

TLR4 is activated mainly through the myeloid differentiation factor 88 (MyD88) signaling pathway. Signals from MyD88 are transmitted to the interleukin-1 receptor-associated kinase (IRAK) family of protein kinases via the interaction between MyD88 and the IRAK4 death domain [45] to recruit the tumor necrosis factor receptor-associated factor 6 (TRAF-6)[46–48]. Before ligand-induced signaling occurs, TLR4 first needs to associate with its extracellular binding partner, myeloid differentiation factor 2 (MD-2) [41, 42]. TLR4-MD2 dimerization recruits TIR domain-containing adaptor protein (TIRAP) and MyD88.