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EDIBLE BIRD'S NEST EXTRACTS USE IN REGENERATIVE MEDICINE

Chua Kien Hui*

Physiology Department, Tissue Engineering Center, Faculty of Medicine, Universiti Kebangsaan Malaysia

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*Corresponding author :
Chua Kien Hui
Email:
ckienhui@ppukm.ukm.edu.my

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SUMMARY

Edible bird's nest (EBN) has long been use for wellness, youthfulness and in some medical problems such as long cough, asthma and weak in immune system. Our group has started to investigate the active compounds in EBN that delivered its medical benefits since year 2003. Indeed, the use of EBN extract in regenerative medicine even more appropriate since the targeted functions of EBN extract are rejuvenation and repair. The nature of the active compounds in EBN is glycopeptide or glycoprotein. These active compounds can be extracted while various technique, including hot water extraction and enzymatic digestion. Molecular weight fragmentation showed the crude extract consisted of many products, each we believe has different properties and benefits. Exposure of EBN extract with human skin cells, resulted increase in proliferation, enhance skin matrix production and reduce the MMP1 proteinase expression. In knee chondrocytes, EBN extract reduce the interleukin alpha 1 induction of inflammation and promote the chondrogenic activity of the chondrocytes. EBN also showed benefit in corneal wound healing model, as well reduce the toxicity of chlorhexidine on corneal cells in keratitis acanthamoeba treatment. Recently, we tested the effects of EBN extract on human adipose-derived stem cells. The results demonstrated mitogenic activity and promote the regenerative ability of human adult stem cells. With all these cellular based data, the use of EBN extract in regenerative medicine is encouraging. However, many more research is still needed to determine the use of EBN extract in vivo as pharmaceutical compound.