SANTA CRUZ BIOTECHNOLOGY, INC.

RAGE (RD9C 2): sc-33662

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: AGER (human) mapping to 6p21.32; Ager (mouse) mapping to 17 B1.

SOURCE

RAGE (RD9C 2) is a mouse monoclonal antibody raised against a peptide representing amino acids 23-54 of RAGE of bovine 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.

APPLICATIONS

RAGE (RD9C 2) is recommended for detection of RAGE of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RAGE (RD9C 2) is also recommended for detection of RAGE in additional species, including bovine.

Suitable for use as control antibody for RAGE siRNA (h): sc-36374, RAGE siRNA (m): sc-36375, RAGE siRNA (r): sc-106985, RAGE shRNA Plasmid (h): sc-36374-SH, RAGE shRNA Plasmid (m): sc-36375-SH, RAGE shRNA Plasmid (r): sc-106985-SH, RAGE shRNA (h) Lentiviral Particles: sc-36374-V, RAGE shRNA (m) Lentiviral Particles: sc-36375-V and RAGE shRNA (r) Lentiviral Particles: sc-106985-V.

Molecular Weight of RAGE: 46 kDa.

Positive Controls: ECV304 cell lysate: sc-2269, HUV-EC-C whole cell lysate: sc-364180 or MCF7 whole cell lysate: sc-2206.

RESEARCH USE

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

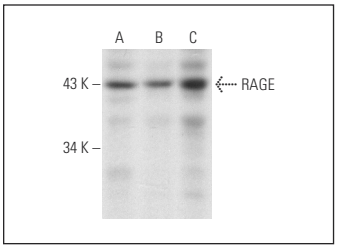
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE

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

DATA



RAGE (RD9C 2): sc-33662. Western blot analysis of RAGE expression in MCF7 (**A**), HUV-EC-C (**B**) and ECV304 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Mu, L., et al. 2011. Activation of the receptor for advanced glycation end products (RAGE) exacerbates experimental autoimmune myasthenia gravis symptoms. Clin. Immunol. 141: 36-48.
2. Serban, A.I., et al. 2015. Extracellular matrix is modulated in advanced glycation end products milieu via a RAGE receptor dependent pathway boosted by transforming growth factor-β1 RAGE. J. Diabetes 7: 114-124.
3. Zhang, H., et al. 2016. Glucagon-like peptide-1 protects cardiomyocytes from advanced oxidation protein product-induced apoptosis via the PI3K/Akt/Bad signaling pathway. Mol. Med. Rep. 13: 1593-1601.
4. Serban, A.I., et al. 2016. RAGE and TGF-β1 cross-talk regulate extracellular matrix turnover and cytokine synthesis in AGEs exposed fibroblast cells. PLoS ONE 11: e0152376.
5. Elmhiri, G., et al. 2016. Antioxidant properties of formula derived Maillard reaction products in colons of intrauterine growth restricted pigs. Food Funct. 7: 2582-2590.
6. Lei, M. and Liu, X.X. 2016. Vagus nerve electrical stimulation inhibits serum levels of S100A8 protein in septic shock rats. Mol. Med. Rep. 13: 4122-4128.
7. Geicu, O.I., et al. 2020. Dietary AGEs involvement in colonic inflammation and cancer: insights from an *in vitro* enterocyte model. Sci. Rep. 10: 2754.
8. Wilkie, T., et al. 2022. Lipopolysaccharide from the commensal microbiota of the breast enhances cancer growth: role of S100A7 and TLR4. Mol. Oncol. 16: 1508-1522.
9. Yu, L., et al. 2023. Cornuside, by regulating the AGEs-RAGE-IκBα-ERK1/2 signaling pathway, ameliorates cognitive impairment associated with brain aging. Phytother. Res. 37: 2419-2436.

CONJUGATES

See **RAGE (A-9): sc-365154** for RAGE antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.