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Brain Inflammation, Glia and Epilepsy (BrIE)

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Epilepsies comprise a family of neurological disorders affecting about 1% of the population worldwide. Six million European citizens currently suffer from active epilepsy and approximately 30% of these present with seizures that are not treatable by currently available medication. This compromises the quality of life of patients who have to cope with the disease their entire life and generates an enormous economic burden on individuals and public health systems. Several forms of epilepsy are associated with an inflammatory reaction of the cerebral tissue. Recent observations suggest that

this phenomenon is involved in the pathogenesis of epilepsy. BrIE will evaluate the role of brain inflammation in the progression and aggravation of epilepsy. The main focus will be on the role of a cellular component of the brain (glial cells) and that of the biological barrier that separates the brain from the blood stream (the blood-brain barrier). Both of these components are functionally altered during epileptic seizures and throughout the progression of the disease. The study will be conducted by a team of clinicians firmly rooted in epilepsy research and a group of neuroscientists involved in a long-term collaboration focused on the study of glia and epilepsy. Understanding how brain inflammation contributes to the process that aggravates epilepsy will aid in the development of future therapeutic strategies.