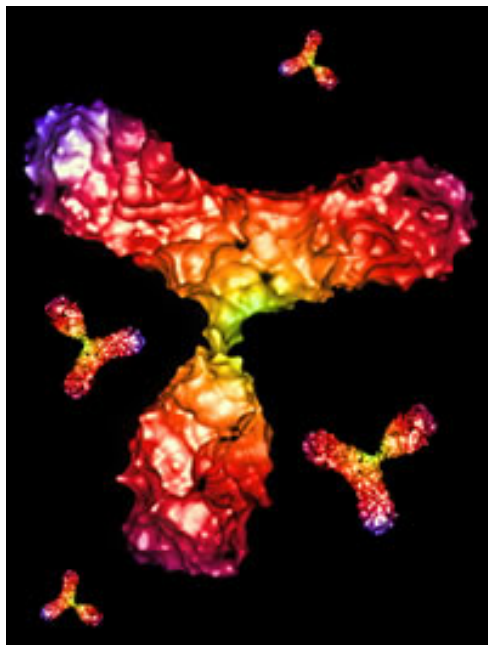


Financial and Technological Risk Analysis for the Development of New Drugs



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Abstract

A feasibility study regarding the risk and viability of a new drug was performed. All aspects of pre-FDA research and testing and the FDA approval process have been considered and a probability study constructed. Although the model is specific for a carbohydrate-based tuberculosis vaccine, many of the analysis procedures and considerations apply to any new drug. Market strategies and demand models were developed. A set of first stage decisions concerning the degree to which the theory is researched and tested was established, and the risk and expected worth of each scenario were determined. The focus on first and second stage decisions helps determine the time period of research that would best suit the needs of the investor. The investor can use the model and have a clear view of what decisions need to be made beforehand with the results of a general financial analysis. The financial study will aid the investor – whether he be a risk averter or a risk taker- in the decision of the pre-FDA research length and the intensity.

Although the development of a new drug is of high risk and uncertainty, as shown in this paper, it is certain that a successful drug would have great benefit to humans due to its wide-spread effect. There are many diseases- malaria, HIV, cancer, leishmaniasis, and tuberculosis, to name a few- that are currently responsible for the deaths of millions of people per year around the world, and steps are being taken to counter their negative effects. Using the risk modeled in this paper, the investor is responsible for weighing the technical and financial risks of the project against the potential for revolutionary change world-wide.