

GW-501516 (CARDARINE)

PRODUCT OVERVIEW

Specification	Details
Generic Name	GW-501516
Drug Class	PPARδ Agonist
Active Ingredient	GW-501516 (Cardarine)
Administration Route	Oral
Dosage Form	Oral Compound
Chemical Class	Non-Hormonal Metabolic Modulator
Aromatization	Peroxisome Proliferator-Activated Receptor Delta (PPARδ)
Clinical Status	Investigational; not approved as a therapeutic medication



INTRODUCTION

GW-501516, commonly known as Cardarine, is an experimental small-molecule agonist of the peroxisome proliferator-activated receptor delta (PPARδ). Unlike SARMs, anabolic-androgenic steroids, and growth hormone secretagogues, Cardarine does not primarily act through androgen receptors or the growth hormone axis.

Research has focused on its effects on:

- Fatty-acid metabolism
- Energy utilization
- Skeletal muscle metabolism
- Lipid metabolism
- Exercise-related metabolic pathways



HISTORY

GW-501516 was developed through pharmaceutical research investigating selective activation of PPARδ, a nuclear receptor involved in lipid metabolism, glucose homeostasis, and energy utilization. Early preclinical research demonstrated that PPARδ activation could modify skeletal-muscle metabolic pathways and increase oxidative metabolism. Subsequent animal studies attracted significant interest because of reported changes in endurance-related metabolic characteristics. Clinical research later investigated GW-501516 for metabolic and cardiovascular indications, including dyslipidemia and metabolic risk factors. Development was ultimately discontinued, and the compound did not progress to an approved therapeutic medicine. (pubmed.ncbi.nlm.nih.gov)



CHEMICAL STRUCTURE

GW-501516 is a non-hormonal small molecule that acts primarily as a selective agonist of PPARδ.

Its mechanism differs fundamentally from anabolic steroids and SARMs because its primary target is a nuclear receptor involved in metabolic gene regulation rather than the androgen receptor.



CHEMICAL PROFILE

Parameter	Information
Primary Components	GW-501516
Hormone Classification	PPARδ Agonist
Administration	Oral
Dosage Form	Oral Compound
Receptor Target	PPARδ
Chemical Class	Non-Hormonal Metabolic Modulator
Alternative Name	Cardarine



PHARMACOLOGY

GW-501516 selectively activates PPARδ, a nuclear receptor expressed in tissues including skeletal muscle, adipose tissue, liver, and other metabolically active organs.

Activation of PPARδ influences transcription of genes involved in:

- Fatty-acid oxidation
- Energy metabolism
- Lipid transport
- Glucose utilization
- Mitochondrial oxidative metabolism

This mechanism distinguishes Cardarine from anabolic-androgenic steroids and SARMs.



MECHANISM OF ACTION

The principal mechanism involves activation of PPARδ.

The general pathway includes:

- Oral absorption
- Systemic distribution
- Binding to PPARδ
- Nuclear receptor activation
- Formation of receptor complexes
- Interaction with regulatory DNA sequences
- Regulation of metabolic gene transcription
- Modulation of lipid and energy metabolism



PHARMACODYNAMICS

GW-501516 influences metabolic physiology primarily through PPARδ-mediated gene regulation.



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

GW-501516 is an experimental compound. Pharmacokinetic data is limited to preclinical studies. It is not approved for human use, and its safety profile is not established for humans.



PHYSIOLOGICAL EFFECTS

GW-501516 primarily influences physiological function through activation of PPARδ, a nuclear receptor involved in lipid utilization and energy metabolism. Activation of this pathway can increase the expression of genes associated with fatty-acid oxidation, mitochondrial oxidative activity, and metabolic energy utilization. In preclinical models, these effects have been associated with a shift toward greater oxidative metabolism in skeletal muscle and improved metabolic handling of fatty acids.

Cardarine does not directly function as an anabolic steroid, SARM, or growth hormone secretagogue. Its physiological effects are primarily mediated through metabolic regulation, not through androgen receptor activation. While it may influence energy expenditure, however, the potential benefits observed in experimental models should not be interpreted as established clinical evidence. These effects are not regulated by androgen exposure following oral administration. The compound undergoes hepatic metabolism and produces circulating metabolites that can be detected analytically.

Because GW-501516 is not an approved therapeutic medication, pharmacokinetic parameters should be interpreted according to the specific research formulation and study population.

CLINICAL APPLICATIONS

GW-501516 was investigated experimentally for metabolic and cardiovascular conditions in which modulation of PPARδ could potentially provide therapeutic benefits.

Research areas included:

- Dyslipidemia
- Metabolic disorders
- Lipid metabolism
- Cardiovascular risk factors
- Glucose metabolism

Clinical development was discontinued, and GW-501516 has not been approved as a treatment for these conditions.



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 GW-501516?

GW-501516, commonly known as Cardarine, is an experimental PPARδ agonist that influences metabolic pathways involving lipid and energy utilization.

Is GW-501516 a SARM?

No. Cardarine is not a SARM. It primarily acts through PPARδ rather than the androgen receptor.

Is GW-501516 a steroid?

No. It is a non-hormonal small-molecule metabolic modulator.

Is GW-501516 oral or injectable?

GW-501516 is an orally administered compound.

Does GW-501516 increase testosterone?

No. Its primary pharmacological target is PPARδ rather than the androgen receptor or testosterone-production pathway.

What is Cardarine primarily associated with?

Cardarine is primarily associated with research into lipid metabolism, fatty-acid oxidation, energy utilization, and exercise-related metabolic pathways.

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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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