



STING

Rabbit Monoclonal antibody(Mab)
Catalog # AD80373

Specification

STING - Product info

Application IHC-P
Primary Accession Q86WV6
Reactivity Human
Host Rabbit
Clonality Monoclonal
Calculated MW 42193

STING - Additional info

Gene ID 340061

Other Names

Stimulator of interferon genes protein, hSTING, Endoplasmic reticulum interferon stimulator, ERIS, Mediator of IRF3 activation, hMITA, Transmembrane protein 173, STING1 (HGNC:27962)

Storage

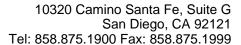
Maintain refrigerated at 2-8°C

STING - Protein Information

Name STING1 (HGNC:27962)

Function

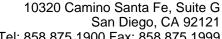
Facilitator of innate immune signaling that acts as a sensor of cytosolic DNA from bacteria and viruses and promotes the production of type I interferon (IFN-alpha and IFN-beta) (PubMed: 18724357, PubMed: 18818105, PubMed: 19433799, PubMed: 19776740, PubMed: 23027953, PubMed: 23747010, PubMed: 23910378, PubMed: 27801882, PubMed: 29973723, PubMed: 30842659, PubMed: 35045565, PubMed: 35388221, PubMed: 36808561, PubMed: 37832545, PubMed: 25704810, PubMed:39255680). Innate immune response is triggered in response to non-CpG double-stranded DNA from viruses and bacteria delivered to the cytoplasm (PubMed:26300263). Acts by binding cyclic dinucleotides: recognizes and binds cyclic di-GMP (c- di-GMP), a





second messenger produced by bacteria, cyclic UMP-AMP (2',3'-cUAMP), and cyclic GMP-AMP (cGAMP), a messenger produced by CGAS in response to DNA virus in the cytosol (PubMed: 21947006, PubMed: 23258412, PubMed: 23707065, PubMed:23722158, PubMed:23747010, PubMed: 23910378, PubMed: 26229117, PubMed: 30842659, PubMed: 35388221, PubMed: 37379839). Upon binding to c-di-GMP, cUAMP or cGAMP, STING1 oligomerizes, translocates from the endoplasmic reticulum and is phosphorylated by TBK1 on the pLxIS motif, leading to recruitment and subsequent activation of the transcription factor IRF3 to induce expression of type I interferon and exert a potent anti-viral state (PubMed: 22394562, PubMed: 25636800, PubMed: 29973723, PubMed: 30842653, PubMed: 35045565, PubMed: 35388221). Exhibits 2',3' phosphodiester linkage-specific ligand recognition: can bind both 2'-3' linked cGAMP (2'-3'-cGAMP) and 3'-3' linked cGAMP but is preferentially activated by 2'-3' linked cGAMP (PubMed: 23747010, PubMed: 23910378, PubMed: 26300263). The preference for 2'-3'-cGAMP, compared to other linkage isomers is probably due to the ligand itself, whichs adopts an organized free-ligand conformation that resembles the STING1-bound conformation and pays low energy costs in changing into the active conformation (PubMed: 26150511). In addition to promote the production of type I interferons, plays a direct role in autophagy (PubMed: 30568238, PubMed: 30842662). Following cGAMP-binding, STING1 buds from the endoplasmic reticulum into COPII vesicles, which then form the endoplasmic reticulum-Golgi intermediate compartment (ERGIC) (PubMed:30842662). The ERGIC serves as the membrane source for WIPI2 recruitment and LC3 lipidation, leading to formation of autophagosomes that target cytosolic DNA or DNA viruses for degradation by the lysosome (PubMed: 30842662). Promotes autophagy by acting as a proton channel that directs proton efflux from the Golgi to facilitate MAP1LC3B/LC3B lipidation (PubMed: 37535724). The autophagy- and interferon-inducing activities can be uncoupled and autophagy induction is

independent of TBK1 phosphorylation

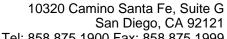


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Cellular Location

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(PubMed: 30568238, PubMed: 30842662).
Autophagy is also triggered upon infection
by bacteria: following c-di-GMP-binding,
which is produced by live Gram- positive
bacteria, promotes reticulophagy (By
similarity). May be involved in translocon
function, the translocon possibly being
able to influence the induction of type I
interferons (PubMed: 18724357). May be
involved in transduction of apoptotic
signals via its association with the major
histocompatibility complex class II (MHC-II)
(By similarity).
Endoplasmic reticulum membrane:
Multi-pass membrane protein
{ECO:0000255,
ECO:0000269|PubMed:30842659,
ECO:0000269|PubMed:32690950}.
Cytoplasm, perinuclear region.
Endoplasmic reticulum-Golgi intermediate
compartment membrane; Multi-pass
membrane protein {ECO:0000255,
ECO:0000269|PubMed:32690950}. Golgi
apparatus membrane; Multi-pass
membrane protein. Cytoplasmic vesicle,
autophagosome membrane; Multi-pass
membrane protein. Mitochondrion outer
membrane; Multi-pass membrane protein.
Cell membrane
{ECO:0000250|UniProtKB:Q3TBT3};
Multi-pass membrane protein. Note=In
response to double-stranded DNA
stimulation, translocates from the
endoplasmic reticulum through the
endoplasmic reticulum-Golgi intermediate
compartment and Golgi to post-Golgi
vesicles, where the kinase TBK1 is
recruited (PubMed:19433799,
PubMed:29694889, PubMed:30842653,
PubMed:30842659). Upon cGAMP-binding,
translocates to the endoplasmic
reticulum-Golgi intermediate compartment
(ERGIC) in a process that is dependent on
COPII vesicles: STING1-containing ERGIC
serves as a membrane source for LC3
lipidation, which is a key step in
autophagosome biogenesis
(PubMed:30842662, PubMed:37832545).
Localizes in the lysosome membrane in a
TMEM203- dependent manner (By
similarity).
{ECO:0000250|UniProtKB:Q3TBT3,
ECO:0000269|PubMed:19433799.
ECO:0000269|PubMed:29694889.
ECO:0000269|PubMed:30842653.
ECO:0000269|PubMed:30842659,
ECO:0000269|PubMed:30842662,
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ECO:0000269|PubMed:32690950, ECO:0000269|PubMed:37832545}

Ubiquitously expressed

(PubMed:18724357, PubMed:18818105). Expressed in skin endothelial cells, alveolar type 2 pneumocytes, bronchial epithelium and alveolar macrophages

(PubMed:25029335).

STING - Protocols

Tissue Location

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- <u>Immunofluorescence</u>
- <u>Immunoprecipitation</u>
- Flow Cytomety
- Cell Culture

STING - Images