Public Abstract

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Title:Impaired spatial learning and increased locomotor activity in TgCRND8 mice as a model of Alzheimer's diease

This study provides a behavioral characterization of the TgCRND8 mouse strain, a transgenic model of Alzheimer's disease (AD). While past research focused mainly on 2-5 month-old TgCRND8 mice, this study examined older (8-9 months old), as well as younger (4-months old) female Tg mice compared to controls. Performance was assessed using three behavioral measures: touch escape, the Barnes maze, and an open-field test. These tasks measure irritability, spatial learning, and general activity, respectively. No differences in irritability were found between Tg and control mice in the younger cohort; however, older Tg mice displayed significantly higher irritability compared to controls, as measured by the touch escape test. Both younger and older transgenic mice displayed poor spatial learning in the Barnes maze task compared to controls, as shown by longer escape latencies and more errors both during acquisition and at 2-week retest. Additionally, both younger and older Tg mice were hyperactive compared to controls, as measured by the open-field test. This research contributes to a better understanding of the cognitive and non-cognitive deficits associated with the progression of AD, in hopes of developing treatments which may ameliorate cognitive and noncognitive symptoms associated with early and later stages of the disease. Treatments that may potentially improve a wide range of AD symptoms can be examined for efficacy using these behavior measures (among others).