Human G-CSF R/CD114
Alexa Fluor® 350-conjugated Antibody
Monoclonal Mouse IgG1, Clone # 38660
Catalog Number: FAB381U
100 µg

DESCRIPTION
Species Reactivity: Human
Specificity: Detects human G-CSF/R/CD114 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) GM-CSF Rα, rhGM-CSF Rβ, or rhM-CSF R is observed.
Source: Monoclonal Mouse IgG1, Clone # 38660
Purification: Protein A or G purified from hybridoma culture supernatant
Immunogen: Mouse myeloma cell line NS0-derived recombinant human G-CSF/R/CD114 Glu25-Pro621
Accession #: Q99062
Conjugate: Alexa Fluor 350
Excitation Wavelength: 346 nm
Emission Wavelength: 442 nm

APPLICATIONS
Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

Flow Cytometry
Recommended Concentration: 0.25-1 µg/10^6 cells
Sample: Human whole blood monocytes and granulocytes

PREPARATION AND STORAGE
Shipping: The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage: Protect from light. Do not freeze.
- 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND
Granulocyte Colony Stimulating Factor (G-CSF) is a pleiotropic cytokine best known for its specific effects on the proliferation, differentiation, and activation of hematopoietic cells of the neutrophilic granulocyte lineage. G-CSF plays an important role in defense against infection, in inflammation and repair, and in the maintenance of steady state hematopoiesis. Recombinant human G-CSF has been approved for the amelioration of chemotherapy induced neutropenia as well as for severe chronic neutropenia following marrow transplant.

Cell activation by G-CSF is mediated by a type I membrane protein belonging to the cytokine receptor superfamily. Human G-CSF R, also known as colony-stimulating factor 3 receptor (CSF3R) and designated CD114, is 863 amino acids (aa) in length, with a 604 aa extracellular domain, a 26 aa transmembrane domain, and a 183 aa cytoplasmic domain that include a 23 amino acid signal sequence. As a result of alternative splicing, at least four isoforms of G-CSF R that differ in their C-terminal region exist. Isoform 2 lacks the transmembrane region and may represent a soluble form of the receptor; however the existence of soluble G-CSF R in human serum has not been reported (1). Mutations have been found in the gene encoding G-CSF R in some patients with severe congenital neutropenia. These mutations typically led to a truncation in the cytoplasmic domain of the G-CSF R leading to maturation arrest of neutrophil precursors in the bone marrow and neutropenia in peripheral blood (2). Human and mouse G-CSF R have a homology of 62.5%.

G-CSF R is expressed in mature neutrophils, neutrophilic precursors, myeloid leukemia cells, and placenta. Binding of G-CSF to its receptor induces dimerization or oligomerization of the receptor activating cytoplasmic tyrosine kinases. Signal transduction from pathways that involve Janus tyrosine kinases/signal transducer and activator of transcription proteins (Jak1, Jak2, and Tyk2/STAT3, STAT3, and STATG), src-related protein tyrosine kinases (Lyn and Syk), Ras/MAP kinase, and phosphatidylinositol have been reported to be activated upon G-CSF stimulation (1).

References:

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