

## WOMEN AND LUPUS ? TACKLING THE DEBILITATING CONNECTION

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### With \$2 Million Grant, UH Researcher Unraveling the Link

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The chronic inflammatory disease systemic lupus erythematosus (known as SLE or lupus), is about nine times more common in women than men, and a University of Houston researcher now has the money to find out why. **The National Institutes of Health** has awarded **Chandra Mohan**, Hugh Roy and Lillie Cranz Cullen Endowed Professor of biomedical engineering, \$2 million dollars to examine the connection.

Mohan knows just where he's taking the money ? straight to the bank. Bank1, that is, a critical gene in B-Lymphocytes, immune cells which make the antibodies that cause lupus when they misguidedly attack the body's own cells.

?Bank1 exists in men and women, but in women the consequences are more drastic because the Bank1 gene and female hormones work together on the same pathway and make even higher levels of disease-causing auto antibodies,? said Mohan.

Genetic studies have led to the identification of several genes involved with lupus, but how they operate is still unclear. One of these genes is the Bank1.

?We will examine how the Bank1 impacts B-cell function and disease, in concert with female sex hormones,? said Mohan. ?A unique aspect of this grant is its focus on unraveling why females are more prone to lupus, by factoring in the contributions of culprit genes and estrogens.?

Merely having a target is a step forward in the investigation of the complex autoimmune disease that is difficult to diagnose and treat because it is a multisystem disorder typically impacting skin, joints and kidneys. The disease is characterized by high levels of anti-nuclear autoantibodies and B-cell hyperactivity. Only one treatment for lupus has been approved in nearly 60 years.

Mohan will examine the molecular mechanisms through which lupus genes and sex hormones interface to cause autoimmunity. A better understanding of the pathogenic mechanisms underlying the disease will also pave the way towards better therapeutics, he said.

Mohan is one of the leading lupus researchers in the world. For more than three decades he's been exploring the disease on different fronts.

"There are three major areas we need advances on concerning lupus," said Mohan. "We need a better understanding of the disease, we need to know if we can diagnose and monitor the disease better using better biomarkers, and we need to know superior ways to treat the disease."

On this grant Mohan is joined by Chin-Yo Lin of the UH Center for Nuclear Receptors and Cell Signaling and biologist Anne Satterthwaite of UT Southwestern Medical Center in Dallas.