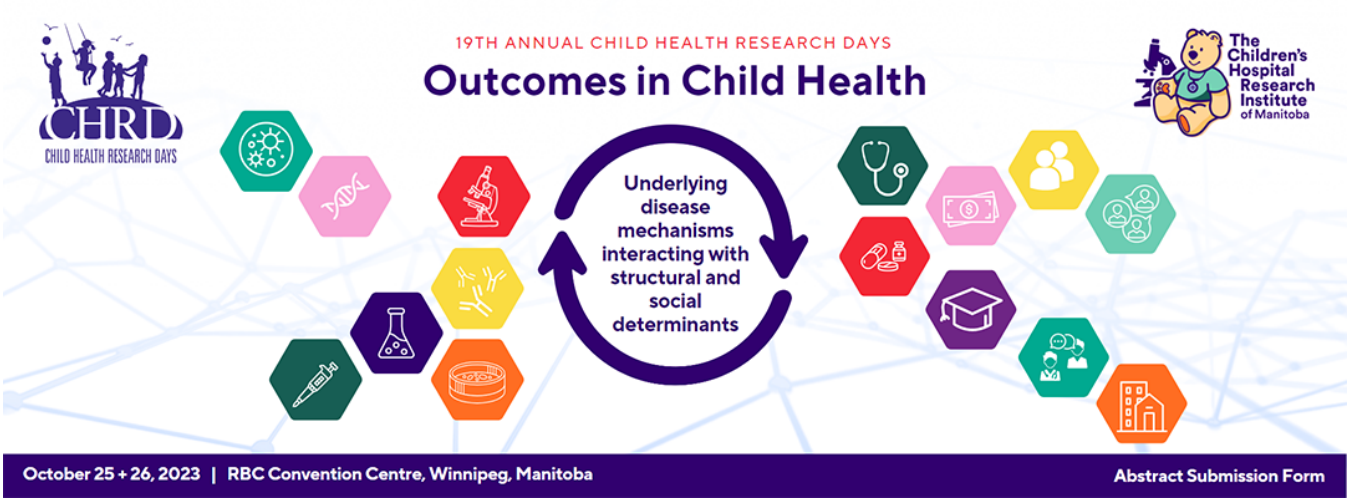

CHRD 2023: Abstract Submission Form

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Presenter Status
Post-Doctoral Fellows

Research Category
Basic Science

Role in the project
Design
Perform Experiments
Analyze Data
Write Abstract

Title
CITED2 ACTS AS A MEDIATOR IN ABNORMAL LUNG DEVELOPMENT IN THE NITROFEN RAT MODEL

Background
Cited2 both modulates lung development and is highly expressed in the septum transversum during diaphragm morphogenesis. The role of Cited2 in the pathogenesis of congenital diaphragmatic hernia (CDH) is unknown.

Objective
We aimed to study Cited2 during abnormal lung development in the nitrofen-model of CDH.

Methods
Timed-pregnant rats were given nitrofen on day 9 to induce CDH, and fetuses were harvested on embryonic day 15, 18 and 21. We collected fetal lungs and performed RT-qPCR (E15, E18 and E21), RNAscopeTM in situ hybridization (E15, E18 and E21) and immunofluorescence (E18 and E21) for Cited2. Statistical analysis was performed using student t-test with significance set at $p < 0.05$.

Results
We observed no difference in RT-qPCR (control: 1.09 ±0.22 and nitrofen: 0.95 ±0.18, p=0.64) and RNAscopeTM in situ hybridization (control: 1.03 ±0.03 and nitrofen: 1.04 ±0.03, p=0.97) Cited2 expression in E15 nitrofen-treated and control pups. Cited2 expression was reduced in RNAscopeTM in situ hybridization of nitrofen-induced pups at E18 (control: 1.47 ±0.05 and nitrofen: 1.14 ±0.07, p=0.0006) but

not different in RT-qPCR (control: 1.04 ±0.16 and nitrofen: 0.81 ±0.13, p=0.33). Cited2 expression was increased in E21 nitrofen lungs in RT-qPCR (control: 1.04 ±0.11 and nitrofen: 1.52 ±0.17, p=0.03) and in situ hybridization. Cited2 protein abundance was higher in immunofluorescence staining of E21 nitrofen lungs.

Conclusion
Our data suggest that dysregulation of Cited2 contributes to abnormal lung development of CDH, as demonstrated by the distinct spatial-temporal distribution in the nitrofen-induced CDH lungs.

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