

# TIRAP (h2): 293T Lysate: sc-170229

## BACKGROUND

Mammalian Toll-like receptors (TLRs) recognize conserved products of microbial metabolism and activate NF $\kappa$ B and other signaling pathways through the adapter protein MyD88. MyD88 functions as an adapter protein in the association of IL-1 receptor associated kinase (IRAK) with the IL-1 receptor. MyD88 contains a characteristic N-terminal death domain, which is essential for NF $\kappa$ B activation, and an adjacent Toll/IL-1R homology domain (TIR domain), which is responsible for signal transduction. MAL (MyD88 adapter-like), also designated TIR domain-containing adapter protein (TIRAP), MyD88 or TLR-4 adaptor protein, is a cytoplasmic TIR-domain-containing protein that activates NF $\kappa$ B, Jun amino-terminal kinase and extracellular signal-regulated kinase-1 and -2. MAL forms homodimers and heterodimers with MyD88. IRAK-2 is required for the activation of NF $\kappa$ B by MAL, but not IRAK, whereas MyD88 requires both IRAKs. MAL associates with IRAK-2 by its TIR domain. In addition, MAL associates with TLR-4, suggesting that it plays a role in TLR-4 signal transduction.

## REFERENCES

1. Medzhitov, R., Presant-Hurlburt, P., Kopp, E., Stadlen, A., Chen, C., Ghosh, S. and Janeway, C.A., Jr. 1998. MyD88 is an adaptor protein in the hToll/IL-1 receptor family signaling pathways. *Mol. Cell* 2: 253-258.
2. Burns, K., Martinon, F., Esslinger, C., Pahl, H., Schneider, P., Bodmer, J.L., Di Marco, F., French, L. and Tschopp, J. 1998. MyD88, an adaptor protein involved in interleukin-1 signaling. *J. Biol. Chem.* 273: 12203-12209.
3. Chow, J.C., Young D.W., Golenbock, D.T., Christ, W.J. and Gusovsky, F. 1999. Toll-like receptor-4 mediates lipo-polysaccharide-induced signal transduction. *J. Biol. Chem.* 274: 10689-10692.
4. Means, T.K., Golenbock, D.T. and Fenton, M.J. 2000. The biology of Toll-like receptors. *Cytokine Growth Factor Rev.* 11: 219-232.
5. Horng, T., Barton, G.M. and Medzhitov, R. 2001. TIRAP: an adapter molecule in the Toll signaling pathway. *Nat. Immunol.* 2: 835-841.
6. Fitzgerald, K.A., Palsoon-McDermott, E.M., Bowie, A.G., Jefferies, C.A., Mansell, A.S., Brady, G., Brint, E., Dunne, A., Gray, P., Harte, M.T., McMurray, D., Smith, D.E., Sims, J.E., Bird, T.A. and O'Neill, L.A. 2001. MAL (MyD88-adaptor-like) is required for Toll-like receptor-4 signal transduction. *Nature* 413: 78-83.

## CHROMOSOMAL LOCATION

Genetic locus: TIRAP (human) mapping to 11q24.2.

## PRODUCT

TIRAP (h2): 293T Lysate represents a lysate of human TIRAP transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## STORAGE

Store at -20 $^{\circ}$  C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## APPLICATIONS

TIRAP (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive TIRAP antibodies. Recommended use: 10-20  $\mu$ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.