Rat MMP-9 / CLG4B Protein (His Tag)

Catalog Number: **80049-R08H**

General Information

Gene Name Synonym:

MMP9

Protein Construction:

A DNA sequence encoding the rat MMP9 (EDL96479.1) (Met 1-Pro 708) was expressed, fused with a polyhistidine tag at the C-terminus.

Source: Rat

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to cleave a fluorogenic peptide substrate Mca-PLGL-Dpa-AR-NH2 (AnaSpec, Catalog # 27076). The specific activity is >1000 pmoles/min/μg . (Activation description: The proenzyme needs to be activated by APMA for an activated form)

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Ala 20

Molecular Mass:

The secreted recombinant rat MMP9 comprises 700 amino acids and predicts a molecular mass of 77.8 kDa. The apparent molecular mass of the rat MMP9 is approximately 100-110 kDa in SDS-PAGE under reducing conditions due to glycosylation.

Formulation:

Lyophilized from sterile 50mM MES, 100mM NaCl, 1mM CaCl2, 10% Glycerol, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

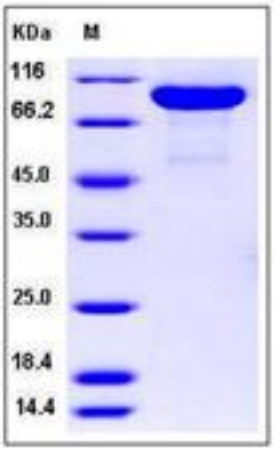
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Matrix metalloproteinases (MMPs) are neutral proteinases that are involved in the breakdown and remodeling of the extracellular matrix (ECM) under a variety of physiological and pathological conditions, such as morphogenesis, differentiation, angiogenesis and tissue remodeling, as well as pathological processes including inflammation, arthritis, cardiovascular diseases, pulmonary diseases and tumor invasion. MMP9, also known as 92-kDa gelatinase B/type IV collagenase, is secreted from neutrophils, macrophages, and a number of transformed cells, and is the most complex family member in terms of domain structure and regulation of its activity. It plays an important role in tissue remodelling in normal and pathological inflammatory processes. MMP-9 is a major secretion product of macrophages and a component of cytoplasmic granules of neutrophils, and is particularly important in the pathogenesis of inflammatory, infectious, and neoplastic diseases in many organs including the lung. This enzyme is also secreted by lymphocytes and stromal cells upon stimulation by inflammatory cytokines, or upon delivery of bi-directional activation signals following integrin-mediated cell-cell or cell-extracellular matrix (ECM) contacts. Since the integrity of the tissue architecture is closely dependent of the delicate balance between MMPs and their inhibitors, excessive production of MMP-9 is linked to tissue damage and degenerative inflammatory disorders. As a consequence, regulation of gene transcription and tissue-specific expression of MMP-9 in normal and diseased states are being actively investigated to pave the way for new therapeutic targets. In addition, the dramatic overexpression of MMP-9 in cancer and various inflammatory conditions clearly points to the molecular mechanisms controlling its expression as a potential target for eventual rational therapeutic intervention.

References

1.St-Pierre Y, *et al.* (2003) Emerging features in the regulation of MMP-9 gene expression for the development of novel molecular targets and therapeutic strategies. Curr Drug Targets Inflamm Allergy. 2(3): 206-15. 2.St-Pierre Y, *et al.* (2004) Regulation of MMP-9 gene expression for the development of novel molecular targets against cancer and inflammatory diseases. Expert Opin Ther Targets. 8(5): 473-89. 3.Chakrabarti S, *et al.* (2005) Matrix metalloproteinase-2 (MMP-2) and MMP-9 in pulmonary pathology. Exp Lung Res. 31(6): 599-621.