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New preclinical data for masitinib in amyotrophic lateral sclerosis (ALS) presented at the 2019 Muscular Dystrophy Association Conference

Data provides further evidence on masitinib's mode of action in ALS via modulation of neurogenic inflammation

AB Science SA (NYSE Euronext - FR0010557264 - AB), a pharmaceutical company specializing in the research, development and commercialization of protein kinase inhibitors (PKIs), presented new preclinical data for masitinib in amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, at the 2019 Muscular Dystrophy Association (MDA) Clinical & Scientific Conference (Orlando, FL, USA; April 15th - 16th).

The 2019 MDA Clinical & Scientific Conference is the most comprehensive neuromuscular disease meeting in the United States, representing the full spectrum of scientific researchers, medical professionals, and decision makers.

This research was delivered by Dr Emiliano Trías from the Institut Pasteur de Montevideo as a platform presentation during the oral sessions on 'Inflammation, Immune Mechanisms, & Therapeutic Approaches'. The title of the talk was 'Post-paralysis treatment with masitinib ameliorates peripheral nerve pathology driven by macrophages, mast cells and neutrophils in an inherited model of ALS'.

Findings have revealed for the first time a mechanism of neurogenic inflammation in an animal model ALS that can be effectively targeted by masitinib. Neurogenic inflammation is a process by which nerves may secrete mediators producing local inflammation that can contribute to development of neurological diseases. This particular process of neurogenic inflammation was observed to occur along the degenerating sciatic nerve and was driven by four cells: macrophages, neutrophil, Schwann cells and mast cells.

By merit of masitinib's inhibitor action on CSF1-IL34/CSF1R and SCF/c-Kit signaling pathways, it is capable of modulating the function of each of these four cells individually. Findings showed that masitinib can exert a potent neuroprotective effect in the peripheral nervous system by significantly downregulating mast cell and macrophage accumulation in this model.

"These findings provide a new and complementary mechanism of action for masitinib that may explain its beneficial effects in ALS", said Professor Luis Barbeito, Head of the Neurodegeneration Laboratory (Institut Pasteur in Montevideo, Uruguay) and senior author of the abstract. *"For the first time we have revealed the underlying cellular interplay and mechanism that masitinib targets in the peripheral nervous system."*

Together with previously published evidence in prominent peer-reviewed journals^{1,2,3}, which showed that masitinib effectively co-targets independent pathological mechanisms in different cell types of the brain and spinal cord (namely, deleterious microglia, neutrophils and mast cells), these data further strengthen the compelling body of evidence for masitinib's mode of action in ALS.

[1] Trias E, et al. Mast cells and neutrophils mediate peripheral motor pathway degeneration in ALS. JCI Insight. JCI Insight. 2018;3(19):e123249. <https://doi.org/10.1172/jci.insight.123249>.

[2] Trias E, et al. Evidence for mast cells contributing to neuromuscular pathology in an inherited model of ALS. JCI Insight. 2017;2(20):e95934. <https://doi.org/10.1172/jci.insight.95934>.

[3] Trias E, et al. Post-paralysis tyrosine kinase inhibition with masitinib abrogates neuroinflammation and slows disease progression in inherited amyotrophic lateral sclerosis. J Neuroinflammation. 2016;13(1):177.

About masitinib

Masitinib is a new orally administered tyrosine kinase inhibitor that targets mast cells and macrophages, important cells for immunity, through inhibiting a limited number of kinases. Based on its unique mechanism of action, masitinib can be developed in a large number of conditions in oncology, in inflammatory diseases, and in certain diseases of the central nervous system. In oncology due to its immunotherapy effect, masitinib can have an effect on survival, alone or in combination with chemotherapy. Through its activity on mast cells and microglia and consequently the inhibition of the activation of the inflammatory process, masitinib can have an effect on the symptoms associated with some inflammatory and central nervous system diseases and the degeneration of these diseases.

About AB Science

Founded in 2001, AB Science is a pharmaceutical company specializing in the research, development and commercialization of protein kinase inhibitors (PKIs), a class of targeted proteins whose action are key in signaling pathways within cells. Our programs target only diseases with high unmet medical needs, often lethal with short term survival or rare or refractory to previous line of treatment.

AB Science has developed a proprietary portfolio of molecules and the Company's lead compound, masitinib, has already been registered for veterinary medicine and is developed in human medicine in oncology, neurological diseases, and inflammatory diseases. The company is headquartered in Paris, France, and listed on Euronext Paris (ticker: AB).

Further information is available on AB Science's website: www.ab-science.com.

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