A Breakthrough Discovery Linked to the Curing of Alzheimer's and Parkinson's Diseases

Davis Joseph Awarded the Semenza International Cell Engineering in Medicine Award for this Discovery

Davis Joseph receiving the Semenza International Cell Engineering in Medicine Award by Prof. Gregg Semenza 2019 Nobel Laureate in Physiology or Medicine at SIPS 2024 Gala and Award Ceremony

WILMINGTON, DE, UNITED STATES, November 21, 2024 / EINPresswire.com/ -- Sustainability through Science and Technology Summit 2024 (SIPS 2024) in its 20th year edition, held in Crete, Greece from 20-24 October 2024, awarded the Semenza International Cell Engineering in Medicine Award to Davis Joseph, for a breakthrough discovery linked to the curing of Alzheimer's, Parkinson's, and other neurodegenerative diseases.

Davis Joseph discovered something that could not be found for the last 17 years: the fundamental neurobiological mechanism of 4E-BP2 Protein deamidation. 4E-BP2 is a protein whose absence in the brain causes memory impairment while 4E-BP2 deamidation is a spontaneous reaction occurring in neurons that alters the protein synthesis in them. Any alteration that affects the optimum balance of protein production required for a healthy nervous system causes imbalances and, as a result, neurodegenerative disease. The discovery found that the axon, a cable-like structure found in neurons, is the key factor of the mechanism that causes 4E-BP2 deamidation due to its special characteristics. Davis validated his discovery experimentally in both the central and peripheral nervous system including the optic nerve, the sciatic nerve, the whole brain, the retinal ganglia, and the dorsal root ganglia of mice. During this work, he invented and developed new methods of dissecting the optic nerve, the retina, and

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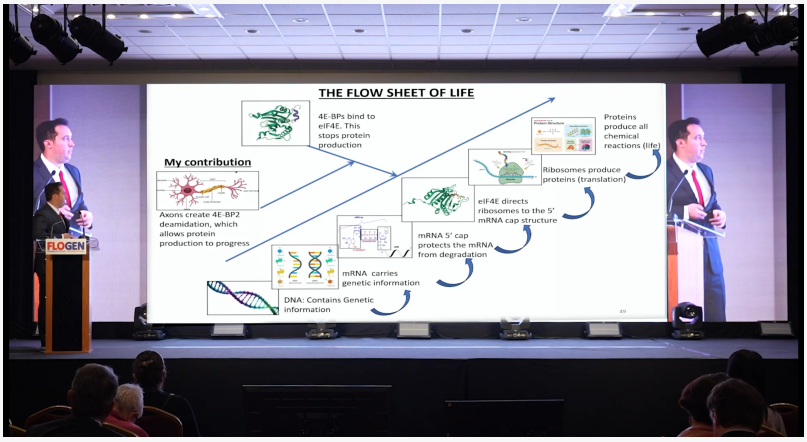
> *Prof. Gregg L. Semenza, MD, PhD, 2019 Nobel Laureate in Medicine*

the whole brain simultaneously as well as dissecting the sciatic nerve without relying on previous literature. These were the first-ever experiments in which the optic nerve, retina and sciatic nerve were dissected to detect 4E-BP2 deamidation. This discovery revolutionizes humanity's understanding of protein production in the human body and paves the way to developing effective treatments against neurodegenerative diseases, such as Alzheimer's, Parkinson's, and many others.



Davis Joseph during his SIPS 2024 Summit Plenary Presentation describing his major discovery that leads to the curing of Alzheimer's and Parkinson's diseases

During the work, Davis made another discovery related to the role of axon-induced oxidation in translational control proteins which paves the way for seminal research into oxidative stress-related drug development against neurodegeneration.

Davis Joseph delivering the acceptance speech during the FLOGEN SIPS 2024 award ceremony

Davis presented this work at SIPS 2024 in the summit plenary session and his work was published as a single author in the FLOGEN Starts Outreach/SIPS 2024 publication and subsequently at the International Journal of Molecular Sciences, one of the world's top journals in the fields of Biochemistry and Molecular Biology (a Q1 Journal). The full paper is given here: https://www.mdpi.com/1422-0067/25/22/12268

"Davis' discoveries at such an early age are impressive and he will have a brilliant and successful career," says Dr. Gregg L. Semenza, MD, PhD, 2019 Nobel Prize in Physiology or Medicine, Professor of Genetic Medicine and Director, Vascular Program, Institute for Cell Engineering at Johns Hopkins School of Medicine, USA

"Davis' research discovery is superb. He will be a Nobel Prize Winner himself," says Harvey J. Alter, M.D, 2020 Nobel Prize in Physiology or Medicine, Principal Investigator, National Institute of Health, USA

"Davis' work is excellent," says Dr. Frank Slack, Ph.D., Shields Warren Mallinckrodt Professor of

Medical Research, Director, HMS Initiative for RNA Medicine, Director, Cancer Research Institute, Departments of Medicine, and Pathology, BIDMC Cancer Center, Harvard Medical School, USA

The award that bears the name and is in honor of Prof. Gregg L. Semenza, 2019 Nobel Prize in Physiology or Medicine, was personally handed over to Davis, by Prof. Gregg L. Semenza himself during SIPS 2024 Gala and Award Ceremony on 22 October 2024 at Out of the Blue Resort, in Crete, Greece.

Photos and full videos of the ceremony and interviews can be viewed here: https://www.flogen.org/?p=195&bio=2024_Davis_Joseph

About:

Davis Joseph is a researcher at the Faculty of Medicine, McGill University and Biochemistry Research Director at FLOGEN Technologies Inc. Davis has received 18 honors, awards, and distinctions for his academic performance in Mathematics (twice), Natural and Social Sciences (twice), French, English (twice), awards for his overall academic results and his service to his community from various Canadian institutions including the "Collège Notre-Dame," "Collège Jean-de-Brébeuf" and the Montreal Geriatric Institution.

FLOGEN Technologies (www.flogen.com) is a High-Tech applied research institute dedicated to developing new sustainable technologies and transforming the existing technologies into sustainable ones in four different fields: Biochemistry, Chemistry, Metals Extraction and Environment based on FLOGEN Sustainability Framework.

FLOGEN Stars Outreach (www.flogen.org), is a not-for-profit corporation dedicated to achieving sustainability through science and technology, raising the profile of science and engineering in society and properly honoring scientists and engineers.

SIPS - Sustainability through Science and Technology Summit (https://www.flogen.org/sips2024/) is a science-focused and industrial engineering-oriented multidisciplinary conference held every year around the world with an average participation of five hundred authors from academia, industry, government, and the entrepreneurship world representing on average 80 countries. The summit is dedicated to achieving sustainability through science and technology and hosts numerous Nobel Laureates regularly.

FLOGEN sustainability Framework (https://www.flogen.org/pdf/sips16_524FS.pdf) is an innovative concept that establishes 3 criteria to be achieved simultaneously to achieve Sustainability i.e. Environmental Protection, Social Development and Economic Growth sustained by three equally important pillars/actors i.e. Science and Technology, Governance and management and Education and Civil Society. The concept fixed the disfigured idea of sustainability and related confusion that existed in literature and in the society. In September

2024, this framework became a constitutional law in the city of Nova Friburgo, Rio de Janeiro, Brazil in an unanimously approved legislative decision, a first in the world in which a scientific concept is transformed into law that it will be used for the approval of all strategic and day to day projects in the city.

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