

Getting on your nerves... and repairing them

February 15 2007

Here is some news that will certainly get on people's nerves: In a study to be published in the March 2007 issue of *The FASEB Journal*, scientists from East Carolina University report that a key molecular mechanism, RNA interference (RNAi), plays a role in the regeneration and repair of periphery nerves, which are the nerves located outside of the brain and spinal column. This research may lead to new therapies that manipulate RNAi to treat people with damaged nerves resulting from degenerative disorders and injury.

Andrew Z. Fire of Stanford University and Craig C. Mello of the University of Massachusetts won the 2006 Nobel Prize for the discovery of RNAi. This study builds on this and other RNAi research, which was reviewed in the July 2006 issue of *The FASEB Journal*, showing that RNAi regulates the creation of proteins in the body.

Until now, there has been no direct evidence that RNAi controls local protein synthesis in axonal nerve fibers, which act as "pavement" for the nervous system's "information superhighway." In addition, the mechanism involved in the nerve fiber creation did not depend on communication with, or transport from, the nerve cell body or its nucleus, or from surrounding support cells. Axonal nerve fibers can be as long as three feet (sciatic nerve), and this independence makes RNAi a promising drug target.

"Repairing and rebuilding damaged nerve tissue is one of the greatest medical advances not yet achieved," said Gerald Weissmann, MD, Editor-in-Chief of *The FASEB Journal*, "and this research is a huge leap

forward. It's no accident that a Nobel Prize discovery should be followed up by great new science."

Source: Federation of American Societies for Experimental Biology

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