

## **Effects of Varying Growth Mediums on Cell Proliferation**

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The purpose of our project is to determine the best growth medium for primary cell lines. Skin grafting has become a major breakthrough in the treatment of skin injuries and has many clinical applications. In skin grafting, a sample of epidermal cells are taken and allowed to proliferate in a growth medium until it is ready to be transplanted onto patients. Non-tumorous cells are difficult to cultivate in laboratories because they only proliferate for a few generations. In order to greatly benefit patients with skin injuries, cell samples need to be grown in the most ideal environment.

Through this experiment, we hope to not only advance the technology behind these medical procedures, but to also expand on what is already known about growth mediums. We tested the viabilities of different growth mediums for primary cell proliferation. Growth mediums used for animal cell culture include hormones, amino acids and/or growth factors. With animal cells, the addition of serum is often added to synthetically mimic blood. Dulbecco's Modified Eagle Medium; Molecular, Cellular, and Developmental Biology 153; and ATCC Dermal Cell Basal Medium were all used to grow Primary Epidermal Keratinocytes, and it was determined that serum-free MCDB 153 created the most successful proliferation, both in speed and success of growth.