

PRODUCT INFORMATION

IGF-1 LR3

Item No. 45532

Synonyms: IGF-1 Long Arginine 3, Long [Arg³]-IGF-I, LR³-IGF-I
Peptide Sequence: MFPAMPLSSLFVNGPRTLCAELVDALQFVCGDRGFYFNKPTGYGSSSRRAPQTGIVDEC
 CFRSCDLRRLEMYCAPLPAKSA-OH
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

IGF-1 LR3 is supplied as a solid. A stock solution may be made by dissolving the IGF-1 LR3 in the solvent of choice, which should be purged with an inert gas. IGF-1 LR3 is sparingly soluble (1-10 mg/ml) in DMSO.

IGF-1 LR3 is sparingly soluble (1-10 mg/ml) in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

IGF-1 long arginine 3 (IGF-1 LR3) is a peptide derivative of human insulin-like growth factor 1 (IGF-1; Item No. 33981) containing 13 additional amino acids at the N-terminus of IGF-1 as well as an arginine in place of glutamate at position 3 of IGF-1, a substitution that increases its half-life by reducing its interaction with IGF binding proteins (IGFBPs).¹ It stimulates protein and DNA synthesis (EC_{50} s = 0.19 and 1.8 nM, respectively) and prevents protein degradation *in vitro* (EC_{50} = 0.53 nM) to a greater degree than IGF-1. IGF-1 LR3 (278 µg/animal per day) increases body weight, muscle RNA content, and muscle protein synthesis in a rat model of diabetes.² It reduces vessel stenosis and the necrotic core size of atherosclerotic plaques in a model of early atherosclerosis using *ApoE*^{-/-} mice.³

References

- Francis, G.L., Ross, M., Ballard, F.J., *et al.* Novel recombinant fusion protein analogues of insulin-like growth factor (IGF)-I indicate the relative importance of IGF-binding protein and receptor binding for enhanced biological potency. *J. Mol. Endocrinol.* **8**(3), 213-223 (1992).
- Tomas, F.M., Knowles, S.E., Owens, P.C., *et al.* Insulin-like growth factor-I and more potent variants restore growth of diabetic rats without inducing all characteristic insulin effects. *Biochem. J.* **291**(Pt 3), 781-786 (1993).
- von der Thüsen, J.H., Borensztajn, K.S., Moimas, S., *et al.* IGF-1 has plaque-stabilizing effects in atherosclerosis by altering vascular smooth muscle cell phenotype. *Am. J. Pathol.* **178**(2), 924-934 (2011).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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