



# IGF-I (hBA-70): sc-4589

## 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  $\alpha$  chains and two signal transducing  $\beta$  chains cross-linked by disulfide bonds.

## REFERENCES

1. Rabkin, R., et al. 1995. Expression of the genes encoding the rat renal insulin-like growth factor-I system. *J. Am. Soc. Nephrol.* 6: 1511-1518.
2. Hayden, J.M., et al. 1995. The insulin-like growth factor system and the coupling of formation to resorption. *Bone* 17: 93S-98S.
3. Auernhammer, C.J., et al. 1995. Effects of growth hormone and insulin-like growth factor I on the immune system. *Eur. J. Endocrinol.* 133: 635-645.
4. Motani, A., et al. 1995. Insulin-like growth factor binding protein-1 inhibits arterial smooth muscle cell proliferation *in vitro* but does not reduce the neointimal response to balloon catheter injury. *Atherosclerosis* 118: 57-66.
5. Delafontaine, P., et al. 1996. G-protein coupled and tyrosine kinase receptors: evidence that activation of the insulin-like growth factor I receptor is required for thrombin-induced mitogenesis of rat aortic smooth muscle cells. *J. Clin. Invest.* 97: 139-145.
6. Jiang, Y., et al. 1996. Effect of tyrosine mutations on the kinase activity and transforming potential of an oncogenic human insulin-like growth factor I receptor. *J. Biol. Chem.* 271: 160-167.
7. Rossetti, L., et al. 1996. Hepatic overexpression of insulin-like growth factor-II in adulthood increases basal and insulin-stimulated glucose disposal in conscious mice. *J. Biol. Chem.* 271: 203-208.

## SOURCE

IGF-I (hBA-70) is produced in *E. coli* as 35 kDa biologically active, GST-tagged protein corresponding to 70 amino acids of IGF-I of human origin.

## PRODUCT

IGF-I (hBA-70) is purified from bacterial lysates (>98%); supplied as 100  $\mu$ g purified protein.

## BIOLOGICAL ACTIVITY

IGF-I (hBA-70) is biologically active as determined by the dose-dependent proliferation of murine BALB/c 3T3 cells: ED<sub>50</sub> = 1.0 ng/ml.

## RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryo-preserved (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

## SELECT PRODUCT CITATIONS

1. Kasimanickam, R.K., et al. 2013. Associations among serum pro- and anti-inflammatory cytokines, metabolic mediators, body condition, and uterine disease in postpartum dairy cows. *Reprod. Biol. Endocrinol.* 11: 103.

## STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.