

DISSECTING THE ROLE OF PHYTOESTROGENS IN SKIN WOUND HEALING

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Phytoestrogens are chemical compounds derived from natural sources that resemble the structure of estrogen in human. Phytoestrogens are abundantly present in food such as fruits, vegetables and legumes. Some phytoestrogens may also exhibit mammalian estrogenic function other than mimicking the estrogen structurally. On the basis of their molecular structure, phytoestrogens can be classified into different groups such as flavonoid and polyphenol. Phytoestrogens are widely researched for their biological effects as anti-oxidant, anti-inflammatory and anti-bacterial agents. In previous studies, estrogen has been shown to accelerate wound healing in postmenopausal women. However, there is meagre understanding on phytoestrogens effect in wound repair. Hence our aim is to explore in depth the potential of phytoestrogens, which are commonly found in foods in the amelioration of skin injury. This study is carried out with a combination of *in vitro* and mouse model approach. Five flavonoids; apigenin, luteolin, chrysin, quercetin and kaempferol, which are known as phytoestrogens are investigated for their wound healing potential in scratch assay. Three of the flavonoids are found to induce migration of human dermal fibroblasts comparable to estrogen. When wounded mice model are treated with these flavonoids, chrysin treatment shows a significant healing result compared to other flavonoids. This finding suggests chrysin as a potential bioactive agent for wound repair and hence consumption of chrysin-rich food may promote healing of chronic wound especially in elderly women or people with low level of endogenous estrogen.

Biography

Nurhuda is currently a full time PhD student at University of Manchester, UK. Her current research focus is on understanding the effects of mutations in protein on cell motility and organism development. As a part of her PhD study, she is also exploring potential compounds that may have effect on cell motility specifically in wound healing. She has graduated her Degree in Biochemistry from University of Malaya, Malaysia. She furthered her study at the same university with a research to identify bioactive peptides from a well-known medicinal mushroom, *Ganoderma lucidum*. By integrating proteomic approach, she had identified peptides with anti-hypertensive effect that could be potentially developed for hypertension treatment. Her work has been published in journals and she is a Member of British Society for Cell Biology.

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