Creating Cellulose as a Potential Xenographic Substitutes for Skin Grafting

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Our project investigates one method of decellularization, and it’s effectiveness on spinach leaves. We aim to strip spinach leaves of their DNA, and leave only the extracellular matrix (EMC) of those leaves. Decellularization is becoming a popularly researched topic, as scientists are investigating how this process can be used for organ transplantation or possibly developing new organs. This is because new DNA can be introduced to the EMC, and the tissue will not be rejected by the body as it otherwise would have been. The need for organ and tissue donors exceeds the availability, and by using foreign biomaterials that are not rejected by the body, more organ transplants can be available. In our project we are testing the effectiveness of three different solutions by perfusing a group of spinach samples with different solutions. After five days, the leaves will be perfused with non-ionized water for two more days. We will be recording how much chloroplasts and DNA remains after the processes are done by a visual comparison as well as counting the chloroplasts visible under a microscope, thus displaying the effectiveness of each method.

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