

NEW PRECLINICAL DATA FOR AVICURSEN (ATL1102) SHOWS POSITIVE SIGNALS OF ACTIVITY IN AUTOIMMUNE EPILEPSY

Melbourne, Australia – 3 September 2024: Percheron Therapeutics Limited (ASX: PER) ('the Company'), an international biotechnology company focused on the development of novel therapies for rare diseases, is pleased to announce novel preclinical data for its lead program, avicursen (ATL1102), in a mouse model of autoimmune epilepsy.

The data provides further validation for avicursen's pharmacological activity as an anti-inflammatory agent and suggests a new group of patients who may benefit from avicursen in future.

Key Points

- Epilepsy encompasses a diverse range of medical conditions characterized by abnormal electrical activity in the brain causing seizures. It is estimated that 1 in 26 people suffer from epilepsy at some point in their lives. Autoimmune epilepsy is a form of epilepsy caused by abnormal activity of the immune system within the brain. It is estimated to represent 5-35% of all new cases of epilepsy.¹
- Avicursen is an antisense oligonucleotide which targets CD49d, a cell surface receptor implicated in the adhesion, migration, and activity of white blood cells. The drug has previously shown evidence of activity in a diverse range of inflammatory conditions, including positive clinical data in a phase II trial in multiple sclerosis and a phase IIa trial in Duchenne muscular dystrophy (DMD). An international phase IIb clinical trial in DMD is ongoing, with initial data expected in December 2024.
- A murine analogue of avicursen in a mouse model of autoimmune epilepsy showed a reduction in median seizure frequency of 66% for the drug when compared to a saline control. The reduction was statistically significant.

"This is very encouraging new data," commented Percheron CEO, Dr James Garner. "Autoimmune epilepsy is a challenging disease with few treatment options, and a substantial proportion of patients are children. We look forward to discussing these results with clinicians and researchers over the coming months. This experiment has been part of a focused effort to identify potential additive opportunities for avicursen, with a view to expanding its use beyond DMD, and we are pleased to have seen a positive signal. In the meantime, the results are also very helpful in a broader sense, because they serve to further validate the pharmacological activity of avicursen and expand our understanding of the drug."

¹ <https://www.epilepsy.com/causes/autoimmune>

Autoimmune Epilepsy

Autoimmune epilepsy was first systematically defined in 2017 and represents a significant subset of patients with seizures.² Its causes and manifestations are diverse but typically result in inflammation of the brain (encephalitis), and the condition is often comparatively resistant to conventional anticonvulsant therapies. At present, treatment is typically via corticosteroids, intravenous immunoglobulin, plasmapheresis, or other immunosuppressive drugs, but a significant proportion of patients remain refractory and there is an urgent need for new treatments.

Study Design

Avicursen was tested in a pilocarpine-induced seizure model, which is a well-established experimental system for investigating this family of disorders.³ Forty mice were divided into three groups, which received respectively (1) a single dose of a murine analogue of avicursen; (2) a mismatch oligonucleotide control; and (3) a saline control, once weekly for seven weeks.

The murine analogue of avicursen was used because of CD49d sequence differences between humans and mice, which make it inappropriate to use an identical drug in both species. The murine analogue was the same agent that has previously been used for experiments in DMD and in limb girdle muscular dystrophy R2.

Outcome measures included the cumulative number of spontaneous recurring seizures per hour and the duration of seizures. The study was conducted in a blinded fashion, with observers unaware during assessment which mice had received which treatment.

The experiments were performed in a commercial contract research organisation under the oversight of Percheron.

Preliminary Results

In animals who received the avicursen analogue, the median frequency of seizures was 0.0480 seizures per hour, compared to 0.1395 seizures per hour in the saline control, representing approximately a 66% reduction, when measured from day 31 to day 43. This result was statistically significant, with $p < 0.05$.

Similar treatment effects were observed when the active group was compared to a negative control mismatch oligonucleotide, and in comparison to a pooled group of saline and control oligonucleotide. No significant effect was seen in the duration or severity of seizures.

² <https://practicalneurology.com/articles/2018-oct/autoimmune-epilepsy>

³ [PS Buckmaster & FH Lew \(2011\). *J Neurosci*. 31 \(6\) 2337-2347](#)

Next Steps

Although the in-life phase of the work is complete, histological assessment remains ongoing to better understand the effects of avicursen on the activity of the immune system in this disease model.

The company expects to share full data at a future academic conference. In the meantime, customary measures have been taken to protect the novel intellectual property resulting from this work.

As previously announced, avicursen is the subject of an ongoing international phase IIb randomised controlled clinical trial in DMD, with initial data expected in December 2024.

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About Percheron Therapeutics Limited

Percheron Therapeutics Limited [ASX: PER | US OTC: ATHJY | FSE: AWY] is a publicly listed biotechnology company focused on the development and commercialisation of novel therapies for rare diseases. The company's lead program is ATL1102, an antisense oligonucleotide targeting the CD49d receptor. ATL1102 is currently the subject of an ongoing international phase IIb clinical trial for the treatment of non-ambulant patients with Duchenne Muscular Dystrophy (DMD), for which data is expected in 2H CY2024. The company previously reported promising results from an exploratory phase IIa study of in the same population and has been awarded orphan drug designation (ODD) and rare pediatric disease designation (RPDD) by the US FDA.

For more information, please contact info@PercheronTx.com.

*This announcement has been authorized for release to the Australian Securities Exchange
by the Board of Directors.*
