

Pam2CSK4

Synthetic diacylated lipoprotein; TLR2/TLR6 ligand

Catalog code: tlr1-pm2s-1

<https://www.invivogen.com/pam2csk4>

For research use only

Version 22B25-MM

PRODUCT INFORMATION

Contents

- 1 mg Pam2CSK4 provided lyophilized
- 1.5 ml endotoxin-free water

Storage and stability

- Pam2CSK4 is shipped at room temperature. Upon receipt, store at 4°C.
- Upon resuspension, store at 4°C for 1 month or at -20°C for 6 months at -20°C. Prepare aliquots before freezing.

Quality control

- The TLR2 activity has been tested using HEK-Blue™ TLR2 cells.
- The absence of endotoxins has been confirmed using HEK-Blue™ TLR4 cells.

DESCRIPTION

Pam2CSK4 (Pam2CysSerLys4) is a synthetic diacylated lipopeptide (LP) and a potent activator of the pro-inflammatory transcription factor NF-κB^{1,2}. Pam2CSK4 mimics the acylated amino terminus of bacterial LPs and is recognized by the TLR2/TLR6 heterodimer². Bacterial LPs are a family of pro-inflammatory cell wall components found in both Gram-positive and Gram-negative bacteria. The stimulatory activity of these LPs resides in their acylated amino terminus.

The TLR2/TLR6 heterodimer recognizes LPs with two fatty acids, a structural characteristic of bacterial LPs. Recognition of Pam2CSK4 is mediated by TLR2 which cooperates with TLR6 through their cytoplasmic domain to induce the signaling cascade leading to the activation of NF-κB³. Of note, it has been demonstrated that Pam2CSK4 induces platelet activation in a TLR2/TLR6/NF-κB-dependent manner¹.

1. Parra-Izquierdo I. *et al.*, 2021. The Toll-Like Receptor 2 ligand Pam2CSK4 activates platelet nuclear factor-κB and Bruton's tyrosine kinase signaling to promote platelet-endothelial cell interactions. *Front Immunol.* 12:729951. 2. Kang J.Y. *et al.*, 2009. Recognition of lipopeptide patterns by Toll-like receptor 2-Toll-like receptor 6 heterodimer. *Immunity* 31(6):873-84. 3. Noh S.Y. *et al.*, 2015. Lipoteichoic acid from *Lactobacillus plantarum* inhibits Pam2CSK4-induced IL-8 production in human intestinal epithelial cells. *Mol Immunol.* 64(1):183-9.

CHEMICAL PROPERTIES

Chemical name: S-[2,3-bis(palmitoyloxy)-(2RS)-propyl]-[R]-cysteinyll-[S]-seryl-[S]-lysyl-[S]-lysyl-[S]-lysyl-[S]-lysine x 3 CF₃COOH

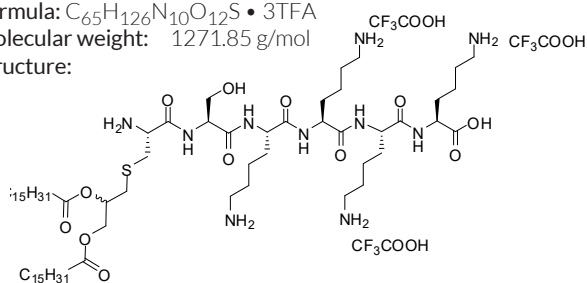
Solubility: 1 mg/ml in water

CAS number: 868247-72-7

Formula: C₆₅H₁₂₆N₁₀O₁₂S • 3TFA

Molecular weight: 1271.85 g/mol

Structure:



METHODS

Preparation of stock solution (1 mg/ml)

1. Add 1 ml of endotoxin-free water (provided) to 1 mg vial.
2. Vortex until completely dissolved. Use immediately or store at 4°C or at -20°C. Prepare aliquots before freezing.
3. Prepare further dilutions by adding the appropriate amount of endotoxin-free water.

Working concentration: 1 pg/ml - 10 ng/ml

TLR2 stimulation using Pam2CSK4

Pam2CSK4 can be used to activate TLR2 in HEK-Blue™ TLR2 cells that 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 a SEAP detection medium, such as HEK-Blue™ Detection.

For more information visit: <https://www.invivogen.com/hek-blue-tnfr2>.

1. Dispense 20 µl of Pam2CSK4 (1 pg/ml-10 ng/ml final concentration) per well of a 96-well plate.
2. Prepare a suspension of HEK-Blue™ TLR2 cells in HEK-Blue™ Detection medium.
3. Immediately add 180 µl of the cell suspension to each Pam2CSK4-containing well.
4. Incubate the plate at 37°C in a CO₂ incubator for 16-24 hours.
5. Determine SEAP levels using a spectrophotometer at 620-655 nm.

RELATED PRODUCTS

Product	Description	Cat. Code
FSL-1	TLR2/6 ligand	tlr1-fsl
HEK-Blue™ Detection	SEAP detection medium	hb-det2
HEK-Blue™ hTLR2 cells	Human TLR2 reporter cells	hkb-htr2
HEK-Blue™ mTLR2 cells	Murine TLR2 reporter cells	hkb-mtr2
Pam3CSK4	TLR2/1 ligand	tlr1-pms

TECHNICAL SUPPORT

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