Stable Differentiation of NT2 Cells

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Technology description

USF researchers have developed a method for the differentiation of teratocarcinoma Ntera2/D1 (NT2) cells into neuronal cells. Laboratory results have shown that when differentiated, these novel neurons will exhibit a stable neuronal phenotype for longer than 30 days in culture or 30 days in vivo. This is longer than many of the current methods. Furthermore, this method does not utilize retinoic acid, which is commonly used in differentiation efforts but may be difficult to completely remove during commercial production. This invention has direct applications in medicine as it provides a method for use in cell replacement therapy for neurodegenerative disease, stroke and spinal cord injury. Further, at least four different types of neurons can be produced with this method: dopaminergic, cholinergic, GABAergic and glutaminergic. Also, since the cells are a cancer stem cell prior to differentiation, they may serve as a model system for developing anti-cancer therapies.

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