

## Sophi-Hydro-Tops: »Liposomes« of new Generation

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When the liposomes about 25 years ago first came on the market, they were initially an innovative »magic ball« and a new argument for marketing (liposomes 1.0). Later it was shown that they also worked cosmetically as an effective moisturizing factor (liposomes 2.0).

The final breakthrough of liposomes in cosmetic and pharmaceutical applications came by the evidence that special designed vesicles are able to transport actives into the skin and increase their bioavailability (liposomes 3.0).

At present the liposomes 4.0. will be introduced, which are, strictly speaking, no liposomes. Why? Because liposomes are defined as nano-vesicles made from phospholipids. Developed by the company Sopharcos the

new »Hydro-Tops« are not based on phospholipids from the soy plant, but on membrane-forming lipids of the sunflower.

In its cosmetic applications, the new Hydro-Tops are comparable to the flexible liposomes but are characterized by equal or even better properties than those of the liposomes. The absence of phospholipids has the advantage that the discussion of soy lecithin (genetic engineering, and grubbing in the subtropics) is avoided and an insert in the growing market of »green – cosmetics« is possible.

As an example of ferulic acid, it could be shown that 1% of the active ingredient was encapsulated in a stable form into the Hydro-Tops. With the liposomes, it was already ev-

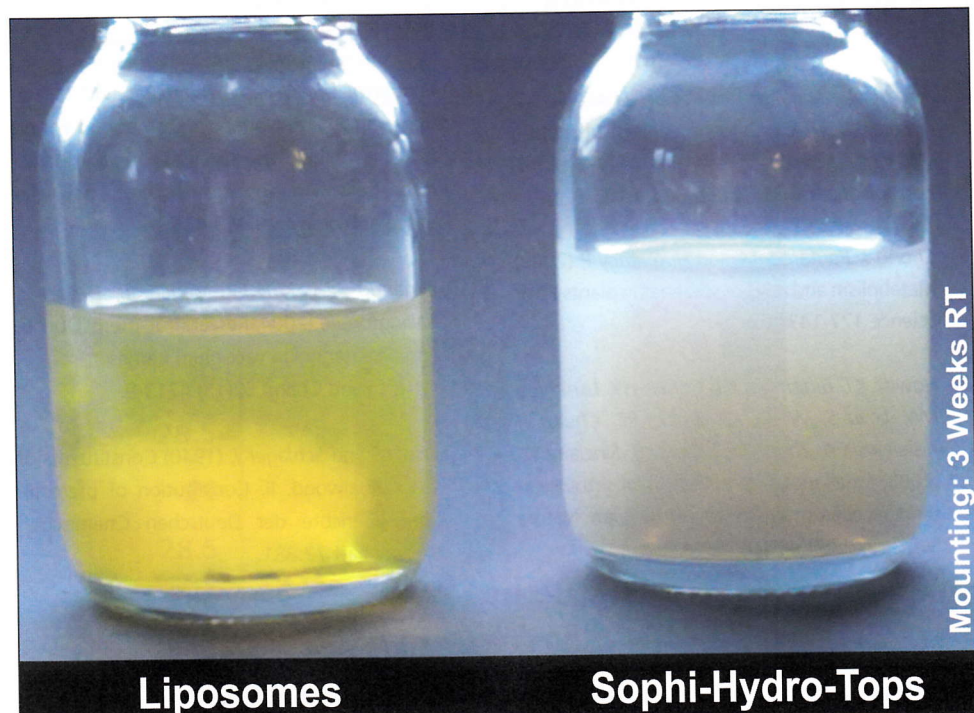


Fig.1 Formulations with ferulic acid

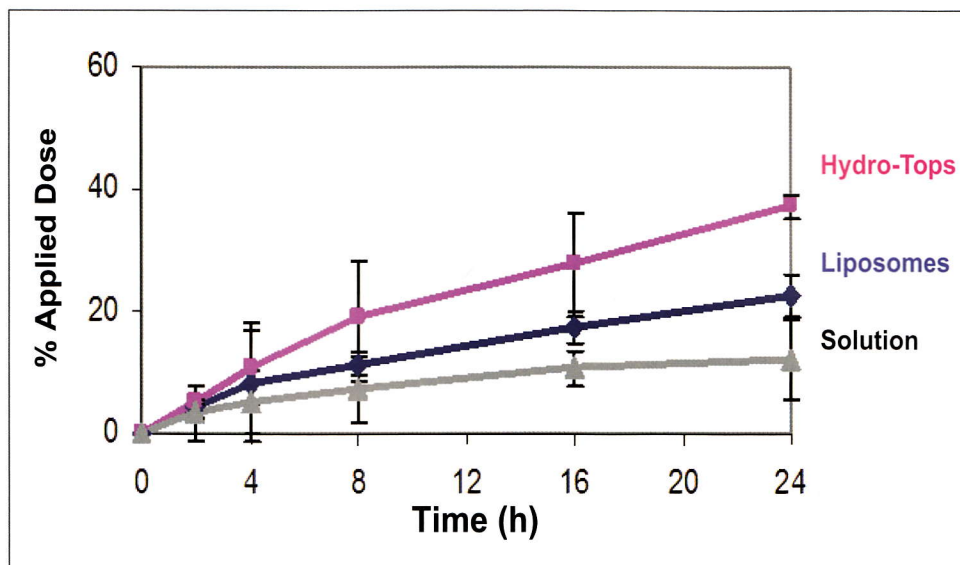


Fig.2 Penetration of ferulic acid through epidermis

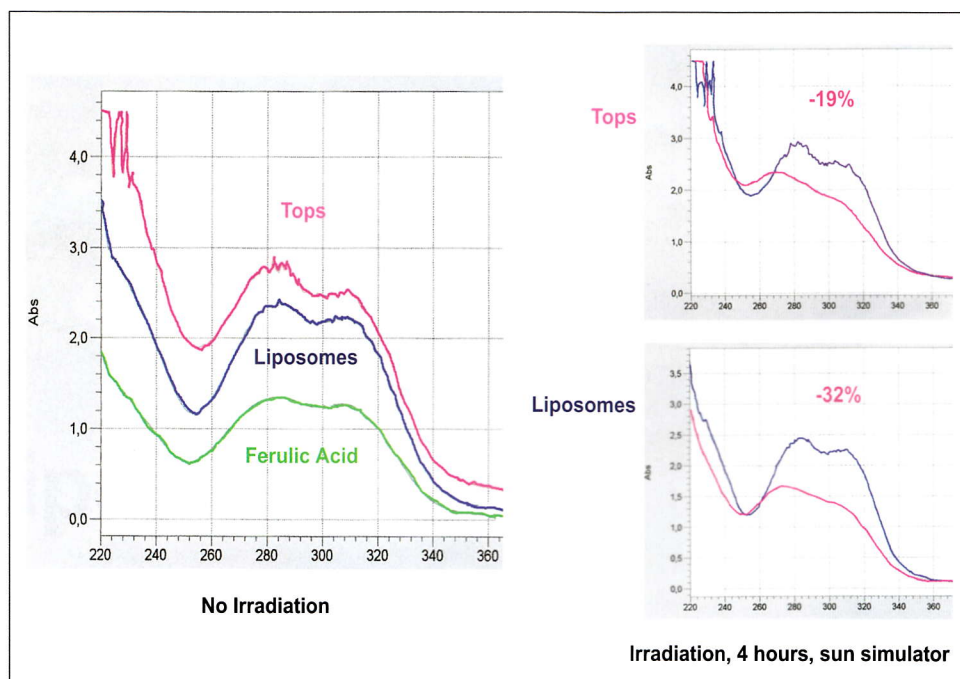


Fig.3 UV-Spectren of different formulations with ferulic acid

ident after 3 weeks that ferulic acid precipitated, however, the Hydro-Top formulation remains stable at least for 6 months (Fig. 1).

The penetration of ferulic acid through the epidermis was studied in human skin ex vivo in the Franz cell. A clearly improved penetration of

ferulic acid could be achieved by encapsulation in the Hydro-Tops, 60% more of the drug was carried through the epidermis compared with the liposomal formulation (**Fig. 2**). Also, the antioxidative potential in skin and the radical-scavenging properties were increased by more than 60% as determined by ESR.

Moreover, the ferulic acid in the Hydro-Tops was 50% stronger protected against UV radiation than in the liposomes (**Fig. 3**).

Finally, the Hydro-Tops give a silky feel to the skin during application and are white in contrast to the yellow-beige liposomes.

Hydro-Tops are by definition no liposomes 4.0, but can be marketed as a new carrier system with higher encapsulation efficacy, better stabilization of the actives and increased drug delivery into the skin and can be used in natural cosmetics.

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