PRESS RELEASE

Cancer vaccine developers Madiha Derouazi and Elodie Belnoue laureates of the European Inventor Award 2022

- **European Patent Office honours Swiss-French inventor duo for their vaccine assembly platform that could be used to treat different types of cancer**
- **These cancer vaccines help boost the immune system's response to the deadly disease and will be used in conjunction with other treatments**
- **The technology offers new hope for cancer treatment, with trials for a colorectal cancer vaccine currently underway**

➢ **View media material for Madiha Derouazi and Elodie Belnoue**

Munich, 21 June 2022 – The European Patent Office (EPO) today distinguished Swiss biotechnologist Madiha Derouazi and French immunologist Elodie Belnoue with the European Inventor Award 2022 in the "SMEs" category. The pair have developed a vaccine assembly platform called KISIMA to produce vaccines for treating different types of cancer, offering new hope in the fight against the disease.

"*This remarkable invention has the potential to save many lives,*" says António Campinos, President of the European Patent Office. *"It may have at one point seemed impossible but Madiha Derouazi and Elodie Belnoue boldly pushed forward with ingenuity and perseverance to create a new way of treating cancer."*

The Swiss-French team were honoured at the European Inventor Award 2022 ceremony, a hybrid event that watched online by a worldwide audience. The Award is one of Europe's most prestigious innovation prizes and is presented annually to outstanding inventors from Europe and beyond who have made an exceptional contribution to society, technological progress and economic growth.

Using vaccines to treat cancer

While many vaccines are used to prevent disease, therapeutic vaccines are administered to treat a disease once it has taken hold. Cancers often suppress the body's own immune response, so the task of a therapeutic cancer vaccine is to help the immune system recognise and destroy the cancer cells. Previous efforts to develop cancer vaccines have either not been able to provoke a strong immune response or the vaccines have only been effective in a few patients.

Derouazi and Belnoue's invention assembles three essential components of a vaccine into one single protein, meaning the platform can be used to produce vaccines for different types of cancer. They are intended for use alongside treatments such as surgery, chemotherapy and radiotherapy.

Derouazi, Belnoue and their team are now using the KISIMA platform to produce their first vaccine, which is designed to treat metastatic colorectal cancer. The vaccine is currently in early-stage human trials with tests being carried out on patients both with the vaccine on its own and in combination with immune-boosting drugs.

The trials represent a big step for Derouazi, who became interested in cancer vaccines during her post-doc. She applied for a patent for the platform in 2012, when working at the University of Geneva, and set up a spin-out company, AMAL Therapeutics, to build and commercialise it. Belnoue was her first employee. In July 2019, pharmaceutical company Boehringer Ingelheim acquired AMAL Therapeutics for EUR 425 million, the largest biotech company exit in Europe that year.

For Derouazi, the focus of her research has always been on the patients. *"The most important moment in my life personally, and also for AMAL Therapeutics and all the team in general, was on July 30 2019 when the first patient was treated with our vaccine. We received a text message at 10pm saying that the patient had been treated, and I was crying. 'AMAL' means 'hope' in Arabic, and this is what we would like to bring to cancer patients."*

Notes to the editor

About the inventors

Madiha Derouazi studied biology at the University of Geneva before earning a Master of Science in biotechnology engineering from the Berlin Institute of Technology in 2000. In 2005, she completed her PhD in biotechnology at the Swiss Federal Institute of Technology

in Lausanne, which was followed by a post-doc at CNRS in France. Here she realised she wanted to focus on cancer. In 2009, Derouazi was hired by the University of Geneva Hospital to lead an independent cancer vaccine project. A colleague remarked that her work was interesting and that she should try to patent it, which led her to found AMAL Therapeutics, where she is still CEO.

Elodie Belnoue graduated with a Bachelor of Science in biochemistry from the University of Paris XI in 1996, followed by a Master of Science in immunology at the University of Paris V. She completed her PhD in immunology at the same university in 2002. Following her studies, Belnoue worked in the immunology department at the Cochin Institute in Paris, evaluating immunotherapies for liver tumours, before moving to Geneva in 2003 to work as a post-doctoral fellow in the Center of Neonatal Vaccinology and Immunology. In 2014, Belnoue joined AMAL Therapeutics as a senior scientist where she is responsible for coordinating research and development activities.

Derouazi and Belnoue are named inventors in European patents EP3270957B1 (granted 2020), EP3270955B1 (granted 2020) and EP2895499B1 (granted 2019).

About the European Inventor Award
The European Inventor Award is one of Europe's most prestigious innovation prizes. Launched by the EPO in 2006, the award honours individuals and teams' solutions to some of the biggest challenges of our times. The finalists and winners are selected by an independent jury comprising former Award finalists. Together, they examine the proposals for their contribution towards technical progress, social and sustainable development and economic prosperity. The EPO confers the Award in five categories (Industry, Research, SMEs, Non-EPO countries and Lifetime achievement). In addition, the public selects the Popular Prize winner from the 13 finalists by voting on the EPO website in the run-up to the ceremony.

This year, for the first time, the EPO is also awarding bright young minds with the Young Inventors prize. The new prize offers a monetary reward to the three finalists to further encourage them to find creative solutions to pressing sustainable development challenges.

About the EPO
With 6 400 staff, the European Patent Office (EPO) is one of the largest public service institutions in Europe. Headquartered in Munich with offices in Berlin, Brussels, The Hague and Vienna, the EPO was founded with the aim of strengthening co-operation on patents in Europe. Through the EPO's centralised patent granting procedure, inventors are able to obtain high-quality patent protection in up to 44 countries, covering a market of some 700 million people. The EPO is also the world's leading authority in patent information and patent searching.

Media contacts European Patent Office

Luis Berenguer Giménez
Principal Director Communication, Spokesperson

EPO Press Desk
Tel. +49 89 2399 1833
press@epo.org