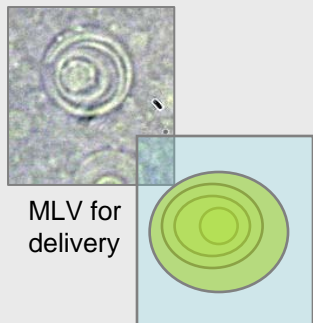


# DC Provesselin™

Supports healthy microcirculation for anti-aging skin care benefits



Multi-Layer Vesicles, concentrated with Angelica Sinensis Isolate, deliver critical microcirculation support for skin care products.

## Applications:

- Dark under eye circles, where blood vessels may be leaky or swollen
- Rosacea skin care, varicose veins and general anti-aging skin care

## Functions:

- Tightens blood vessels via stimulating norepinephrine
- Inhibits inflammatory COX-2 enzyme
- Stimulates collagen type 1 secretion
- Protective antioxidant



Dong quai (*Angelica sinensis*), also known as Chinese Angelica, has been used for thousands of years in traditional Chinese, Korean, and Japanese medicine. It remains one of the most popular plants in Chinese medicine, and is used primarily for health conditions in women. Dong quai has been called "female ginseng," based on its use for gynecologic disorders such as painful menstruation (dysmenorrhea) or pelvic pain, recovery from childbirth or illness, and fatigue/low vitality. It is also given for strengthening *xue* (loosely translated as "the blood"), for cardiovascular conditions/high blood pressure, inflammation, headache, infections, and neuropathic (nerve) pain.

DC Provesselin, an active extract isolate of Dong quai (*Angelica sinensis*) prepared in a phospholipid multi-layer vesicle to enhance delivery, has demonstrated significant activity in supporting microcirculation. Healthy microcirculation is essential to skincare as skin contains more blood vessels than most other organs. Healthy circulation is responsible for cell nutrition, oxygenation and removal of wastes and toxins.

INCI Name: Water (and) Phospholipids (and) Butylene Glycol (and) Angelica Polymorpha Sinensis Root Extract

Formulation: Use at pH 4-7

Disperse in emulsion or gel at or below 40C

Recommend use level 3-6%

Distinctive Cosmetic Ingredients, LLC

801 Montrose Avenue, South Plainfield, NJ 07080

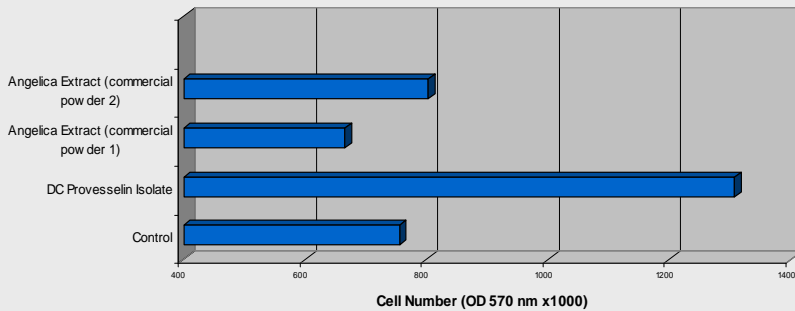
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[www.dcingredients.com](http://www.dcingredients.com)

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## Comparison of Dong quai (*Angelica sinensis*) extracts vs. DC Provesselin Isolate

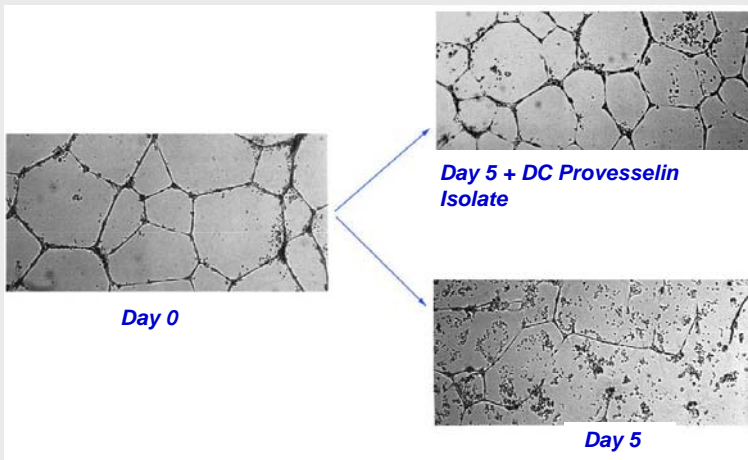


Comparative effect of different Angelica extracts on cell growth.

DC Provesselin Isolate significantly stimulated more cell growth vs. other commercial angelica extract powders.

Not all extracts are the same!

## Protecting microcirculation



DC Provesselin Isolate is capable of protecting capillary networks from disintegration, in vitro.

This activity is indicative of the protective effect on the dermal microcirculation, and on the skin itself.

## Stimulation of norepinephrine norepinephrine release to tighten blood vessels

Test Material	concentration	pg/sample
H2O	0	5
nicotine	10uM	13.5
nicotine	1uM	10
DC Provesselin Isolate	0.1%	47

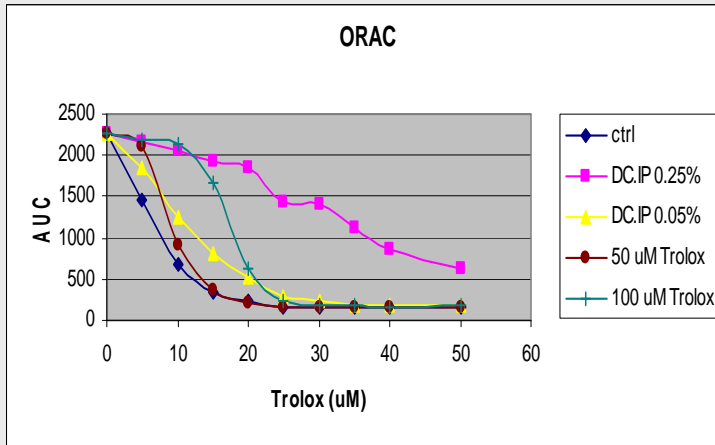
This chart demonstrates DC Provesselin Isolate has a stimulatory effect on norepinephrine (noradrenaline).

Norepinephrine has a direct action on tightening of blood vessels.

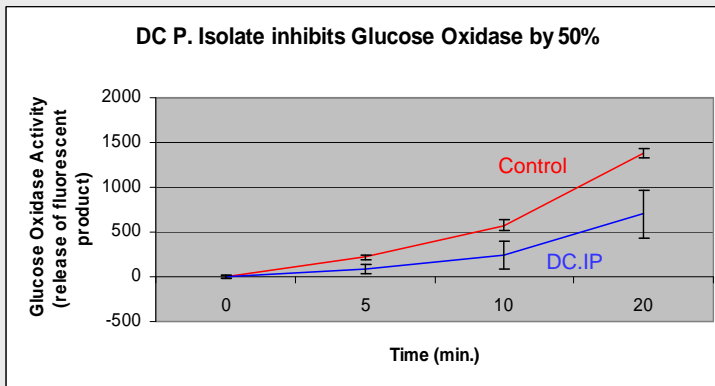
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## Antioxidant properties of DC Provesselin Isolate (DC.IP)

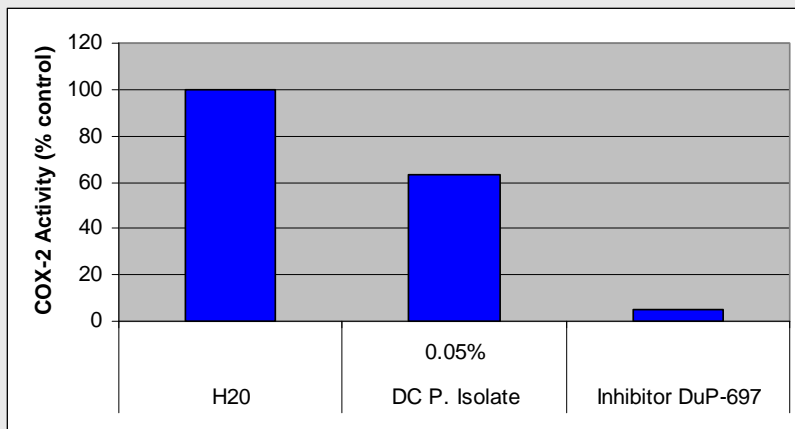


Oxidative stress is the key event in the pathophysiology of aging and photo-aging. DC Provesselin Isolate has excellent antioxidant activity, as measured by Oxygen Radical Absorbance Capacity (ORAC) test. It features 64 umoles Trolox Equivalent/g, which means that every gram of DC Provesselin Isolate has antioxidant activity comparable to 64 umoles of Trolox - the water-soluble form of tocopherol (vitamin E). This is roughly twice of the antioxidant activity of pomegranates and 3 times the antioxidant activity of blueberries.



DC Provesselin Isolate partially inhibits activity of Glucose Oxidase (in vitro). Inhibiting GOx can be useful for reducing formation of peroxide free radicals.

## Reducing inflammation via inhibition of COX-2 activity



Cyclooxygenase-2 (COX-2) is a pro-inflammatory enzyme, whose increased activity may compromise health and integrity of the skin. Materials inhibiting COX-2 may have beneficial effect on skin homeostasis.

DC Provesselin Isolate demonstrates potential for inhibition COX-2 enzyme activity and conditioning inflamed skin.