

Product Datasheet

Imiquimod, TLR7 ligand NBP2-26228-1mg

Unit Size: 1 mg

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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NBP2-26228-1mg

Imiquimod, TLR7 ligand

Product Information	
Unit Size	1 mg
Concentration	Please see the protocols for proper use of this product. If no protocol is available, contact technical services for assistance.
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Buffer	NBP2-26228-0.125mg: 125 ug in 50 uL of DMSO (this product was formerly supplied in sterile water) NBP2-26228-1mg: 1 mg in 400 uL of DMSO.

Product Description	
Description	Imiquimod, TLR7 ligand is an imidazoquinoline amine analog to guanosine. As a synthetic molecule of the Imidazoquinoline family, it has potent immunostimulatory activity. Imiquimod has been shown to activate only TLR7. This activation is MyD88 dependant and leads to the induction of the transcription factor NF-kB.
Species	Human, Mouse
Specificity/Sensitivity	Imiquimod is human/mouse TLR7 agonist.
Notes	5 mg size will be provided as 5 x 1.0 mg vials.
Endotoxin Note	<0.001 EU/ug

Product Application Details	
Applications	Functional, In vitro assay, Ligand Activation
Recommended Dilutions	Functional, In vitro assay, Ligand Activation
Application Notes	Formula: C ₁₄ H ₁₆ N ₄ , HCl. Molecular weight: 276.8. This product is useful for activation of TLR7 and stimulation of TLR7 has been achieved with 5-10 ug/mL. Use in ligand activation, functional, and in vitro assays reported in scientific literature (PMID 25957979)

Images

Imiquimod, TLR7 ligand [NBP2-26228] - 293T cells were transfected with pCMV/TLR7 plasmid and pNF-kB/SEAP plasmid using Lipofectamin 2000. After 48 hrs of transfection, 5 ug/mL of Imiquimod (R-837) was added. Cells were incubated at 37C for 24 hrs. Transfected cell supernatant was collected and analyzed using NF-kB SEAPorter Assay kit.



Publications

Liu Y, Diamond SL. Activation of Most Toll-Like Receptors in Whole Human Blood Attenuates Platelet Deposition on Collagen under Flow *Journal of Immunology Research* 2023-01-17 [PMID: 36703865] (Block/Neutralize)

Jalloh S, Olejnik J, Berrigan J et al. CD169-mediated restrictive SARS-CoV-2 infection of macrophages induces pro-inflammatory responses *PLOS Pathogens* 2022-10-24 [PMID: 36279285] (Western Blot, Knockdown Validated)

Ye H, Pan J, Gong E et al. Inhibitory Effect of Immunologically Activated Mesenchymal Stem Cells on Lung Cancer Cell Growth and Metastasis *Cancer biotherapy & radiopharmaceuticals* 2021-03-26 [PMID: 33769841]

Effects of TLR Ligands on the Expression of Cytokines and Possible Role of NFkB in its Process in the Theca of Chicken Follicles Kang Y, Nii T, Isobe N *J Poult Sci* [PMID: 32055188] (Func, Chicken)

Hinks TSC, Marchi E, Jabeen M et al. Activation and In Vivo Evolution of the MAIT Cell Transcriptome in Mice and Humans Reveals Tissue Repair Functionality *Cell Rep* 2019-09-17 [PMID: 31533045] (In Vivo, Mouse, Human)

Parthasarathy G, Philipp MT. Intracellular TLR7 is activated in human oligodendrocytes in response to *Borrelia burgdorferi* exposure. *Neurosci. Lett.* 2018-02-03 [PMID: 29408631] (Human)

Yabe-Wada T, Matsuba S, Takeda K et al. TLR signals posttranscriptionally regulate the cytokine trafficking mediator sortilin. *Sci Rep.* 2016-05-25 [PMID: 27220277] (Func, In vitro, Human, Mouse)

Li Q, Ma Y, Li L et al. Flagellin influences the expression of a variety of important cytokines and chemokines without affecting the immune status of umbilical cord mesenchymal stem cells. *Mol Med Rep* 2015-09-01 [PMID: 26330280] (In-vitro, Func)

Nohmi K, Tokuhara D, Tachibana D et al. Zymosan Induces Immune Responses Comparable with Those of Adults in Monocytes, Dendritic Cells, and Monocyte-Derived Dendritic Cells from Cord Blood. *J. Pediatr.* 2015-05-06 [PMID: 25957979] (LA, In vitro, Func, Human)

Details:

Zymosan, TLR2 ligand (Imgenex IMG-2212) was used for in-vitro stimulation experiments involving human heparinized cord or adult blood Monocytes, peripheral blood dendritic cells (DCs) and monocyte-derived DCs (MoDCs). Zymosan was employed at 1 ug/mL concentration on Monocytes as well as on MoDCs and at 0.5 ug/mL on DCs. See full text for experimental details and results.

Zhang L, Liu D, Pu D et al. The TLR7 agonist Imiquimod promote the immunogenicity of mesenchymal stem cells *Biological Research.* 2015-01-17 [PMID: 25654296] (Human)

Details:

Imiquimod, TLR7 ligand used for stimulating human umbilical cord mesenchymal stem cells (UCMSCs) in experiments involving study of the immunogenicity of MSCs- Imiquimod dissolved in DMSO at 2.5 mg/ml concentration to make a stock solution and then added the stock solution to 6 wells plates containing 1.5×10^5 cells in 2 ml medium at 10 ug/ml working concentration. Experiments also involved Imiquimod treatment to co-cultures of PBMC and UCMSC.

Valencia Pacheco GJ, Pinzon Herrera F, Cruz Lopez JJ et al. Expression and activation of intracellular receptors TLR7, TLR8 and TLR9 in peripheral blood monocytes from HIV-infected patients. *Colomb Med (Cali).* 2013-06-30 [PMID: 24892454] (Flow Cytometry Control)

Kusagaya H, Fujisawa T, Yamanaka K et al. Toll-like receptor-mediated airway IL-17C enhances epithelial host defense in an autocrine/paracrine manner. *Am. J. Respir. Cell Mol. Biol.* 2014-01-01 [PMID: 23944933] (In vitro, Human)

Details:

TLR ligand treatment (primary normal human bronchial epithelial cells), Figs 1, S1. CpG-ODN was used at 10 ug/ml.

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