**DESCRIPTION**

**Source**
Bovine serum-derived
Advanced glycation end product (AGE) of bovine serum albumin (AGE-BSA) was prepared by incubating BSA and glucose under sterile conditions at 37 °C for 60 days and then biotinylated.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Measured by its ability to bind immobilized rmLOX-1 (Catalog # 1564-LX) in an ELISA type binding assay with an estimated Kᵦ &lt;75 nM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endotoxin Level</td>
<td>&lt;0.10 EU per 1 µg of the protein by the LAL method.</td>
</tr>
<tr>
<td>Formulation</td>
<td>Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.</td>
</tr>
</tbody>
</table>

**PREPARATION AND STORAGE**

**Reconstitution**
Reconstitute at 1 mg/mL in sterile PBS.

**Shipping**
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**
- Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month after reconstitution, 2 to 8 °C under sterile conditions.
- 3 months after reconstitution, 20 to 70 °C under sterile conditions.

**BACKGROUND**

Advanced glycation end products (AGEs) are formed by the non-enzymatic reaction of reducing sugars with amino groups on macromolecules (1, 2). Glycation is accomplished by the Maillard reaction, which is a multistep process that begins with Schiff base formation between the amine and the carbonyl group on the sugar followed by rearrangement to form Amadori intermediates. The intermediates are oxidized to highly reactive dicarbonyl compounds which target the primary amino groups in lysine and arginine residues (3). Some AGEs involve protein crosslinking, while others, such as Nε-carboxymethyl lysine (CML), are confined to single molecules (3). The final step of AGE formation is essentially irreversible, but the Schiff bases and Amadori intermediates are susceptible to degradation (4, 5). The Maillard reaction is accelerated under hyperglycemic and oxidative conditions. Renal failure, dietary AGE intake, and the normal aging process also contribute to the in vivo accumulation of AGEs (6 - 8). Increased AGE accumulation may be both a cause and effect of diabetes as well as multiple chronic inflammatory conditions such as Alzheimer’s disease, atherosclerosis, and arthritis (1, 2). AGEs can bind a variety of receptors, including RAGE, AGE-R₁, R₂, -R₃, and the scavenger receptors CD36, LOX-1, SR-AI, SR-AII, SR-BI, Stabilin-1/FEEL-1, and Stabilin-2/FEEL-2 (1). RAGE is a multiligand receptor that is upregulated on macrophages, monocytes, smooth muscle cells, and endothelial cells in response to AGE accumulation (9). RAGE activation induces a broad proinflammatory response (1, 2, 10). The increased production of reactive oxygen species promotes additional AGE formation and RAGE upregulation, a cycle that exacerbates diabetic complications and inflammation-induced tissue injury (1, 2).

**References:**