

News

The University of Texas Health Science Center at Dallas
5323 Harry Hines Boulevard Dallas, Texas 75235 (214)688-3404

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Contact: Sheila Raven

or Ann Williams

Office: 688-3404

Home: 375-6043

*****Searle Scholar chosen to study acid balance at UTHSCD.

DALLAS--A novel protein that acts as a pump to rid cells of acid is the subject of a study to be conducted by 1984 Searle Scholar Dr. Dennis K. Stone of The University of Texas Health Science Center at Dallas.

Stone said the award of the \$157,500 grant to support his research over the next three years will allow him to conduct an in-depth study of the regulation of acid or hydrogen ion (proton) balance that is essential for life in the individual cells of the body.

The protein, a novel proton ATPase, acts as a pump to rid kidney cells of acid, a function critical for normal cell metabolism. In the kidney, the proton ATPase works in concert with a chloride transporting protein to aid the body in excreting excess hydrochloric acid into the urine.

The researcher's work could have clinical significance in renal tubular acidosis, an inherited kidney disorder.

After similar proton pumps were found in brain cells, Stone began looking at other cells in the human body. His research of those pumps will center on purifying the acid-purging protein to see what it does in an artificial setting at the molecular level.

In addition, he will measure the rate acid is excreted because of proton ATPase and will further define the physiology of the system.

Efforts to isolate the protein begin by using a special detergent to transfer the protein to an artificial membrane. The protein adheres to the detergent so it can be inserted into liposomes, or tiny spheres of soybean lipid.

The number of protons "pumped" into the liposome is determined by using a special dye read by a spectrometer that absorbs light at certain wavelengths.

Stone said the award of the Searle grant will give him more flexibility in conducting the research than is provided by government grants.

As 1984 Searle Scholars, Stone and 19 other researchers were selected from more than 130 applicants sponsored by 78 U.S. universities. The recipients are chosen for demonstrating a potential for innovative research that will make significant contributions to their profession. The funds for the program are designated to support newly established investigators.

"I appreciate the Searle Scholars program's and UTHSCD's commitment to young researchers," Stone said. "Here the thrust has always been to take people when they are young and develop their potential. It reflects the reputation of this school that I was selected."

Stone, a native Dallasite, received his B.A. from The University of Texas at Austin and his M.D. from Southwestern Medical School. He completed intern and residency programs at Columbia-Presbyterian Medical Center, New York, and then returned to UTHSCD to do fellowship

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Searle scholar

work in kidney physiology and how the kidney secretes acid ions.

He recently worked with Dr. Efraim Racker, one of the foremost membrane biochemists in the United States, on a post-doctoral fellowship at Cornell University in Ithaca, N.Y.

A board-certified nephrologist, Stone also thinks of himself as a membrane biochemist.

Stone is the second Searle Scholar selected at UTHSCD. Last year Dr. Paul Sternweis, assistant professor of Pharmacology, was a Searle recipient.

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