LTA-SA Purified

Purified lipoteichoic acid from *Staphylococcus aureus* - TLR2 ligand

Catalog # tlrl-pslta

For research use only

Version # 15E011-MM

PRODUCT INFORMATION

Content:

- 5 mg LTA-SA Purified
- 10 ml endotoxin-free water

Storage:

- LTA-SA Purified is shipped at room temperature and should be stored at -20 °C.
- Upon resuspension, store LTA-SA Purified at 4 °C for short-term storage or -20 °C for long storage. Avoid repeated freeze-thaw cycles. Resuspended product is stable for 1 month at 4 °C and for 6 months at -20 °C when properly stored.

Quality Control:

- The TLR2 activity has been tested using HEK-Blue™ TLR2 cells.
- The absence of other bacterial components (e.g. endotoxins) has been confirmed using HEK-Blue™ TLR4 cells.

DESCRIPTION

Lipoteichoic acid (LTA) is a major immunostimulatory component of Gram-positive bacteria. LTA is responsible for causing gram-positive sepsis. LTA shares many of the biochemical and physiological properties of the immunostimulatory lipopolysaccharide (LPS) of gram-negative bacteria. Like LPS, LTA is an amphiphile formed by a hydrophilic polyphosphate polymer linked to a neutral glycolipid. LTA stimulates immune cells through TLR2 to produce TNF-α and other inflammatory cytokines[1].

This preparation of LTA from *S. aureus* is purified following the method described by Morath *et al*[2]. It contains 10 times less endotoxin according to the gel clot LAL Assay than the standard preparation. At concentrations ranging from 1 ng to 10 µg/ml, it highly activates TLR2 and no other TLRs including TLR4.

1. Schwandner R. *et al.*, 1999. Peptidoglycan- and lipoteichoic acid-induced cell activation is mediated by toll-like receptor 2. J Biol Chem, 274(25):17406-9.**2. Morath S. *et al.*, 2001.** Structure-function relationship of cytokine induction by lipoteichoic acid from Staphylococcus aureus. J.Exp.Med. 193:393-397.

METHODS

Preparation of stock solution (5 mg/ml)

Stimulation of TLR2 can be achieved with 1 ng - 1 µg/ml LTA-SA Purified.

- Add 1 ml of endotoxin-free water (provided) and vortex to homogenize.

TLR2 stimulation with LTA-SA Purified

LTA-SA Purified can be used to activate TLR2 in cells expressing this receptor such as HEK-Blue™ TLR2 cells. These cells were designed to study TLR2 stimulation by monitoring NF-κB activation. Stimulation of HEK-Blue™ TLR2 cells with a TLR2 agonist activates NF-κB which induces the production of SEAP (secreted embryonic alkaline phosphatase). Levels of SEAP can be easily determined using HEK-Blue™ Detection, a cell culture medium that allows the detection of SEAP as the reporter protein is secreted by the cells.

For more information visit: www.invivogen.com/hek-blue-tlr2

- Dispense 20 µl of LTA-SA Purified at various concentrations (1 ng - 1 µg/ml) per well of a 96-well plate.
- Prepare a cell suspension ~280,000 cells per ml in HEK-Blue™ Detection medium and immediately add 180 µl of the cell suspension (~50,000 cells) to each LTA-SA Purified-containing well.
- Incubate the plate for 6 - 24 h at 37 °C, 5% CO_2.
- Determine SEAP levels using a spectrophotometer at 620 - 655 nm.

RELATED PRODUCTS

Product	Catalog Code
HEK-Blue™ Detection	hb-det2
HEK-Blue™ hTLR2 cells	hkb-htlr2
Other TLR2 agonists	
FSL-1 (Synthetic diacylated lipoprotein)	tlrl-fsl
HKLM (Heat Killed *L. monocytogenes*)	tlrl-hklm
LPS-PG Ultrapure (LPS from *P. gingivalis*)	tlrl-pglps
LTA-BS (Standard LTA from *B. subtilis*)	tlrl-lta

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