PRESS RELEASE

NEW INDEPENDENT PUBLICATION IN THE INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES CONFIRMS THE ROLE OF MASITINIB AS A POTENTIAL THERAPY IN NEURODEGENERATIVE DISORDERS INCLUDING ALZHEIMER'S DISEASE

Paris, 08 March 2021, 8am CET

AB Science SA (NYSE Euronext - FR0010557264 - AB) today announced the publication of a peer-reviewed article in which the authors state that blocking hemichannels on mast cells with masitinib represents a promising novel strategy for slowing the progression of neurodegenerative diseases such as Alzheimer's disease and amyotrophic lateral sclerosis (ALS). Hemichannels allow cell communication with the extracellular environment and have diverse physiological and pathophysiological roles in the nervous system.

Entitled 'Mast Cell and Astrocyte Hemichannels and Their Role in Alzheimer's Disease, ALS, and Harmful Stress Conditions', this publication [1] is freely accessible online from the International Journal of Molecular Sciences website https://doi.org/10.3390/ijms22041924.

This review article [1] examines hemichannels and their contribution to mast cell degranulation in Alzheimer's disease. Of particular interest are data from the authors *in vitro* and *in vivo* (APPswe/PS1dE9 mouse model of Alzheimer's disease) experiments that show increased mast cell hemichannel activity after treatment with amyloid peptide ($A\beta_{25-35}$), with subsequent degranulation response and enhanced histamine release [2]. The number of mast cells in hippocampal and cortical areas increased drastically even before amyloid plaque deposits became evident, suggesting that mast cells are one of the first brain cells to recognize and respond to amyloid peptides, and thus may play a critical role in the onset and progression of Alzheimer's disease. Treatment with masitinib was shown to totally prevent the amyloid-induced hemichannel-dependent mast cell activity in bone marrow-derived mast cells and brain mast cells. The authors concluded that hemichannel expressed by mast cells might serve as a molecular target with which to develop therapeutic treatments that could delay the onset and progression of Alzheimer's disease.

This research supports results from the phase 2B/3 study, AB09004, that evaluated oral masitinib in patients with mild and moderate Alzheimer's disease.

Philip Scheltens, Professor of Neurology at the Alzheimer Center Amsterdam, said: "*This research provides further supportive evidence that masitinib, through its dual targeting of mast cells and microglia, has a unique and effective profile for neurodegenerative diseases such as Alzheimer's disease and amyotrophic lateral sclerosis.*"

As a reminder [3], AB Science recently announced topline results from its Phase 2B/3 study (AB09004) evaluating oral masitinib in patients with mild and moderate Alzheimer's disease met its predefined primary endpoint. Study AB09004 was an international, randomized, placebo-controlled, phase 2B/3 study evaluating different doses of masitinib as a treatment of patients with confirmed mild to moderate Alzheimer's disease. This study compared the efficacy and safety of masitinib relative to placebo after 24 weeks of treatment when administered as an add-on therapy to cholinesterase inhibitor (donepezil, rivastigmine or galantamine) and/or memantine. Two doses of masitinib were tested, masitinib 4.5 mg/kg/day and a titrated dose of masitinib from 4.5 to 6.0 mg/kg/day, with each dose having an independent control arm.

The study demonstrated that masitinib 4.5 mg/kg/day (n=182) generated a significant treatment effect compared with the control arm (n=176) on the primary endpoint of change from baseline in the Alzheimer's Disease Assessment Scale-Cognitive Subscale (ADAS-Cog), an instrument that measures the effect on cognition and memory (p=0.0003). The study also demonstrated that masitinib 4.5 mg/kg/day generated a significant change from baseline in Alzheimer's Disease Cooperative Study Activities of Daily Living (ADCS-ADL) score, an instrument that assesses self-care and activities of daily living (p= 0.0381). There were significantly fewer patients reaching severe dementia stage (MMSE<10) with masitinib 4.5 mg/kg/day compared with placebo after 24 weeks of treatment (p-value= 0.0446).

[1] Harcha PA, Garcés P, Arredondo C, Fernández G, Sáez JC, van Zundert B. Mast Cell and Astrocyte Hemichannels and Their Role in Alzheimer's Disease, ALS, and Harmful Stress Conditions. International Journal of Molecular Sciences. 2021; 22(4):1924. https://doi.org/10.3390/ijms22041924

[2] Harcha PA, Vargas A, Yi C, Koulakoff AA, Giaume C, Sáez JC. Hemichannels Are Required for Amyloid β-Peptide-Induced Degranulation and Are Activated in Brain Mast Cells of APPswe/PS1dE9 Mice. J Neurosci. 2015;35(25):9526-9538. Doi:10.1523/JNEUROSCI.3686-14.2015

[3] AB Science press release. Dec 18,2020. https://www.ab-science.com/results-from-phase-2b-3-study-evaluating-masitinib-in-alzheimers-disease/

About the International Journal of Molecular Sciences
The International Journal of Molecular Sciences is an international, peer-reviewed, open access journal covering research in biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. It is published by MDPI and was established in 2000.

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.

Forward-looking Statements - AB Science
This press release contains forward-looking statements. These statements are not historical facts. These statements include projections and estimates as well as the assumptions on which they are based, statements based on projects, objectives, intentions and expectations regarding financial results, events, operations, future services, product development and their potential or future performance.

These forward-looking statements can often be identified by the words "expect", "anticipate", "believe", "intend", "estimate" or "plan" as well as other similar terms. While AB Science believes these forward-looking statements are reasonable, investors are cautioned that these forward-looking statements are subject to numerous risks and uncertainties that are difficult to predict and generally beyond the control of AB Science and which may imply that results and actual events significantly differ from those expressed, induced or anticipated in the forward-looking information and statements. These risks and uncertainties include the uncertainties related to product development of the Company which may not be successful or to the marketing authorizations granted by competent authorities or,

more generally, any factors that may affect marketing capacity of the products developed by AB Science, as well as those developed or identified in the public documents filed by AB Science with the Autorité des Marchés Financiers (AMF), including those listed in the Chapter 4 "Risk Factors" of AB Science reference document filed with the AMF on November 22, 2016, under the number R. 16-078. AB Science disclaims any obligation or undertaking to update the forward-looking information and statements, subject to the applicable regulations, in particular articles 223-1 et seq. of the AMF General Regulations.

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