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NEWSPAPER 2

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News

新しく発表された文献のご紹介

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引用：Acta Neuropathol Commun. 2020 May 12;8(1):67. doi: 10.1186/s40478-020-00936-3.

Behavioral and electrophysiological evidence for a neuroprotective role of aquaporin-4 in the 5xFAD transgenic mice model

Yoichiro Abe , Natsumi Ikegawa, Keitaro Yoshida, Kyosuke Muramatsu, Satoko Hattori, Kenji Kawai, Minetaka Murakami, Takumi Tanaka, Wakami Goda, Motohito Goto, Taichi Yamamoto, Tadafumi Hashimoto, Kaoru Yamada, Terumasa Shibata, Hidemi Misawa, Masaru Mimura, Kenji F. Tanaka, Tsuyoshi Miyakawa, Takeshi Iwatsubo, Jun-ichi Hata, Takako Niikura and Masato Yasui

Abstract

Aquaporin-4 (AQP4) has been suggested to be involved in the pathogenesis of neurodegenerative diseases including Alzheimer's disease (AD), which may be due to the modulation of neuroinflammation or the impairmentof interstitial fluid bulk flow system in the central nervous system. Here, we show an age-dependent impairment ofseveral behavioral outcomes in 5xFAD AQP4 null mice. Twenty-four-hour video recordings and computationalanalyses of their movement revealed that the nighttime motion of AQP4-deficient 5xFAD mice was progressivelyreduced between 20 and 36 weeks of age, with a sharp deterioration occurring between 30 and 32 weeks. This reduction in nighttime motion was accompanied by motor dysfunction and epileptiform neuronal activities,demonstrated by increased abnormal spikes by electroencephalography. In addition, all AQP4-deficient 5xFAD mice exhibited convulsions at least once during the period of the analysis. Interestingly, despite such obvious phenotypes, parenchymal amyloid β (Aβ) deposition, reactive astrocytosis, and activated microgliosis surrounding amyloid plaques were unchanged in the AQP4-deficient 5xFAD mice relative to 5xFAD mice. Taken together, our data indicate that AQP4 deficiency greatly accelerates an age-dependent deterioration of neuronal function in 5xFAD mice associated with epileptiform neuronal activity without significantly altering Aβ deposition or neuroinflammation in this mouse model. We therefore propose that there exists another pathophysiological phase in AD which follows amyloid plaque deposition and neuroinflammation and is sensitive to AQP4 deficiency. Keywords: 5xFAD, Alzheimer's disease, Amyloid β, Aquaporin-4, Epilepsy

分析便利グッズのご紹介

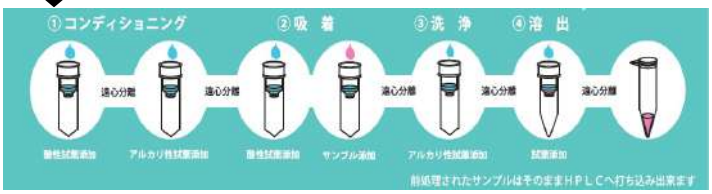
クリーンカラムEG試薬セット

血中、尿中のカテコールアミンの前処理が15min

クリーンカートリッジ

コンディショニング液A＆B＆C

クリーンカラムEGを使うと15min以内で



分析 ちょこっと出し情報

イソフラボン分析

- Daidzein
- Glycitein
- Equol
- Genistein

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