

HaliOx highlights use of Immunosign® to define CAR T-cell therapy signature in tumor at ASCO 2017

- For the first time, a tumor microenvironment immune gene signature associated with CAR T-cell treatment of non-Hodgkin lymphoma (NHL) patients has been described.
- Data analysis pointed to immune programs which may facilitate or modulate anti-tumor activity of CAR-T cells.
- These data may potentially lead to rational optimization of CAR T-cell treatment of aggressive NHL patients.

Marseille, France, June 5, 2017 – HaliOx SAS, an immuno-oncology diagnostic company, announced the presentation of data describing chimeric antigen receptor (CAR) T-cell treatment signature in the tumor microenvironment utilizing Immunosign® at the 2017 American Society of Clinical Oncology (ASCO) Annual Meeting. This was generated in context of the multicenter registrational trial [ZUMA-1](#) sponsored by Kite Pharma, testing axicabtagene ciloleucel (an autologous anti-CD19 CAR T-cell therapy) in patients with refractory aggressive B-cell non-Hodgkin lymphoma (NHL).

Immunosign® Clinical Research assay is a set of new immune gene expression signatures designed to investigate the immune response within the tumor environment. In ZUMA-1, Immunosign® was used for a characterization of anti-CD19 CAR T cell-mediated tumor microenvironment immune gene profile.

In data presented at ASCO 2017 by Dr. Jérôme Galon, a tumor immune gene signature associated with CAR T-cell treatment of diffuse large B-cell lymphoma (DLBCL) patients is described for the first time.

This analysis, performed on DLBCL patients' samples from the ZUMA-1 Phase 2 multicenter trial, defined a tumor immune gene signature induced or amplified by CAR T-cell treatment, involving both T cell proliferative (IL-15), chemokine, CD8 / immune effector genes and immune checkpoints.

These data may potentially lead to rational optimization of T-cell interventions in cancer.

Adrian Bot, M.D., Ph.D., Vice President, Translational Sciences, Kite Pharma, comments: *“In our ZUMA-1 Phase 2 trial with axicabtagene ciloleucel, in refractory aggressive non-Hodgkin lymphoma, we characterized for the first time an immune gene signature in the tumor microenvironment. This work points to several immune pathways that may orchestrate the clinical activity, as well as strategies to optimize this therapeutic modality”.*

Jérôme GALON, Ph.D., Laboratory of Integrative Cancer Immunology, INSERM, presenter of the study, adds: *“Axicabtagene ciloleucel therapy showed very encouraging clinical results in a difficult to treat disease. As for other immunotherapeutic approaches, characterizing adaptive immunity may be essential in identifying patients who will potentially benefit from this therapy or guiding future treatment optimizations. We look with confidence in the future of cancer treatment by combining immune-based diagnostic assays with efficient immunotherapies such as CAR T-cell infusion.”*

Vincent FERT, CEO of HalioDx concludes: *“We are proud to contribute to the development of such game-changing immunotherapy as a growing number of biopharma are utilizing our flagships assays Immunoscore[®], Immunosign[®] and Halioseek[™] in their clinical program. We bring to our Biopharma partners not only a unique view on the dynamic of the immune response to tumors but also a reliable and risk-free biomarker-to-diagnostic roadmap with the potential to leverage their post-development strategic options.”*

Poster presentation:

- [Characterization of anti-CD19 chimeric antigen receptor \(CAR\) T cell-mediated tumor microenvironment immune gene profile in a multicenter trial \(ZUMA-1\) with axicabtagene ciloleucel \(axi-cel, KTE-C19\)](#)

Abstract #3025

Poster Session: Developmental Therapeutics – Immunotherapy

Poster Board #120

Session Time/Location: Monday, June 5, 2017: 8:00-11:30 AM CDT, Hall A

Presenter: Jerome Galon, Ph.D., Laboratory of Integrative Cancer Immunology, INSERM

About HalioDx

The Immune Response to Cancer Diagnostics

HalioDx is an immuno-oncology diagnostic company providing oncologists with first-in-class Immune-based diagnostic products and services to guide cancer care and contribute to precision medicine in the era of immuno-oncology and combination therapies.

HalioDx Immunoscore[®] technology integrates immunohistochemistry combined with advanced imaging analysis enabling extraction of spatially-organized tissue molecular information.

Immunoscore[®] is a platform for many cancers, as immune response to tumor is a key hallmark of disease progression.

Pioneered by Jérôme Galon at the Cordeliers Research Center, Paris, France, Immunoscore[®] Colon is the flagship assay of HalioDx, positioned to be a future diagnostic standard for delivering prognostic and predictive information. HalioDx develops also Halioseek[™] PD-L1/CD8 and Immunosign[®], proprietary gene signatures based assay, to help stratifying patients for immunotherapies.

HalioDx collaborates with an increasing number of renowned international clinical groups and biopharmaceutical companies to support clinical utility and ensure rigorous performance validation of its assays in a large number of cancer indications.

HalioDx has an experienced team of more than 100 employees, a CLIA-certified laboratory (H1 2017) and compliant facilities to develop, manufacture, register and market *in vitro* diagnostic (IVD) products.

HalioDx executes biomarker studies and companion diagnostic assay development in conformity with regulations and in partnership with biopharmaceutical companies.

The company co-founded the European immunology cluster Marseille Immunopole (MI).

For more information, please visit our website www.halioldx.com and follow the company on Twitter [@HalioDx](https://twitter.com/HalioDx).

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