

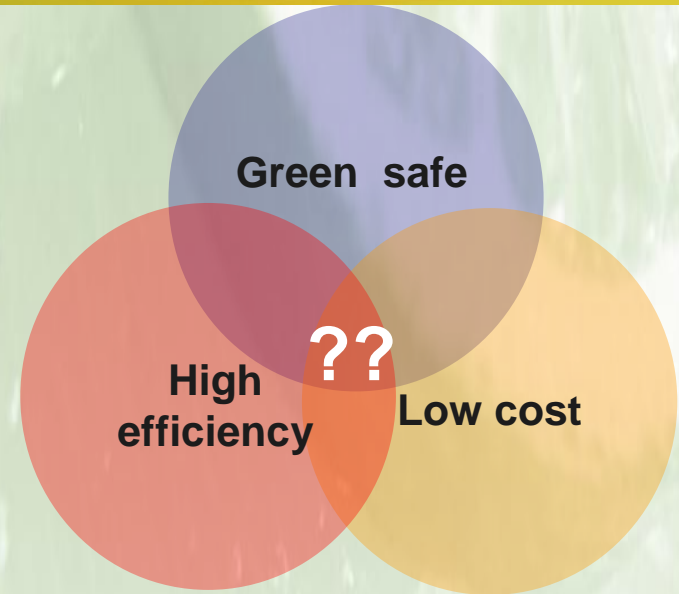
An Excellent Skin Lightener

—Derived from Vitamin C



Current status and challenge

- Chemical synthesis: Safety concern?
Kojic acid, hydroquinone
- Plant extracts: Pricing pressure?
Glycyrrhiza
- Consumer desire for green ingredients and products
- Mildness while efficacy is vital: Consumers are demanding highly efficient systems, particularly in skin care products;



Safe and effective alternative Ascorbyl Lactoside— Everwhite™ VCL

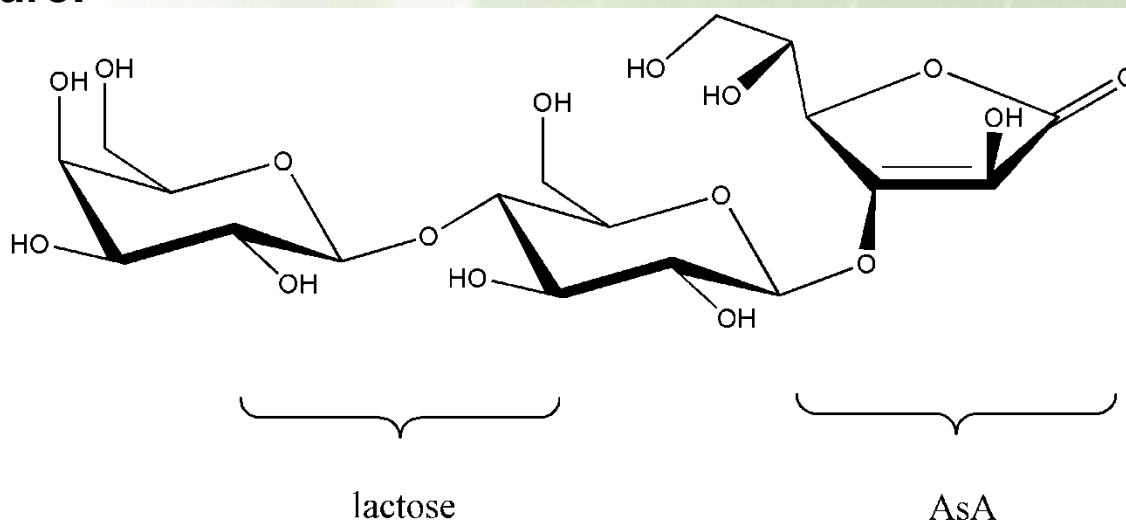


Advantages

- Safe and no irritation
- Low cost
- Multi-effect whitening ingredient

General Information

Trade Name:	Everwhite™ VCL
INCI Name:	Ascorbyl Lactoside
Chemical Name:	3-O-lactosyl-L-ascorbic acid
Appearance :	Light yellowish to white powder
Structure:	



Toxicological Data



Acute Oral Toxicity (Rats)	LD 50 >5,000 mg/kg No toxicity
Acute Percutaneous Toxicity (Rats)	LD 50 >2,200 mg/kg No toxicity
Acute Skin Irritation (Rabbits)	No irritation
Acute Eye Irritation (Rabbits)	No irritation
Multiple Skin Irritation (Rabbits)	No irritation
Skin sensitization	No sensitization
Subacute Oral Toxicity Test (doses of 1,000 mg/kg, 28 days Repeat)	No obvious toxicity

Product Efficacy - Multi functional skin lightener



- **Has better lightening performance and safety profile compared with ascorbyl glucoside;**
- **Protects the skin from UV damage;**
- **Promotes the synthesis of collagen to smooth away wrinkles and make your skin younger.**

Safety and efficacy evaluation

- **Stability evaluation**

 - Anti-oxidation test**

- **Safety evaluation**

 - Cell reproduction test (MTT)**

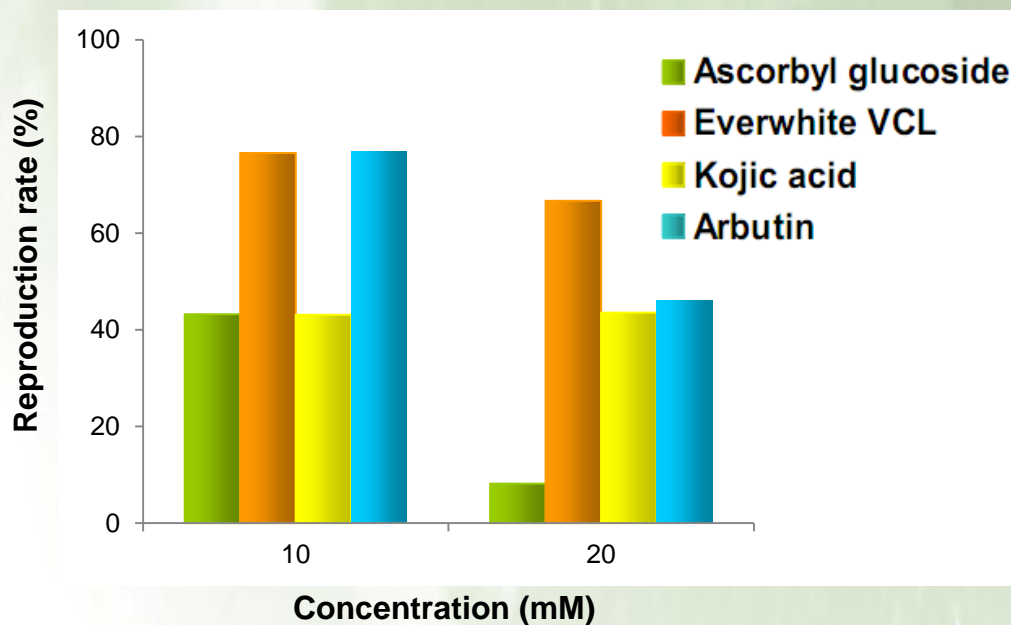
- **Lightening Effect**

 - Inhibitory effect on tyrosinase activity**

- **Lightening Effect**

 - Inhibitory effect on melanin production**

Safety evaluation -Cell reproduction test (MTT)

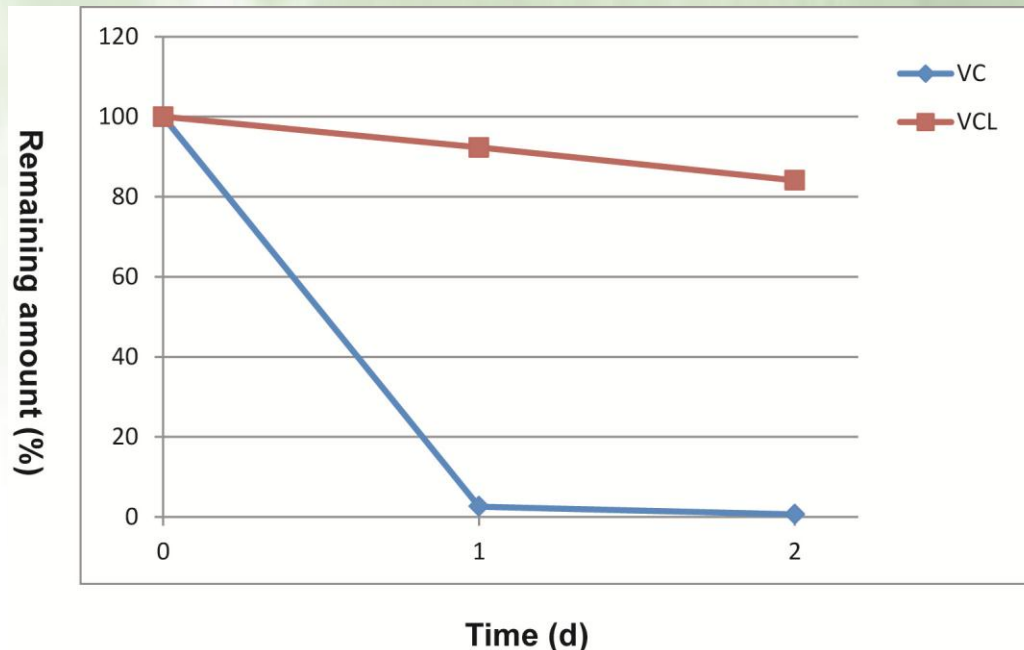


Conclusion:

Everwhite™ VCL has no obvious cell toxicity on melanocyte under test concentration.

*The melanocyte's reproduction rate of the blank is 100%.

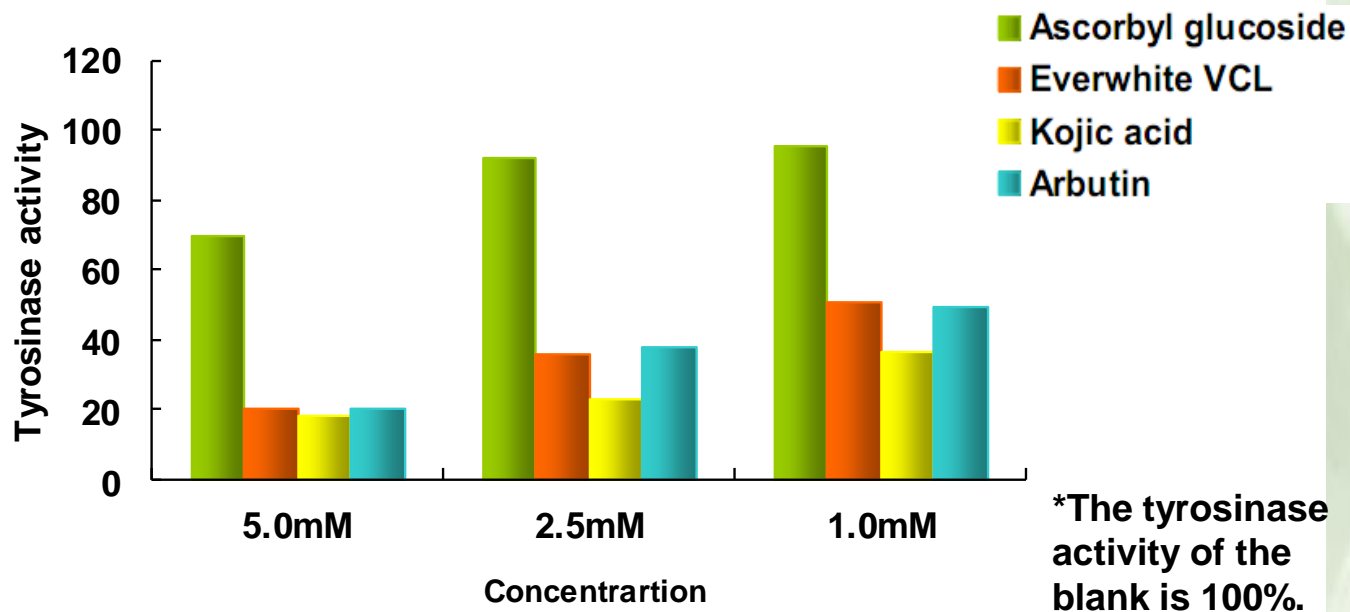
Stability evaluation – Anti-oxidation test



Conclusion:

Everwhite™ VCL exhibited much better stability against oxidation than VC

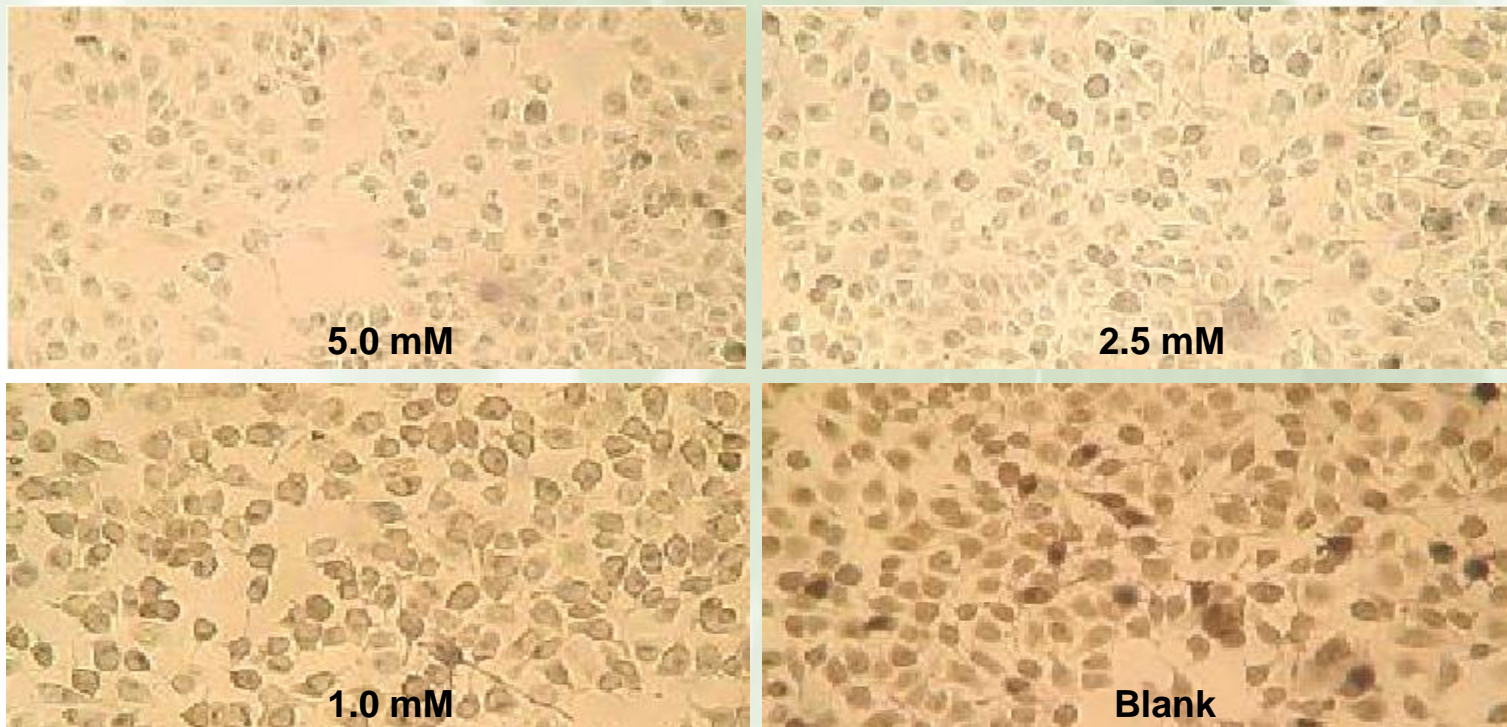
Lightening Efficacy – Inhibitory effect on tyrosinase activity



Conclusion:

Everwhite™ VCL has obvious inhibitory effect on the activity of tyrosinase at test concentrations.

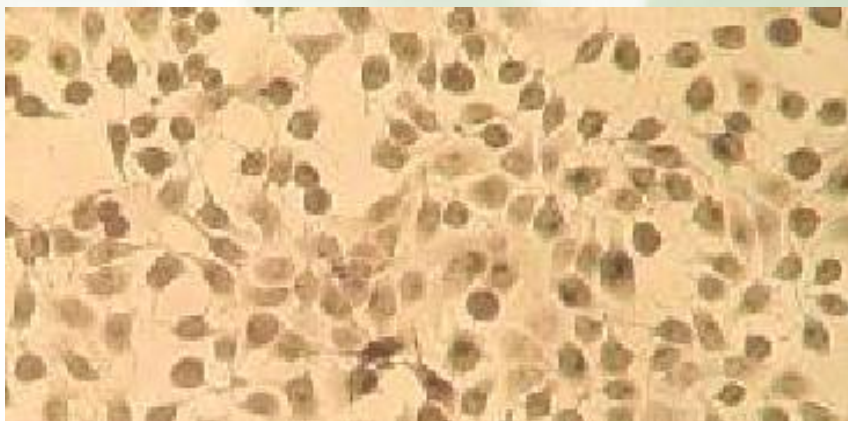
Lightening Efficacy — Melanin Reduction Effect



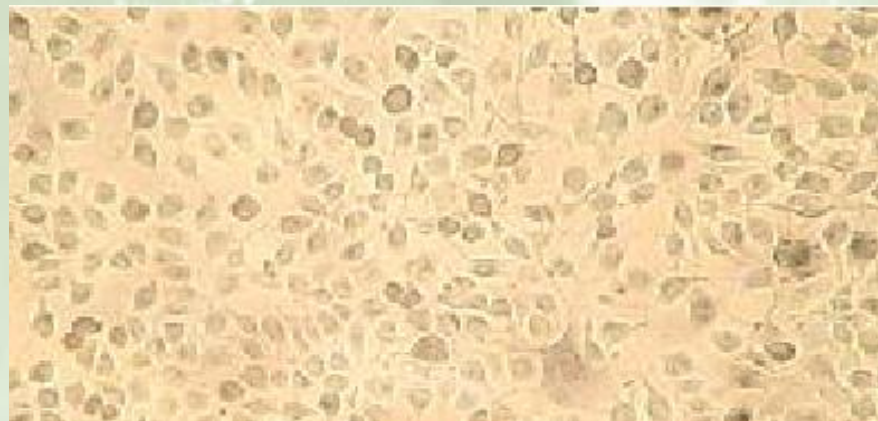
Conclusion:

Everwhite™ VCL can obviously reduce the synthesis of melanin; the effect increased with the concentration of Everwhite™ VCL.

Lightening Efficacy - Melanin Reduction Effect



AsG 2.5mM



AsL 2.5mM

Conclusion:

Everwhite™ VCL has better melanin reduction effect than ascorbyl glucoside at the same concentration.

Safety and efficacy evaluation



Conclusion:

Everwhite™ VCL has better efficacy and safety than ascorbyl glucoside.

Formulation guideline



- Recommended use level: 0.2%-5.0%
- Application: Lightening, anti-aging, and sunscreen products.
- How to use: Add at the last step of the manufacture ;
- The aqueous solution of **Everwhite™ VCL** can be added into the formulation directly;

Sample formulation

	Ingredient	% w/w
A	Glyceryl Stearate (and) PEG 100 Stearate	4.00
	Steareth-21	0.80
	Cetearyl Alcohol	4.00
	Hydrogenated Polydecence	5.00
	Octyl Triglyceride	5.00
	Dimethicone	1.00
	Bisabolol	1.00
B	Glycerin	5.00
	Xanthan Gum	0.20
	Disodium EDTA	0.10
	Aqua	to 100
C	Polyacrylate (and) Polyisobutene (and) Polysorbate 20	0.80
D	EVERWHITE™ VCL (Ascorbyl Lactoside)	1.00
	Aqua	5.00
E	Preservative	0.30
	Fragrance	0.20

Properties and procedures

Procedure

1. Mix Phase A and heat to 80°C;
2. Heat Phase B to 80°C and mix to uniform;
3. Add Phase A into Phase B under agitation, homogenize;
4. Add Phase C under agitation;
5. Cool to 45°C and add Phase D and Phase E slowly under agitation;
6. Cool to room temperature with stirring.

Properties

Appearance: White cream pH:5.0~6.0
Viscosity: 20000-25000mPa.s
(Brookfield RVT Spindle 6 @ 20RPM, 25°C)

Conclusion



- **New chemical entity, derived from Vitamin C**
- **Good stability & safety**
- **Multi-functional skin lightener**
- **Convenient to use**



Sino Lion

Thank You!

