

# Glycosphere-GT

The benefits of green tea delivered to the skin

## Green Tea extract

Most of the medicinal properties attributed to green tea come from flavonoids. Numerous studies have shown these polyphenols, mostly galliccatechin, epigallocatechin, epicatechin and epigallocatechin gallate in green tea, to have protective effects against free radicals, cardiovascular damage and even cancers and infections. Considering their well-documented antioxidant and anti-inflammatory activities, green tea polyphenols are likely to slow down the development of some signs of aging. They may also synergistically enhance sun damage protection by quenching free radicals and reducing inflammation. Green tea extracts are also composed of caffeine, minerals and aminoacids.

Like most antioxidants, green tea extracts can be oxidized and react to some constituents of cosmetic formulas.

## Glycospheres-GT

Glycospheres are submicron delivery systems. They can entrap plant extracts such as green tea within their hydrophilic inner core, separating them from the constituents of the formulas and protecting them from degradation.

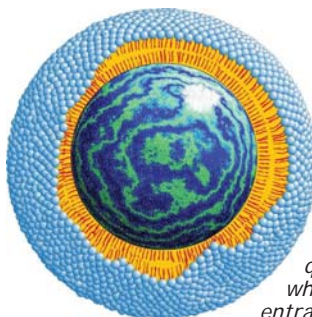
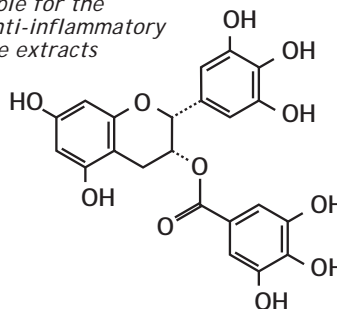
## In vitro test - NBT test:

We used Nitroblue Tetrazolium (NBT) in vitro test to demonstrate the ability of Green Tea extract to inhibit the formation of the superoxide radical ( $O_2^{\cdot -}$ ), generated by UV light during the test (note: the results below are expressed as relative activity compared to PCO in solution).

- Solution of Green Tea extract: 100%
- Glycospheres-GT: 421%

Green extracts show a very high level of activity against superoxide radical. However, it appears that, during the test, when the solution is irradiated to generate the radical, green tea polyphenols are not stable. On the contrary, Glycospheres-GT, which remain stable during the test, exhibit an relative activity more than four times higher.

Epigallocatechin gallate, one of the polyphenols found in green tea extracts, responsible for the antioxidant and anti-inflammatory properties of these extracts



Glycospheres are based on a stable inner core, made of a network of cross-linked starch. This polysaccharide has been modified with a quaternary ammonium, which allows it to bind and entrap poly-anions like PCOs. The core is surrounded by lipid layers which helps protecting the entrapped molecules.

## INCI name :

Water (And) Camellia Sinensis Extract (And) Palmitoyl Hydroxypropyltrimonium Amylopectin / Glycerin Crosspolymer (And) Phenoxyethanol (And) Hydrogenated Lecithin (And) Methylparaben (And) Butylparaben (And) Ethylparaben (And) Propylparaben

## Applications

- Gs-GT is used as a free-radical scavenger in anti-aging or anti-inflammatory products, regenerating creams or slimming products
- Gs-GT is best formulated by replacing part of the water in the formula by the Glycosphere suspension
- Recommended use level is between 1 and 5%



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