

ILTOO Pharma welcomes the publication of MIROCALS Phase IIb Trial Results in *The Lancet*, demonstrating Safety and Efficacy of Low-Dose IL-2 in ALS

Paris, France – May 10, 2025 – ILTOO Pharma is pleased to welcome the publication in *The Lancet* of the results from the MIROCALS phase IIb clinical trial ([Access the MIROCALS Trial article in The Lancet](#)) shows that low-dose interleukin-2 (IL-2_{LD}), a therapy pioneered by ILTOO Pharma, significantly improves survival and slows functional decline in patients with Amyotrophic Lateral Sclerosis (ALS), a fatal neurological disease with limited therapeutic options.

The study, entitled "*Efficacy and safety of low-dose IL-2 as an add-on therapy to riluzole (MIROCALS): a phase 2b, double-blind, randomised, placebo-controlled trial*", was coordinated by Dr Gilbert Bensimon (Centre Hospitalier Universitaire de Nîmes, France) and Dr P. Nigel Leigh (Brighton and Sussex Medical School, UK), on behalf of the MIROCALS Consortium. Results demonstrate that low-dose IL-2 is well tolerated with no major safety issues. Although the study's primary endpoint, survival at 21 months, was not met in the overall population, a pre-planned analysis revealed a significant survival advantage in patient with moderate levels of phosphorylated neurofilament heavy chain protein (pNFH), a biomarker in the cerebrospinal fluid (CSF), reflecting the level of nerve cell damage in the brain and spinal cord. For these patients representing 80% of the study population, the risk of death by the end of the study was reduced by over 40%.

"These findings show that modulating the immune system is an effective approach to slow the progression of inflammatory disorders of the Central Nervous System, such as ALS" said Professor David Klatzmann, the pioneer of low-dose IL-2 therapy and founder of ILTOO Pharma. **"In addition to ALS, IL-2_{LD} has shown promising experimental and clinical results in the treatment of neuroinflammation, such as in multiple sclerosis, Alzheimer's disease and autism spectrum disorder, highlighting its broad therapeutic potential".**

Moving Forward to Market Approval

Since its creation in 2012, ILTOO Pharma has gathered extensive preclinical and clinical data which confirmed IL-2_{LD} as a powerful anti-inflammatory therapy and acquired exclusive license of all the patents owned by AP-HP (Assistance Publique-Hôpitaux de Paris), Sorbonne University and INSERM and covering multiple indications.

Recently, ILTOO Pharma has acquired the exclusive license of the MIROCALS trial data, been granted Orphan Drug Designation (ODD) in the US and the EU for ILT-101, its patented form of IL-2_{LD}, initiated a Managed Access Program in France, UK and Austria for the treatment of patients with ALS in compassionate cases, and engaged with regulatory agencies (FDA and EMA) towards an accelerated market access approval of IL-2_{LD} for the treatment of ALS.

"ILTOO Pharma is working to promote IL-2_{LD} as a novel therapeutic approach for ALS," said Professor José Achache, Chairman of ILTOO Pharma. **"The results of the MIROCALS trial represent a major progress for all patients with ALS, and ILTOO Pharma is actively engaged with regulatory authorities, patient's associations and the scientific community**



to accelerate the next phases of development towards market access approval in Europe and the USA”.

ILTOO Pharma has developed ILT-101, a patented liquid form of IL-2_{LD}, designed to better fit patient needs. ILT-101 has been granted Orphan Drug Designation (ODD) in the US and the EU for the treatment of ALS and has received a Paediatric Investigation Plan (PIP) waiver in the EU, which will accelerate the path to market approval.

ILTOO Pharma is currently running a Managed Access Program with ILT-101 in France, UK and Austria for the treatment of patients with ALS in compassionate cases (information about the program is available on the company website), and is working towards implementing an Early Access Program.

About Amyotrophic Lateral Sclerosis:

Amyotrophic lateral sclerosis (ALS), also known as Motor Neurone Disease, Charcot's Disease or Lou Gehrig's Disease, is an adult-onset motor neurons disease and is usually diagnosed between the ages of 40 and 70. It is a life-limiting neurodegenerative disease that affects about 45,000 patients in Europe and approximately 33,000 patients in the US. There is currently no cure for ALS and no effective treatment to stop or reverse the progression of the disease.

About The MIROCALS trial:

MIROCALS (NCT03039673) is an acronym for “Modifying Immune Response Outcomes in ALS”. The randomised, double-blind, placebo-controlled clinical trial involved 17 ALS Clinical research centres across France and the United Kingdom, together randomising 220 patients, treated for 18 months with IL-2_{LD} on top of Riluzole, and followed-up for 21 months. The MIROCALS project was funded through the European Commission H2020 programme and the Motor Neurone Disease Association, with additional support from the Programme Hospitalier de Recherche Clinique (French Health Ministry), My Name’s 5 Doddie Foundation, MND Scotland, Association pour la Recherche sur la Sclérose Latérale Amyotrophique, Association Française contre les Myopathies, and the Alan Davidson Foundation. The study was sponsored by Centre Hospitalier Universitaire de Nîmes.

Further information on the MIROCALS trial can be found here:

[MIROCALS Trial Article in The Lancet](#)

[Clinicaltrials.gov - NCT03039673](#)

[MND association - Clinical trials - MIROCALS](#)

[The MIROCALS Study Group](#)

About ILTOO Pharma:

ILTOO Pharma, a Paris-based pharmaceutical company founded in 2012, is dedicated to the development of immunotherapies with IL-2_{LD} for the treatment of autoimmune and inflammatory disorders. The landmark discovery driving the company’s efforts, protected by a



large patent portfolio, is that IL-2_{LD} is a potent and selective activator of Regulatory T cells (Tregs). Extensive preclinical and clinical studies have confirmed IL-2_{LD} as a powerful anti-inflammatory therapy with specific potential for inflammation of the Central Nervous System (CNS).

About ILT-101

The patented drug of ILTOO Pharma is ILT-101. It is a ready-to-use, injectable liquid form of IL-2_{LD} available in vials, designed to better fit patient needs. ILT-101 has been formulated to be easy to use and more suitable for long-term treatment, with a unique formulation that enables stability over a period of 36 months. The drug has been developed to treat a wide range of diseases including auto-immune and inflammatory diseases and certain central nervous system conditions.

For further information, please visit our website:

<http://www.iltoopharma.com/>

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