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Time course morphologic and gene expression characterization of direct reprogrammed human fibroblasts along nerve-like lineages *in vitro*

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Many ethical, immunologic, and tumorigenic concerns surround the reprogramming of induced pluripotent stem cells and human embryonic stem cells into normal mature cell lines that might have regenerative medicine applications. Because of these concerns, the idea of developing methods that will start with normal human fibroblast cultures, taken from any individual at any age, and directly reprogramming them to various mature differentiated cells, has a great deal of appeal. We have developed a method that begins with normal fibroblasts obtained from a cell bank and takes cells down a nerve-like pathway. After initial culture, fibroblasts are grown in supplemented media to enhance the number of CD117 positive cells capable of multipotent growth. Subsequently, the cells are grown in media that are designed to promote nerve-like differentiation. In our experiments, cells develop nerve-like morphology and immunologic markers *in vitro*. In addition to demonstrating nerve-like cell structure, we conducted a time course analysis of the transcriptome of the maturing cells using next generation RNA-sequence technology. Analysis of the gene expression profile of these cells as they progress down this *in vitro* nerve-like pathway is currently underway. Meanwhile, preliminary attention has been given to the cellular expression of genes known in the literature to be important in nerve-like differentiation. Some of the key findings of these morphologic and gene expression experiments are presented.

Biography

Chelsea Agbay is Member of Chemistry Honor society and she completed her Master degree in saint peter University at USA, she is very much interested in Tissue culture and *Invitro* preservation and she published nearly many articles in Google scholars and Many Journals

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