

DEFA1 Protein, Human (GST)

Cat. No.:	HY-P72171
Synonyms:	alpha 1; DEF1; DEF1_HUMAN; DEFA1; DEFA1B; DEFA2; Defensin 1; Defensin; Defensin; alpha 1; Defensin; alpha 1; myeloid related sequence; Defensin; alpha 2; HNP-1; HNP-2; HNP1; HP-1; HP-2; HP1; HP2; MRS; Myeloid related sequence; Neutrophil defensin 1; Neutrophil defensin 2
Species:	Human
Source:	E. coli
Accession:	P59665 (D1-C94)
Gene ID:	1667
Molecular Weight:	Approximately 34 kDa

PROPERTIES

AA Sequence	D I P E V V V S L A W D E S L A P K H P G S R K N M A C Y C R I P A C I A G E R R Y G T C I Y Q G R L W A F C C
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm solution of 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>The DEFA1 Protein serves as a versatile effector within the innate immune system, wielding antibiotic-like properties against a diverse range of infectious agents, encompassing bacteria, fungi, and viruses. Additionally, DEFA1 contributes to immune defense by promoting the activation and maturation of antigen-presenting cells (APCs). Through interaction with the vital precursor of cell wall synthesis, lipid II, DEFA1 inhibits bacterial cell wall synthesis. It further impedes adenovirus infection by restraining viral disassembly at the vertex region, hindering the release of the internal capsid protein pVI crucial for endosomal membrane penetration during cell entry. The protein's interaction with adenovirus capsid redirects viral particles to TLR4, promoting a NLRP3-mediated inflammasome response and interleukin-1 beta (IL-1beta) release. DEFA1 induces the production of proinflammatory cytokines, including type I interferon, in plasmacytoid dendritic cells (pDCs) by triggering NFKBIA degradation and nuclear translocation of IRF1, both pivotal for pDC activation. Structurally, DEFA1 exists as both a tetramer and a dimer, illustrating its dynamic organization, and it interacts with RETN.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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