

Thesis Title	<i>Cordyceps militaris</i> Extract Induces Proliferation, Migration and Expression of Growth Factors in Human Dermal Fibroblast Cells for Enhanced Wound Healing
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ABSTRACT

Angiogenesis plays a crucial role in wound healing by facilitating the delivery of oxygen and nutrients, which are required for cell proliferation and tissue regeneration. *Cordyceps militaris* extract (CME) has found extensive use in both traditional and contemporary medicine due to its diverse therapeutic compounds. However, the specific impact of CME, which contains adenosine and a high amount of cordycepin, on promoting the proliferation of neonatal human dermal fibroblast cells (HDFn) and wound healing has not been clarified. Herein, we first optimize the concentration of CME commercial adenosine, commercial cordycepin and mixture of adenosine and cordycepin (ratio 1:5) which could be used to treat HDFn without toxicity. Then, investigated the effect of CME on HDFn since the cells secrete pro-angiogenic factors related to cell proliferation, migration and angiogenesis that affect healing process. Concentration of CME at 0.156 and 0.313 μ M significantly increased ($p < 0.001$) HDFn proliferation around 60% compared to untreated. Furthermore, CME also had migration capacity treatment and upregulated the expression of FGF-2 and VEGF-A which are pro-angiogenic factors in HDFn. Our research indicates that CME

shows potential as a therapeutic agent for wound healing and angiogenesis. Its capacity to boost cell proliferation and facilitate vascular development positions it as a valuable candidate for medical use.

Keywords: *Cordyceps militaris*, Adenosine, Cordycepin, Fibroblast Growth Factor-2, Vascular Endothelial Growth Factor-A

