UT SOUTHWESTERN MEDICAL CENTER NEWS

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Dr. Bruce A. Beutler, other American Nobel Prize winners receive congratulations from President Obama

DALLAS – Dec. 1, 2011 – UT Southwestern Medical Center geneticist and immunologist Dr. Bruce A. Beutler and other 2011 Nobel Prize winners from the U.S. today met with President Barack Obama at the White House, launching a series of events leading to the prize ceremony in Stockholm later this month.

"It was an honor to meet President Obama, especially in the company of my fellow Nobel laureates. It was a prize in itself to know that our country, represented by the president, holds our work in such high esteem," said Dr. Beutler, who recently returned to UT Southwestern, where he made his seminal discoveries, to become the director of the new Center for the Genetics of Host Defense.

The Nobel laureates' day of recognition in Washington included a seminar at the Embassy of Sweden and a black-tie dinner in their honor at the home of Jonas Hafström, the Swedish ambassador. Dr. Beutler and the other honorees will receive their awards in ceremonies on Dec. 10 in Stockholm.

Dr. Beutler and Dr. Jules A. Hoffmann of Strasbourg University's Institut de Biologie Moléculaire et Cellulaire in France shared half the Nobel Prize in physiology or medicine for their discovery of receptor proteins that recognize disease-causing agents and activate innate immunity, the first step in the body's immune response. The other half of the prize went to the late Dr. Ralph M. Steinman of Rockefeller University in New York for his discovery of the dendritic cell and its role in adaptive immunity.

Dr. Beutler was a faculty member and a Howard Hughes Medical Institute investigator at UT Southwestern from 1986 to 2000. From 1993 to 1998, he searched for a receptor capable of binding the bacterial product called lipopolysaccharide (LPS), which can cause life-threatening septic shock, a condition that involves overstimulation of the immune system.

Dr. Beutler's original studies at UT Southwestern led to the identification of Toll-like receptors as sensors that act like sentinels to alert the host immune system when infection is present.

In 1998, he and his colleagues discovered that mice resistant to LPS had a mutation in a gene

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that was quite similar to the Toll gene in the fruit fly, the organism Dr. Hoffmann studied.

This Toll-like receptor (TLR) turned out to be the elusive LPS receptor. When it binds LPS, signals are activated that cause inflammation in mammals. Excessive LPS overstimulates the immune system and causes septic shock. These findings showed that mammals and fruit flies use similar molecules to activate innate immunity when encountering pathogenic microorganisms. The discoveries of Drs. Beutler and Hoffmann triggered an explosion of research investigating innate immunity.

Drs. Beutler and Dr. Hoffmann also shared the Shaw Prize in a Sept. 28 award ceremonies in Hong Kong with Dr. Ruslan M Medzhitov of Yale University.

UT Southwestern faculty members now have won five Nobel Prizes since 1985. Dr. Michael Brown and Dr. Joseph Goldstein (1985), Dr. Johann Deisenhofer (1988) and Dr. Alfred Gilman (1994) preceded Dr. Beutler in being honored by the Nobel Assembly at Karolinska Institutet.

Prior to his return to UT Southwestern, Dr. Beutler – elected to both the National Academy of Sciences, and the Institute of Medicine in 2008 – was chairman of the Department of Genetics at Scripps Research Institute in La Jolla, Calif.

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