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Construction of a knockout targeting vector to generate an Interleukin-13 Receptor α1 deficient Balb/c mouse

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A recent publication from our lab has provided evidence for the involvement of the α1 chain of the Interleukin-13 cytokine receptor (IL-13Rα1) in the development of the neonatal immune system. Specifically, we have shown that cell death of T helper type 1 (Th1) effector cells can be prevented by antibody-mediated blockade of IL-13Rα1. Currently, a knockout mouse deficient in expression of IL-13Rα1 is not available and the development of an IL-13Rα1 knockout mouse will provide new insights on the relationship between IL-13Rα1 signaling and neonatal immunity. In this effort we have begun construction of a targeting vector that will bear sufficient homology to the IL-13Rα1 wild-type locus to allow for deletion of exons 7, 8, and 9 via homologous recombination, thereby rendering that allele non-functional. After construction of the targeting vector, a collaborative effort between the Transgenic Animal Core facility here at the University of Missouri will continue throughout the remainder of the cell culture, embryonic manipulation, and screening processes.