

Certificate of Analysis

Health forever Products Limited

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BL ID#: 09-0589/B-8725
Product Name: Jobelyn (lot#0309)
Received on 03/09/09

Assays Performed	Results (IC ₅₀)
Collagenase Inhibition ¹	60 µg/mL
Elastase Inhibition ¹	17 µg/mL
Anti-glycation ²	4 mg/mL

Comments:

1. Wrinkle is a product of aging, smoking, sun exposition, pollution and etc. With the decrement of collagen (which provides skin firmness) and elastin (which supplies skin elasticity and rebound), appearance of roughness, uneven tone, brown patches, thin skin and deep wrinkles will show up. A product's anti-wrinkle activity can be determined by its inhibitory capacity on collagenase or elastase. Jobelyn was analyzed against common benchmarks that are known for anti-wrinkling.

Collagenase Inhibition: 15-fold potency of Vitamin C; 8-fold potency of Idebenone; 30-fold potency of ferrulic acid.

Elastase Inhibition: 22-fold potency of Vitamin C; 8-fold potency of ferrulic acid; 1.5-fold potency of quercetin

2. Collagens are important proteins for the skin, as they are essential for structure and function of the extracellular matrix in the dermis. Thinner and wrinkled skin, the typical signs of normal aging, are the consequence of reduced collagen. Protein glycation contributes to skin aging as it deteriorates the existing collagen by crosslinking. Accelerated skin aging is especially noticeable in diabetic patients, where glycation is increased because of the high serum glucose level. Jobelyn was analyzed in parallel with ascorbic acid and alpha-tocopherol (chosen benchmarks), neither ascorbic acid nor alpha-tocopherol showed significant anti-glycation activity.

Reference:

Demeule M., Brossard M., Pagé M., Gingras D., Béliveau R. Matrix metalloproteinase inhibition by green tea catechins. *Biochim. Biophys. Acta*, 1478: 51-60, 2000

Generation of Active Oxygen Species from Advanced Glycation End-Products (AGE) under Ultraviolet Light A (UVA) Irradiation Hitoshi Masaki, Yuri Okano and Hiromu Sakurai, *Biochemical and Biophysical Research Communications* 235 (2), 1997, 306-310.

Approved By


Boxin Ou, Ph.D.

Date

5/15/09