

# STRONG CHILDREN'S RESEARCH CENTER

## Summer 2018 Research Scholar

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### ABSTRACT

Title: Response of pediatric lung mesenchymal stromal cells (MSCs) to Wnt pathway agonists and antagonists

Background: The Wnt pathway is crucial in development and repair throughout the human body. Previously, activation of this pathway has been thought to lead to an increase in cellular proliferation. However, recent evidence has found Wnt pathway activation may lead to decreased proliferation and increased differentiation in Mesenchymal Stromal Cells (MSCs). MSCs have recently become the focus of several clinical trials due to their immune modulation role and role in fibrosis, especially in Bronchopulmonary Dysplasia, a fibrotic chronic lung disease of premature infants. The actions of Wnt pathway activation have yet to be fully understood in human MSCs, especially in the lung.

Objective: The present study aims to describe the actions of Wnt pathway agonists and antagonists in pediatric lung MSCs by adding four different doses of lithium chloride (LiCl; a known Wnt agonist), Secreted Frizzled Related Protein 1 (SFRP1; a known Wnt antagonist), and