

LOCAL FAT REDUCTION AND LYMPHATIC DRAINAGE WITH CELLBOOSTER® SHAPE

Timur Taskesen, MD, PHD, presents an innovative solution for local fat reduction and lymphatic drainage based on the CHAC technology by Suisselle



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CELLBOOSTER® SHAPE is a Class III medical device (CE0373), developed and fully produced by Suisselle, a leading medical aesthetic company based at Yverdon-les-Bains in Switzerland (certified ISO 22716, ISO 13485 and ISO 9001). This injectable device is designed to reduce local fat accumulation or deposits. It reduces water retention and diminishes puffiness by improving microcirculation and hydration. The uniqueness of this product is the hyaluronic acid reshaping complex thanks to the CHAC technology, which consists of stabilised hyaluronic acid (HA) with L-carnitine, vitamin C, and other active ingredients. HA hydrates the skin and supports tissue structure, while L-carnitine and vitamin C are critical components in fat metabolism, skin health, and lymphatic function.

CELLBOOSTER® SHAPE complex stabilised with CHAC technology

CELLBOOSTER® SHAPE utilises CHAC technology, a patented process designed to stabilise HA without the use of chemical binding agents, resulting in long-lasting effects. The stabilisation is achieved through a three-step process:

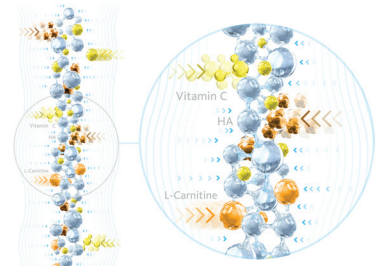
- Formation of a HA matrix: High pressure and shear deformation are applied to the HA, leading to the unfolding and restructuring of its molecular chains. This step increases the HA's interaction

- with other components, enhancing its ability to form an initial stable and robust matrix
- Cross-linking: The HA molecules are then cross-linked without any chemical agents using physical methods like controlled pressure and deformation are used. This creates a stable structure while maintaining the HA's biological properties
- Final stabilisation: The whole structure is strongly stabilised in solution to provide long-term efficacy when injected into the skin.

Overall, the in-house innovation available in the CELLBOOSTER® SHAPE helps to achieve the clinical benefits of an advanced skin booster: effective fat reduction and skin reshaping made possible by a gradual and optimal release of the nutrients and HA into the injected area.

Materials and methods

The CELLBOOSTER® SHAPE formulation consists of non-crosslinked hyaluronic acid (18mg/6ml) combined with L-carnitine and vitamin C. Studies have shown that L-carnitine plays a significant role in fat metabolism by facilitating the transport of fatty acids into the mitochondria for energy production, thus aiding in fat reduction¹. Additionally, vitamin C, a potent antioxidant, supports collagen synthesis and strengthens the skin's extracellular matrix, which can improve skin elasticity and overall appearance².



CELLBOOSTER® SHAPE Complex stabilised with CHAC technology

Local fat reduction and lymphatic drainage mechanisms

As we age, the natural fat-burning and lymphatic drainage mechanisms in our skin tend to decrease in efficiency. However, these processes can be revitalised by stimulating mitochondrial activity, the energy powerhouse of our cells. Mitochondria play a crucial role in fat burning through the beta-oxidation process. Fatty acids are broken down into acetyl-CoA, which then enters the Krebs cycle, a series of chemical reactions that generate ATP (adenosine triphosphate)—the cell's energy currency. This energy fuels various cellular functions, including the maintenance of metabolic processes that are essential for fat reduction. Additionally, efficient mitochondrial function supports the lymphatic system, which is responsible for removing waste and excess fluid from tissues. The enhancement of mitochondrial activity can, therefore, lead to improved lymphatic drainage, reducing water retention and contributing to a leaner appearance.

“CELLBOOSTER® SHAPE effectively combines HA, L-carnitine, and vitamin C to target local fat deposits while promoting lymphatic drainage and improving skin health.”

By boosting these natural mechanisms, interventions such as CELLBOOSTER® SHAPE can help counteract the effects of ageing, promoting both localised fat reduction and enhanced lymphatic drainage.

Results

Clinical observations indicate that treatments using CELLBOOSTER® SHAPE result in a noticeable reduction in local fat deposits and improved skin tone. L-carnitine's ability to dilate subcutaneous arteries enhances blood flow and nutrient delivery to tissues, promoting healthier, more resilient skin[3]. Moreover, vitamin C's role in stimulating elastin and collagen production contributes to the reduction of stretch marks and skin sagging, which are common concerns in areas with fat accumulation².

Conclusion

CELLBOOSTER® SHAPE effectively combines HA, L-carnitine, and vitamin C to target local fat deposits while promoting lymphatic drainage and improving skin health. The synergistic effects of these ingredients enhances the cosmetic appearance by reducing puffiness and fat and supports the structural integrity and elasticity of the skin, making it a valuable tool for treatments focused on body contouring and rejuvenation.

Safety and efficacy profile of L-carnitine Minimised side effects

L-carnitine has lower incidence of side effects when compared to phosphatidylcholine (PPC) and deoxycholic acid (DC). Injections of PPC and DC have been associated with adverse reactions such as inflammation, pain, and scarring at the injection site.

Inherent Metabolic Pathway:

In contrast to PPC and DC, L-Carnitine operates within the body's innate metabolic pathways by facilitating the transport of fatty acids into mitochondria for energy conversion. Its mode of action does not interfere with product safety and biocompatibility.

Alignment with skin health

L-carnitine's inclusion in formulations aimed at enhancing skin health is a testament to its beneficial properties. Its antioxidant activity and potential role in supporting cellular energy metabolism can contribute to skin rejuvenation and overall skin health. This alignment with skin health provides additional advantages beyond its primary function of reducing fat deposits.

Boosted energy production

By facilitating the transport of long-chain fatty acids into mitochondria, L-carnitine has the potential to enhance energy production. This could yield benefits beyond fat reduction alone, such as improved exercise performance or increased overall energy levels. Such effects may not be readily achievable with PPC or DC injections, which do not directly influence energy metabolism.

Application versatility

L-carnitine's versatility extends beyond fat reduction treatments. Its role in supporting energy metabolism and skin health makes it a valuable ingredient in various cosmetic formulations. This flexibility allows L-carnitine to be included in products addressing diverse cosmetic concerns, such as cellulite reduction or skin rejuvenation.

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CHAC technology

CELLBOOSTER®

SHAPE



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FAT BURNING
SKIN BOOSTER

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* Medical Devices Class III, regulated health products bearing the CE marking (CE 0373). Only to be administered by appropriately trained healthcare professionals who are qualified or accredited in accordance with national law.

References

1. Alizadeh Z, Halabchi F, Mazaheri R, et al. Review of the Mechanisms and Effects of Noninvasive Body Contouring Devices on Cellulite and Subcutaneous Fat. *Int J Endocrinol Metab.* 2016; 14 (4):e36727. doi: 10.5812/ijem.36727. PMID: 28123436
2. Pullar JM, Carr AC, Vissers MCM. The Roles of Vitamin C in Skin Health. *Nutrients.* 2017; 9(8):866. <https://doi.org/10.3390/nu9080866>
3. Cipolla, Marilyn J. et al. Propionyl-L-carnitine dilates human subcutaneous arteries. *Journal of Vascular Surgery, Volume 29, Issue 6, 1097-1103*