**Progressive Increase of Alzheimer’s Disease Pathology in 5xFAD Transgenic Mice**

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**BACKGROUND**

Today, Alzheimer’s disease (AD) is one of the most devastating neurodegenerative diseases worldwide. Pathologically increased β-amyloid (Aβ) in the brain of AD patients is thought to be one of the main causes for the observed progressive cognitive decline in affected people. The development of new drugs against AD is therefore a main research focus. To be able to test these new drugs, appropriate animal models are needed. 5xFAD mice bear 5 mutations, 3 in the APP695 gene as well as 2 mutations in the presenilin 1 gene. The expression of the 5xFAD transgene is driven by the neuron-specific Thy1 promoter. The 5xFAD transgenic mouse model mimics the most crucial phenotypic pathologies of amyloidogenic neurodegeneration and is therefore among the best transgenic AD animals available.

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**MATERIALS and METHODS**

We analyzed the soluble and insoluble fraction of whole brain lysate from 5xFAD mice over age for aggregated Aβ by A4 assay and for Aβ with Mesoscale Discovery platform. Furthermore Aβ aggregates as well as neuroinflammation, as indicated by astrocystosis and activated microglia, were evaluated by quantification of immunofluorescent labeling.

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**RESULTS**

Our results show an early and progressive increase of Aβ 40 and 42 aggregates as well as neuroinflammation in the cortex and hippocampus of 1 to 9 months old 5xFAD mice.

**Aβ and Aβ aggregates**

**Neuroinflammation**

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**SUMMARY and CONCLUSION**

Our results suggest that 5xFAD mice are not only a well-suited model for AD research but also to analyze AD-related neuroinflammation. Additionally these data give insight into the progression of the most prominent disease hallmarks in 5xFAD mice, providing a good basis for planning possible efficacy studies in those animals.

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For more information about the model please visit: [www.qpsneuro.com](http://www.qpsneuro.com)

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