



Akoya's CODEX® System Utilized in Novel Study of Muscle Strength and Aging Published in Science

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The CODEX® system enables Stanford researchers to study spatial localization and cellular phenotypes associated with a novel protein implicated in aging.

MARLBOROUGH, Mass. — December 11, 2020—

Akoya Biosciences, Inc., The Spatial Biology Company®, today announced that CODEX was used for spatial phenotyping to identify the source of a protein that can reverse age-related muscle atrophy. This study represents the first demonstration of the CODEX system in imaging muscle tissues. The paper, titled 'Inhibition of prostaglandin-degrading enzyme 15-PGDH rejuvenates aged muscle mass and strength' was published [online](#) in *Science* on December 10th from the laboratory of Helen Blau, PhD., Professor and Director of the Baxter Laboratory for Stem Cell Biology at Stanford University's School of Medicine.

Muscle loss due to aging, called sarcopenia, is estimated to cost the US healthcare system billions of dollars each year, and results in a reduced quality of life for patients. Dr. Blau and her team are experts in investigating mechanisms of muscle structure and function related to aging and muscle disorders.

In this study of muscle fibers in mouse models and human tissue, the authors discovered an elevated level of a protein called 15-PGDH associated with old muscles. By blocking the activity of 15-PGDH in old mice, physical strength and muscle mass were restored in the animals. The opposite happened when the researchers increased the expression of 15-PGDH in young mice, causing their muscles to atrophy and weaken, as if having an aging effect. This is the first time that the protein has been associated with aging.

A CODEX assay was used to discover and understand the source of 15-PGDH, which acts as a regulator of muscle function. CODEX's multiplexing capabilities allowed researchers to look across numerous cell types and determine where the protein was localized in the tissue and which cells were expressing it. If standard methods had been used, the study would not have had the rich data of spatial phenotyping that made a difference in the results.

"We adopted CODEX for this study because the platform's multiplexing capabilities simplified our search for different cell types in a tissue sample, what proteins they express and where they're localized," said Helen Blau, PhD, Professor of Microbiology and Immunology at Stanford University. "This is how we were able to identify the cells that express 15-PGDH. We're hopeful that new ways to improve health and people's quality of life can be uncovered with the findings from this study."

"We're excited that CODEX has once again supported a novel discovery and provides researchers the ability to image protein expression and cell phenotypes within their spatial context. Studying proteins *in situ* brings us as close as possible, to a clinical phenotype," said Brian McKelligon, CEO of Akoya. "As Akoya continues to work with an ever-increasing number of researchers across the biological spectrum, we are eager to see more of these high-impact studies that help define the future of human health."

For more information about CODEX, go to: akoyabio.com/codex

About Akoya Biosciences

Akoya Biosciences, The Spatial Biology Company®, offers the most comprehensive, end-to-end solutions for high-parameter tissue analysis from discovery through clinical and translational research, enabling the development of more precise therapies for immuno-oncology and other drug development applications. The company has two industry-leading platforms that empower investigators and researchers to gain a deeper understanding of complex diseases such as cancer, and other immune system or neurological disorders. The CODEX® system is the only benchtop platform that can efficiently quantify more than 40 biomarkers and is ideally suited for biomarker discovery. The Phenoptics™ platform is the only end-to-end multiplexed immunofluorescence solution with the robustness and high throughput necessary for translational research and clinical trials. For more information, please visit akoyabio.com.

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