Recombinant Human CRIM1

Catalog Number: 1917-CM

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Leu35-Ser939, with a C-terminal 6-His tag Accession # Q9NZV1
N-terminal Sequence Analysis	Leu35
Predicted Molecular Mass	99.9 kDa

SPECIFICATIONS

SDS-PAGE	125-140 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of NIH-3T3 mouse embryonic fibroblast cells. Glienke, J. *et al.* (2002) Mech. Dev. **119**:165. rhCRIM1 immobilized at 3 µg/mL, 100 µL/well, will mediate >50% NIH3T3 cell adhesion (added at 1 x 10^5 cells/well).
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in 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, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Cysteine rich motor neuron 1 (CRIM1) is a type I transmembrane glycoprotein of the chordin-like cysteine-rich repeat (CRR) family of BMP inhibitors (1 - 4). The ~130 kDa, 1036 amino acid (aa) CRIM1 contains a 34 aa signal sequence, a 905 aa extracellular domain (ECD), a 21 aa transmembrane domain and a 76 aa cytoplasmic domain. The ECD includes an N-terminal IGF-binding protein-like motif and six chordin-like von Willebrand C-type CRRs. The ECD can be released from the cell, presumably by proteolytic processing (4). Human CRIM1 ECD shows 88%, 88%, 91%, 86%, 87%, 83% and 72% aa identity with mouse, rat, dog, cow, opossum, chick and zebrafish CRIM1 ECD, respectively. CRIM1 can interact with TGF-β family ligands, including BMPs 2, 4 and 7, via its CRR domains (4). It binds BMPs intracellularly and antagonizes them by lowering their expression, processing and secretion (4). CRIM1 is expressed in the developing spinal cord in the floor plate and developing motor neurons (1). It is also expressed by perivascular smooth muscle cells and aligns at points of cell-cell contact during endothelial cell capillary formation (2). Endothelial cell expression in vitro appears to be specific to cells that are adherent and growing (2). CRIM1 is also expressed in a spatially and temporally restricted manner in the developing lens, limbs, kidney, teeth and testis (5). Studies where CRIM1 expression is manipulated in developing mouse, chick and zebrafish support its involvement in regulation of vascular and somitic development and organogenesis (5 - 7).

References:

1. Kolle, G. *et al.* (2000), Mech. Dev. **90**:181.
2. Glienke, J. *et al.* (2002) Mech. Dev. **119**:165.
3. Abreu, J. G. *et al.* (2002) Gene **287**:39.
4. Wilkinson, L. *et al.* (2003) J. Biol. Chem. **278**:34181.
5. Pennisi, D. J. *et al.* (2007) Dev. Dyn. **236**:502.
6. Kolle, G. *et al.* (2003) Dev. Dyn. **226**:107.
7. Kinna, G. *et al.* (2006) Mech. Dev. **123**:277.

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