The Brain's "Thermostat": Shedding Light Upon Neurological Disease



Jerry Yin Professor, Department of Genetics; Department of Neurology

CURRENT RESEARCH

Molecular tools that identify disease before symptoms occur

It is estimated that six thousand different human diseases have genetic causes. While research is heavily concentrated on a few of these diseases -- Alzheimer's, Parkinson's disease, and cancers to name a few -- the remaining diseases often get little attention, time, or funding. Dr. Jerry Yin, of the University of Wisconsin, is focused on research that is likely to have an effect on a wide range of diseases. In fact, Dr. Yin's investigation of memory formation has led him to a set of molecules that is dysfunctional in most, if not all neurological diseases prior to the onset of the first disease-related symptoms and problems. In other words, this molecular signature and behavioral read-out could be diagnostic in telling providers if something is wrong earlier than ever before and therefore, lead patients to seek out more tests to determine what is wrong. In addition to the likelihood of successful applications, Dr. Yin's work provides fundamental research that gives insights into new behavioral interventions and outcome measures.

Dr. Yin's research, operating at multiple levels of neurobiology, is committed to linking these different levels in order to make an impact on patients. His work with fruit flies has lead to important findings about the CAMP signaling pathway which works much like the thermostat of a house. Anytime a cell or organism needs to change in response to something, this ancient pathway plays a role in "turning up the heat" or "lowering it" to help the organism adjust to change. In the presence of disease-causing molecules, Dr. Yin believes an organism has trouble resetting the thermostat and through understanding this process, he hopes to measure its occurrence to predict disease. Thus, Dr...

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AFFILIATION

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EDUCATION

- Ph.D. in Molecular Biology 1986, University of Wisconsin, Madison
- B.A. in Biology 1975, Princeton University

RESEARCH AREAS

Life Science, Diagnostics, Metabolic / Diabetes, Neurological / Cognitive

FUNDING REQUEST

Your contributions will support the continued research of Dr. Jerry Yin, of the University of Wisconsin, as he studies brain function and dysfunction to develop diagnostic, therapeutic tools, and outcome measures. Donations will support the necessary \$500K required each year for personnel and supplies. However, additional funding will help to accelerate their work and extend his current research to rodent and even human samples.

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