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BioSenic performs further analysis of its phase 2 clinical trial data, leading to an optimal administration scheme for its next late-stage trial of arsenic trioxide in cGvHD

New post-hoc analysis suggests a repeated administration cycle for BioSenic's upcoming phase 3 trial of oral arsenic trioxide (ATO) in chronic graft-versus-host disease (cGvHD)

Mont-Saint-Guibert, Belgium, September 27, 2023, 7.00am CEST – BIOSENIC (Euronext Brussels and Paris: BIOS), the clinical-stage company specializing in serious autoimmune and inflammatory diseases and cell therapy, today announces the completion of a post-hoc analysis of its phase 2 clinical trial of ATO, finding the best scheme for administration of an efficient treatment of cGvHD. The analysis will be used to decide on the best oral ATO's posology for BioSenic's forthcoming phase 3 clinical trial.

BioSenic phase 2 clinical trial entitled 'Treatment of Chronic Graft Versus Host Disease with Arsenic Trioxide (GvHD-ATO)' was conducted from 2016 to 2020 (ClinicalTrials.gov ID NCT02966301 - GMED16-001). The first results were originally published in 2022 in the peer-reviewed journal Transplantation and Cellular Therapy under the title 'High Response Rate and Corticosteroid (CS) Sparing with Arsenic Trioxide-Based First-Line Therapy in Chronic Graft-versus-Host Disease after Allogeneic Hematopoietic Stem Cell Transplantation'. These collated results demonstrated that the first-line use of ATO and corticosteroids is associated with a high clinical response rate and rapid CS sparing in moderate to severe cGvHD following allo-HSCT (current standard treatment for several types of leukaemias). The primary endpoint of the phase 2 trial was preliminary efficacy based on the overall response rate (ORR; complete response [CR] or partial response [PR]) at 6 months, after 1 or 2 cycles of intravenous (IV) ATO treatment. At 6 months, the ORR was 75.0%, with a CR rate of 35% and PR of 40%.

BioSenic's new post-hoc analysis of the full set of clinical data gained during the phase 2 trial shows that among the group of patients who did not achieved complete remission after the first course, a significant one-fifth of these patients had a positive primary endpoint following a second cycle of treatment. As a result, BioSenic will further use this 2-cycle treatment in its forthcoming trials. This will involve the administration of a double four-week course, separated by a rest period, resulting in a two-to-four times higher total dose of ATO. BioSenic expects thus to get closer to the optimal conditions for a curative treatment for cGvHD, for which there is currently no satisfactory therapy.

In the field of oncology, IV ATO is used as a first-line treatment for acute promyelocytic leukemia (APL) since 2003, with demonstrated safety and long-term remissions. Until now, in APL, ATO was administered daily by IV infusions for up to, or more than, a hundred accumulated doses. IV administration, because it requires hospitalization, is not practical for patients, results in lower quality of life, and is very expensive. The introduction of an oral formulation of ATO during 2 short cycles, presently BioSenic's optimal design of administration, will greatly improve patient quality of life and compliance, while reducing healthcare costs. This is a significant achievement in BioSenic's aim to contribute improved and potentially curative treatment for an autoimmune disease, with no current satisfactory medical solutions.

François Rieger, PhD, Chairman and CEO, BioSenic said: *"BioSenic is continuing to investigate new tricks that an old medication accomplishes in the field of autoimmune diseases. BioSenic's preclinical and clinical data show that the first-in-class modulatory properties for immune differentiation and homeostatic maintenance of the immune system of arsenic trioxide is much wider and profound than anticipated. The systematic analysis of BioSenic's clinical results is delivering additional conclusions on the mechanism of action of arsenic salts and also on the optimization of its formulations, dosages and optimal treatment timing. We are now focused on the finalizing preparations for our phase 3 trial of a new oral formulation of ATO targeting chronic graft-versus-host disease and devoting our efforts to exploiting clinical data reflecting the properties of arsenic trioxide to provide curative treatments for patients with autoimmune diseases for whom palliative medical treatments are unsatisfactory."*

About BioSenic

BioSenic is a leading biotech company specializing in the development of clinical assets issued from: (i) the arsenic trioxide (ATO) platform (with key target indications including Graft-versus-Host Disease (GvHD), systemic lupus erythematosus (SLE) and systemic sclerosis (SSc) and (ii), the development of innovative products to meet unmet needs in orthopedics.
Following a reverse merger in October 2022, BioSenic combined a strategic positionings and strengths to use, separately and combined, an entirely

new arsenal of various anti-inflammatory and anti-autoimmune formulations using the immunomodulatory properties of ATO/oral ATO (OATO) with its innovative cell therapy platform and strong IP for tissue repair protection.
BioSenic is based in the Louvain-la-Neuve Science Park in Mont-Saint-Guibert, Belgium. Further information is available at http://www.biosenic.com.

About BioSenic technology platforms

BioSenic's technology is based on two main platforms:

1) *The ATO platform, which has been successfully developed, has immunomodulatory properties with fundamental effects on the activated cells of the immune system. The first effect is the increase of the cell oxidative stress in activated B, T and other cells of the innate/adaptative immune system to the point they will enter a cell death program (apoptosis) and be eliminated. The second effect is potent immunomodulatory properties on several cytokines involved in inflammatory or autoimmune cell pathways, with return to homeostasis. One direct application is its use in onco-immunology to treat GvHD (Graft-versus-Host Disease) in its chronic, established stage. cGvHD is one of the most common and clinically significant complications affecting long-term survival of allogeneic hematopoietic stem cell transplantation (allo-HSCT). cGvHD is primarily mediated by the transplanted immune cells that can lead to severe multiorgan damage. BioSenic has been successful in a Phase 2 trial with its intravenous formulation, which has orphan drug designation status by FDA and EMA. The Company is heading towards an international Phase 3 confirmatory study, with its new, IP-protected, OATO formulation. Another selected target is moderate-to-severe forms of systemic lupus erythematosus (SLE), using the same oral formulation. ATO has shown good safety and significant clinical efficacy on several affected organs (skin, mucosae and the gastrointestinal tract) in an early Phase 2a study. Systemic sclerosis is also part of the clinical pipeline of BioSenic. This serious chronic disease badly affects skin, lungs or vascularization, and has no actual current effective treatment. Preclinical studies on pertinent animal models are positive, giving good grounds to launch a Phase 2 clinical protocol.*
2) *The allogeneic cell and gene therapy platform developed by BioSenic, with differentiated bone marrow sourced Mesenchymal Stromal Cells (MSCs), which can be stored at the point of use in hospitals. ALLOB represents a unique and proprietary approach to organ repair and specifically to bone regeneration, by turning undifferentiated stromal cells from healthy donors into bone-forming cells on the site of injury. ALLOB has recently been evaluated in a randomized, double-blind, placebo-controlled Phase 2b study in patients with high-risk tibial fractures, using its optimized production process, after a successful first safety and efficacy study (Phase 1/2a) on fractured long bones, with late-delayed union. However, in June 2023, BioSenic decided to suspend its interventional trial on fracture healing using ALLOB, following negative results obtained for the primary endpoint in this exploratory Phase 2b clinical trial, interpreted as a failure of a too early cell injection, just after fracture. BioSenic is now focusing on determining the best time to optimise the efficacy of ALLOB (choice between early or late treatment).*

Note: Biosenic has reevaluated a previous important and years-long clinical development program. In March 2023, after the clinical identification of distinct OA subtypes, BioSenic delivered a new post-hoc analysis of its Phase 3 JTA-004 trial on knee OA, demonstrating positive action on the most severely affected patient subpopulation. This new post-hoc analysis drastically changes the therapeutic profile of the combined components and allows for better patient targeting in future clinical developments. This leads to a next generation of JTA, off-the-shelf enhanced viscosupplement to treat knee osteoarthritis (OA), made of a unique combination of mammalian plasma proteins, derivatives of hyaluronic acid (a natural component of synovial fluid in the knee) and a third active component. JTA or some derivatives are intended to provide effective lubrication and protection to the cartilage of the arthritic joint and to alleviate osteoarthritic (OA) pain and inflammation.
The company, will nevertheless focus its present R&D and clinical activities on a selective, accelerated development of its autoimmune (ATO/OATO) platform.

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