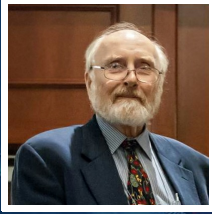


Mitochondrial Ribosomes: Powering the Proteins that are Necessary for Life



Thomas O'Brien

President, Administrative Professor, Biochemistry and Molecular Biology

CURRENT RESEARCH

Discoveries that are progressing towards treatments for mitochondrial diseases and cancer


Consider the energy required for all of the activities we do each day from waking up and brushing our teeth, to exercising. The human design is so efficient that there are systems that create and use energy to power all of our body's processes. On the most basic level, within our cells, mitochondria are known as the powerhouses of the cell; they are energy storage sites in our cells that convert carbohydrates into energy. The mitochondrial energy is critical for ribosomes, another cell structure, to create proteins that ultimately are required for the structure, function, and regulation of the body's tissues and organs. As we have begun to understand the basic functions and anatomy of these structures, we have also begun to understand the mutations and deletions of genetic information that cause mitochondrial diseases to occur allowing us to come closer to preventative and curative measures that could impact our society as a whole.

If mitochondria are the powerhouse of the cell, Dr. Thomas O'Brien, Biochemistry and Molecular Biology professor at the University of Florida, has become the powerhouse behind its research, beginning with his 1967 discovery of mitochondrial ribosomes. Three years later, in 1970, Dr. O'Brien was introduced as the "father" of the mitochondrial ribosome at the Gordon Research Conference on Mitochondria. His discovery has since avalanched into a developing understanding of the ways in which mitochondrial ribosomes' composition, structure, function, and evolution are relevant to human health and mitochondrial disease.

- Dr. O'Brien recently introduced to the scientific community 90 new candidates for mitochondrial disease, deafness, sensor neural...

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AFFILIATION

 University of Florida

EDUCATION

- Ph.D. in Physiology 1964 , Marquette University

AWARDS

- Basic Science Research Award
- NATO Senior Science Fellow
- European Molecular Biology Organization
- National Science Foundation Fellow

RESEARCH AREAS

Life Science, Metabolic / Diabetes, Oncology / Cancer

FUNDING REQUEST

Your contributions will help Dr. O'Brien to better understand the mitochondrial ribosomes thereby leading to breakthroughs that could help eliminate cancerous cells, and treat mitochondrial diseases.

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