

## IRLAB presents application of deep learning on multidimensional CNS drug efficacy data

IRLAB (Nasdaq Stockholm: IRLAB A) presents results from a collaboration between the Department of Mathematical Sciences at Chalmers University of Technology, Gothenburg, the specialist artificial intelligence (AI) company Smartr and IRLAB. Based on multidimensional *in vivo* phenotypic dose response profiles generated by IRLAB's ISP technology, it is found that in particular multilayer perceptron networks perform well for prediction of therapeutic indication and classification of drug candidates. The methodology further holds promise to discover new or expanded indications for both drug candidates and approved treatments within the central nervous system (CNS).

"This application of AI methodology to our ISP database yielded stable results supporting the use of deep learning as a valuable addition to the machine learning methods we use in our proprietary research platform ISP, Integrative Screening Process. The ISP technology is key to the rapid and successful discovery and development of our clinical candidates mesdopetam and pirepemat. Enhancing the precision in our methodology further improves quality and contributes to increased competitive advantage for IRLAB and our drug candidates," says Dr. Susanna Holm Waters, M.D., Ph.D., Director of Biology and Biostatistics at IRLAB.

The scientific abstract, part of a master thesis in engineering mathematics & computational science, was submitted to and accepted by the Society for Neuroscience (SfN) and will be presented at one of the most prominent conferences globally, SfN Global Connectome: A virtual event.

Find the poster presentation at the event:

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Presentation time: Tuesday, January 12 at 10:00 -10:30 EST (16:00-16:30 CET)

Presenter: Klara Granbom, MSc, on behalf of IRLAB

Presentation number: P383.09

Abstract: Clinical predictions in CNS drug discovery based on *in vivo* systems response profiles and non-linear machine learning methodology

Session title: Techniques in Neurodegenerative and Neuropsychiatric Diseases' Research

The poster will, after its publication, be published on IRLAB's webpage under "scientific publications" ([www.irlab.se/research-platform/scientific-publications](http://www.irlab.se/research-platform/scientific-publications)).

### For more information

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### About the SfN Global Connectome: A Virtual Event

SfN Global Connectome: A Virtual Event is a cross-cutting digital neuroscience event designed to facilitate scientific exchange across the globe and the field, providing scientists at all career stages, of all disciplines, with opportunities to learn, collaborate, and connect.

### About the research platform ISP

IRLAB uses a unique proprietary research platform called the Integrative Screening Process (ISP) to generate the company's drug pipeline. ISP's systems biology methodology considers the overall effects associated with the interactions in the brain, one of the body's most complex organs. In practice, this means that the effects of new drug candidates are studied directly in living systems with detailed analytical methods, which results in a powerful basis for discovering new effective drugs. Centrally to IRLAB's competitiveness is the increased predictability of a drug candidate's potential. This is made possible with the support of the ISP platforms comprehensive, highly qualitative and relevant data in combination with effective machine learning methods.

All drug candidates in the IRLAB's project portfolio have been generated through ISP with the most advanced candidates in clinical Phase IIb.

**About IRLAB**

IRLAB is a Swedish research and development company that focuses on developing novel treatments in Parkinson's disease. The company's most advanced candidates, mesdopetam (IRL790) and pirepemat (IRL752), both of which completed Phase IIa-studies, intends to treat some of the most difficult symptoms related to Parkinson's disease: involuntary movements (PD-LIDs), psychosis (PD-P) and symptoms linked to cognitive decline such as impaired balance and increased risk of falls (PD-Falls). Through the proprietary research platform, ISP (The Integrative Screening Process), IRLAB discovers and develops unique drug candidates for central nervous system (CNS) related disorders where large and growing medical need exist. In addition to the clinical candidates, the ISP platform has also generated several CNS programs that are now in preclinical phase. IRLAB is listed on Nasdaq Stockholm Main Market. More information on [www.irlab.se](http://www.irlab.se).