



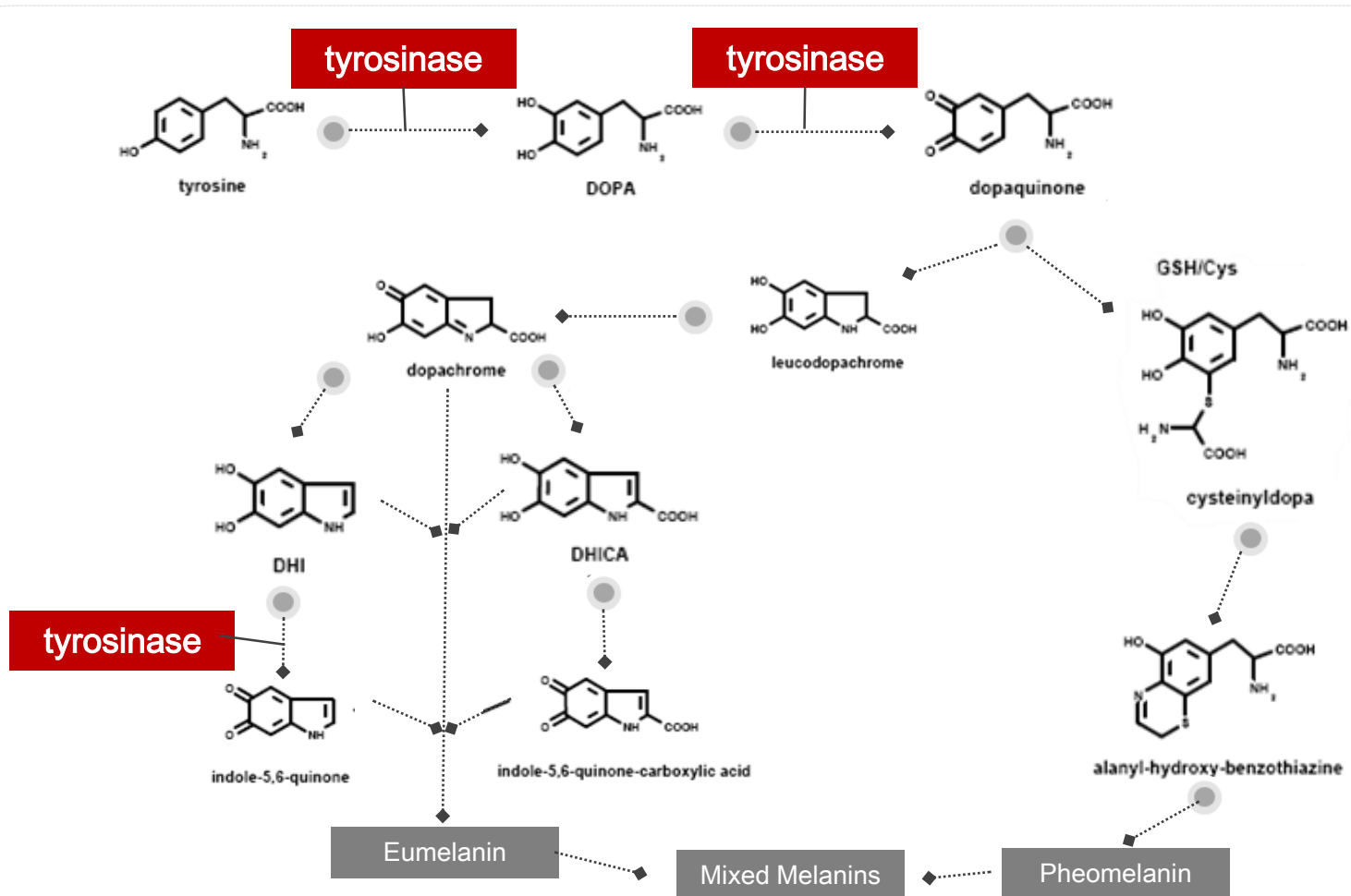
MELAZERO®

*More Be **Nature***

Phyto Whitening agent through
Novel mechanism

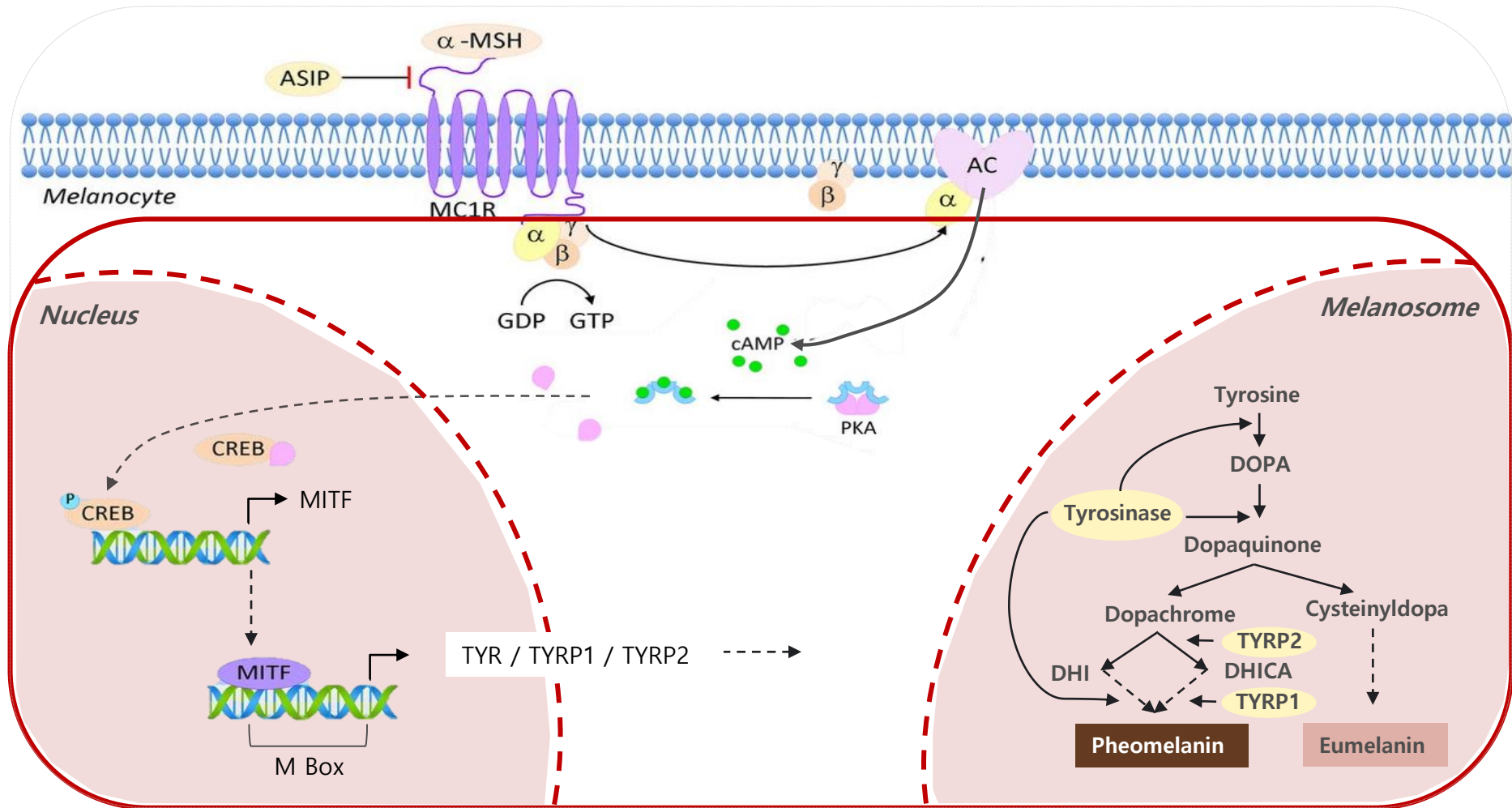
Previous Whitener

- 1st Generation Whitener - (Melanin synthetic (tyrosinase) inhibition)



Previous Whitener

- 2nd Generation Whitener - (Melanin synthetic (pathway) inhibition)



Innovative Phyto Whitener

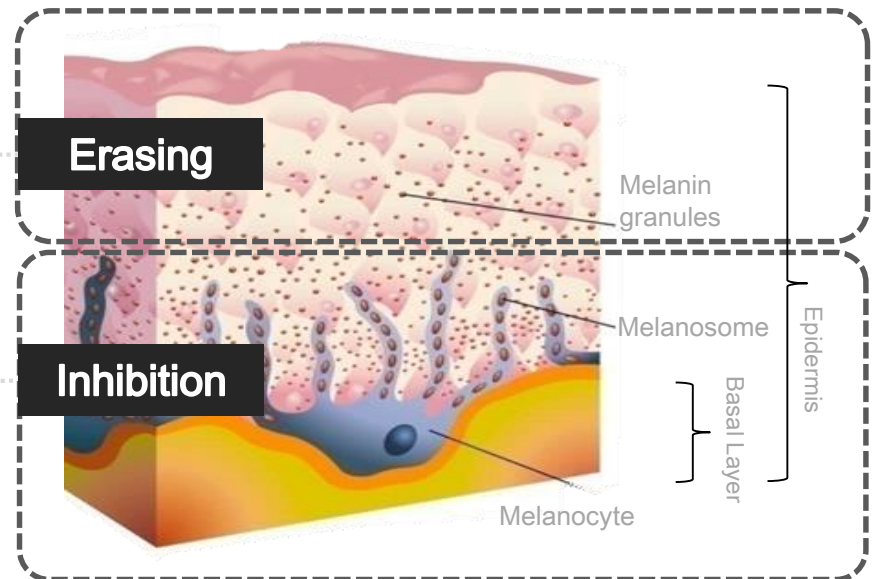
- 3rd Generation Whitener - (Created melanin erasing & Melanin synthetic inhibition)

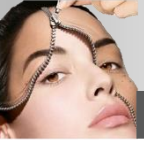
Total Solution for Whitening



- Created Melanin
(Melanophagy)

- Melanin Synthesis





MELAZERO®

General info.

Efficacy

Safety

Innovative Phyto Whitener

- Created Melanin Erasing



'Autophagy controlling'

'Autophagy'

2016's The Nobel Prize in Physiology or Medicine

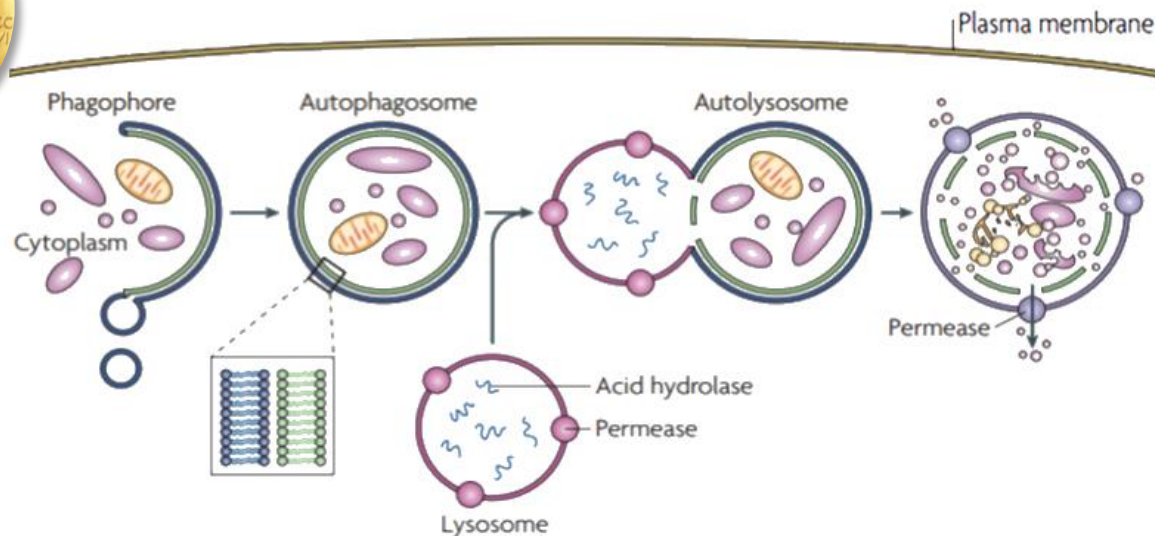
Innovative Phyto Whitener

What is 'Autophagy' ?



'Autophagy'

is the natural, regulated, destructive mechanism of the cell that disassembles unnecessary or dysfunctional components.

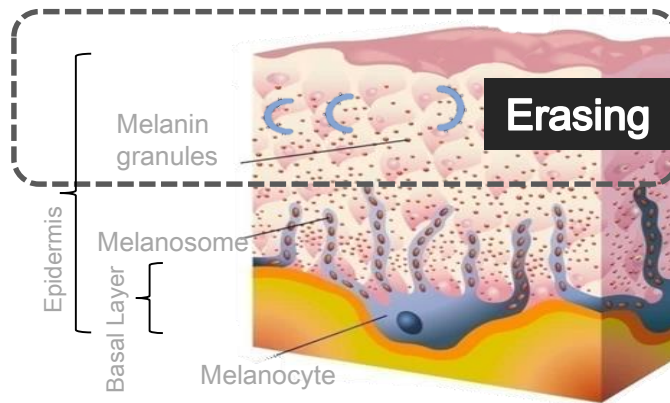


- Step 1 Unnecessary cytoplasmic components are enclosed by phagophore.
- Step 2 Autophagosomes are formed and lysosomes bind to autophagosomes.
- Step 3 Unnecessary cytoplasmic components are perfectly disassembled and become amino acids, saccharides, etc.

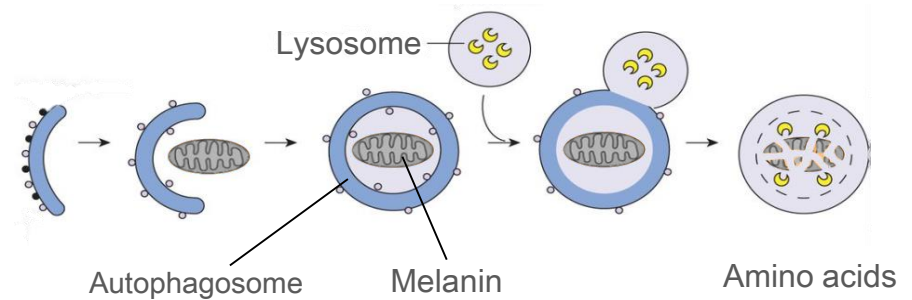
Innovative Phyto Whitener

- What is 'Melanophagy' ? (Autophagy in melanocyte)

Novel pathways for Whitening



Melanophagy mechanism

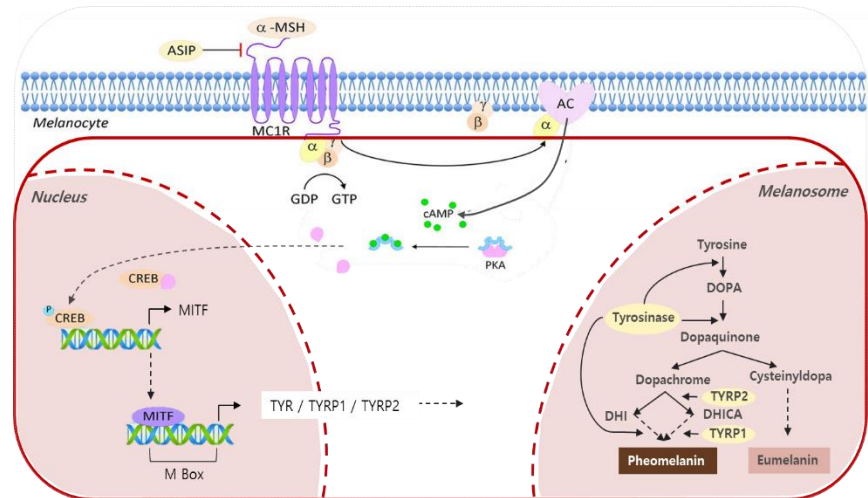
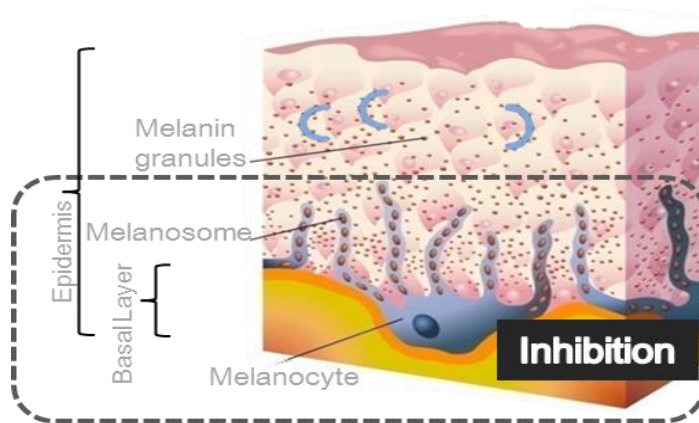


- Step 1 Melanin granules are enclosed by phagophore.
- Step 2 Autophagosomes are formed and lysosomes binds to autophagosomes.
- Step 3 Melanin granules are perfectly disassembled to amino acids.

Innovative Phyto Whitener

- Inhibition of Melanogenesis Pathway

Inhibition of pathways for Whitening



Total Inhibition in making melanin
(Both of Pheomelanin and Eumelanin)

Innovative Phyto Whitener

● Origin

Phyto Whitener from Korean **Oriental Plant**



Arisaema Amurense

Used as pain reliever traditionally

Innovative Phyto Whitener

● Manufacturing process

Non chemical purification from **Oriental Plant**



Arisaema Amurensis

Extraction



Non-chemical
purification



Stabilization



Highly concentrated
Phyto Whitener



● Patent No. **10-1814065**

‘Active for
promoting melanin degradation.’



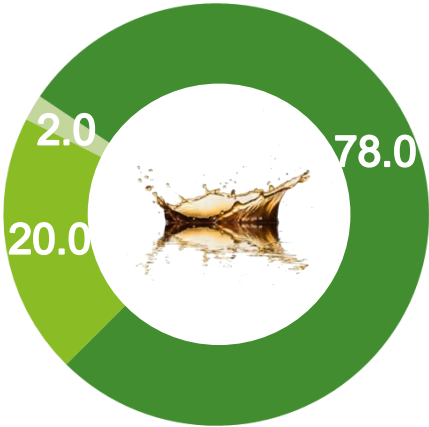
● Recommend dosage



Innovative Phyto Whitener

● Composition

Information of Ingredients



More Be Natural !

	INCI name	Composition(%)	Remarks
●	Arisaema Amurense Extract	78.0	Plant origin
	Decyl glucoside	20.0	Natural origin
	1,2-Hexanediol	2.0	

Enormous Whitening effect

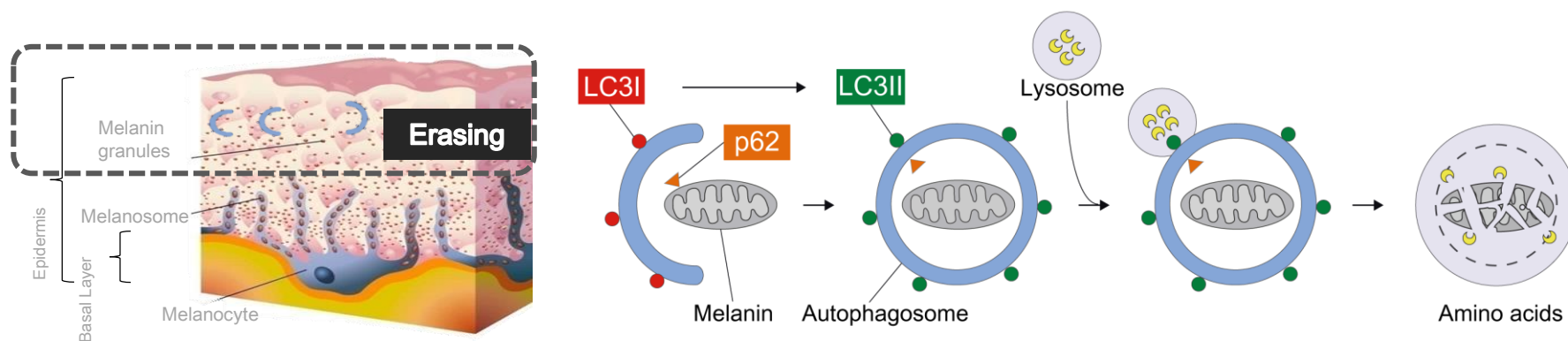
- Melanophagy controlling



Enormous Whitening effect

- Erasing Created Melanin - Melanophagy controlling

Novel pathways for Whitening - *Melanophagy mechanism*



- Step 1 When phagophore is formed, **p62** binds to targeted melanin.
- Step 2 While phagophore becomes autophagosome, **LC3I** gets converted to **LC3II**.
- Step 3 Autophagosome fuses with lysosome containing enzymes and autolysosome is formed.
- Step 4 Melanin is degraded by lysosomal enzymes and released to the cytosol for reuse.

Enormous Whitening effect

- Erasing Created Melanin - Melanophagy

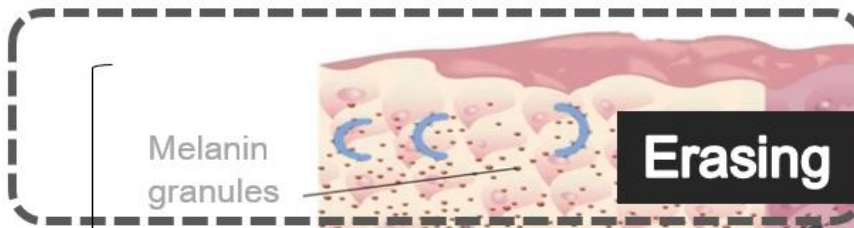
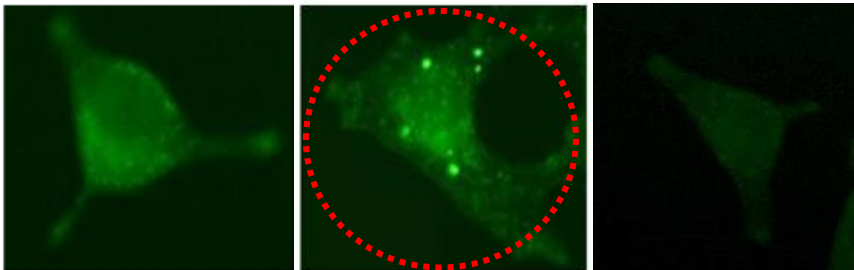
Melanophagy is induced in Melanocyte

Inducing Melanophagy

Control

1% Melazero

1% α -Arbutin



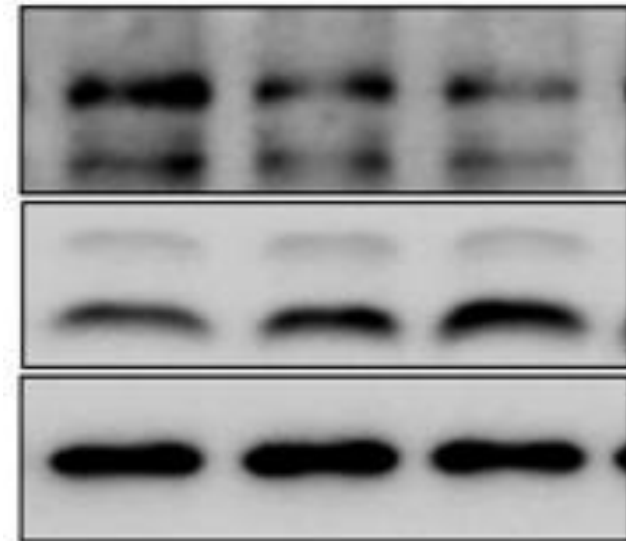
Cf) 1% α -Arbutin = had no effect on autophagy

Erasing Created Melanin

Control

0.2%
Melazero

1.0%
Melazero



p62 ↓

LC3 I

LC3 II ↑

Actin

* Inducing autophagy : p62 ↓ LC3 II ↑

Enormous Whitening effect

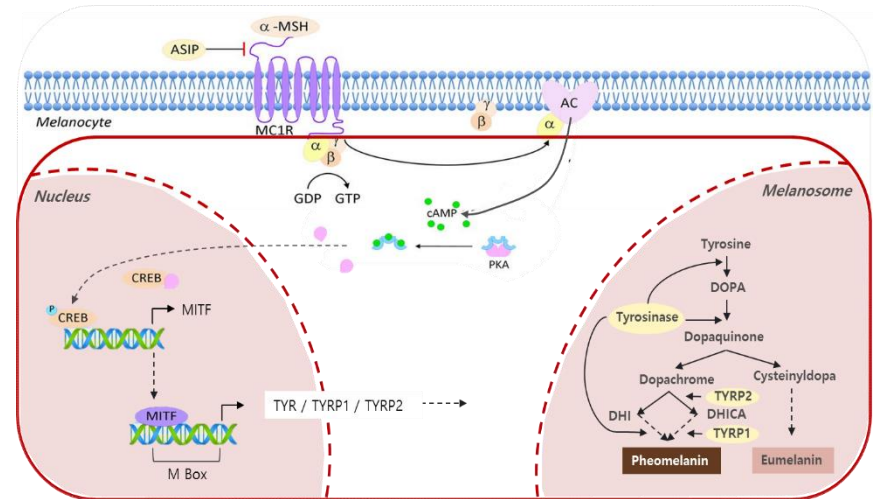
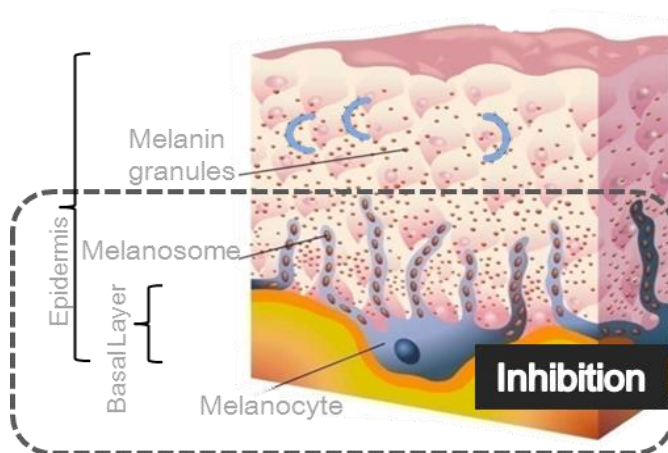
- Melanin Synthesis Inhibition



Enormous Whitening effect

- Melanin Synthesis Inhibition

Melanin synthetic inhibition

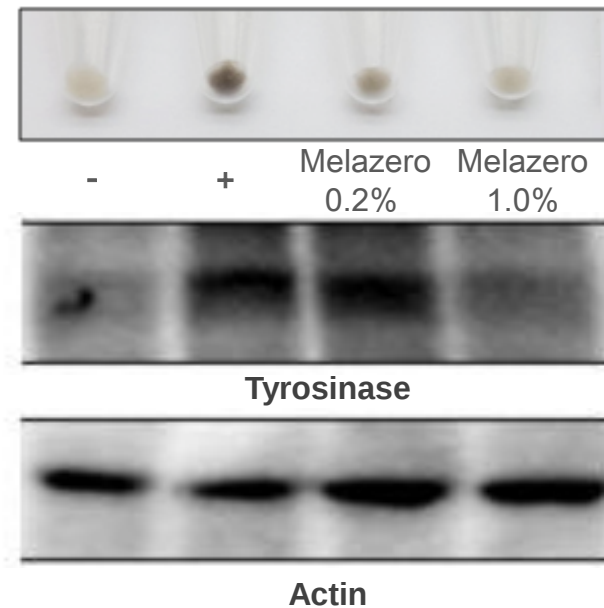
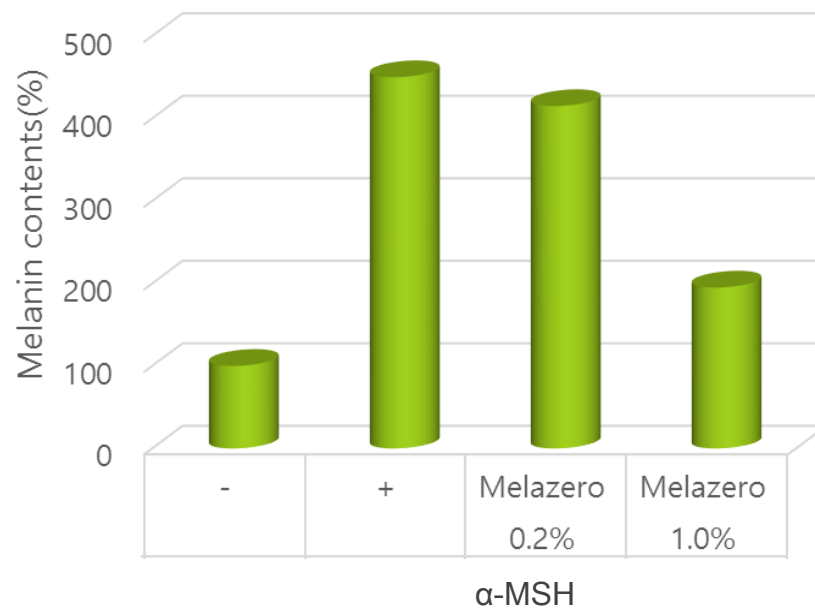


Cell culture analysis

Enormous Whitening effect

- Melanin Synthesis Inhibition

Melanin Contents Analysis



Enormous Whitening effect

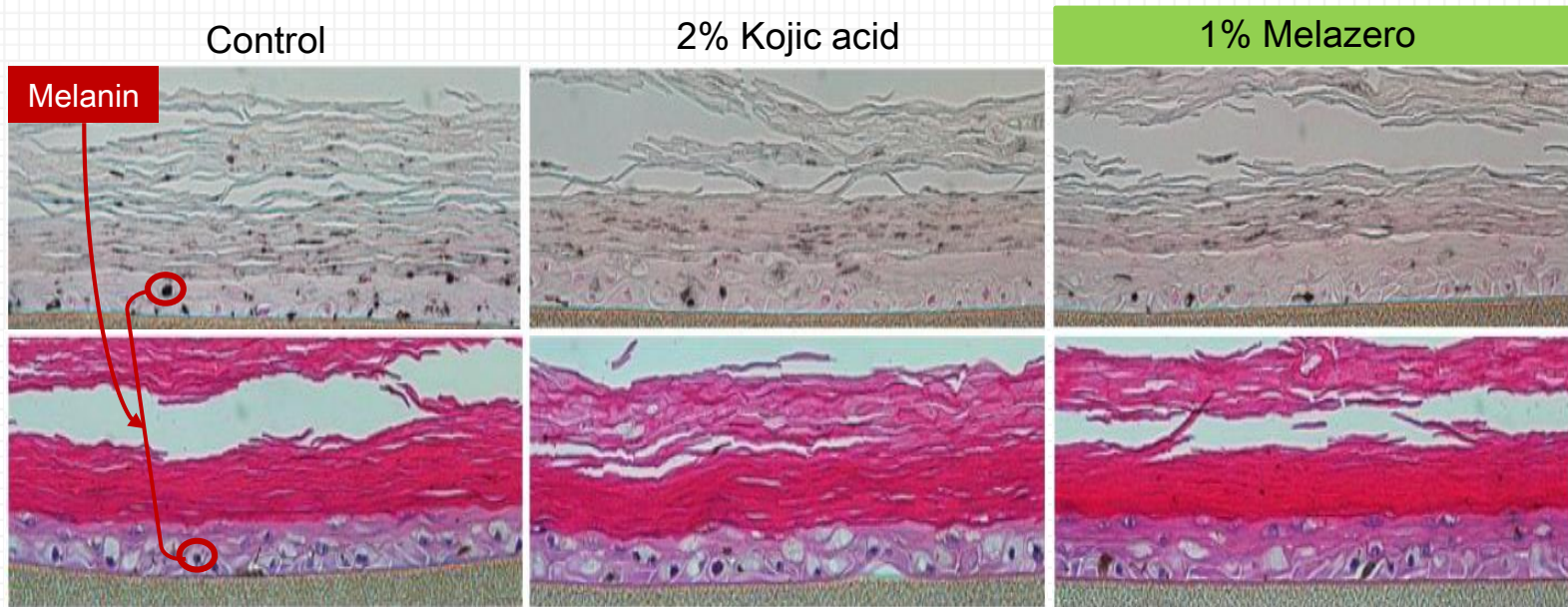
- Whitening effect - 3D Cell



Enormous Whitening effect

- Whitening effect - 3D Cell

2% Kojic acid vs 1% Melazero



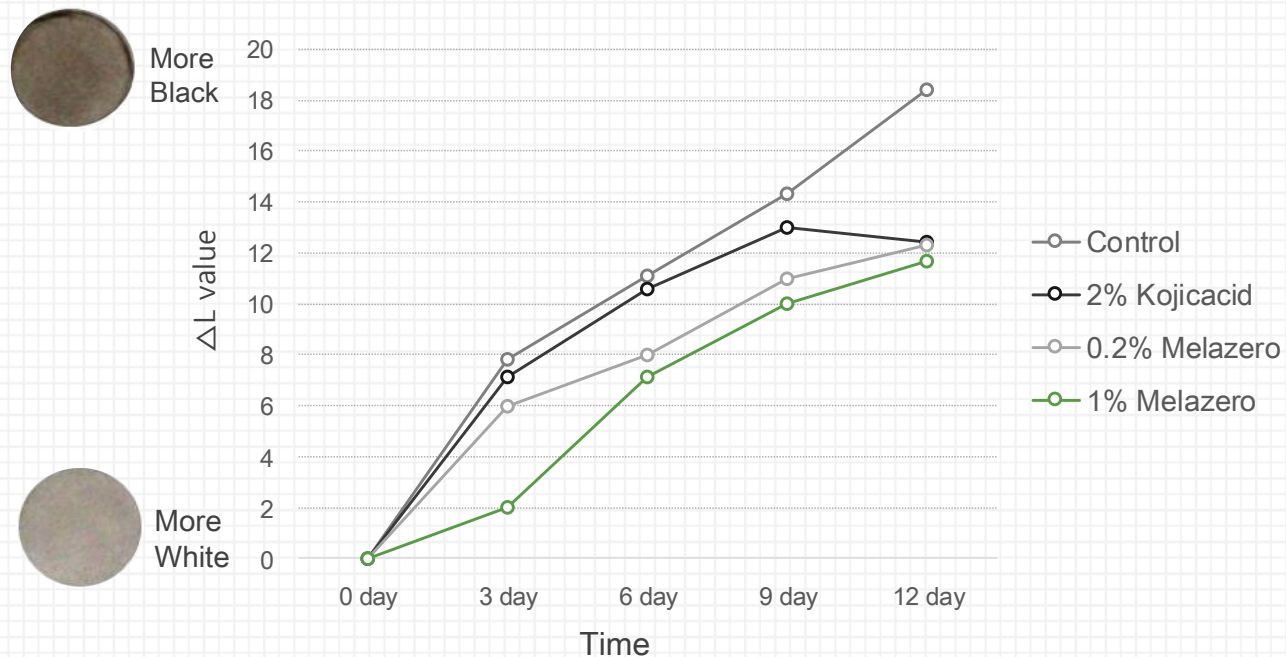
AL value (0: more white / 20: more black)
Control : 18.5 / Kojic acid 2% : 12.5 / Melazero 1% : 11.8

More Effective than Kojic acid

Enormous Whitening effect

● Whitening effect - 3D Cell

2% Kojic acid vs 1% Melazero



More Effective than Kojic acid

Enormous Whitening effect

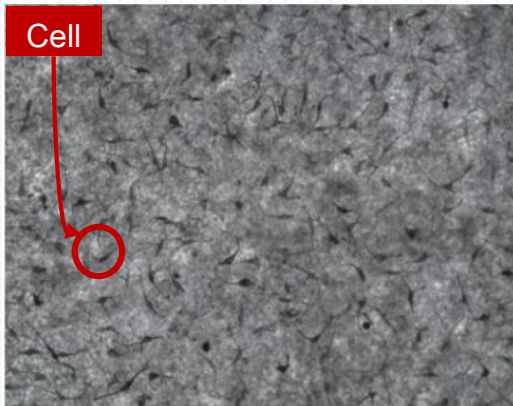
- Whitening effect - 3D Cell

2% Kojic acid

vs

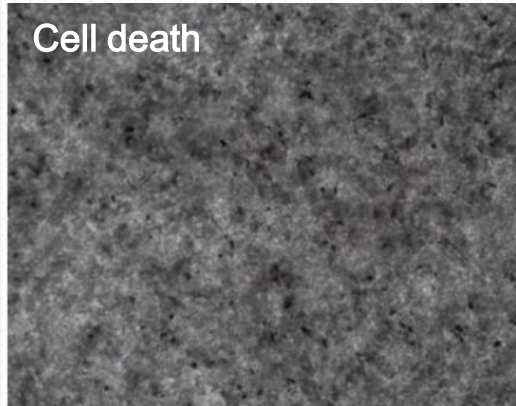
1% Melazero

Control



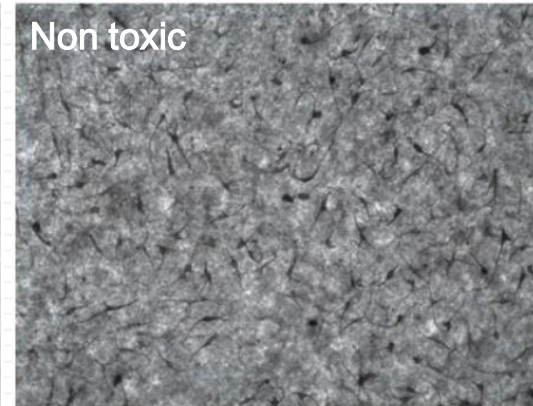
Normal morphology

2% Kojic acid



Destroyed morphology

1% Melazero



Normal morphology

More Safe & Non-toxic than Kojic acid

Enormous Whitening effect

- Whitening effect - Clinical Test (Hyperpigmentation)



Enormous Whitening effect

- Clinical Test - Hyperpigmentation

Clinical Test (22 persons, Hyperpigmentation)



.....

2 weeks later,
Whitening effect confirmed
(p -value < 0.001)

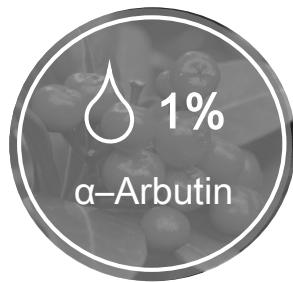
VERIFIED



Enormous Whitening effect

Clinical Test - Hyperpigmentation

Clinical Test (22 persons, Hyperpigmentation)

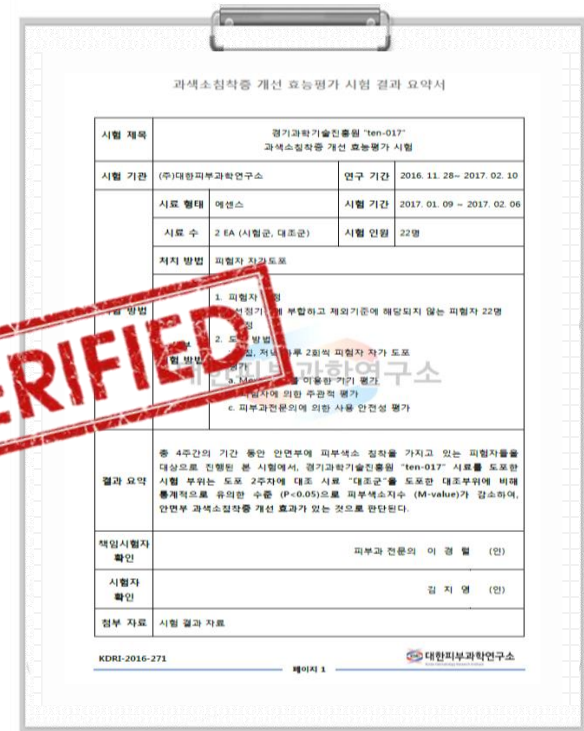


4 weeks later,
Whitening effect confirmed



2 weeks later,
Whitening effect confirmed
(p -value < 0.001)

‘More Rapid Effect than α-Arbutin’



Safety Test

● Skin Irritation

Clinical Test (34 persons, Patch test)



‘Non-irritation for 24hr’

VERIFIED

피부 침포 안전성 평가시험 결과 요약서

(주) 티이엔 "Melazero 2% in water"
피부 침포 안전성 평가시험

시험 제목	(주) 티이엔 "Melazero 2% in water" 피부 침포 안전성 평가시험		
시험 기관	(주) 대한피부과학연구소	연구 기간	2016. 12. 22 ~ 2017. 03. 03
시험 형태	무영양 액상	시험 기간	2017. 02. 21 ~ 2017. 02. 24
시험 수	1명	시험 인원	34명
처치 방법	24시간 패치검토		
시험 방법	1. 피험자 선정 평가기준에 부합하고 제외기준에 해당되지 않는 피험자 34명 선정 2. 무영양 액상 3. 패치의 등에 24시간 철폐 4. 평가 결과 30분, 24시간, 48시간 후에 관찰 5. 평가 결과 30분, 24시간, 48시간 후에 관찰 : 국내 피부과학회 (KCDG) 및 미국화장품협회 (PCPC) 기준을 준거로 자택기준에 의해 평가		
시험 결과	피부과 전문의의 평가에 의한 피부 자극 지수 1) Melazero 2% in water : 0점, 무자극 → (주) 티이엔 "Melazero 2% in water" 시료는 일차자극 측면에서 무자극 물질로 판정됨.		
책임시험자 확인	피부과 전문의 이 경 립		
첨부 자료	피부 반응도 점수 판정 기준		

KDR-2016-327-A8 제1페이지 1

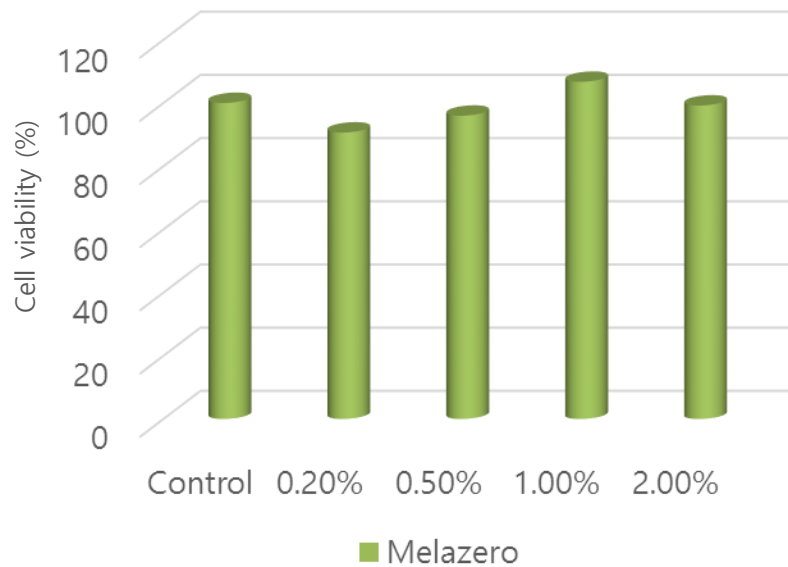
대한피부과학연구소

Safety Test

- Cytotoxicity on Melanoma cell

Cell Test (MTS assay, Cytotoxicity)

Melanoma Cell



NON TOXIC

Don't worry about "Vitiligo"



The Best Partner of ***You!***