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Insulin-like Growth Factor-1 (IGF-1) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone IGF1/1020]
Catalog # AH11509

Product Information

Application	IF, FC
Primary Accession	P05019
Other Accession	3479, 160562
Reactivity	Human, Mouse, Rat, Rabbit
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1, kappa
Clone Names	IGF1/1020
Calculated MW	21841

Additional Information

Gene ID	3479
Other Names	Insulin-like growth factor I, IGF-I, Mechano growth factor, MGF, Somatomedin-C, IGF1, IBP1
Application Note	IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Insulin-like Growth Factor-1 (IGF-1) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	IGF1 (HGNC:5464)
Function	The insulin-like growth factors, isolated from plasma, are structurally and functionally related to insulin but have a much higher growth-promoting activity. May be a physiological regulator of [1-14C]- 2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts. Stimulates glucose transport in bone-derived osteoblastic (PyMS) cells and is effective at much lower concentrations than insulin, not only regarding glycogen and DNA synthesis but also with regard to enhancing glucose uptake. May play a role in synapse maturation (PubMed:21076856, PubMed:24132240). Ca(2+)-dependent exocytosis of IGF1 is required for sensory perception of smell in the olfactory bulb (By similarity). Acts as a ligand for IGF1R. Binds to the alpha subunit of IGF1R, leading to the activation of the intrinsic tyrosine kinase activity which autophosphorylates tyrosine residues in the beta subunit thus initiating a

	cascade of down-stream signaling events leading to activation of the PI3K-AKT/PKB and the Ras-MAPK pathways. Binds to integrins ITGAV:ITGB3 and ITGA6:ITGB4. Its binding to integrins and subsequent ternary complex formation with integrins and IGFR1 are essential for IGF1 signaling. Induces the phosphorylation and activation of IGFR1, MAPK3/ERK1, MAPK1/ERK2 and AKT1 (PubMed:19578119, PubMed:22351760, PubMed:23243309, PubMed:23696648). As part of the MAPK/ERK signaling pathway, acts as a negative regulator of apoptosis in cardiomyocytes via promotion of STUB1/CHIP-mediated ubiquitination and degradation of ICER-type isoforms of CREM (By similarity).
Cellular Location	Secreted {ECO:0000250|UniProtKB:P05017}.

Background

This antibody is specific to Insulin-like Growth Factor (IGF-1) and shows minimal cross-reaction with IGF-11, Proinsulin, MSF, and Insulin. IGF-1 is a polypeptide growth factor with two isoforms that are produced by alternative splicing. Isoform 1 is also known as IGF-IB while isoform 2 is known as IGF-IA. IGF-1 stimulates the proliferation of a wide range of cell types including muscle, bone and cartilage tissue. It functions as an autocrine regulator of growth. Activation of IGF system has emerged as a key factor for tumor progression and resistance to apoptosis in many cancers like those of breast, thyroid and colon.

References

Rotwein p, et. al. (1986) J. Biol. Chem. 261: 4828-4832. | Sandberg-Nordqvist AC, et. al. (1993) Cancer Res. 53: 2475-2478. | Zheng WH, et. al. (2000) J. Neural.Transm. Suppl. 2000: 261-272