

Breakthrough in search for MS treatment

BRITISH scientists have discovered a potential cause for multiple sclerosis, in a major breakthrough that could pave the way for new treatments for the disease.

Scientists have found a new cellular mechanism which may cause the autoimmune disorder.

Although the cause has so far been a mystery, the disease makes the body's own immune system attack myelin - the fatty "sheaths" which protect nerves in the brain and spinal cord. This leads to brain damage, a reduction in blood supply and oxygen and the formation of lesions in the body. Sym-

toms can be wide-ranging, and can include muscle spasms, mobility problems, pain, fatigue, and problems with speech. Scientists have long suspected that mitochondria, the energy-creating "powerhouse" of the cell, plays a link in causing multiple sclerosis.

Using human brain tissue samples, researchers at the Universities of Exeter and Alberta found a protein called Rab32 is present in large quantities in the brains of people with MS - but is virtually absent in healthy brain cells.

Where Rab32 is present, the team discovered that a part of the cell that stores calcium gets too close to the mi-

tochondria. The resulting miscommunication with the calcium supply triggers the mitochondria to misbehave, ultimately causing toxicity for brain cells in people with MS.

Researchers do not yet know what causes an unwelcome influx of Rab32 but they believe the defect could originate at the base of the cell.

The finding will enable scientists to search for effective treatments that target Rab32 and embark on determining whether there are other proteins which could play a role in triggering MS.

The paper is published in the journal *Neuroinflammation*.

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