



Advanced BioDesign publishes its study in non-small cell lung cancer (NSCLC) in Oncogene

Study shows for first time benefit of its active compound DIMATE in overcoming drug resistance in NSCLC

Lyon, France, May 12, 2020 – Advanced BioDesign, dedicated to developing novel therapies against resistant cancers, today announces promising results using its dual inhibitor DIMATE against an original therapeutic target, the ALDH enzymes family, in pulmonary cancer. The results, recently published in *Oncogene*, demonstrate that in lung cancer xenografts with high to moderate cisplatin resistance, a combination treatment with DIMATE promotes strong synergistic responses with tumor regression.

In support of these findings, the study highlights a new mechanism of action associated with the therapeutic target: the ALDH enzymes, notably ALDH1A3 and ALDH3A1. High expression of these enzymes confers an aggressive, chemo-resistant behavior in non-small cell lung cancer (NSCLC) and reduces patient survival. This strongly suggests that ALDH1A3 and ALDH3A1 make cancer cells resistant to chemotherapy by disposing of their toxic compounds induced by chemotherapy, such as aldehydes and reactive oxygen species (ROS). A combination of DIMATE together with ROS-inducing agents, such as cisplatin, triggers a potent anti-tumor response at lower doses of chemotherapy, which also results in fewer side-effects.

“This study unravels a new mechanism of action bringing synergy with current chemotherapeutic agents in NSCLC,” said Ismail Ceylan, president of Advanced BioDesign. “Beyond these results, we also demonstrated an important proof of concept using ALDH inhibitors to treat lung cancer. It provides preclinical evidence for their use, singularly or in combination with ROS-inducing chemotherapeutic agents, to kill lung cancer cells more efficiently and overcome patient-specific drug resistance.”

Drug resistance is the main cause of chemotherapy failure in lung cancer. With these findings, Advanced BioDesign will pave the way for a new treatment strategy working synergistically with gold-standard chemotherapies, as most of these have ROS-inducing activities.

Previous studies by Advanced BioDesign research teams also demonstrated the use of DIMATE as a relevant therapeutic option for melanoma and leukemic stem cells. The therapeutic potential of ALDH inhibitors like DIMATE therefore seems to offer broad and promising clinical opportunities in cancer treatment.

“These results, obtained in collaboration with researchers at the University Hospital of Cologne, the University Hospital La Conception in Marseille and others, represent a major step towards a new targeted therapy for the treatment of NSCLC, the most common type of lung cancer. DIMATE is the active compound in Advanced BioDesign’s lead candidate ABD-3001, which is now moving forward into clinical trials as a first-in-class ALDH inhibitor drug for refractory cancers,” said Mileidys Perez, chief scientific officer at Advanced BioDesign.

[Read the full article published in Oncogene](#)

About Advanced BioDesign

Advanced BioDesign is a French biotechnology company developing an innovative targeted therapy to treat resistant cancers, with a first indication in acute myeloid leukemia (AML).

Its main anti-cancer compound, ABD-3001, is a first-in-class suicide inhibitor of aldehyde dehydrogenases 1 & 3 (ALDH1 & 3). The ALDH enzyme allows cancer cells to detoxify themselves by recycling harmful molecules. By inhibiting this enzyme, ABD-3001 causes apoptosis of the cancer cells without damaging healthy cells.

ABD-3001 is currently in the preclinical stage. Advanced BioDesign plans to submit its regulatory file to the French National Agency for Medicines and Health Products Safety (ANSM) in 2020. The company is actively preparing to enter phase 1 clinical trials in 2021.

Founded in 2010 and based in Saint-Priest, near Lyon (France), Advanced BioDesign collaborates with Prof. Régis Costello at the AP-HM (Marseille, France), which is also a base for some of its employees. Since 2013, Advanced BioDesign has benefited from the strategic and scientific support of Xerys experts. As part of the continued funding of its research and development programs, Advanced BioDesign secured €9 million in funding at the end of 2019 from Xerys Funds.

<http://www.a-biodesign.com/>

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