

Glycospheres

Delivery System Protection and Stability of Actives

Global Program



Delivery systems are now widely used as cosmetic ingredient carriers, under many different forms, including liposomes, nano or microspheres. However, if the transport of the active molecule within the epidermis is the first objective of the use of such systems, stabilization of the encapsulated or entrapped molecule is also one

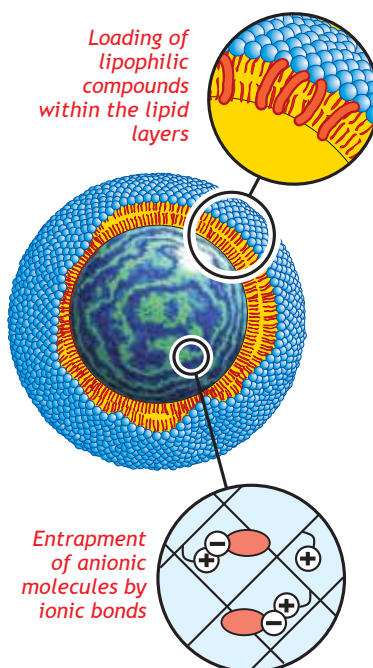
of the major goals to be achieved. This stabilization can only be obtained if the active molecule stays inside the carrier during formulation, and if the carrier is physicochemically stable. Kobo Products has thus developed the Glycosphere, a stable and protective delivery system.

Structure

Glycospheres are supramolecular configurations, organized around a solid inner core. The latter, consisting of modified starch, is powerfully hydrophilic and endows the particle with its chemical and physicochemical stability as well as its biocompatibility. A single layer of fatty acids is covalently grafted at the periphery of this central core, endowing the particle with a peripheral lipophilic nature, without modifying its internal hydrophilic nature. The Glycosphere can thus organize polar lipids and hence retain and deliver lipophilic active agents.

Entrapment

Both hydrophilic and lipophilic active agents can be incorporated into Glycospheres. Two different types of chemical interactions play a role in their capacity to retain molecules within the Glycosphere: ionic bonds and hydrophobic interactions.



Hydrophilic Active Ingredients

The central core of Glycospheres contains strongly cationic groups. Anionic hydrophilic actives are thus retained by high energy ionic bonds. Entrapment stability and performance are thus incomparably greater than with any other delivery system.

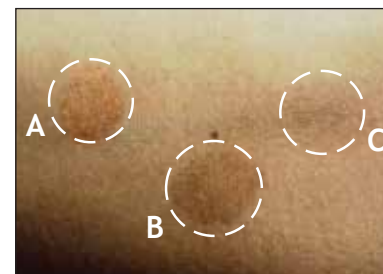
Macromolecules such as enzymes can be entrapped within the inner core, up to 200,000 daltons.

Lipophilic Active Ingredients

The potent cohesion existing between the lipid layer and polar lipids arranged at the periphery enables loading with lipophilic compounds.

Activity of Entrapped Molecules

Several free-radicals scavengers were compared for their activity as aqueous solution and entrapped within Glycospheres. We showed no significant difference between entrapped and non-entrapped forms for green tea extract, grape seed (PCO) extract, ascorbic acid or alpha-tocopherol. Similarly, an *in vivo* test was performed with procyanidolic oligomers extracted from grape seeds. Application of dithranol to the forearm skin causes erythema, which is reduced by antioxidant protection. Zone A on the picture shows erythema caused by application of dithranol, zone B the erythema reduced by an aqueous solution of PCO (0.05%) and zone C the erythema virtually eliminated by protection using Glycospheres-entrapped PCO (same amount). This antioxidant is active even after entrapment.



KOBO

USA - New Jersey
+1 (908) 757-0033

BRASIL - São Paulo
+55 (11) 5062-0634

UK - Abingdon
+44 7913 636 673

FRANCE - Labege
+33 (0)5-62-88-77-40

Product Name	Active Ingredient(s)	INCI Name
Cn-HAHWS	Sodium Hyaluronate	Water (And) Pentylene Glycol (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Sodium Hyaluronate (And) Hydrogenated Lecithin
New Gs-GTS	Green Tea Polyphenols	Water (And) Pentylene Glycol (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) Camellia Sinensis Leaf Extract (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Hydrogenated Lecithin
New Gs-PCOGS	Grape PCOs	Water (And) Pentylene Glycol (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Vitis Vinifera (Grape) Seed Extract (And) Hydrogenated Lecithin



KFL-170-BR

Charcoal + Scrub Face Mask

Part 1

- Deionized Water - Water 56.40%
- Glicerina Bi-Destilada U.S.P. - Synth: Glycerin 20.00%
- Goma Xantana - M Cassab: Agar (And) Xanthan Gum 0.60%

Part 2

- Tersil® CB - Terramater: Kaolin 5.00%
- CHARCOAL POWDER - Kobo Products: Charcoal Powder 2.50%

Part 3

- SunBoost ATB - Kobo Products: Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol 5.00%
- Montanov™ 68 - Seppic: Cetearyl Alcohol (and) Cetearyl Glucoside 2.00%
- Oliwax® - QuantiQ: Hydrogenated Olive Oil, Olea Europaea (Olive) Fruit Oil, Olea Europaea (Olive) Oil Unsaponifiables 1.50%

Part 4

- KoboScrub™ SD-200 - Kobo Products: Silica 5.00%

Part 5

- Cn-HAHWS - Kobo Products: Water (And) Pentylene Glycol (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Sodium Hyaluronate (And) Hydrogenated Lecithin 1.00%

Part 6

- Cosmoguard® SL CP - Cosmotec: Phenoxyethanol (and) Ethylhexylglycerin 1.00%

Manufacturing Procedure

1. Combine Part 1 under propeller mixing.
2. Add Part 2, mix until homogeneous and heat to 75-80°C.
3. Combine Part 3 and heat to 75-80°C.
4. Add Part 3 to Parts 1 and 2 and mix until homogeneous.
5. Cool batch to 50°C and add Part 4. Mix until homogeneous.
6. Add Part 5 and mix until homogeneous.
7. Add Part 6 and mix until homogeneous.

Description

This Mask features KoboScrub™ SD-200, a natural scrubbing bead, which imparts exfoliation to the skin and CHARCOAL POWDER, a natural and highly porous powder, which absorbs impurities from the skin. Skin moisturizing ingredients are Kobo's Glycosphere Cn-HAHWS, with encapsulated Sodium Hyaluronate, and SunBoost ATB which imparts excellent skin conditioning properties and emolliency, while soothing skin due to its Bisabolol and Vitamin E content.