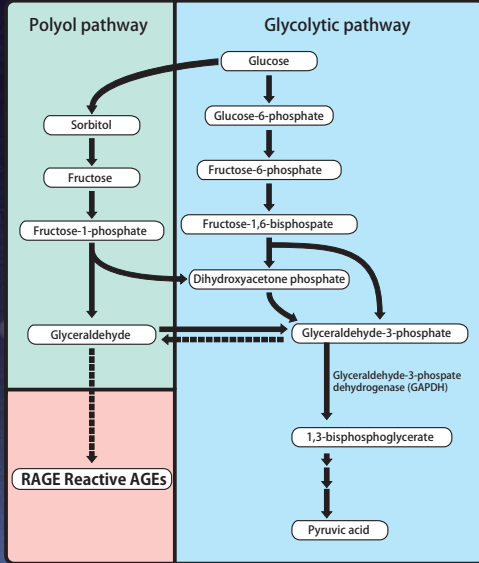
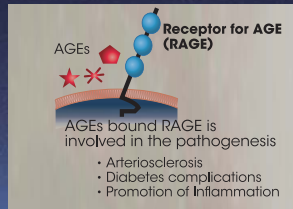


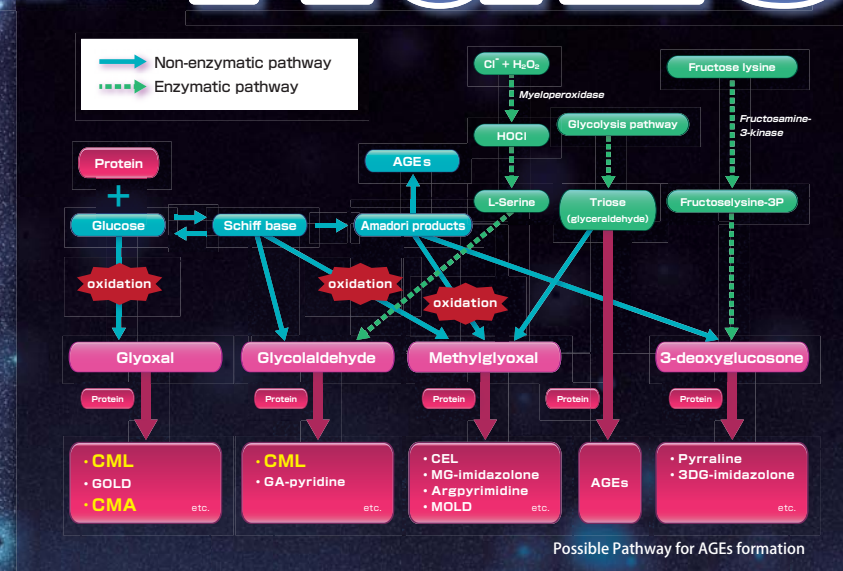
Screen test samples for their ability to inhibit RAGE reactive AGEs formation!



The RAGE receptor (Receptor for AGEs) was found and isolated in 1992 from bovine lung as 55kDa membranesspanning protein. (1) RAGE expression is distributed. RAGE is present not only on monocytes and or macrophages but also on vascular smooth muscle cells, neurons, hepatocytes, and kidney mesangial cells. The function of AGE receptors are still unclear but have been suggested to effect signal transductions or the apoptosis process. RAGE itself does not bind to AGE types and exhibits high specificity to glyceraldehyde-derived AGEs (GAAGE). GA-AGE has been suggested to be a "toxic AGE" (TAGE). Such TAGEs may be particularly detrimental to cells and may be more highly associated with disease or disease complications. In addition, recent reports describe glycosaminoglycan (GAG) sulfates on some cancer cells as RAGE ligands and suggest that such interactions may promote tumor metastasis (2,3). Thus, factors effecting GA-AGE formation, and compounds effecting the interaction of GA-AGE with RAGE are of interest to study links between AGEs and disease and for the development of drugs that inhibit AGEs-related pathophysiology.



# Advanced Glycation End Products Research



RAGE Reactive AGEs Assay Kit, Glyceraldehyde

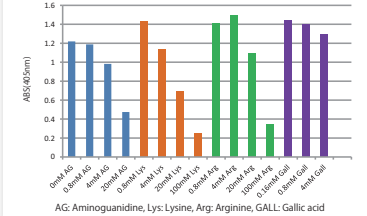


This kit detects RAGE reactive AGEs generated from glyceraldehyde glycation on albumin solid 96 well plates by RAGE-Fc.

Application:

- Assessment and drug screening for drug development
- Assessment of the activity of functional foods
- Other ingested substances

Inhibition of RAGE reactive AGEs (GA-AGEs) formation by Aminoguanidine



Description	Cat. No.	Quantity	Storage
RAGE Reactive AGEs Assay Kit, Glyceraldehyde	CSR-AAS-AGE-K04E	1 kit (96 well x 1 test)	4°C

Kit Components	
• 96-well albumin coated plate 1 Plate (One strip-well plate)	• Blocking Buffer 10 mL
• Microplate sealing film 96 well, 2 sheets	• RAGE-Fc Solution 5 mL
• Sample Dilution Buffer 30 mL	• Alkaline Phosphatase (ALP) labeled protein A/G 5 mL
• Glyceraldehyde solution (100mM) 5 mL	• Substrate Tablets (For 5mL) 3 tablets
• Aminoguanidine Stock Solution (20mM)	• Substrate Dilution Buffer 15 mL
• Washing Buffer (10X) 30 mL	

Kits to detect inhibition of *in vitro* AGEs formation on protein substrates.

- Albumin Glycation Assay Kit, Glyceraldehyde
- Collagen Glycation Assat Kit, Glucose/Fructose
- Collagen Glycation Assay Kit, Glyceraldehyde
- Elastin Glycation Assay Kit, Glyceraldehyde

Kits to detect inhibition of *in vitro* CML or CMA formation on collagen.

- Collagen AGEs Assay Kit, CML-specific, Glyoxal
- Collagen AGEs Assay Kit, CMA-specific, Glyoxal

Kit to detect inhibition of *in vitro* RAGE-reactive AGEs formation on albumin.

- RAGE Reactive AGEs Assay Kit, Glyceraldehyde

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# Screen test samples for their ability to inhibit AGEs formation!

Advanced glycation end products (AGEs) are products that are formed from the glycation process "Maillard reaction", and affect the functional properties of proteins.

## Measure the inhibitory effect of AGEs formation on various protein substrates!

The non-enzymatic reaction of reducing carbohydrates with lysine side chains and N-terminal amino groups of macromolecules (proteins, phospholipids and nucleic acids) is called the Maillard reaction or glycation. The products of this process, termed advanced glycation end products (AGEs), adversely affect the functional properties of proteins. Many AGEs have fluorescent and covalent cross-linking properties. Accumulation of AGEs has been thought to play an important role in the pathogenesis of diabetic patients as well as the aging process. Recent studies have suggested that AGEs can arise not only from sugars but also from carbonyl compounds derived from the autoxidation of sugars and other metabolic pathways. Among different AGEs, there is evidence that glyceraldehyde-derived AGEs are associated with such cytotoxicity.

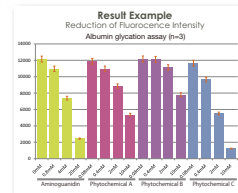
### Albumin Glycation Assay Kit, Glyceraldehyde

This kit provides rapid detection of fluorescent AGEs and inhibition assay for glycation of albumin solution by glyceraldehyde.



#### Principle:

Albumin Glycation Assay Kit is a complete assay system designed to measure the fluorescent AGEs using the fluorescence microplate reader equipped with a 370 nm excitation filter and 440nm emission filter.



Description	Cat. No.	Quantity	Storage
Albumin Glycation Assay Kit, Glyceraldehyde	CSR-AAS-AGE-K01E	1 kit (96 well × 2 tests)	4°C

**Kit Components**

- Bovine Serum Albumin (BSA) Solution :10 mL
- Glyceraldehyde Solution (500 mM) : 2 mL
- Dilution Buffer : 30 mL
- Aminoguanidine Solution (20 mM)[Glycation Standard] :0.5 mL

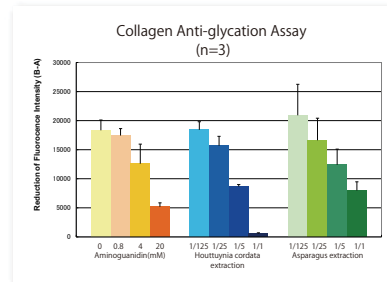
### Collagen Glycation Assay Kit

Collagen Glycation Assay Kit, Glyceraldehyde provides rapid detection of fluorescent AGEs and inhibition assay for glycation of collagen by glyceraldehyde. Collagen Glycation Assay Kit, Glucose / Fructose is available for a long term examination that researches early saccharification from fructose.



#### Principle:

The collagen gel formed in 96-well plates generates fluorescence after long-term incubation with glucose or fructose at 37°C. Some reagents or natural products inhibit this reaction. These two kits are complete assay systems designed to measure the fluorescent AGEs using the fluorescence microplate reader equipped with a 370nm excitation filter and 440 nm emission filter.



Description	Cat. No.	Quantity	Storage
Collagen Glycation Assay Kit, Glucose / Fructose	PMC-AK70-COS	1 kit (96 well × 2 tests)	4°C
Collagen Glycation Assay Kit, Glyceraldehyde	PMC-AK71-COS		

**Kit Components**

- PMC-AK70-COS:**
  - Collagen Acidic Solution, 5 mL
  - Neutralizing Solution, 5 mL
  - Glucose Solution (200 mM), 10 mL
  - Fructose Solution (200 mM), 10 mL
  - Sample Dilution Buffer 20 mL
  - Aminoguanidine Solution (20 mM): Positive Control, 0.1 mL
- PMC-AK71-COS:**
  - Collagen Acidic Solution, 5 mL
  - Neutralizing Solution, 5 mL
  - Glyceraldehyde Solution (500 mM), 2 mL
  - Sample Dilution Buffer 30 mL
  - Aminoguanidine Solution (20 mM) : Positive control, 0.5 mL

# Detection and Measurement

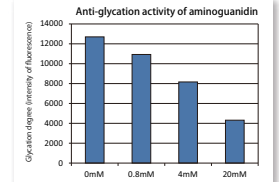
### Elastin Glycation Assay Kit, Glyceraldehyde

This kit provides detection of fluorescent AGEs and inhibition assay for glycation of Elastin solution by glyceraldehyde.



#### Principle:

Elastin Glycation Assay Kit is a complete assay system designed to measure the fluorescent AGEs formed in elastin glycated with glyceraldehyde using the fluorescence microplate reader equipped with a 370nm excitation filter and 440 nm emission filter.



Description	Cat. No.	Quantity	Storage
Elastin Glycation Assay Kit, Glyceraldehyde	CSR-AAS-AGE-K05E	1 kit (96 well × 2 tests)	4°C

**Kit Components**

- Elastin Solution :10 mL
- Glyceraldehyde Solution (500 mM) : 2 mL
- Dilution Buffer : 30 mL
- Aminoguanidine Solution (20 mM) [Glycation Standard] : 0.5 mL

### Select the kit depending on the proteins!

Description	Protein that will undergo glycation (substrate)	Research Target
Collagen Glycation Assay Kit, Glyceraldehyde (PMC-AK71-COS)	Collagen	Connective tissue such as skin and bone
Albumin Glycation Assay Kit, Glyceraldehyde (CSR-AAS-AGE-K01E)	Serum albumin	Blood proteins, diabetes markers
Elastin Glycation Assay Kit, Glyceraldehyde (CSR-AAS-AGE-K05E)	Elastin	Aging of skin, blood vessels

## Measure the inhibitory effect of CML or CMA formation!

CML is generated by the oxidative cleavage of Amadori products by hydroxyl radicals, peroxynitrite and hypochlorous acid, thus suggesting that CML is an important biological marker of oxidative stress *in vivo*. CML concentration, adjusted for age and duration of diabetes, is further increased in patients who have severe complications, including nephropathy, retinopathy, and atherosclerosis.

N-ε-carboxymethylarginine (CMA), an AGE component was identified in glycated collagen, it generates during the reaction of collagen with reducing sugars or glyoxal. AGEs accumulation in collagen induced dermal fibroblasts to undergo apoptosis. Because AGEs accumulate in collagen as a function of aging, CMA may be involved in aging of collagen-rich tissues such as skin. CML is detected in many proteins such as collagen and albumin, whereas CMA is generated specifically in collagen, suggesting that CMA may provide a marker for collagen glycation. An anti-CMA monoclonal antibody specifically and sensitively detects CMA in collagen.

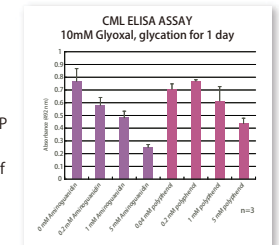
### Collagen AGEs Assay Kit, CML/CMA Specific, Glyoxal

This kit enables rapid detection of CML formed by glycation with glyoxal on a collagen coating plate. Collagen AGEs Assay Kit, CMA-specific enables rapid detection of CMA formed by glycation with glyoxal on a collagen coating plate.



#### Principle:

Collagen coated on 96-well plate is glycated by glyoxal and CML or CMA is formed onto collagen coating wells for 1day-CML/7days-CMA at 37°C. The inhibitory effects of glycation by aminoguanidin (positive control) or samples are probed with an anti-CML or CMA antibody, followed by an HRP conjugated secondary antibody. The inhibitory effect of glycation in an unknown sample is determined by comparison with the inhibitory effect of glycation by aminoguanidin (positive control). "Collagen AGEs Assay Kit, CML or CMA-Specific, Glyoxal" is suitable for research of functional foods and cosmetic materials which have anti-glycation activity.



Description	Cat. No.	Quantity	Storage
Collagen AGEs Assay Kit, CML-Specific, Glyoxal	CSR-AAS-AGE-K02E	1 kit (96 well × 1 test)	4°C
Collagen AGEs Assay Kit, CMA-Specific, Glyoxal	CSR-AAS-AGE-K03E		

**Kit Components**

- 96-well Collagen coated plate
- One strip-well plate
- Microplate seal 2 sheets
- Anti-CML Antibody (100X) 100 μL (AAS-AGE-K02E) or Anti-CMA Antibody (100X) 100 μL (AAS-AGE-K03E)
- Blocking Buffer 50 mL
- HRP Conjugate Secondary Antibody (100X) 100 μL
- Sample Dilution Buffer 30 mL
- Washing Buffer (10X) 50 mL
- Substrate Solution 10 mL
- Stop Solution 10 mL
- Glyoxal Solution 5 mL
- Aminoguanidin Solution (10 mM)