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Title: Beneficial effects of polysaccharides extracted from local Basella spp. promotion of wound-healing

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Basella spp., also known as Malabar spinach, Creeping spinach, or Buffalo spinach, is a perennial vine in the family Basellaceae. The leaves, stems, and young shoots with buds of Basella spp. have been consumed as vegetables on the dining tables; more importantly, these plants have also been exploited for their unique properties in traditional Chinese and Indian medicine to treat constipation and used as an anti-inflammatory reagent. First, we detected 91-96% polysaccharide contents in our leave extracts from Basella alba. The average molecular weight is 35-38 kD. Secondly, we found that preconditioning of macrophage cells with Basella alba polysaccharides for 24 h followed by LPS for additional 6-24 h significantly reduced LPS induced NO production and IL-6 secretion. Finally, we found that Basella alba polysaccharides significantly enhanced the migration capability of skin fibroblast cells. In the full-thickness lesion model for wound-healing assay, a piece of rat skin was surgically removed followed by topical application of Basella alba polysaccharides. Results indicate that polysaccharide extracts significantly reduced the sizes of the wounds; furthermore, Masson trichrome staining revealed regular patterns of collagen fibrils in the polysaccharide group. Thus, Basella alba polysaccharides can promote wound-healing with reduced lesion sizes and enhanced regular patterns of collagen fibrils. In summary, the above results reveal the therapeutic potential of Basella alba L. in anti-inflammation and promotion of wound-healing.

Biography

Tz-Chuen Ju is an an Assistant Professor in the Department of Nursing at Catholic St. Mary's Junior College of Medicine, teaching Physiology, Physiological experiments and Anatomy courses. Doing PhD studies at Institute of Neuroscience, National Yang-Ming University, Taiwan. Postdoctoral Research Associate in Lab. for Cell and Molecular Biology, Institute of Biomedical Sciences, Academia Sinica, Taiwan.

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