Acellular Treatment from Clarias sp. Collagen for Skin Loss

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Malaysia catfish known as ‘ikan keli’ is well known for its high yield of collagen and its low commercial value compared to other cultural freshwater fish. This Clarias sp. catfish is a good source of collagen and protein. Thus, making this freshwater fish as our first choice to be combined with polymer that will be used in wound healing and burn treatment in the future. This project aims at introducing a new method of treatment that will benefit the community, not only with its effectiveness but also its low cost treatment. Therefore, this study will focus on preparation and characterization of Clarias sp. collagen film blend with PVA/Starch to promote cell migration and proliferation which later lead to the formation of newly regenerated skin tissues. The catfish was cut into small pieces, treated with NaCl of 1: 6 (Weight/Volume), NaOH of 1:10 (weight/volume) for 3 days and lastly the collagen was extracted using acetic acid and coagulated by NaCl. The acid soluble collagen was dialyzed using dialysis membrane for 2 days to get neutral collagen before added to PVA/Starch Hydrogel at ratio 2:1, molded into thin films and allowed to cool for 24 hours. A few test were conducted to evaluate the biocompatibility of the collagen film, have shown that the collagen film from Clarias sp. collagen and PVA/starch film does promote the growth, viability and proliferation of the HDF (human dermal fibroblast) cells. The collagen film also shows hydrophillic properties that support the adhesion and interaction of human cells on the collagen film. The physical and mechanical test that were conducted on the collagen film revealed that the collagen film have excellent properties to act as a wound and burn cover for skin loss in this acellular treatment.

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