

Immune system researchers win \$500K medical prize

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Dr. Bruce Beutler of the Scripps Research Institute in La Jolla, Calif., speaks during a news conference in Albany, N.Y., Friday, April 24, 2009. He was a co-recipient of the Albany Medical Center Prize, the largest medicine or science award in the United States. (AP Photo/Mike Groll)

(AP) -- The nation's richest prize in medicine and biomedical research was awarded Friday to three immune system researchers for work that led to new treatments for rheumatoid arthritis and diabetes.

The \$500,000 Albany Medical Center Prize is being shared by Dr. Ralph Steinman of Rockefeller University, Dr. Charles Dinarello, of the University of Colorado, and Dr. Bruce Beutler, of The Scripps Research Institute in La Jolla, Calif.

It's the largest medicine or science award in the United States, and ranks second only to the \$1.4 million [Nobel Prize](#) among medical prizes.

The Albany prize was established in 2000 with a \$50 million gift from the late Morris "Marty" Silverman, a New York City businessman who wanted to encourage health and biomedical research.

Their progress in the study of immunity started with Steinman in 1973. He discovered a white blood cell he named the dendritic cell. The cells act as the 911 call for the body, alerting other [white blood cells](#) to multiply and prepare a defense.

Steinman's discovery of [dendritic cells](#) and their role in immunity, has pushed research toward potential vaccine improvements, treatment of autoimmune disorders and cancer.

"It's very important to understand how your body resists infection," Steinman said.

Dinarelli worked on therapies to block the immune system's inflammatory reaction when it's harmful.

Dinarelli identified the molecule in the body that produces a fever, or inflammation. Since discovering that molecule, later called [Interleukin-1](#), he's focused his work on blocking it to relieve inflammation. This, and discoveries of different Interleukins, has resulted in treatment for immune disorders, including Crohn's disease, diabetes, allergies and rheumatoid arthritis.

Beutler defined what another type of protein the dendritic cells produce does for immune systems. It's called Tumor Necrosis Factor, or TNF. He isolated TNF and explained that it also played a role in responding to inflammation.

Beutler created a medication that blocks TNF when it goes into overdrive. The medication - brand name Enbrel - has been used to treat [rheumatoid arthritis](#), psoriasis, and other autoimmune disorders.

Beutler is most proud of discovering the key proteins that the immune system uses to "see" viruses. By acting like the eyes of our [immune system](#) these "toll like receptors" (TLR) spark the body's response to an infection.

Scientific progress and discoveries usually move slowly, but Beutler said the moment when he realized he had found TLRs, he knew it was a major discovery.

"It was the most exciting moment of my life," he said. "It made me hyperventilate and I could barely talk and tell my colleagues."

On the Net:

Albany Medical Center: <http://www.amc.edu/Academic/AlbanyPrize> .

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