

Press release

For immediate release

Advanced BioDesign: A new study published in the *Journal of Cellular Molecular Medicine* on the involvement of Aldehyde Dehydrogenase activity in refractory or relapsed Acute Myeloid Leukemia

Lyon (France), October 29, 2024 - Acute Myeloid Leukemia (AML) remains a major medical challenge despite recent advances in targeted molecular therapies. A recent study published in the *Journal of Cellular Molecular Medicine*¹⁾ has highlighted a crucial aspect of leukemic cell resistance to chemotherapy: their increased ability to manage cellular stress and produce reactive oxygen species (ROS), thanks to high activity of the ALDH1A1/2 enzymes.

The results show that ROS levels and ALDH1A1/2 activity in the bone marrow of AML patients are correlated with the ELN 2022 prognostic groups and overall survival. Patients with high ROS levels have a significantly lower median overall survival (8.2 months) compared to those with low ROS levels (24.6 months).

After the first line of treatment, a significant increase in ROS levels and ALDH1A1/2 activity was observed, particularly in refractory patients. These findings underpin the development of ABD-3001, a competitive and irreversible inhibitor of ALDH1. *In vitro* tests showed that ABD-3001 can inhibit the proliferation of patient-derived leukemic cells by disrupting the redox balance.

Geoffroy Venton, MD of APHM & first author, states: “Our research shows that inhibiting ALDH1A1/2 enzymes can play a crucial role in combating leukemic cell resistance to chemotherapy. ABD-3001 has shown promising results in the laboratory, and we are eager to see its efficacy confirmed in clinical trials.”

ABD-3001 is currently being evaluated in the first multicenter phase 1 clinical trial, named “ODYSSEY” (NCT05601726), for patients with relapsed AML. The initial safety results are eagerly awaited by the medical community.

Ismail CEYLAN, CEO at Advanced BioDesign, adds: “It is the result of exceptional scientific and operational work by our teams. The launch of the ODYSSEY clinical trial marks an important milestone for our company. Result gathered in the first part show us the tolerability of our approach and beyond our expectation with a compassionate use treatment allowed by French authorities for one patient. We hope that ABD-3001 can offer a new therapeutic option for patients with relapsed AML.”



About the Study: The study was conducted by a team of researchers specializing in oncology and hematology, with support from several international research centers. The full results will be presented at the next annual congress of *The European Hematology Association*.

1) *Reactive oxygen species and aldehyde dehydrogenase 1A as prognosis and theragnostic biomarker in acute leukaemia patients* : <https://onlinelibrary.wiley.com/doi/epdf/10.1111/jcmm.70011>

About the ODYSSEY clinical trial

ODYSSEY is a Phase I/II clinical trial for the treatment of acute myeloid leukemia (AML). It is a multicenter study, with centers in Paris, Lyon and Marseille, designed to assess the safety and tolerability of the drug candidate ABD-3001.

Fully funded by Advanced BioDesign, the ODYSSEY clinical trial is coordinated by Professor Régis COSTELLO (Hôpital de la Conception, Marseille), in collaboration with Doctor Lina BENAJIBA (Hôpital Saint-Louis, Paris), and Doctor Maël HEIBLIG (Hôpital Lyon Sud, Lyon).

About Xerys Invest

Xerys Invest is a French private equity firm that invests mainly in today's significant sectors such as Health & Life Sciences and GreenTech. Xerys Invest thus supports companies in industrial sectors that are going through major transformations that meet economic, environmental, and societal challenges and that have strong ambitions in terms of development and international expansion. Xerys Invest stands out on the market both by its modus operandi and long-term strategic and operational support for the companies held in its portfolio and by its offer of traced or pooled investment opportunities offered to investors and the relationship with them. Finally, Xerys Invest has real sector expertise, supported by a strategic committee made up of specialists and recognized experts in key sectors. For more information: <https://xerys.com>; LinkedIn @Xerys.

About Advanced BioDesign

Advanced BioDesign is a French biotechnology company developing an innovative new therapeutic approach against resistant cancers, with a first indication in acute myeloid leukemia (AML). Its first drug candidate, ABD-3001, is a first-in-class "suicide" inhibitor of class 1 aldehyde dehydrogenases (ALDH1). In January 2022, Advanced BioDesign obtained authorization from the French Agence Nationale de Sécurité du Médicament (ANSM) to launch its first human clinical trial, ODYSSEY, which began in November 2022. Based in Lyon, Advanced BioDesign is supported and accompanied by Xerys Invest funds, which have been financing its research and development programs since 2013.

For more information: <https://www.a-biodesign.com>; LinkedIn [@Advanced BioDesign](#)



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