*Paris, 4 June 2019, 8pm*

**AB Science outlook for 2019 - Summary of webcast part 1**

**AB Science SA** (NYSE Euronext - FR0010557264 - AB), a pharmaceutical company specializing in the research, development and commercialization of protein kinase inhibitors (PKIs), is providing a summary of the web conference held on 4 June 2019 on its clinical programs in amyotrophic lateral sclerosis and mastocytosis.

**Introduction**

- Lifting of ANSM Clinical Hold in France
  - ANSM lifted on 27 May 2019 its decision to suspend clinical trials.
  - AB Science is now back to a normal process to get authorization for new clinical trials. Each clinical study has to go through a standard authorization procedure from ANSM and ethic's committee.
- AB Science has two lead compounds
  - Masitinib: Selective kinase inhibitor
    - Targeting mast cells and macrophages/microglia.
    - Developed in neurology, oncology and inflammatory diseases.
    - In phase 3.
  - AB8939: Microtubules destabilizer of new generation
    - Synthetic drug.
    - Developed in oncology, primarily acute myeloid leukaemia.
    - Entering phase 1.

**Amyotrophic lateral sclerosis (ALS)**

- Mechanism of action

Masitinib distinguishes itself from other ALS developmental drugs by exerting neuroprotection in both central and peripheral nervous systems. How masitinib works in ALS through mast cells and microglia has been established and published on three peer reviewed journals [1 ;2 ;3].

- Results from phase 2/3 (AB10015)

Study AB10015 was a double-blind, placebo-controlled phase 2/3 study to compare the efficacy and safety of masitinib in combination with riluzole, versus placebo in combination with riluzole. In this study, masitinib (4.5 mg/kg/day) demonstrated a significant benefit in ALS patients identified as normal progressors, which was the population for primary analysis (i.e. patients with a baseline ALSFRS-R progression of <1.1 point/month).

- Phase 3 confirmatory study

A subgroup analysis of phase 2/3 AB10015 confirmed that patients with less severe disease at the start of treatment are those likely to benefit most from masitinib. Based on the primary analysis method, the difference of change in ALSFRS at week 48 was 3.39 in the primary analysis population (i.e. disease duration of up to 36 months, no restriction on disease severity at baseline, fast progressors excluded), 4.67 in the so called moderately severe subgroup (i.e. disease duration of up to 24 months, at least 1 on each of the 12 ALSFRS-R individual component items at baseline, slow and fast progressors excluded) and 6.79 in the so called mildly severe subgroup (i.e. disease duration of up to 24 months, at least 2 on each of the 12 ALSFRS-R individual component items at baseline, slow and fast progressors excluded).

The design of the confirmatory study has been optimized.

- The study will enroll the so called mildly severe patients
- Two doses will be tested, a dose of 4.5 mg/kg/day as confirmatory dose, and a dose of 6.0 mg/kg/day to seek greater efficacy. Indeed, in the phase 2/3 study which tested the two doses of 3.0 and 4.5 mg/kg/day, a dose proportional effect was observed
- A dose titration from 3 mg/kg/day to 4.5 or 6.0 mg/kg/day will be implemented in order to increase tolerance and reduce discontinuations

These optimizations in the design of the phase 3 confirmatory study have been validated by EMA through protocol assistance.
As for the first study, this study will evaluate the change in functional score (ALSFRS) after a 48-week treatment period. It will enroll 500 patients across 50 sites specialized in ALS. It is expected to start in second semester of 2019 and to end in second semester of 2021.

- EMA New submission for conditional marketing authorization

New data have been generated to address the three major objections previously raised by EMA. However, no decision has been taken yet regarding a potential new submission for conditional marketing authorization based on the final results from AB10015 study. If a new submission is made, it can only be under the normal assessment timeline because results for single pivotal study need to be exceptionally compelling in the context of an accelerated assessment.

- Competitive landscape, targeted population

There is still a high need for new treatments in ALS. In Europe, there has been no drug registered since Riluzole 32 years ago. Masitinib is the only tyrosine kinase inhibitor developed in ALS late stage.
There are above 100,000 patients with ALS in the main geographies, around 30,000 in Europe, 20,000 in the USA, and 50,000 in China, Japan, and Korea.

**Indolent Systemic mastocytosis (ISM)**

Masitinib is developed in the claim of indolent systemic mastocytosis with severe symptoms. The clinical program in mastocytosis is comprised of 2 proof of concept studies and two phases 3.

- Results from the first phase 3 (AB06006)

Study results showed that masitinib administered at 6.0 mg/kg/day was superior to the comparator, as measured by the cumulative 75% response rate until week 24 on the handicaps of pruritus or flushes or depression or fatigue (4H75% response). The 4H75% response was 18.7% for the masitinib treatment-arm versus 7.4% for the placebo treatment-arm (p=0.0076, Odd ratio=3.63) in the mITT population (primary analysis). Masitinib also demonstrated significant activity on objective markers of mast cell activation and burden (i.e. level of tryptase, body surface area with urticaria pigmentosa, and presence of Darier's sign). The results of the study were published in *The Lancet* [4].

- Phase 3 confirmatory study

The design of the phase 3 confirmatory study benefits from the two scientific advice from EMA on the first phase 3 and from the assessment by EMA of the results of the first phase 3 and has been optimized to increase the probability of success.

- Exclusion of patients with cutaneous mastocytosis. The first phase 3 study AB6006 included patients with indolent cutaneous and systemic mastocytosis and efficacy was demonstrated only in patients with indolent systemic mastocytosis which is the population of the confirmatory study.
- The key inclusion criteria will be centrally verified before randomization in order to guaranty the robustness of the demonstration
- A dose titration from 3 mg/kg/day to 6.0 mg/kg/day will be implemented in order to increase tolerance and reduce discontinuations

- Fatigue assessment based on Fatigue Impact Scale (FIS) will be excluded in order to facilitate the demonstration of a significant treatment effect

This confirmatory study will evaluate the cumulative 75% response rate until week 24 on the handicaps of pruritus or flushes or depression (3H75% response). It will enroll 140 patients across 30 sites. It is expected to start in second semester of 2019 and to end in second semester of 2021.

- Competitive landscape, targeted population

There is still a high need for a treatment in indolent systemic mastocytosis with severe symptoms, and there is currently no approved treatment in this claim. Masitinib is the only drug in phase 3 in this claim.
There are around 10,000 patients with severely symptomatic ISM in Europe and USA and around 17,000 in China, Japan, and Korea.

**Intellectual Property Status**

Masitinib IP rights are secured up to 2037 in ALS and up to 2031 in mastocytosis in the US and potentially 2036 in Europe.

| Protection | Item | Duration of protection | Status |
|---|---|---|---|
| **Patent on composition of matter and PTE** | Patent on composition of matter has been filed and delivered. It will be further extended until 2028 through patent term extension (PTE) | Until 2028 | Delivered |
| **Synthesis process patent** | A further protection until 2028 has been achieved through synthesis 'process' patent | Until 2028 | Delivered |
| **Orphan drug status** | Masitinib has been granted orphan drug designation by both EMA and FDA for ALS and Severe Systemic Mastocytosis | Exclusivity of 7 years for FDA<br>and 10 years for EMA | Delivered |
| **Phase 3 'Method of use' patents** | Amyotrophic lateral sclerosis (ALS) | Until 2037 | Delivered |
| | Systemic mastocytosis (severe) | Until 2031 in the USA<br>Until 2036 outside USA | Delivered<br>Pending |

Publications

[1] Trias, E., et al., Mast cells and neutrophils mediate peripheral motor pathway degeneration in ALS. JCI Insight. 2018. 3(19).
[2] Trias, E., et al., Evidence for mast cells contributing to neuromuscular pathology in an inherited model of ALS. JCI Insight, 2017. 2(20).
[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): p. 177
[4] Lortholary O et al. Masitinib for treatment of severely symptomatic indolent systemic mastocytosis: a randomised, placebo-controlled, phase 3 study. Lancet. 2017 Feb 11;389(10069):612-620. doi: 10.1016/S0140-6736(16)31403-9. Epub 2017 Jan 7

**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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