Recombinant Human Mdg-1/His

20141126BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**400-021S**
Size:	5 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*DNAJB9*
Synonyms:	Microvascular endothelial differentiation gene 1 protein, DnaJ homolog subfamily B member 9, ERdj4

Angiogenesis research has focused on receptors and ligands mediating endothelial cell proliferation and migration. Little is known about the molecular mechanisms that are involved in converting endothelial cells from a proliferative to a differentiated state. Microvascular differentiation gene 1 (Mdg1) has been isolated from differentiating microvascular endothelial cells that had been cultured in collagen type I gels (3D culture). In adult human tissue Mdg1 is expressed in endothelial and epithelial cells. Sequence analysis of the full-length cDNA revealed that the N-terminal region of the putative Mdg1-protein exhibits a high sequence similarity to the J-domain of Hsp40 chaperones. It was shown that this region functions as a bona fide J-domain as it can replace the J-domain of Escherichia coli DnaJ-protein. Mdg1 is also upregulated in primary endothelial and mesangial cells when subjected to various stress stimuli. GFP–Mdg1 fusion constructs showed the Mdg1-protein to be localized within the cytoplasm under control conditions. Stress induces the translocation of Mdg1 into the nucleus, where it accumulates in nucleoli. Costaining with Hdj1, Hdj2, Hsp70, and Hsc70 revealed that Mdg1 colocalizes with Hsp70 and Hdj1 in control and stressed HeLa cells. These data suggest that Mdg1 is involved in the control of cell cycle arrest taking place during terminal cell differentiation and under stress conditions.

References

1. Pröls F et al, Cytogenet Cell Genet 79(1-2):149-50, 1997
2. Pröls F et al, Exp Cell Res 269(1):42-53, 2001
3. Shen Y et al, J Biol Chem 277(18):15947-56, 2002

Sequence

MKHHHHHHSAGLEVLFQGPMASKSYYDTLGVPKSASERQIKKAFHKLAMKYH
PDKNKSPDAEAKFREIAEAYETLSDANRRKEYDTLGHSAFTSGKGQRGSGSS
FEQSFNFNFDDLFKDFGFFGQNQNTGSKKRFENHFQTRQDGGSSRQRHHFQE
FSFGGGLFDDMFEDMEKMFSFSGFDSTNQHTVQTENRFHGSSKHCRTVTQRR
GNMVTTYTDCSGQ

Database References

Protein RefSeq:	NP_036460.1
Uniprot ID:	Q9UBS3
mRNA RefSeq:	NM_012328.2

Product Specifications

Expressed in	E.coli
Purity	> 98% by SDS-PAGE & Coomassie stain
Buffer	50 mM acetic acid
Stabilizer	None
Formulation	lyophilized
Length (aa):	221
MW:	25.3 kDa

Stability: The lyophilized human Mdg-1, though stable at room temperature, is best stored desiccated below 0°C. Reconstituted human Mdg-1 should be stored in working aliquots at -20°C.

Reconstitution: Human Mdg-1 should be reconstituted in 50 mM acetic acid or water to a concentration of 0.1 mg/ml. This solution can be diluted in water or other buffer solutions or stored at -20°C.

AVOID REPEATED FREEZE AND THAW CYCLES!

Applications: No biological data available at the moment.

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Recombinant Human Mdg-1/His

Handling/Application

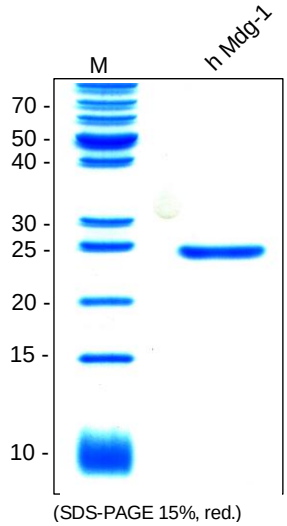

Fig. 1: SDS-PAGE analysis of recombinant human Mdg-1. Sample was loaded in 15% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.

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