SCITECH IDEAS IN ACTION

Dr. Stephen A. Hill

The fifth SciTech Lecture Series for the 2013-2014 Academic Year featured the President and CEO of Targacept, Dr. Stephen A. Hill, a relative newcomer to Winston-Salem. In December 2012, Dr. Hill accepted the leadership of this biopharmaceutical company which is engaged in the development of novel NNR Therapeutics™ for the treatment of various diseases and disorders of the nervous system. Karen Hicks, the Vice President of Human Resources for Targacept, introduced Dr. Hill as an individual with an optimistic vision who is committed to building on the company's successes over the past years and has the vision and enthusiasm to continue moving its drug candidates toward commercialization. Despite its lead drug candidate's failure in Phase 3 clinical trials in 2012 and the consequent downsizing of their workforce from 134 employees to 43, office relocation, and stock price tumbles, the company ended 2013 with over $140M in cash and investments, a substantial library of preclinical compounds, a solid investor base, and supportive Board of Directors. It is therefore understandable why the current employees of Targacept remain positive and upbeat about their company. They have a new leader at the helm, and there is still opportunity for a resurgence that could positively impact patient lives and create substantial value for this biopharmaceutical company.

Focusing on the positives, Dr. Stephen Hill opened his lecture, "*Biotech: Risks and Rewards,"* by illuminating the fact that there are substantial inherent risks in research and drug development, but there are also substantial rewards and benefits for patients when a drug is successful. As he explained, many pharmaceutical companies fail because it is such an expensive process to get a single drug to market, often requiring investments in the hundreds of millions of dollars before the medicine is even available for sale. For every small company that succeeds, many more fail. There are uncomfortable statistics showing that 90% of the experimental medicines that are studied in humans fail to be both safe and effective. In spite of these high hurdles and long odds, Dr. Hill assured the audience he has a positive outlook for this relatively young company.

With a slide presentation, he lectured on the beginnings of the research with tobacco plants and nervous system receptors. For example, it was discovered that when the Green June Beetle Bug ate tobacco plants, the nicotine in the plant served as a natural built-in pesticide which modulated neurotransmission in the predator. Building on an understanding of neurotransmission pathways and the role of nicotinic receptors, a group of researchers at R. J. Reynolds delved further. Neuronal nicotinic receptor (NNR) Therapeutics™ are designed to selectively modulate the activity of specific NNRs considered relevant to particular diseases, while also limit adverse side effects. Thus, the foundation for a new biopharmaceutical company, Targacept, was created.

With so much risk of failure on the forefront, one is asked why bother with this research? Dr. Hill cited three "future epidemic" motivations for becoming a part of this high-risk business: (1) the development of a drug for treating Alzheimer's disease, which affects 5 million people in the US alone --; (2) a better quality of life for those suffering with schizophrenia; and (3) a cure for those "silent sufferers" of bladder incontinence, some of whom are so affected they cannot work. These are only a few examples of motivators for continuing the quest of researching and developing new drugs. Dr. Hill's final slide was one for stimulus and hope for a company that refuses to accept failure. He quoted from one of history's most famous people, Winston Churchill, who said, "We must never, never, never give up."

Video Link: https://www.youtube.com/watch?v=JgsDyrfwJts