Innovations
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

Product

Diagnostic Test

Indication

Multiple Sclerosis

Value Propositions

▸ Novel, blood-based diagnostic
▸ Mitigates the need for invasive diagnostic spinal tap

Market

▸ $27 billion—
Global MS market
(6.3% CAGR 2021-2028)

Intellectual Property

▸ Provisional Patent Filed*
▸ Available for licensing

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Background on CU5589H

Multiple sclerosis (MS) is a chronic inflammatory disease of the CNS with demyelination and neuronal damage and is the most common cause of neurological disability in young adults. In 2021, there were roughly 784,000 Americans living with MS. A characteristic feature of MS is the increased intrathecal synthesis of IgG, and the presence of oligoclonal bands (OCBs) in the brain and CSF. Current laboratory diagnosis of MS relies entirely on the demonstration of elevated total IgG levels and the presence of oligoclonal bands in CSF obtained through a lumbar puncture (spinal tap). Diagnosing MS quickly is crucial to facilitate intervention and be able to effectively treat the symptoms and eventually the condition itself. A need exists for more rapid and reliable diagnosis of MS and its subtypes.

Technical Innovation

Dr. Xiaoli Yu and a team of researchers in the department of Neurosurgery have developed a novel blood-based screening method for the detection of higher levels (>2.5 x) of serum IgG1 and IgG3 antibody subclasses in MS. Furthermore, serum IgG antibodies (ex. IgG1 or IgG3) can be used to distinguish Secondary Progressive MS from Relapse Remitting MS/Primary Progressive MS, and for monitoring the effectiveness of disease modified therapies. This new technology mitigates the need for an invasive spinal tap. Identification of these biomarkers in the serum rather than CNS is a less invasive and more cost-effective means for diagnosing MS in patients.
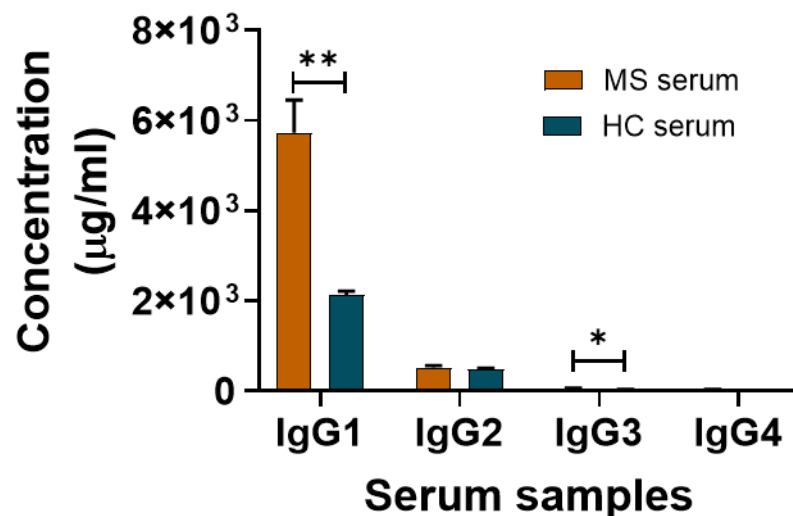

Figure: Representative experiment illustrating IgG1 and IgG3 detection in serum using technology platform from subjects having MS compared to healthy controls.

*Provisional Patent—"Methods, Compositions, and Applications for Diagnosing Multiple Sclerosis"—Filed September 29th, 202