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ProductInformation

Anti-Insulin-Like Growth Factor I (IGF-I)
Developed in Goat
Affinity Isolated Antibody

Product Number **I 2157**

Product Description

Anti-Mouse Insulin-like Growth Factor-I (IGF-I) is produced in goat using recombinant mouse insulin-like growth factor-I (IGF-I)[1] expressed in *Escherichia coli*, as the immunogen. The product is purified by IGF-I affinity chromatography.

Anti-Mouse Insulin-like Growth Factor-I (IGF-I) recognizes recombinant mouse IGF-I by various immunochemical techniques including neutralization, immunoblotting, and ELISA. Based on ELISA, this antibody shows approximately 15% cross-reactivity with recombinant human IGF-I and less than 2% cross-reactivity with recombinant mouse IGF-II.

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 IGF-I, a 70 amino acid protein cross-linked by three disulfide bridges, has a predicted molecular mass of approximately 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 [2] 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.[2]

Reagent

Anti-Mouse Insulin-Like Growth Factor I is supplied as approximately 100 µg of antiserum lyophilized from a 0.2 µm filtered solution in phosphate buffered saline with 5% trehalose..

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of sterile phosphate-buffered saline containing 0.1 % human serum albumin or bovine serum albumin to produce a 0.1 mg/ml stock solution of antibody.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2 ° to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at –20 °C. Avoid repeated freezing and thawing.

Product Profile

Anti-Mouse Insulin-Like Growth Factor I has the ability to neutralize the bioactivty of recombinant mouse IGF-I on MCF-7 human breast carcinoma cells. Recombinant mouse IGF-I (15 ng/ml) is added to the wells of a 96 well plate containing various concentrations (0.01-100 µg/ml) of the antibody and preincubated for 1 hour at 37 °C. Following this preincubation, MCF-7 cells (5×10^4 cells/ml) are added to the wells. The assay mixture in a total volume of 100 µl, containing antibody at concentrations of 0.01-100 µg/ml, recombinant mouse IGF-I at 15 ng/ml, and cells at 5×10^4 cells/ml, is incubated at 37 °C for 72 hours in a humidified CO_2 incubator. The mixture is pulsed with ^{3}H-thymidine during the final 24 hours. The cells are detached and harvested onto glass fiber filters, and the ^{3}H-thymidine incorporated into the DNA is measured.[3]
The Neutralization $Dose_{50}$ (ND_{50}) for anti-mouse IGF-I is approximately 2.5 to 10 µg/ml in the presence of 15 ng/ml of recombinant IGF-I using the MCF cell line.

The exact concentration of antibody required to neutralize recombinant mouse IGF-I activity is dependent on the cytokine concentration, cell type, growth conditions, and the type of activity.

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 IGF-I activity on a responsive cell line, when IGF-I is present at a concentration just high enough to elicit a maximum response.

For immunoblotting, a working antibody concentration of 0.1 to 0.2 µg/ml is recommended. The detection limit for recombinant mouse IGF-I is approximately 2 ng/lane under non-reducing and reducing conditions.

For ELISAs, a working antibody concentration of 0.5 to 1.0 µg/ml is recommended. The detection limit for recombinant mouse IGF-I is approximately 0.3 ng/well.

By immunohistochemistry, a working antibody concentration of 15 µg/ml is recommended in cells and tissues.

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

Endotoxin: < 0.1 EU (endotoxin units)/µg antibody as determined by the LAL method.

References

1. Bell, G., et al., Nucleic Acids Res., **14**, 7873 (1986).
2. Zumstein, P., et al., J. Biol. Chem., **262**, 11252 (1987).
3. Karey, K.P., et al., Cancer Research, **48**, 4083 (1988).

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