

# Clinical Evaluation of Anti-Aging Effectiveness of Combining Two Antioxidant Serums in Chinese Female with Mild-to-Moderate Skin Aging

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## Introduction

Antioxidant products benefit skin by reducing oxidative stress in dermal fibroblasts. A topical serum contains 15% Vitamin C, 1% Vitamin E and 0.5% ferulic acid (CEF) has been reported to improve the appearance of photodamaged skin. Another study reported same conclusion for daily application of a topical nighttime serum containing 1% resveratrol, 0.5% baicalin and 1% vitamin E (RBE). However, there is a lack of studies examining combination effects of these two serums.

## Objective

To evaluate anti-aging effects of combining RBE and CEF in Chinese females with mild-to-moderate skin aging.

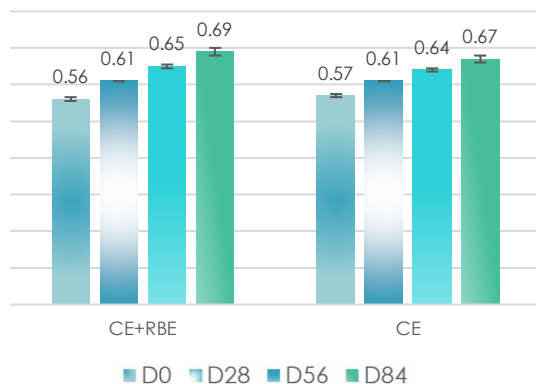
## Materials and Method

A prospective, split-face, randomized controlled trial was conducted among 44 Chinese females with mild-to-moderate facial skin aging. Daily application of CEF in the morning and RBE at night was randomized to half of subjects' faces. The other half applied CEF only as a control. Skin elasticity (R2), tightness (F4), smoothness (Sesm), glossiness, crow's feet area and depth were measured on both sides at baseline, day 28, day 56, and day 84 after enrollment. Subjective clinical assessments by physicians and participants' satisfaction questionnaire were also collected. Skin tolerances were evaluated by physicians.

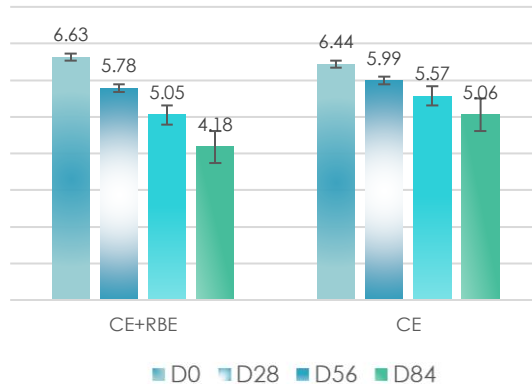
## Results

The average age of enrolled participants was  $44.6 \pm 0.9$  years old. Both test sides showed significant increases in all measurements during follow-up comparing to baseline. Comparing to the control side, combining RBE and CEF showed better percentage improvements since day 28 and achieved maximum at day 84 in elasticity (25.25% vs. 19.19%,  $P=0.0026$ ), tightness (36.76% vs. 21.18%,  $P<0.001$ ) and glossiness (34.62% vs. 15.09%,  $P<0.001$ ). Physician assessments presented similar results. All participants were satisfied with anti-aging effects (i.e. face-lifting, tightening, increasing elasticity, fine line reducing) and reported positive overall feeling for the combination treatment. No adverse effect was observed.

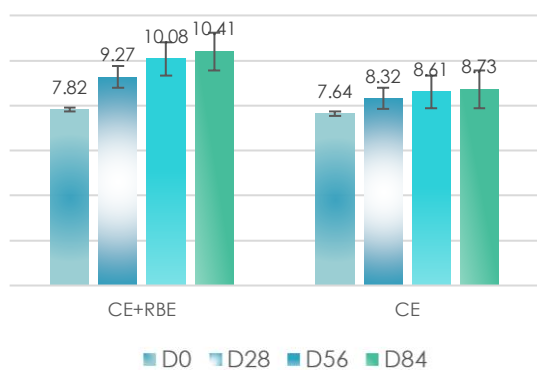
### Skin Elasticity Score



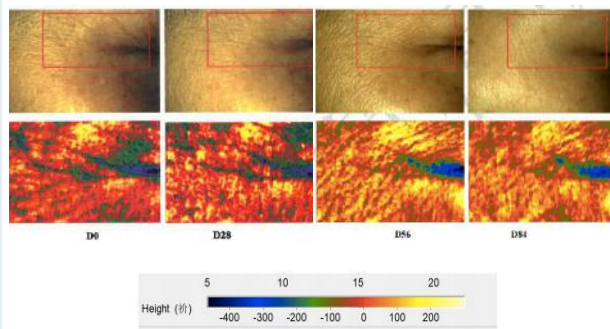
### Skin Firmness Score



### Skin Glossiness Score



### Skin Fine lines PRIMOS 3D IMGAE of Crow's Feet Area



## Conclusions

The combination of antioxidant serums showed significant better effects on skin anti-aging and higher satisfaction compared to using CEF alone.