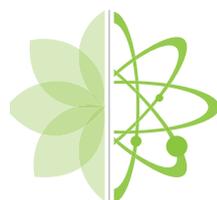


# NIO-OXY

The best choice for a visible  
whitening effect



**naturalis**<sup>®</sup>  
LIFE TECHNOLOGIES

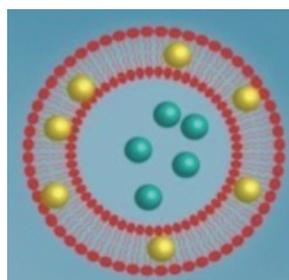
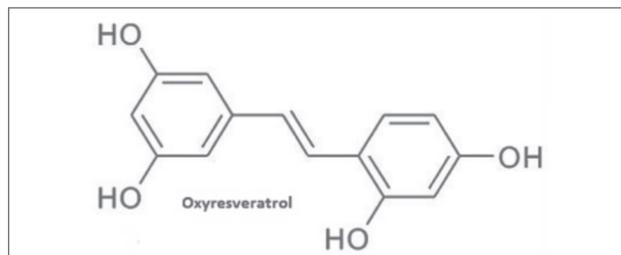
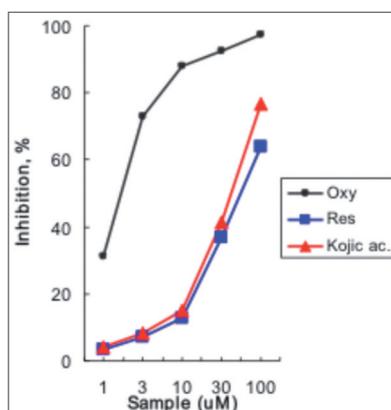


Whitening, skin radiance and blemishes are all skin problems related to the physiology of melanogenesis that can be corrected by inhibition of melanin production.

**NIO-OXY** is a niosomal preparation of oxyresveratrol (2',3,4',5-tetrahydroxystilbene), a natural active molecule isolated from the oriental herbal medicines *Ramulus Mori*, that exhibits a potent inhibitory effect on dopa oxidase activity of tyrosinase, the enzyme which catalyzes the rate-limiting steps of melanin biosynthesis.

Oxyresveratrol in view of its IC50 value of 1,2 µM exhibits about a 150-fold more potent inhibitory effect on mushroom tyrosinase than resveratrol (IC50=54,6 µM), 32-fold more than Kojic acid (IC50=40,1 µM) and 800-fold more effective than arbutin (IC50=1,05 mM)

Inhibitors	IC50 (µM)
Oxyresveratrol	1.2
Kojic acid	40.1
Resveratrol	54.6
Arbutin	1050

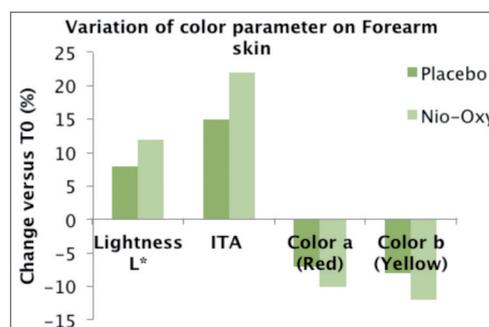


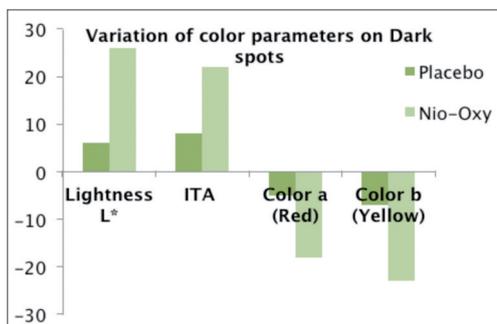
*Niosome Vesicle*

The ultra-deformable niosomal vesicles made of a bilayer of polyglycerol esters offer some important advantages: increase the stability of entrapped active agents oxyresveratrol and improve its bioavailability, enhancing its skin penetration through stratum corneum to get melanocytes lying in the deeper strata of epidermis where melanogenesis occurs.

## EFFICACY TESTS

In vivo study carried out on 16 Asian volunteers, testing a crem containing 3% Nio-Oxy versus placebo for 4 weeks of treatments.





L= Lightness (Characterizes skin clarity)  
 ITA= Individual Typological Angle (indicates skin pigmentation degree)  
 b= Color Intensity yellow (a decrease indicates a reduction of yellow constituent of the skin)  
 a= Color Intensity red (a decrease indicates a reduction of red constituent of the skin)

Placebo      Nio-Oxy 3%



Whitening effect on forearm on volunteers treated with placebo vs. Nio-Oxy 3%

The same type of study was carried out on Caucasian people with similar results. Nio-Oxy leads

to a significant reduction of melanin pigmentation for each skin type:

- Reduces melanin pigmentation (-71% vs placebo on L parameter)
- Reduces pigmentary blemishes (-280% vs placebo on L parameter)
- Reduction of the yellow constituent of the skin (b) in Asiatic people (-25% vs placebo)

#### RECOMMENDED USE LEVEL:

- Skin radiance products      1,0-2,0%
- Skin whitening                      2,0-3,0%
- Anti-dark spot                      3,0-4,0%

#### COSMETIC APPLICATION:

- Specific facial and hand cream
- Skin lightening body cream
- Neck and décolleté treatments

#### FORMULATING WITH NIO-OXY:

DOSAGE: 1-3%

SOLUBILITY: soluble in water, insoluble in oil or fats

MODE OF INCORPORATION: dilute in a part of water before blending in the cosmetic product. Do not heat above 50° C.

MAXIMUM DOSAGE: No known restrictions

SOLUBILITY: dispersible in water phase

#### SPECIFICATION:

Aspect:	<i>Gel</i>
Color:	<i>Amber</i>
Odor:	<i>Characteristic</i>
pH at 25°C sol 10%	<i>4,00-5,00</i>
Specific weight (20°C)	<i>1.050-1.075</i>
Water content (K. Fischer)	<i>50-55%</i>
Total germ count	<i>&lt; 100 cfu/g</i>

#### CERTIFICATION STATUS:

Product free from Genetically Modified Organisms  
 Allergen free  
 Not tested on animals

PACK SIZE AVAILABLE: 1,20 and 50 kg pails

HANDLING PROCEDURES: Store in a cool and dry place, avoid light and heat. Keep containers closed when not in use.

SHELF LIFE: Stored in unopened containers for 18 months

SAFETY & TOXICITY: Reference COMMISSION REGULATION (EC) No 987/2008 of 8 October 2008 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH):

- non-irritating
- non-toxic

INCI NAME: Hydroxyresveratrol, Polyglyceryl-10 Oleate, Polyglyceryl-6 Laurate, Sorbitan Palmitate, Aqua/Water.

INCI NAME (for China Market): Morus Alba Extract, Polyglyceryl-10 Oleate, Polyglyceryl-6 Laurate, Sorbitan Palmitate, Aqua/Water

#### MANUFACTURER:

Naturalis Srl – Italy Product N° NS-1210



Naturalis Srl Via Ozanam, 20811 - Cesano Maderno (MB) - Italy  
Phone +39 0362 545457 - Fax +39 0362 526364 - [www.naturalis.it](http://www.naturalis.it) - [info@naturalis.it](mailto:info@naturalis.it)