STRONG CHILDREN'S RESEARCH CENTER

Summer 2018 Research Scholar

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ABSTRACT

Title: **Development of a Murine HE4 Knockout Model**

Background: Human epididymis protein 4 (HE4), a protein encoded by the WFDC2 gene, is known to be elevated in ovarian cancer patients. Serum HE4 level is utilized as a bio-marker for ovarian cancer, however its exact function in both cancer and normal biology is unknown. To further our understanding of HE4's biologic function, we have worked to generate a murine knockout model of WFDC2.

Objective: WFDC2 was floxed with both a 3' and 5' loxp region. Floxed homozygotes were developed and subsequently bred with CMV-Cre mice. This enabled the generation of heterozygous germline HE4 knockout mice (WFDC2+/-). WFDC2 knockout heterozygotes were then bred together, in an attempt to generate animals that were homozygous for the HE4 deletion.

Results: No homozygous knockouts have been achieved thus far. Several heterozygous knockouts along with wild type (WFDC2 present on both alleles) were present. Additionally, Mice were absent for LoxP which suggests that Cre had functioned as it was supposed to, this suggests that knockout of He4 was embryonically lethal to the pups

Conclusion: HE4 appears to be essential for mouse embryo development, but it is unclear at which stage of development it plays a role. We will investigate this further by analyzing murine fetuses at different gestational ages to determine the exact timing of embryonic lethality