The SV2A protein: imaging synaptic density during the progression of the temporal lobe epilepsy in the kase rat model

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Introduction

EPILEPSY
✓ Affects around 1% population, 25% suffer drug-resistant epilepsy.
✓ SYMPTOMS: Seizures, cognitive impairments, mood disorders.

SV2A PROTEIN
✓ Integral membrane protein, ubiquitously expressed and critical for the CNS functioning.
✓ FUNCTION: Vesicle fusion and Ca²⁺ modulation (Mendoza-Torreblanca et al., 2013)

EPIDEMIOLOGY
✓ Affects around 1% population, 25% suffer drug-resistant epilepsy.

Methods and results

EPILEPTIC MODEL:
KA (SALINE) IP INJECTION (15mg/kg) (Hellier et al., 1998)

[¹⁸F]UCB-H Focus120 micoPET (Siemens)

T2 structural 9.4T/310 ASR (Agilent/Varian)

PET AND IRM ATLAS RAT BRAIN

• The SV2A decrease is present along all the epileptic process, even in early phases of the disease.
• The use of [¹⁸F]UCB-H is suitable to detect and evaluate the epileptic disease, and to develop and evaluate new therapeutic drugs.

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