

FLA-ST Ultrapure

Purified Flagellin from *S. typhimurium*; TLR5 ligand

Catalog # tlr1-epstfla, tlr1-epstfla-5

<http://www.invivogen.com/fla-st>

For research use only

Version # 17L04-MM

PRODUCT INFORMATION

Content:

- FLA-ST Ultrapure (purified flagellin from *Salmonella typhimurium*) is provided lyophilized and is available in two quantities:
 - 10 µg: tlr1-epstfla
 - 50 µg: tlr1-epstfla-5
- 1.5 ml endotoxin-free water

Storage:

- FLA-ST Ultrapure is shipped at room temperature and should be stored at -20°C. Lyophilized product is stable for 1 year when stored at -20°C.
- Upon resuspension, prepare aliquots of FLA-ST Ultrapure and store at -20°C. Resuspended product is stable for 6 months at -20°C when properly stored. Avoid repeated freeze-thaw cycles.

Quality Control:

- Purity: >95% (SDS-PAGE)
- Endotoxin levels: <0.05 EU/µg
- Biological activity has been confirmed using HEK-Blue™ hTLR5 cells.

DESCRIPTION

FLA-ST Ultrapure is a high purity grade of flagellin isolated from the Gram-negative bacteria *Salmonella typhimurium*. Flagellin, the principal component of the flagella present on many Gram-negative and Gram-positive bacteria, is a proinflammatory molecule recognized by distinct types of pattern recognition receptors (PRRs); the surface localized Toll-like receptor (TLR5)¹ and the cytosolic NOD-like receptors (NLRs), NLRC4 and NAIP5².

Extracellular flagellin is detected by TLR5 resulting in MyD88-mediated NF-κB activation, cytokine and nitric oxide production depending on the nature of the TLR5 signaling complex³. Intracellular flagellin is detected by NLRC4 (also known as IPAF) and NAIP5. Recognition by NLRC4 and NAIP5, leads to inflammasome assembly, triggering caspase-1 activation of IL-1β and IL-18.

1. Hayashi F. *et al.*, 2001. The innate immune response to bacterial flagellin is mediated by Toll-like receptor 5. *Nature* 410(6832):1099-103. 2. Zhao *et al.*, 2011. The NLRC4 inflammasome receptors for bacterial flagellin and type III secretion apparatus. *Nature*. 2011 Sep 14;477(7366):596-600. 3. Mizel SB. *et al.*, 2003. Induction of macrophage nitric oxide production by Gram-negative flagellin involves signaling via heteromeric Toll-like receptor 5/Toll-like receptor 4 complexes. *J Immunol*. 170(12):6217-23.

METHODS

Preparation of stock solution (500 µg/ml)

- Open vial lid carefully to avoid any loss of product.
- Resuspend FLA-ST Ultrapure with endotoxin-free water (provided).
 - Add 20 µl to 10 µg of FLA-ST Ultrapure

Note: Alternatively, the 10 µg of FLA-ST Ultrapure can be resuspended in 40 µl of endotoxin-free water to provide a stock solution at 250 µg/ml.

- Add 100 µl to 50 µg of FLA-ST Ultrapure
- Mix by pipetting. Do not vortex. Prepare aliquots and store at -20°C.

Working concentration 10-100 ng/ml.

TLR5 stimulation using FLA-ST Ultrapure

FLA-ST Ultrapure can be used to stimulate TLR5 in HEK-Blue™ TLR5 cells. HEK-Blue™ TLR5 cells stably overexpress the TLR5 gene and an NF-κB-inducible secreted embryonic alkaline phosphatase (SEAP).

For more information, visit: www.invivogen.com/hek-blue-trl5

- Dispense 20 µl of FLA-ST Ultrapure (10-100 ng/ml final concentration) per well of a 96-well plate.
- Prepare a cell suspension of HEK-Blue™ TLR5 cells according to the data sheet.
- Add 180 µl of HEK-Blue™ TLR5 cell suspension per well.
- Incubate the plate for 6-24 h at 37°C, 5% CO₂.
- Collect 20 µl of supernatant and add to a well of a 96-well plate containing 180 µl of QUANTI-Blue™.
- Incubate the plate at 37°C for 1-3 h.
- Determine SEAP levels using a spectrophotometer at 620-655 nm.

RELATED PRODUCTS

Product	Cat. Code
HEK-Blue™ hTLR5 cells (human TLR5)	hkb-hltr5
HEK-Blue™ mTLR5 cells (mouse TLR5)	hkb-mtlr5
QUANTI-Blue™	rep-qb1
Other TLR5 ligands:	
FLA-BS Ultrapure (flagellin from <i>B. subtilis</i>)	tlr1-pbsfla
FLA-PA Ultrapure (flagellin from <i>P. aeruginosa</i>)	tlr1-pafla
RecFLA-ST (recombinant flagellin from <i>S. typhimurium</i>)	tlr1-flic

TECHNICAL SUPPORT

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