

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived
Gly307-Arg441
Accession # AAA53035

N-terminal Sequence Analysis Gly307

Predicted Molecular Mass 15.6 kDa

SPECIFICATIONS

SDS-PAGE 20 kDa, reducing conditions

Activity Measured by its ability to induce cell death using Mv1Lu mink lung epithelial cells.
The ED₅₀ for this effect is typically 0.1-0.4 µg/mL.

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 HCl with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

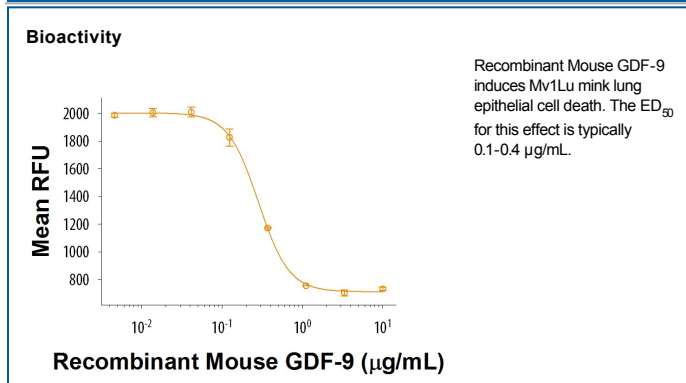
Reconstitution Reconstitute at 100 µg/mL in 4 mM HCl containing 0.1% bovine serum albumin.

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.

DATA



BACKGROUND

Growth Differentiation Factor-9 (GDF-9) is an oocyte secreted paracrine factor in the TGF- β superfamily (1, 2). It is synthesized as a prepropeptide and is subsequently processed by proteases into the mature protein (1, 2). Mature mouse GDF-9 has a predicted molecular weight of 15.6 kDa, and shares 90% and 95% amino acid sequence identity with mature human and rat GDF-9, respectively. It forms both non-covalent homodimers and heterodimers with BMP-15, which is coordinately expressed with GDF-9 in the oocyte. (3-5). GDF-9 signals through TGF- β RI/ALK-5 and BMPR-II, while the GDF-9:BMP-15 heterodimer is believed to signal through BMPR-II, ALK-4, -5, -7, and BMPR-IB/ALK-6 (5-8). SMAD2 and SMAD3 are phosphorylated following activation of receptor complexes by GDF-9 (5, 6). GDF-9 functions as a paracrine factor in the development of primary follicles in the ovary (9, 10). It is critical for the growth of granulosa and theca cells and for the differentiation and maturation of the oocyte (11, 12). GDF-9 is thought to act synergistically with BMP-15 to control development of the oocyte-cumulus cell complex (5, 12-14). In mice, GDF-9:BMP-15 heterodimers have been shown to be more potent regulators of granulosa cell functions compared to GDF-9 homodimers (6). Studies on GDF-9 null mice have demonstrated arrested follicular development at the primary follicle stage (10). In humans, aberrant GDF-9 expression and activation is associated with a multitude of common human ovarian disorders including premature ovarian failure and polycystic ovary syndrome (15-17).

References:

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