New Biological Strategy to Correct Cellulite

Author: Corinne Stoltz, SEPPIC, Paris, France

Keywords: Slimming, Adipocytes, Caffeine Like, Curative effect, Quinoa, New anti-Adipogenesis, Preventative

Abstract

With the influence of fashion and media, consumers are searching for the miracle solution to have the perfectly sculpted body figure. Our recently developed "SOS Silhouette" programme addresses that demand with curative and preventative slimming ingredients targeting the adipocytes (fat cell storage). Due to its caffeine-like effect, Adiposlim™ treats existing cellulite by simultaneously restricting and eliminating fat storage in the adipocytes through the inhibition of free fatty acid production and lipolysis stimulation. The fat storing capability of adipocytes is decreased allowing cellulite reduction in just a month. Adipoless™ provides a preventative and innovative action against cellulite formation through an anti-adipogenesis mechanism that suppresses the maturation of new adipocytes. Each active ingredient can be incorporated into formulas individually or together for a complementary effect.

Introduction

Within the skin layers, adipocytes are located in the hypodermis. In the body, adipocytes are responsible for the synthesis and storage of fat, which is necessary for maintaining proper energy balance, mobilizing energy sources in response to hormonal stimulations and commanding changes by signal secretions. These cells influence body functions such as metabolism, temperature regulation, etc. However, enlarged adipocytes appear as non-aesthetic cellulite (Figure 1).

When food is ingested, it is converted into energy to meet the body's current demand. Any excess undergoes lipogenesis where the triglyceridesare broken down into free fatty acids to enter the adipose tissue where eventually it reforms into triglycerides again to be stored in the adipocytes. Once the existing adipocyte reaches its storage limits, it signals for dormant preadipocytes to mature and join the active adipocytes. Ultimately, the adipocytes increase their capacity to store fat, which can lead to the unsightly cellulite. Adiposlim™ can treat the existing adipocytes by reducing and limiting the ability to store fat while Adipoless™ prevents the recruitment of new adipocytes through an innovative anti-angiogenesis action (Figure 2).

Adiposlim™

With its lipoaminoacid structure, Adiposlim™ reduces the fat storage capability of the adipocytes via the inhibition of free fatty acid entry and the purge of stored fats by lipolysis activation (Figure 3).

First, in the lipogenesis phase, Adiposlim™ blocks the function of the lipoprotein lipase, thus inhibiting the transformation of triglycerides into free fatty acids. Because this occurs, free fatty acids can enter the adipocyte for fat storage. Test results show that Adiposlim™ significantly limits the amount of free fatty acids that are able to enter into the adipocytes, as illustrated in Figure 4.

Secondly, Adiposlim™ achieves a caffeine-like lipolytic activity by stimulating lipolysis causing the break down of triglycerides into free fatty acids, which is explained by an increase of cAMP, a key substance within the adipocytes for fat elimination. Figure 5 demonstrates the measurement of triglyceride lipolysis from female (average of 13 specimens) and male (1 specimen) adipocytes. In comparison to 0.01% pure caffeine, Adiposlim™ can obtain similar results, but at a lower dosage of 0.0025%. To further show the lipolytic action, cAMP levels were observed via actual measurement (Figure 6), PDE3 inhibition, and adrenergic receptor regulation. Finally, as the free fatty acids are released, they recycled into energy as cellular ATP (Figure 7) so they are not available to reform into triglycerides as it is the case with caffeine.