abcam

Product datasheet

Rat RAGE ELISA Kit ab202409

SimpleStep ELISA®

1 References 4 Images

Overview

Product name Rat RAGE ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	5			2.6%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			2%

Sample type Cell culture supernatant, Urine, Serum, Cell culture extracts, Tissue Extracts, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 6.9 pg/ml

Range 31.25 pg/ml - 2000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Urine	90	82.4% - 98.8%
Serum	106.6	100.5% - 116.7%
Cell culture media	108.3	99.1% - 117.3%
Cit plasma	103.2	95.3% - 112.8%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Rat

Does not react with: Cow, Pig

Product overview

Abcam's RAGE *in vitro* SimpleStep ELISA® (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of RAGE protein in rat serum, plasma, urine, cell culture supernatant, cell and tissue extract samples.

The SimpleStep ELISA® employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.

Sensitivity:

Samples diluted in Sample Diluent NS – 6.9 pg/mL
Samples diluted in 1X Cell Extraction Buffer PTR – 13.1 pg/mL

Notes

RAGE mediates interactions of advanced glycosylation end products (AGE). These are non-enzymatically glycosylated proteins which accumulate in vascular tissue in aging and at an accelerated rate in diabetes. RAGE acts as a mediator of both acute and chronic vascular inflammation in conditions such as atherosclerosis and in particular as a complication of diabetes. AGE/RAGE signaling plays an important role in regulating the production/expression of TNF-alpha, oxidative stress, and endothelial dysfunction in type 2 diabetes. RAGE interaction with S100A12 on endothelium, mononuclear phagocytes, and lymphocytes triggers cellular activation, with generation of key pro-inflammatory mediators. RAGE may be a receptor for amyloid beta peptide. RAGE contributes to the translocation of amyloid-beta peptide (ABPP) across the cell membrane from the extracellular to the intracellular space in cortical neurons. 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 intra-neuronal space. RAGE-dependent signaling in microglia contributes to neuroinflammation, amyloid accumulation, and impaired learning/memory in a mouse model of Alzheimer disease.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Rat RAGE Capture Antibody	1 x 600µl
10X Rat RAGE Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml

Components	1 x 96 tests
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml
Plate Seals	1 unit
Rat RAGE Lyophilized Recombinant Protein	2 vials
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

Function

Mediates interactions of advanced glycosylation end products (AGE). These are nonenzymatically glycosylated proteins which accumulate in vascular tissue in aging and at an accelerated rate in diabetes. Acts as a mediator of both acute and chronic vascular inflammation in conditions such as atherosclerosis and in particular as a complication of diabetes. AGE/RAGE signaling plays an important role in regulating the production/expression of TNF-alpha, oxidative stress, and endothelial dysfunction in type 2 diabetes. Interaction with S100A12 on endothelium, mononuclear phagocytes, and lymphocytes triggers cellular activation, with generation of key proinflammatory mediators. Interaction with S100B after myocardial infarction may play a role in myocyte apoptosis by activating ERK1/2 and p53/TP53 signaling (By similarity). Receptor for amyloid beta peptide. Contributes to the translocation of amyloid-beta peptide (ABPP) across the cell membrane from the extracellular to the intracellular space in cortical neurons. 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.

Tissue specificity

Endothelial cells.

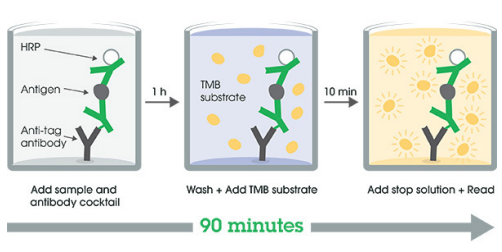
Sequence similarities

Contains 2 Ig-like C2-type (immunoglobulin-like) domains.
Contains 1 Ig-like V-type (immunoglobulin-like) domain.

Cellular localization

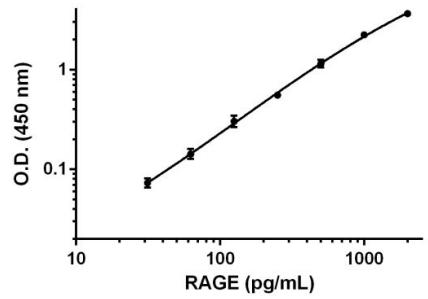
Secreted and Cell membrane.

Images



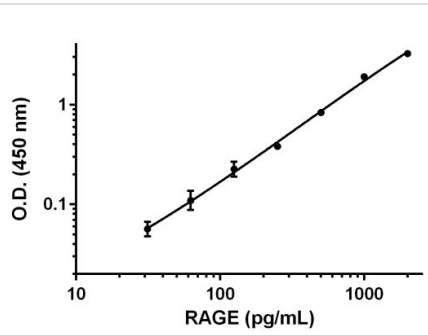
Other - Rat RAGE ELISA Kit (ab202409)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



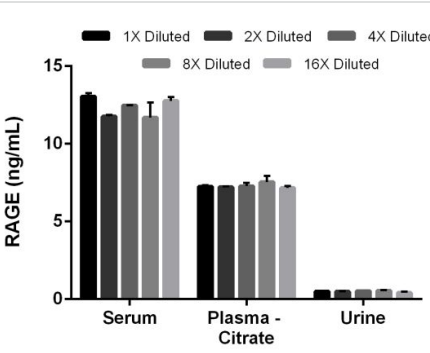
Example of RAGE standard curve prepared in Sample Diluent NS.

Background-subtracted data values (mean +/- SD) are graphed.



Example of RAGE standard curve prepared in 1X Cell Extraction Buffer PTR.

Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of RAGE in rat serum, plasma (citrate) and urine samples.

The concentrations of RAGE were measured in duplicates, interpolated from the RAGE standard curve and corrected for sample dilution. Note that 1X Diluted serum samples were 10X pre-diluted, 1X Diluted plasma (citrate) samples were 5X pre-diluted, 1X Diluted urine samples were neat. The interpolated, dilution factor-corrected values are plotted in ng of RAGE per mL of neat biological fluid (mean +/- SD, n=2).

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