

DESCRIPTION

Species Reactivity	Canine
Specificity	Detects canine RAGE in ELISAs and Western blots. In sandwich immunoassays, approximately 0.5% cross-reactivity with recombinant human RAGE is observed and less than 0.1% cross-reactivity with recombinant mouse RAGE and recombinant rat RAGE is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant canine RAGE Asp25-Val339 Accession # XP_532093
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Canine RAGE (Catalog # 4750-RG)
Canine RAGE Sandwich Immunoassay		Reagent
ELISA Capture	0.2-0.8 µg/mL	Canine RAGE Antibody (Catalog # AF4750)
ELISA Detection Standard	0.1-0.4 µg/mL	Canine RAGE Biotinylated Antibody (Catalog # BAF4750) Recombinant Canine RAGE (Catalog # 4750-RG)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Advanced glycation endproducts (AGEs) are adducts formed by the non-enzymatic glycation of macromolecules. AGE formation is accelerated in oxidative and hyperglycemic conditions, diabetes, renal failure, atherosclerosis, Alzheimer's disease, arthritis, and in normal aging (1-5). Receptor for advanced glycation endproducts (RAGE) is a 35 kDa type I transmembrane protein belonging to the immunoglobulin superfamily. Besides AGEs, RAGE binds β-amyloid peptide, S100/calgranulin family proteins, HMGB1/amphoterin, and leukocyte integrins (6-9). Mature canine RAGE consists of a 383 amino acid (aa) extracellular domain (ECD) with one Ig-like V-type domain and two Ig-like C-type domains, a 23 aa transmembrane segment, and a 43 aa cytoplasmic domain (10). Within the ECD, canine RAGE shares 73%-77% aa sequence identity with human, mouse, and rat RAGE. In human, soluble forms of RAGE are generated by alternate splicing and are associated with multiple disease states (11, 12). RAGE is expressed in the embryonic central nervous system and on macrophages, monocytes, smooth muscle cells, and endothelial cells (13-15). It is upregulated in response to AGE accumulation, and its activation induces a broad proinflammatory response (6, 15). The increased production of reactive oxygen species during inflammation promotes additional AGE formation and RAGE upregulation, a cycle that exacerbates diabetic complications and inflammation-induced tissue injury (2, 4).

References:

1. Schleicher, E. and U. Friess (2007) *Kidney Int. Suppl.* **106**:S17.
2. Herold, K. *et al.* (2007) *J. Leukoc. Biol.* **82**:204.
3. Thornalley, P.J. (2006) *J. Ren. Nutr.* **16**:178.
4. Goldin, A. *et al.* (2006) *Circulation* **114**:597.
5. Ramasamy, R. *et al.* (2005) *Glycobiology* **15**:16R.
6. Kislinger, T. *et al.* (1999) *J. Biol. Chem.* **274**:31740.
7. Yan, S.D. *et al.* (1996) *Nature* **382**:685.
8. Huttenen, H. *et al.* (2000) *J. Biol. Chem.* **275**:40096.
9. Chavakis, T. *et al.* (2003) *J. Exp. Med.* **198**:1507.
10. Murua Escobar, H. *et al.* (2006) *Gene* **369**:45.
11. Yonekura H, *et al.* (2003) *Biochem. J.* **370**:1097.
12. Koyama, H. *et al.* (2007) *Mol. Med.* **13**:625.
13. Hori, O. *et al.* (1995) *J. Biol. Chem.* **270**:25752.
14. Brett, J. *et al.* (1993) *Am. J. Pathol.* **143**:1699.
15. Bierhaus, A. *et al.* (2006) *Curr. Opin. Investig. Drugs* **7**:985.