

Recombinant Human Melanoma Inhibitory Activity Protein (Human MIA)

Product Information

Product Name	Cat#	Size
Recombinant Human Melanoma Inhibitory Activity Protein (Human MIA)	92576ES08	5 µg
	92576ES60	100 µg
	92576ES76	500 µg

Product Description

Melanoma Inhibiting Activity (MIA), also known as cartilage-derived retinoic acid-sensitive protein (CD-RAP), is an approximately 11-15 kDa protein that is secreted as a noncovalent homodimer and is structurally related to OTOR/Otoraplin and MIA-2. Mature human MIA contains a SH3 domain and shares 90% and 92% amino acid sequence identity with mouse and rat MIA, respectively. Alternative splicing generates a short isoform that lacks the SH3 domain. MIA is widely expressed in developing and regenerating cartilage and in the endothelium and parenchyma of developing lungs. MIA disrupts cellular interactions with the extracellular matrix by binding to Integrins $\alpha 4 \beta 1$ and $\alpha 5 \beta 1$. It competes with Fibronectin fragments for Integrin binding and interferes with Integrin signaling. It also functions as a chemoattractant for mesenchymal stem cells and enhances their BMP-2 and TGF- β 3 induced differentiation into chondrocytes [tscheid]. MIA-deficient mice exhibit delayed chondrocyte differentiation but enhanced chondrocyte proliferation and cartilage repair. MIA is up-regulated in several cancers including malignant melanoma, lung adenoma, metastatic oral squamous cell carcinoma, neurofibromatosis type 1 (NF-1)-related tumors, and pancreatic cancer. It is selectively secreted and internalized from the trailing pole of migrating cells. This polarization reduces cellular attachment to the matrix at the trailing pole and contributes to directional tumor cell migration.

Product Properties

Synonyms	CD-RAP
Accession	Q16674
GeneID	8190
Source	E.coli-derived Human MIA, Gly25-Gln31.
Molecular Weight	Approximately 12.1 kDa.
AA Sequence	GPMPKLADRK LCADQECSPH ISMAVALQDY MAPDCRFLTI HRGQVVVYVFS KLKGRGRLFW GGSVQGDYYG DLAARLGYFP SSIVREDQTL KPGKVDVKTD KWDFYCQ
Tag	None
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Purity	> 98 % by SDS-PAGE and HPLC analyses.
Biological Activity	The ED ₅₀ as determined by a cell proliferation assay using human A375 cell line is less than 5 µg/mL, corresponding to a specific activity of > 200 IU/mg. Fully biologically active when compared to standard.
Endotoxin	< 0.1 EU per 1µg of the protein by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4, with 5 % Trehalose. We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom.
Reconstitution	Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20°C. Further dilutions should be made in appropriate buffered solutions.

Shipping and Storage

The products are shipped with ice pack and can be stored at -20°C to -80°C for 1 year.

Recommend to aliquot the protein into smaller quantities when first used and avoid repeated freeze-thaw cycles.

Cautions

1. Avoid repeated freeze-thaw cycles.
2. For your safety and health, please wear lab coats and disposable gloves for operation.
3. For research use only!