

PRESS RELEASE

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Asarina Pharma: *Journal of Neuroendocrinology* publishes preclinical data on effective Tourette syndrome therapy with no side effects

Stockholm, June 12 2019: A new paper in the *Journal of Neuroendocrinology* shows how Asarina Pharma's compound Sepranolone reduced tics in an animal model of Tourette syndrome as effectively as current first-line treatment Haldol—without inducing any motor side effects.

The paper, Isoallopregnanolone reduces tic-like behaviors in the D1CT-7 mouse model of Tourette syndrome is co-authored by, amongst others, Marco Bortolato, Prof of Pharmacology and Toxicology at the University of Utah, and Torbjörn Bäckström, Senior Professor in Obstetrics and Gynecology at the University of Umeå and CSO of Asarina Pharma.

CEO Peter Nordkild: "This publication non only validates Sepranolone as a very effective treatment against the negative effects of Allopregnanolone, whether produced peripherally or centrally in the brain, but also clearly demonstrates Sepranolone's potential as a treatment for a range of obsessive disorders triggered by the production of Allopregnanolone during stress. As the body's natural, endogenous substance that inhibits Allopregnanolone, Sepranolone could treat not only our lead indications, Premenstrual Dysphoric Disorder and Menstrual Migraine, but disorders like Tourette, OCD, pathological gambling and others. For people living with Tourette there is a great unmet need for an effective treatment not associated with serious side effects. We've already exposed more than 200 patients to Sepranolone in our clinical PMDD program, with no serious side effects observed. We're very excited to continue developing Sepranolone for Tourette."

Early studies from Prof. Bortolato strongly suggested that stress increases the severity of the tics experienced by Tourette syndrome patients, by promoting the brain's production of Allopregnanolone. The present study shows that Sepranolone, the body's endogenous substance that inhibits Allopregnanolone, has no side effects and suppresses tic-like responses on par with Haldol (Haloperidol), and Finasteride, an experimental drug that suppresses the synthesis of Allopregnanolone.

Peter Nordkild: "It's the specificity of Sepranolone that is key to the absence of side-effects. Unlike today's first-line anti-psychotic treatments for Tourette, Sepranolone does not induce serious motor and endocrine side effects such as parkinsonism, tardive dyskinesia or gynecomastia. Prof Bortolato's data point to Allopregnanolone and

Sepranolone being part of a broader biological mechanism that speaks directly to the relationship between obsession and compulsion. The implications for Sepranolone as a therapy are profound, and exciting."

Read our special Focus Feature on Asarina Pharma and Tourette syndrome, p. 9-13, HERE.

For further information, please contact:

Peter Nordkild, CEO, Asarina Pharma AB

Phone: +45 25 47 16 46

E-mail: peter.nordkild@asarinapharma.com

Märta Segerdahl, CMO, Asarina Pharma AB

Phone: +46 707 344 533

E-mail: marta.segerdahl@asarinapharma.com

Certified Adviser

Erik Penser Bank AB Phone: +46 8-463 83 00

Mail: certifiedadviser@penser.se

About Asarina Pharma

We are a Swedish biotech company developing Sepranolone, the world's first dedicated treatment for premenstrual dysphoric disorder (PMDD) and other menstrual-related conditions. Our product pipeline is built on over 40 years' research into menstrual-related disorders like PMDD and menstrual migraine. With our new family of GAMSA compounds (GABA_A Modulating Steroid Antagonists), we aim to deliver a new generation of efficacious and safe drugs for still widely untreated conditions, thereby becoming a leading Women's Health company.

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