



## PRESS RELEASE

**PUBLICATION IN THE WORLD-RENOWNED JOURNAL *SCIENCE* CONFIRMS POTENTIAL OF MASITINIB AS A TREATMENT OF COVID-19 WITH ANTI-VIRAL ACTIVITY AGAINST SARS-COV-2 AND ALL TESTED VARIANTS OF CONCERN**

**MASITINIB EFFECTIVELY REDUCED SARS-COV-2 VIRAL LOAD *IN VIVO*, REDUCING INFLAMMATORY SIGNATURES, AND SHOWED POTENTIAL BENEFITS FOR SURVIVAL AND CLINICAL SCORES**

*Paris, 20 July, 2021, 6pm CET*

**AB Science SA** (Euronext - FR0010557264 - AB) today announces publication of a peer-reviewed article titled '*Masitinib is a broad coronavirus 3CL inhibitor that effectively blocks replication of SARS-CoV-2*' in the journal *Science* [1]. The article reports on research that identifies masitinib as a broad antiviral agent capable of treating SARS-CoV-2 (the virus that causes COVID-19), including demonstration of *in vivo* activity in mice, with efficacy maintained, *in vitro*, against SARS-CoV-2 variants of concern.

This article and its accompanying online supplemental material are accessible online from the journal website: <https://science.sciencemag.org/lookup/doi/10.1126/science.abg5827>

Research led by Professor Savas Tay and Dr. Nir Drayman from the Pritzker School for Molecular Engineering (University of Chicago, USA) screened a library of 1,900 clinically safe drugs and identified masitinib as the most potent inhibitor of the main target responsible for virus reproduction, a protease called 3CLpro.

Drugs targeting viral 3C-like protease are an attractive therapeutic option for COVID-19, in part because they are considered less vulnerable to the development of SARS-CoV-2 drug resistance; however, no such drugs targeting 3C-like protease are yet registered for use in the treatment of COVID-19. This direct-acting antiviral mechanism of action distinguishes masitinib from many other COVID-19 drugs, including polymerase inhibitors or monoclonal antibodies.

Also reported for the first time are data on the effectiveness of masitinib as an anti-SARS-CoV-2 drug in animals. Mice infected with SARS-CoV-2 and then treated with masitinib showed >200-fold reduction in viral titers in the lungs and nose, as well as improved overall lung pathology and significantly reduced levels of key pro-inflammatory cytokines. Overall, results showed that masitinib rapidly and effectively reduced SARS-CoV-2 viral load in mice (reducing >99% of the viral load on day 6), reduced inflammatory signatures, and showed potential benefits for survival and clinical scores. Remarkably, masitinib was also effective, *in vitro*, against all tested variants of concern, including the rapidly spreading Alpha, Beta and Gamma variants.

Results also showed that, *in vitro*, masitinib is potent against multiple corona- and picorna- viruses (human pathogens that cause a range of diseases including the common cold, meningitis, hepatitis and poliomyelitis). Thus, masitinib is a relatively broad-spectrum antiviral with potential activity against multiple viruses that rely on 3CL protease to complete their life cycle.

Dr Nir Drayman, senior researcher at the Pritzker School for Molecular Engineering (University of Chicago) and one of the article's principal authors commented: "*It will take a long time to vaccinate the world population and the emergence of viral escape mutants rendering vaccines ineffective remains a possibility. Consequently, there is continued need for new treatment options for COVID-19, as well as for antivirals that could be used against future emerging viruses. It is therefore very encouraging that masitinib has*

*demonstrated both these properties, showing activity against all SARS-CoV-2 variants of concern we tested, including the highly transmissible Alpha, Beta, Gamma variants, and also a broad-spectrum antiviral activity with potential for treating several other viral diseases.”*

Professor Savas Tay, principal investigator of the study and author of the article (Pritzker School for Molecular Engineering, University of Chicago), said: *“Our data suggest that administration of masitinib would be most beneficial soon after infection, when an antiviral is likely to have most effect, which is a feasible strategy for masitinib because it is simply administered orally. The potential benefits of masitinib should be carefully studied in clinical trials.”*

Recently, AB Science signed an exclusive licensing agreement with the University of Chicago to conduct research for the prevention and treatment of COVID-19 with masitinib and other AB Science proprietary drugs [2]. Under this agreement, AB Science supplied masitinib and more than 130 other AB Science proprietary drugs that have demonstrated activity against SARS-CoV-2 main protease 3CL-Pro via virtual screening methodology, and in return will benefit from the proprietary research platform of the University of Chicago.

Alain Moussy, cofounder and CEO of AB Science commented: *“We are committed to continue the development of masitinib and its analogues for the treatment of COVID-19. A clinical study is currently ongoing in the treatment of hospitalized patients with moderate and severe COVID-19. Based on these new results demonstrating the anti-viral activity of masitinib, we will initiate a second study evaluating the anti-viral activity of masitinib in patients with symptomatic mild and moderate COVID-19.”*

With a 5-Year Journal Impact Factor of 51.4, *Science* is one of the world's top academic journals. *Science* reaches an estimated worldwide readership of more than one million.

## **Reference**

[1] Drayman N, DeMarco JK, Jones KA, et al. Masitinib is a broad coronavirus 3CL inhibitor that effectively blocks replication of SARS-CoV-2. *Science*. 2021;373(6553). doi: 10.1126/science.abg5827

[2] AB Science press release, April 6, 2021. <https://www.ab-science.com/signing-of-an-exclusive-licensing-agreement-with-the-university-of-chicago-to-conduct-research-for-the-prevention-and-treatment-of-covid-19/>

## **About masitinib**

Masitinib is an 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, inflammatory diseases and viral 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](http://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 published by AB Science. 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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