SIERRA BIOPHARMA

A healthy immune system for a healthy life

AT A GLANCE

Autoimmune Therapeutics
Founded in 2019
Headquartered in Davis, CA
Leveraging $4.5M in non-dilutive awards and grants from NIH

MILESTONES

Constructed and characterized therapeutic compound for MG

Proof of concept testing in rats and beginning initial dog studies

EXECUTIVE TEAM

Robert Fairclough, Ph.D.
Chief Executive Officer and Co-founder
Biophysical chemist; over 40 years of research into the Acetylcholine receptor (AChR) and MG at the University of California, Davis.

Vu Trinh, Ph.D.
Chief Scientific Officer and Co-founder
Molecular biologist/protein chemist; over 10 years of research into MG. Developed compound for testing.

David Richman, M.D.
Clinical Advisor
More than 40 years of executive leadership experience in inflammatory disease drug development

SUMMARY

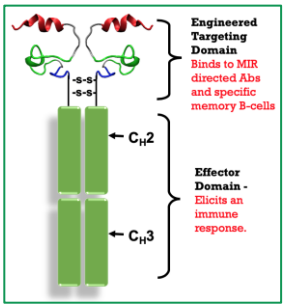
Sierra Biopharma is developing therapeutics that selectively neutralize, remove, and destroy immune components that lead to autoimmune diseases, starting with the orphan indication myasthenia gravis (MG).

BACKGROUND

Myasthenia Gravis is a chronic autoimmune neuromuscular disease that affects approximately 1.4 million people worldwide. The disease –which triggers an immune response that blocks the normal functioning of neuromuscular signals – leads to serious and progressive consequences, including weakness in skeletal muscles and even the inability to walk, talk, eat or breathe.

RESEARCH DETAILS

To solve this problem, Sierra Biopharma has developed an antigen-specific therapeutic for MG that targets pathogenic antibodies (Abs) and the memory B-cells (mBCs) that lead to their production. This biologic compound currently binds to and neutralizes the main immunogenic region (MIR) in directed pathogenic Abs and should eliminate their mBCs.



This approach has significant advantages over the current standard of care:

- **Effective** – blocks and clears pathogenic anti-MIR Abs by binding to their combining sites
- **Targeted** – only attacks disease causing pathogenic anti-MIR Abs — and not the wider immune system
- **Antigen-specific** – unlike other solutions, does not down regulate entire immune system

IMPACT / ADVANTAGE

The worldwide drug market for Myasthenia Gravis is approximately $1.2 billion per year and growing. Current MG therapies include non-antigen-specific immune suppression, which makes patients vulnerable to infection. Sierra Biopharma's unique and targeted approach eliminates pathogenic antibodies and their memory B-cells while maintaining a functional and healthy immune system for better patient benefit.

Sierra Biopharma is focusing initially on MG to validate the product before pursuing additional autoimmune disorders, which affect over 24 million Americans.

Program	Indication	Discovery	Pre-clinical	IND	Phase 1
MIR-MG	Myasthenia Gravis				
MIR-LE	Lambert Eaton MG syndrome				
MIR-A	Allergies				

The company also has strong IP patent protection with an exclusive license through UC Davis.

NEAR-TERM RESEARCH PLANS

The company has raised initial non-dilutive funding to develop the therapeutic compound for MG and begin proof of concept tests in rats and is seeking $700K to run toxicity and dosing studies and start developing and testing the biologic in dogs.