

# **AMELIORATIVE EFFECT OF FERMENTED CABAGGE EXTRACT ON WOUND HEALING AND CONTACT DERMATITIS**



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### **Materials and Methods**

Wound healing and contact dermatitis are associated with the disruption of mechanical homeostasis and inflammation in skin. Nitric oxide (NO), have been known to play important functional roles in various organ systems by regulating homeostasis and pathogenesis of inflammation. Natural NO is produced by plant fermentation in HumanEnos located in South Korea. It can be used to treat wound healing and contact dermatitis without side effects.





Fig 2. Wound healing effect in vivo. The wound appearance observed at designed time points. WHD; Wound + DW, WHN; Wound + Nitrite [1mM], WHP; Wound +cabbage-fermented extract.

Fig 3. The wound size post-wounding. The fermented extract significantly cabbage contributed to the wound healing compared with the control group. WHD; Wound + DW, WHN; Wound + Nitrite [1mM], WHP; Wound +cabbagefermented extract. Values are Mean±SD \* P < 0.05 with respect to WHD group.

### 3. Effect of natural NO metabolites on contact dermatitis





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Ear



500 µm



Fig. 4. Balb/c mice developed chronic skin inflammation

and the healing activity of cabbage-fermented extracts. CON; DW + DW, DNFB; 0.3% DNFB + DW, YFH; 0.3%

DNFB + cabbage-fermented extract 10,000 ppm and YFL;

0.3% DNFB + cabbage-fermented extract 1,000 ppm.

NO NO monitoring t monitoring Natural NO Natural NO



## Conclusions

These results demonstrated that CFE-NO has the ability to heal wounds and to treat contact dermatitis. Therefore, natural NO could potentially be used as functional food or pharmaceutical for the treatment of skin diseases.

### References

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Fig 5. Interferon y level of DNFB-induced **Balb/c mice.** The level of IFN-γ was significantly decreased when the cabbage fermented extract was treated to the ear compared to control group. CON; DW + DW, DNFB; 0.3% DNFB + DW, YFH; 0.3% DNFB + cabbage-fermented extract 10,000 ppm and YFL; 0.3% DNFB + cabbage-fermented extract 1,000 ppm.

Fig 6. Ear thickness levels of cabbage fermented extract. The cabbage fermented extract significantly contributed to the ear thickness.

7. Histochemical analysis of Fig skin epidermis by cabbage-fermented extract. CON; DW + DW, DNFB; 0.3% DNFB + DW, YFH; 0.3% DNFB + cabbage-fermented extract 10,000 ppm and YFL; 0.3% DNFB + cabbagefermented extract 1,000 ppm.

