

Supplemental data(2): Comparison of SP-A, TLR4 and MD2 amino acid sequences of different animal species. Alignment of amino acid sequences of (A) TLR4 (B) MD2 and (C) SP-A proteins in rat, mouse, baboon, macaca and human. The X-ray crystal structures of human TLR4, human MD2 and rat SP-A available in PDB format were used for bioinformatics simulation (Figure 4). The amino acid residues of SP-A, TLR4 and MD2 included in the bioinformatics simulations are shown (> start, < end). Homology between the proteins of different species is shown as *.

(A) TLR4

Mouse TLR4 → HMPPPWLLARTLIMHALFFS-CLTPGSLLHPCIEVVPHTITYQCMDQKLSKVPPDIPSSTKHID
 Rat TLR4 → MPPLLHLAGTLIMHALFLS-CLRPGLSLHPCIEVLPHTITYQCMDQHLSKIPHDIPSTKHLID
 Baboon TLR4 → MMSASRLAGTLIPAMHAFSCVRPESWEPVCVEVPHITYQCHLFNYKIPDHPLFTKHLID
 Human TLR4 →

Mouse TLR4 ← LSFHPLKILKSYSFMSFSELQWLDLSRCIEIETIEDKAWMGLMHLNLHILITLGPFIQSFSPG
 Rat TLR4 ← MHPPLKILRSYXTHFSQWLQWDLRCEIEIETIEDKAWMGLNQLSTLVLTGHPIKSFSPG
 Baboon TLR4 ← LSFHPLRMLHGSYSSFSPPELQVLDLRSCEIQTIETIEDGAYQSLSHSLTLITLGPFIQSLALG
 Human TLR4 ← LSFHPLRMLHGSYSSFSPPELQVLDLRSCEIQTIETIEDGAYQSLSHSLTLITLGPFIQSLALG

Mouse TLR4 ← SFSGTSLSLNVLVAVETKLASLESFPIPGQLITLKLNLVNHVNNHINHSCKLPAVFSLNLHNVH
 Rat TLR4 ← SFSGTSLNLVAVETKLASLESFPIPGQLITLKLNLVNHVNNHINHSCKLPAVFSLNLHNVH
 Baboon TLR4 ← SFSGTSLNLVAVETKLASLESFPIPGQLITLKLNLVNHVNNHINHSCKLPAVFSLNLHNVH
 Human TLR4 ← AFSGLSSLQKLVLVAVETKLASLESFPIPGQLITLKLNLVNHVNNHINHSCKLPAVFSLNLHNVH

Mouse TLR4 ← DL SYNYI QTITI TVNDLQFLRENP QVNL SLDMSLPPIDF I QD QAF QG IKLHLNLT LRGNFHNS
 Rat TLR4 ← DL SYNYI QTITI TVNDLQFLRENP QVNL SLDMSLPPIDF I QD QAF QG IKLHLNLT LRGNFHNS
 Baboon TLR4 ← DL SSNIKIQSYI CYCDLVLHQLPMLHSLDLSPMLPNTI IQPGAFKEIRLHLKLTRSNFDL
 Human TLR4 ← DL SSNIKIQSYI CYCDLVLHQLPMLHSLDLSPMLPNTI IQPGAFKEIRLHLKLTRSNFDL
 ***: * * *; * * *; * * *; * * *; * * *; * * *; * * *; * * *; * * *;

Mouse TLR4 ← NIMKTCIQLAGLHVIRLILGEFKDERMLIIFEPDSMEGLCDVTIDFEFLRTXYNDFSDDI
 Rat TLR4 ← NVLKCMLQMLTGDNVNRLLILGEFKDERMLIIFEPDSMEGLCDVTIDFEFLRTXYNDFSDDI
 Baboon TLR4 ← NVMKTCIQLAGLAEVRLVLFGEFRNERHLEEFDKSALEGCLNLIEEFLRTLYDYLNDN
 Human TLR4 ← NVMKTCIQLAGLAEVRLVLFGEFRNERHLEEFDKSALEGCLNLIEEFLRTLYDYLNDN
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Mouse TLR4 ← VK-FNCLANVSAMSLAGVSIXKYLADWVPRHEKWQSLSLSIIRCHLKPFPKSLPLFKSWLTT
 Rat TLR4 ← YH-LNCLANVSAMSFPTGVHIXKHIAADVPRHEKWQSLSLSIIRCHLKPFPKSLPLFKSWLTT
 Baboon TLR4 ← IDLFNCLANVAASSFSLVSVTIERVKDFSYNEGWQHLEL VNCKFGFQEPTELESLKLRLFTTA
 Human TLR4 ← IDLFNCLANVAASSFSLVSVTIERVKDFSYNEGWQHLEL VNCKFGFQEPTELPLKLSKLRLFTTA
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Mouse TLR4 ← HKGSISFKVNLPSLPSLSDLSRNHSPSGCCSYSDLGTNSLPHLDLSFNGAIIMSAMPNG
 Rat TLR4 ← HREDISFGQLALPSLRYLDSLHRAMSFRGCCSYDFGTHNLKYLDSLSPNGVILMSAHFG
 Baboon TLR4 ← HKGGHAFSEVLDLPSLFEFLDLSRHNLSPKGCGC
 Human TLR4 ← HKGGHAFSEVLDLPSLFEFLDLSRHNLSPKGCGCSQSDFTGTLSKLDSLSPNGVILMSAHFG
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Mouse TLR4 ← LEELQHLDQHSLNLKQMSFSPVFLSLRHLIYLDISHTHTRVAFNGIFNGLSLSLEVLKMG
 Rat TLR4 ← LEELEYLDQHSLLKXKTEFSVFLSLEKLLYLDISYTNTKIDFDGIFGLTSNLTKMG
 Baboon TLR4 ← -----
 Human TLR4 ← LEQLEHLDQHSLNLKQMSFSPVFLSLRHLIYLDISHTHTRVAFNGIFNGLSLSLEVLKMG
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Mouse TLR4 ← NSFKDNTLSNFVANTHTLTFLDLSKQCQLEQIISWGVFDTLHRLQLLNHSNNHNLFLDSHY
 Rat TLR4 ← NSFKDNTLSNFVANTHTLTFLDLSKQCQLEQIISRGVFDTLYRLQLLNHSNNHNLFLDPHY
 Baboon TLR4 ← NSFQENFLPDIFTELRLHNTFLDLSLQCLQLEQLSPTAHFLSSLQVLNHSNNHNFSLDTFFY
 Human TLR4 ← -----

Mouse TLR4 ← HQLYSLSTIDCSFNRIETSKG-ILQHFPKSLAFHNLTHNSVACICEHQKFLQWVKEQKQF
 Rat TLR4 ← QKQYSLSTIDCSFNRIETSKG-ILQHFPKSLAVFHNLTHNSVACICEHQKFLQWVKEQKQF
 Baboon TLR4 ← -----
 Human TLR4 ← KCLNSLQVLDYSLWHIMTSKKQELQHFPSSLAFHLHQTQNDFACTCEHQSFQFLQWIKDQRQL
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Mouse TLR4 ← LWNVEQMTCATPVEMNTSLVLDFHNSCTCYMYKTIISSVSVSIVLUVSTVAFLIYMFYHLLI
 Rat TLR4 ← LWNVEQMKCASPIDMKASLVLDFTNSTCYIKTYKTIISSVSVSIVLUVATVAFLIYMFYHLLI
 Baboon TLR4 ← LVEVERMECATPSDKQGMPLVLSLN-→
 Human TLR4 ← -----

Mouse TLR4 ← LIAGCKKYSRGE SIYD AFVYI S QNEDWVRNELVKNL EGVPRFHLCYLHYRDF IP GVAIA
 Rat TLR4 ← LIAGCKKYSRGE SIYD AFVYI S QNEDWVRNELVKNL EGVPRFHLCYLHYRDF IP GVAIA
 Baboon TLR4 ← -----
 Human TLR4 ← LLAGCIKYGRGENIYD AFVYI S QDDEDWVRNELVKNL EGVPPFLCYLHYRDF IP GVAIA
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

(B) MD2

Macaca MD2 ← MLPFLFFSTLTFSSITEAQKHYWVCNSSDASISYTYCDKHQYPIISINVHPCIKLKGSGL
 Human MD2 ← MLPFLFFSTLTFSSITEAQKQYWVCNSSDASISYTYCDKHQYPIISINVHPCIELKGSKGL
 Mouse MD2 ← MLPFLFFSTLTFSSITEEKQQWCFCHNSDAISISYTYCDKHQYPIISISSEPICIRLRGTNGF
 Rat MD2 ← MLPFLFFSTLTFSSITEEKQQWCFCHNSDAISISYTYCDKHQYPIISISSEPICIRLKGTNGF
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Macaca MD2 → LHIFYIPRPRDVKQLYFHLYITVNSHSLPKRKKEVICRGSDDYSFCRALKGETVNTTVSFS
 Human MD2 → LHIFYIPRPRDVKQLYFHLYITVNTTVHPLPKRKKEVICRGSDDYSFCRALKGETVNTTVSFS
 Mouse MD2 → LHIFYIPRPRDVKQLYFHLYITVNTTVHPLPKRKKEVICRGSDDYSFCRALKGETVNTTVSFS
 Rat MD2 → LHIFYIPRPRDVKQLYFHLYITVNTTVHPLPKRKKEVICRGSDDYSFCRALKGETVNTTVSFS
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Macaca MD2 → FKGIGIFSKGKGYKCVVVEAISSGSEEMLFCLEFDIINQPNNSN
 Human MD2 → FKGIGIFSKGKGYKCVVVEAISSGSEEMLFCLEFDIINQPNNSN
 Mouse MD2 → FEGLFPLKPKHGRVCAEAIAGDTEEKFCLMFIIHRGDVW
 Rat MD2 → FEGLFPLKPKHGRVCAEAIAGDTEEKFCLMFIIHRGDVW
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

(C) SP-A

Rat SP-A → HSLSLCAF TLFLTVVAGIKCNVTDVCAGSPGIPGAPGHNGLPGRDGRDGVKGDGPFPGP
 Mouse SP-A → HSLSLCAF TLFLTVVAGIKCNVTDVCAGSPGIPGAPGHNGLPGRDGRDGVKGDGPFPGP
 Baboon SP-A → HSLSLCAF TLTLMAASGAACEVKDVCVGSPGIPGTPGSHIGLGRDGRDGVKGDGPFPGP
 Human SP-A → HSLSLCAF TLTLMAASGAACEVKDVCVGSPGIPGTPGSHIGLGRDGRDGVKGDGPFPGP
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Rat SP-A → GPPGMPGIPGPGRDGLP GAPPAPGERGDKEPGERGLP GPPAYLDEELQTELYEIKHQILQ
 Mouse SP-A → GPPGMPGIPGPGRDGLP GAPPAPGERGDKEPGERGLP GPPAYLDEELQTELYEIKHQILQ
 Baboon SP-A → GPPGMPGIPGPGRDGLP GAPPAPGERGDKEPGERGLP GPPAYLDEELQTELYEIKHQILQ
 Human SP-A → GPPGMPGIPGPGRDGLP GAPPAPGERGDKEPGERGLP GPPAYLDEELQTELYEIKHQILQ
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Rat SP-A → TMGVLSLQGSMLSVGGDKVFS THGQSVNFDTIKEHCTRAGGNIAVPRTEEEHEAIASI
 Mouse SP-A → TMGVLSLQGSMLSVGGDKVFS THGQSVNFDTIKEHCTRAGGNIAVPRTEEEHEAIASI
 Baboon SP-A → -----
 Human SP-A → TMGVLSLQGSMLSVGGDKVFS THGQSVNFDTIKEHCTRAGGNIAVPRTEEEHEAIASI
 TRGALSLSQGSIMTVGEKVFSNGQSIITFDAIQEACARAGRIVAPRNPEEEAIAFVK
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Rat SP-A → YNNYYVLGHIEDQTQDFHYLDGASVNYTHWYGPERPQGQGKEKCVEMYTDGTWHDRCQ
 Mouse SP-A → YNTXPYLGVIEGQGTPGDFHYLDGASVNYTHWYGPERPGRGKEKCVEMYTDGTWHDRCQ
 Baboon SP-A → -----
 Human SP-A → YNNYYVLGHIEDQTQDFHYLDGASVNYTHWYGPERPGRGKEKCVEMYTDGTWHDRCQ
 YNTXPYLGVIEGQGTPGDFHYLDGASVNYTHWYGPAGRGRGKEKCVEMYTDGTWHDRCQ
 ***: * *; * *; * *; * *; * *; * *; * *; * *; * *; * *; * *;

Rat SP-A → YRLAVCEF →
 Mouse SP-A → YRLAICEF →
 Baboon SP-A → -----
 Human SP-A → SRLTICEF →
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