



# LIPOSOMAL CBD CREAM

The next generation in skin-penetrating CBD topicals

BY JOE DACREMA

TIME TO READ: 4-6 MIN.

## THE TAKEAWAY

Liposomes have the ability to drive higher concentrations of CBD and improve bioavailability, with their hydrophobic nature more effectively penetrating the water-tight barrier of the skin.

**“LIPOSOME” HAS BECOME QUITE A BUZZWORD** in recent years, largely driven by new advances in the pharmacology and dietary supplement industry. One can find plenty of dietary supplements ranging from vitamin C to curcumin to even colostrum using liposomal delivery systems, and now liposomal CBD products have made their way into the buying tastes and preferences of the consumer.

Liposomal technology, broadly speaking, refers to the use of liposomes to both target drug therapy (in our case CBD) to receptor-specific tissue (in our case the endocannabinoid system) and to enhance bioavailability.

### What are liposomes?

The word liposome derives from Greek roots where “lipo” refers to “fat” and “some” refers to “body.” But a liposome is much more than a “fat body.”

Liposomes are man-made transport vesicles designed to

deliver biologically useful substances like CBD to tissue with greater efficacy. A liposome is essentially a phospholipid membrane filled with a watery mix, and shares many of the features of a living cell. Structurally a liposome is roughly the size and shape of a cell and is bound by a membrane that is compatible with a living cell membrane because, critically, they share the same phospholipid building blocks.

Further, a liposome can function like a cell, having the ability to interact chemically with a cell. Where a living cell membrane has two concentric layers of phospholipid building blocks called a phospholipid bilayer, a liposome will generally have one. Liposomes can travel through the watery mix of tissue matrix intact until arriving at the site of administration.

### Greater bio-efficiency

The cell membrane is integral to all biological processes because it facilitates cell-to-cell communication, chemical

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interaction, and flow of materials into and out of the cell. This is because membranes have affinity with both water (hydrophilic) and oil (hydrophobic) — two substances that normally “don’t mix”— at the same time.

When a liposome interacts with a cell, the contents of the liposome are able to move according to the concentration gradient into the target cell. The liposomal membrane, meanwhile, is integrated into the target cell membrane. This means that liposomes can interact in ways that target certain cells and tissue types with greater bio-efficiency.

### Delivery vehicles for CBD

Liposomes improve transdermal systems by acting as delivery vehicles for CBD. They are nonimmunogenic and non-toxic, thermodynamically stable (prolonged shelf life), and non-irritating to the skin. Because of their ease of preparation, thermodynamic stability, bio-compatibility, enhanced topical performance and safety after prolonged application, liposomal topicals are the vehicle of choice for topical delivery systems.

Importantly, a great advantage of the dual (hydrophobic/hydrophilic) nature of liposomes is their ability to drive higher concentrations of CBD and improve delivery efficiency. Because of their hydrophobic nature, liposomes are able to effectively penetrate the stratum corneum, a particularly watertight barrier of the skin. And because of their hydrophilic nature, liposomes absorb readily into the more aqueous layers of deeper tissue. The improvement in skin permeation, ability to drive higher

concentrations and the ability to target tissue make liposomal transdermal delivery systems superior compared with conventional topicals.

### Advantages of liposomal transdermal delivery

Liposomal delivery has the advantage of the ability to deliver substances over a wide range of physiochemical properties such as molecular weight, size, solubility, electrical charge (proteins), etc., making it an ideal choice for cannabinoid delivery.

Liposomal systems form spontaneously (self-assemble) and without the application of heat, making them very stable, moisture insensitive and easy to handle, with a long shelf life. Liposomes are very safe for long-term use, being nonimmunogenic, biocompatible and biodegradable. And liposomes offer total dermal absorption, penetrating the watertight barrier of the skin for superior transdermal delivery.

CBD products, treatments and therapies have gained (near) universal acceptance, having proven themselves — by now, post medicinal marijuana — as effective for just about any health condition with an inflammatory component, which is just about any health condition you can think of. Coupled with this new technology of delivery, liposomal transdermal CBD products will offer therapeutic value for years to come. **CE**

**JOE DACREMA** is the owner of DaCremaBotanicals.com, which has produced small-batch, quality CBD products since 2014.



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