Multiple Sclerosis (MS) Diagnosis and Treatment using LRG-47

Technology #2123

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Multiple Sclerosis (MS) Therapies Slow Disease Progress - With serious Side Effects

Multiple Sclerosis (MS) is an autoimmune disease of the central nervous system that affects an estimated 2.5 to 3 million patients worldwide. The immune system attacks the myelin sheath encasing and protecting nerve fibers, thus disrupting the transmission of electrical signals between the brain, spinal cord, and various parts of the body. Affected individuals often exhibit a constellation of heterogeneous motor and sensory symptoms, some of which are extremely debilitating. Currently available therapies slow disease progress or reduce the frequency of relapses, but either suffer from modest efficacy or serious side effects.

Diagnostic and Therapeutic Methods Tested for Treating Multiple Sclerosis (MS)
The invention comprises both a diagnostic method, validated in humans, and a therapeutic method, validated in animal models. Expression levels of the immunity-related GTPase LRG-47, also called Irgm1, were increased many-fold in serum, CSF, and spinal cord tissue from MS patients, as well as in serum and spinal cord tissue from a mouse model of MS. Furthermore, inhibition of LRG-47 using anti-LRG-47 antibody or LRG-47 siRNA protects against clinical symptoms in a mouse model of MS.

Applications:
• Treatment for relapsing and progressive forms of MS
• Diagnostic test for MS
• Diagnostic biomarker for monitoring the progression of MS
• Companion biomarker for measuring the response to MS treatment

Advantages:
• No definitive MS diagnostic test is currently available
• Novel target for MS therapeutic
• LRG-47 translocates to the cell membrane, thus making it accessible to antibodies for therapeutic intervention
• May be more efficacious than current treatments
• May avoid serious side effects of current treatments


Licensing Status: Available for Licensing and Sponsored Research Support

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