AGER Protein, Human (HEK293, hFc)

Cat. No.:	HY-P74604
Synonyms:	Advanced glycosylation end product-specific receptor; Ager; Rage
Species:	Human
Source:	HEK293
Accession:	Q15109 (Q24-A344)
Gene ID:	177
Molecular Weight:	approximately 76.18 kDa

PROPERTIES

AA Sequence	Q N I T A R I G E P L V L K C K G A P K K P P Q R L E W K L N T G R T E A W K V L S P Q G G G P W D S V A R V L P N G S L F L P A V G I Q D E G I F R C Q A M N R N G K E T K S N Y R V R V Y Q I P G K P E I V D S A S E L T A G V P N K V G T C V S E G S Y P A G T L S W H L D G K P L V P N E K G V S V K E Q T R R H P E T G L F T L Q S E L M V T P A R G G D P R P T F S C S F S P G L P R H R A L R T A P I Q P R V W E P V P L E E V Q L V V E P E G G A V A P G G T V T L T C E V P A Q P S P Q I H W M K D G V P L P L P P S P V L I L P E I G P Q D Q G T Y S C V A T H S S H G P Q E S R A V S I S I I E P G E E G P T A G S V G G S G L G T L A L A
Biological Activity	1.Immobilized Human AGER at 20 μg/mL (100 μL/well) can bind Biotinylated Human HMGB1.The ED_{50} for this effect is 30.85 ng/mL, corresponding to a specific activity is 3.24×10^4 Unit/mg. 2.Measured by its binding ability in a functional ELISA. Immobilized human S100A12 at 2 μg/mL (100 μl/well) can bind recombinant human AGER with a linear range of 0.032-20 μg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4 (Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.) or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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	AGER Protein, a cell surface pattern recognition receptor, adeptly senses endogenous stress signals with a wide-ranging ligand repertoire, encompassing advanced glycation end products, S100 proteins, high-mobility group box 1 protein/HMGB1, amyloid beta/APP oligomers, nucleic acids, phospholipids, and glycosaminoglycans. Accumulation of advanced glycosylation end products, especially prevalent in aging and diabetes, triggers inflammatory responses at various disease sites, including diabetes, vascular complications, neurodegenerative disorders, and cancers. RAGE, upon ligand binding, utilizes TIRAP and MYD88 as adapters to transduce signals, ultimately inducing inflammatory cytokines IL6, IL8, and TNFalpha through NF-kappa-B activation. Noteworthy interactions include S100A12-triggered cellular activation, S100B-induced apoptosis post-myocardial infarction, and the facilitation of amyloid-beta peptide translocation in cortical neurons. AGER also plays a role in endothelial albumin transcytosis with HMGB1 through the RAGE/SRC/Caveolin-1 pathway, leading to endothelial hyperpermeability, and mediates the loading of HMGB1 in extracellular vesicles for hepatocyte pyroptosis via the NLRP3 inflammasome. Additionally, it promotes extracellular hypomethylated DNA uptake for the activation of inflammatory responses. The constitutive homodimeric and oligomeric forms, along with interactions with S100 proteins, APP, TIRAP, and HMGB1, highlight the intricate involvement of AGER Protein in various cellular processes and pathological conditions.

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