



Andre Fischer

# EPINEURODEVO

## Patient-centered Targeting of Epigenetic Vulnerabilities in Neurodevelopmental Disorders: A Cross-disciplinary Platform for Druggable Disease Models

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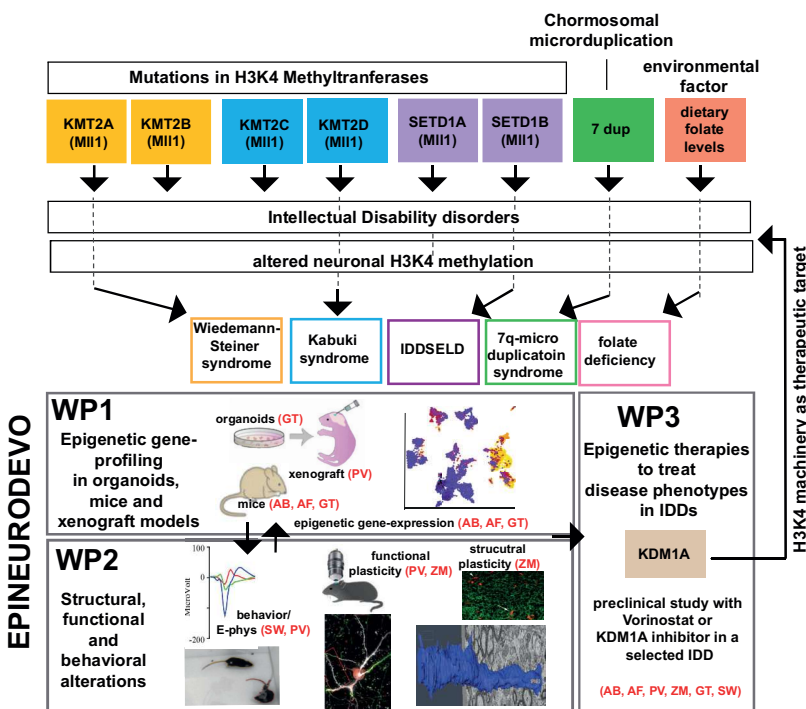


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Intellectual disability disorders (IDDs) are a group of devastating disorders that lead to learning impairment and behavior defects in young children. They are mainly caused by mutations in single genes. Many of these genes encode for proteins that control the process of epigenetic gene-expression such as the methylation of histone proteins. Of particular importance in this context are the proteins that orchestrate the methylation of histone 3 at lysine residue 4 (H3K4me), since mutation in any of these genes cause IDDs. Our overarching aim is to better understand the de-regulation of H3K4 methylation in IDDs. We will perform a systematic analysis in the

developing and adult brain across the spectrum of IDDs. Here, we build on the unique expertise of our consortium in epigenetics, brain development, neuronal structural and functional plasticity with ample experience in modeling IDDs in mouse models, iPSC derived human brain organoids and xenograft models. Our results will provide a blueprint for translation research in neurodevelopmental diseases. Since we also plan to test therapeutic strategies, our research could have immediate clinical impact.



Initials refer to the partners contributing to the specific work packages