

TMEM173 Protein, Human (Sumo-His)

Cat. No.:	HY-P70700
Synonyms:	Stimulator of interferon genes protein; TMEM173; Mediator of IRF3 activation; sting;
Species:	Human
Source:	E. coli
Accession:	Q86WV6 (V155-V341)
Gene ID:	340061
Molecular Weight:	35-38 kDa

PROPERTIES

AA Sequence	<p>V A H G L A W S Y Y I G Y L R L I L P E L Q A R I R T Y N Q H Y N N L L R G A V</p> <p>S Q R L Y I L L P L D C G V P D N L S M A D P N I R F L D K L P Q Q T G D H A G</p> <p>I K D R V Y S N S I Y E L L E N G Q R A G T C V L E Y A T P L Q T L F A M S Q Y</p> <p>S Q A G F S R E D R L E Q A K L F C R T L E D I L A D A P E S Q N N C R L I A Y</p> <p>Q E P A D D S S F S L S Q E V L R H L R Q E E K E E V</p>
Appearance	Solution
Formulation	Supplied as a 0.2 µm filtered solution of 20 mM HEPES, 100 mM NaCl, 10% Glycerol, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

Background	<p>The TMEM173 protein acts as a facilitator of innate immune signaling, functioning as a sensor for cytosolic DNA from bacteria and viruses, ultimately promoting the production of type I interferon (IFN-alpha and IFN-beta). This innate immune response is triggered in response to non-CpG double-stranded DNA from viruses and bacteria delivered to the cytoplasm. TMEM173 recognizes and binds cyclic dinucleotides, specifically cyclic di-GMP (c-di-GMP), a second messenger produced by bacteria, and cyclic GMP-AMP (cGAMP), a messenger produced by CGAS in response to DNA virus in the cytosol. Upon binding to c-di-GMP or cGAMP, TMEM173 oligomerizes, translocates from the endoplasmic reticulum, and is phosphorylated by TBK1, leading to the recruitment and activation of the transcription factor IRF3. This induces the expression of type I interferon, establishing a potent anti-viral state. Additionally, TMEM173 plays a direct role in autophagy, with cGAMP-</p>
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binding initiating ERGIC formation, which serves as the membrane source for autophagosome formation, targeting cytosolic DNA or DNA viruses for lysosomal degradation. The multifaceted activities of TMEM173 highlight its central role in orchestrating innate immune responses and autophagic processes, contributing to the cell's defense against viral and bacterial threats.

Caution: Product has not been fully validated for medical applications. For research use only.

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