Knock-Out Core - Gene-Targeted Mouse Core

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Several animal models exist to study the role of synaptic receptors in stress and anxiety associated with alcohol abuse. These models will be used by the investigators of this Integrated Neuroscience Initiative on Alcoholism (INIA). Other animal models of interest to INIA investigators do not exist and need to be created. For instance, NR2B knockout mice die shortly after birth due to deficiency in suckling behavior. To bypass this early developmental hurdle, we created an inducible NR2B knockout mouse. This mouse, which exhibit a specific pattern of NR2B deletion in forebrain, is now under investigation by several components of the Initiative. The goals of the Gene-Targeted Mouse Core are to 1) create new animal models using the cre-lox system to allow for inducibility (and some tissue-specificity) of gene deletion and provide simple crossing and PCR genotyping protocols; 2) create straight knockout mice from existing ES cell lines and 3) maintain and distribute among INIA investigators breeding pairs of each line. The Core takes advantage of a successful collaboration between the Delpire lab, which has generated several models of cation-chloride cotransporter knockouts and several inducible knockouts, and the existing Vanderbilt University Ingram Cancer Center Transgenic/ES cell Core, which has extensive experience in all aspects of gene targeting and manipulation of mouse embryos. These new mouse line will not only be of use to INIA investigators, but will also be of interest to the broader Neuroscience research community.