

Product No. K-0131

Lot 075H4827

Monoclonal Anti-Human *c-kit*/SCF Receptor

Purified Antibody

Clone K44.2

Monoclonal Anti-Human *c-kit*/SCF Receptor (mouse IgG1 isotype) is derived from the K44.2 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from immunized BALB/c mice. Recombinant human *c-kit*/SCF Receptor produced in transfected CHO cells was used as immunogen. The isotype is determined using Sigma ImmunoType[™] Kit (Sigma ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2). The product is provided as protein A purified and 0.22 μ m-filtered antibody, in 0.01 M phosphate buffered saline, pH 7.4.

Specificity

Monoclonal Anti-Human *c-kit*/SCF Receptor, clone K44.2, recognizes the ligand binding domain of the receptor. It binds to the two amino terminal Ig-like domains in the extracellular portion of p145^{kit}. The antibody can displace receptor-bound SCF and inhibit SCF-induced proliferation in factor-dependent human cells like M07e and TF-1.^{1,2,3}

Description

Stem Cell Factor (SCF),⁴ also called *c-kit* ligand⁵ (KL), or Mast Cell Growth Factor⁶ (MGF), is a growth factor/cytokine with broad activities, especially in hematopoiesis. Among SCF's many activities is the ability to act on early hematopoietic progenitor/stem cells and to stimulate the proliferation and survival of mast cells. SCF is one of the most potent stimulators of multilineage progenitors (CFU-GEMM) in both human and murine bone marrow cells.^{5,7} SCF acts synergistically with other growth factors, including erythropoietin, G-CSF, M-CSF, GM-CSF, IL-3, and IL-6, to increase the number and size of colonies of hematopoietic progenitors.^{4,5,8} SCF plays an important

role in the survival, proliferation or migration of primordial germ cells and melanoblasts during both the development and maturation stages.⁹ The *c-kit*/SCF Receptor belongs both structurally and functionally to a subgroup of receptor tyrosine kinases which includes the receptors for the platelet-derived growth factors (PDGF) and for macrophage-colony stimulating factor (M-CSF).¹⁰ The receptor is characterized by an extracellular ligand binding portion containing five immunoglobulin (Ig)-like domains.¹¹ Binding of SCF to its receptor induces dimerization of the receptor followed by modulation of phosphoinositide metabolism, flux of intracellular free calcium, and activation of the intrinsic tyrosine kinase activity of the receptor, leading to its autophosphorylation and phosphorylation of other cellular substances.

Uses

Monoclonal Anti-Human Kit/SCF Receptor may be used for studying ligand-receptor interaction in a bioassay and flow cytometry.

Antibody Concentration: 2.0 mg/ml.

Working Concentration: 100 ng/ml.

The antibody titer is determined by neutralization bioassay using TF-1 cells. Antibody used at the recommended concentration will neutralize 50% of the biological activity of human SCF when the factor is present at 80% of its maximal effective dose (usually 10-100 ng/ml) as determined from the dose response curve.

In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

Storage

For continuous use, store at 2-8°C. For extended storage freeze in working aliquots. If aseptic technique is used, additional filtration should not be necessary and should be avoided due to adsorption of product on filtration membrane. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

References

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