

Technical Data Sheet

Purified Mouse Anti-IRS-1

Product Information

Material Number:	611394
Size:	50 µg
Concentration:	250 µg/ml
Clone:	6/IRS-1
Immunogen:	Rat IRS-1 aa. 1131-1234
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Mouse Tested in Development: Rat
Target MW:	180 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

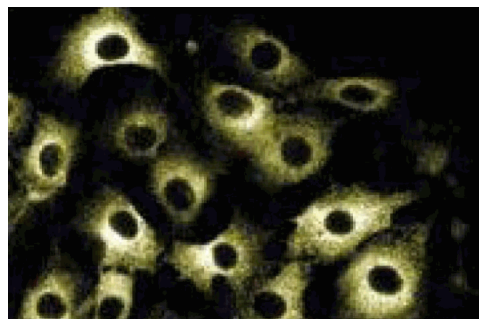
Description

The IRS (Insulin receptor substrate) proteins IRS-1, IRS-2, IRS-3, and IRS-4 are major substrates of the insulin receptor tyrosine kinase and the insulin-like growth factor-1 receptor. IRS proteins contain an N-terminal pleckstrin homology (PH) domain, an ATP-binding domain, and multiple tyrosine phosphorylation sites in the C-terminus. Following insulin receptor ligation, IRS-1 binds to the juxtamembrane region of the receptor and is tyrosine phosphorylated. This facilitates its interaction with SH2 domain-containing signaling proteins, such as PI3 kinase, fyn, Grb2, and PTP1D. Phosphorylation dramatically reduces the affinity of IRS-1 for the insulin receptor, indicating that dissociation from the receptor and subsequent subcellular translocation are important to IRS-1 function in the pleiotropic effects induced by insulin. In support of this, IRS-1-null mice are viable, but exhibit growth retardation and abnormal glucose metabolism. In cases of reduced IRS-1 expression, certain IRS-1 functions can be assumed by the related IRS-2 protein, while other activities linked to IRS-1 are inhibited. Thus, IRS-1 is an essential component of insulin induced signal transduction.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Bioscience Pharmingen during antibody development only or reported in the literature.



Western blot analysis of IRS-1 on RSV-3T3 cell lysate.
Lane 1: 1:1000, lane 2: 1:2000, lane 3: 1:4000 dilution of anti-IRS-1.



Immunofluorescent staining of RSV-3T3 cells.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at -20° C.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharming/en/protocols for technical protocols.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

References

Backer JM, Myers MG, Shoelson SE. Phosphatidylinositol 3'-kinase is activated by association with IRS-1 during insulin stimulation. *EMBO J.* 1992; 11(9):3469-3479.(Biology)

Kuhné MR, Zhao Z, Rowles J. Dephosphorylation of insulin receptor substrate 1 by the tyrosine phosphatase PTP2C. *J Biol Chem.* 1994; 269(22):15833-15937. (Biology)

Obici S, Feng Z, Karkanias G, Baskin DG, Rossetti L. Decreasing hypothalamic insulin receptors causes hyperphagia and insulin resistance in rats. *Nat Neurosci.* 2002; 5(6):566-572.(Clone-specific: Western blot)

Paz K, Liu YF, Shorer H. Phosphorylation of insulin receptor substrate-1 (IRS-1) by protein kinase B positively regulates IRS-1 function. *J Biol Chem.* 1999; 274(40):28816-28822.(Biology)

Sun XJ, Rothenberg P, Kahn CR. Structure of the insulin receptor substrate IRS-1 defines a unique signal transduction protein. *Nature.* 1991; 352(6330):73-77. (Biology)