

ECU SEEKS PARTNER TO LICENSE

Vaccine for Multiple Sclerosis and Other Autoimmune Diseases

East Carolina University seeks a collaborative partner to develop a new advancement in the treatment and prevention of autoimmune diseases—especially multiple sclerosis (MS).

MS afflicts more than 2.5 million people worldwide. In the United States alone, 400,000 people suffer from the disorder at an annual cost to the economy of about \$20 billion. MS is an autoimmune disease that affects the central nervous system, and more particularly, the myelin material that surrounds and protects individual nerve fibers. The body's own immune system attacks the myelin, leaving behind lesions and scarring that interrupt electric impulses traveling to and from the brain. Symptoms of MS include fatigue, bladder and bowel dysfunction, difficulty in walking, reduced cognitive function, dizziness, depression, pain, visual impairment, sexual dysfunction, and other symptoms. No cure exists for MS, but various treatments are available to improve the quality of life for those living with the disease. The global market for these treatments is currently estimated at \$4.9 billion.

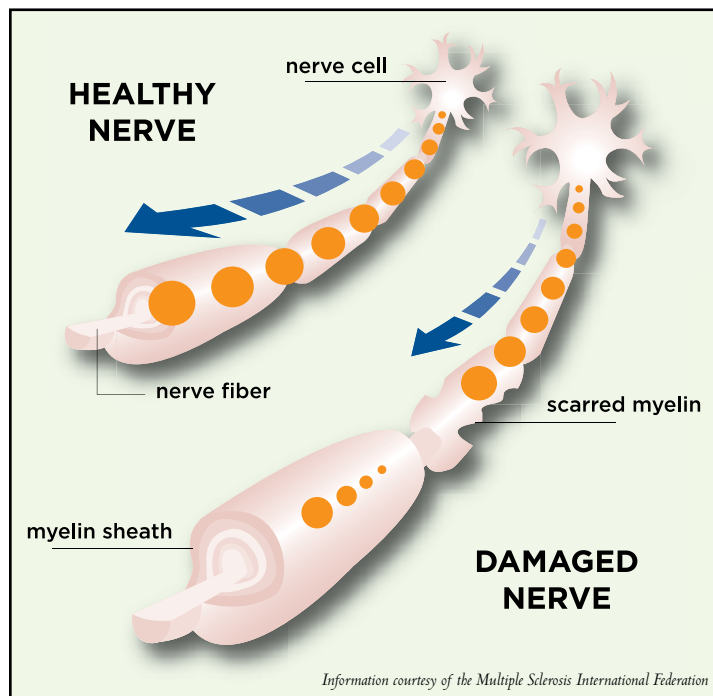
TECHNOLOGY

Mark D. Mannie, PhD, of the Department of Microbiology and Immunology at the Brody School of Medicine at East Carolina University, recently developed a unique fusion protein that, when tested in the widely accepted experimental autoimmune encephalomyelitis (EAE) rat model, produced a dramatic tolerogenic effect. Rats, whether pretreated or treated following exposure to the EAE stimulating agent, exhibited **decreased incidence, reduced symptoms, and delayed onset of attack.**

Dr. Mannie is currently planning studies in other mammalian models that will eventually lead to clinical trials in humans.

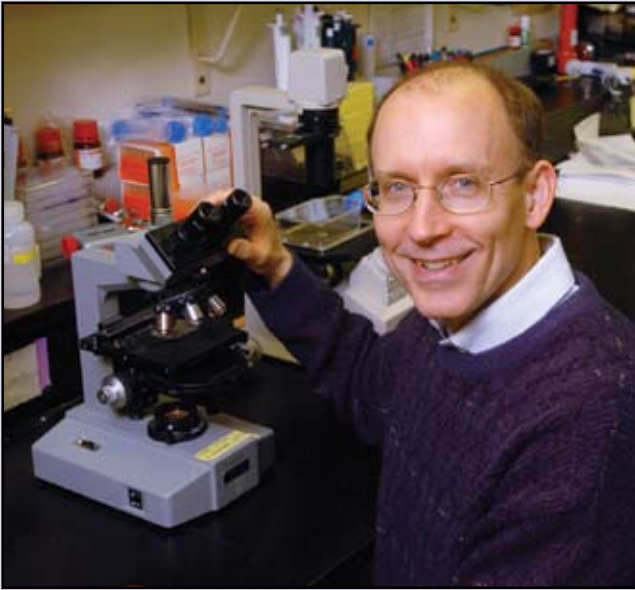
OTHER APPLICATIONS

- Diabetes type I
- Rheumatoid arthritis
- Crohn's disease
- Lupus
- Hyperthyroidism and hypothyroidism
- Other autoimmune disorders



ADVANTAGES

- Strong market need for products with improved efficacy and simpler modes of delivery
- Technology may be applied to other forms of autoimmune disorders
- Fusion protein is selective and does not hinder normal T cell activity in the immune system



Mark D. Mannie, PhD, has developed a unique fusion protein to help in the treatment and prevention of autoimmune diseases.

ABOUT THE INVENTOR

Mark D. Mannie
Professor
Department of Microbiology and Immunology
The Brody School of Medicine at
East Carolina University
600 Moyer Boulevard
Greenville, NC 27834-4534
<http://www.ecu.edu/cs-dhs/microbiology/mannie.cfm>

RECENT ARTICLES

Patel, D. M., R. W. Dudek, and M. D. Mannie. 2001. "Intercellular exchange of class II MHC complexes: ultrastructural localization and functional presentation of adsorbed I-A peptide complexes." *Cell. Immunol.* 214, 21-34.

Patel, D. M., and M. D. Mannie. 2001. "Intercellular exchange of class II MHC/ peptide complexes is a conserved process that requires activation of T cells but is constitutive in other types of APC." *Cell. Immunol.* 214, 165-172.

Walker, M. R., and M. D. Mannie. 2002. "Acquisition of functional MHC class II/peptide complexes by T cells during thymic development and CNS-directed pathogenesis." *Cell. Immunol.* 218, 13-25.

Mannie, M. D., D. J. Frasier, and T. J. McConnell. 2003. "IL-4 responsive CD4+ T cells specific for myelin basic protein: IL-2 confers a prolonged postactivation refractory phase." *Immunol Cell Biol.* 81, 8-19.

Breakthrough Research at East Carolina

For a century, East Carolina has served the people of North Carolina and the nation. From modest beginnings as a teacher training school, East Carolina has grown to become an emerging, national research university with an enrollment of more than 24,000. East Carolina is focused on using new technology to improve the quality of life for the public. East Carolina received top rankings in studies conducted by the *Chronicle of Higher Education* and the Milken Institute measuring the practical application of research for the university's success and efficiency in filing patents, licensing inventions, and creating spin-off companies. ECU's research has led to the formation of several spin-off biotechnology companies in eastern North Carolina. In addition, ECU has entered into a partnership with Pitt Community College to assist in developing a biotechnology labor pool for the region. Researchers at East Carolina are committed to making discoveries daily that are consistent with the university's mission to serve the public with its tools for innovation.

CONTACT

Mark Foley
Licensing Associate
Office of Technology Transfer
East Carolina University
2200 South Charles Boulevard
Greenville, NC 27858
Phone: 252-328-9546
E-mail: foleym@ecu.edu