



MyD88 Inhibitor Peptide Set

Catalog No:	NBP2-29328
Content:	The MyD88 Homodimerization Inhibitor peptide: 2 x 1 mg (lyophilized) DRQIKIWFQNRRMKWKK <u>RDVLP</u> GT (MyD88 homodimerization sequence is underlined). Molecular weight: 3100 Control peptide: 2 x 1 mg (lyophilized) DRQIKIWFQNRRMKWKK Molecular weight: 2361
Storage:	The solid product is stable in the dessicator at room temperature for 1 year. However, we recommend storing dessicated at -20°C.
Species Reactivity:	Human, Mouse, Rat, Zebrafish, Xenopus
Form:	White Solid
Application:	Inhibition of MyD88 dependent TLR/IL-1R signaling activitiy by interefering with MyD88 homodimer formation.
Inhibitory mechanism:	Functions as a decoy by binding to the MyD88 TIR domain.
Solubility:	Solubilize the peptides prior to use by making 5 mM PBS* stock solutions (please see Preparation of 5 mM Stock Solutions). The stock solutions are stable at -20oC for 6-8 months. Avoid repeated freeze/thaw cycles. For multiple uses, we suggest aliquoting the stock solution prior to freezing.

Background

MyD88 is an adapter protein that links Toll-like receptors (TLRs) and Interleukin-1 receptors (IL-1rs) with downstream signaling molecules. Homodimerization of MyD88 is a critical step in the signaling process, and allows the recruitment and activation of the kinase IRAK. MyD88 exists as a homodimer when recruited to activated TLR/IL-1Rs. The inhibitor peptide contains a sequence from the MyD88 TIR homodimerization domain (Loiarro, et al.).¹ MyD88 monomer binds to this inhibitor peptide, there by blocking MyD88 homodimerization.

The MyD88 Homodimerization inhibitory peptide contains a protein transduction (PTD) sequence (DRQIKIWFQNRRMKWKK) derived from antennapedia which renders the peptide cell permeable.² The control peptide consists of only the PTD sequence.

Research purposes only. Not for diagnostic or use in human. For use in animal, follow your Institution's Animal Handling Policy.

Preparation of 5 mM Stock Solutions

PBS* is added directly to the vials to prepare the stock solutions. Note: Bring the solution to room temperature and quick spin the tubes before opening the caps.

MyD88 Homodimerization Inhibitor Peptide: 1 mg of DRQIKIWFQNRRMKWKKRDVLPGT

Add 64.4 ul of PBS* to the vial to make a 5 mM stock solution. Mix by vortexing. Aliquot and store at -20°C or -80°C. Avoid repeated freeze thawing.

Control Peptide: 1 mg of DRQIKIWFQNRRMKWKK

Add 84.8 ul PBS* to the vial. Mix by vortexing. Aliquot and store at 20°C or -80°C. Avoid repeated freeze thawing.

*Recipe for 1X PBS:

1. Dissolve the following in 800ml distilled H₂O.
 1. 8g of NaCl
 2. 0.2g of KCl
 3. 1.44g of Na₂HPO₄
 4. 0.24g of KH₂PO₄
2. Adjust pH to 7.5 with HCl.
3. Adjust volume to 1L with additional distilled H₂O.
4. Sterilize by autoclaving

Usage:

Inhibitory peptide at 100 μ M concentration may be a starting point. However, useful concentration of peptide may vary depending on experimental condition and cell type. Incubate cells for 24 hr with peptides before stimulating with ligands.

Reference:

1. Loiarro M, C Sette, G Gallo, A Ciacci, N Fantò, D Mastroianni, P Carminati, and V Ruggiero. peptide-Mediated Interference of TIR Domain Dimerization in MyD88 Inhibits IL-1-Dependent Activation of NF κ B. *J Biol Chem.* 16:15809-14. (2005).
2. Derossi D, AH Joliot, G Chassaings, A Prochiantz. The Third Helix of the Antennapedia Homeodomain Translocates through Biological Membranes. *J Biol Chem.* 269:10444-10450 (1994).

Product Citation:

Targeting of antigen to dendritic cells with poly(-glutamic acid) nanoparticles induces antigen specific humoral and cellular immunity. Uto T, X Wang, K Sato, M Haraguchi, T Akagi, M Akashi, and M Baba. *J. Immunol.*, 178: 2979-2986 (2007).
 β 2-integrin induced p38MAPK activation is a key mediator in the CD14/TLR4/MD2-dependent uptake of LPS by hepatocytes. Scott M, T Biliar. *J Biol Chem* 283:29433-29446 (2008).

Novus Biologicals products cited:

1. MyD88 (NBP2-29328): MyD88 peptide inhibition (mouse WT hepatocytes), Figs. 4A,D.
2. TIRAP (NBP2-29331): TIRAP peptide inhibition (mouse WT hepatocytes), Figs. 4B,D; 5B; 6E.