



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human STING Protein
Catalog Number: hRP-2246
Manufacturer: LD Biopharma, Inc.

Introduction

STING protein facilitator of innate immune signaling that acts as a sensor of cytosolic DNA from bacteria and viruses and promotes the production of type I interferon (IFN-alpha and IFN-beta). Innate immune response is triggered in response to non-CpG double-stranded DNA from viruses and bacteria delivered to the cytoplasm. Acts by recognizing and binding cyclic di-GMP (c-di-GMP), a second messenger produced by bacteria, and cyclic GMP-AMP (cGAMP), a messenger produced in response to DNA virus in the cytosol: upon binding of c-di-GMP or cGAMP, autoinhibition is alleviated and STING is able to activate both NF- κ B and IRF3 transcription pathways to induce expression of type I interferon and exert a potent anti-viral state. It may be involved in translocon function, the translocon possibly being able to influence the induction of type I interferons. STING may also be involved in transduction of apoptotic signals via its association with the major histocompatibility complex class II (MHC-II). It mediates death signaling via activation of the extracellular signal-regulated kinase (ERK) pathway. It is essential for the induction of IFN-beta in response to human herpes simplex virus 1 (HHV-1) infection. STING exhibits 2',3' phosphodiester linkage-specific ligand recognition. STING can bind both 2'-3' linked cGAMP and 3'-3' linked cGAMP but is preferentially activated by 2'-3' linked cGAMP.

The biggest cytoplasmic domain of human STING cDNA (137-378aa, Derived from BC047779. Isoform-I) was constructed with codon optimization gene synthesis and expressed with a human N-terminalT7-His-TEV cleavage site Tag (29aa) fusion. This protein was expressed in E. coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: STING (TMEM173; ERIS; MITA)
Accession Number: NP_938023
Species: Human
Size: 50 μ g / Vial



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Composition: 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.

Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Deschamps T et al., *Evasion of the STING DNA-Sensing Pathway by VP11/12 of Herpes Simplex Virus 1*. J. Virol. 91 (16), e00535-17 (2017)

Mao Y, et al., *STING-IRF3 Triggers Endothelial Inflammation in Response to Free Fatty Acid-Induced Mitochondrial Damage in Diet-Induced Obesity*. Arterioscler. Thromb. Vasc. Biol. 37 (5), 920-929 (2017)

Chen Y, et al., *p38 inhibition provides anti-DNA virus immunity by regulation of USP21 phosphorylation and STING activation*. J. Exp. Med. 214 (4), 991-1010 (2017)

Yin Q, et al., *Cyclic di-GMP sensing via the innate immune signaling protein STING*. Mol. Cell 46 (6), 735-745 (2012)

Applications

1. May be used for protein-protein interaction assay.
2. May be used as specific substrate protein for STING specific kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. Potential therapeutic protein, which may be used for anti-infectious disease drug development by modulating endogenous STING activities
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHENLYFQGGEFKGLAPAEISAVCEKGNFNVAHGLAWSYYIGYLRLLI
LPELQARIRTYNQHYNNLLRGAVSQRLYILLPLDCGVDPNLSMADPNIRFLDKLPQQTGDHAGI
KDRVYSNSIYELLENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCRTLEDIL
ADAPESQNNCRLLIAYQEPADDSSFSLSQEVLRLRHLRQEEKEEVTVGSLKTSAVPSTSTMSQEP
ELISGMEKPLPLRTDFS