

Mechano Growth Factor, MGF, TFA

□ Cat #PP-1530

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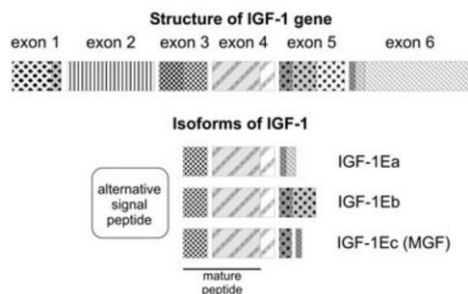
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Mechano growth factor (MGF) is a novel splice variant of the Insulin-Like Growth Factor-1 (IGF-1), also known as IGF-1 Ec in humans and IGF-1Eb in rodents. It is actually originally called MGF because the RNA form of it is expressed in muscle tissues in response to the overload or/and damage of muscle growth tissue. The C-terminal peptide of the mechano growth factor (MGF) is a crucial region for the alternative splicing of the peptide. The alternative splicing in the MGF is brought about by the shift in the reading frame in which a specific C-terminal sequence (E-domain) is encoded by exon 5 and the first part of the exon 6. Another interesting point in MGF is that, because of the E domain it contains, MGF can act on muscles independently from the rest of the molecule. Furthermore, MGF can elicit very different effects with mGF promoting satellite cells proliferation and IGF-1 inducing differentiation.

into activation. Which in turn allows the activation of extra undamaged nuclei to grow new muscle fiber and tissue. The appearance of MGF also initiates the upregulation of new protein synthesis. After this initial splicing of IGF-1 into MGF, production then switches towards producing a systemic release of IGF-1Ea from the liver, which also upregulates protein synthesis as well. The expression of IGF-1 splice variants, over the course of the healing and regrowth phase of muscle repair is thought to be the primary mechanism by which the body produces new muscle tissue.

References: Goldspink, G. 2001 S.Y. International journal of sport nutrition and exercise metabolism.

For in vitro research use only



PP-1530-MGF

160316SV

CAS#	N/A
Mol. Mass	2867.14
Formula	C ₁₂₁ H ₂₀₀ N ₄₂ O ₃₉
Sequence	Tyr-Gln-Pro-Pro-Ser-Thr-Asn-Lys-Asn-Thr-Lys-Ser-Gln-Arg-Arg-Lys-Gly-Ser-Thr-Phe-Glu-Glu-Arg-Lys
Purity	>95%

When mechanical overload is introduced to a muscle (as by weight training), the IGF-1 gene is released and is differentially spliced during the bodies response. Initially, it is spliced to produce predominantly IGF-1Ec (called the MGF splice variant of IGF-1). This early splicing stimulates satellite cells