PRESS RELEASE

MEDESIS PHARMA

Development of NanoManganese for the optimization of radiotherapy in cancer treatment

Positive results as radioprotectant in Animal Model of Glioblastoma

Montpellier (France), April 20, 2022 - 6:30pm CET – Medesis Pharma (ISIN: FR0010844464, Ticker: ALMDP), a pharmaceutical biotechnology company developing drug candidates with its proprietary buccal active ingredient delivery technology, Aonys®, is announcing today positive outcomes in the development program for its drug candidate NanoManganese, as a radioprotectant in cancer treated by radiotherapy.

Optimization of the efficacy and safety of radiotherapy in the treatment of cancers

Radiation causes direct DNA damage leading to cell death. Radiotherapy used to treat cancer is based on the hypothesis that due to their high proliferation rate and low DNA reparation activity, cancer cells are more sensitive to radiation than healthy tissues. Radiation also causes free radical generation through radiolysis of water leading to DNA damages in cancer and normal cells. Thus, the principle of radiotherapy in cancer is to provoke cancer cells death while limiting damages to normal cells.

Radiotherapy has been associated with toxicity which can be severe and cause permanent damages. There are early adverse effects during or within two weeks of radiation therapy, which are associated to free radical generation.

NanoManganese associates Aonys® technology with manganese ion, delivering intracellularly manganese at cation state. Manganese Superoxydismutase (MnSOD) is key in mechanisms eliminating intracellular free radicals and regulating oxidative stress. NanoManganese through MnSOD-like activity helps elimination of free radicals and limits oxidative stress.

In studies carried out on irradiated mouse models in collaboration with the Institute for Biomedical Research of the Armed Forces (IRBA), NanoManganese significantly increased mouse survival, demonstrating its antiradical activity and supporting its potential to protect healthy tissues from radiation toxicity.

On the strength of these initial results, Medesis Pharma initiated a study at the end of 2021 on a mouse model (mouse) of glioblastoma (cancer of brain tissue) treated with radiotherapy. The objective was to prove that NanoManganese does not reduce the effect of radiotherapy on cancer cells.

As a result of this study, it is demonstrated that treatment with NanoManganese maintained efficacy of radiotherapy on tumor cells. Study results also showed a trend toward a potential of NanoManganese to sensitize tumor cell to radiation, mechanistically backed up in literature. This could mean that not only NanoManganese could protect healthy tissues from toxicity of radiotherapy but as well potentialize efficacy of radiotherapy on tumor cells.

The continuation of this preclinical work on the efficacy of NanoManganese associated with the Aonys technology in the treatment of cancers by radiotherapy is included in the financing plan presented on April 13, 2022 for the current year. Their validation will be followed by a clinical Phase II which will be prepared at the end of 2022 for implementation in H1 2023. The financing plan will be determined in the coming months, specifying that a call to the market will be preferred, subject to market conditions. The financing terms will be determined according to the progress of the ongoing programs and the best estimated opportunities.

Up to 60% of patients diagnosed with cancer will receive radiation therapy as part of their treatment. (https://www.fondation-arc.org/treatments-soins-cancer/radiotherapie/quest-ce-que-la-radiotherapie). Radiation therapy is efficient and highly cost effective with a single modality treatment accounting about only 5% of the total cost of cancer care, any improvement to the efficacy and safety of radiotherapy will therefore benefit many patients.

About Medesis Pharma

To advance the treatment of serious diseases without effective treatments, Medesis Pharma creates drug candidates based on its proprietary Aonys® technology for the oral administration of active ingredients in nanodroplet form, enabling active ingredients to be effectively delivered to all cells, with passage through the blood–brain barrier (BBB). This innovative approach is being applied for future drugs to treat major diseases that do not have effective treatments: Alzheimer's Disease, Huntington's Disease, certain resistant cancers and severe respiratory inflammations such as those linked to COVID-19. Medesis Pharma is also developing dedicated treatments for people irradiated following a civil or military nuclear accident.

Medesis Pharma, a French biopharmaceutical company based near Montpellier, has a track record of 15 scientific publications, holds nine patents, reflecting 17 years of research, and is focused specifically on four projects that are moving into Clinical Phase II for neurodegenerative diseases and the treatment of Covid-19. Building on its world-renowned positions, Medesis Pharma is also working on new applications for its technology in partnership with public research laboratories (CNRS, CEA, IRBA), major teaching hospital centers in France, Canada and the United States, as well as private structures such as Transgene.

Medesis Pharma's shares are listed on Euronext Growth Paris (FR0010844464 – ALMDP).

Learn more at
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