

Boehringer Ingelheim Acquires AMAL Therapeutics, Significantly Enriching Its Cancer Immunology Portfolio with Novel Cancer Vaccines Platform

- *Acquisition adds key platform supporting Boehringer Ingelheim's focus on patients with difficult-to-treat gastrointestinal and lung cancers*
- *AMAL's first-in-class proprietary KISIMA® platform leverages peptide/protein-based vaccination technology*
- *AMAL will remain at the campus of the University of Geneva in Switzerland and operate as a subsidiary within Boehringer Ingelheim*

Ingelheim am Rhein, Germany and Geneva, Switzerland – 15 July 2019 –

Boehringer Ingelheim today announced its acquisition of all shares of AMAL Therapeutics SA, a private Swiss biotechnology company focused on cancer immunotherapy and advancing first-in-class therapeutic cancer vaccines derived from its technology platform KISIMA. AMAL's lead vaccine ATP128 is currently developed for stage IV colorectal cancer and is slated to begin first-in-human trials later this month. Boehringer Ingelheim plans to develop new therapies by combining assets from its cancer immunology portfolio with AMAL's proprietary KISIMA immunization platform.

"Acquiring AMAL is part of Boehringer Ingelheim's long-term strategy to enhance our existing position as an innovator of novel cancer therapies, including immuno-oncology treatments, which leverage cutting-edge scientific discoveries and their applications," said Michel Pairet, member of Boehringer Ingelheim's Board of Managing Directors with responsibility for the company's Innovation Unit. "We want to pioneer new paradigms of biology-based care for cancer patients, and the technologies and expertise developed at AMAL are critical to our efforts."

The total transaction could amount up to EUR 325 million, and is comprised of an upfront payment as well as contingent clinical, development and regulatory milestones plus up to EUR 100 million if certain commercial milestones are hit.

"I am extremely proud of the hard work of AMAL's entire team, which is validated by this acquisition, and very excited to further develop the KISIMA technology platform within Boehringer Ingelheim," said Madiha Derouazi, Ph.D., Founder and Chief Executive Officer of AMAL Therapeutics. "Our new relationship with Boehringer Ingelheim will enable us to realize the full potential of our KISIMA platform to fight solid cancers while preserving AMAL's approach to biotechnology research and our scientific and academic

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networks. Moreover, sharing resources and capabilities in clinical development will greatly help us to move ATP128 and other assets forward.”

Boehringer Ingelheim’s Cancer Immunology group is built to discover therapies that engage triggering of immune responses against non-inflamed, “cold” tumors, which represent a large group of cancer types refractory to many treatments, including checkpoint inhibitor drugs. Immune targeting of cold tumors is a particular challenge. AMAL’s KISIMA vaccine technology, designed to stimulate potent immune responses, is a promising therapeutic option for patients with these type of cancers.

The AMAL acquisition, along with that of the 2018 acquisition of Vira Therapeutics (Vira-T) and in-license of OSE Immunotherapeutics’ SIRP-alpha targeting antibody, significantly strengthens Boehringer Ingelheim’s strategic focus on immune cell-directed therapies. By combining its world-class in-house research and development with that of highly innovative biotechnology companies, Boehringer Ingelheim is developing innovative immuno-oncology therapies and accelerating the delivery of the next-generation of cancer treatments.

AMAL is headquartered on the medical campus of the University of Geneva, from which it was spun-out in 2012, with financial backing from a syndicate of both corporate and institutional investors, including the Boehringer Ingelheim Venture Fund and High-Tech Gründerfonds as the initial seed investors. Additional investments were provided by VI Partners, Helsinn Investment Fund, BioMed Partners and Schroder Adveq. AMAL’s technology platform and derived products are protected by a broad portfolio of patents and licenses.

KISIMA

Unlike prophylactic vaccines that immunize a patient to prevent an infection before it occurs, therapeutic vaccines combat existing diseases. Anti-cancer therapeutic vaccines carry antigens, pieces of protein that also are in tumors. By presenting antigens to the patient’s immune system, a vaccine can prompt tailor-made responses, including activation of killer T cells that target the tumor and can boost memory immunity to reduce the risk of relapse.

AMAL’s proprietary technology platform KISIMA enables the assembly of three functional components into one patented fusion protein used as a vaccine: First, a proprietary cell-penetrating peptide for antigen delivery; second, a proprietary toll-like receptor (TLR) peptide agonist as an adjuvant, and third, a multi-antigenic cargo that can be tailored for specific indications.

ATP128

AMAL's lead candidate, ATP128, is a therapeutic chimeric recombinant protein vaccine designed using KISIMA and currently developed for stage IV colorectal cancer. AMAL will conduct KISIMA-01, an international Phase Ib clinical study to evaluate the combination of ATP128 with Boehringer Ingelheim's anti-PD1 compound BI754091, via a May 2019 collaborative agreement, in Microsatellite Stable (MSS) patients with stage IV colorectal cancer.

This first-in-human study will investigate ATP128 as single agent and in combination with BI754091 using safety and tolerability as primary endpoints. The study will also measure anti-tumor activity and characteristics of the immune response as secondary and exploratory endpoints.

Boehringer Ingelheim

Improving the health and quality of life of patients is the goal of the research-driven pharmaceutical company Boehringer Ingelheim. The focus in doing so is on diseases for which no satisfactory treatment option exists to date. The company therefore concentrates on developing innovative therapies that can extend patients' lives. In animal health, Boehringer Ingelheim stands for advanced prevention.

Family-owned since it was established in 1885, Boehringer Ingelheim is one of the pharmaceutical industry's top 20 companies. Some 50,000 employees create value through innovation daily for the three business areas: human pharmaceuticals, animal health and biopharmaceuticals. In 2018, Boehringer Ingelheim achieved net sales of nearly EUR 17.5 billion. R&D expenditure of almost EUR 3.2 billion, corresponded to 18.1 percent of net sales.

As a family-owned company, Boehringer Ingelheim plans in generations and focuses on long-term success. The company therefore aims at organic growth from its own resources with simultaneous openness to partnerships and strategic alliances in research. In everything it does, Boehringer Ingelheim naturally adopts responsibility towards mankind and the environment.

More information about Boehringer Ingelheim can be found on www.boehringer-ingelheim.com or in our annual report: <http://annualreport.boehringer-ingelheim.com>.

Boehringer Ingelheim in Oncology

Cancer takes. Takes away time. Takes away loved ones. At Boehringer Ingelheim Oncology, we are giving patients new hope, by taking cancer on. We are dedicated to collaborating with the oncology community on a shared journey to deliver leading science. Our primary focus is in lung and gastrointestinal cancers, with the goal of delivering breakthrough, first-in-class treatments that can help win the fight against cancer. Our commitment to innovation has resulted in pioneering treatments for lung cancer and we are advancing a unique pipeline of cancer cell directed agents, immuno-oncology therapies and intelligent combination approaches to help combat many cancers.

Boehringer Ingelheim Venture Fund

Created in 2010, the Boehringer Ingelheim Venture Fund GmbH (BIVF) invests in groundbreaking therapeutics-focused biotechnology companies to drive innovation in biomedical research. BIVF is searching for significant enhancements in patient care through pioneering science and its clinical translation by building long-term relationships with scientists and entrepreneurs. BIVF's focus is to target unprecedented therapeutic concepts addressing high medical needs in immuno-oncology, regenerative medicine, infectious diseases and digital health. These may include novel platform technologies to address so far undruggable targets, new generation vaccines and/or new biological entities, such as oncolytic virotherapy.

BIVF takes an active role with its portfolio companies – delivering significant added value through its own extensive drug discovery, scientific and managerial expertise. BIVF has EUR 250 million under management and currently supervises a portfolio of more than 20 companies. For more information, please visit www.boehringer-ingelheim-venture.com.

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