SANTA CRUZ BIOTECHNOLOGY, INC.

RAGE (9A11): sc-80653

BACKGROUND

Advanced glycosylation end products of proteins (AGEs) are nonenzymatically glycosylated proteins that are associated with a variety of conditions, including diabetes and other vascular disorders, as well as amyloidosis. These proteins regulate cellular functions via specific cell surface acceptor molecules, such as RAGE (receptor for advanced glycosylation end products). RAGE is a type 1 membrane protein that is found on the surface of endothelial cells, mononuclear phagocytes and vascular smooth muscle cells. Binding of AGEs to RAGE results in the induction of cellular oxidant stress and activation of the transcription factor NFκB. Evidence suggests that the induction of oxidant stress results in the activation of an intracellular cascade involving p21 Ras and MAP kinase, which leads to activation of transcription.

REFERENCES

1. Neeper, M., et al. 1992. Cloning and expression of a cell surface receptor for advanced glycosylation end products of proteins. J. Biol. Chem. 267: 14998-15004.
2. Yan, S.D., et al. 1994. Enhanced cellular oxident stress by the interaction of advanced glycation end products with their receptors/binding proteins. J. Biol. Chem. 269: 9889-9897.
3. Schmidt, A.M., et al. 1996. RAGE: a novel cellular receptor for advanced glycation end products. Diabetes 45: 77-80.

CHROMOSOMAL LOCATION

Genetic locus: AGER (human) mapping to 6p21.32.

SOURCE

RAGE (9A11) is a mouse monoclonal antibody raised against amino acids 22-342 of mature RAGE of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

RAGE (9A11) is recommended for detection of RAGE of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for RAGE siRNA (h): sc-36374, RAGE shRNA Plasmid (h): sc-36374-SH and RAGE shRNA (h) Lentiviral Particles: sc-36374-V.

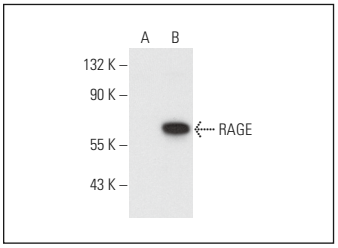
Molecular Weight of RAGE: 46 kDa.

Positive Controls: RAGE (h2): 293T Lysate: sc-170841.

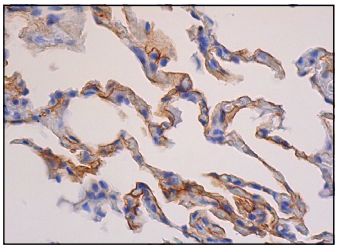
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



RAGE (9A11): sc-80653. Western blot analysis of RAGE expression in non-transfected: sc-117752 (**A**) and human RAGE transfected: sc-170841 (**B**) 293T whole cell lysates.



RAGE (9A11): sc-80653. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing membrane staining of pneumocytes and macrophages.

SELECT PRODUCT CITATIONS

1. Yin, C., et al. 2013. RAGE-binding S100A8/A9 promotes the migration and invasion of human breast cancer cells through actin polymerization and epithelial-mesenchymal transition. Breast Cancer Res. Treat. 142: 297-309.
2. Huang, M., et al. 2019. S100A9 regulates MDSCs-mediated immune suppression via the RAGE and TLR4 signaling pathways in colorectal carcinoma. Front. Immunol. 10: 2243.
3. Ciccimarra, R., et al. 2022. The normal and fibrotic mouse lung classified by spatial proteomic analysis. Sci. Rep. 12: 8742.
4. Waqas, K., et al. 2022. Methylglyoxal—an advanced glycation end products (AGEs) precursor—inhibits differentiation of human MSC-derived osteoblasts *in vitro* independently of receptor for AGEs (RAGE). Bone 164: 116526.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.