

## News Release

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### **Leaps by Bayer and Khloris join forces to develop induced pluripotent stem cells (iPSCs) as breakthrough anti-cancer vaccines**

- Seed investment of Leaps by Bayer paves an exclusive leadership position for next generation oncology business
- Research study from Stanford University suggests that vaccination with iPSCs may cure and prevent the development of many types of cancer

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**Leverkusen / South San Francisco, California, April 2, 2019** – Leaps by Bayer, the investment arm of the global life sciences company Bayer, and Khloris Biosciences, a biotechnology company, announced today that they have joined forces to develop novel, first-in-class anti-cancer vaccines based on human induced pluripotent stem cells (iPSCs). This technology has the potential to address one of today’s biggest issues in human health: to prevent and cure cancer.

Although initiated a century ago, the field of cancer vaccines is in an early stage of development. Cancer vaccines could be either prophylactic - intending to prevent cancer from developing in healthy people, or therapeutic – intending to treat an existing cancer by strengthening the body’s natural immune response against it.

#### **Khloris Biosciences: Pioneering Cancer Vaccination**

A study\* in mice from Stanford University School of Medicine suggests iPSCs can train the immune system to protect against the development of different types of cancer. Alternatively, as an adjuvant therapy following surgery or radiation, iPSC vaccination could also reactivate the immune system in cancer patients to prevent a relapse and/or metastasis.

Human iPSCs have potential as anti-cancer vaccines because they share the same characteristics of cancer cells, such as expression of tumor antigens and the ability to self-renew. Injecting iPSCs that genetically match the recipient, but that are unable to replicate, can safely expose the immune system to a variety of cancer-specific targets.

Curing and preventing cancer is one of the main focus areas of Leaps by Bayer, since it still represents one of today's biggest health concerns with limited curative or preventative therapies available. Kemal Malik, Bayer board member for Innovation, said: "We are very impressed with Khloris's approach. It represents a unique opportunity in the development of novel vaccines that ultimately would enable our immune system to successfully fight cancer before it gets out of control – the ultimate breakthrough in cancer management".

"Bayer's development expertise, commercial reach and worldwide network of R&D sites, combined with our scientific knowledge and technology, will increase the chances to bring this potential breakthrough option to patients in need", commented Prof. Joseph C. Wu, a co-founder of Khloris.

"This alliance is in line with our passion for developing truly innovative and disruptive cancer therapies that have a major and lasting impact on disease. Leaps by Bayer offered a unique investment concept that allows big ideas to flourish", stated Dr. Lynne A. Bui, co-founder and CEO of Khloris.

The Board of Directors will be composed of two representatives from Khloris - Dr. Lynne A. Bui and Prof. Joseph C. Wu - and two representatives from Leaps by Bayer - Dr. Juergen Eckhardt and Dr. Lucio Iannone.

The terms of the investment were not disclosed.

Khloris is the 7th investment of [Leaps by Bayer](#), a unit of Bayer investing into solutions to some of today's biggest problems. Previous Leaps investments into potentially breakthrough technologies include Casebia Therapeutics (CRISPR/Cas technology to cure severe genetic disorders), BlueRock Therapeutics (iPSC technology to cure cardiovascular and CNS diseases) and Joyn Bio (probiotics for plants to enable for chemical fertilizer-free farming).

\*Autologous iPSC-Based Vaccines Elicit Anti-tumor Responses In Vivo. Kooreman, N. et al., Cell Stem Cell. 2018;22(4):501-513.

<https://www.ncbi.nlm.nih.gov/pubmed/29456158>

### **About Khloris**

Khloris Biosciences is a biotechnology startup founded in 2017 developing a novel approach for anti-cancer vaccines using induced pluripotent stem cells (iPSCs) to trigger a robust immune-response involving innate and adaptive immune cells. The company is located in South San Francisco, California. Khloris is a spinout of the technology that was developed in the laboratory of Prof. Joseph C. Wu , Director of the Stanford Cardiovascular Institute and Professor in the Department of Medicine and Department of Radiology at the Stanford University School of Medicine. Lynne A. Bui, MD is the co-founder and CEO of Khloris, founder and Chairman of Global Cancer Research Institute (GCRI), and has broad experience in hematology/oncology R&D throughout the industry and academia. For more information, go to [www.khlorisbiosciences.com](http://www.khlorisbiosciences.com).

### **About Bayer**

Bayer is a global enterprise with core competencies in the life science fields of health care and nutrition. Its products and services are designed to benefit people by supporting efforts to overcome the major challenges presented by a growing and aging global population. At the same time, the Group aims to increase its earning power and create value through innovation and growth. Bayer is committed to the principles of sustainable development, and the Bayer brand stands for trust, reliability and quality throughout the world. In fiscal 2018, the Group employed around 117,000 people and had sales of 39.6 billion euros. Capital expenditures amounted to 2.6 billion euros, R&D expenses to 5.2 billion euros. For more information, go to [www.bayer.com](http://www.bayer.com).

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kj (2019-0087E)

**Forward-Looking Statements**

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