Abstract

Neurosci Res. 2006 Apr;54(4):254-60.

Behavioural anomalies in mice evoked by "Tokyo" disruption of the Vitamin D receptor gene.

Kalueff AV, Keisala T, Minasyan A, Kuuslahti M, Miettinen S, Tuohimaa P.

Medical School, University of Tampere, Finland.

BACKGROUND: Vitamin D is a steroid hormone with many important functions in the brain, mediated through the nuclear Vitamin D receptor (VDR). Mounting clinical data link VDR mutations to various psychiatric phenotypes.

OBJECTIVE: We have reported previously that mutant mice lacking functional VDR ("Tokyo" VDR mutant mice) display several behavioural anomalies, including high anxiety and aberrant grooming. Given the important role of Vitamin D and VDR in brain development and functioning, we hypothesized that several other important behavioural domains may be affected by disruption of the VDR gene in mice.

RESULTS: Here we report that VDR mutants display unaffected depressive-like behaviour, but show abnormal social behaviours, reduced social barbering and aggressiveness, impaired nest building and aberrant maternal (pup neglect, cannibalism) behaviours.

CONCLUSION: Taken together, these findings confirm the important role postulated for the VDR in the regulation of behaviour, and suggest the mice lacking functional VDR may be a useful tool to model different brain disorders.

PMID: 16427152