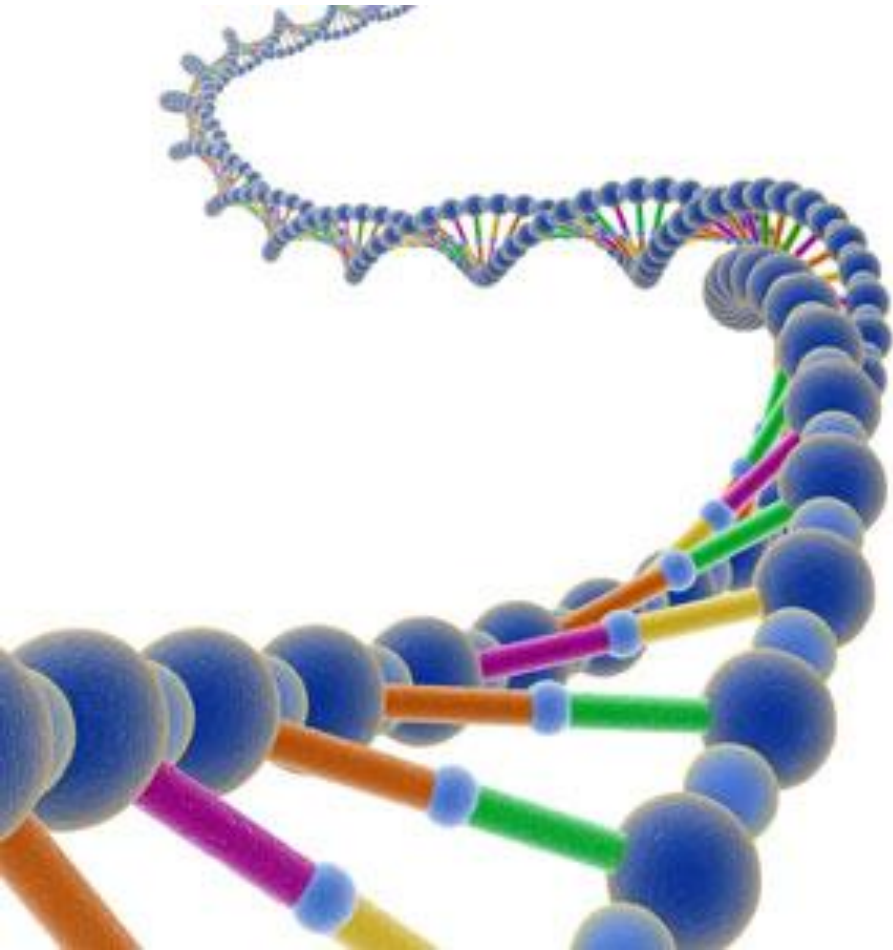


Innovation behind Beauty and Elegance

Everwhite™ VC-Et



Steve Herman
January 29, 2015

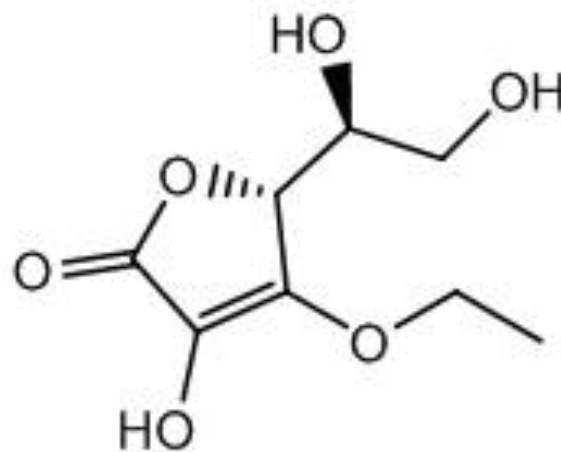


Sino Lion

Everwhite™ VC-Et

Multi-Functional Skin Lightener Derived From Vitamin C

- Molecular formula : $C_8H_{12}O_6$
- CAS No.: 86404-04-8
- Molecular weight : 204.18
- Vitamin-C content : 86.3 %



Sino Lion

Product Information

INCI Name: 3-o-Ethyl ascorbic acid

- Appearance: White to off-white solid
- Assay (HPLC): 99.0% Min
- pH (1%): 3.0-6.0



Sino Lion

Properties

- Good Water solubility
- Low Molecular Weight

Item	Formula	M/W	VC Contents%
VC-PMG	$C_6H_7MgO_9P$	278.4	63.3
AA2G	$C_{12}H_{18}O_{11}$	338.3	52.0
SAP	$C_6H_7Na_2O_9P$	300.1	58.7
Everwhite VC-Et	$C_8H_{12}O_6$	204.2	86.3

- VC-PMG : Magnesium-L-Ascorbyl-2-Phosphate
- AA-2G : Ascorbate-2-O-Glucoside
- SAP: Sodium Ascorbyl Phosphate



Features & Benefits

- Excellent whitening and anti-ageing effect
- High antioxidation
- Stable derivative of ascorbic acid
- Lipophilic and hydrophilic structure
- Anti-inflammation
- improve the skin color and elasticity
- Accelerate the synthesis of collagen



Sino Lion

Uses

Everwhite VC-Et: Multi-functional skin lightener

- Skin whitening and anti-aging products
- Gels
- Lotions
- Creams
- Essences

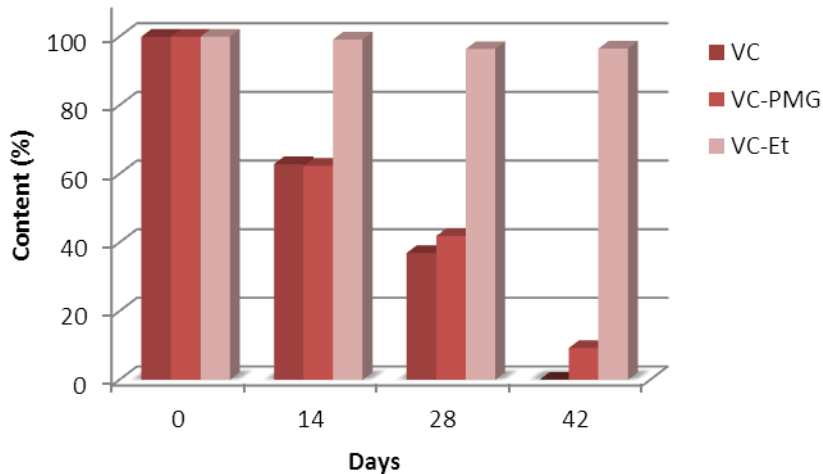


Sino Lion

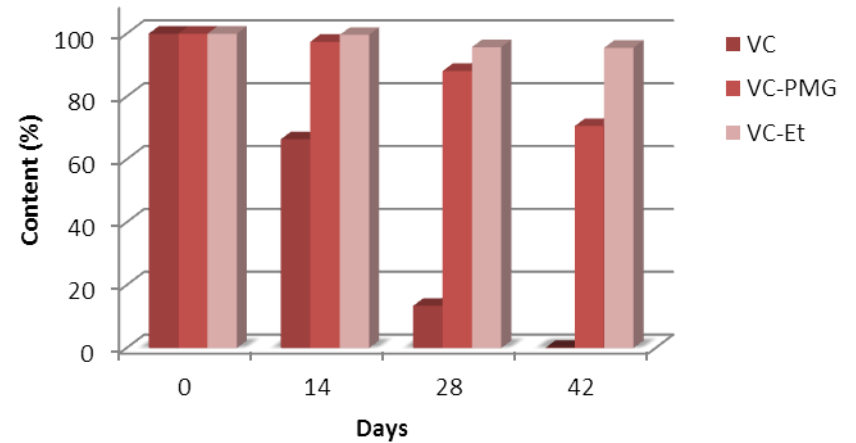
Performance

Stability

In 50% ethanol



In water

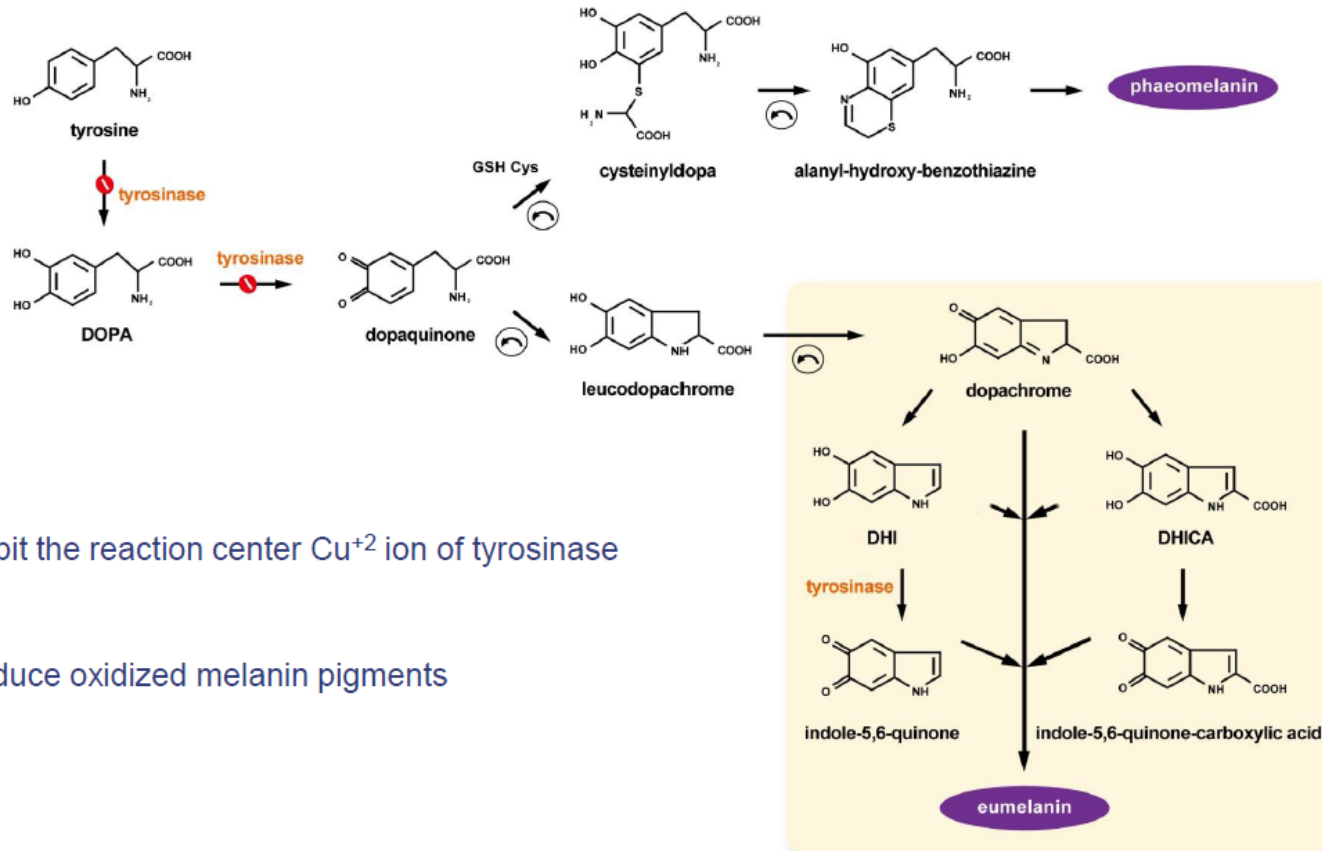


Stability in aqueous solution (60°C for 42 days)



Sino Lion

Whitening Mechanism

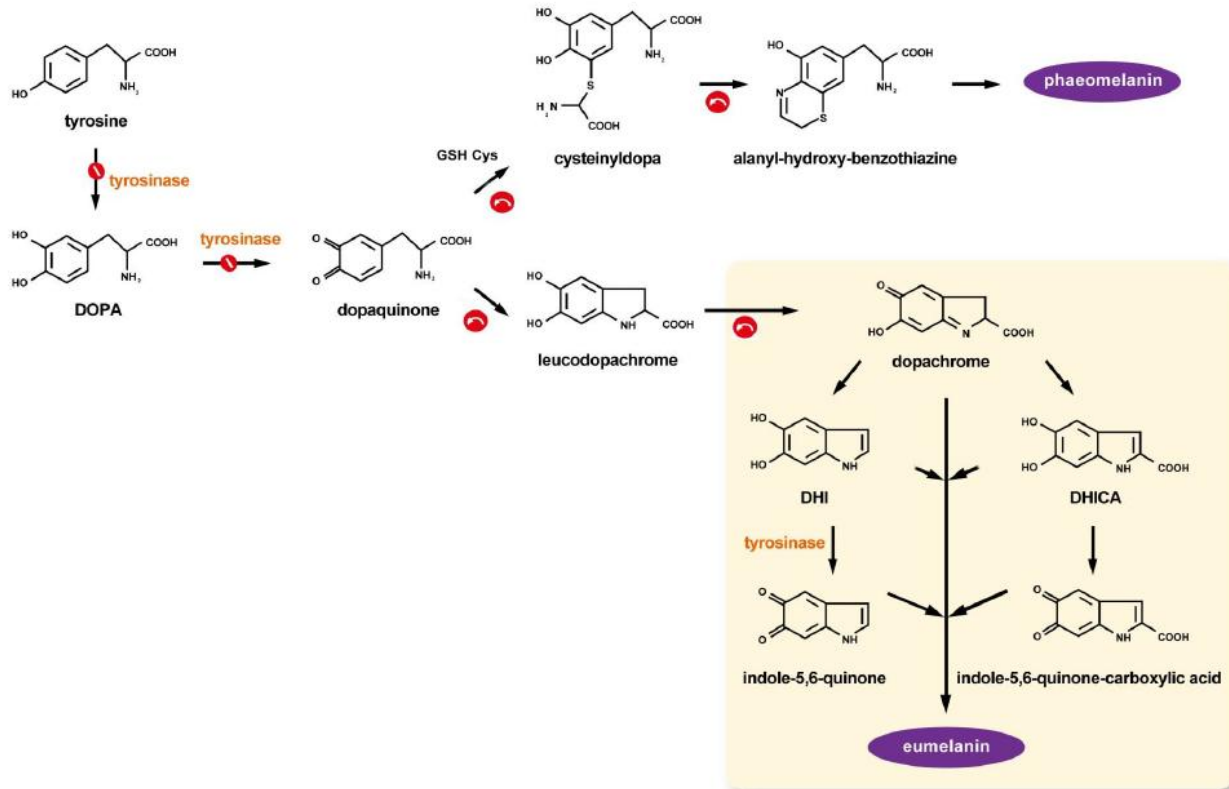


-Inhibit the reaction center Cu^{+2} ion of tyrosinase

- Reduce oxidized melanin pigments

Ref: Briganti, S et al. (2003) *Chemical and Instrumental Approaches to Treat Hyperpigmentation*
 Pigment Cell Res 16:101–110.

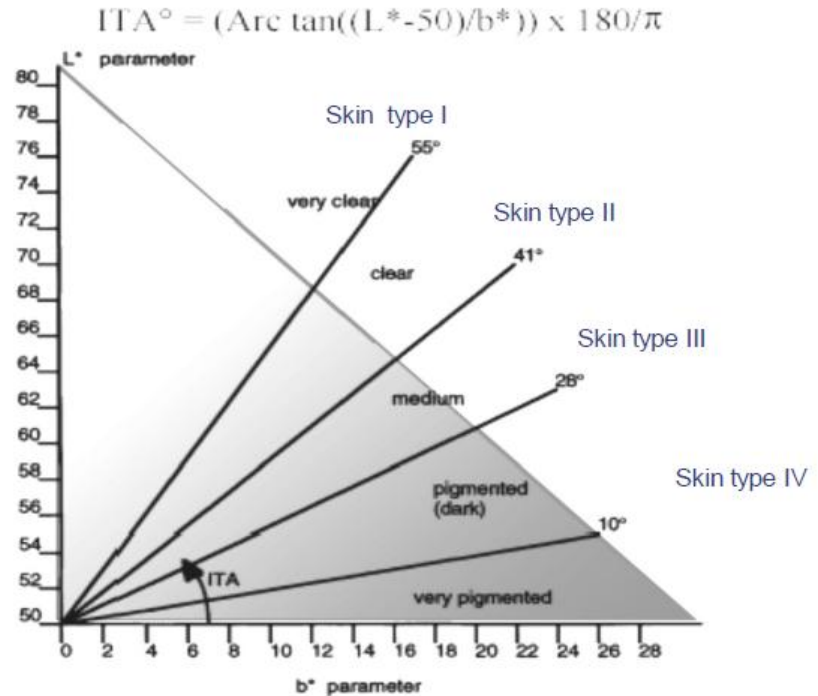
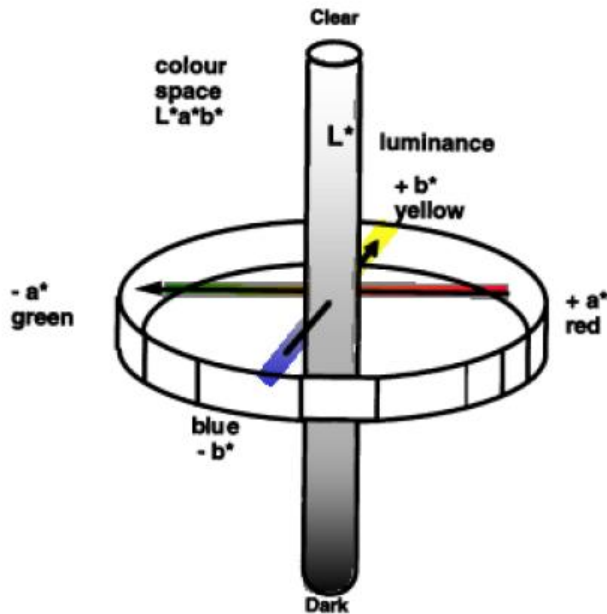
Ferric Reducing Ability



Ref: Briganti, S et al. (2003) *Chemical and Instrumental Approaches to Treat Hyperpigmentation*
 Pigment Cell Res 16:101–110.

In-vivo Whitening Efficacy

- Test Method : Chromametric Analysis



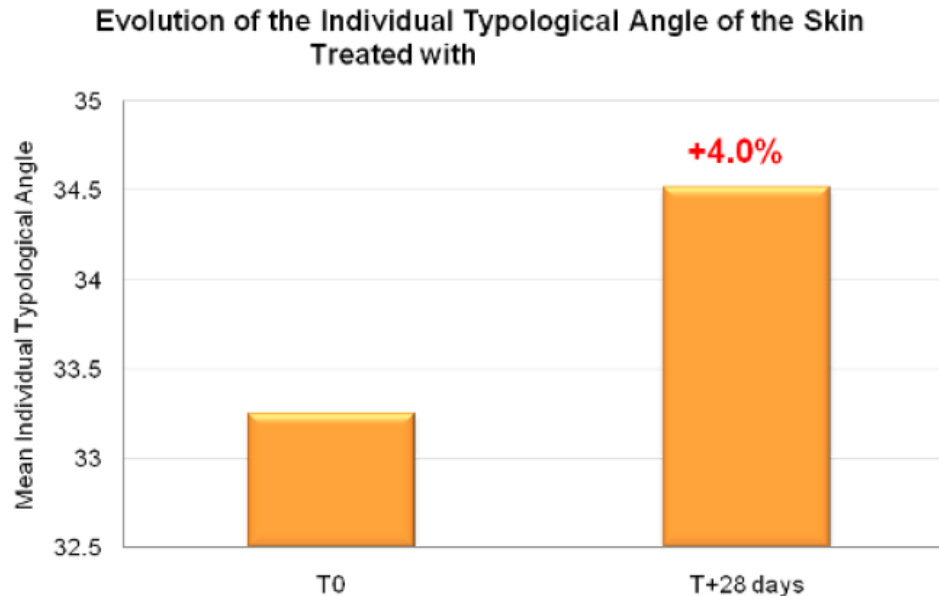
Ref: Chardon, A., Cretois, I., Hourseau, C., *Skin colour typology and sun tanning pathways* Int. J. Cosm. Sci, (1991), 13, 191-208



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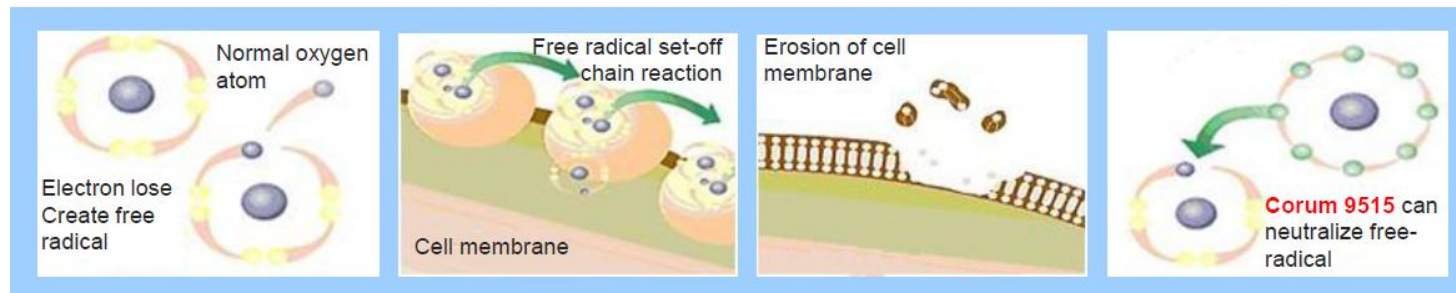
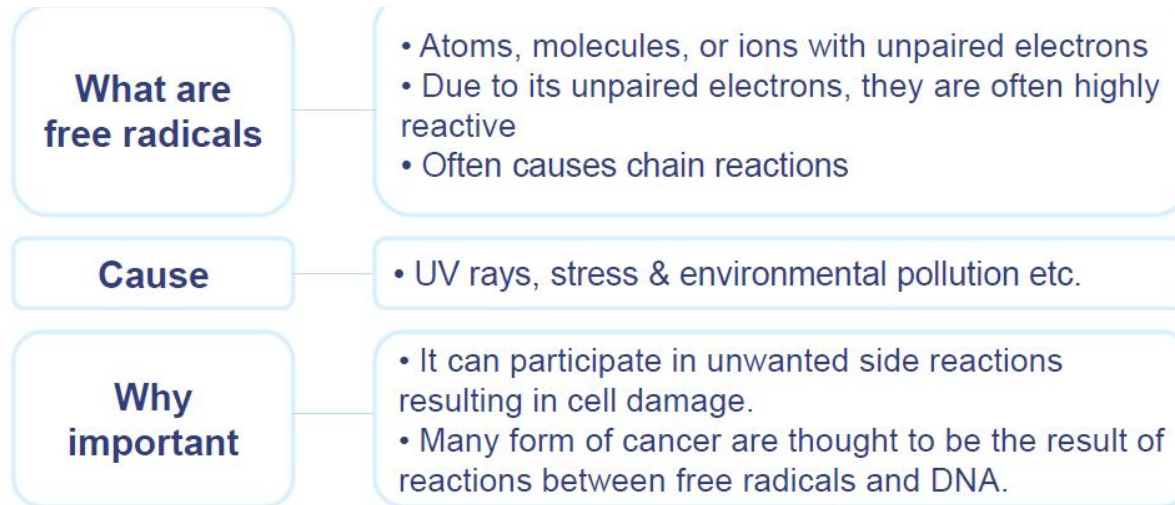
In-vivo Whitening Efficacy

- Subjects: 20 healthy Asian female 25-40 years old with skin type III
- Method: Chromametry (CR-300), 2% Everwhite VC-Et
- **Result: Significant increase**



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Free Radical Scavenging Mechanism



Ref . Stephanieizzo, (2009). *Anti-Up? A Quick View into Antioxidants, Free Radicals, and Your Body*

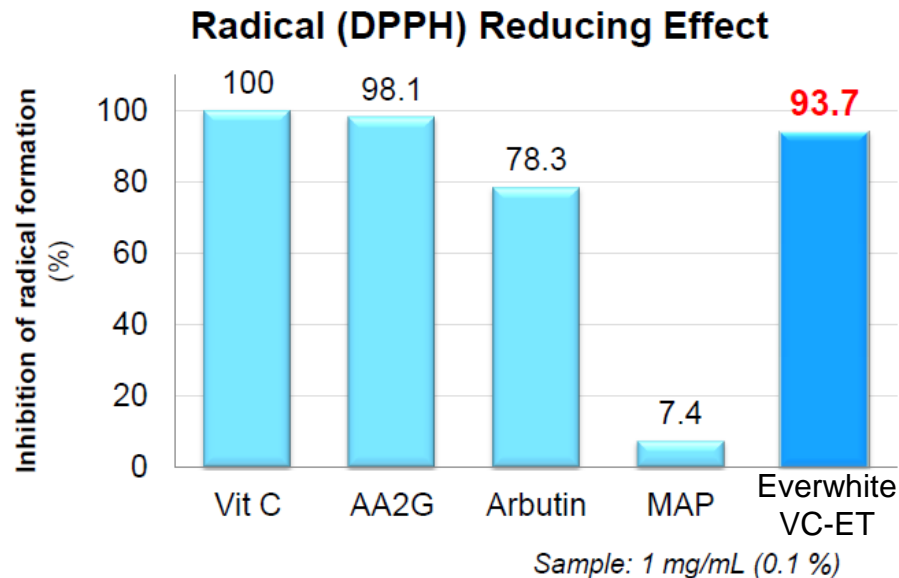


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Free Radical Scavenging Test

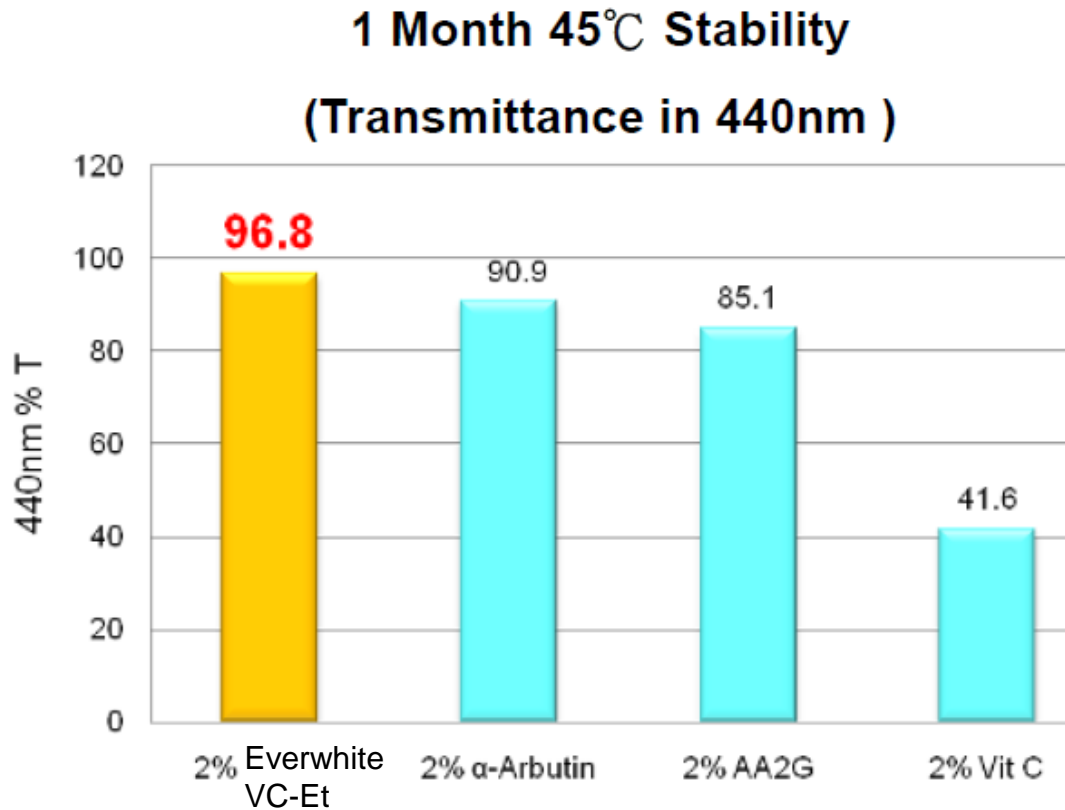
Other benefits:

- Anti-oxidant effect (L-ascorbic acid function)
- Radical Scavenging effect (L-ascorbic acid function)



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Heat Stability Test

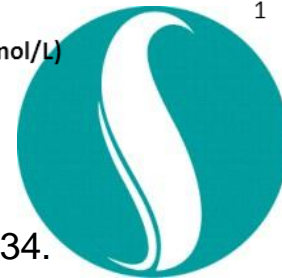
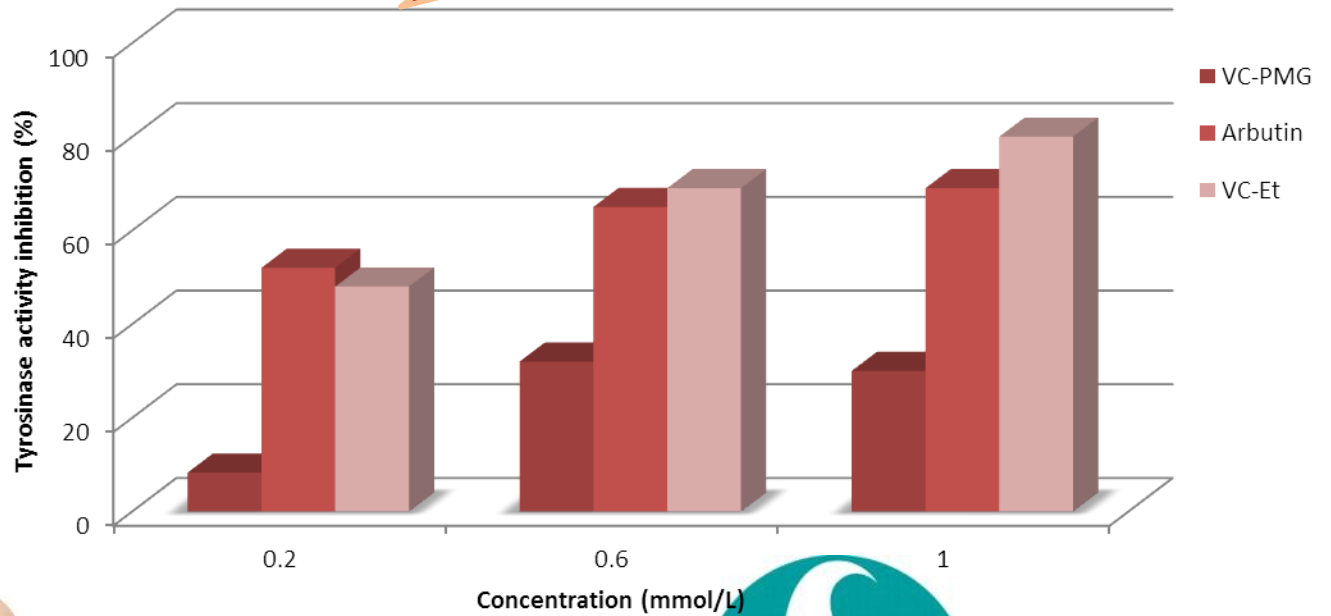


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Performance

Whitening Effect (Cell Test)

Everwhite VC-Et provides good tyrosinase inhibitory effect in UV-induced oxidation of tyrosine



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Performance

Whitening Effect

Comparison: Whitening effect with other ingredients

Tested substance	Sample concentration(%)	Rate of inhibition of UV UV-introduced oxidation of L-DOPA(%)
Ascorbic acid (vitamin vitamin-C)	0.3	78
VC – PMG	0.3	13
Arbutin	0.3	65
Everwhite VC-Et	0.3	90



Conclusion

- Stable Vitamin C derivative
- Good Solubility
- Multi-functional skin lightener
- Convenient to use



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Conclusion 2

- **effective** and **stable** skin lightening agent
- Balance the skin tone
- Reduce dark spot
- increase collagen synthesis
- excellent anti-oxidation properties
- scavenge radical
- DNA protection



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Innovation behind Beauty and Elegance



Thank You.
Questions
or
Comments?



Sino Lion