA--TVIDSNDVFCVIFYGLFPGSRLFNF---DLNYCELSSMIAIII
ILIVFVVIVALATVAYYYRNLIKVWLYNYGLRPR-----PDDSDKIYDAFVSYSSEFDEST
VVHTLAPKLETNPKYKLCLHYRDFPIGSSIAETIVESVENSKRVIMLLSENYLSSEWCYI
EFKTAHHQVLKDRTNRLIVILYDEINMDNLDPLRLYLKTNTYLCWKD-----WFWQKL
YYAMPDVSD

>Ttr-TLR α 3

-LTSLPFTEDLDLQNNISIRELT-----PYLKHV
KILNIANNKLEIVSAEAIQSLKTVQKFNLSGNRLTKL--NVNHFKTNLETLDIQDNQFTC
NCEDQWFQEWLLQINN--AVVNADSVRCHNK----DVAILSAS--HTDCGLANHTILTIC
VSVGAVMVCVAVVMVYIFRKEIKVLINHFSWHPR--RENDNRHYLYDAFISYNLLNLDF
VRNSLIKNLE--PRYQLCIHNRDFFLLGNEIADNIVTSINASKRFIAVVSKAFIGESECWQY
EFQFAHNDAMKDKRNNIIILMEDSDLGEIDNCLKIYLRTHTYLSYKD-----LFLQKL
LYSMPQVRT

>Ttr-TLR γ 3

LMSSFPNILYLSLANNKLGELQEQKQKDFYPLTKLEEINLSGNNITYFPVNVFLAQTKL
KRLLLHDNSLKVWH-INMSTMTSLEYLDLSENQITIIGQMSMNYFKTIVSINLNDNKIDC
LCFNLEMITWIQK-S--KFIHQRDNLKC--GDTK--KSILSYDPK---SCEVAELVIGVT
LGISALFIGVLFLIFYKIHWH-LKYKLHLLKWRWRGMMA--DQNEQEMIFISYENRDRCW
VINTLLPKLEG-MNYKTYIHNRDFTVGRPIADNIVHAIDICARTVLILSDHFAQSEWCVF
ELNMALV-----KNSVVPIQYAP-----

>Ttr-TLR α 1

-VEDVP-----SLEELSLQFCNFSVITRNMLQNYPNL
KTMVMHNNRINYIETAALTRKVRINVITLDNNRLTHID-----KQVIIVRLQGNPWDC
QCHLKPLSDYVRNHIK-----GNITCYSPPS-----LASTPLQQVNTCEQGILLFLPIM
LGLLLALVLASTCCVYWYRYEIKIMWNKY-----RKAYKTEKHTYHAFVSHSSVDFKF
VKDNLVSLE--PTYKLYVYYRDSIPGSTIVEDIVKAIDDSAITIILLSQNFLHSDWTKL
EFKQSYFKAMKSKSNMIIILMEDIPLDSIKPQIKAYIRTKTYIHKND-----RFFEKL

TSSMPKEEM

>Ttr-TLRy2

-----NDISYFPDNIFIHQTKL
KKLILRRNAFQVWN-VNMSTMLSLRYLDLSKNLLTVIGETSLTFMDTFMTINLEDNLFIC
SCPYLPTISWIQEN--NKSIRQAQNLKCKMGEN--EIKLMSYNAE---SCHVIYDIIGIT
SSISVIIVMATIFISYKFHW-IKYKFHIIKWRLRNCFGIHDQPANNERIFISYENRDRRW
VLDLTPKLENTMNYNTCIHAWDFMPGYPIADNIVRAIDICTKTIVVLSDHFAESNWCQL
ELQMALV-----KHSVPIRYAPIEKQNKTRLLKYLTKANVYIDWYD**MHNKED**AFWDKL
KYTLDRDDE

>Ttr-TLRy1

-----NDISYFPDNIFIHQTKL
KKLILRRNAFQVWN-VNMSTMLSLRYLDLSKNLLTVIGETSLTFMDTFMTINLEDNLFIC
SCPYLPTISWIQEN--NKSIRQAQNLKCKMGEN--EIKLMSYNAE---SCHVIYDIIGIT
SSISVIIVMATIFISYKFHW-IKYKFHIIKWRLRNCFGIHDQPANNERIFISYENRDRRW
VLDLTPKLENTMNYNTCIHARDFMPGYLIADNIVRAIDICTKTIVVLSDHFAESNWCQF
ELQMALV-----KDSVPIRYAPIEKQNKTRLLKYLAKEANVYIDRYN**MHNKED**AF----

>Ttr-TLRβ5

-----LTHLIVTGNKLTTLSPSELF---
THLKYLDVSNNISITSFSREIVGDLGYIERFIFDDNKIECDCELSHFQQWLLTTLI----
DTSKTERCYN---YEGVRIIDYQPTWID-CDNTYVVVGSIGS-
FCLLVATVAALLVYYRWDVKYWFILRKIKAKRYHNMHDENNVMYDAFVSYSYLDEGW
IYNELIPNIEDDIKFQLLMDQRDFLPGHYIENIVQGIDSSHKVLLIISLNFIESQWCTF
ETRAEQSSIETG-QRLILIFLEPLKKSEMSRHLQRL-----S---

>Ttr-TLRα4

-LNALPYVP-LYLQDNHITHLT-----DYLALI
TELNLDHNAISEIPLAFLNSIPKMKTLKLAYNQIKYFPEEIEETR--AFNWSMHHNPIAC
NCYSLWLKKWVSANRK--RIDNLHDIVCFSG--AGGVAILEAS--DHLICID---IILAA
TITPASIIIMVLLGCIFRKELKVILYKFNWHPK-----RENESLPFDAFVSYSYCSADEHW
IVTQLAKKLESNPPYKLCCLHYKSFEPGVAIADNIVTSIDNSKRTILVLSDKFLESEWCRY
EFQAAHYRALKNRRKYLIIMLNKIDPSKLDKNLRLYLKTNGYIKPTE-----LFWEKL
KYELPMKSS

>Ttr-TLRβ2

IFMNLTQLQWL VANHNNIGMCLTKGMSKLFQNLKSLQWDLSSNQIETLPKELFQNLK
SLKYLNLSNRISYWASEQFTALKKLQTLDFNSNVITTINKSSIGQLENV-
HLNLSNNLFSDCDLRWFRNYINYT--KIDFTYIKDYLC AAPPDFQGKHFLKFHSNMII-
CSPYLIRYISIGGAVVLIVLMISLATYNWRWYLKCLKLFRLLKNTLRGFQ--
EDDDIVTYDAYLSFAEEDRDWVTRTLLPKIDNEGRYRIYYDDRDDMPGDNIINAIDSGIE
KSEKSIVVFSKKYATNGRIDVDLTLI----
LDKPHQRVILIMLEEVP LRMIPRCLHSTLWSNQHLLWTE**DVNGQA**LFWEKLNNKL MED

>Ttr-TLRβ4

-----MGDNSLYR--PNDLPALFAPLHSLTYLSISKNKLDY LHEDTFNGLYNL
EKLILTTNKLEYLSTDLFKNTTKLKTLYLAKNSLKTINAGTFEKL TFLKDINLGENQFDC
HCDIRPLRDWLKYKQKKKAIKIQGDLNCTTPPNLRNSLIVDYNPSWLD-CDNEYLLISS

C--SMGFVLITITVIYIFHWNIKLFFAIRKANRKIDGENNPLLKRYHAFISYANDSLWW
IKKHLLPNLQDNFEFNL CIRDRDFRAGQAEVDNIIDGMQNSTCTIFLITAEFIDSGWRQF
EMNVILRGLIDDPNNRFILVFLEDIPNNKLPIVLSTLKKNVDCLYWP--**KVKRI**QFWAKL
KVRILGK--

>Ttr-TLR β 1

IFFNISTLQILNLNKNLLSELP----DVLFTNLENLQCLDLSSNLLEVIPEKLFANLKSL
TDLNLANNMLYNTN-GIFHPLIHLTFLNLSSNSLTMITKDTLAGPKKLKTVDLNKNVFKC
TCDLQWVFDRLRQSKQCPYIVQLREYKCTN---LPGTCVANFMPSQWE-CHSIFIVVISV
LGS-ICITLLLMGCCYRYRFYLLHFCFVLKRLRETYEELYDNTQYRFDAFICYNDEDLNW
VQSQLLPKLRE-ATIKICINFMHFRIGAPRIDTIMEGIQTSRKTVLVISRHFLDDDWCLF
EMNVAAHRLFEEGKDNLVIIFLEPIQYSEMPLTLQAVVRTKRYLEWST**NEQGK**DLFWET
LCYLLKTRPS

>Hps-TLR γ 4

FMSSFPNLAHLSLAKNKL----KK---NVFWPLKLLEYLDLSDNQISMLPKGVFSQQSSL
KYLILKDNALTKLS-LGLKNMKCLKYVDVSVNKLETLEPQTRSFLEKKMFIFMEDNVFQC
SCSNIDMLYWMRNMNLKSSVQRWSQVKCHNYEN---VNLTDYDIS---KCDSIRTLVVTL
IGVLV-LMLVMGVVIYKSDR-LRYKWHLLKWRLRNNR---D-HRQNFKIFFSYGSRDRQW
VWEVLKPKLEQ-DGYSLFIHEIDFHVGECIADNIVYAIDVCDQIVFVLSDNFVSSEWCMF
ELNMALV-----KHCIVPIRLSPIMKRN--RLIKYLTkTRTYLEW-K**DKESA**DEFWARL
YSRLNRK--

>Hps-TLR γ 3

YLSSLPNLAYLSLAKNKL----NI---DVFTPLKLLEYLDLSGNQIAILPKNVFSQQDNL
KYLIMKNNALKTLN-
FQLKNMNSLEYIDASENKLGTLGQQTRFFLEMMMSISLEDNVFQC
SCSNVDMINWMTKTSKVSQRWSQIECFNLRS---VNLTDYDIS---KCDSVTTIIATI
VGV LAPAMFCMGLVIYNYDR-IRYKWHLLKWIRIRNYQAVVR-
HRERFQIFLSYDSCDRQWWVKVLKPKLER-
EGYSLFIHEIDFHVGECIADNIVYAIDVCDQIVFVLSDNFVSSEWCMFELNMALV-----
KHCIVPIRLSPIMKRN--RLIKYLTkTRTYLEW-K**DKQSA**DEFWARLYSRLNRK--

>Hps-TLR δ

DFSNLEKLRTVILLCNRLKFP----TSL-LDVKSLAQLELANNRIREIPP--IGQLREI
KFLSVKCNRLTSLPE--LAKLEVAEVICFSENMIVDVPVESLLRFKNLKTLC LHSNRIQN
H---K-VMQLHE----DVRLN-----C-----**IGD-DIQ---KCR-----**
-----F---AYHVR-----SSNFRL-KCRNM-DKTTWKWDVYIAYAEAAEHI
VDEELVPKLTN-MGLTACVYYKDSQPGKDIMADRRDMIDRSKILVLLTKDTSYSDF-IS
EIQHIVSEGPKDQTARLIPVQWDE---AIIPDELKKVVVTSR----RT--**AQEK**VFWSRI
EKALKS---

>Hps-TLR α

-LTSLPQVP-LYLSNNRITELS-----SYLGSL
TKLHLDHNSLREINPNFLSQLKNLTFLSITWNNIKYFPESIKGT---LFNLSIHNNPIAC
DCHSLWLKKWISRSRN--RFDNLKDIVCVDG--AGGSPVLEAQ--DNQICL---KMILLG
TIVPFVVIIVMLVFIFRKELKVILYKFHWHPR-----REDYTLPYDAFVSYS SGDEHW
VVSQ LTKKLEGSRPFKLCLHYKSFEPGVAIADNIVTSIDSSRR TILVLSNNFLNSEWCKY
EFQAAHYRALKNRKKYLIIMLNEVNTDKL DKNLKL YLKTNGYIKPSE-----LFW EKL
QYEMPVLEP

>Hps-TLR γ 1

ATSAPFDLTYFSLAKNKLEMMFNINSTDVFHPLEKLQFLDLSENGIIDVPSNVVEKQVSL
RMLNLSNNNMQTFKV--LFSLRNLTYLDISNNLLKTIDVISTIGLDQILRINMDKNDFEC
VCSNVRTIDWIRKDSLRRDDLQCKVIKEGGWNKIVDY---QLNDCDSDLIVLPIA
SA--LAVITFIFGIIFWKRNRQIKYKLHLLKWRW-GFLKT-NPHVERGQIFISYDHRDGDW
VRNTLRPNIQE-MGYRPYLHEIDFVPGESIADNIVHAIDVCDKTVVIISDYAESAQWCQF
ELQMAITKGL----GYVPIKYAKLKRK--NKLFQYFMKCVTYLEWPA**DDDT**RAKFWIRL
GRAIAKE--

>Hps-TLR γ 2

YLSSLPNLAHLSLAKNKL----NI--TDVFTPLKLLEYLDLSGNQIAILPKNVFSQQDNL
KYLIMKNNALKTLN-
FQLKNMNSLEYIDASENKLGTLGQQTRFFLEMMMSISLEDNVFQC
SCSNVDMINWMTKTSKVSQRWSQIECFNLRS---VNLTDYDIS---KCDSVTTIATI
VGV LAPAMFCMGLVIYNYDR-IRYKWHLLKWRIRNYQAVVR-
HRERFQIFLSYDSCDRQWWVKVLKPKLER-
EGYSLFIHEIDFHVGECIADNIVHAIDTCDQIIIVLSDNFASSEWCMF
ELHMALV-----KHCIVPIRLSPIVEHNN-RLITFLTCTRITYLEW-K**NKPSGE**IFWARL
YGTLNRE--

>Lan-TLR δ 7

EVENF-ELRSLCLACNVIDNLP----GKFF--MKQLQELDVSYNRLTQIPA--IRNLKNL
EFLRLTGNRLQTIPS--IESLDRLLYLCLSENALVDIPTNALHRLINIKSLCLNSNRLPC
E---V-VIQVIQESSPKVSLREN----C-----**K--EIRD-----**
-----AFRAK-----QYFEK-DGKDFESDVYVMHADEDYAL
VDQEIVPHLEER-NLKVTVNIQALRPGLPVSDQLVHFIESSRKILVVFTKNDVFEHTCLT
KVKAAL EKRRKES-ETSPIVLVE-CPKSKVPHEFKDLYVIHR----RT--**THEK**HFWPNI
INAITQ---

>Lana17091

-LIHMSKID-LDVSNNYLETIP-----SD-TMY
REVYLDNNSISTFPTSQV--LPHLTTLRLRYNSIRTISMRQIEKDT-VNDLYLGGNPWRC
DCHARSIKHLLNNSN--IIRDLDDITCVSGELTLGKSIKNVP--DNNGCPI---IAAIV
GGLVFVVIACMLLLYKCNLKVRIWLYKFRFRFK--D--KQDSDKIYDAFISYSSLDEKY
VVQTLVPGLENTPPFKVCVHYKHFIPGASIAESIVEAVENSKRTIMLLSQNFIHSEWCTY
EFKTAHHQVLKDRSNHLIVVVLGDIP-SDLDSDLKLYLSTNTYL RADD-----WFWEKL
LYAMPKLEN

>Lan-TLR δ 1

DFKC-LKLKALYLNANYIRELT----PNIL-KLEELIIFDGSYNELQVLPN--IDQLQSL
KYIRLKQNQLRRRLPE--LGNVKSLEVICVSENRLQDIPA EKLAKLPKL-RLCLHSNRLGQ
---K-VVRTLKEAKFEVRFDN-RSVD--**P-----KISKI--KVEGCH-----**
-----MTVLT-----RETPVFDVFMLYSEDEKV
ITDEFLPKLEKKAELKVCFASRDYIPGHFELKEALTNMRKSRKIIALLTEHFDEQK--AV
EINHAVDADLARQSCSVIPVWGNV---KMPVQFKRIVPLRR-----VDWDRL
ITAIKE---

>Lan-TLR α 2

-ITTLPAMP-IYLQNNKLEIT-----DYFSRV
HTLVASNNNSIAKITSRIFWY---ISHVQLDGNNLKSLPQDIESMKHNITSLSLSRNPWTC
SCENLWLKSWLLKKRK--VI-HMDSVICTNE--VKGKPISQVT--EEMLCHPSYIQVAVS
LGVLLLLTLITIAVLYKYRFEVKVILHRFNWHPR-----QEMTEKLYDAFISYSSDRLW

VHTTLAPTLENQLPYRLCMHCRDFLPGEAIDNNIIQAIQNSRCTILVLTKNFLRSNWCIF
EFQQAHYQMIHNAHFKVIVILKEDIPAEEMDDDLRAYLRHTHTYLEAKD-----WFWKKL
LYVMPTMNK

>Lan-TLR β 6

-----MFRNLTQLRKLYIQNTGLSFLPPNVFVNNGMM
SELQLQSNFLSTWDPIVFQPLLSLRKLFMDHNNIRILNETSFFIWDNLTDLNLAGNPFSC
TCENLWFRNWIQST--NVKLLQLHAYLCYEPKKLSKSPFLDWHPTKAQ-CTPAWVIASAI
GVPTLLFLALVIVVSHRYRWYIRYWCFTLRSRYKRLEPFEDNGTYVFDAFVSYNCHDR
PWVIQRLLPKLEYDAGFKLCLHDRDFIVGHDIVDNIVDGDVSRKTILVLSNNFAQSQWC
QELTMAQHKLFDENKDILVLILLEDIKPENLSNRLTLLLRKQTYIEWPSEEEGQDLFWE
RVKAALQKPSG

>Lan-TLR β 9

IFNNVPTLTTELCLDNNQFYRILLDILRDLLRPLRHLRCLSLTANKLTEPLGMFDGLANL
TTLDLNLNSLRSLPVEIFRHQRQMTDLHLDNRNSIFTLSGHMFANLTALKNFNYARNKIIC
DCNIRSFQSWLATT--SVNV---PRELCFGPEWAQKTPIKEFRPSWFA-CDD--VYLA
SGGCVFFVIFLSAVLYSFRWDILYIYAIYRASGKKSKLGRREPHKTYDAIAMYSPTSVTW
IKKHLIPNLEEDIRFKLCINDRDYIVGDPLVDNVETNMEKSRRILFLLTREYFESQLHET
EINLAQVKLFDGFDVKIIFVFLEEVPKTTFKEPLKTMHRHGNCLHWPRKKRERTIFWKR
LKLALLEAKT

>Lan-TLR β 8

IFKNVPTLTELYLDNNQFYRILPDILKDLFRPLRQLRHFSLG-----LPP-----
-----HQSMYRVPGNFA----L---DPNGHK---
-RQLKSFHGSLA---MTTV-----CIWPPYREDA-----CF-----
-----FVIFLSAVLYSFRWDILYIYAIYRASGKKSKLGGREPHKTYDAIAMYSPTSVTW
IKKHLIPNLEEDIRFKLCINDRDYIVGDPLVDNVETNMEKSRRILFLLTREYFESQLHET
EINLAQVKLFDGFDVKIIFVFLEKVPKKTFFKEPLKTMRLRHGTCLQWPRKKRERTIFWKRL
KLALLEAKT

>Lan-TLR α 4

FLTSLPNFPNLEVQRNQL-----ERFPN---IALPNL
WILSLKDNSITEIKNESLQHVPNLRYLSLEGNGITHIPEGFFNHTPHM-TANLTGNPIKC
DCSQRWIKDWMLQQEKRTIF---VEAFCSNSSG--AINIKDF---DFEACVPTFYVTLV
VLVLLIIVAILILLIYICRKEQVWIIRGWWKA-NVLTNSAQRTYKYDAYIAYCDNNYSI
IRDHFIPRLEQKHGYRLFIRDRDSEAGQPIAENVANAISKSYCTIALLSNSAMESEWFPV
EFELTHSLSVEDKSRRLVIVKVGHLKSKEALQKSIQLYLTTKTYLSWTD-----DFWDKM
HKILPDKRE

>Lan-TLR α 3

-LTGFPSLP-LYVNRNQVETFP-----TLFSDL
QELQAADNNIGSISNSSFTAAPKLQYINLDRNGIAEVVVGTFDSL--LSMVSLKGNSLHC
DCSQRWIQDWIIRNLT--FI----ATCNDT-----DFTQCDT-NVVALAV
VLVVLAVFIALVAITFFYRTEVEVLIYRYKQ--R----DSDTD KDYDIFISYSNDDSVF
VRNVIIQKMETEWGYKLCIHERDFLPGEYIADNIANAVEKSRRTLTLSDSYLHSEWCVF
EFAMAHQQSLKDRCRRLVVVKLSDLDSNLLAKEVGIYLTNTFLHKGC-----MFEWKV
RGTLPAKPL

>Lan-TLR α 8

-LTALPFAP-LEMAGNLIEVLE-----PYLANA
TKLILSNNAIQTIDPAVFGFLFAELRTLHLDGNHLTHLPKEITSVN--ISEIKLDKNYLSC

DCKSTWLKRWLNENGK--NIPRFTELTCAVG--QNGQRIIDVP--DSSTCDPLIVPIAIC
LAVVLVILAVNLIV-YRFSIEIKVLVYKFNWHPR--D--DDGPEKIFDAFVSYSQDYKW
VVHNLRHTMENVPYRLCVHDRDFIVGETIFDNIMNSVQQSKRMIMVLSQNYVDSEWC
MMEFRTAHQKVLKERSKYLIILFDDVNKDQLDEELLAYLNTSTYLEVSS-----WFWKKL
FYAMPDLSK

>Lan-TLR β 5

VFSHAPHLQELYMSDNHLDKIDDAALEKLFRNLTKLRKLIISQTRLTHLPPKLFETKPFL
RELQLGSNQLSSLDPVVFQSLFSLQMLYLENNLIRTIYESSLFVWKNLTKISLAENLFSC
TCDNFWFRTWMDTT--QTTIVALNSYRCYEPKELAKSPFLDWHPSKAQ-
CTPAWVIASAGVSIIMFLALVTVVSHRYRWYIRYWCFTLRSRYKRLEPFENNGTFVFD
AFVSYNCHDRHWVIQRLLPKLEYDAGFKLCLHDRDFIVGHDIVDNIVDALEVSRKTILVL
SNNFAQSQWCQLEMTMAQHKLFDENKDILVLILLEDIKPENLSNRLTLLLRKQTYIEWP
REEEGQDLFWERVKAALQKPYG

>Lan-TLR α 1

KLNGQPNMEIVEFSNYAY-----VFITIFHGYPALHTLIAVRNNITVFPQATLLNFPKL
RYVDLRYNSIKELKI---PR-GSNRVFDLRHNDIQDLTIENVNAMRYAAHVDFRNNPIDC
GCNNSDAVKHLRSEVVKSTYRFLYDIPCHHGET--TTTIRSINLDDLNECF-IIIIPWIV
LGLLACLVLTLTALTVEYFRREIQILLFRLKCRCR-----S-PPKRFD AFVSYNSGDEHW
IVHTLAPKLENKPPFRLCLHYRDFIVGAAIAENIIESIEASRHTIMVLSENFLKSEWCLM
EFRAAYHQGLRERNKHIAIVLEDILLDDIEADLRSHLRTTTYLKVSD-----WFWDKL
IYCLSRNPH

>Lan-TLR α 6

-ITTLPAMP-IYLQNNKLEIT-----DYFSRV
HTLVASNNIAKITSRIFWY---ISHVQLDGNILKSLPQDIESMKHNITSLSLSRNPWTC
SCENLWLKSWLLKKRK--VI-HMDSIICTNE--VKGKPISQVT--EEMLCHPYSIQVAVS
LGILLLLTLITIAVLYKYRFEVKVILHRFNWHPR-----QEMTEKLYDAFISYSSSEDRFW
VHTTLAPTLENQLPYRLCMHCRDFLPGEAIDNNIIQAIQNSRCTILVLTKNFLKSNWCIF
EFQQAHYQMIHNAHFKVIVILKEDIPAEEMDDDLRAYLRTHTYLEAKD-----WFWKKL
LYVMPTMNK

>Lan-TLR β 7

IFSAVPSLNTLSLANNSLGQT-
PAILKKMFKNLGQIWKLRLSGNGLVELPLGMFDDLQVM
TDLHLQVNQITTLPAIFNKCKKLAHVNVENNKIISISEGLVLAIGSLRQLDLSGNKWTC
DCDIRWFVHWLRNT--RVLLSKGKQEHCLNPSDLRQLKLVDFCPAWIE-
CDNLHLTAGLTSS--VVAITLTSYLIFIFRWDIKYAWVIRKTRRNGYVEI---
PDERYAAFVSYCSKNTKWIKDELLKNVEDDMGLRLCIYERDFICGNPIVDNIEEYMNQT
TRVVFVVTGDSLQSRLCDHEFKVAQNKLFEKRITSIIFILHEDVDKKTIPDNMQTMMRHT
TCLCWPE~~NGRQKT~~VFWKKIRLALLR---

> Lan-TLR δ 3

DFKD-LKLKELYLNGNKIRTLP----PNIF-KLRELTHFDGSYNELQSIPD--IDQLQNL
KYIRLKQNRLRRLPE--LGNVKSLEVICVSENCLQDIPAELAKLPKL-RLCLHSNRLGQ
---A-VFQTLKKAKFHVRFDN-RLVD--~~P-----KIKD-----KIEGCH-----~~
~~-----MTVPS-----~~--GKMPIYDVFIYSEDEKL
INDVFLPGLEEENELKVCVAFRDYIPGQYVSEEAISNMKKSRKIIALLTEHFDEQK--AV
EINQAVGADQGRQSCSVIPVVSIGNI---KIPAQFEKIVPLRA-----VDWDKL
LTAIKA---

> Lan-TLR δ 4

AIKKLTKLESLALNANEIRELN----IGIF-DLEHLIFLDASHNPIFAIPK--VQKLKKL
EYLRKMCRLQALPE--LGDLPRLLETICVSENMIKVPKAEKFQKMRQLRTICLHSNRLSV
E---LKLRQ-LK---DVRLNDQSLNC-----GCY-----

-----K-KPTEKDVLIYSGTDDR
VDDEILPILEEELRFSAVVDFRDFIVGKPVFTQYAANRKSCRKILFVLTADFCSGK--RM
HLNEALQAVADDKRSRIIPLIWN-D-PNFQLPEELRSYVQLHK---NE-----SRNEKL
WKALA----

> Lan-TLR δ 2

DFKG-SQLKALYLNANYIRTLP---QNIL-KLKELIIFDGSYNELQFLPD--IDQLQNL
KYIRLKQNQLRRLPE--LGNMKSIEVICVSENRLQHIPAEKLAKLPKL-RLCLHSNRLGQ
---A-VVQILKTAKFEVRFDN-RSVD---P-----KIPKI---KIEGCH-----

-----MTVLS-----RETPVFDVFILYSEEDEKL
ITDKFLPQLEDKAEKVCFASRDYIPGHFELKEALNNMKKSRKIIALLTEHFDEQK--AV
EINQAVDADLARQSCSVIPVWGNV---KMPAQFKKIVPLRR-----VDWDRL
LTAIKE---

> Lan-TLR β 1

LFKGTSKLKILFLSDNELGYVFNDPNGMLFKNLYKLENLTLEARNRISQLWPAQFQNLTS
VKNLSLSDNQVSFFTSQLFAPMTSLRALNLSQNMISLVNSSSIGGLGRLQTLDSLGSFP
ACTCDLVWFRRWINQT--NITLSQLDVYTCNTPAERRGMPLQFDPDAID-
CVNPIYLASAVGG-TLALLVVVFISLYRWRWFLKLRYRFRKRLAKGYERV-
EGDDIVSDAFVSFCADREWWAVELLARMDSAGRNL-
VCDLNFLPDKSELESVVEAIECTRKAIVVLSDAYIGDPRCQF
ELEQIYESSVERQRYEMILVLKG-
LPNGKIPKVLRRQLERGEFLEWTE-DANGQQLFWDQLGEKLEQRPH

> Lan-TLR β 10

DIRNLTRLKILHFCNTISLTRPD--NNFFTGMVSLESNLNLAGKELEGVDLTFLNPLINL
KVLNMTYTGLTKVTPGTFKPLQNLRTLDLSDNKLVEIDGDIKYIPKLATFLFNNNRFSC
DCHLVRVFGWLKHT--SIQI---EDQPCFSPSKLSAVKVGDYSPGFLE-CK-QVLLYALG
--TLVL--LIFTAVITFYRWDIRFWWQKVRPKKQGYIPI----DGEFDAFVSYSKDEDW
VVGTLVRNLEEEARFQLCLDNRLIPGNFIIDNLIQGMESKCCFLVITRNFVKSEWCNF
ELNTAISKMLDERKNVVILIYLEHIPDKDLPKNLRLKHKVTHLKWPNDERKIDIFWKKL
QLVLYHKKE

> Lan-TLR δ 5

NIKKLTKLESLVLNANEIRELN----IGIF-DLEHLIFLDASHNPISAIPK--VQKLKKL
EYLRKMCRLQALPE--LGDLPRLLETICVSENMIKVPKAEKFQKMGQLRTICLHSNRLSV
E---LKLRQ-LK---DVRLNDQSLNC-----GCY-----

-----K-KPMENDVLIYSGTDDTV
VDDEILPILEKELRFSAVVDFRDFIVGKPVFTQYADNRKSCRKILFVLTADFCSGK--RM
HLNEALLAVADDRRSRIIPLIWN-D-PNFQLPEELRIYAKLNR---KD-----YFWKKL
QKALA----

> Lan-TLR β 4

IFSNSPNLHDLMSHDNQLNDMNSTALETVFRNLTKLRKLYLQNSKLANLPKMFVNNG
MLSTLQLQSNYLSTWDPIVFLPLLSLKHLFMDHNNHILNETSFFIWTNLTEVNLAGNPF
SCTCENLWFRNWIQST--KAKVLQLHKYICYS---AKTPFLDWHPTKAQ-CTPAWVIASAI

GVSIMLFLALVIVVSHRYRWYIRYWCFTLRSRYKRLEPFEDNGAFVFDAFVSYNCHDR
HWVIQRLLPKLEYDAGFKLCLHDRDFIVGHDIVDNIVDALEVSRKAILVLSNNFAQSQW
CQLEMTMAQHKLFDENKDILVLILLEDIKPENLSNRLTLLLRKQTYIEWPREEEGQELFW
ERVKASLQIHSG

>Lan-TLR α 5

-YTSVP-LG-LTLANNGITELKNNSINQSFTGLFQLRTLNLNLSFNLLLEDLKEYSFSGMTML
ENLYLDHNLSTSIDPSTFASLSRLKILTLHSNRLEYLLPDVF---TSLVHLTLSHNRWPC
DCDVIYFKHWVVSYSKA--IIFDVGNINCTFKRIVQGKRVLYF---DEDYCNRTHVAALVS
VSILFFLTVIVTSLLLYRTEIKVWIFKFGCRPK-----PDDDEKIFDAFISYSSKDEHL
IVHELAPRLENHPSYKLCLHYRDFPVGASIAETIIDAVEASKRTILVLSQNFLDSEWCLY
EFQTAHHQALQDRTNRVIVILLEDIPLNMDNELRAYMKTCTYLRWDD-----WFWDKM
AYALPDVHK

>Lan-TLR β 2

LFSHTPNLHELNLNSNHLRHLNSTAMETMFRNLTLQRKMYIRNAGLSVLPPNMFVNKG
MLSELQLQSNLSLSTWDPFVFQPLISLKKLYMNGNRISVLNETSFHIWNNVTEMDLSGN
PFSCCTCGNLYFRNWMQTT--QVKLLEIHRYQCFEPKDLEKTLFLDWHPTIAQ-CT-
VWIIASAIGVSTMLFLALVIVVSHRYRWYLRWYWCFSLRARYKRLEPFEDNGTYVFDAFV
SYNCHDRSWVIQRLLPKLEYDAGFKLCLHDRDFIVGHDIVDNIVDGID-----
-----NLSNRLTLLLRKQTYIEWPSEEEGQELFWERV

KAALRRPPE

>Lan-TLR δ 6

NIKKLTKLESLVLNANEICELN---IGIF-DLEHLIFLDASHNPISIEIPK--VQKLKKL
EYLRKMCRLQALPE--LGDLPRLLETICVSENMISKVPAEKFQKMGQLRTICLHSNRLSV
E---LKLRQ-LK---DVRLLNDQSLNC-----GCY-----
-----K-KPMENDVLVIYSGTDDR
VRRRILPILEKKLGLSAVVDFRDFITIGKPVFTEYADKLKNCRKILFVLTADFCSGM--KL
HINEALQAVADDKRSRIIPLIWN-D-PNFQLPVELRSYAKLNR---KD-----YFWKNL
KKALA----

>Lan-TLR β 3

IFSNSPNLHDRSMHNNQLNDMNSTALETMFRNLTKLRKLYIHNSKLANLPPKMFANNG
MLSTLQLQSNYLSTWDPVVFQPLLSLKKLFMDHNNIRILNETSFFIWTNLTEINLAGNPFS
CTCENLWLRNWIQST--KVKLLQLHYYQCYAPEKLAKTQFLDWHPTKAQ-
CTPAWVIASAIGVPTLLFLALVIVVSHRYRWYIRYWCFTLRSRYKRLEPFENNGTFVFD
AFVSYNCHDRHWVIQRLLPKLEYDAGFKLCLHDRDFIVGHDIIDNIVDALDVSRTILVL
SNNFAQSQWCQLEMTMAQHKLFDENKDILVLILLEDIKPENLSNRLTLLLRKQTYIKWP
CEEEGQELFWERVKAALQKPYG

>Lion-TLR α 2

-LSAIPRMP-LHFENNRIEELS-----
GYLKFFVGLWMSRNDITAISSREVVLLSKAKGIYFQYNKISRLSKSVMSLWKGVSCLDL
TYNLLVCDCHSEWLRHWIIEASY--LV-NGWKLRCASDETARGRAITVE--SHEVCKT---
IIAIFGTVFILLIVAFALVVRYRQEIKIWLYKYDWHPK--D--DSDPSLIYDAFICYSSLDYDW
AVHTLWNKLENTPPYKLLHQRDFIPGQMTMDSIYEGVNSSKRMIMLVLTQNFVRSDW
CMAEFRTAHHEVLSKNTNYLIAILGEDLDIECVPEDFKVFLKNTTYLKKDE-----
NFWDRLFYALPQKGP

>Lion-TLR β 8

AFLGLEHIEELDLNDTDIGAV-REDLKYVFKPLKGLKRLNLADSLFKHYPVVIFQNQAEL

EELDWSSNAITAIGSVVFSTLRRRLRRDLRNNQLIYISGKVFTTLTNLQTLLMWENSFAC
NCKLRGFTYWLSRSKFKDAICESYSEPCRSPPKHVGHRLSFLPTWLD-
CENAIVALSTSLVLLFCLSVSLSVVAYRKRLSIRYWYVIRKLKRKGYIPL--
SRRHSYDVFIAYMPQEQRWVEHTFRPELEKDVAFRVATVDREFQVSGEVIDLVEGGF
RHSSHVIFIVTDEFLSWEKSDYMMTQAEVMYLEKGCEPILVLKERITMDQAPLSYKRLI
RHVVRLHWPQGGGYTEDFWKNLRLVLLGERT

>Lion-TLR β 4

EMEHLTKLEKLFLSCAGTTVLP-----STLATLKQLEISEWSFREDISIQIISSLKNI
EILSLQQSNIHHFPYQELMMLDNLVTLDSLNRNISALDCHKRIWKIPKLRKLNVASNNFEC
NCSMLPFSEWLRRPRPRIEIIISLFNVKCAFPSKYNNMALFNFDKD----CRSPIILPSTL
GP-IGLLIAIVFVTVRYRGYIRYGLMLIRARWRGYGSI-EGCKFKWDAFVSFNGADYDW
VYNQLKPKLEDEAGYRICLHHRDFTIGEFITDNIVKCIDRSRKTLLILSDDFAKSQWCQL
ELSAQHKLFYDDRDLILVKNLNDVSPENITGTMQVVMRTKTFITWSDALAEQDLFWK
QLILALKRPPG

>Lion-TLR β 7

AFTGLENLEQLELNDDIGAV-IEDLKYMRLPLKSLKRLDLDKSRFSHIPEDTFLNQVNL
EELHLADNEIRVIGHSAFRTLVRKYLDLRNNRIEFIHGEAMGHLSLLTFLFTENNFGC
HCDLAGFTKWLKEHTFHENRCEWRSECTVPLHLKDTPILDYQPGWTD-
CDNLILTSSIFSFLILSSSIAIHSYRRRLSIRYWYVLQKLRRRAEGGTQ-
NSLDEPFDVFISFELNDRYWVEETLLPNLEDDIRFRVCTVDRDLDPGRPEVMNIARGIR
NSRNVIFVVTRELIQTAWCEYEICLAETQSLQEGNCRLIIFLEKFTWEELPLCMKRLLSH
VNFLRWPETAHEQEDFWRRRLRLVILGETT

>Lion-TLR β 6

AFTGLENLEQLELNDDIGAV-IEDLKYMRLPLKSLKRLDLDKSRFSHIPEDTFLNQVNL
EELHLADNEIRVIGHSAFRTLVRKYLDLRNNRIEFIHGEAMGHLSLLTFLFTENNFGC
HCDLAGFTKWLKEHTFHENRCEWRSECTVPLHLKDTPILDYQPGWTD-
CDNLILTSSIFSFLILSSSIAIHSYRRRLSIRYWYVLQKLRRRAEGGTQ-
NSLDEPFDVFISFELNDRYWVEETLLPNLEDDIRFRVCTVDRDLDPGRPEVMNIARGIR
NSRNVIFVVTREFAQTSWCEYEISLAETQYLQEGNCRLVVLFLQKFTWEELPLCLKRLL
SHVNFLRWPATAHERNEFWQRLRLMLLGELT

>Lion-TLR α 1

-LNKLPSIKLIYLNQNNF-----SQISLDHSENLLTEILE--RSIKGHV
KVLDLSYSSIADIDNEFLEKLSHLTHLYLNGNKLTKLTEHTLSLQERLTEHLHYNNTWDC
SCSAMLMIKLLNRLIARKTLVRPDEIVCVTPERNRGRMVYMV---DDELCE-TKLAFYIE
QHFVLNMTLALLVLKFFKRETIQLLTL-----RAIVNDDD-TSMVFDAFVSYCEDDRVW
VEQELIPCLQQEPPYKICQHRLNFVPGFTVQQNEFNAIKHSRRTIIVMSNAYLGREHCQ
YEFKTAYNYWITEKEPRLVVVKYPDVEDRN-QETCHAYFRKFTYLEKDE-----NTFDRL
LAFMPRR--

>Lion-TLR β 5

AFVGLEKLEQLELNDDIGEI-TEDMKSVFHPLKGLKRLDLDKSRFSNIPDGMFMNQVN
LVELHLADNKLRAIDHSVFRTLLRLKQLDLRNNRLGFISGEVMARLPSTLQTTFFTGNNF
GCHCDLAEFTRWLKKNDFRENQCELYNEKCVVPPSMKDTSLDYQPTWLG-
CDNLILTSSAFSFFLILSTSVAIHAYRRRLSIRYWFVVQKMRRRAEYEAL-
DNSDIPFDVFVCFEKNDRFWVEKTLLPKLEDDIRFRVCTVDRDLDPGRPEVMNVARGI
RNSRNVIFVVTRELIQTAWCEYEICLAETQSLQEGNCRLIIFLEKFTWEELPLCMKRLLS
HVNFLRWPETAHEQEDFWRRRLRLVILGETT

>Llon-TLR β 2

ALHGIPNLEVLDIHGKNKFDDMTQD--
ANFLSMFRNLKRLSMGKMGLFFLEGWIFDNLTKLERLELSFNALGNITARWFKNLKYLK
KLEMRDCRIATVNVKSFAFLNQLNSLDLRDNPFS CDCSIQWFLNWSKHHGNQLYMFN
RKDYTCASPQWLHRMPLRKFTIP---SCYKTLTGLSV
AGVAIIVCFFVLAFFSRYRWHIKYKLFKLIWF-QYEEL-DGSKYEFDYHVHYDDQDVSW
VVNTLIPELEDKRGYRLYIKHRDSSLCQYIENIRYSIEHSYKTVLCLSNQFTQNPQTQF
LLSFIINKLVNEKKNILVCILLEEQGENLLETLEEVLTEKSYIRLPE DREAMEYFWSRV
DEALH-PRN

>Llon-TLR β 1

VFQNLKRLKILRLTNNDLGPQLKDTKGELFAGLENLEELYIEKNDIQELTGDVFRHLKGA
KMLELGENAISQWGTSTFSQNSTLKHNLNRNRIATINEPSLADLKLLTTLTANPFSC
DCGLVWFRRWINST--NVTPELELYTCNSPVRMAGIPLLKFDPSLT-CKDPYILGSSL
GG-VVILILVISLVIYRYRWFILRAYRIAKAVAGYEPI-PGDDLRFDAYISNHRDDRRF
VLDELLQNYDNNGGFRLCFNERDFVPGEYDLTNVTENMSQSQRGLIVLSLQYIQDHFQ
DFELHLLLKEANLRA-FGLVIELEEIPPNRIPNGLRRIFEEDHLSWSE DPNQQQL
FRERLTNKLQRRPQ

>Llon-TLR β 3

PIAGLNKLYKFGTTGADF----IN--RGLFINKTELQSLHIGSGRITMNHLDILRNVTSL
KSLRLEKMDIREIPH--ILHLKHLKSLTLVSNKIEMIPQHFIPKLDGLKTVDLAFNPFAC
NCSLMPFSNWLRNASRLATVTNLDVTLCFSPASYKNTPLNFEEKD----CRNPIILPSVL
IP-LVLLILVVTAVSVQYRGYIRYACMLVRARWRGYDALNEGRSFKYDTFVSYNREDA
AWVLRVLRPKLEDEVGYQICLHDRDFTVGEDIVDNIIMSIDESRKTILVLSDNFAKSQWC
QLEMSLAQHKLFEEDNRDVLILIRLGEVAEENMTRTMRMLMRTKTYITWPQ NEEGIDLF
WRNLIFALRRPPG

>Lrub-TLR β 2

FFKGLTNLQNLSSWTDGFEVDHSQGADIFDQANTLRSLNFLGGFITHISAGLINDLHNL
THLNFQSNSIGYLFSEWFENLTNLKVLNLNDNKITTVVGANGRFFRSLSQLTIGENAFD
CDCQLRFFSEWLRGLDDQIRVSDMDKAVCLTPIAYENKRIKDF---KSAVCS---GIAFTS
AAAALLFIILSVIVGCYCRHDIKYMMAIRRLHHR---TLR-GSKLIYDV----NDTDRQW
INTNIGNITDKD--FNITTNHPDIVPGEARSNPLSKQINQCYYTLLISNHFKDDLWPEV
HANLTVQEI---HNIRFVIVLIDNLRDLPRELKALAKQRPCFKWPT ETLRRRLFWRQL
ILALIKRRA

>Lrub-TLR α 1

-LNKLPSIKLVYLNNGNF-----SQINLDHSEKLLTEILD--KSIKGHV
KVLDSLHSNISDIDKQFLEKLPYLSHLYLNDNMLTKLTLNSLRIADRLTEIHLNNNTWHC
SCNMTQMTILLNHLIARKTLVRPDEILCATPERHRGRRVYML---DHEL CG-TDSMSFVV
LTSIIAITLATLILKFFKPKTLQVALP-----RAIEDDDD-TGMVFDAFVSYCEDDRVW
VEEELIPRLK--PSYKICEHKKHFVPGITVQENEYNAIKHSRRTIIVMSNAYLERGHCRY
EFTTAYTYWIIEMKPRLVVVKYPEVVDQNK-ETCHAYFRTFTYLAKDG-----NTFDRL
LDFMPEK--

>Lrub-TLR β 1

ELHGIPNLDVLDIHGKNKFDNMVQD--ANFLSMFPNLKTLQMGMGLFFLKDCIFDNLTKL
EKLELSFNALGNIPARWFKNLKHLKTLEMRDCRIATVNEKSFEFLNQVTHLDRNNPFS
CDCSMKWFLNWSKYHNNRLVNYNQDYTCASPPTLHGLPIKNFTIP---
SCYKTLTGLSAAGVAVLICFFSLALLGRYRWHIKYKLFKLIWY-QYEEV-

DGSKYEYDYHVHYDDEDVTWVLNTLIPELETKRRYRLYIKHRDSPLCEYIENIRYSIEH
SYKTVLCLSNKFTRNPGTQFLLSFIINKLVNEKKNILVCILLEEIEGENLLDTLEEVLT
ERNYIRLPE**DREAM**EYFWTLVDQALH-PRN

>Lrub-TLR α 3

-LKAIPHLTNFIHKDVQV-----ESSILILSHNNINSLNP--YEHLKHF
TQIDLSHNNLSFIDPSWFNLFKGVSQLHLNDNNLTQINPKDIETFRNLEELHLYNNPWD
CGCNKIWFKSWLSYLADAGVVMKPHLITCASHHWNKEKIVHNL---YVSFCQ-TFIAMVLI
--VLVTIFFIFILM-----YKLRLYIFSFNVHLR-----EEGENMESDAFISYNGADYDW
VKNKFNIRL---MKYKLC-NLRQAVDGRDFLENIETALMTSKRTIVVLTKHYLEDEECTR
EFKIAREYWVDIKRHLIVLKH-GVDIDEIDNEIRLFLKRYKLIEMDR-----NLWRNL
SYAMPNP--

>Lrub-TLR α 4

-LKAIPTLNGLIKPDNKI-----LLLTGNNITNLNA--VQYLDSE
TTIDLSHSNISAINETL--LGKVSKLFLNDNNLTHLLVQGLKIFTNLEELHLYNNPWNC
SCDQKWMKLWLLNYIDAGIILKPHMVTGSGQWNNEGKVIHTL---PEEFCFPTILYIFLV
---LLVCILVG---VKQFIYNNKYQLFEFNLHPC-----EHGENMNYDVFISYCENDRSK
VLKDLIQSRD--PPYKICDPDDSFPRGRPINESIADAVTKSKRTIIVLTKAYALKSYCCE
EFRTALDHWSMDERHRLIVI--KDIETNTIDDKLRQYLREYTYLELDV-----NLWKRL
SYILPQP--

>Lrub-TLR α 2

TNWPGHIQSFEKDVTEIHLNNPWDCSCNKLWMKKWLNKLIV--ILVKPDKIICGTP--
NKGQMFYMV---EDSFC--TDKKIIIL--VISIVLAVLILRH---VFHKLWPDPLPPNRI---
DDSNTSGMTFADFVSYPEPSEWVEQELIPNLQQNPPYKVCHHKQYFQPGMPSEWN
EFMAIHSRRIIIVMSNSYLEREHCRFEFSTAYSYWIHTKNPRIVIVKYPDLEIVN-
REACSAYFKRFTYLAKDE-----T-FKRLFQFMPL--

>Nge-TLR β 6

VFLGLGHITELNMTDIGKI-TEDLEFVFRPLKNLERLNLANSALKDFPRDLFLNQVNL
KILDLSYNRITIIGDVILSTLKKLRYLDLRRNEITEISGDALRKLTYLQIALIAKNNYAC
TCALRGFTKWLLEHKVTDDVCADYSAGCRSPQFVGKRLDKFQPSWID-
CDNAIVTLSTLFTIIFCLFTILSIYGYRKRLSIRYWYVIRKIKRKGYLPL-
PALHDLHDAYVAYADNDHAWVEGTLLPNLEDDVTFKICTNERDFQVSDEIIDIVEKGIK
SDRIIFLITNAYLQATKSDYVMAQAERLYLETGRPHIILIMKEKINFDRVPLSFKRLISHAA
RLHWPE**NQGQR**NDFWKNLRLLLLGERT

>Nge-TLR β 5

VFLGLGHITELNMTDIGKI-PDDLEVFRPLKNLKNLNLANSAINDFPRDLFLNQVNL
EFLDLSYNRITIIGDVVSTLKKLRYLDLRRNEITEISGDALRKLTYLQIALIGKNNYAC
TCALRGFTKWLLEHQVGGEVCADLSASCRSPQFVGKRLDRFQPSWID-
CDNTIVTLSTLFIII---VCLSIYGYRKRLSIRYWYVIRKIKRKGYLPL-
PALHDLHDAYVAYADNDHAWVEGTLLPNLEDDVTFKICTNERDFQVSDEIIDIVEKGIK
SDRIIFLITNAYLQETKSDYVMAQAERLYLETGRPHIILIIKEKINFDRVPLSFKRLISHAAR
LHWPE**NQGQR**NDFWKNLRLLLLGERT

>Nge-TLR α

NSLDYVWVVHTLWNKLEKRPAYRLLLHHRDFIPGGMIMDNIVEGVTKSKRMIMYVTDN

FIKSQWCMVEFRTAHHEALSKNMNYLIAIVDEELDIENVPEDFKVFLKNTTYLKRNE-----
HFWDKLYYALPQRGP

>Nge-TLR β 2

VFKNLKHLKKLKGKNELGGLIDDKKGELFAGLDHLEQLDLRMNSVKELTDGVLKPLKG
MKKLELGRNSISAWGPATFSQNRTLQHLNLSNNNIATISKSSMSTLTSLVTLTLTGNPF
SCDCGLVWFRRWIDHA--NVTFPGLKSYQCNSPPVREGLLLLKFDPNSTL-
CIDPYVLGGSIGG-AVILCLVMTLVMYRYRWFILRAYRFGQAMREYEPI-
PGDDLHFDAYISNRDSSREFVLGTLLPVFDNNGAYRLCFDERDFEPGEYVLTNITNNIA
QSQRGLIILTPEYIHDKFYELELHMLLEEANKRP-
FTIIVIELVEIPPNRVPNGLRRIFEARNQLTWSENPDEQALFKDRLTNKLERRPQ

>Nge-TLR β 4

-----DCGYLNISYFKFDDQLELANPVPFRLTPNIAEFMVSAARCFVQPQYK-----
-----LVSLLRAILRDEYITWHKKMFLLRVAVVLPPLLADGRRASDVEYVKKGVNV
NCTEKGWKDVPKNLPKKIASIRRAVGLTKLESOLDLTANKIRXIPQ--RCHKRLLAGLCA
FGVLLIVTALGLGLFSRYRWKIKYKIFKLRLWIFYQYEEL-
DGSKEYEHFLVHYDDSDFPWVRDMLIPELEHKRGYRLYIKDRDSRLCEYILENIQYSIE
NSYKTVLCISNQFTQNSWCQFLLRLLIQKLVNEKKNILVCILLEEIGGENLLDTLENVLTQ
KNYIRLPEDREAMAYFWTCVVEALH-PRN

>Nge-TLR β 1

VFKNLKHLKKLVGKNELGGLIEDKKGELFAGLDHLEQLDLRMNNIQELTDGVLRLPLKG
MKKLELGRNSISAWGPATFSQNRTLQHLNLSNNNVATISKSSMSTLTSLVTLTLTGNPF
LCDCGLVWFRRWIDHA--NVTFPGLKSYQCNSPPIREGLPLLKFDADSLP-
CIDPYILGGSIGG-AVILCLAMTLVMYRYRWFILRAYRFGQAVREYEPI-
PGDDLEFDAYISNHHSSEFVLGTLLPNFDNNGAFRLYFDERDFEPGTHDLTNMGKKI
SQSQRGLIILTPEYIQDKFHELELHLLLEEAKKRP-
FTIIVIELVEIPPTRVPKGLRRVFEARDQLTWSENADEQVLFKERLTNKLERRPQ

>Nge-TLR β 3

-----PEFEDFEVVSARKVFEVERWSFDKAVHICGWVLRF--
VYNLRHPNLRHSGPLSHEEMFLLRVAVVLPLLAHGRRASDVEYVKKGVNV
NCAEKGWKDVPKNLPKKISSIRRAVGLTKLESOLDLTANKI-----
-----SRYRWKIKYKIFKLRLWIFYQYEDL-DGSKEYEHFLVHYDDSDFPW
VRDMLIPELENKRGYRLYIKDRDSRLCEYILENIQYSIENSYKTVLCISNQFTQNSWCQF
LLRLLIQKLVNEKKNILVCILLEEIEGENLLDTLENVLTQKNYIRLPEDREAMAYFWTCV
VEALH-PRN

>Pau-TLR γ 14

LFRAVGKLEHLFASRNMFGFLFKPGDLVTTLSGLPNIKTIDLSINRLSYLPRGIFSECPNL
THLDLQRNGMKSVHL--FSSLPSLKYLDLSHNEIKGFSKEQTEDF---FLKLENNSFEC
SCDNIPFIEWIQSDGSNDTVLNKSKLICEFADG-RMTALVDVDLNKLYDCMKIIIAVATM
---AVVLLSTSLIMWRYQWYIKYWIYVLRRLRHR-----DDGTEPFASYISYADNDYDL
ANT-VCTKLEE-SNLPVFFRDRDTSLGTSIFDEYFRGISSRKCILCLTDSHLNCAERYF
ELQMSMVR---GKGFLIPVVVGNLALEKLPKPLRLLRDDVYFEWPKTDLEEDFWKSL
IAAVLTRKG

>Pau-TLR γ 6

-----NCRRSLLGF-----E-EH-QICIKRTWGIKCHRS---LDAVFSYCLH-----
-----HQHLILAAFTGKMVTCLSSEDRHVVHDLRLARLEENSDFGLCIHYRNL

PGRNIEENVIDAIESSRHSMLVVSRLNFKSEWCIFEMHMARNIFRRQQKDVLLLILLEDIVQDAPLTLVNLRSRTYLKWPADDDVGQEAFWERLKETLKREPE

>Pau-TLR γ 5

RYKAFPALKKLILAGNKLYIMLRDRKTKHFRYLNNLTHLDLAYNSINELYPETFNDLP
AIKEVLLRGNRLISVTSMNITGMPSLKNISFAKNNVRFVSENVLHLWHG-
KSVDIFSQNPFNCSCFLPFLRWFNNVSSTVTLNLSHDHYRCGDEKKT---
YVRKISLDALTKCTSAWMIISIAMSICVALCITLGSVLYRHRWTISFWINFAARKSHSYSP
H-MRQRFQYDAFVIYSSDRHWVHDVLVTRLEDESIGLCIHYRNFLPGRDIEENVL
NAIENSRHSMLVVSRLNFKSEWCIFEMHVARNVLRQQRKDVLLILLEDIPVQDAPLTL
VNMLRTRTYLKWPANDVGQEAFWEMLKETLTQEPE

>Pau-TLR γ 2

IFQNLTSLKTLDLSHNLLADKLKDEYGTIFQNMSTTVVKIDLSGNGIYKLHINTFHHLKKV
REVILRNRLASLPVHIEYLTALKLVDMTSNRVEYLSKASLDSLDK--TVLLADNPFC
TCEMLVLFRLHEYLEGLHIKDNHSHVYCSHNTSLR---LSNFQFDDLQKCT-LWIWLSLS
TILLTALIVGLGVAYRRRWTFIRFWLIAAR---QGYHRL-PMPEYKYDAFLCHSGENTWW
A-KRIQDHLEDDIGMKLCIYYRDFPVGVPIVECVNDAIVDSRYIILLITKSFIKSQWCYI
EFFMAKSKVFCENRSRLIVLMEKLTDDVLPRTLQNLMDKSDVYLEWTDNALGQEQFW
KRLRERLRTEPP

>Pau-TLR γ 13

QKAFGNLEHLMASRNRFGLFRSEDLVTTFSNLPRITIDLALNSLTSLPEGMFSSQCPL
LEYLNLERNGIKVNI--FATPLSKLLDLSHNEIKGFTKDQTDLL---VLQMNNSNFEC
SCGNIPFIEWIQSDASDGIVLNKNNLTCQYEDG-KITSLRAVQ--GLYQCIIITVSSL
---TSVALCTALIVWRYQWHVRYWYILRLKRR-----DEVSKCFDAFISYSDHNL
AAS-VFRKLEE-MGLQIFFRERDTVIGACVLDESFRGISSREIVLCLTESYLSNDQCYF
ELRMSMLR---GKGFVIPVVVGDALEKLSKPLRHLLREGVYFEWPTLESEE
KDFWKSMKKAVLTAKG

>Pau-TLR α 2

-LTETS---ISLAKNNLSNIGHNYIVNTFKDANCLKELRLDNNKLTQLKRYYFESLNNI
VELWLQNNDITSIDKDSFIHLTHLQRLFLHRNHLHTLPESKL---DSIVEVTLAQNNWSC
ECSFASFRHWLLDHID--IMADITNITCTATSTSRGEELVSF---DINFCNQRLISGLIA
SILTLVTITLSLSLLKYRDTIKVWLYRYGWRPS-----SADVRKKYDIYLSSTNTEA--
-CRELLAELEDLPRYVFFPQRDLIPGGVTTNDITEAIKESWRTIVVLSPAYLQDSWRMF
EFLRAHYCSVHTKTNRIIVLLSEPMKADDMEDIQAYLTSKSYIKLWE-----RLYDKI
RYRLPDGRK

>Pau-TLR α 1

-LSGIPE---VSLANNEITELNNNDIPNTFRELACVKVLRDLHNQIAHLAAYIFTGLRQL
RELDLQSNLISSIDNRTFHQIIHLEKLQLHDNRLVSLPEPNT---TSMKHITLSGNPWTC
GCDFAQFRRWLILHMD--IIPDILEVKCTLKQTSNNRKLIDLSLINIEYCYESIRNALIS
TIIIFICLIITTIVYTNRMEIKVWIFRYGRRPY-----KDDFSKPYDAYISYSDKQLNF
VIELLPKLEQSPHYKLHVRARDDLPGGVRANDIISTLENSCRTIAVLSENVADEWCLF
EFQRAHYNALHSMHSIIVVLLHDVKA-DVDKEIQLYIKTGSYMRRDD-----KLWQKI
RYALPDTRK

>Pau-TLR β 3

YFKGLKKLDEILLGRNDFSEFDRKSPIEIFSDLRSLRKLNLNYVNLKYLHDGFFAALKNL
TKLILDGNGFSGWSPRAFQYLVSLQHLIINCQVFTINSSMLQPVALTRFEGYGNPFA
CECKLRWFISWLEMMNSSTHV---KPYKCLTPKKWHGHSIFEYNTTDDD-

CSDWLLITATASGTVVFVTA AISGIAYYHRWSIRYWMFLARSRRKKEISLRRRREDFEYD
CFVTYSSLDTDFVQEMLSHLEGENDLRVCIHERNFQVGGDITDNIVQSIETSRKIVVVL
TENYVKSEWCKLELNMAHAKLLDERRQALIIMKEKVSVKLMTPIRLHLVRNQTYILWNG
SDILQTAFWGKLVQAIMKP--

>Pau-TLR β 2

YFANLTSLEHLSLNFVDLGIDIDSKPECLFEGLVKLVLDLSSTALNGLPERLFKDLTSL
ERLILRKNQLSGWNGAVLENLKNLRSLDVSMNQIRTINQSSLRPVSTLNHFQGFHNPIYI
CDCNLAWYVDWVGQM HATLKISHKISYKCSN---LKNKSLLQYRPTFFE-
CHRLAILCGSGFG-LFTVIFTVIGLLYKHRWYIRYWIFLLRSRRSTHLEETDGLLYTYDCFI
TYSGEDSNLVTQQLLPKLENEFGYKMCVHERDFKLGREISENIAESIEKSRKVLVLTQ
NFVQSEWCKFEVNLAHANALHNARQSLIILVEDVSFEHMTPIRLFLMRKKTFLWEWTND
AQQQTLFWERLKNAIQQYGG

>Pau-TLR γ 10

-----GKGLSTIPRNLPNATVLILRRNSITSIPANIF-----
--VLLQRNNIAVVD-ATFKKLPIKLM DLGHNYIKKFSFEQVEDL----TLRLTG NLFEC
SCKTVDFITWIQAPGTSNV IENKKDLKCASPDG-THQRVVEVSLQQLGYCVQLIISAVV
S---AMGICVAVVIWRHKWTIKYWMYLL---KRRR--GIDRIRPRHAYISATDDDLEK
ANMIFQQ-IEDKLENSVFWKHRDTPGRSTFDEIFRGVEESRKVILCITQSYSTCTQ-NF
EEMSF---ARGKGFIIPVLIGDVPLERLPRPLRRLRDDIYLEWPNNVAEMP NFVWSL
HEAVMTQKG

>Pau-TLR γ 7

LFSHFPSIKVIELQDNLLGLEMPDQFADV FENVRTLLEIDLSSNYLNKLAAECLAGNAKL
TRIH LANNKLDKLG-LRLENFPMLEFLNLSKNAILFLSSNETSALDSI-ILDLSGNILLC
SCATLNFLDWLRT---SVIFSGRNTYTCSY-KG-KPRNLEDVDLENFRECMSVTVLTSSL
VA--GTILVMLATVGWYRRGHIRYVIY-----KFRQ--HPNDDLRYDAYLAYESRD CDV
AVEMAAI-LEGDHGLDIYIHDRNAPVPGDHYSIFDGLGRSKKVILLITDHALRSESWSF
ETDLSL---SIKGKGKILCVVKGHLSIGRLNRKLRYLMADDTYLVWPE DNDVEKTFWRHV
AVAITSKNG

>Pau-TLR γ 15

FLAYLPSIEVIELQDNLLGLEMPHQFARVFENVTTLTEIDLTRNYLHNLTAECLTGNENL
AKIHLANNKLDKIGL--VEKFPMLEFLNLSKNAILFLSSSETSALDSIAIVDLSGNIMLC
SCATLNFLWLRTA--SVTFPKSSYTCTYK GK--TRNLEEFDYEDFRECF SITVLTSSL
VA--GTVLVLSVVIGWYRRWHIRYIIY-----KFRQPPEPNDGHR YDAYLAYESRDHDK
ALE-MTAVLERDHGLKIYIHDRNAPLPGDH HDSIFDGVGRSKKVILLITDHALRSQWWSF
ETDLS---LSIKGKSKILCVVKGHLSIGRLNRKLRYLMADDTYLLWPD NENAANTFWRN V
ALAITSKNG

>Pau-TLR α 6

-LRSFPKLP-LHLEDNFLEHVE-----EYLKRV
TKLFASRNNISDVSEKVLKKMEKITVLYLDSNKLTTLP EYIKKMTRRLTHVNIKHNFEC
DCNTLWIKYWLRENIA--KVIETQNILCSSG--TKGKSIIYVP--DNKVCEL---VAAIV
LAVTLTIFLVAVVSVYKHRQEVKVL LYKLQWHPK--E-LDEDETKIYDAFISYCQKD YRF
VCNDLRSSLEQNPPYKLCIHERDFMAGAPIYENIMNSVKLSKRMIMILSNDFLLSEWCM
LEFRTAHQKVLKEHSRYLIIIALGDIVSRNTDEDLQAYLKTNTYLTVD D-----LFLERL
RYALPRPTS

>Pau-TLR α 4

-LTSLPKLPRTNFSNNHLTEVT-----
AYFPNIIDLDISGNNIRNVSDAALIQLRNIKVLNVAKNKLTTMPRRLLESSANSTAISLSGN
SWNCTCSEVWFIKWVLSKSS--VVTDSHGLFCSHP--MRGKRFSDDV--
VTERCDADYTAVAVSVGVSSTVLLIVIVITVFSEDIKVILFKWNIDIR--N-
VDNCSDRNFDADFVSYSLLDGDWVRNHLLPLENDPPFKTCFHERDFIPGLPITENIIQAI
QKSKRTVLVVSKNFIDSEWCQFEFLTAHKTFLETKENKLIVIVVESVNLRS LNPKLRAYF
NTKTFLKVTD-----LFKEKLYYAMPRLME

>Pau-TLR α 3

-LTSLPAAP-FHLSKNSINKIE-----DYLTRV
FNMDLSYNNISVIDEDAFQNMKQVQSVDLRGNGLTTLPLLLKQGTRNLQKIFLGENKYN
CSCENAWMKNWLKRNSN--ISAGLEDIVCDSP---KKFRAIKVI--EADNCREKFTQE VVV
SICLCLLVLVLSIIIIYRDLFRVLMYHFNVRH----EEETDATYDAFIAYSSLDGEW
VRNKLMPLENRKPFKVCIHREFLPGLSVADNVHRCMDLSRRNVMVVSQNFINSEW
CRFEFQAAHAATMRNKS KRLLIMLEDIRQDNLGDDIKSYLKTNTYLEAEE-----
WFKPKLFYFMPSVKS

>Pau-TLR γ 4

RWQATPSLKKLLLTGNRLYVMLRDKKTKHFKYLKNLEHLDLADNNLAEIYPDMFRELPV
IKEIVLRRNRLFSATNLDVSGMPLLKKVNFVNNKIRFVSEGALKLWHG-
KSIDFSGNPFNC SCHFLPFLEWFNNASPTVTLLNSDQYLCRS-----
GAYIKNVDIKRLNQCKKTWRVISITVAIGVALSITFGGVLYRYRWTIKFWIVFAARRSR---
EVDRCRKFRFDADFVIYSSEDRYWVHDVLR TKLEDGND FGLCIHYRNFLPGPPIEENIIG
AIENSRHCILIVSRNFLQSEWCIFEMHMARNVFRQQQKDV LILILLEDVPVQDAPLTLVN
LLRTRTYLKWPADDDVGQEA F WETLKDTLRQEPE

>Pau-TLR α 5

-LTNLPKLP-LQLSDNRIEELK-----DYFHRL
LELDLSNNGLR TMSDIALVKLTNITTLKLNGNRLRTLPRSTETWSQSLRQLALHDNLWE
CTCDTMWFRDWLIQLGS--VVQEPDSIMCFKD--E EWKPIKKA-----ILC--DYIPLAIT
VSSVSAVLM LA AVLMYIYRMEMKLLIFRLNWHPR-----TEILNKKYDAFISYSEEDSMW
VRRLIQLLEVD D PPYITCFHHRDFIPGVSTAANIEMAVHDSQCTIIVLSPA FVQSEWCMF
EFQVAHAACLMDNEIGKVIIKEDIEVKKLQPD LKSYLRTMTYVKASD-----WFSEKL
YYALPQKDK

>Pau-TLR γ 1

ILQNMTSLRTLILSDNSLADKLADEYGS L FQNMTSVVEIDLSYNGIYVLHSNTFYHLKNV
RKIILRNNRLASLPSEHTENLTVLSFVDMASNKIQYLSKAFLDSLNR--TVLLSGNPFNC
SCGMLVFLHWLADYDDEDKIQDYRKLHCHRKPR LH---LSDFRFADLEECT-LWIWLSII
TMCTLAVLTVCFGV TYHKRWVIRFWLVATR---KKYNRL-PTTQYTYDAFLCHSSEDVRC
V-ERM RERLEEGSR LKLC LYRDFPLGVPIIECVNEAIADSR YILLITKNFIKSQWCIY
EFFMAKTKVFCENLSRLIIVVLEELTNDVLPRTLQSVMRD NVYLEWTD DVQGQEHFWQ
RLEECLGTEPP

>Pau-TLR γ 12

LFRAIGKLEHLFASRNRI GL LTSQDLSATFSSLPNIRTIDLSLNQLSSIPESMFSLCPHL
ERLNVQRNGMKS VN L--FANLQSLKFLDFSHNEISGFTKEQTIDL----ALQMNNNSFEC
SCNNVPFIEWIQHESSNDTVLYKENLTCLYKDG-REEAVISVDLGGLYECIKIIIIISTL
---ISVVLCTALVAWR FQWHIRYWVYILRMKRR-----DDV-----SKKXYDLALS-
VLH KLEE-MGLLAFFRDRD TDLGVCVLDEC FRGI ESSRSIVCLTENYLN SGQRYF
ELRMSMLR---GKGFVIPVVVG DVALEKLSKPLRHLLRDGVYFEWPTLESEEKDFWKSM

LKAVLTPKG

>Pau-TLRy11

MFRAIGKLEHLFASRNRIGLVTSQDLTATFSSLPNIRTIDLSLNQLSFIPEGMFSLCPHL
ERLNVQRNGMKSVDNL--FANLQSLKFLDFSHNEISGFTKEQTIDL----ALQMNNNSFEC
SCNNVPFIEWIQLESSNDTVLNKENITCLYKDG-REEAVISVDLGGLYECIKIIIVSTL
----ISVVLCSALIAWRFQWHIRYWVYILRMKRR-----DDVSKNFDAFISYADVDYDL
ALS-VLHKLEE-MGLLAFFRDRNTDLGACVLDECFRGIESSRKSIVCLTESYLDSDQRYF
ELRMSMLR----GKGFVIPVVVGDALEKLSKPLRHLLSDGVYFEWPT**LESEEK**DFWKS
MLKAVLTPKG

>Pau-TLRy9

FFRDFPSLQTLQLASNRFGFLTESYLEAIFSNLPSIRKIDLADNLLTTVPKAMFSNCTSL
VTNLNRYNPLVTFFEF--FSLFPQISYVDVGDCKIQEFKAYQVKFFSSL-KVNVSGLDLDC
NCENKEFYEMIQKNKSLADLEGKQELACTRDGV--RVKLAHLGLSGLESCMYIFVILCVT
---VVSAILISVVIVLYCRWNIKYLVLHTKRKLR-----NQANALYYDVYLSFSEDDRDT
AFQ-LFTGLNN--GLEVFYWPRNSRPGTCQFEEIFEQMGGLCKKIVILITASTENSAMQNF
EIRMSLPR----GKGFVPIVKEDYVIGKLP GPIKNLLRQDLFFLWPE**QEKDQEM**FYRNV
KRAARSKDG

>Pau-TLRy8

LFRAVPSLQTLALLAVNRIGLFTETELVAIFSNLQNIKEIDLTDNMLTTIPKVMFSNCTSL
VILNLQKNPLLTFFEL--FSLFPGFTFIDLSNCEIQEFKYFQTAFSSFRVNVSGLSLSC
NCNNKEFYDMIRNNKSLVDLEGREELTCTHGTE--RIKLVDLDLSSLESCWYTFILVCVT
---LTSVVIIGVVVLYCRWNIKYLVLTKNKLRL-----NNANIFEYDLYISFSEDDRDI
AFQ-LFTGLHNK-GLDVFFWPRNSRPGSCVFDEIFEQLDGSKKVLVLVTSSTEN
SVTQNF EIRMSMAR----GKGFII PVVTEDFVVCNLPQG IKHLLRHDL YFLWPE**EDEEKE**
EFWKNLERAITTKRG

>Pau-TLRy3

SYLPCPNLRKLILAGNRLYVMLRDKGTHFANLPNLEYLDLANNNLTELYPEMFSELP
QTIVLRGNRLF AVANMDISDMPSLKIIIFARNRIQFVSEGAQLLWHG-KKLDLSQNPFC
SCQSLSFLRWFKNVSTVTFLSPHGYLCRDKFHQKSEYVGEVDLKRLEECRKDWIVISI
TVSTGVALLITLIGMIYRHRWTIKFWIVFAARRG-PINSLDRQRRFHYDAFLIYSSDRHW
VHDLVREKLEEDNEFGLCIHYRNFLPGQPIEENIMYAIENSRLVLSRNFLKSEWCIF
EMHMARNIFRQQRDILILILLEDIPVQDSPLTLINMLRTRTYLKWPA**DDVGQE**AFWEML
KQTLKKEPG

>Pau-TLRβ1

-----MFEGLVKLKVLDSLTYTNLKG LPERLFKDLTGL
ERLILRQNQLSGWNDVVLRLNLKNLRS LDVSMNQIRTINQSSLRPVSTLNHFQAFSNPYI
CDCNLAWYVDWVRQMHGTLKISYKIPYNCSN---LKHKSLLQYRPTFFE-CHRLVILCG
SGFG-LFVVILAVIGLLYKHRWYIRYWIFLLRSRRSNHLEETDRLLYTYDCFITYSGD
DSDLVTQQLLPKLENEFGYKMC IHERDFKLGREISENIAESI-----VVL TQNFKSE
WCKFEVNLAHANTLHNARQSLIIILVEDVSFEHMTPIRLRFLMRKKT FLEWSN**DTQGQ**RV
FWERLKDAIQQRGQ

>Phe-TLRα

-LNGIPE---VSMANNNLAVLNNNTIPDAFMNVDCILVLNLSQNKLTYLDASMFNGLKDL
RELHLQENNISTIMKDTFQRLQKLEILHLHKNSLTVLHEPSI---GSLKKLTLANNEWVC
DCEFAPFRQWLIEHMN--IIQDLINITCVIKEKSKNRKLIDLSLTNIEFCYESLRNALIS
VIIIFISIGVTSTLVYKYRNSIKVWLF RYGRPY-----QDDFSKTYDAYVSYS DKQLNF

VLHELLPKLERAPQYKLYLRDRDLIPGGVQANDIIEAIEDSCRTLVLSENYYTTDEWCLF
EFQRAHYNALHNKNHNVVVIKLHDIQTEDIDKEIQLYIKTGSFFKRED-----KLWEKV
RYALPDMRE

>Phe-TLR β

-----RFFKDLSQL
LTLELGQNKLGWDPEIFKNTTKLQYFSVYSNNIGTLNKSSMHLLPSLKRFDAYSNPYV
CNCDLIWYCDWLRNMQRKVTIRSDRPYNCSN---LKKRTLLSYNPTFFD-CHQLKIILPSG
FG—FVFVFIAGLAYRYRWYMRYWLFLLRSRRNKHLEEHERLCYEYDCFVTYSG
EDSEWVIQEMPLPKLEQEFRLRACIHERDFELGHDIYENIAESIENSARKVIVILTKNFVKSE
WCKFELNLAHANTLHNACQKLIIVMKECVPMNIMTPLLRYLVKRTFLEWSNDEQGRT
LFWNRLNIALTTAAG

>Ese-TLR α

----L--LNNLDLSSNRISYIP---PRLFYKLEYLATLNLRSNQLTELDI--YFYLPRI
QTIDLTfNRISRFTNEVINNLPSLKQADLRNNLITSFDDYVLRLYRSL-TMRLDNNPLNC
DCAKI-FTQLLRNSVDTTNI---FRALCQT---FNGKSIFNFSLN---ACSSLFQIAGYV
IGLLLLLLMILYCLILAICFNCIPFFYVCPCKS-GVK-----RDKEYDLFISYNRANEKW
VKEQLVPFIKENENYILHYNEN-KLDEVFGPYVKDIMSKSSCILFILSDAFLKEWNNK
DLRQHLRYLITKEKTRFICVQMHDICDEEVEEYFTDKLQIPRFVSLNDE----LFWKKL
AYYLPKPKS

>Pcau-TLR α 2

-QSEIPNVS-LRLDGNNVTTIHNSVIPGSFRDLNNLIALYLDGNEIEEIGDDQFNGLADI
KELHLENNMLVNISTTWIDVTPMFSMLALHGNAFSKAPEAIY---IRSSEYTLRQNPWIC
DCTDEFFLDWLRNSVD--NISDIGEMMCTIPRAITVIEILDF---EMVYCTAGFIAGFVM
LGVFLTTVLCLIALTHHYQHEIKLWLFKYGVRVR---DPESDKAKKYDAFISYHNSDEDI
ILREFVPQLEHETPYKLCVHNRDFLAGEFIAENIVYAVENSRRRTIVLLTASFIDSEWCRY
EFQAAHNQAISEKVNRIILVVFEDIPKGKLDKNLEAYIKTNTYLRYYDD-----MFWSKL
RYALPAVRA

>Pcau-TLR α 1

CLEKIPGLTKLSIAHTTIRSVV--YMRDFFKYHPNLTYLDMTGTRFSSLTTEAISSLDHL
RVLRLRDTGISSIPD--FARL-QLKELDLSYNNLMRIPVALL---DSLKHLDLRENPLIC
ECSTIDFMHAAQRFGLVGYLDDPDALSCFTSDQ--SIALRKVHIQ---DCG-VINIFAIV
MASLIL--LAIVVVTYRRRRYIAYYFHVTAVRLKRYEPA---GEYEYDAFVGYST-ELNW
IINFLLPKMENENPYRLFLEERDMPAYGMQVSNIVAFMDKSHTVILVITQTFLTVDVYCNF
MLKTAAM-----RNNVHIFLETIATEEFPAELRVLQLHSTCLHWSENRNSQERFWKAI
EYAMPQDPS

>Pcau-TLR α 3

-ITEFADWAEIFLDGNFLDDFN-----GLNLEKPL
TILSLSQNNIDEGGLSLKEILTHVTYLGLTENNLTQLPDKDFMLAASVQVISLNGNPFR
DCETSYLKRWFSSNAQ--RINKPNETFCTSGPLYRRTAIADLP--DDVTCDSTFPYVYLS
LLVALLAGVA-----GVGVYVC-----RGDDGDESTG-KEYDAFIAFSSQDFEF
VARTLVPGLEGRPPYRLCVHNRDFHAGKLIMDSIIQAEVSRSTVLLLSNHFIQSNWCKL
EFQASFIEVLANPRYKLIVIVCEPIEMDSLEPDLRFYIKHTHTYLEIKD-----KFWCKL
CAALPRPLA

>Hsp-TLR α 3

-LTKVPYVP-LFMDGNDVNRLPNSVINGSFVGVSNLRLRLDGNLLQNLNGFEFLPLGNL
HELYLHDNLLFEVAKATFAALGHLKVLTLHNNRLHRIPSDLF---QHLTELTLSVNSWIC

DCENSTVQVWAESISD--IISDINLTYCLLGIT--GENLSEFNDS---LCMENFLYLILI
LVLFIIICVILAFLLYRFCYEFKVCLYRYGWRIN-----MEDYHKKYDAFVSYSTRDEL
VLEEFVHRLE--PQFKVALQYREF-PSSSVADGIMDGAHKSRRFVIFITENFLHYVWKEP
ESKSAHQQLWDTRNQVIIVMLTERPDDKFEPDLRLYMKSKTCLRWND-----MFWDKL
YYTMPDIKR

>Hsp-TLR α 4

-VSDLKEFEFMFFDGNFLEAFF-----NLNLTKPL
LVLSLMDNNLRADSLSLKDILLHVTHLSLSGNNMTELPDKKFMQKRDEVENFIITGNPFR
CDCHTLYLKNWFQQNSD--VIVHANATFCKFGPYQQTPIMDLP—DEVTCGATLPDV
QVNLATLLFAAPVT-----GVVFLYNYRR—QSVKENE GVGKEYDAFIAFNSNDFDL
VAYTLVPVLESNPPYRLCVHNRDFPAGKLIMDSIINAVEQSRATILVLSNNFIKSHWCKL
EFQASFIEVLGNPKYKLVVILCEDIPIDSLDADLRYLKTHTYLELND-----DFWPKL
IAALPPPMG

>Hsp-TLR α 1

GLFNIPNLKVVDLCSNNLTRVP----QKLFHDVPTLESILLVNNSISFIHREDFKNLPAL
QLVNMSLNVIEGISPDGFIGVDNLNTLDFEANSLSVFAANNIGFLSKLREVDLQGNVMK
CGCFEISFSELLSSQ--RLTF---TDIHCVTPELLE--QV--F-----HCPKSWLLYVCI
VG--VLFLFVILIIIVRFCSRVIACHRYGIRIR-----QQPKGKTYDAYICYSRSEHW
VSSTLVPVLESRPPYKLCVHNRDRPAGDSSSNMVMNAIKQSKVTVLVLSDDFMTSDW
CMVEFSPLHQSMSSY-TNNIPIVLENIESRNVNTEMKRILRNKQALHVDD-----YFWDKL
YYMLPDAEA

>Hsp-TLR α 2

--TAVPEIS-LHLDSDNDLSTIGNSEIAGSFRDLSKLTLLDLEGNSLTDVGSQVFTGLQSL
QRLHLNRNDISHVDERAFEGLSRLSALFLDGNALALPAAALY---ANASQFTLSGNPWIC
DCSMEFFFSWLKVNVN--RISDIGSTLCTV-----EMPIMDF---ETAYCSSAFIAGLAV
LAILFLTTVVGMVVYRYQYEIRVWVFRYGIRRR---YPESDKNKLYDAFLSYHNGDEEM
ILKEFIPRLEYERKFLLCIHARDFVPGEFIAENITQAAENSRRRTIVLLTKRYLESEWCY
EFQAGHNQAICDQVNRILVFGDIPKDKLDSNLQAYINTNTYIRYDD-----RFWDKL
LYAMPDPPI

>Rva-TLR α

-LTTIPMLP-VYLDGNRLPSLPNSRINHTFNGLSQLRNLHLHHNQITILRGGEFSQLVSL
EVLDSLWNDIHSIHEHTFLTTLKLRVLNLAGNQDLSLITLPL---PTVSQLFLANNVWEC
WCNEERLTEWLVRFTA--RIQDIHHMH CYDRSQ--AL-LRDMPRE---RCSASFVVVGIV
LGCVCFLVIVLVAFLRYRYEIQVRLYRFLRLS-----EEDYEKICDAFISYSDLDEHL
VLGELAPRLEFSPKYKLFHLYRDHPLGMRTPEIIQGVQLSKRTILVLSENYLKREWAKL
DFKTAHQVFKDKKNKIIIVLLGDIQMKDLVDLRIYLYKQNPCLQWGE-----LFWKKL
YYALPDPEP

>Hex-TLR α

-LTSIPMLP-VYLDGNVLPSPNSRINHTFNGLSHLKVHLHHNQITVLRGHEFDQLVNL
EVLDSLWNDIHSIHPATFSQLTKLRVLNIAGNQDLSLVALPL---PSLTQLFLANNLWEC
WCNDDRDLTDWLVRHSG--KILDIHHLHCYDRSQ--AL-LRDMPRE---RCSASFIMVGVI
LGCVCFVILAIALILRYRYEIQVRFYRFRMRLS---SQDEDEYKMFDAFISYSDQDEHL
VLGELAPRLEYVPKYKLFHLSRDYPLGTRTPDSVIQGVQMSKRTILFLSENYLKREWSK
LDFKTAHQVFKDKRNKIIIVLLGDIQMKDLVDLRIYLYKQNPCLHWGE-----LFWKKL
YYALPDPEP

>Pcap-TLR β

MFSNF-SLKELYLGDNKLGPAFEGNLGHLFDNLTVLSLLDLSFNDIDIFSIDQFSSLSAL
KVLNLNHNKVSIFPPDVFGLKSLERLNKANKITVLEAGSFQLMKKLKEIDFSENPLQC
QCDVMDFFHWINFT--NLTITHWNDYFC--PQR--NTSLKEFLIMEAEELHNIVIICAI
TISSLVIFVLLCVLAFRL-YRFIYVRASVEVNTQKSTTIKKNKVKCYDAFICYTSKDADW
IPALFKEHLGEARKLRLYFHDNHKHIERTTSWDVMNKVDSSYKVVFIKTNFVQTDWF
QWESMMLMF-----QDCAIIVGLEDIPTMNMSTLQWLVRTKPFITWPVLDTDIGLFWDDL
AIYIKER--

>Lloa-TLR α

-LEPSPDIP-IYLEHMEIPVVRHSEIPLAFNTLPSLQLLDLSGNYLMRLTGDELYRTNKI
TTLLLHNNHLMMSLGDRLNEVMPQLKTITLHNNKLQDLPLSIEQ--KQITDITLGSNLFRC
DCSPRFIQYWFSSNLD--MIHDVSDIFCVENISNFGDDIFKIP--MTQIATASFLIITAL
LAVALITIGLICLAVLFLRKTKSVIVQRYKVPPF--GTHTTGSSPLFDAFISYSKKDEKL
IIDTLRYQLES-EEYILCLLHRDSPNYSTISDELINQMECAQSLILVLTQHFLNNEWKTL
QIKTSHQIFAKNRHKKLIALLGDGIEPNQLDAELGQILRKNTCIRMND-----LFWNLL
HSALPVRIA

>Ovo-TLR α

-LKPSPDIP-IYLENMEIPIVRYSEVPLAFNTLPSLQLLDLSGNYLMRLTGDELYRTNKI
TTMLHNNHLMMSLGDRLNEVMPQLKTITLHNNKLQDLPLSIEQ--KQITNITLGSNLFRC
DCSPRFIQFWFSRNLD--VIHDMSDIFCVENISNFGEDIFKIP--MAQIATASFLIITVL
FAVALITTGLILLAMLFLRKTKSVIVQRYKVPPF--GTHTTGSSPLFDAFISYSKKDEKL
IIDTLRYQLES-EEYILCLLHRDGPNTISDELINQMECAQSLILVLTQHFLDNEWKTL
QIKTSHQIFAKNRHKKLIALLGDGIEPNQLDAELGQILRKNTCIRMND-----LFWNLL
HSALPVRIA

>Ael-TLR α 1

-LEH-----LLTNTSIDRVP-----LAQLSLGRNAITEIGVETFAN
ASRLSFINLSHNGARSFRKNVTDSLESSTEIK-ADSSLECECLG--EREWLGSSEAE----
TSVTNLHCLAPQINGGEKRHRLQV-NQEIADAWTIVLIAIFSILLVFIIVAIIVILRFKVE
IQAFVFNFGVRIK---LPNDVGDKIYDAFLIFSADDEDWVNTLLQKLETAPPYR
ICIHRYDFVPGNPPIQNVMDSVANSKSTLAVISDGFINSQWCKYEFVTAFFQQTILKNAAHK
LCAILTQKIEPQLLKSNIQFYLKTNTYLEKSD-----MFWEKLFSLPDP--

>Ael-TLR α 2

-LEH-----LLTNTSIDRVP-----LAQLSLGRNAITEIGVETF
ANASRLSFINLSHNGARSFRKNVTDSLESSTEIK-ADSSLECECLG--ERE WLGSSEAE----
TSVTNLHCLAPQINGGEKRHRLQV-NQEIADAWTIVLIAIFSILLVFIIVAIIVILRFKVEIQ
AFVFNFGVRIK---LPNDVGDKIYDAFLIFSADDEDWVNTLLQKLETAPPYRICIH
YRDFVPGNPPIQNVMDSVANSKSTLAVISDGFINSQWCKYEFVTAFFQQTILKNAAHKLCA
ILTQKIEPQLLKSNIQF-----

>Isc-TLR3

-LTQLPTLP-LDLSGNKLESLSN-----TA---GLAKKAPFL
RLLNLSDNLLSSIDPSEIPQ--GTDELFLRGNRLSRFPIDLVSKF-NMSILELAGNPWSC
DCEDYAFRQWAEAYTD--VEDAEETCAKGPN--LKRFDL---GQKLCPS--LSYGLP
LLVLLIISLAASTAYLRHKRAIKVWLYRGVCSS-CIKEDDLDEDKIFDVFLSFSSKDSMW
AYEQLIPGVEA-
HGFSVCTYDRNFKGGFLLQDIIHEAVSCSRRTLLLLTKNFVESEWCRW
EFRVAHHQALEDKINRLILVLVDELAPGLVDEELQLYMQATNYLRWGE-----HFWDKL
IYSLPKKDA

>Isc-TLR2

-FTQLV-LRKLMLRNNRI-----YIDGTFRNNGNLKYLDLAENRIEWLGKRAFSGLVNL
DLLSVSDNFLHLNGSV-SHMPQLRILNFSHNA-----IQ--TLYGNDFYN
DPELT-FYAYG-NNLS--TI---GAFQ-TSPKL---RM--F-----ACA-----
-----LTASTAYLKYKREIKVWLYRGLCSR-CIKEDDLDDDKLFDVFLSFSSKDSNW
AYNELIPKIES-HGFSICTYDRNFKGGYLVQDIIHEAVACSRRIILLTTFVESEWCRW
EFRVAHHRALEDNTNRLIVVLVDEVTSDAVDEELRRYMQVTNFLRWGE-----HFWDKL
LYSLPKKDS

>Isc-TLR1

-LTDLPTSP-LYLQSNSSISLV-----APRWENL
TEVYLDENLLSNLDLTT---MRRLQILSLTNNRLRSLTPQLMGMLSSL-SLSLSGNPWIC
DCSTFSFKTWLRGHVY--MVKDYPDIACGD----GVRINEI---PDSYCPVKQLAAVTA
ICVLAVLLVVVSVLYYRNRQTIIAYVYHFHNVFE----DLDEDKTYDAFVSYSADRDI
AMG-LLNSLESEEMFKLCIHERDWLPGYNISWNIVNSVQNSRRTILVVSDFLE
SVWFQVEFHTAYYQMLEDRVDRLIVIRGELPAETLDKELKFLTTKTYLVWGE-----
WFWEKLYAMPHRRQ

>Isc-TLR5

-YGAIPRVP-LYLDGNDMSHLSNSTINRTFNGLVGLQVLHLDHNKVTALHGFENLTNL
RELHLSHNRLATVSNRTFVSLKSLTILYLDNNYIVEFQVWNF---PSLSDLRLGHNPWSC
GCRFMEFQDWVHMFGA--PLKDSVAIRCRQNQT--GP-LLEF---NATACT-NYMPLLIV
LPSVVVLLLFVLVLVLYRKQMKVWVHKYGVRLR---QYAPEVDRLFDAFVSICK
KDEAFVAQILAPELECHPPFRLCLRYRDLMSGYVAEAITEAVECSHRTLVLVSEQFLK
SEWCRFELKTAHHELRCNSRHRLVVVLLDDVAVKEMDADARQCLRSVLLRWGD-----
-RFWEKLYALPDAAR

>Isc-TLR4

-HIAVPQLP-LYLDGNDIPALSSSTVNRTFSGRLTRLVRLERNRLATLHGYEFDGLGEL
KELYLSYNHLTHVNNATFVPLKSLEVLHLDHNYILEMAIWNL---PRLNDVRLADNPWSC
DCHFAQFTDFLQNKGA-ELVRDLFSIQCVHNET--ALPLWEL---NTTSCT-DLVPLLVV
LAALFLLLCIVVLAFVYRRHLSVWFYKYGVRRM-----PAEEELFDAFVSYSKKDEAF
VAQILAPELECQPPYRLCLHYRDLMAGGYLTDAITEAVESSRRTIVILSEHFLKSEWCY
EFKSAHHEVLHSCTHRLVVIFLGRVSYKELDPDIRLWLKSSTFLRWGE-----RFWDKL
RYAMPDTRH

>Dpu-TLRβ

TFYGLNSLEYLNMDRCKL----TD--EAIFAGAPRLRHLSMRDNQIVSFGSNPFADATSL
VSVDLFKNRIRGWDTQLFAGSPDLVDLNLNLAENQISTVSKAMMADIANLSEVDLLGNPID
CDCNLEPLRRYLEDTEDNLLI---KADHCSSPDKWRFQPITSFDPD---HCYYSFVIALYI
LIPTVCLSMVLGYAIYRSRWVIRYYMFRKRLSQ-SSSSMAEEGNFKYDAFVSYS
NVDHAFVAR-MVGMLENPPHYKLCVYERDFTAGNVLNDICIMQSIATSRKVVLVISE
NFIQSHWCLWELHLAQHSLLDKRNLVLVVVGKLLNQCPPTLRFLMKTRIYLEWDL
DPSKQRFVWERLRDALAQKPD

>Dpu-TLRα3

-LNEIPRLPRMNLSSNSI-----QIPNSS-----DCYPDVTWLDLSHNGMDESS
MSDWQNLPKLNRLDLTHNNFNSIPNGVVDSWHNL-TYNLNGNPWKCDCTNLALL
NFIYGSWK--RLEDNFQMKCDN----GQKISEL---SVELCP-SVKYYTIPLPILALLIVCVGIIV
YRNRVIRAWLYRQLCLWK---EEEENDERIYDAFISFSHHDEIFVNEVLVPQLERPPHY

QLCIHYRDWLAGEWIADQIVRSVATSKRTIVVLTENFLDSLWGKLEFRTAYKQVLTDKR
MRLIIVKGELPPDKMDQELQTYLSLNTYLYKYDD-----FFMDRLRYALPHNTS

>Dpu-TLRα2

PLNDLPGIP-LYLDGNNLTLSGSTLNRTFHGLGALQVLQLADNELEELRGSEFEPLDHL
RELYLQNNKLRFISDTAFVHLRSLQVLRDLGNRLTFPLWRL---PHLNQLSLGLNPWSC
ECRFLAFQQWIAAHPQ--QLVDSDSLHCLMGDQ----QLIGF---EFNSCSADYLPVMAA
GICLFLGLIAVVLVFVYRQTVRIWIFRYRIRLS-----EEDKDAMFDAFVSYSLKDEQF
VSQVLAAELEHESSFRCLCLQHRDFPTSHPGGDPLTLGLAASRRIVLVISQSFIESEWTR
PEVRTALTGFLRLPRSRLVAVLLTPWTDDQSDPELSLLLRSSIIIRWGE-----NFWSKI
RYYLPDPTP

>Dpu-TLRα1

-FDDLN-LKTLWLDSNKL-----KIGKIFKNIPQLISLQLGSNVIKQLEIGAFSNLPNL
FQLNLQNNQLDILPSDVLQSLANLKYLDLSNNKLTIID-----RNL-TYSLSGNPWRC
DCSNLALLKFIYGSWK--RVEDFNQMRCDN-----GLFFEL---SVELCP-SLKYLTA
MPVLALLVFCICTIFYRSRRVIRAWLYHQFCLWQ---EEEENDRIYDAFISFSHNDEKF
V-DELVAQLERPPNYQLCLHHRDWLAGEWIPDQIVRSVASSKRTVVILTENFLDSF
WGKLEFRTAYQQVLKDKRMRLIVIVKGELPPDKMDTELQTYLSLNTYLYKYDD-----
FFMERLRYALPHKKN

>Dpu-TLRα4

-HPNLPRIP-LYLDGAQLRALSSSIINRTFNGLRGLYVLHLEDNRIRTLEGFEFSLESL
RELYLHNNAITSIQNRTFSALKHLQVLRDLGNRLVDFPVWNL---PELNALTNDNPWSC
DCLFLALRTALHTAGP--KVSDASQLICGGSNR--NRSL-----LCV-DYLPPLVT
TLVAFIAVTLIILFVFIYRQPVRVWCHRYGLRLS---SAATPDSKLFDALSYSAKDDAF
VQQMLATNLEYSPTYKLCLQHRDCPSGGGLSETISQAVDSSRRTVMIISPNFIKAWC
RFEYKSALHQLFGTSRKRLIVILIGDVTHKDLADLKLKLYKTNTYLQWGE-----GFWDKL
RFALPDPVQ

>Ppr-TLR1

-----KSHIDSL
SSLEYLDVRDNEFACSCDLRWFQTWMTQVP-KMIIPNKNLSLHCRSPTDMTQDSVA
NYTTPWIK-CDNFIVVGGVSV--FVVLAIKITLLVGLKRWEIKYWWVFKKARM-GWRK
LRDS---EFDAYVCYHSEDEEWVTQTLQENIEGNVNFKLCIEERDFILGRQHLENF
TDLLNKSHKVLIVVSQNYLKSLLWCRFEVGMALQKLYEDNRDLLIFILLDNLKRKDMPra
LKCLMLNSRVLWPWKSSQMKSVFWMKLKLALQE---

>Ppr-TLR2

ILTKLPNLSKLDLSSNELGS--SSILPYLFKNLSTLRELDISDNILRTMHEDMFNSLLHL
EKLVI RHNYFKTLPTNIFKRLVNLRSLVMSTNNLCGLYKDQISPLISL-RLDVRRNSFYC
SCSLRWFQNLWLT--RVWVDDKYKMRCNSPDSQWSNTLINFTIPWYR-
CDNTIMASTSV--SVLFLIISIVILLIFFRWDIKYWWVFSKVSIRGWHHF--
SEEKEYDAFVCYEHSDWDWMKELLENVEKNNTFKLCIHERDFIPGKRIVDNIERGINL
SHKVIIIVSSAYLSSQWCEFELDMAHIKLTKKKK-----V-----

>Ppr-TLR3

-----LLGMMNLTGFINSETPPLFDKNSYLSKSLDLATNGLHVVHEKTMKSLPNL
QYLNLSDNFLSDIS---ISGMLQLIVLNISKNNWKDTPTELIQSLQKLNCLDISSNPLTT
ECEIQEFIQWSLYT--NVTLTkYNKFECILKNN----HV--FSETVIKTCNSGMFLAIGL
CTSFFILSVIVLTITYRNRWTIKWWLFLARKYLRLREELAEQRNYQYDAFVAFSADDITW

LKSDLIPELEMDRGLKLCIHRDFQLGVPIEENIVNAIANSRKTILLITNKFVHSNWCMF
EVHMARQRLFDEGKNVIAILLEEVNIGKLNRTLRLNLTSTNTYLEYPK**NEDGQQ**LFWIKL
VDALRSNKD

>Ppr-TLR4

LFSCCLKNLATLLLQGNLGGVITDLHGDLFSSKSNLVDLHLDNNVETLPVNLFKNATS
LKRLSLSKNTIRHWHERLFRKTTSLEYLNLAHNQISLMNKTSLPNLNILKTLNLTANPFA
CTCDLIWFHDWVQNT--KVNLPGVEDYTCDSPQIFQGVPLKEFDPNKLVCWEKLIMY
ISFPS-LIAVILVSFLIVYKKRWSLRRYWFIMKMRARRKRLMEE—GLEFDAFISYCTA
DKDWVEQTILSKLDKKA-FKFYYDARDDIPGKGIYDNLQYGFHRSKILIILSTEYFEDK
HADLELQLIPEIEVDAREDKVIFVFKEDVYVNKIPRSIRRKVDNDDFLTWT**DQAVQD**LF
WGRLHEELSK-PQ

>Cs_Toll4

SLIDMDNLTTLLLQNNHLGDSLRLDVIGQTFSSQKKLVNLNSKNSIKALPYLIFKNQVSL
KNLSLARNAMTDVS-FSLKTMKMLQFLDLSDNQIEYVTSENMGYLDQIAH
LNLSGNILACMCDNQQLSWIATT--KVHIIDRGQLKCLYRNKT-TLSLSRIIRSQKDC
SLWIVMTSCVTGFGLLLILSLITLLYHRRWQLRYLWYIGRKKIDPFH--HDSRLPQIDVY
ISYEQHDVQTVTDYVYPFFERRG-YIVKIRE-EFEATDKLYRVIPDTVNKTRKVV
VFLTpsyckdywntFEFNIAAYEGIYTKRNIIPVLIGDFSQDNFTPEIRSFVNSKIVLRFP
SQAHRINTFNEQLEHWLQ----

>Cs_Toll13

TFKYLPKLIALEVSYFNMFDMPAQsINTLFSPLSNLKYLMCYNCQIRDDPKLFLSNKSQL
NRIKLDRNYIENISNDTFKSNPLLKTLsinmnKIGHLKASEIDFLNSLSDSLDLSHNPFIc
DCDLEWFITWLKST--KTAKVEYQNYVCAYPANMAGTKLTDVHYTYRE-
CHPVWEWVGIVGGPIAVVLAIVSFVLYRKRWSIKHYIYLMRKRR-NYILV-
DGENFLYDAFVAYNQEDSDWVREHLLPVLEDEHQLKLCIHERDFRAGILINDNIVTCIEQ
SKKIIILSNEFAKSGWCMFELRVAHSHKIEDE-MELVVILLERINGRNMNN
SMKTLLETTTYIEWTE**DQHGGQ**LLFWNQLKASMNK---

>Lrug-TLR2

-FLRIPELQK-----WRYDIPKLIYLDLSYNDIDRIDINGFPDDG-
LGRINLQFNNITTIRSEDIRA-LEA-IVDISNNPINCgcG-iklyEF-----LGNYEYIR
DLVCHSP--LKGRKIRNLT--QKEICPTH-MVLIVSLCAVVILGIIIIILL
RYYREVILVYRLHI---PCQPVDTYDSKNYDAFISYSSKDDDWLRTLVRLENEE
KFKLCVHHRDFEIGAAIADNVVQSVEDSRHTVMVLSRNYVDSEWCYI
EFRTALHQSLIERQKHLIVILEDVPKSELPDLRKCLETFYIQVGD-----LFWDKI
RYSLG--HR

>Ppe-TLR1

VFKNLSSLKTLNLSKNRLKYMVEDKYGGMFEGLDNLVTLNLENNDIEGLSPVIFLHLTN
VQNLLMSGNRMahWDKELFTNTQHIKNLDSLrNKISVIDEHALNNYSNFKTLNLEDNPF
ACNCELVWFCKWANRT--KVTLVKFNNTCSPKSRQGVLLINFDWRSLV-CFNPYI
IAGSVVG-GVFLMTLIVVMlyRCRWISLCCYRCGQRC-DYHYL-E-
EDKRFDAYISFDKKDnsfVQEVIMNQFDRNGKYQLCFEPRDFRLGSSIVGSMCVAVEN
SHRAIIVFTNAYLASGRFQMELDLLHNEHLDRSFGMIFVTTGPQLDFRLLPKWLHKSye
DGKFLVWDE**NSSAQE**EFRQRLDRKLRTPPP

>Ppe-TLR3

VFQRLNSLKHLDLSLNQLGRLTQLQFVRLFQPIRTLEYLHLGHNDLTFLNAPIFEDMLAL
KTINLVENSLKVVQSNLFESSPSLervLLSDNQISFLDAGMFRMTNLSFLSIEENEFEc

DCALRQFRDWGHGD--GVMILGLHGRCFASDKRLDSRVTEYETEWIE-
CDHEYIIAGALGL-FFAFATLLAGLVYRYRYDLLWWLLKRRRRR----PT--
TAGERYHAFVSYNSRDSRFTLS-MIRYLEDDIRFKISFDG--FDPASFISDCI
VQCIERSEKIIIFVVSRTFLQSEWCSEYELRMGELKCFEERRNIMILIFLEKIPVKELPRSLR
TLVRQINYLQWPV**DERARD**VFWKRLKIALSKDAK

>Pps-TLR3

YFANLTWLEHLNLEGVNLRDVNVDPDCLFEGLDNLKVLDLTNTNLKGIPTRFFKDLRS
LQELILRQNRLSGWNDVVFNDLTALQFLDVAVNQIRVVNMSSLQSVKSLNRFQAFSNP
YICDCNLAWYADWLRRMHATLKVTYQLPYNCSN---LKRVSVLSYRPTFFE-CHRLIIL
SASGGG-LFILVMLTVTVLYQYRWYIRYWMFLLRSRAKHVEEADRLIYKYDGF
VTYSGEDSEWVIRTLLPKLEKEYGFSMCIHERDFTLGRDISENIAESIEQSRKVLVLTN
NFVRSYWCKFEVNLAHANTLHNSRQSLIIILAEDVDMDLMTPIRLRYLIRRKTYIEWTM**ND**
QQQILFWKRLKEAMQKRGN

> Pps-TLR2

ILKNMTRLKTLILSDNMLSDSLVDESGRMFKDMNSVETLDLSGNRIFILHVNTFKHLINV
KTILLKDNRLASTPAVNVESLESLEQVDLSSNRIQYLSNEFLQSVTK--SVRLTGPNPFNC
TCEILVLLQWLAGSEDAMKLVNDNTLACSGDNIRGAKLVDFHYKSLQRCI-LWIWLSVS
TILTISILTFCIGLAYRKRWSLRFWIIAAR---RKYERL-PSTNYTYDAFVCHSSFDAKW
M-NTLQKELEQEPNFKLCLHYRDFPLGLPIVECINDAIVNSKYIILLITRNFIESQWCY
EFYMAKTRVFCENRSRLIIVILEHLPEAVLPQTLQNVMKDHVYLEWTD**DPVGGQ**AFWE
RLRENLAEP

>Pps-TLR4

-LTDFPTLPDLNVSNNDLTQLP-----IYLTQLVELDATGNNI
GDISGTALLQMSNIKALYIRNNNLKLPKALLDSHGNASVLTGENPWDCSCPNEW
FLKWMTSRGS--VVTDVGDVTCDIP--VRGQRFSDDV--IKQNCETDYMVMAS
VGSITALLIALLVLVIFRHDIKVILFKWDIDL--A-EEQSKDRPFDVFSYSSLDGEW
VRQKLLPMLERNPPFRTCFHERDFLPGAPIAENIMRAIQASKRTLMMVSKNFIASDWCE
FEFLTAHKSFMETKQNKIIVVMLEDVDTKSMDPMLRAYFTTKTFIRAAD-----LFKEKL
YYAMPR-TE

>Pva-TLR1

-----L-----DLSHNSLGYMESS
VFQNLSGLKFLNISKNFKCDLCPFRDLLHEA--TFHF---GQNPCYYPTSLKKQL
VSNYSLSFIA-CDHEMIIVLAVAG-FIFLTIPIALIAYYRLNLKYWWYFGRRAA-GYRPL-
DGGVHRYDAFVCYSKNELSWVRELVEELENNERFQLCIHDRDFDLGGDIVDNIIRSID
CSRRVIFILSREFIRSYWGTFELNLALMEAIEKRINFILIFFENIPKKEIPRHLQCFMRHVT
YASWPQ**QARARE**MFWMKLKLALRNEE

>Pva-TLR2

YFANLTSLDHLILNGVYLRALNDDKPECLFQGLGKLKVLDAFTHLKGLPERLFKDLTRL
ETLILRHNQLSGWNDVVLNENLKNLRSLDVSGNQIHTINQSSLRPVSTLNHFQAFSNPYI
CDCNLAWYADWVRQMHAATLKISYQVPYNCSN---LKNKSLLQYRPTFVE-
CHRLIILSASGGG-LFIVILAVIGLLYKYRWYIRYWIFLLRSRRARHIEENDRL
YTYDCFITYSGEDSDLVTQQLPKLENEFGYKMCIHERDFKLGRDISENIAESIEKSRKV
LVVLTQNFVQSEWCKFEVNLAHANTLHNARQSLIIILVEDVGFEHMTPIRLYLIKKKTFL
WSN**EEQGQ**VFWERLKDAIQQRGQ

> Pva-TLR3

YFAGLLTLISLKMSDLDMGKLS--DKVCLFEGLTELKYLDLHKVMLKNLPANIFVDLKS

VYLRISGNKLLAINPVVFSSMSLERLDVSSNLIQNINQSSLQPFKGLNYFEAYNNPYAC
TCDLQWYTDWLRQMKRKIIIRKNMQYKCASPKKFKKNLLTYNPTFID-CYEPFIIGTTV
GS-FAVLATIVVAVGYHYRWYIRYWLFLFRSRFAKNLREDERLVYRYDCFVTYCE-
DDGWVLETLRPKLEDEFGFRVCLQDRDFELGKSKVDNIDEAIQNSRKVLIFLTANFAMN
SWCNFELSLAHANCLENDQQHLIIIMMEDVSPKYMTPIRLYLVRKRTYIEWTGDEVGQN
LFWQKLPAIRSPNQ

> Pva-TLR4

YFSGRPSLVSLKMPGVNLHKQT—KSSCLFRGLFRLKHLDLHDVQLKRLPSDMF
QDLQSLVYLRLSGNMLHEINPVVFSML-SLARLDVSSNLIQNINQSSLQPFKGLNQF
EAHYNPYACTCDLQWYTEWLRTMIRKVTIRKYMQYKCATPKQIERKNLLTYDPTFLD-
CYEPFIIGTSVGS-FAVLVIVVTVGYYHYRWYIRYWLFLFRSRFAKNLREDERLVY
RYDCFVTYCE-DDGWVLETLRPKLEDEFGFRVCLQDRDFELGKSKVDNIDEAIQ
NSRKVLIFLTANFAMNSWCNFELSLAHANCLENDQQHLIIIMMEDVSPKYMTPIRLYLVR
KRTYIEWTGDEVGQNLFWQKLPAIRSPNQ

>Pva-TLR5

RYKIAPSLKKLILSGNKLYIMLRDQKKKHFKHLNNLTHIDLSHNSINELYPEVFSELSNV
KEIILRRNRLLAVTSMNITEMPSLKNVSLVANNIRVVPETSLRAWRG-KSFDFSRNPFNC
SCQFLPFLRWFNNSSTVTLLHAENYRCGDEQKI---FVREVRLELVKCTSAWIVISIA
LSICVALCITLGSILYRHRWTIRYYIVSAARRTRGHPPQ-MLRRFQYDAFVVYSSSEDRHW
VHDAMRTRLEDGSDFGLCIHYRNFLPGRHIEESVIDAIENSRHSILVVSRLRSEWCIF
EMHMARNIFRQQRKDV LIVVLLLEDIPVQEAPLTLVNLLRTRTYLKWPA DDVGQEA FWE
MLKETLKKEPE

> Pva-TLR6

LLKGLGNLKWFLNANNQLGKNLLQEYSLLFGDTLSLKEHLDRNDISSLPGNLFHSMKN
LEILSLRDNKISHWSPKLFAPLKSMEALDLSNNLIALINQTSVHNING--AFNL TGNPFAC
TCDLMWFRQWVNIT—NISFPCIGQYACNSPHSLQNTKFLDWYPDPRD-CINPFYVG
GSVCG-TVLLMLVISGATYRRRWFI RLSWYKLTHRRRGYRSLNNADVPSFDAFVSFCE
EDRQWVFDTLMKTFDEDNFNICHDERDFPPNLSTAGCIFGCIENSRKFIVVSEDYD
YCGRLEIELHYALQEIMEDA EFEIIVLLKDNPHPSRIPKHVAHLVSDPEFVEWPS DNDGQ
QLCLRRLQTMLERD--

>Ce_Toll1

-MVPVVELP-IILSGVTLPQLRGTSIPKAFHTLPALKTLDLSDNSLISLSGEEFLKCGEV
SQLFLNGNRFTLSRGIFEKLPNLKYLT LHNNLSLEDIPQVL---TALSKISLSSNPLRC
DCSGEHAAEWFSLHRH--LVVDFPKVECWENVNTNMGNDVFVMP--IEELRDYSILFVIIT
ISIAVLLCVLVILAISFIRKSHDAINQRYKA--S--NCSTSGSSPLYHAFVSYSKKDEKM
VIDQLCRPLED-EDYQLCLLHRDGPTYCAISDELIAQMDSSQCLILVLT KHFLENEWKTL
QIKTSHQLFAKNRAKRVI AVLGDGV DANLLDDELGQILRKHTRIEMRS-----LFWTLL
HSSLPSRLP

>Dm_Toll1

-LTHVP-LPNLHLENNTL-----LRLPSANTPGYESVTSLHLAGN
NLTSIDVDQ---LTNLTHLDISWNHLQMLNATVLGFLMKWRSVKLSGNPWMC
DCTAKPLLLFTQDNFE--RIGDRNEMMCVNAEM--PTRMVEL---STNICPAVFIALAVV
IALTGLLAGFTAALYYKFQTEIKIWL YHNLLW---EEDLDKDKKFD AFISYSHKDQSF
IEDYLV PQLEHPQKFQLCVHERDWLVGGHIPENIMRSVADSRTIIVLSQNF IKSEWAR
LEFRAAHR SALNEGRSRIIVIIYSDIDVEKLDEELKAYLKMNTY LKWGD-----WFWDKL
RFALPHRRP

>Dm_Toll2

-LAALPRIP-LYLDGNNMPELEASTLNGSLAQLVNLRLVHLENNKLTALEGTEFRSLGLL
RELYLHNNMLTHISNATFEPLVSLEVLRLDNNRLSSLP-----HSLQGLTLGRNAWSC
RCQQLRLAQFVSDNAM--VVRDAHDIYCLDAGI---K-RELELIANGDCS-YRLPLLA
VL-VLIFLVVVLIVFVFRESVRMWLFHYGVRVP-----FEDAGKLYDAIILHSEKDYE
FCRNIAAELEHRPPFRLCIQQRDLPPQA-SHLQLVEGARASRKIILVLTRNLLATEWNRI
EFRNAFHESLRGLAQKLVIIETSVSAEAEDAELSPYLKSVPSLLTCD-----YFWEKL
RYAIPIESP

>Dm_Toll3

-LLQMPSLSS-----s-----RVTYVDLRNNNL
TALSQKNRSSINRL-KLHLLDNPWSCSCNDIEKINFMKSVSS--SIVDFTEIKC-SN----
GEKLV SIN--QHI-CP-SDLFYALALISLVATIIALNFLIWFRRQPVLVWFYHGVCLSA----
RELDKDKRFDAFLAFTHKDEALL-EEFVDRLERRPRFQLCFYLRDWLAGESIPDCIG
QSIKDSRRIIVLMTENFMNSTWGRLEFRLALHATSRDRCKRLIVVLYPNVKNDSLDSEL
RTYMAFNTYLERSH-----NFWNKLIYSMP----

>Dm_Toll4

-LSEIPQLPTLVFERNSLKKWP-----PGYSSV
TRFYLAHNRLSDIDQ-----DKLEYLDISNNNFSALEDDRVRGFLKRL-QLSLFGNPWTC
RCEDKDFLVFVKEQAK--NIANASAIQCIDT---GRSLIEVE--ETD-CP-SVLIYYTS
LAVSLLIIALSINVFICFRQPIMIWFYHEICLSA---RELDKDKYDAFLSFTHKDEDL
I-EEFVDRLENRHKFRLCFYLRDWLVGESIPDCINQSVKGSRRRIILMTKNFLKSTWGRL
EFRLALHATSRDRCKRLIVVLYPDVEHDDLSELRAYMVLNTYLDNRN-----NFWNKL
MYSMPHASH

>Dm_Toll5

-LEELP-LPRLKVGNNSL-----TSLPTSEHSGYANV
SGLFLSDNNLTSLGS---DQLPNLTHLDVRGNQIQSLSDEFLFLNNTMTLSLSGNPITC
GCESLSLLFFVRTNPQ--RVRDIADIVCTKQKK---SFQQM---EAFLCP-SYLLISCV
VGGLVIVICLLTVFYLMFQQELKIWLNNLCLW---EEELDKDKTYDAFISYSHKDEEL
I-SKLLPKLESPPHFRCLCHDRDWLVGDCIPEQIVRTVDDSKRVIVLSQHFIDSVWARM
EFRIAYQATLQDKRKRIIILYRELEHNGIDSELRAYLKLNTYLKWGD-----LFWSKL
YYAMPHNRR

>Dm_Toll6

-YSEMPRVP-LYIDGNNFVELANSHINTTFSGLKRLILHLEDNHIISLEGNEFHNLENL
RELYLQSNKIASIANGSFQMLRKLEVLRLDGNRLMHFEVWQL---PYLVEISLADNQWSC
ECGYLAFRNYLGQSSE--KIIDASRVSCIYNNA--SV-LRE---KNGKCT-GLLPLLLV
ATCAFVAFFGLIFGLFCYRHELKIWAHTNCLMNK---VDQLDKERPNDAYFAYSLQDEHF
VNQILAQTLENDIGYRLCLHYRDVNINAYITDALIEAAESAQFVLVLSKNFLYNEWSRF
EYKSALHELVKR-RKRVVFIYGDLPQRDIDMDMRHYLRTSTCIEWDD-----KFWQKL
RLALPLPNG

>Dm_Toll7

-TTELPRVP-VYLDGNNFPVLKGSAINRTFASLASLQLLHLADNKLRTLHGYEFEQLSAL
RELYLQNNQLTTIENATLAPLALELIRIDGNRLVTLPIWQMHAATTRLKSISLGRNQWSC
RCQFLQLTSYVADNAL--IVQDAQDIYCMAASSSGSLK-RELDFNATGACT-SYIPLLA
AL-ALLFLLVVIAMVFAFRESLRIWLFHYGVRVP-----CEESEKLYDAVLLHSAKDSEF

VCQHLLAAQLETRPPLRVCLQHRDLAHDATHYQLLEATRVSRRVVILLTRNFLQ
TEWARCELRRSVHDALRGRPQKLVIIEPEVAFEESDIELLPYLKTSAVIRRSDE-----
HFWEKLRYALPVDYP

>Dm_Toll8

-YEQLPHIP-LYLDGNNFRELQHSVLNRTFYGLLELEVLQLQSNQLKALNGN
EFQGLDNLQELYLQHNAIATIDTLTFTHLHLKILRLDHNAITSFAVWNF---
SYLNELRLASNPWTCSEFIDLRDYI-NRHE--YVVDKLMKMCISGNPASLPV--V-----
QCSNDYIPILVAILTAFIFVMICISLVFIFRQEMRVWCHRFGVRLN---VDKNEREKLFDA
FVSYSKDELFFVNEELAPMLEMEHRYKLCLHQRDFFVGGYLPETIVQAIDSSRRTIMVV
SENFIKSEWCRFEFKSAHQSVLRDRRRRLVIVLGEVPQKELDPDLRLYLKTNTYLQWG
D-----LFWQKLRFALPDVSS

>Dm_Toll9

AFDGIATLKYLYFERSNIKDLE-----KSLKNLQVLGLAGNNINALTPAMFQSLESL
EILDSSNHVGNWYRSFAHN-SALRVNLRSNTINMLSNEMLKDFERLDYLSLG
DNDFICDCHLLWYIPWLQRSYSKLRFEDYMAKCSAPYHLDGDTLLDFQLQVDENCQ
SELHVTNTVIAVMLVGACILGFIIYLKRWHIHYSSSLKSAKKFTNIQRDPSAVYDIFISY
CQNDRTWVLNELLPNVEETGDVSICLHERDFQIGVTILDNIISCMDRSYSMLIISSKFLL
SHWCQFEMYLAQHRIFEVSKEHLILVFLEDIPRRKRPKTLQYLMDVKTYIKWPTAKEDR
KLFWKRLKRSLERE--

>Ci_TLR1

AFKHV-NLTC--IKFNQV---EQ-NGIMFSGL-MVKQLYFIRSNIRSISSSAFTGSVHL
RLLDVSYNKITGLEKDIFTNL--LEELNLRGNQIRVLDPSTFSSLVNLRSLDIENNRFLC
NCDIPLQQWIIDKLYRILL---RNVTCSLHSSRSYVDIIEW---DSELCWK--KIVGIV
LGC-LLLSTACAVFGFSVRFQALFWYEMIKSKV-SYHPRNRSDVYEQAYISC
DSVDEAWVVRQLLCAIENETPMKLCFPSRDFKPGCPKMVSAANNLRLSKHALVILSKD
YVANSWTRFELSMVSEMWRNSERESLIVVYLKEV--ERL---PVLGVRRNAWL
VPTDVADRP SFWMKLRRSLAK---

>Ci_TLR2

RFNVLP TIPRLDLSNLQL----NE--KISLTQLTRLTTLNL TGNKLT SIPL--QGLPRSI
ENINLSRNKISTLPATTLTCLPNLKQLDLRNNSFSTIQTQEVSIFLAVTSVLLKGNPLEC
NCKLRPLITWIQTNEKDLSTHDLKDLCFTPKRFEGRFIINLSES----CP-NLLIGGLV
TALLIIIIIVNIYLYKKRKKQERRDI-----GFKDLEED-TYEYDAFVSYSDDVEF
VYK-MLEEMEEKRERKMCIHERDFTPGRGIADNIVECISTSRRMVLVSRKYASSA
WCQYEVQIALTELHAKRRRLLVPILLEDVTREQYAGSVTTILSAITAIQAPK AQRTWANF
WNKLDKTLT----

>Od_TLR

QLKNL-NLRGVDFSMNKITHFC----IDDFVNLEDLEFFNASLNQITDIPNNTFSFAREL
RVLDLHANSIQELN---FANLPELRMLDVSENQIRTSVDPYL---GALEQLDASYNPFQC
DCQLKKFVQFVQEPGRIVGIAQSQRYKCQIPRLLGNLNLRL---QDKVCENEFYLSILA
IS-IVVILVVAVVSKNRRQRMKMKELSGRNRVR---AAKN-NIVKNDAAILCHINSQKW
VTDVMLPTLKQKPQEKLYI---DFIKSQVKNEKLRRRCVEQNKRVIITTEFASSDACLF
CLQAIYDLTRNRKDGIVLVVLEPIPWNSMPHALKILMAEKTFIQYPVEDVGRQYFWDA
LRASIYQERT

>Sp_TLR020

VFRQLSVLQELNLEYCQIGNL-----PLVFSGLESQKLSLKGNNIQHIHDDVLSGLGQV
NIIDFEGNQIIYLDELIFSNNRNLTNLSLADNKLTRFNQKTFKPISSISSLDLSMNPIDC

NCDLKWLIYWINKP---IHLIDRDKTICSSLEPFREKPLLDVDPNEL--CILGLLFL-IP
LASIGL--VVISVLLYHFRWQLRYKLFLLKLAA-GYKEMRDHNDYEFDVNIIFGEDDEEW
IREQLRPALGERLQ-RNVFGDEDLVLGMHYLDSVHYVVSHSYKTIIVLSRAAVQDRWFIL
KFRTAMDHVSDTLTEFVVVVFLEDIPDDEMPFLARLYLNDGRYIHWTE**DARGQEC**FWD
ELTKNLT----

>Sp_TLR007

VFQNLSQLVYLDMTNSRIHTLR----SGLFSPLSSRLRYLYIGENNLGEVPGDIFNGLFRL
NVLTFFQNNILSSLDPKTFAQTLRLTDLYLPGNQISTIKPGTV---NTS-RFDISKNPFS
TCSLAWFRQWLDSDAD--IDFKHADQTLCSGLKGLSKQPILSFHPD---HCGVIFLIAGIS
FTGIFL--FFITLLAYNRRWWLNNHKLFLKLAV-GYKEMAEADNYEFHLNLMFLEEEEEEW
VDRVMKPALEERFHQNIYGDKDLHLGMFYINAINDALDNSFKTVLLISNQSIRDWCMT
KLRLMALEHLNETGLDKIILFLEDIEDENLPYLVRLFMSRNKYMLWTD**DEEDGQEL**FWAQ
FEKSMRAN--

>Sp_TLR053

IFTPLRNLVELDLTSCCIKQVA----SRTFANLTLLQLSLQDNDLT SIPKDAFQGLQNL
QVLRQLQNNLIKFIHQGLFMGTNELEQLYLQNNHISTVASNTF---SSL-RFNIAYNPLTC
DCQLAWFRQWLNEVEGKIDLAPKNQTRCSSLKVLVNQIWSFHPD---YCGITMIIVSAC
FAPILV--LTLGILVYLNRRWWINYLKLYLLKLAI-GYHEITEPEDYEFQLNLMFHDDDEWW
VNDCKMPFLEQRMHERVIFGDADLHPGSFYLNAIYDVIENSHKTILLISNQSVDDTWYM
TKLRMTVEHMDTKLEKVILIFLEDIDDDHLPYLVRLLSRNKYLLWTE**DEEGQEV**FWA
KVQKSMRQN--

>Sp_TLR039

ILTDLLLLQELDLSDCQLTEI-----VNAFEGQLQSLQILHLEGNQLLDLPHGVLWNMAHL
RNVYLEGNKLKYLDRLDFFNSSRLRNLT LARNQLTGLNHSTFKPIKTLLSIDISENEITC
TCNLKWLPWLSGS---ITLLNEIDTRCSSLEEELELKPLMSFKPAEL--CGPIALYCSLP
IVTTWI--IIVLVFAYRHRWFLKYKLFLLKMAV-GYREIRDFDDYEFHLNVMFAEEDEGW
VRYRLRPVLEELLE-RNVYGDNDLPLGMHYDDAVHYVVEKSYKTIVLVSRAAIQDNWFI
QFRTAADQVNDTQIENMVVIFLEDIPDVELPFLVRLYLSDRKYLSWKE**DERFQEY**FWQ
KLIKMLKRN--

>Sp_TLR056

IFQNLSNLQILRLDKCSLSVL-----IGIFIDLKSLVSLHLENNHLKVISTGLFDKLYDL
QYLLLNGNELTYLDSNLFKYLSSLRCLDASENRISGLNHSTIEPL-RLTTLGLSLNPLVC
NCNLKWLPGWLKG---IELIDSMGTTCNTLEPFRGKQLITFDPRYE--CGPITLYSCLA
MIGFVL--IFAVGLIYYQRWWVRYQLFLLKLCF-GYEEVHDRGEFQYDIAIMLDEIDNEW
VNQHLPALMERGD-RIVCGDEELMLGMFYLDAVHYATEKSFKTIFVISHAA
LQDQWFMMKFRTVLDHVNDVGTEKMILVFVEDVEDDELFLIRLFLSDHRYLVWPD**DERGQEY**FWQ
FWEELIRDLTRH--

>Sp_TLR044

TFQGLQNLQNLMDNSDITSLN----EDIFLNLTSLQHLSIDVNHIAELTSRHLADLRSL
VGVSISKSNEIKGLASDVFTNPNHLSYLYISHNHLTTVKEGTV-----LRTLDVSNNPFSC
NCEFTWFLNWINKA--EVSIIHPDQTNCSLAPFKNQPILAFDPT---VCGPVWVYIITI
--FVIVTCIMICVVAYQRRWLINYLKLFHLKILL-GRRDDHDR-DYEYDINLAFDDDDDEQW
VRGILKPGLEERLDDRIVCGDDDLPLGMYIEAITEVFESYKSILIVSNRAVDNHSFIS
KLRLAVDQMNEVELEKVILIFKEDIPDGRLPYLVRLFLSKNKYFRWSE**DKYGGQK**IMWEK
LVRELGKD--

>Sp_TLR016

VFNNLSALQVLNMSDCQISTI-----SGAFASMTSLTILSLQNNDLQILPLHIFDNLHL
SIFSIGNNVLYIDEALFAKMQMITSIDLARNQLSTFNQTTFSQITTLSSIDLSQNPIEC
SCKSKWLIKLLRGA---IDVQNGKDTTCSFMKPFGEALESIQPNDL--CTAFPVYFSAV
FFAVIF--VIFIIFVYHFRWQLRYKHFLRLAI-GYREILDREDYDFDVYVISTDDDENW
IHDQLKPSFQRFLYSRNVFTEDDLPLGMHRTEAVDHVLT RSFKILVLVNKAACADDWFL
TCFRMAMDQVADTQTENIIVVFLENIEEDEEMPLNVRLYMGQGQGYVEWVE**DDEGQKYF**
WKRLEKCLSKH--

>Sp_TLR100

TFSSLGNLGTMYLQHNNLYNMWETIHVPFLKSLRRLKYLNLCYNGFQNI PNNSLSNLP
ELKALFLCHNKISHLQDNIINDL-PLTTLDLGHNQINLINQTLLEPLGTLKALT VSGNPFSC
GCDLQWFREWLDVT--QVHVDDNSHMICSSPPDMRGKLVIDFHPETLN-
CDHTWVLVGVG---SCMVFTVALAVKFRFHINYCFNLVNARRRKYQRIKEDLPFLY
DAFVFFSHKDEEWVYNELVRHLEDDSGLRLCVHNRDFTLGRKILDNTIEAVDSSRFTLC
ILSADYLD SHWCKMEQEFAMANLIDR—DVLIIIALGEIPENKITKKLHKVMMKR TYLKW
PME**EPVQRN**DFWMKLKTVLREPNN

>Hs_TLR1

---TKSLLSLNMSSNIL-----DTIFRCLPRIKVLDLHSN KIKSIPK--VVKLEAL
QELNVAFNSLTDLPG—CGSFSSLSVLIDHNSVSHPSADFFQSCQKMRSIKAGD
NPFQCTCELGEFVK NIDQV--SSEVEGWDSYKCDYPESYRG TLLKDFHMSELS-CN-
TLLIVTIVATMLVLVTVTSLCSYLDLPWYLRMVCQWTQTRRRARNPLEEQRN LQFHAFI
SYSGHDSFWVKNELLPNLEKE-GMQICLHERNFVPGKSIVENIITCIEKSYKSIFVLSP
NFVQSEWCHYEL YFAHHNLFHEGSNSLILILLEPI PQYSIPSKLKS LMARRTYLEWPK**EK**
SKRGLFWANLRAAINKK--

>Hs_TLR2

---WPKMKYLNLSSTRIHSVT-----GCIPTLEILDVSNNNL-----NLSLNL PQL
KELYISR NKLMTLPDASL--LPMLLVLKISRNAITTSKEQLDSFHTLKTLEAGGN NFIC
SCEFLSFTQEQQALA-KVLIDWPANYLCDSPSHVRGQQVQDVRLSVSE-
CHRTALVSGMCCA-LFLLILLTGVLCHRFHWYMKMMWAWLQAKRKPRK--
APSRNICYDAFVSYSERDAYWVENLMVQELENNPPFKLCLHKRDFIPGKWIIDNIIDSIE
KSHKTVFVLSENFVKSEWCKYELDFSHFRLFDENNDAA ILILLEPIEKKAIPQKLRKIMNT
KTYLEWPM**DEAQR**EGFWVNLRAA IK S---

>Hs_TLR3

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TCESIWFVNWINET--HTNIPELSHYLCNTPPHYHGF PVRLFDT S---SCKDPFELFFMI
TS-ILLIFIFIVLLIHFEGWRISFYWNVSVHRV-GFKEIDQTEQFEYAAYIIHAYKDKDW
VWEHFSSMEKEDQSLKFCLEERDFEAGVFELEAIVNSIKRSRKIIFVITHLLKDPLCRF
KVHHAVQQAIEQNLD SIILVFLEEIPDYKLNHARRGMFKSHCILNWPV**QKERIG**AFRHLK
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>Hs_TLR4

IFNGLSSLEVLKMAGNSF----ENFLPDIFTEL RNLTFLDLSQCQLEQLSPTAFNSLSSL
QVLNMSHNNFFSLDTFPYKCLNSLQVLDYSLNHIMTSKKQELQHFSSLAFLNL TQNDF
ACTCEHQSFLQWIKDQ--RQLLVEVERMECATPSDKQGMPVLSL NIT----
CQMKTIIGVSVLS--VLVSVVAVLVYKFYFHLMLLAG-----KYG----
RGENIYDAFVIYSSQDEDWVRNELVKNLEEGPPFQLCLHYRDFIPGVAIAANIHEGFHK

SRKVIVVVSQHFIQSRWCIFEYEIAQTWQFLSSRAGIIFIVLQKVEKTLLRQELYRLLSRN
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>Hs_TLR5

----PSLEQLFLGENMLQLAWTELCWDVFEGLSHLQVLYLNHNYLNSLPPGVFSHLTAL
RGLSLNSNRLTVLSH---NDLPNLEILDISRNQLLAPNPDPV---VSLSVLDITHNKFIC
ECELSTFINWLNHT--NVTIAGPADICYVYPDSFSGVSL--FSLSTEG-CDEKFFIVCTV
TLT---LFLMTILTVTKFRGFCFICYKAQRLVFKDHPQGTEPDYKYDAYLCFSSKDFTW
VQNALLKHLDDQNRFNLCFEERDFVPGENRIANIQDAIWNSRKIVCLVSRHFLRDGWC
LEAFSYAQGRCLSDLNSALIMVVVGSLSQYQLHQSIIRGFVQKQQYLRWPEDLQDVGW
FLHKLSQQILKKQT

>Hs_TLR6

---VESIVVLNLSSNML-----DSVFRCLPRIKVLDLHSNLIKSVPK--VVKLEAL
QELNVAFNSLTDLPG--CGSFSSLSVLIIDHNSVSHPSADFFQSCQKMRSIKAGD
NPFQCTCELREFVKNIDQV--SSEVEGWDSYKCDYPESYRGSPDKDFHMSELS-CN-
TLLIVTIGATMLVLVTVTSLCIYLDLPWYLRMVCQWTQTRRRARNPLEEQRNLFHAFIS
YSEHDSAWVKSELVPYLEKE-DIQICLHERNFVPGKSIVENIINCIEKSYKSIFV
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>Hs_TLR7

VFDGMPNLKNLSLAKNGLKSF-----WKKLQCLKNLETLDLSHNQLTTVPERLSNCSRSL
KNLILKNNQIRSLTKYFLQDAFQLRYLDLSSNKIQMIQKTSFNVLNNLKMMLLHHNRFLC
TCDAVWFVWWVNHT--EVTIPYLTDTVCGVGAHKGQSVISLDLYT---CELLILFSLSI
SVSLFL--MVMMTASHLYFWDVWYIYHFCKAKIKGYQRLISPDCC-YDAFIVYDTKDPEW
VLAELVAKLEREKHFNLCEERDWLPGQPVLNLSQSIQLSKKTVFVMTDKYAKTENF
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>Hs_TLR8

AFLNLPSTELHINDNMLKFF-----WTLLQQFPRLELLDLRGNKLLFLTDSLSDFTSSL
RTLLLSHNRISHLPSGFLSEVSSLKHLDLSSNLLKTINKSALKTTTKLSMLELHGNPFEC
TCDIGDFRRWMDHL--NVKIPRLVDVICASPGDQRGKSIVSLELTT---CVSVILFFFTF
FITTMV--MLAALAHHLFYWDVWFIYNVCLAKVKGYRSLSTSQTF-YDAYISYDTKDADW
VINELRYHLERDKNVLLCLEERDWDPLAIDNLMQSINQSKKTVFVLTCKYAKSWNFK
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>Hs_TLR9

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RRLDVSCNSISFVAPGFFSKAKELRELNLSANALKTVDHSWFPLASALQILDVSANPLH
CACGAA-FMDFLLEV--QAAVPGLSRVKCGSPGQLQGLSIFAQDLRL---CLDWDC
FALSLLAVALG—LGVPMLHHLCGWDLWYCFHLCLAWLRGRQSGRDEDALPYDA
FVVFDKTQSDWVYNELRGQLERGRALRLCLEERDWLPGKTLFENLWASVYGSRKTLF
VLAHTDRVSGLLRASFLLAQQRLLDRKDVVLVILSPDGRRSRYVRLRQRLCRQSVL
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>Hs_TLR10

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RELNIAFNFLTDLPG--CSHFSTRLSVLNIEMNFILSPSLDFVQSCQEVKTLNAGRNPFR
TCELKNFIQLETYS--EVMMVGWDSYTCYPLNLRGTRLKDVHLHELSCNTALLIVTIV

VIMLVLLAVAFCCCLHFDLPWYLRMLGQCTQTWHRVRKTQEQKRNVRFHAFISYSEHD
SLWVKNELIPNLEKEGSILICLYESYFDPGKSISENIVSFIEKSYKSIFVLSPNFVQNEWC
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LRAAINNEQT

>Nv_TLR

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DCYASWMRDWLANNTD--KIEDTSSILCASG--LEGLPIISVP--LSDNCSALSLLLAIV
LAVLLVLSVVAFAVMTYCFRWEMKILMYHFNWHPR--D--DTDVSKIYDTFISYSSQDASW
VRETLQRTLESVPPYRLCIHDRD FEIGASI HDNILNSVRLSKRMIMVLSNHFIASEWCRL
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FYALPKPLA

>Ad_TLR1

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LGGLLFVSLVAFAVGYKFRSEAKVFMYHFNWHPR--N--
DLDPNKPYPDAFISFSGNDYEW
ICNTLCVRLNDPPYKLCLHHRDFLVGAPIQQNIFDGIERSKRMIMTSLSKHFVRSEWCLL
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FYALPQNTN

>Ad_TLR2

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LGGLLLVFLVAFAVGYKFRGEVKVFMYHFNWHPR--N--DLDPNKIYDAFISFSGIDYEW
ISNTLCARLENDPPYKLCLHHRDFLVGAPIQQNIFNGIEKSKRMIMILSKNFVKSEWCLL
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FYALPQNSK

>Ad_TLR3

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LGGLLFMFLLAFAVGYKFRSEGKVFMYHFNWHPR--N--
DSNPNKTYDAFISFSGNDYAW
ISNTLCARLENDPPYNLCLHHRDFLVGAPIQQNIFNAIEKSKRMIMILSKNFVKSEWCLL
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FYALPQNSN

>Ad_TLR4

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TSLYLSHNQIERLDEKTIDRLKRIQVLFIDSNKLTTLPRNIENVS--FTKISMQHNFFRC
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LGCLFLVFLVAFAVGYKFRSEAKVFMYHFNWHPR--K--
DSDPNKIYDAFVSFSGNDYEW
ISNTLCVRLNDPPYKLCLHHRDFLVGAPIQQNIFNGIEKSKRMIMILSKNFVRSEWCLL
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FYALPQNSN

>Am_TLR

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LGGLLLVFLVAFVAVGYKFRGEVKVFMYHFNWHPR--N--DLDPNKPYPDAFISFSGIDYEW
ISNTLCVRLNDPPYKLCLEHHRDFLVGAPIQQNIFDGIERSKRMIMILSKHFVKSEWCLL
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FYALPQNSN

>Of_TLR

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LGGALVLTFAFIVAYKYRGEMKVLMYHFNWHPR--D--DSDPRKIYDAFVSYSGSDHQW
VVNTLQERLEHDPYKLCIHHRDFVVGAPIQENILNSVDQSKRMLMVLRSRNLKSEWC
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>Mm_MyD88

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-----QKYLKQQNQ-----SE--KLQV-RVE-SVQ-----
LG-G---ITT-----DD-LGTPELFDAFICYCPNDIEF
V-
QEMIRQLEQDYRLKLCVSDRDVLPGTCVWSIASELIKRCRRMVVVVSDDYLSKECDF
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>Dm_MyD88

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MG-----Q-PLPRYNACVLYAEADIDH
A-
TEIMNNLESRYNLRFLRHRDMLMGVPFEHVQSHFMTRCNHLIVVLTEEFLRSPENTY
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>Bg_MyD88

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L-----TGKKTTYDAYICYNPKDLEF
V-RELISRFESKYRFTLFPFRDDLPGMNEHAINAKIIERCRHMIVVLSKNFLQSEACEF
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>La_MyD88

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-----KSYLRQSKE-----M-----IE--KLQD-EVSMEYD--E-----
YK-Y---MTT-----DV-TGKAMYYDAFVSYAEEDIGF
V-KKLISELEKEYGLKLCVQARDLIPGASTNTVCAKLIERCTRMVILSPKFLNSAQCDF
QIKFAQSLSPGSRGKKLVPIMYKCC-----DIPSILRHIAICDYTK--DLQEWFWNRL
AMSLKAP--
>Aq_MyD88
----QNL-----SDWRTLVEL-----GFTY-EMV
MLLRAKNSPTSLLEEATLESL--IVMMELENV-----SALQQVK--SIH-D----
RPPP--RK---PNSCS----SDPSTMVA--P-AVPSLKYVDVNLQTNDSCEQ-----
LSS----LSL-----DHGDGSDFDIFLSFAPADAEF
A-DEMRLRLIN-AGISVYIASEGLMPGQSFIDEVADKIRGCRKTIILSPDYNQCSWCNY
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YKSVRHQ--
>Lp_MyD88
----NPQLTT-----LTGLRDFRGVAEL-----FDY-WDI
QNFQMTSDPFLKLLIQNTVGKL-DLEEIERT-DVIDD-----VK--YAEIDA---
-----HNYLRKQKW-----C---KE--SLQD-NVS--SCTA-----
-----LTV-----DVNEGEVSLYDAYVCYTDIEDIEC
V-HILSRQLESE-GIRLFIRDRLLLGQMEYEAFAIRLIERCNRLVILVSPEFLKSVECEF
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>Spi_MyD88
----RPCL-----NDYRLLAAK-----YTN-EEI
KYLESLREPVELMTRRTIAEL-SLQQIDRP-DVVQD-----LQ--YI--DS---
-----TPFEKEREQ-----
-----RTN-----NVQRTVRKSYHAFVCFAEEDKAF
V-DNLVKKMENNRLHLCLPVRDFLPVGSHELTALAIQRCKKFIVILSKNYDSSQGAII
QAQIATSLAPGAKEKRIIPVLIDEC-----SIPRTLSHITYLDYLR--DEKH-FWNLL
CDTLTRN--
>Spu_MyD88
----RPRG-----CDWRDMAEE-----FSYQLHI
QNFALESDPVKVLASNVGKL-DIEKIERH-DVLHE-----LP--FLEEDC---
-----KRW-KRTQA-----AR--DIQV-EVT-NFS--S-----
LR-G---ITL-----DS-SGPPPEMFDAYVCFAMADLEF
V-QQLRSQLESPhNYKLCIDQRDLLPGGSHALVTAEIINRCNKMLVILSPEFLQSPSCDF
QTKFAVSLEPGAMKRRIPILVKPC-----DLPLIIRHITLCDFTK--DLRPWFWGRL
RKAMSIR--
>Cg_MyD88
----DPGVTG-----D--YNDYQGLAEV-----FTF-QDI
TNFQRQSKPTEMLYQPTVDNL-KLQPIGRSDDVITE-----CA--LIKDVD---
-----DRYCKDITG-----SK--DIQD-SVSPNRSCDS-----
LG-L---VTI-----DVEKGDTLYYDAFVIYNPKDLEF
V-
KELAGKMEAPYNLKFClPWRDDLPGGSRYEVSaHMITRCRRTLVLSSDFLKSAAADF
QLKFAHCLSPGARSKKVVpVFSAPC-----KMPGILRAVSFVDFTN--GLRDWNWPRL
NAVLRCPRD