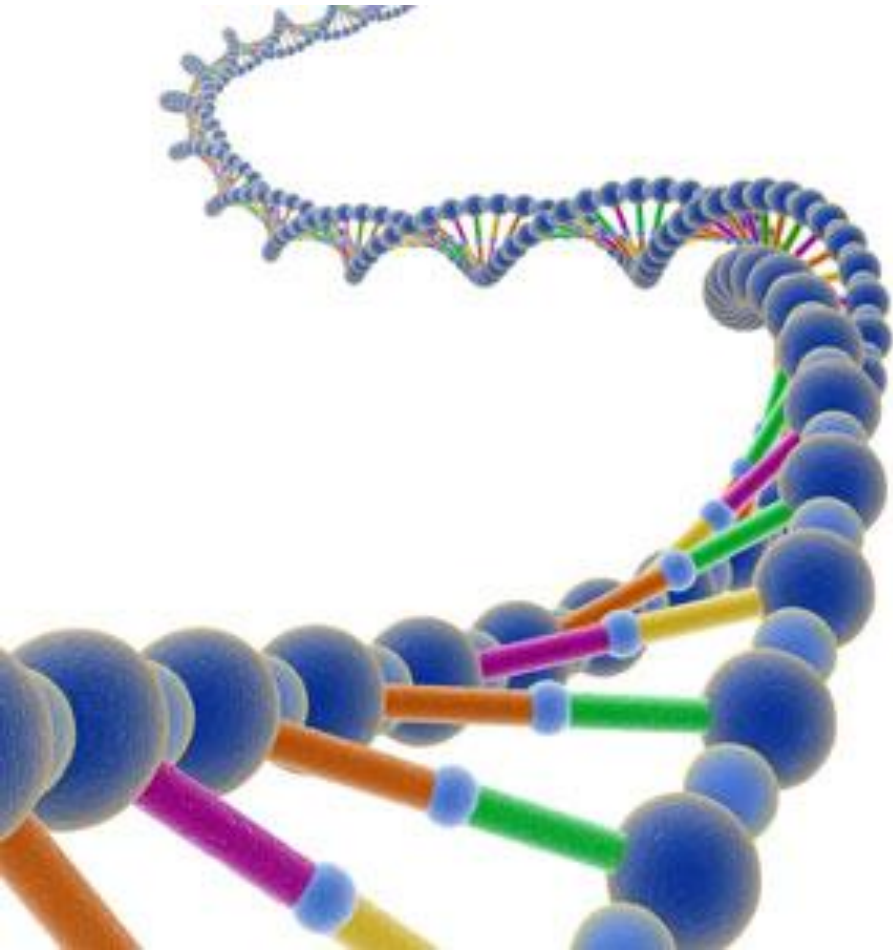


Innovation behind Beauty and Elegance

# Everwhite™ VCL



Steve Herman  
January 29, 2015



**Sino Lion**

# Everwhite™ VCL

Multi-functional Skin Whitener Derived From Vitamin C

INCI Name:

Ascorbyl Lactoside

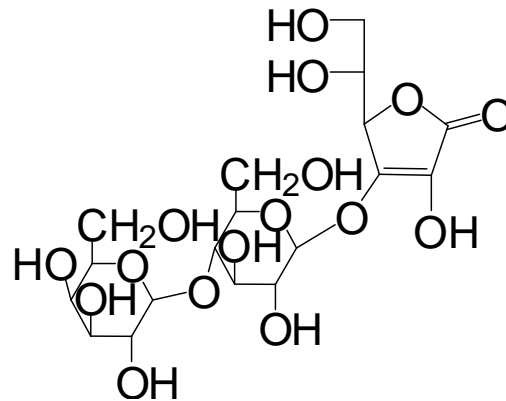
Chemical Name:

3-O-lactosyl-L-ascorbic acid

Molecular Weight:

500.14

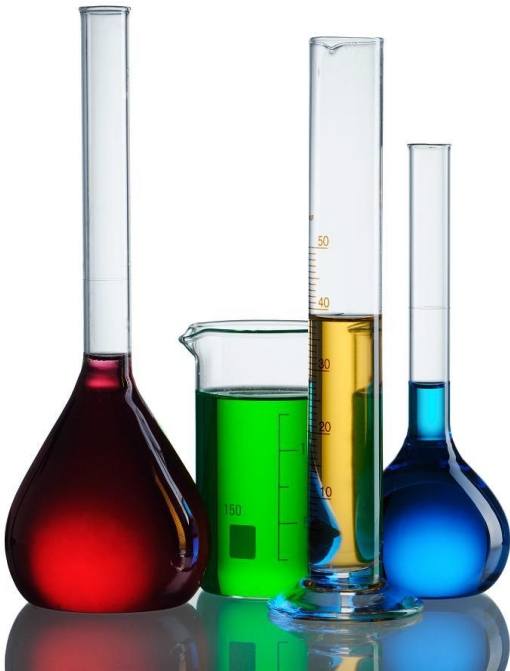
Structural Formula:



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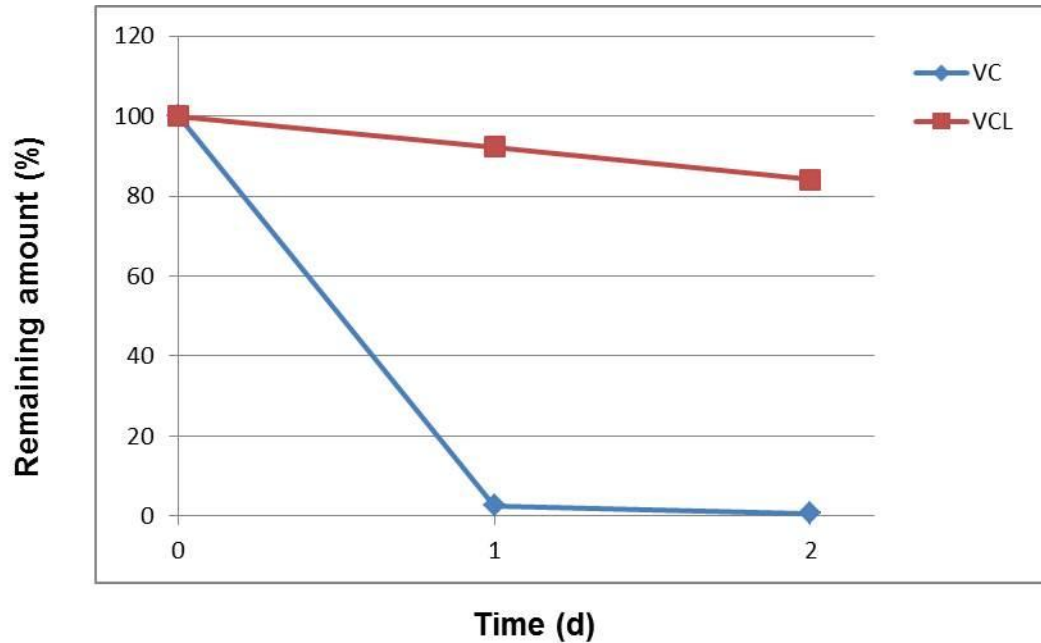
# Chemical Properties

Light yellowish to white powder  
Water soluble  
More tolerant than traditional  
vitamin C derivatives to high  
temperature, wide pH, metal  
ions or other stress conditions.



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# Stability Data



Conclusion:  
Everwhite™ VCL exhibited much better stability against oxidation than VC



# 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



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# Product Efficacy

- 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.



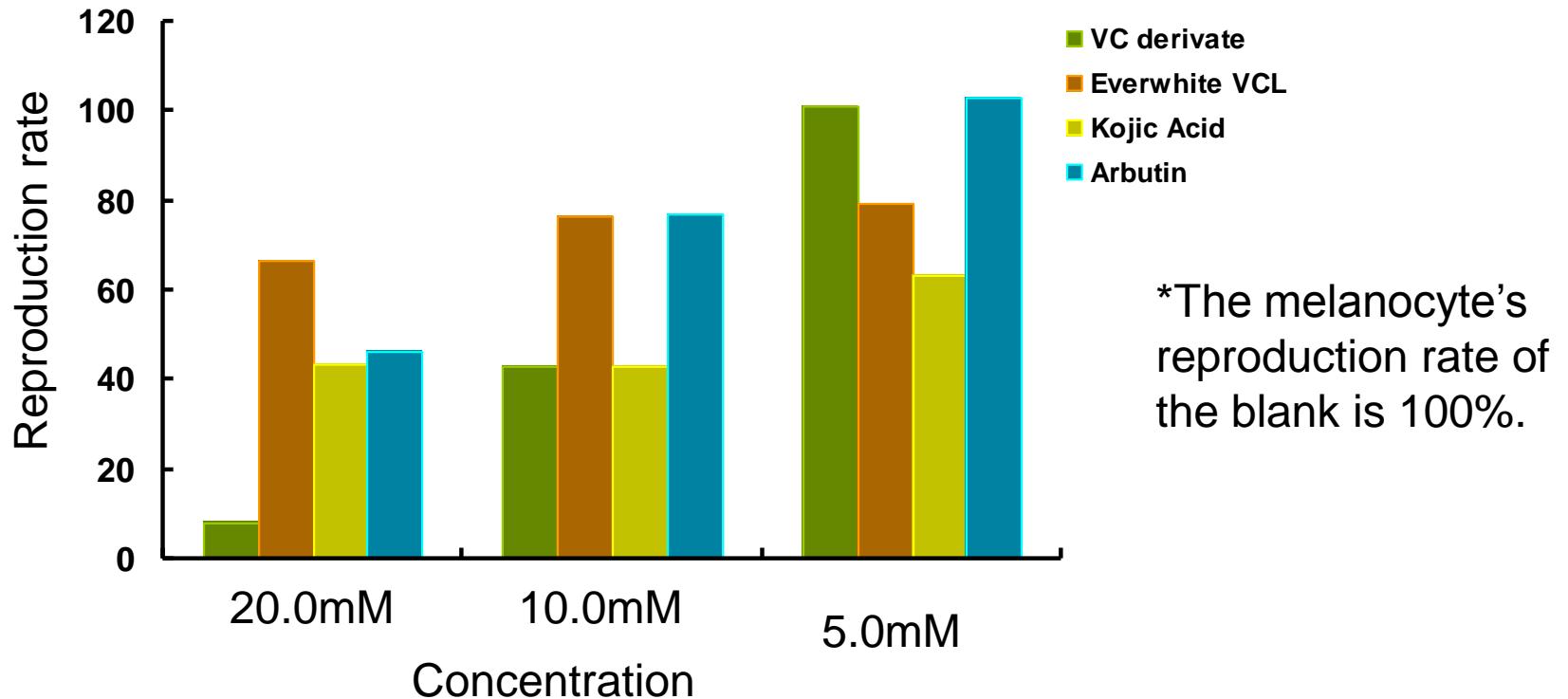
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# Safety and efficacy evaluation

- 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)



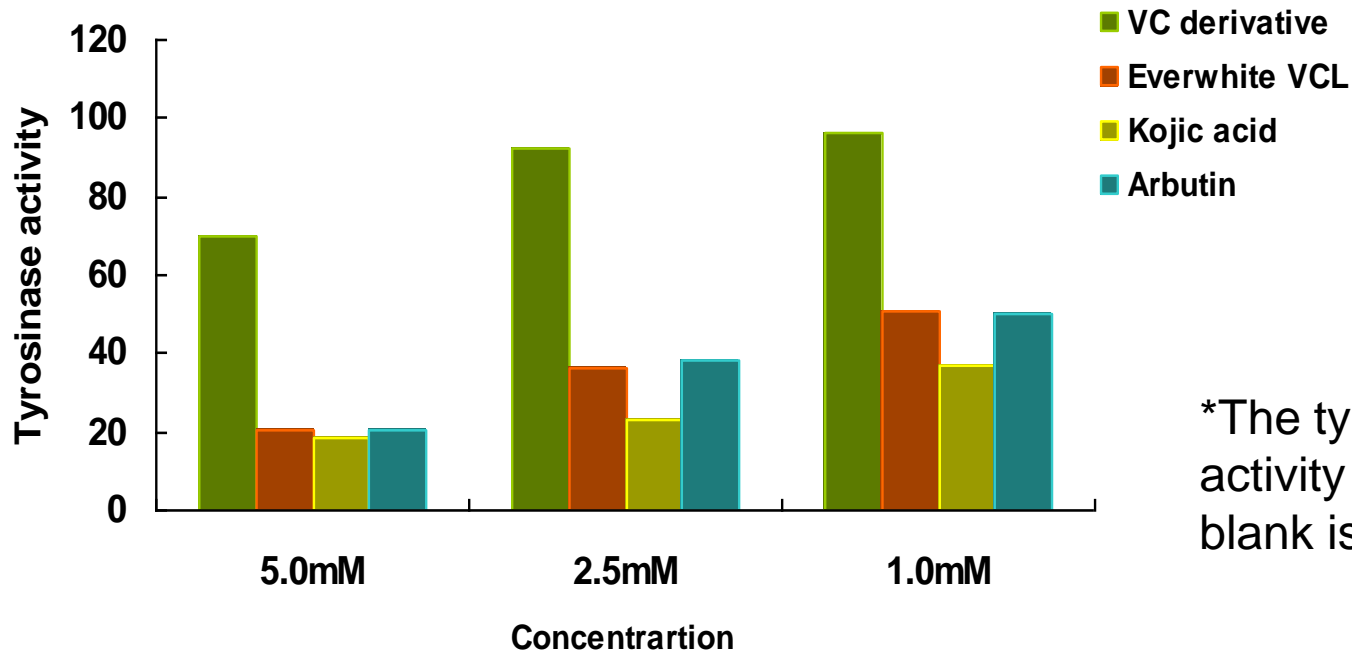
Conclusion:  
Everwhite™ VCL has no obvious cell toxicity on melanocyte when the concentration is below 10.0 mmol/L.



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# Lightening Efficacy– Inhibitory effect on tyrosinase activity



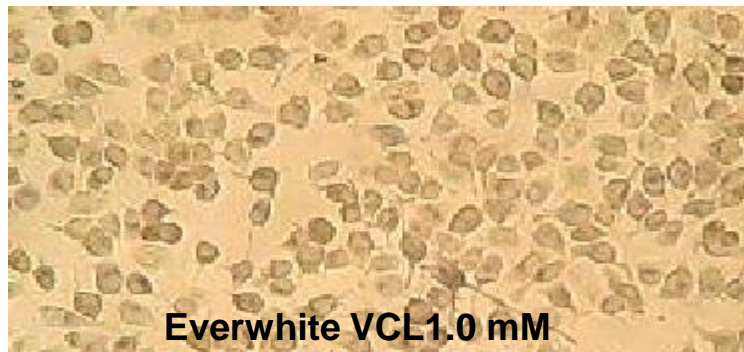
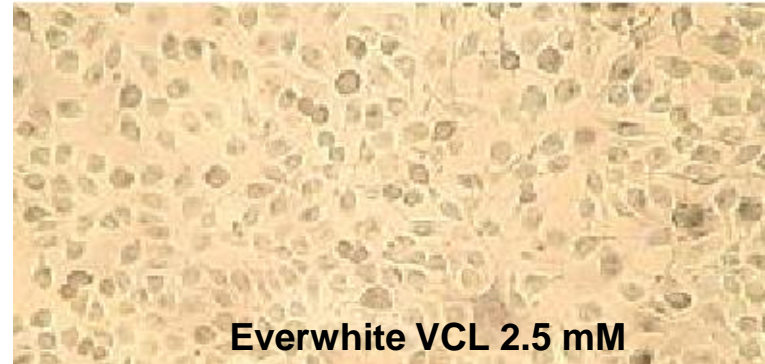
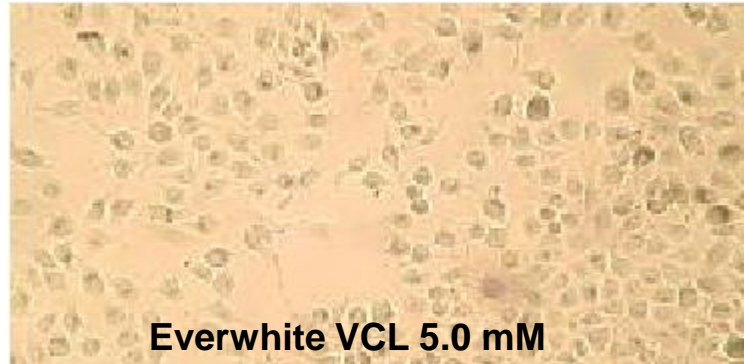
\*The tyrosinase activity of the blank is 100%.

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



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# Lightening Efficacy – Melanin Reduction Effect



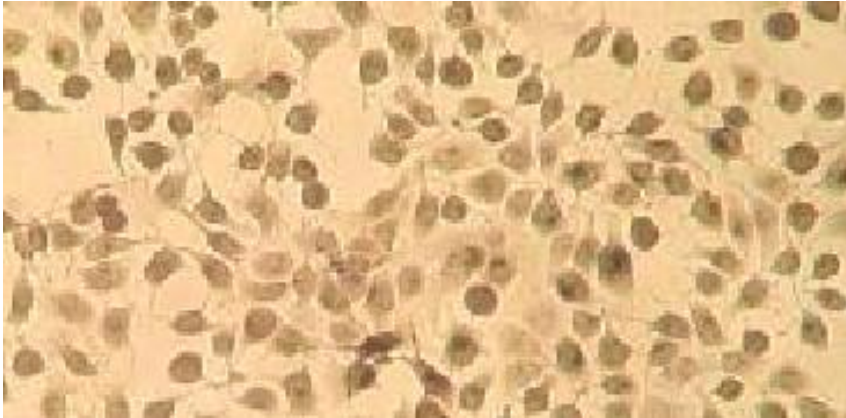
Conclusion:

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

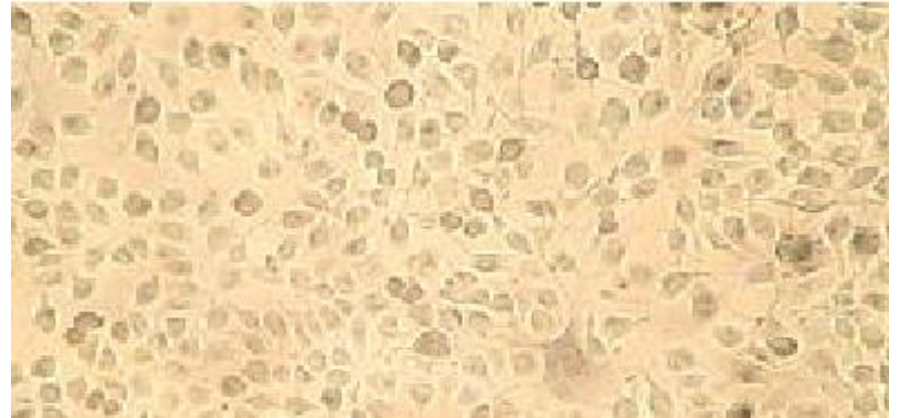


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# Lightening Efficacy - Melanin Reduction Effect



**Ascorbyl glucoside 2.5mM**



**Everwhite VCL 2.5mM**

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



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# Safety and efficacy evaluation

Conclusion:

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



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# Formulation guidelines

- 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



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# 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



# Procedure

## 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)



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# Conclusion

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





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Thank You.  
Questions  
or  
Comments?

