15th International Congress for Stereology and Image Analysis
Aarhus University, 27–30 May, 2019

Abstract

Abdel-Rahman Al-Absi (Aarhus University; CSGB)

GABA(A) receptor α3 subunit deficit in the prefrontal cortex of Df(h22q11)/+ genetic mouse model of schizophrenia

Joint with Per Qvist, Simon Glerup, Connie Sanchez and Jens R Nyengaard

Background: Schizophrenia is a highly heritable neuropsychiatric disorder that disturbs patient's thoughts, feelings and behavior, resulting in a 2–3 fold increase in their mortality rate. Although the etiology is poorly understood, emerging candidate risk genes for schizophrenia, along with clinical findings, implicate various aspects of GABAergic neurotransmission with the cognitive symptoms of schizophrenia.

Methods: Through behavioral, molecular, biochemical, and brain morphometric characterization of a new genetic mouse model of schizophrenia Df(h22q11)/+ which mimics the 22q11.2 human microdeletion syndrome, we investigate dysfunctions in the cortical GABAergic system with potential translational relevance to schizophrenia.

Results: Df(h22q11)/+ shows a decrease at both mRNA and protein levels of GABA(A) α3 receptor subunit in the prefrontal cortex (PFC). This decrease is accompanied with deficits in both sensory motor gating and visuospatial memory.

Conclusion: Further investigations are necessary to explore the impact of the GABA(A) α3 on both the inhibitory and the excitatory circuits in PFC of Df(h22q11)/+ mice.