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“Laser Microdissection and
Parkinson Disease:
Quantitative gene expression analysis of
individual human dopaminergic neurons
from post-mortem midbrain tissue”

4 June 2013, 11:00 (s.t.)

Venue: IMB Seminar Room 2nd floor

Institute of Molecular Biology (IMB)

Johannes Gutenberg University Campus Mainz

All are welcome to attend

Abstract

“Laser Microdissection and Parkinson Disease: Quantitative gene expression analysis of individual human dopaminergic neurons from post-mortem midbrain tissue”

A Hallmark of Parkinson's disease (PD) is the progressive loss of dopamine (DA) midbrain neurons in particular within the substantia nigra (SN). Causal gene mutations and transcriptional dysregulation in sporadic and familial forms of PD have been identified. Cell specificity of gene expression analysis is essential to avoid tissue sample related artifacts, in particular when the relative number of target cells present in the compared tissues varies. Here, we describe a detailed protocol for RNA and miRNA analysis which combines contact- and contamination-free laser microdissection and quantitative PCR of individual dopaminergic neurons from *post-mortem* human midbrain tissue from PD patients and unaffected matched controls. Our results indicate a concerted upregulation of mRNAs of dopamine homeostasis and PARK genes but not miR-133b in dopamine midbrain neurons in Parkinson's disease.