

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human RGM-A in Western blots. In Western blots, approximately 40% cross-reactivity with recombinant chicken RGM and recombinant mouse RGM-A is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human RGM-A Cys48-Gly422 Accession # Q96B86
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 Human Repulsive Guidance Molecule A/RGM-A (Catalog # 2459-RM)

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

Human Repulsive Guidance molecule (RGM) is a 33 kDa GPI-linked member of an expanding RGM-related family of neuronal and muscle-expressed membrane proteins (1). It is synthesized as a 450 amino acid (aa) preproprotein that contains a 47 aa signal sequence, a 121 aa N-terminal prosegment, a 256 mature region and a 26 aa C-terminal prosegment (2). The N-terminal prosegment contains an RGD tripeptide and the molecule's only two potential N-linked glycosylation sites. The mature segment shows an abbreviated von Willebrand factor domain. Proteolytic processing occurs at an aspartic acid-proline bond, creating a predicted 32 kDa mature region (2). The mature region of human RGM-A has 88% and 93% aa identity to the chick and mouse mature region of RGM-A, respectively. When compared to human RGMb and c, the mature region of human RGM-A shows 58% and 54% aa identity, respectively. Recombinant chick RGM-A has been reported to induce collapse of temporal but not nasal growth cones, and to repel temporal retinal axons *in vitro*. This suggests a role in the development of the retina-superior colliculus connection. In mammals, however, this activity is not so evident, and thus its function in this system is uncertain (3). Alternatively, in mice, RGM-A is said to be needed for neural tube closure, and may play a role in entorhinal-hippocampal connections (3, 4). The receptor for RGM-A is reported to be neogenin (5, 6). RGM-A has also been shown to be a bone morphogenic protein co-receptor, able to bind both BMP-2 and BMP-4 (7).

References:

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4. Brinks, H. *et al.* (2004) *J. Neurosci.* **24**:3862.
5. Rajagopalan S. *et al.* (2004) *Nat. Cell Biol.* **6**:756.
6. Matsunaga E. *et al.* (2004) *Nat. Cell Biol.* **6**:749.
7. Babitt J.L. *et al.* (2005) *J. Biol. Chem.* **280**(33):29820.