MSH WHITE™

Victory for a Toned Complexion!

LIGHTENING

- **Phenylalanine Lipobiovector**
- **α-MSH antagonist**
- **Tyrosinase inhibition**
- **Youth revealing complex**

100%
lighter age spots*

73%
fewer age spots*

83%
more radiant complexion*

100%
more even toned complexion*

▪ Uniform skin! (pigmentation control)

Strong lightening action
of MSH WHITE™ at 2% for a uniform complexion

· Lighter areas of hyperpigmentation
Clinical evaluation at 2 and 3 months:
> **80%** of volunteers

· Skin significantly lightened
66% of volunteers
Melanin index of pigmented areas:

-3** (D56/D0) **-4*** (D84/D0)

· D-Squame: decrease of melanic pigments located in corneocytes

Protocol 1•

In low doses, MSH WHITE™, **doubles the lightening action** of ascorbyl glucoside

▪ **MSH WHITE™ (0.2%)+ Ascorbyl glucoside (2%)** **NEW**

· Macrophotographs

· D-Squame (D84/D0): decrease of melanic pigments located in corneocytes **-13 %**

▪ **Ascorbyl glucoside (2%)**

· Macrophotographs

· D-Squame (D84/D0): decrease of melanic pigments located in corneocytes **-7 %**

Protocol 2••

▪ Visibly luminous skin! (radiant complexion)

After 2 months, MSH WHITE™ at 2% significantly **increases** the luminosity of the complexion (L*) for 73% of volunteers

+1.13*

Protocol 1•

After 2 months, MSH WHITE™ significantly boosts the ascorbyl glucoside action **NEW**

· MSH WHITE™ (0.2%)+ ascorbyl glucoside (2%)
L* (skin luminosity):

+0.35**(a)

· Ascorbyl glucoside (2%)
L*: +0.21 (not significant (b)

Protocol 2••

• Protocol 1: Study conducted on 30 Asian volunteers/application on the face, 2 times per day for 84 days, using the 6911 formula (2% MSH WHITE™)

*p < 0.05
** p < 0.01

•• Protocol 2: Study conducted on 60 Asian volunteers/application on the face, 2 times per day for 84 days, using the EU07205 formula (placebo / 2% ascorbyl glucoside / 2% ascorbyl glucoside + 0.2% MSH WHITE™)

**p < 0.01
(a) significant esult/placebo
(b) non-significant esult /placebo

▪ Skin Perfection in 7 days!

Super-fast action: in 7 days, MSH WHITE™ is the only active ingredient presenting lightening activity & visible radiance of the comp lexion

	MSH WHITE™	Arbutin	Kojic acid	Hydroquinone
· Lightening action (amount of melanin/control)	-24%	-24%	-33%	-9%
· Illuminating action on the complexion (L* variation/control)	+9%	-1%	0	-2%

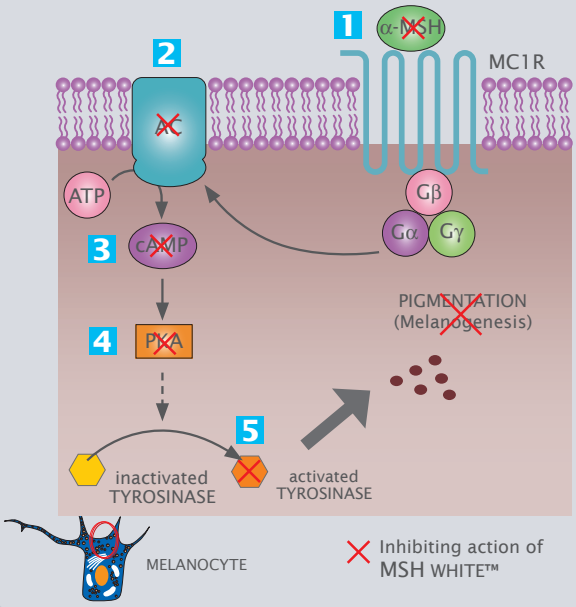
Protocol : topical application of active ingredients in formula on reconstructed epidermis of phototype IV
MSH WHITE™ or arbutin or kojic acid: 2% - hydroquinone: 0.1%

▪ ID card

- **INCI Name:** undecylenoyl phenylalanine
- **Pure active ingredient** (white powder)
- **Lipoaminoacid:** vectorized essential amino acid
- **Amphiphilic Structure:** excellent cutaneous bio-affini
- **Can be formulated in all kinds of products**
- **Dose:** from 0.2% (in combination) to 2% (alone)
- **Non-phototoxic** (for use in sunscreen)
- **Preservative-free**
- **ECOCERT**
- **Biodegradable**

A UNIQUE MODE OF ACTION: tyrosinase metabolic inhibition
Inhibits key steps in the α-MSH induced **melanogenic cascade**

α-MSH ANTAGONIST



- Melanocyte culture*
- Melanocyte culture* with MSH WHITE™ (0.1%)

*5 days

Superior activity versus benchmark lightening agents

	1 Affinity for α-MSH receptor	2 Anti adenylate cyclase action	3 ↘ Amount of intra-cellular cAMP	4 Anti-protein kinase A action	5 Anti-tyrosinase action	Decreased melanogenesis A Basal	B α-MSH induced	C UVB induced
MSH WHITE™	96%	-100%	-34%	-100%	-83%	-66%	-145%	-66%
Arbutin					-93%		-53%	-97%
Kojic acid					-94%			-55%
Magnesium ascorbyl phosphate								-53%
Hydroquinone					-89%	-100%	-100%	TOXIC

Protocol:
1 Studies conducted on B16/F1 melanocytes. Dosage for active ingredients affinity fo α-MSH receptors via immunoradiochemistry.
2 Biochemical model, purified enzyme. Enzyme activity measured by radioactivity.
3 Studies conducted on B16/F1 melanocytes. Dosage for amount of intracellular cAMP via immunochemistry.
4 Biochemical model, purified enzyme. Enzyme activity measured by radioactivity.
5 Biochemical model, purified enzyme. Enzyme activity measured by spectrophotometry.

Protocol:
A B16/F1 melanocytes incubated with 1 active ingredient for 96 hours.
B B16/F1 melanocytes cultivated in the presence of α-MSH, incubated with 1 active ingredient for 96 hours.
C B16/F1 melanocytes irradiated with UVB light, incubated with 1 active ingredient for 96 hours.
Amount of intracellular melanin measured by spectrophotometry.