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The National Institute of Diabetes and Digestive and Kidney Disease of the National Institutes of Health Wins the FLC Mid-Atlantic Region Technology Transfer Award for Targeted Treatments for Chronic and Painful Diseases

The Mid-Atlantic Region of the Federal Laboratory Consortium this year presented the second place, Regional Excellence in Technology Transfer Award to Dr. Kenneth A. Jacobson of the National Institute of Diabetes and Digestive and Kidney Disease of the National Institutes of Health for work on "Targeted Treatments for Chronic and Painful Diseases."

The researchers have developed a group of compounds useful in treating a wide variety of diseases, many of which are chronic and painful for those afflicted. These compounds, known as adenosine A3 receptor agonists, are small molecules that bind to adenosine A3 receptor and induce their biological activity. The adenosine A3 receptors are embedded in cell surfaces and are important for communicating the need for a cell to initiate activity in response to adenosine detected outside the cell. Adenosine is important in the body's response to chronic or acute tissue stress or cell damage. Because the four subtypes of adenosine receptors are located in different tissues, they tend to be tissue- and disease-specific, making them both very valuable in drug development and challenging for identifying molecules that will bind to them with the desired affinity and specificity. The first selective adenosine A3 receptor agonist and also the most selective such agonists have been designed by NIDDK researchers to stimulate this receptor subtype exclusively and, therefore, have very focused biological activity. For example, certain of these small molecules activate adenosine A3 receptors to provide cerebroprotective, cardioprotective, and anti-inflammatory effects and to shrink tumor cells.

The development of receptor-specific adenosine A3 receptor agonists of high affinity at NIDDK has enabled current clinical trials and pre-clinical studies by NIDDK's licensee and CRADA partner, Can-Fite Biopharma, Ltd. for treatment of rheumatoid arthritis, dry eye syndrome, and psoriasis, with very encouraging results. Rheumatoid arthritis is a chronic disease of unknown cause affecting 2.1 million Americans. It can lead to long-term joint damage, resulting in chronic pain, loss of function and disability. Dry eye syndrome is an extremely common condition, the cause of which remains unclear, and is thought to affect approximately 60 million Americans. Psoriasis is a lifelong skin disease affecting approximately 7.5 million Americans, about 10 percent to 30 percent of whom also develop psoriasis arthritis, which causes pain, stiffness and swelling in and around the joints. Other autoimmune inflammatory diseases are under study and in pre-clinical trials in an effort to bring comfort to other patients and alleviate other chronic and painful diseases through use of the technology. Its use is also being evaluated in pre-clinical studies for cancers.

One of the most coveted awards in the field of technology transfer, FLC awards for Excellence in Technology Transfer recognize laboratory employees who have accomplished outstanding work in the process of transferring Federally-developed technology to the marketplace. The award was made on September 21 at the region's annual meeting.

The Federal Laboratory Consortium is comprised of the technology transfer offices of all of the Federal laboratories throughout the country while its Mid-Atlantic Region focuses on the 70 Federal laboratories in DC, DE, MD, PA, VA and WV.

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