IGF-1 Lr3

PRODUCT OVERVIEW

Specification	Details
Generic Name	Long R3 Insulin-Like Growth Factor-1
Drug Class	IGF-1 Analog
Active Ingredient	IGF-1 Lr3
Administration Route	Subcutaneous Injection
Dosage Form	Injectable Peptide
Chemical Class	Recombinant / Modified Peptide
Primary Target	IGF-1 Receptor (IGF-1R)
Clinical Status	Investigational; not approved as a therapeutic medication

INTRODUCTION

IGF-1 LR3, commonly referred to as Long R3 IGF-1, is a modified analog of human Insulin-Like Growth Factor-1 (IGF-1). It was designed to alter the pharmacological characteristics of native IGF-1, particularly its interaction with IGF-binding proteins and its duration of biological activity.

IGF-1 is an important mediator of growth hormone signaling and contributes to cellular growth, protein metabolism, skeletal development, and tissue maintenance. IGF-1 LR3 is primarily encountered as an experimental research peptide rather than an approved therapeutic medicine.

HISTORY

The development of modified IGF-1 analogs was driven by research into the relationship between IGF-1 structure, receptor activity, and binding to circulating IGF-binding proteins. Native IGF-1 has a relatively short biological availability and is extensively regulated by IGF-binding proteins.

Structural modification of IGF-1, including the introduction of an extended peptide sequence and an amino-acid substitution, produced the molecule commonly referred to as IGF-1 LR3. Research into such analogs has focused on understanding IGF-1 receptor signaling, cellular proliferation, glucose metabolism, and growth-related biological pathways.

IGF-1 LR3 has not been established as an approved therapeutic drug for human use.

CHEMICAL STRUCTURE

IGF-1 LR3 is a modified form of human IGF-1.

The molecule incorporates:

• An amino-acid substitution at position 3
• An additional 13-amino-acid sequence at the N-terminus

These modifications alter its interaction with IGF-binding proteins and influence its pharmacological behavior compared with native IGF-1.

CHEMICAL PROFILE

Parameter	Information
Primary Components	IGF-1 Lr3
Hormone Classification	IGF-1 Analog
Administration	Subcutaneous Injection
Dosage Form	Injectable Peptide
Receptor Target	IGF-1 Receptor (IGF-1R)
Chemical Class	Recombinant / Modified Peptide

PHARMACOLOGY

IGF-1 LR3 primarily acts through the IGF-1 receptor (IGF-1R), a receptor tyrosine kinase found on numerous cell types.

Activation of IGF-1R initiates intracellular signaling pathways including:

• PI3K/Akt signaling
• MAPK/ERK signaling
• Protein synthesis
• Cellular growth
• Cellular survival

These pathways are involved in the regulation of muscle, bone, connective tissue, and other tissues responsive to IGF-1.

MECHANISM OF ACTION

The general mechanism involves:

• Administration of the modified peptide
• Systemic distribution
• Binding to IGF-1 receptors
• Receptor activation
• Intracellular signal transduction
• Activation of PI3K/Akt and MAPK pathways
• Regulation of protein synthesis and cellular growth
• Modulation of tissue-specific biological processes

PHARMACODYNAMICS

IGF-1 signaling may influence:

• Protein synthesis • Muscle cell growth • Satellite-cell activity • Tissue repair • Nitrogen metabolism

SKELETAL MUSCLE SYSTEM

Anabolic-androgenic steroids interact with androgen receptors in skeletal muscle and may influence:

• Protein metabolism
• Muscle tissue maintenance
• Nitrogen metabolism
• Muscle cell function

Androgen receptor signaling contributes to the regulation of normal skeletal muscle structure and function.

SKELETAL SYSTEM

Androgen receptor signaling contributes to skeletal physiology and may influence:

• Bone remodeling
• Skeletal maintenance
• Bone metabolism
• Structural integrity

CONNECTIVE TISSUE

Androgen receptor signaling may influence connective tissue physiology through:

• Structural protein metabolism
• Tissue maintenance
• Tissue remodeling
• Collagen metabolism

REPRODUCTIVE SYSTEM

Androgenic compounds interact with androgen-sensitive tissues and may influence:

• Hormonal regulation
• Endocrine signaling
• Reproductive physiology
• Androgen-responsive tissues

PHARMACOKINETICS

The pharmacokinetic characteristics of IGF-1 LR3 differ from those of native IGF-1 because of its structural modifications.

The extended peptide structure and altered binding characteristics reduce interaction with some IGF-binding proteins, potentially increasing the fraction of biologically available peptide and prolonging its activity compared with endogenous IGF-1.

However, comprehensive human clinical pharmacokinetic data for IGF-1 LR3 are limited, and a validated therapeutic pharmacokinetic profile has not been established.

PHYSIOLOGICAL EFFECTS

IGF-1 LR3 is designed to produce biological activity through the IGF-1 receptor, activating signaling pathways involved in protein synthesis, cellular growth, survival, and tissue remodeling. IGF-1 signaling is particularly important in skeletal muscle, bone, cartilage, and connective tissue, where it participates in processes related to growth and tissue maintenance. Its interaction with the PI3K/Akt and MAPK pathways can influence cellular metabolism and growth-related processes.

Because IGF-1 signaling also participates in glucose regulation and cellular proliferation, excessive or inappropriate activation may produce effects beyond the intended tissue response. The physiological consequences of IGF-1 LR3 in humans have not been adequately characterized in controlled clinical studies, and therefore experimental findings should not be interpreted as established therapeutic effects.

CLINICAL APPLICATIONS

IGF-1 LR3 does not have an established approved clinical application. Research involving IGF-1 biology has explored its role in growth disorders, muscle wasting, metabolic regulation, bone physiology, and tissue repair. However, these areas should be distinguished from the clinical use of mecasermin, an approved recombinant IGF-1 product used for specific pediatric growth disorders.

IGF-1 LR3 itself remains an experimental analog and has not been approved as a general treatment for growth hormone deficiency, muscle loss, athletic performance, or tissue enhancement.

SAFETY CONSIDERATIONS

The use of anabolic-androgenic steroids may require consideration of cardiovascular, hematological, hepatic, endocrine, metabolic, and reproductive health.

Important safety considerations include:

• Cardiovascular health
• Blood pressure
• Hematological parameters
• Lipid profile
• Liver function
• Endocrine function
• Reproductive function
• Prostate health

The overall safety profile depends on the specific compound, formulation, concentration, duration of exposure, individual response, and patient characteristics. Appropriate medical evaluation and regular monitoring should be considered when clinically indicated.

POTENTIAL ADVERSE EFFECTS

Potential adverse effects associated with anabolic-androgenic steroid exposure may involve endocrine, cardiovascular, hematological, hepatic, dermatological, reproductive, and metabolic systems.

Endocrine Effects
• Suppression of endogenous hormone production
• Alterations in hormonal balance
• Changes in reproductive hormone signaling
• Potential suppression of spermatogenesis

Cardiovascular Effects
• Changes in lipid profile
• Possible increases in blood pressure
• Potential cardiovascular risk

Hematological Effects
• Changes in hematocrit
• Changes in hemoglobin
• Possible increase in erythropoietic activity

Dermatological Effects
• Acne
• Increased sebaceous activity
• Androgen-related hair loss in genetically predisposed individuals

Reproductive Effects
• Changes in reproductive function
• Potential reduction in fertility
• Alterations in reproductive hormone regulation

Hepatic & Metabolic Effects
• Changes in liver function parameters
• Alterations in metabolic markers
• Changes in glucose and lipid metabolism

The occurrence and severity of adverse effects vary according to the specific compound, formulation, exposure, duration of use, individual response, and patient characteristics.

CONTRAINDICATIONS

Condition	Reason
Severe hepatic disease	Increased hepatic risk
Hormone-sensitive cancers	Androgen receptor sensitivity
Pregnancy	Potential risk of fetal development
Known hypersensitivity	Allergic reaction
Significant cardiovascular disease	Potential cardiovascular effects

DRUG INTERACTIONS

A comprehensive interaction profile may not be established for every anabolic-androgenic steroid or formulation.

Potential interactions or clinical considerations may exist with:
• Anticoagulants
• Antidiabetic medications
• Hepatotoxic medications
• Other anabolic-androgenic steroids
• Other hormonal therapies
• Drugs affecting lipid metabolism

The clinical significance of potential interactions depends on the specific compound, formulation, dosage, duration of exposure, concomitant medications, and individual patient characteristics. Appropriate medical evaluation should be considered when multiple medications or hormonal therapies are used concurrently.

LABORATORY MONITORING

Laboratory Test	Purpose
CBC	Monitor hematological parameters
ALT / AST	Liver function
Bilirubin	Hepatic assessment
Lipid Profile	Cardiovascular risk assessment
Blood Pressure	Cardiovascular monitoring
Total Testosterone	Assess androgen status
LH / FSH	Assess endocrine suppression

STORAGE & STABILITY

* Store according to official product labeling.
* Protect from excessive heat and direct sunlight.
* Do not freeze.
* Maintain original packaging integrity.
* Keep away from children.
* Inspect packaging before use.

PRODUCT AUTHENTICITY

Every genuine NEXON product should include appropriate quality verification features.

Authentication may include:

* Batch number tracking
* Manufacturing information
* Expiration date verification
* QR authentication system
* Authorized distribution verification

NEXON emphasizes transparency, traceability, and product quality control.

FREQUENTLY ASKED QUESTIONS

What is IGF-1 Lr3?
IGF-1 LR3 is a modified analog of human Insulin-Like Growth Factor-1 designed to alter its pharmacological characteristics compared with native IGF-1.

Is IGF-1 LR3 a steroid?
No. It is a modified peptide, not an anabolic steroid.

Is IGF-1 LR3 a SARM?
No. Its primary target is the IGF-1 receptor, not the androgen receptor.

Is IGF-1 LR3 oral or injectable?
It is encountered as an injectable research peptide. It does not have an approved oral dosage form.

What is the primary target of IGF-1 Lr3?
The primary target is the IGF-1 receptor (IGF-1R).

Is IGF-1 LR3 the same as HGH?
No. HGH (somatropin) is growth hormone, whereas IGF-1 LR3 is a modified analog of IGF-1, a major downstream mediator of growth hormone signaling.

NEXON QUALITY COMMITMENT

NEXON is committed to maintaining high standards of manufacturing quality, product consistency, traceability, and scientific transparency.

Through quality control systems, authentication procedures, and responsible information sharing, NEXON aims to provide reliable pharmaceutical products and educational resources for healthcare professionals and informed users.

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