IGF-I (W18): sc-74116

SANTA CRUZ®

BIOTECHNOLOGY

The Power to Question

BACKGROUND

Insulin-like growth factor-I, or IGF-I, is an ubiquitous peptide that acts in both an autocrine and paracrine fashion to stimulate the growth of vascular smooth muscle cells. In addition, IGF-I regulates renal function, growth and repair; is critically involved in bone formation and resorption; and has been implicated in mediating aspects of the immune response. IGF function is modulated by at least six circulating IGF-binding proteins, designated IGFBP1-6, which associate with the soluble growth factor. While the function of IGF-II is less well understood, overexpression of the protein in mice suggests that IGF-II may play a regulatory role in Insulin sensitivity and glucose uptake. Both IGF-I and IGF-II exert their biological effects through a common receptor, designated IGF-IR. Like the Insulin receptor, IGF-IR is composed of two extracellular α chains and two signal transducing β chains cross-linked by disulfide bonds.

CHROMOSOMAL LOCATION

Genetic locus: IGF1 (human) mapping to 12q23.2.

SOURCE

IGF-I (W18) is a mouse monoclonal antibody raised against recombinant protein corresponding to amino acids 49-118 of IGF-I of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

IGF-I (W18) is recommended for detection of IGF-I of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with mouse IGF-I or mouse or human IGF-II.

Suitable for use as control antibody for IGF-I siRNA (h): sc-37193, IGF-I shRNA Plasmid (h): sc-37193-SH and IGF-I shRNA (h) Lentiviral Particles: sc-37193-V.

Molecular Weight of IGF-1A/IGF-1B/IGF-3 isoforms: 22/17/15 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA
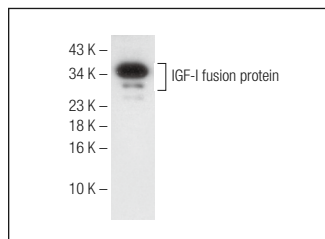
IGF-I (W18): sc-74116. Western blot analysis of human recombinant IGF-I fusion protein.

SELECT PRODUCT CITATIONS

1. Gozal, D., et al. 2010. Physical activity attenuates intermittent hypoxia-induced spatial learning deficits and oxidative stress. Am. J. Respir. Crit. Care Med. 182: 104-112.

2. Wang, H.B., et al. 2011. Evaluation of Nrf2 and IGF-1 expression in benign, premalignant and malignant gastric lesions. Pathol. Res. Pract. 207: 169-173.

3. Maris, C., et al. 2015. IGF-IR: a new prognostic biomarker for human glioblastoma. Br. J. Cancer 113: 729-737.

4. Liu, H., et al. 2016. MicroRNA-26b is upregulated in a double transgenic mouse model of Alzheimer's disease and promotes the expression of Amyloid-β by targeting Insulin-like growth factor 1. Mol. Med. Rep. 13: 2809-2814.

5. Valadez-Bustos, N., et al. 2019. Oral administration of microencapsulated B. longum BAA-999 and lycopene modulates IGF-1/IGF-1R/IGFBP3 protein expressions in a colorectal murine model. Int. J. Mol. Sci. 20: 4275.

6. Chong, H., et al. 2020. The PGC-1α/NRF1/miR-378a axis protects vascular smooth muscle cells from FFA-induced proliferation, migration and inflammation in atherosclerosis. Atherosclerosis 297: 136-145.

7. Kim, B.H., et al. 2021. Hair growth stimulation effect of Centipeda minima extract: identification of active compounds and anagen-activating signaling pathways. Biomolecules 11: 976.

8. Qiu, J., et al. 2022. Antenatal dexamethasone retarded fetal long bones growth and development by down-regulating of insulin-like growth factor 1 signaling in fetal rats. Hum. Exp. Toxicol. 41: 9603271211072870.

9. Chen, L., et al. 2023. Synergy of 5-aminolevulinate supplement and CX3CR1 suppression promotes liver regeneration via elevated IGF-1 signaling. Cell Rep. 42: 112984.

RESEARCH USE

For research use only, not for use in diagnostic procedures.