# Recombinant Human RGM-B

Catalog Number: 3630-RG

## DESCRIPTION

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| **Source** | Mouse myeloma cell line, NS0-derived human RGM-B protein<br>Gly87-Asp209 (N-terminus chain) & Pro210-Ser452 (C-terminus chain), with a C-terminal 6-His tag<br>Accession # AAH67736 |
| **N-terminal Sequence Analysis** | Gly87 & Pro210 |
| **Predicted Molecular Mass** | 13.4 kDa (N-terminus chain), 27.7 kDa (C-terminus chain) |

## SPECIFICATIONS

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| **SDS-PAGE** | 20 kDa and 35 kDa, reducing conditions |
| **Activity** | Measured by its binding ability in a functional ELISA.<br>Immoblized rhBMP-4 at 1 µg/mL (100 µL/well) can bind rhRGM-B with a linear range of 10-500 ng/mL. |
| **Endotoxin Level** | <0.01 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Supplied as a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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| **Shipping** | The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after opening.<br>• 3 months, -20 to -70 °C under sterile conditions after opening. |

## BACKGROUND

RGM-B, also known as DRAGON, is a 40 kDa member of the repulsive guidance molecule (RGM) family of GPI-linked neuronal and muscle membrane proteins (1, 2). It is synthesized as a preproprotein that consists of a 45 amino acid (aa) signal sequence, a 368 aa mature region, and a 24 aa C-terminal prosegment (3). RGM-B contains an RGD motif, two potential N-linked glycosylation sites, and an abbreviated von Willebrand factor domain. There is a potential proteolytic cleavage site within the VWF domain (4). Alternative splicing may generate isoforms of RGM-B with N-terminal extensions or truncation following the VWF domain. Mature human RGM-B shares 52% and 36% aa sequence identity with the comparable regions of RGM-A and RGM-C, respectively. It shares 98%, 92%, 92%, and 78% aa sequence identity with macaque, mouse, bovine, and chicken RGM-B, respectively. RGM-B is expressed in the developing and adult nervous system, particularly in the dorsal root ganglia and mantle layer of the spinal cord (3 - 5). In mouse, it shows a complementary, non-overlapping distribution with RGM-A (2 - 5). RGM-B is also expressed in fetal and adult enteric ganglia and in postnatal intestinal epithelium (6). RGM-B expression has been detected in neuronal cell bodies and proximal axonal segments (4) but is also present on the cell surface, where it interacts homophilically and mediates neuronal adhesion (3). RGM-B additionally functions as a BMP coreceptor. It directly binds BMP-2 and -4 but not other TGF-β family proteins (7). RGM-B associates with BMP type I (ALK-2, -3, -6) and type II (Activin RIIA, Activin RIIB) receptors and enhances BMP signaling (7).

**References:**


1. Monnier, P.P. *et al.* (2002) Nature **419**:392.
2. Schmidtmer, J. and D. Engelkamp (2004) Gene Exp. Patterns **4**:105.
3. Samad, T.A. *et al.* (2004) J. Neurosci. **24**:2027.
4. Niederkofler, V. *et al.* (2004) J. Neurosci. **24**:808.
5. Oldekamp, J. *et al.* (2004) Gene Exp. Patterns **4**:283.
6. Metzger, M. *et al.* (2005) Dev. Dyn. **234**:169.
7. Samad, T.A. *et al.* (2005) J. Biol. Chem. **280**:14122.




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