



Centre de Neurosciences Psychiatriques

CNP SEMINARS

ANNOUNCEMENT

Friday, April 8, 2022, 11:00 – 12:00

Astroglial modulation of the antidepressant action of deep brain and bright light stimulation

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Even if major depression is now the most common of psychiatric disorders, successful antidepressant treatments are still difficult to achieve. Therefore, a better understanding of the mechanisms of action of current antidepressant treatments is needed to ultimately identify new targets and enhance beneficial effects.

Given the intimate relationships between astrocytes and neurons at synapses and the ability of astrocytes to "sense" neuronal communication and release gliotransmitters, an attractive hypothesis is emerging stating that the effects of antidepressants on brain function could be, at least in part, modulated by direct influences of astrocytes on neuronal networks.

We will present two preclinical studies revealing a permissive role of glia in the antidepressant response: i) Control of the antidepressant-like effects of rat prefrontal cortex Deep Brain Stimulation (DBS) by astroglia, ii) Modulation of antidepressant efficacy of Bright Light Stimulation (BLS) by lateral habenula astroglia.

Therefore, it is proposed that an unaltered neuronal-glia system constitutes a major prerequisite to optimize antidepressant efficacy of DBS or BLS. Collectively, these results pave also the way to the development of safer and more effective antidepressant strategies.

Invited by Jean-Marie.Petit@chuv.ch

Selected recent publications:

-Delcourte S, Etievant A, Rovera R, Mor D, Cooper HM, Le HD, Williams AE, Panda S, Azmani R, Raineteau O, Coutanson C, Dkhissi-Benyahya O, Haddjeri N (2020): *Astroglia in lateral habenula is essential for antidepressant efficacy of light*. bioRxiv 2020.07.31.230201.

-Etievant A, Oosterhof C, Betry C, Abrial E, Novo-Perez E, Rovera R, Scarna H, Devader C, Mazella J, Wegener G, Sánchez C, O Dkhissi-Benyahya, C Gronfier, Coizet V, Beaulieu JM, Blier P, Lucas G and Haddjeri N (2015): *Astroglial control of the antidepressant effects of prefrontal cortex deep brain stimulation*. EBioMedicine. 2(8): 898-908.

-Delcourte S, Etievant A and Haddjeri N (2021): *Role of central serotonin and noradrenaline interactions in the antidepressants' action: Electrophysiological and neurochemical evidence*. Progress in Brain Research. 259: 7-81.

**Salle de séminaire, 1^{er} étage CNP
Hôpital Psychiatrique de Cery-Site de Cery, CH-1008 Prilly-Lausanne**

Link for videoconference

<https://chuv.webex.com/chuv/j.php?MTID=m43ff6fa2988b56216e4b80c9a3cf1927>