BioMap and MBZUAI team up on joint biocomputing lab to promote sustainable development, human health in the Middle East

ABU DHABI, UAE, March 7, 2023 /EINPresswire.com/ -- Abu Dhabi, UAE – (ARAB NEWSWIRE) -- Through a signing ceremony, BioMap, a leading AI life science platform, announced its strategic cooperation with Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), a world-leading artificial intelligence research institution in establishing a joint laboratory.

The laboratory will be the first biocomputing innovation research laboratory in the Middle East. The joint laboratory announced its research would be carried out in two distinct directions: the de novo design of oil degradation enzymes, and mining for potential drug targets for the treatment of aging-related and rare diseases.

Using BioMap's world-leading cross-modal bio-computing model, "xTrimo (Cross-modal Transformer Representation of Interactome and Multi-Omics)", the two parties aim to explore new technologies to advance large-scale life science models in protein generation, protein structure prediction, cell function prediction, and

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Photo: Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) | Source: BioMap

other life science tasks. The two parties will focus on driving breakthroughs in AI generated proteins (AIGP) by prioritizing the Middle East's extensive needs in medical health, drug design, energy, and environmental protection.

The signing ceremony was attended by Jiarun Qu, Vice President of Strategic Development of BioMap, and Dr. Kun Zhang from Mohamed bin Zayed University (MBZUAI). During the ceremony the two organizations introduced their collaboration roadmap, and BioMap shared the technical progress made with its xTrimo model system and its strategic development plan for the Middle East.

As the world's largest cross-modal life science model, xTrimo models how proteins, cells, and complex biological systems work together, allowing downstream models to learn the operating laws of biological systems and analyze how proteins interact with each other and with cells in the human body. xTrimo is capable of predicting and generating new proteins that can perform targeted interventions and treatments on cells and the human body to address specific needs.

xTrimo has achieved state-of-the-art (SOTA) performance in various areas such as protein structure prediction, antibody sequence generation, and cell characterization. Additionally, it has made breakthroughs in predicting cell function and designing new drugs from scratch.

Scientists have been exploring the use of enzymes to efficiently degrade contaminations caused by oil. One type of enzyme, alkanes are the major component of crude oils and are commonly found in oil-contaminated environments. Although some types of alkane oxygenase can be extracted from microbes, those enzymes usually require a higher temperature to function with ideal catalytic activity, which can complicate such applications as marine oil spill cleanup, oil and gas storage, and transportation. With this challenge in mind, BioMap plans to use its AIGP platform to de novo design a protein with a 10-fold improvement in alkane oxygenase catalytic function under lower temperatures and without coenzyme assistance. The same methodology could enhance the performance and broaden the applications of oil degradation enzymes and oil recovery enzymes by optimizing their catalytic efficiency under different conditions.

Besides cooperating on energy sustainability, the two parties will also focus on scientific research on aging-related diseases, a major public health challenge around the world. In recent years, with the extension of human life expectancy and the increasingly aging population, research on drug targets for aging-related diseases has become one of the hotspots in the field of life sciences. The two parties will collaborate using large-scale AI models and multi-omics pre-training to accelerate the discovery of drug targets for aging-related diseases, enabling the development of personalized treatments.

About BioMap

Founded in 2020, BioMap is a disruptive super-scale AI model-powered life science platform. The platform aims to leverage cutting-edge AI and Biotech to tackle the grand challenge of decoding

life and solving the most valuable problems in life science industry, such as target discovery, de novo drug design and enzyme optimization.

With BioMap's AIGP (AI generated proteins) platform, scientists are capable of modeling life from protein to system level, conducting dialogue with the system via de novo generated proteins, and realizing specific biological functions.

The company has established over 12,000 m2 of high-throughput labs in Beijing, Suzhou, and Silicon Valley, and has grown its professional team to over 200 members, led by world-class experts. So far, BioMap has initiated over 30 in-house R&D projects of immune-oncology and autoimmune diseases and built more than 10 co-development collaborations with leading institutions globally through its AIGP platform.

For more information about BioMap, please visit: https://www.biomap.com/

About Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)
Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) is a graduate research university dedicated to advancing AI as a global force for humanity. UAE's visionary leaders established MBZUAI to educate and develop top talent, foster an innovation ecosystem, and act as a strategic think tank for the public and private sectors.

The university has a vital role to play in many of the UAE Government's strategic objectives, with AI identified as a critical component for future growth and prosperity. MBZUAI's own strategic vision and mission works in parallel to position Abu Dhabi as a hub for the international AI community.

For more information about MBZUAI, please visit: https://mbzuai.ac.ae

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