



SEMINARIO PRESENCIAL

Martes, 21 de junio de 2022

12:00 h. Instituto Cajal (CSIC) Madrid

DR. TOBIAS ENGLE

UNIVERSITY OF MEDICINE AND HEALTH SCIENCES

Dublin, Ireland

ATPergic signalling in epilepsy: Novel avenues for diagnostics and therapeutics

Abstract

Epilepsy is one of the most common chronic neurological diseases. Major challenges in epilepsy management include the persistent high percentage of drug-refractoriness among patients, the absence of disease-modifying treatments and the shortage of non-invasive diagnostic tools. Over the last few years, the key role played by the purinergic signalling system in mediating the hyperexcitability of neuronal networks has become increasingly clear. While the anticonvulsant function of the nucleoside adenosine via P1 receptors is well established, compelling evidence from both experimental models and patients suggests now also an important role for ATP-gated P2 receptors, in particular for the ionotropic P2X7 receptor. Moreover, in addition to the therapeutic potential of targeting the purinergic system during epilepsy, emerging data now also shows its promise as diagnostic tool. This seminar will present new data on how ATP receptors contribute to seizures and epilepsy and how we can use the purinergic system as novel diagnostic.

Affiliation and short bio

After the completion of his PhD in 2005 investigating Alzheimer's disease in several disease models in the laboratory of Prof Jesus Avila at the CBM (Madrid), Dr Engel took on a post-doctoral research position at the Royal College of Surgeons in Ireland (RCSI) studying molecular pathomechanisms during epileptogenesis. His main research focus for the last 10 years is the study of purinergic signalling (in particular via the ATP-gated P2X7 receptor) during epilepsy and how interference with purinergic ATP-gated signalling in the brain impacts on seizures and the epileptic phenotype. During his career, he has contributed to the field with over 100 publications. He has been the first to show the anticonvulsive and disease-modifying potential of targeting ATP-gated receptors in the brain and to demonstrate the diagnostic potential of purinergic signaling for seizures and epilepsy. During his career he has secured several funding awards including from Science Foundation Ireland, Irish Research Council and H2020 where he was the coordinator of a European-wide doctoral training network ("PurinesDX: Purinergic signaling in brain diseases") comprising over 20 PIs including academics, clinicians and specialists in drug and biomarker development.

Instituto Cajal. CSIC

Avda. Doctor Arce, 37. 28002. Madrid. Tel. 91 585 4750



www.cajal.csic.es