

CLINICAL DATA – SACCHARIDE ISOMERATE (BRIGHTENING COMPLEX)

This revolutionary molecule is able to interact with the pigmentary synapses to treat dark spots which are pollution-induced, the most common contributor to uneven skin tone.

Unique Characteristics include:

- A molecule with unique folding.
- A molecule that is effective against dark spots within 2 weeks use.
- A molecule found to be effective by 96% of users on reducing the number of pigmentation spots.

Mode of Action

Reduces melanin synthesis that is commonly pollution induced:

It had already been shown that pollution induces inflammation, itself involved in melanogenesis activation. But a recent study definitively confirmed that pollution is directly involved in increasing the number of pigmented spots on the cheeks¹. To treat dark spots that are pollution-induced, Saccharide Isomerate (brightening complex) significantly reduces the appearance of hyperpigmentation.

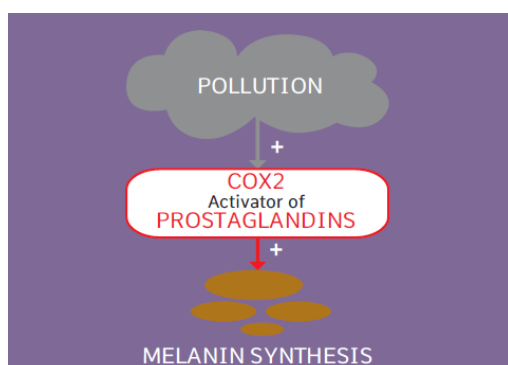
Inhibits the formation of pigmentary synapses to reduce melanin transfer.

Transfer of melanin from melanocytes to keratinocytes is physically possible due to mutual recognition between the two cells. This recognition occurs by a keratinocyte receptor fixing onto a melanocyte receptor. This conjuncture is called a pigmentary synapse². Saccharide Isomerate (brightening complex) is able to fix the melanocyte receptor so that it cannot communicate with the keratinocyte and so prevents formation of the pigmentary synapse.

A Clear Link

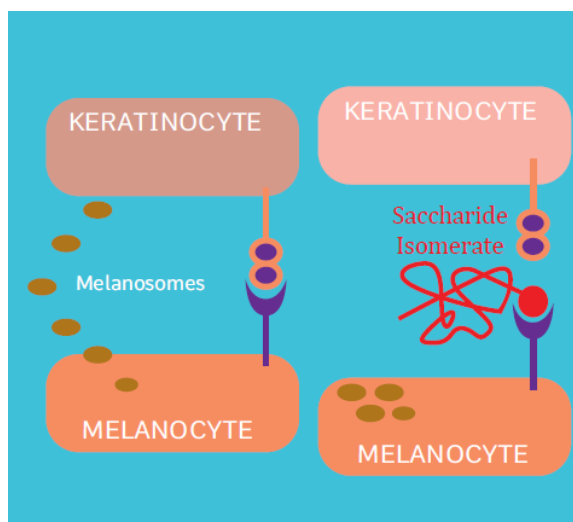
1. Pollution + Inflammation → Dark spots

Clinical studies have shown that pollution induces an increase in the pro-inflammatory enzyme COX2 in the epidermis. However, COX2 activates prostaglandins, known for stimulating melanogenesis.



2. Pigmentary synapse and melanin transfer

Saccharide Isomerate (brightening complex) reduces formation of pigmentary synapses by 35%.

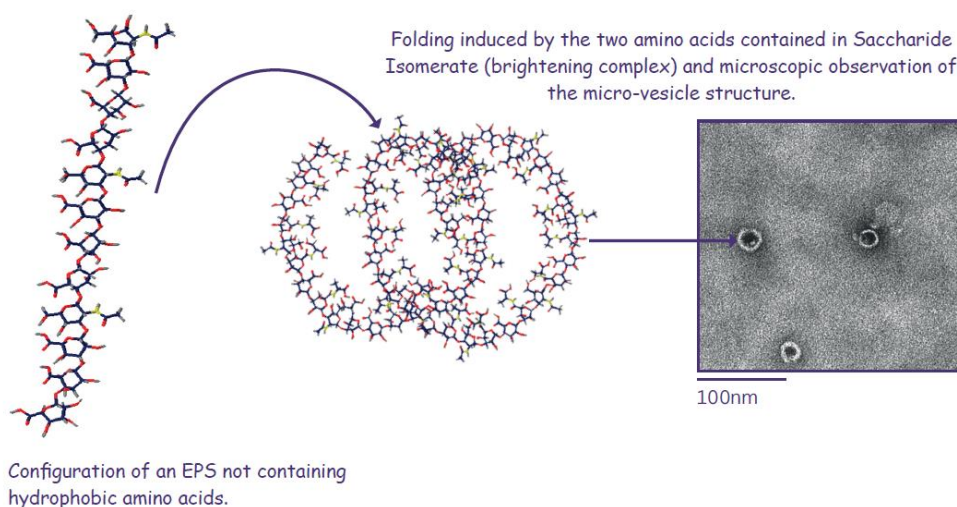


WHAT MAKES THIS INGREDIENT UNIQUE?

A composition and specific configuration for interaction with pigmentary synapses:

The formation of pigmentary synapses involves osidic receptors, i.e. the recognition of sugar residues. Saccharide Isomerate (brightening complex) is a sugar polymer with an unparalleled structure which enables it to reach the site and interact with the formation of pigmentary synapses.

This is the first marine Exopolysaccharide in which two amino acids have been identified: serine and alanine. These two hydrophobic amino acids induce folding of the molecule in the form of micro-vesicles and so facilitate its penetration into the skin to interact with the pigmentary synapses. The discovery of this molecule was published in the literature³.



CLINICAL STUDIES

In-vitro

- 35% inhibition in the formation of pigmentary synapses.
- 45%** protection against production of COX2 pollution induced.
- 71%* protection against pollution induced melanin synthesis.
- 39% protection against UVs induced production of COX2.
- 81% protection against UVs induced synthesis of melanin.

In-vivo

After 2 weeks treatment:

- 6% average reduction in dark spots and up to 38% reduction.

After 4 weeks treatment:

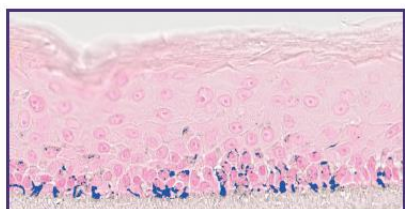
- 13%* average reduction in dark spots and up to 57% reduction.

After 8 weeks treatment:

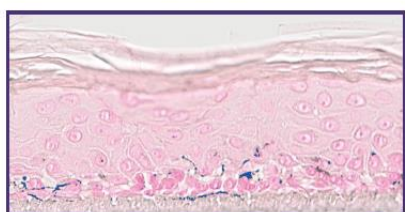
- 20%* average reduction in dark spots and up to 60% reduction.
- 12%** average reduction in dark spots area and up to 51% reduction. 96% of users observed a reduction in dark spots.
- 92% of users found their pigmentation to be more uniform.
- 92% of users found their skin tone transformed after each application.

*p<0.05 - **p<0.01 Student test

Visualization of melanin synthesis (in blue)
in explants exposed to car exhausts
1H/day for 9 days



Without Saccharide Isomerate (brightening complex)

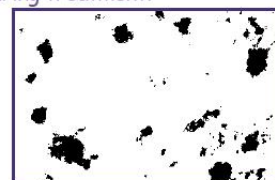


With 1% Saccharide Isomerate (brightening complex)

Twice daily application on the face of a formulation containing 1%
Saccharide Isomerate (brightening complex). Change in number
of dark spots during treatment.



D0



D14



D28



D56

References:

1. Pollution and skin: From epidemiological and mechanistic studies to clinical implications. J. Krutmann (and., al). Journal of Dermatological Science 76 (2014) 163–168
2. Biogenesis of melanosomes - the chessboard of pigmentation. C. Delevoye (and., al). Med Sci (Paris). 2011 February; 27(2): 153–162.
3. Structure of an Amino Acid-Decorated Exopolysaccharide Secreted by a *Vibrio alginolyticus* Strain. S. Drouillard (and.,al). Mar. Drugs 2015, 13, 6723-6739