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# **Does Turk Builder Max Actually Work?**

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#### Abstract

Turk Builder Max is marketed as a leading turkesterone supplement due to its verified *Ajuga turkestanica* sourcing and third-party testing. It contains 10 mg of turkesterone per capsule, alongside other ecdysteroids and *Rhodiola heterodonta* extract, claimed to enhance muscle growth and performance. While some studies suggest anabolic potential, scientific evidence remains inconclusive. Label inconsistencies in turkesterone supplements highlight the need for independent testing. Though Turk Builder Max meets its ingredient claims, its true efficacy and safety require confirmation through large-scale, placebo-controlled human trials.

Keywords: Sports; Biology; Muscle hypertrophy; Supplement; Turkesterone

#### Introduction

In recent years, turkesterone has become an infamous supplement within the fitness industry and Greg Doucette has been the face of the controversy. In the past, many supplement companies were exposed, with their products being shown to have no turkesterone at all or levels far below label claims [1]. The products were FDA tested and approved, but this test was flawed as it flagged chemically similar compounds as turkesterone [2]. Greg's company, HTLT Supplements, responded quickly, sourcing their turkesterone from a plant called Ajuga turkestanica, which is grown in Uzbekistan [3]. HTLT's product is now verified by mass spectrometry, which is widely seen as the gold standard for identifying compounds [3]. Consequently, Turk Builder Max has been promoted as the best turkesterone supplement available, containing 10 mg of turkesterone per capsule [3]. This paper aims to evaluate whether the ingredients of Turk Builder Max can effectively contribute to muscle hypertrophy and performance enhancement based on current scientific literature.

#### **Ingredients and Claims**

The ingredients 20-hydroxyecdysome and turkesterone, at 10 mg per capsule, are ecdysteroids that are claimed to upregulate muscle protein synthesis, with some human and animal studies supporting the claim that they increase muscle hypertrophy [3]. Other additional minor

ecdysteroids, at 6 mg per capsule, may contribute to a synergistic effect for the product [3]. The product also includes *Rhodiola heterodonta* extract, which is an adaptogenic herb known for its antioxidant properties, a potential endurance enhancer and a stimulant [3].

	Supplen	nen	t F	a	ct	S
	Serving Size Serving Per Container	1 Capsule 40	2 Capsules 20		3 Capsules About 13	
La restance in the second		Amount %DV per serving	Amount per serving	%DV	Amount per serving	%DV
HTLT	Sodium (as Capsorb® (Sodium Caprate)) 5.9 mg <1%		11.7 mg <1%		17.6 mg	1%
IN NOTION -	Uzbek Ajuga Turkestanica Extract	200 mg **	400 mg	**	600 mg	**
TURK	Ecdysteroids Turkesterone 20-hydroxyecdysone (20HE) Other Minor Ecdysterones	10 mg ** 10 mg ** 4 mg **	20 mg 20 mg 8 mg	**	30 mg 30 mg 12 mg	** ** **
MAX	Uzbek Rhodiola Heterodonta Extract (std. 3% Salidrosides)	100 mg **	200 mg	**	300 mg	**
Set The UNSE	Capsorb <sup>®</sup> (Sodium Caprate)	50 mg **	100 mg	**	150 mg	**
DETARY SUPPLEMENT 40 CAPSULES	Black Pepper Fruit Extract 95% (Piper nigrum)	5 mg **	10 mg	**	15 mg	**
	**Daily Value (DV) not established.					

Figure 1 – HTLT's Turk Builder Max with supplement facts [3].

#### What Are Ecdysteroids?

Ecdysteroids, including turkesterone, are steroid hormones that are found in plants and arthropods [4]. They are chemically similar to human hormones, leading to the hypothesis that they may cause nutrient partitioning and enhance protein synthesis by interacting with the PI3K/Akt signalling pathway [5]. However, human studies on the anabolic effects of ecdysteroids remain scarce and inconclusive.

#### Is Turkesterone a Special Ecdysteroid?

Some consider turkesterone to be a special ecdysteroid as it is the most readily available ecdysteroid with a  $11\alpha$ -hydroxyl group [6] and has a high potency in some systems [6]. It is believed to bind to membrane-bound estrogen beta receptors, leading to increased transcription of IGF-1 and therefore the activation of the PI3K/Akt/mTOR signalling pathway, promoting muscle protein synthesis [7].



Figure 2 – Turkesterone 2D chemical structure [8].

Compared to other ecdysteroids, turkesterone may have a higher bioavailability and binding affinity due to its  $11\alpha$ -hydroxyl group [7] (Figure 2). If this is the case, it would result in turkesterone being more potent and efficacious than other ecdysteroids. This requires further research for confirmation.

# **Analysis of Turkesterone Supplements**

The accuracy of turkesterone labelling has been questioned, prompting an independent analysis.





Table 1 shows that Turk Builder Max meets label claims and some other products contain little to no *Ajuga turkestanica*-derived compounds. Consumers should be cautious when purchasing turkesterone supplements and seek out third-party tested products. Additionally, this provides a possible explanation as to why a recent human trial found that turkesterone supplementation had no significant effect on muscle hypertrophy [8].

# **Human Clinical Trials and Animal Trials**

Studies on turkesterone and other ecdysteroids have had conflicting results. In one study, rodents supplemented with 20-hydroxyecdysone and turkesterone exhibited improved endurance and recovery rates, suggesting a potential ergogenic benefit [9]. There have been a limited number of human trials and very few on testosterone specifically. Some studies indicate mild increases in lean muscle mass [10], while others report no significant changes compared to placebo groups [8]. This conflicting evidence calls turkesterone's efficacy into question. To determine turkesterone's efficacy, well-designed randomised, double-blind, controlled human trials should be conducted, using mass thirdparty tested turkesterone supplements.

## **Health Concerns**

Turk Builder Max is marketed as a natural supplement but its ingredients such as ecdysteroids may present potential health risks. Having said this, one study found no increase in biomarkers for liver or kidney toxicity [11]. Although ecdysteroids are not classified as anabolic steroids [12], their potential effects on endocrine regulation are not fully understood and should be studied over the short and long term. Additional research is necessary to establish the safety profile of Turk Builder Max, particularly in people with preexisting health conditions.

# Conclusion

Although Turk Builder Max contains genuine turkesterone from *Ajuga turkestanica*, its actual efficacy remains uncertain. Large-scale, placebocontrolled human trials are needed to assess its impacts on performance. While ecdysteroids, including turkesterone, have shown potential anabolic effects in some studies [13], the overall scientific evidence is inconclusive in humans. Until rigorous human trials are performed, caution is advised around purchasing and consuming Turk Builder Max. It is possible that it's an ineffective supplement for increasing muscle hypertrophy and a waste of money, or at worst, a safety risk for consumers.

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