



A CASE STUDY OF RETTSYNDROME.ORG'S SCOUT PROGRAM

Research with Results

Executive Summary

Rettsyndrome.org presents a case study of the successful partnership between our organization and a biopharmaceutical company (Anavex Life Sciences Corp.). The study helps to identify potential new treatments for Rett syndrome. This study also serves as an example of how a non-profit organization can encourage the pharmaceutical industry to test compounds and drugs. These drugs are in their pipeline for preclinical testing and can support a non-profit organization. In this case study, we cover the positive testing of the compound, ANAVEX 2-73, in a mouse model of Rett syndrome. It also outlines Anavex's plan to move ahead into a human clinical study.

Background - Scout Program

In June of 2013, the Rettsyndrome.org Board of Directors gave final approval to launch the Scout Program, a Drug Discovery Screen in a mouse model of Rett syndrome. Since then, \$1.2M has been put into this program that puts Rettsyndrome.org in a unique position to proactively accelerate Rett syndrome research. Over 14 compounds have been tested, and 3 compounds are going into human clinical trial planning.

Steve Kaminsky, PhD, Chief Science Officer of Rettsyndrome.org, determined that a standardized testing bed for preclinical testing was lacking for Rett syndrome, and the Scout program was developed. Participants in a workshop recommended important guidelines that the community of Rett researchers can implement to ensure more standardized study design and transparent reporting. Therefore, the Scout program was designed and focused on the state of the art in animal studies for Rett syndrome.

The Scout program has been developed to provide a rigorous platform for the drug companies to use for either new or repurposed compounds they believe might be useful in treating Rett syndrome. This aspect of the Scout program provides an incentive to the drug company to make Rett syndrome a priority in their clinical research portfolio because Rettsyndrome.org provides the testing environment through our established partnership with a Contract Research Organization (CRO) and does not take any intellectual property away from the company. The program is designed to facilitate drug discovery for industrial partners and allows them the opportunity to help those with Rett syndrome.

The Scout program testing bed is performed under contract with the CRO PsychoGenics, Inc. in Tarrytown, New York.

ANAVEX 2-73

Anavex has a vision of bringing *Precision Medicine* to patients suffering from a wide range of Neurodevelopmental and Neurodegenerative Diseases, including Rett syndrome, Parkinson's and Alzheimer's. To achieve this goal, Anavex is dedicated to developing Effective Targeted Therapies.

ANAVEX 2-73 is a small molecule in clinical development. It activates the Sigma-1 receptor, targeting cellular homeostasis by reducing protein misfolding, oxidative stress, mitochondrial dysfunction, inflammation and cellular stress, relevant in the pathophysiology of a wide spectrum of neurodegenerative and neurodevelopmental diseases. Given the converging beneficial effects of **ANAVEX 2-73** on seizures, cognition and anxiety, confirmed prior in independent studies, Anavex was committed to exploring an indication with a very high unmet need, Rett syndrome, which might require the combined amelioration of those individual ailments.

Partnerships

ANAVEX was informed that Rettsyndrome.org offered the Scout program to accelerate Rett syndrome research. The program could test **ANAVEX 2-73** in a validated MECP2 deficient mouse model that causes neurological symptoms that mimic Rett syndrome. **ANAVEX 2-73** was added to the priority list for testing in the Scout program by the independent CRO. The encouraging results demonstrated dose related significant improvements in an array of behavioral and gait paradigms in the Rett syndrome model. The data was subsequently presented by Christopher Missling, PhD, President and Chief Executive Officer of Anavex at the 14th Rett syndrome Research Symposium in June 2016.

Results

Given the interest by the Rett syndrome community, Anavex is now planning a clinical study with Rett syndrome. With the data generated from the Scout Program, Anavex received the FDA orphan drug status for **ANAVEX 2-73** in May 2016. Now, Anavex is committed to continue to work very closely with the Rett syndrome community which builds the case that Rettsyndrome.org and its partnerships are key to bringing forth potential new options for the treatment of Rett syndrome and other neurodevelopmental and neurodegenerative diseases.