

# ACB Lemon Peel Extract G

Natural Skin Lightener + Refreshing + Evens Skin Tone

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Tomorrow's Vision... *Today!*<sup>®</sup>

# ACB Lemon Peel Extract G

## Technical Information:



**Product Code:** 20364G

**INCI Name:** Glycerin & Water & Lactobacillus/Lemon Peel Ferment Extract

**INCI Status:** Conforms

**Suggested Use Levels:** 0.5–2.0%

**Suggested Applications:** Evens Skin Tone, Natural, Skin Lightening, Anti-Aging

# The Appeal

- Medicinal fruit
  - High in vitamin-C
  - Traditionally used to prevent/treat scurvy
- Globally used in food & beverages
- Aromatherapy
  - Enhances mood
- Cosmetics
  - Anti-aging: AHAs & antioxidants
  - Skin care

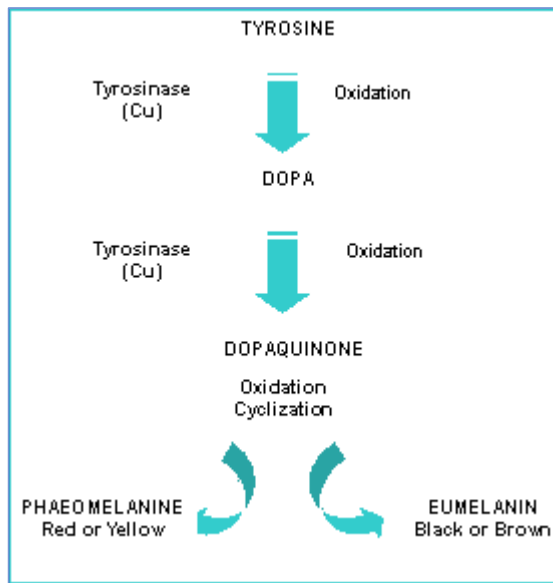


## Reference:

- 1) Kiecolt-Glaser, Janice. et. al. Olfactory Influences on Mood and Autonomic, Endocrine, and Immune Function. *Psychoneuroendocrinology*. 2008 April; 33(3): 328-339 [Retrieved: January 8, 2011].

# Added Benefit

- Peel contains phytochemicals capable of whitening skin
- Inhibits tyrosinase



## Tyrosinase:

First pathway discovered

- Easily accessible model
- Currently one of the best understood melanogenic pathways
- Directly involved in the oxidative pathway for melanogenesis

# Efficacy Data

## *in-vivo* Tyrosinase Assay



Conditions	
Equipment	Shimadzu UV-1601 UV/Vis Spectrophotometer
Temperature	25.00°C
pH	6.50
Absorbance	280.00 nm
Path Length	1.00 cm
Reagents	Tyrosine, Tyrosinase, Hydroquinone USP, ACB Lemon Peel Extract G, Licorice Extract/Polysorbate-80 (1:4)

# ACB Lemon Peel Extract G Efficacy Assay Results

## Tyrosinase Inhibition

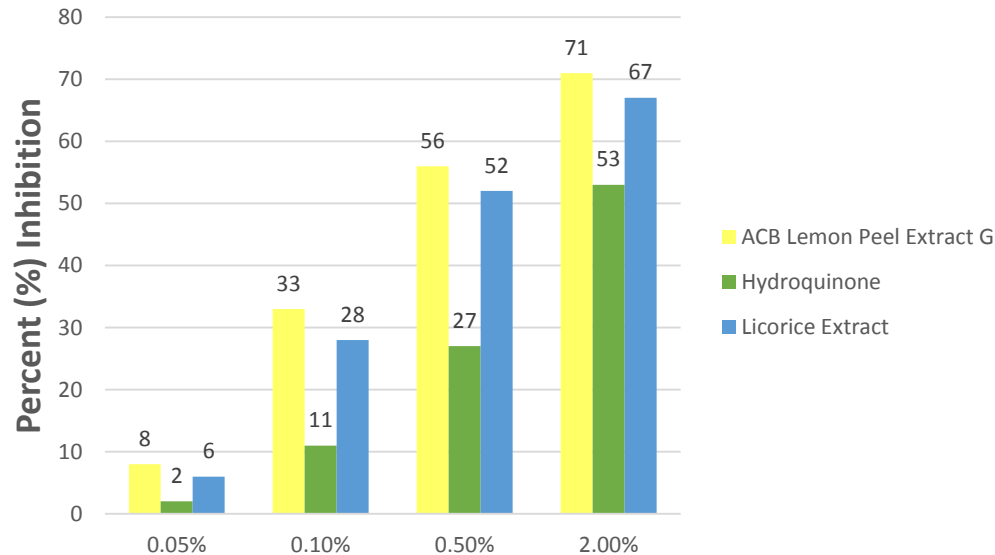


Figure 1: Percent inhibition of Tyrosinase

## Results

### ACB Lemon Peel Extract G

2.00% inhibited tyrosinase  
28.57% more effectively than  
hydroquinone



## Protocol

- Tyrosinase is one of the causes of hyperpigmentation, an over-production of dermal melanin pigment, leading to melasmas, freckles, age-spots, and liver spots.
- Solutions of **ACB Lemon Peel Extract G**, Hydroquinone (positive control), Licorice Extract, and mushroom tyrosinase (0.05, 0.10, 0.50, and 2.00%), were prepared in 0.1M Phosphate Buffered Saline. Phosphate Buffered Saline was used as the negative control.

# ACB Lemon Peel Extract G Efficacy Assay Results

## 20364G ACB Lemon Peel Extract G ORAC

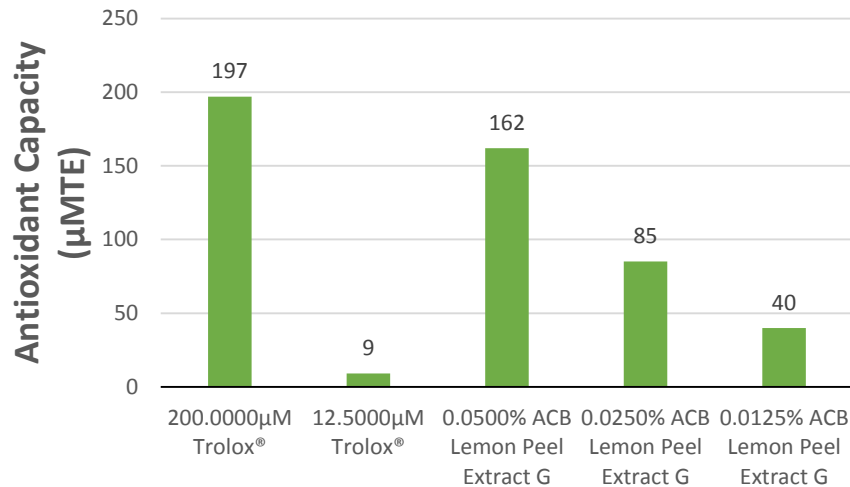


Figure 2: Antioxidant capacities



### Protocol

- Trolox® was used as the positive control
- Solutions were prepared at three concentrations
- Fluorescent measurements were taken every two minutes for two hours

## Results:

### ACB Lemon Peel Extract PBF

showed potent antioxidant activity  
at a 0.0500% concentration

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