TREND report

Metfora's Diagnostic Technology to Change Healthcare

Martin Fuchs CEO • published in the November 2022 issue

Clinical diagnostics is very challenging from a business perspective with long development cycles and protracted adoption but there is tremendous scope for major impact due to significant unmet needs in clinical practice. Moreover, those in the industry find it highly motivating to work with the dedicated professionals in healthcare to develop solutions to the challenges they face every day.

METFORA

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To make diagnostics more effective, Metfora is taking a novel approach to detecting disease. Their focus is on metabolites, small molecules produced by the cellular machinery, in order to enable early-stage disease detection. This allows the physician to make a timely intervention and allows patients to get the treatment they need when it will be most effective.

Chronic Diseases on the Rise

This is important because, according to a recent study, 45% of the American population suffers from at least one chronic disease. The at-risk population for chronic diseases (people 40+) is about 150M people. Many of the affected people are undiagnosed, misdiagnosed or diagnosed only late in the progression of their disease. They frequently present with nonspecific symptoms like fatigue or shortness of breath, making diagnosis difficult and, as a result, they often make multiple visits to their doctor over periods of months or years. During this long diagnostic interval, the disease goes untreated and can progress to a more advanced stage that is less sensitive to the available therapies.

AI-Enabled Approach for Detecting Chronic Diseases

Metfora's novel AI-enabled approach overcomes the difficulty of detecting chronic diseases by discerning disease-specific changes in the levels of circulating metabolites. These can be measured in blood using mass spectrometry. This is combined with machine learning, popularly known as AI, to discern disease-specific metabolite patterns, akin to "disease fingerprints," in the data. Finding such disease fingerprints in a patient's blood allows the presence of the disease to be predicted with very high confidence.

The technology has been licensed from the University of Arizona. The initial focus is on a panel of four lung diseases (COPD, pulmonary fibrosis, pulmonary hypertension, and asthma) that will form the first commercial embodiment of the technology. Metfora has obtained grant funding to drive progress and is now seeking investor financing to bring the test to market.

Martin Fuchs, Chief Executive Officer, brings more than 40 years of industry experience. He has held senior product development roles in diagnostics, most recently in clinical microbiology at Accelerate Diagnostics. He is the cofounder of three companies including Metfora, CellPoint Diagnostics and Active Impulse Systems. He began his career at Waters, a world leader in bioanalytical instrumentation and holds two Engineering degrees from Massachusetts Institute of Technology (MIT). He is an inventor on more than 30 issued US patents. Martin can be contacted at martin.fuchs@metfora.com.