abcam

ab237362

Alexa Fluor® 647 Anti-RAGE antibody [EPR21171]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR21171
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human

Dilution info	1/200
Notes	This product gave a positive signal in RAGE with Myc tag transfected 293T fixed with 4% formaldehyde (10 min).

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information AGER

Function	Cell surface pattern recognition receptor that senses endogenous stress signals with a broad ligand repertoire including advanced glycation end products, S100 proteins, high-mobility group box 1 protein/HMGB1, amyloid beta/APP oligomers, nucleic acids, histones, phospholipids and glycosaminoglycans (PubMed:27572515, PubMed:28515150, PubMed:34743181, PubMed:35974093, PubMed:24081950). Advanced glycosylation end products are nonenzymatically glycosylated proteins which accumulate in vascular tissue in aging and at an accelerated rate in diabetes (PubMed:21565706). These ligands accumulate at inflammatory sites during the pathogenesis of various diseases including diabetes, vascular complications, neurodegenerative disorders and cancers, and RAGE transduces their binding into pro-inflammatory responses. Upon ligand binding, uses TIRAP and MYD88 as

adapters to transduce the signal ultimately leading to the induction of inflammatory cytokines IL6, IL8 and TNFalpha through activation of NF-kappa-B (PubMed:21829704, PubMed:33436632). Interaction with S100A12 on endothelium, mononuclear phagocytes, and lymphocytes triggers cellular activation, with generation of key pro-inflammatory mediators (PubMed:19386136). Interaction with S100B after myocardial infarction may play a role in myocyte apoptosis by activating ERK1/2 and p53/TP53 signaling (By similarity). Contributes to the translocation of amyloid-beta peptide (ABPP) across the cell membrane from the extracellular to the intracellular space in cortical neurons (PubMed:19906677). ABPP-initiated RAGE signaling, especially stimulation of p38 mitogen-activated protein kinase (MAPK), has the capacity to drive a transport system delivering ABPP as a complex with RAGE to the intraneuronal space. Participates in endothelial albumin transcytosis together with HMGB1 through the RAGE/SRC/Caveolin-1 pathway, leading to endothelial hyperpermeability (PubMed:27572515). Mediates the loading of HMGB1 in extracellular vesicles (EVs) that shuttle HMGB1 to hepatocytes by transferrin-mediated endocytosis and subsequently promote hepatocyte pyroptosis by activating the NLRP3 inflammasome (PubMed:34743181). Binds to DNA and promotes extracellular hypomethylated DNA (CpG DNA) uptake by cells via the endosomal route to activate inflammatory responses (PubMed:24081950, PubMed:28515150). Mediates phagocytosis by non-professional phagocytes (NPP) and this is enhanced by binding to ligands including RNA, DNA, HMGB1 and histones (PubMed:35974093). Promotes NPP-mediated phagocytosis of Saccharomyces cerevisiae spores by binding to RNA attached to the spore wall (PubMed:35974093). Also promotes NPP-mediated phagocytosis of apoptotic cells (PubMed:35974093). Following DNA damage, recruited to DNA double-strand break sites where it colocalizes with the MRN repair complex via interaction with double-strand break repair protein MRE11 (By similarity). Enhances the endonuclease activity of MRE11, promoting the end resection of damaged DNA (By similarity). Promotes DNA damage repair in trophoblasts which enhances trophoblast invasion and contributes to placental development and maintenance (PubMed:33918759). Protects cells from DNA replication stress by localizing to damaged replication forks where it stabilizes the MCM2-7 complex and promotes faithful progression of the replication fork (PubMed:36807739). Mediates the production of reactive oxygen species (ROS) in human endothelial cells (PubMed:25401185).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

Storage information	Avoid freeze / thaw cycle, Stable for 12 months at -20°C, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	RAGE also known as Receptor for Advanced Glycation End-products is a multi-ligand cell surface receptor with a molecular weight of approximately 45 kDa. It belongs to the immunoglobulin superfamily consisting of three extracellular immunoglobulin-like domains a transmembrane domain and a cytoplasmic tail. RAGE is widely expressed in various tissues throughout the body with high expression levels in the lungs heart and cells of the nervous system. The receptor can interact with several ligands such as advanced glycation end-products (AGEs) amyloid beta and S100/calgranulin proteins facilitating signal transduction into the cells.
Biological function summary	RAGE functions in the immune and inflammatory response where it mediates cell signaling that leads to cellular activation and the release of pro-inflammatory cytokines. It acts as part of complexes with different proteins contributing to cellular processes such as proliferation and migration. RAGE also plays roles in the regulation of oxidative stress and apoptosis impacting cellular health and survival.

	Researchers employ tools like 'anti-RAGE' antibodies and 'RAGER ELISA' assays to measure and study RAGE expression levels and its interactions in various experimental setups.
Pathways	RAGE is significantly involved in the NF-kB pathway and the MAPK signaling cascade. Its activation can lead to the release of NF-kB a transcription factor that plays an essential role in immune and inflammatory responses. RAGE interacts with proteins such as p38 MAPK leading to a cascade of events that regulate inflammation and stress responses. The signaling pathways involving RAGE are important in maintaining cell homeostasis and responding to cellular stressors and tools like 'anti-RAGE' and 'mouse RAGE' antibodies serve to elucidate these complex pathways further.
Associated diseases and disorders	RAGE has strong associations with chronic diseases like diabetes and Alzheimer's disease. In diabetes RAGE binds to AGEs contributing to inflammation and vascular complications where it often interacts with proteins like iNOS and VEGF. In Alzheimer's disease RAGE is implicated in the accumulation and toxicity of amyloid-beta peptides interacting with proteins such as APP and tau. Understanding RAGE's role in these diseases can aid in developing therapeutic strategies employing reagents such as 'phen RAGE' and 'anti-RAGE' for targeted treatment approaches.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

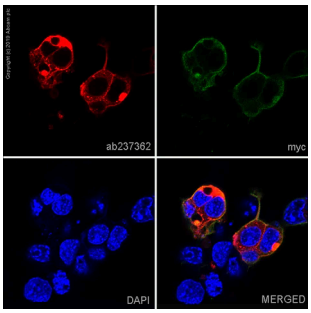
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-RAGE antibody [EPR21171] (ab237362)

RAGE Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RAGE antibody

ab237362 staining RAGE in 293T cells transfected with RAGE with MYC tag. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab237362 at 1/200 dilution (shown in red) and Mouse monoclonal to Myc-Tag (Alexa Fluor® 488) (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.