

Co-developed with the China National Engineering Research Center for Functional Food, Innovation Center on Probiotics Science and Technology of Jiangnan University  
—A team led by academican of the Chinese Academy of Engineering

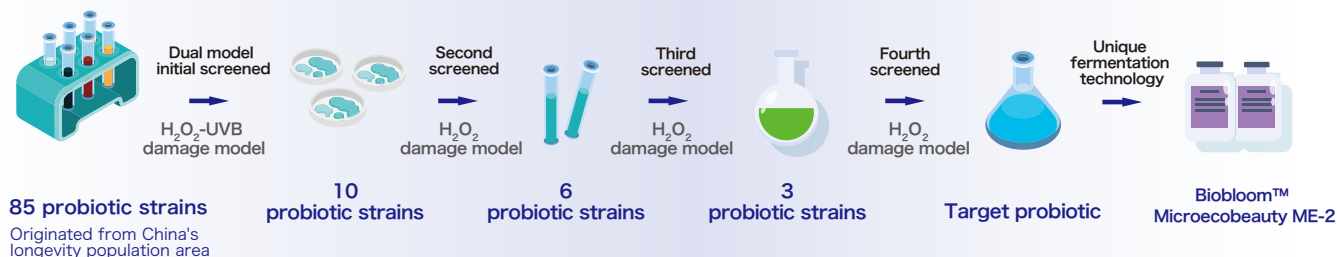
# Biobloom™ Microecobeauty ME-2

「Antioxidant power derived from probiotics」

- ◎ Screened from 85 probiotic strains
- ◎ Significantly increase the secretion of Nrf2 and activate the antioxidant pathway
- ◎ Enhance cell antioxidant capacity, reduce oxidative damage
- ◎ Reduce pigment deposition, tighten and brighten skin

Biobloom™ Microecobeauty ME-2 is jointly developed by Bloomage Biotech and the China National Engineering Research Center for Functional Food, Innovation Center on Probiotics Science and Technology of Jiangnan University — A team led by academican of the Chinese Academy of Engineering. ME-2 is based on the probiotic strain library of the Innovation Center Probiotic Science and Technology to obtain the strongest anti-oxidant *Lactobacillus paracasei*, and then used *Lactobacillus paracasei* as the fermentation strain based on Bloomage Biotech's probiotic fermentation technology platform to produce.

## Screened from 85 probiotic strains

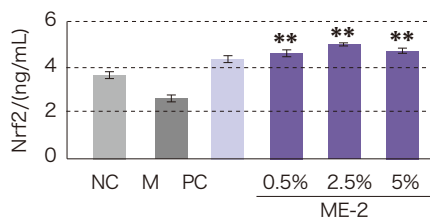


## Significantly increase the secretion of Nrf2 and activate the antioxidant pathway (in-vitro)

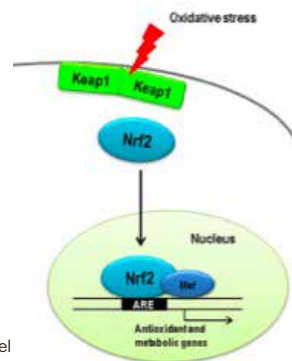
Nrf2 (Nuclear factor erythroid 2-related factor2) is an important transcription factor regulating redox balance in cells. Nrf2 can activate the expression of downstream phase II metabolic enzymes, antioxidant proteins/enzymes, proteasome/molecular chaperones, anti-inflammatory factors and phase III metabolic enzymes.

The expression of these target proteins regulates the oxidation-reduction balance in the body, so that the body can recover from an oxidative stress state to a normal physiological state.

After oxidative damage with H<sub>2</sub>O<sub>2</sub>, ME-2 treatment was used. The results showed that compared with the model group, the amount of Nrf2 secretion in the 0.5%, 2.5%, and 5% ME-2 groups increased by 61.84%, 77.93% and 64.83%, respectively.



\*\* P<0.01 PC: 25ppmVC HaCaTcell-H<sub>2</sub>O<sub>2</sub> damage model

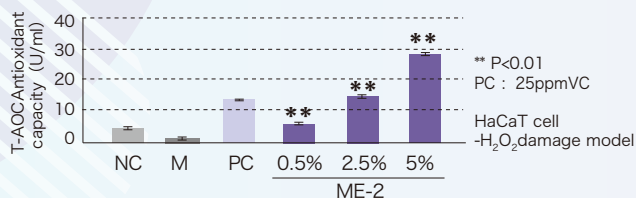


Nrf2 action diagram

## Enhance cell antioxidant capacity, reduce oxidative damage(*in-vitro*)

### T-AOC (Total Antioxidant) Capacity

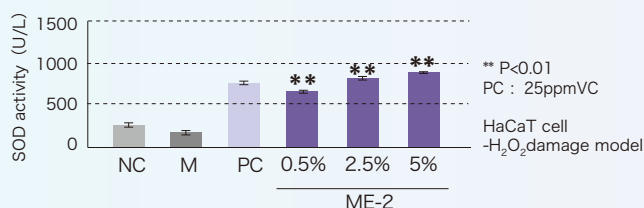
T-AOC detection is usually carried out by ABTS method. Because it is not easily interfered by external factors, the ABTS method can more accurately reflect the antioxidant activity of the sample. After oxidative damage with  $H_2O_2$ , ME-2 treatment was used. The results showed that compared with the model group, the T-AOC capacity of the 0.5%, 2.5%, and 5% ME-2 groups increased by 3.9 times, 11.7 times and 22 times, respectively.



### SOD activity

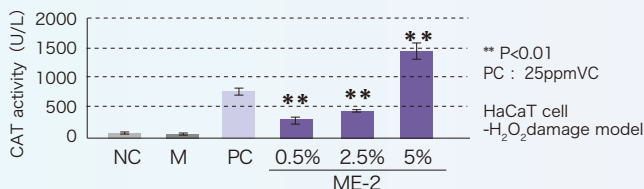
Superoxide dismutase (SOD) is an important antioxidant enzyme in organisms, and is the primary substance to remove ROS. SOD activity can directly reflect the antioxidant activity.

After oxidative damage with  $H_2O_2$ , ME-2 treatment was used. The results showed that compared with the model group, the SOD activity of the 0.5%, 2.5%, and 5% ME-2 groups increased by 3.2 times, 4.3 times and 4.8 times, respectively.



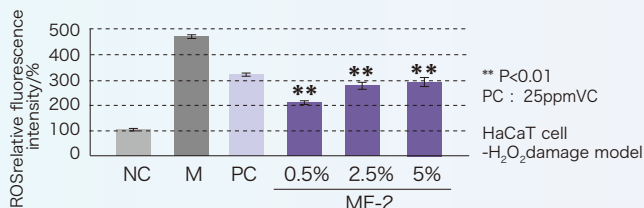
### CAT activity

Catalase (CAT) is responsible for decomposing  $H_2O_2$ , which is highly diffusive and has oxidative toxicity to cells. After oxidative damage with  $H_2O_2$ , ME-2 treatment was performed. The results showed that compared with the model group, the CAT activity of the 0.5%, 2.5%, and 5% ME-2 groups increased by 7.3 times, 10.2 times and 33 times, respectively.



### Reduce the ROS

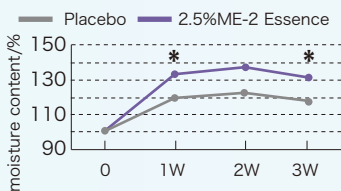
After oxidative damage with  $H_2O_2$ , cells secreted a large amount of ROS, and after ME-2 treatment, the ROS relative fluorescence intensity of 0.5%, 2.5% and 5% ME-2 groups decreased by 54.9%, 41.1% and 37.8%, respectively, compared with the model group.



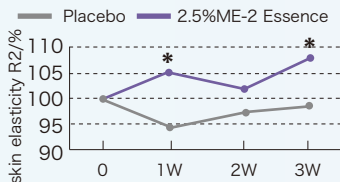
## Reduce pigment deposition, tighten and brighten skin (*in-vivo*)

Using a half-face, double-blind, randomized human body test, after using the essence containing 2.5% ME-2 every morning and evening for 3 weeks, it was found that compared with the placebo group, the skin moisture content of the 2.5% ME-2 essence group was significantly increased by 14%. Elasticity increased by 10% and brown spot area decreased by 12%. Therefore, ME-2 can reduce pigmentation, tighten and brighten, and improve skin condition.

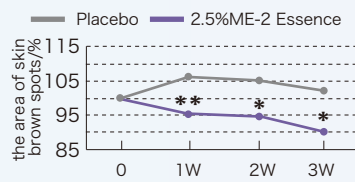
### skin moisture content + 14%



### skin elasticity+10%



### the area of brown spots-12%



\* P<0.05  
\*\* P<0.01

in-vivo test, Half-face control, Double-blind test.

## Instruction

[INCI names] LACTOBACILLUS FERMENT, PENTYLENE GLYCOL

[Recommended Dosage] 0.5%-5%

[Application] Anti-oxidation, anti-aging and other skin care or makeup products



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CREATIVE TECHNOLOGY FOR VIBRANT LIFE

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