Recombinant Mouse ECM1

Catalog Number: 4428-EC

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse ECM1 protein Ala20-Glu559, with a C-terminal 6-His tag Accession # AAI38694
N-terminal Sequence Analysis	Ala20
Predicted Molecular Mass	61.8 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	80-90 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of BUD-8 human fibroblast cells. When 2.5 x 10^4 cells/well are added to rmECM-1 coated plates (5 µg/mL, 100 µL/well), approximately 55-85% will adhere after 60 minutes at 37° C. Optimal dilutions should be determined by each laboratory for each application.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 300 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

Extracellular matrix protein-1 (ECM-1, ECM-1a) is an 85 kDa, secreted glycoprotein important in connective tissue organization (1 - 3). Of identified splice variants, the 559 amino acid (aa) form, ECM-1a is most widely expressed, with highest expression in the placenta, heart, and developing bones (3, 4). ECM-1b (434 aa) is found only in tonsil and skin, where it is associated with suprabasal keratinocytes (3, 5). Mouse ECM-1 contains a 19 aa signal peptide and a 540 aa secreted portion that includes an N-terminal proline-rich, cysteine-free region, two tandem repeat domains, and a C-terminal domain. Mature mouse ECM-1 shares 90% aa identity with rat ECM-1 and 65 - 69% aa identity with corresponding isoforms of human, equine, bovine and canine ECM-1. There are six repeats of a CC(X_{7-10})C motif (x = any aa) within the tandem repeat and C-terminal domains. These motifs, also found in members of the albumin family, are expected to form two (in ECM-1b) or three (in ECM-1a) “double loop” structures that are involved in ligand binding to extracellular matrix molecules such as fibulin-1, perlecan, laminin 332, and fibronectin (4 - 7). ECM-1 is over-expressed in many malignant epithelial tumors and has demonstrated angiogenic activity (8, 9). A role in regulating alkaline phosphatase during endochondral bone formation has also been suggested (4). In humans, loss of function within the tandem repeat regions due to mutation is considered causative of thickened and irregular extracellular matrix within connective tissue, called lipoid proteinosis (10). Autoantibodies in the skin disease lichen sclerosis also target these repeats (11). The phenotypes of these diseases support a role for ECM-1 as a “biological glue” in the dermis (1, 6, 7).

References:

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Europe | Middle East | Africa TEL +44 (0)1235 529449