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Product Information

Monoclonal Anti-Insulin-like Growth Factor-I
Clone 126002
produced in hamster, purified immunoglobulin

Catalog Number **I9409**

Product Description

Monoclonal Anti-Insulin-like Growth Factor-I (Igf1) is purified from a hybridoma produced by the fusion of mouse myeloma cells and B cells from an Armenian hamster immunized with recombinant mouse Insulin-like Growth Factor-I (GeneID 16000) expressed and purified from *Escherichia coli*. The antibody is purified by Protein G affinity chromatography.

Monoclonal Anti-Insulin-like Growth Factor-I recognizes murine Insulin-like Growth Factor-I. Applications include immunoblotting, ELISA, and neutralization. In capture ELISAs, less than 0.25% cross-reactivity was observed with rhIGF-I, rmIGF-II, rmIGF BP-2, rmIGF BP-5, or rmIGF BP-6.

Insulin-like growth factor-I (also known as somatomedin C and somatomedin A) and insulin-like growth factor-II (IGF-II) belong to the family of insulin-like growth factors, which are structurally homologous to proinsulin. Mature IGF-I and IGF-II are highly conserved and share approximately 70% amino acid sequence identity. Mouse Igf1, a 70 amino acid protein cross-linked by three disulfide bridges, has a predicted molecular mass of ~7.6 kDa. Mouse and human IGF-I share 97% sequence identity.

Insulin-like growth factor-I has autocrine, paracrine, and endocrine functions. It mediates the growth-promoting activities of growth hormone postnatally and plays a role in embryonic growth and differentiation. IGF-I also controls cell proliferation and differentiation by regulating specific events in the G1 phase of cell cycle. IGF-I stimulates myoblast differentiation and myotubal formation,[1] and has insulin-like effects, such as stimulation of glucose consumption in adipose tissue. IGF-I exerts its actions through the IGF-I receptor. IGF-I and IGF-II are expressed in many tissues and cell types. IGF-I is mitogenic for a variety of cells including fibroblasts, osteoblasts, smooth muscle cells, fetal brain cells, neuroglial cells, and erythroid progenitor cells.[1]

Reagent

Supplied lyophilized from a 0.2 μm filtered solution of phosphate buffered saline with 5% trehalose.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To one vial of lyophilized powder, add 1 mL of 0.2 μm filtered phosphate buffered saline to produce a 0.5 mg/mL stock solution. If aseptic technique is used, no further filtration should be necessary for use in cell culture environments.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended.

Neutralization

The exact concentration of antibody required to neutralize recombinant mouse Igf1 activity is dependent on the cytokine concentration, cell type, growth conditions and the type of activity studied. The antibody was added to the neutralization assay at various concentrations from 0.01-1000 μg/mL in the presence of 15 ng/mL recombinant mouse Igf1. Mouse Igf1 stimulates the proliferation of the MCF-7 cells in a dose-dependent manner. The ED_{50} for this effect is typically 1-3 ng/mL.[2]

The Neutralization $Dose_{50}$ (ND_{50}) for this antibody is defined as that concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when that cytokine is present at a concentration just high enough to elicit a maximum response.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended to detect mouse Igf1. Using a colorimetric detection system, the detection limit for recombinant mouse Igf1 is ~50 ng/lane under non-reducing and reducing conditions.

Capture ELISA: this product can be used as a capture reagent in a mouse Igf1 sandwich immunoassay in combination with biotinylated mouse Igf1 detection antibody and recombinant mouse Igf1 as the standard. The suggested coating concentration range is 2-8 µg/mL.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

Endotoxin: <0.1 EU/µg antibody as determined by the LAL method.

References

1. Zumstein, P., et al., *J. Biol. Chem*., **262**, 11252 (1987).
2. Karey, K. P., et al., *Cancer Research*, **48**, 4083 (1988).

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