LAM-MS

Lipoarabinomannan from *Mycobacterium smegmatis* - TLR2 ligand

Catalog # tlrl-lams

For research use only

Version # 06C31-MT

PRODUCT INFORMATION

Content:

- 500 µg lipoarabinomannan from *M. smegmatis* (LAM-MS)
- 1.5 ml sterile endotoxin-free water

Storage :

- LAM-MS is shipped at room temperature and should be stored at -20˚C.
- Upon resuspension, LAM-MS should be aliquoted and stored at 4°C for short term storage or -20˚C for long storage. Product is stable 1 month at 4°C and 6 months at -20°C when properly stored.

Quality Control:

Endotoxin: <0.125 EU/mg LAM-MS

DESCRIPTION

Lipoarabinomannans (LAM) are lipoglycans restricted to the *Mycobacterium* genus that act as potent modulators of the host immune response. They are found in the envelope of all mycobacteria species, such as the pathogenic strains *M. tuberculosis* and *M. leprae*, the vaccine strain, *M. bovis BCG*, the opportunistic strains *M. avium* and *M. foruitum*, and the non-pathogenic strain *M. smegmatis*. LAM display different immunomodulatory effects depending on their structure. PILAM, which are phosphoinositol-capped LAM and found in non-pathogenic species *(M. smegmatis)*, are proinflammatory molecules whereas ManLAM, which are mannose-capped LAM and found in pathogenic species *(M. tuberculosis)*, are anti-inflammatory molecules[1]. PILAM activates macrophages in a TLR2-dependent manner that seems to involve other TLRs but not TLR4[2,3].

1. Quesniaux VJ. *et al.*, 2004. Toll-like receptor 2 (TLR2)-dependent-positive and TLR2-independent-negative regulation of proinflammatory cytokines by mycobacterial lipomannans. J Immunol. 172(7):4425-34.
2. Tapping RI & Tobias PS., 2003. Mycobacterial lipoarabinomannan mediates physical interactions between TLR1 and TLR2 to induce signaling. J Endotoxin Res. 9(4):264-8.
3. Dao DN. *et al.*, 2004. Mycobacterium tuberculosis lipomannan induces apoptosis and interleukin-12 production in macrophages. Infect Immun. 72(4):2067-74.
4. Schindler U. & Baichwal VR., 1994. Three NF-kB binding sites in the human E-selectin gene required for maximal tumor necrosis factor alpha-induced expression. Mol Cell Biol, 14(9):5820-5831.

METHODS

Preparation of sterile stock solution (1 mg/ml)

Stimulation of TLR2 can be achieved with 100 ng -10 µg/ml LAM-MS.

- Add 500 µl sterile endotoxin-free water (provided) and vortex until complete solubilisation.
- Use stock solution to prepare serial dilutions.

LAM-MS stimulation

- Transfect your cell line with an NF-κB-inducible reporter plasmid, i.e. a plasmid carrying a reporter gene, such as SEAP or luciferase, under the control of an NF-κB-inducible ELAM-1 (E-selectin) promoter[4].

Note: InvivoGen provides pNiFty, a family of NF-κB-inducible reporter plasmids that can be transfected transiently (pNiFty) or stably (pNiFty2). pNiFty plasmids are available either with the SEAP or luciferase reporter genes (see Related Products).

- If your cell line does not naturally express TLR2, cotransfect with a TLR2 expressing plasmid, such as pUNO-TLR2.
- Twenty-four to forty-eight hours after transfection, stimulate cells with 100 ng -10 µg/ml LAM-MS for 6 to 24 hours.
- Determine LAM-MS stimulation on TLR2 by assessing reporter gene expression using the appropriate detection system.

RELATED PRODUCTS

Product	Catalog Code
pNiFty-Luc (Amp^R)	pnifty-luc
pNiFty-SEAP (Amp^R)	pnifty-seap
pNiFty2-Luc (Zeo^R)	pnifty2-luc
pNiFty2-SEAP (Zeo^R)	pnifty2-seap
pUNO1-hTLR2 (human gene)	puno1-htlr2
pUNO-mTLR2 (mouse gene)	puno-mtlr2

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