Human/Mouse Insulin R/CD220 Alexa Fluor® 488-conjugated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: FAB1544G
100 TESTS

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human Insulin R/CD220 in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant mouse Insulin R is observed and less than 5% cross-reactivity with recombinant human INSRR is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Insulin R/CD220 His28-Lys944 Accession # NP_001073285
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

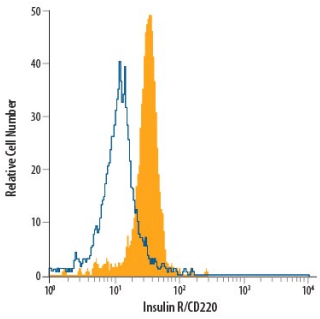
APPLICATIONS

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.*

	Recommended Concentration	Sample
Flow Cytometry	5 µL/10^6 cells	See Below

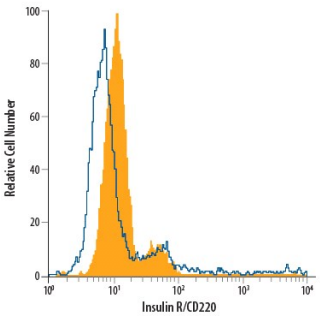
DATA

Flow Cytometry



Detection of Insulin R/CD220 in Human Blood Monocytes by Flow Cytometry. Human peripheral blood monocytes were stained with Goat Anti-Human/Mouse Insulin R/CD220 Alexa Fluor® 488-conjugated Antigen Affinity-purified Polyclonal Antibody (Catalog # FAB1544G, filled histogram) or isotype control antibody (Catalog # IC108G, open histogram). View our protocol for Staining Membrane-associated Proteins.

Flow Cytometry



Detection of Insulin R/CD220 in Neuro-2A Mouse Cell Line by Flow Cytometry. Neuro-2A mouse neuroblastoma cell line was stained with Goat Anti-Human/Mouse Insulin R/CD220 Alexa Fluor® 488-conjugated Antigen Affinity-purified Polyclonal Antibody (Catalog # FAB1544G, filled histogram) or isotype control antibody (Catalog # IC108G, open histogram). View our protocol for Staining Membrane-associated Proteins.

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.

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BACKGROUND

The Insulin Receptor (INS R) and insulin-like growth factor-1 receptor (IGF-1 R) constitute a subfamily of receptor tyrosine kinases (1-4). The two receptors share structural similarity as well as overlapping intracellular signaling events, and are believed to have evolved through gene duplication from a common ancestral gene. INS R cDNA encodes a type I transmembrane single chain preproprotein with a putative 27 amino acid residues (aa) signal peptide. The large INS R extracellular domain is organized into two successive homologous globular domains, which are separated by a Cysteine-rich domain, followed by three fibronectin type III domains. The intracellular region contains the kinase domain sandwiched between the juxtamembrane domain used for docking insulin-receptor substrates (IRS), and the carboxy-terminal tail that contains two phosphotyrosine-binding sites. After synthesis, the single chain INS R precursor is glycosylated, dimerized and transported to the Golgi apparatus where it is processed at a furin-cleavage site within the middle fibronectin type III domain to generate the mature disulfide-linked $\alpha_2\beta_2$ tetrameric receptor. The α subunit is localized extracellularly and mediates ligand binding while the transmembrane β subunit contains the cytoplasmic kinase domain and mediates intracellular signaling. As a result of alternative splicing, two INS R isoforms (A and B) that differ by the absence or presence, respectively, of a 12 aa residue sequence in the carboxyl terminus of the α subunit exist. Whereas the A isoform is predominantly expressed in fetal tissues and cancer cells, the B isoform is primarily expressed in adult differentiated cells. Both the A and B isoforms bind insulin with high-affinity, but the A isoform has considerably higher affinity for IGF-I and IGF-II. Ligand binding induces a conformational change of the receptor, resulting in ATP binding, autophosphorylation, and subsequent downstream signaling. INS R signaling is important in metabolic regulation, but may also contribute to cell growth, differentiation and apoptosis. Mutations in the INS R gene have been linked to insulin-resistant diabetes mellitus, noninsulin-dependent diabetes mellitus and leprechaunism, an extremely rare disorder characterized by abnormal resistance to insulin that results in a variety of distinguishing characteristics, including growth delays and abnormalities affecting the endocrine system. INS R is highly conserved between species, rat INS R shares 94% and 97% aa sequence homology with the human and mouse receptor, respectively.

References:

1. Nakae, J. *et al.* (2001) Endoc. Rev. **22**:818.
2. De Meyts, P. and J. Whittaker (2002) Nature Rev. Drug Disc. **1**:769.
3. Kim, J.J. and D. Accili (2002) Growth Hormone and IGF Res. **12**:84.
4. Sciacca, L. *et al.* (2003) Endocrinology **144**:2650.

PRODUCT SPECIFIC NOTICES

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