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News

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*****Southwestern scientists receive
\$50,000 award.

(HOLD FOR RELEASE IN TUESDAY AMs)

Two Dallas medical school scientists who opened a new research frontier with their discovery of how one kind of inherited defect causes heart attacks were given the first annual \$50,000 Richard Lounsbery Award for Biology and Medicine in Washington Monday night, (April 23).

Drs. Michael S. Brown and Joseph L. Goldstein, professors at The University of Texas Southwestern Medical School, will share the award presented by the National Academy of Sciences. The honor also carries a \$20,000 travel and research grant.

Dr. Goldstein is chairman of the Department of Molecular Genetics and Dr. Brown is director of the Center for Genetic Diseases at Southwestern. They are co-holders of the Paul J. Thomas Chair of Medicine at the medical school.

The award was one of 14 presented by the NAS during its 116th annual meeting. Another of the 14, the National Academy of Sciences Public Welfare Medal, was presented to Cecil H. and Ida M. Green, Dallas philanthropists who were among the founders of Texas Instruments, Inc., "for their outstanding role as discriminating donors, seeking those opportunities where their support of science could make a qualitative difference--to people and institutions."

The Greens are, in fact, among the most generous benefactors of Southwestern Medical School and The University of Texas Health Science Center.

A third award, the James Murray Luck Award for Excellence in Scientific Reviewing, with a \$5,000 honorarium, was made to G. Alan Robison, chairman of the Department of Pharmacology at The University of Texas Health Science Center at Houston.

The achievement of Drs. Goldstein and Brown has been credited by other researchers as shedding new light on how body cells regulate production of essential substances. Starting with groups of people whose cells seemed to produce too much cholesterol or fat, the pair zeroed in on children who were dying of heart attacks as early as 7 to 12 years of age.

Tracing the complex chemistry step by step, Brown and Goldstein focused on the membranes which cover each of the body's millions of cells.

Like the surface of the moon, normal cells are covered with receptors which have a specific job of recognizing and "grabbing" various body chemicals. Some of the receptors had the job of binding with a form a blood fat known as low density lipoprotein, (LDL).

The incredibly sophisticated process is so sensitive that "it compares to putting a teaspoon of sugar in a swimming pool and being able to taste the sweetness," Dr. Brown explained.

Taken inside the cell by the receptor, the LDL takes a part in building and maintaining the cell and, more importantly, causes a chemical reaction which keeps the cell from manufacturing too much of its own fat or cholesterol. In addition, when the LDL is taken inside the cell the LDL particle is destroyed. This destruction prevents the blood fat level from building up too high.

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What the Dallas researchers found when they were able to grow and manipulate skin cells in test tubes was that the people who inherited the blood fat disease (familial hypercholesterolemia) were lacking the right kind of cell membrane receptors.

With little or no LDL absorbed by the cell, there was no chemical reaction to stop internal production of cholesterol. The body was unable to destroy the LDL normally, so that it built up to enormous levels in the blood stream and eventually plugged the arteries, producing heart attacks.

As many as one out of every 500 Americans have some form of this disorder.

The further importance of the discovery may rest with fact that other processes in the cell seem to be regulated by the receptor binding process. Other chronic diseases could be a result of genetic malfunction involving the cell membrane.

Drs. Brown and Goldstein have won a number of awards for their work. They include the Heinrich Weiland Prize for 1974, the Pfizer Award of the American Chemical Society for 1976, the Harvey Society Lectureship for 1977, the Bernstein Award of the New York State Medical Society for 1977, and the Passano Award of 1978.

Dr. Goldstein is a graduate of Southwestern Medical School where he received the school's top honor--the Ho Din award of Southwestern Medical Foundation. Dr. Brown won similar acclaim at the University of Pennsylvania medical school. The two became friends in 1966 when they were interns at Massachusetts General Hospital. The pair began developing their common interest in genetics when they were appointed to research positions at the National Institutes of Health near Washington.

As a part of the award process, Drs. Brown and Goldstein were to deliver a paper on their research at the Lounsbery Symposium Wednesday morning (April 25) during the NAS annual scientific program.

The Richard Lounsbery Award is a memorial to an American banker who developed an interest in biology and medicine during his lifetime, and who was also interested in promoting relations between the United States and France.

The award, created by Mrs. Lounsbery, will be given next year to a French scientist under an arrangement between the National Academy of Sciences and the Academie des Sciences of France.

The criteria for the alternating awards will be "The scientific level of his work, the scope of his discoveries and the benefit to mankind that may derive from them."

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