CV Summary: Marta Murgia

Single Muscle Fiber Proteomics Research

Current Position

Associate Professor at the Department of Biomedical Sciences, University of Padova, Italy, and Guest Scientist at the Max-Planck-Institute of Biochemistry, Martinsried, Germany, where she maintains an ongoing collaboration with Prof. Matthias Mann's Proteomics Group.

Research Development in Single Fiber Proteomics

Dr. Murgia published the first proteome of single muscle fibers in 2015, contributing to the development of this specialized approach. This work has enabled investigation of muscle fiber diversity and function at the molecular level.

Key Scientific Contributions

Her research has applied mass spectrometry-based single fiber proteomics to study:

Mitochondrial specialization between fiber types (EMBO Reports, 2015)

Fiber-type-specific changes in human muscle aging (Cell Reports, 2017)

Protein profiles of different fiber types in human skeletal muscle (Skeletal Muscle, 2021)

Molecular signatures of muscle disuse in spaceflight and bed rest conditions (PNAS Nexus, 2022)

Proteome changes in astronauts following ISS missions (npj Microgravity, 2024)

This work has provided insights into metabolic pathways, mitochondrial adaptations, and molecular mechanisms underlying muscle plasticity in response to exercise, aging, inactivity, and microgravity.

Broader Research Activities

Dr. Murgia's research interests include muscle physiology, metabolism, signal transduction, and the effects of exercise and inactivity. Her current work also examines plasma biomarkers of activity and performance in humans.