ACCELPharma

IPRO 353 - DNA, Dollars & Drugs: Applications of Pharmacogenomics - Fall 2006

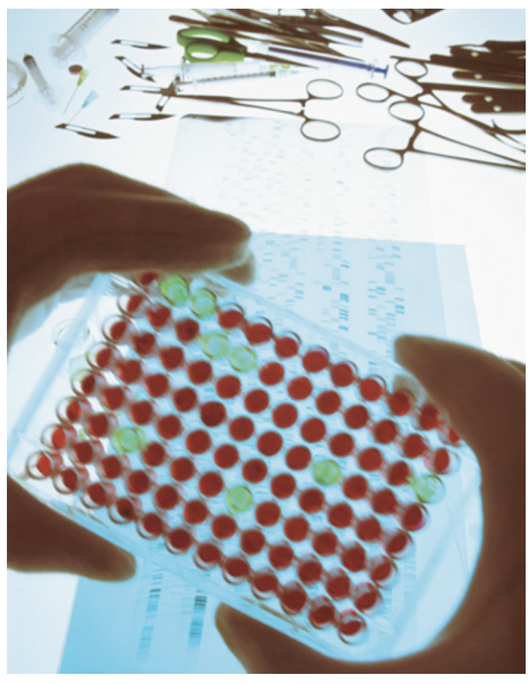
Discover the *ACCEL*Pharma Model

Pharmacogenomic Analysis

In order to pinpoint specific mutations causing the side-effect, pharmacogenomic meta-analysis is used in conjunction with a variety of publicly available sources that provide significant information on the targeted genes.

The enzymes used in the metabolic process of each drug are important to discovering any mutations in the c-DNA sequence of the person being tested. Those mutations are compared to a standard, and used to generate a list of suspected genes within the general population.

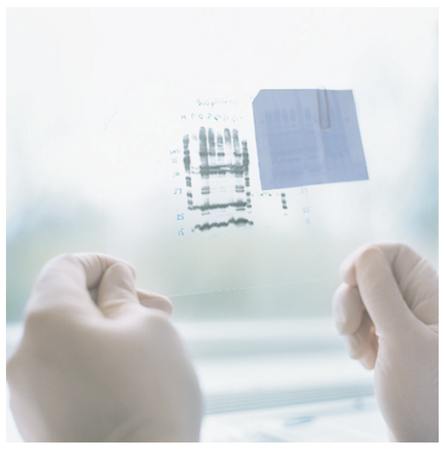
Polymerase Chain Reaction (PCR)



PCR basically provides a way to exponentially generate large amounts of DNA from a very small sample size. It is a very powerful tool to detect mutations in real-time. We will be using a specialized form of Allele-specific PCR, in which primers are developed for each mutation to determine the specific polymorphism/ mutation in a certain individual. Developing the PCR kit will be a one-time cost, which can be used repeatedly for each patient blood sample at a low per-test cost. The kit can be applied to each blood sample, generating a matrix containing the occurrence of each allele in each patient.

Data Analysis

Data from the PCR analysis will be input into a database along with information on the adverse affect. Using SPSS Clementine®, we can then construct a data tree model and compare the occurrence of an allele to an adverse effect. Using methods like QUEST (Quick, Unbiased and Efficient Statistical Tree) or CHAID (Chi-squared Automatic Interaction Detector) the model will identify variables that are most significant to the prediction of an adverse effect, as well as calculating the probability of this allele being a predictor.



Key Words

Mutation

Any change within a DNA or RNA sequence. A mutation does not necessarily have to cause physiological change. If the mutation significantly alters the genomic sequence, it can cause structural changes to the proteins/enzymes in the body. Any change to a protein or enzyme indicates an entirely new functional or non-functional change, causing mild to severe physical effects.

Primers

Short, artificial segments of DNA that complement the beginning or ending of the specific DNA fragment to be replicated. They work by adhering to a single, denatured DNA strand and begin replication when bound with DNA polymerase.

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Pharmacology is about helping people

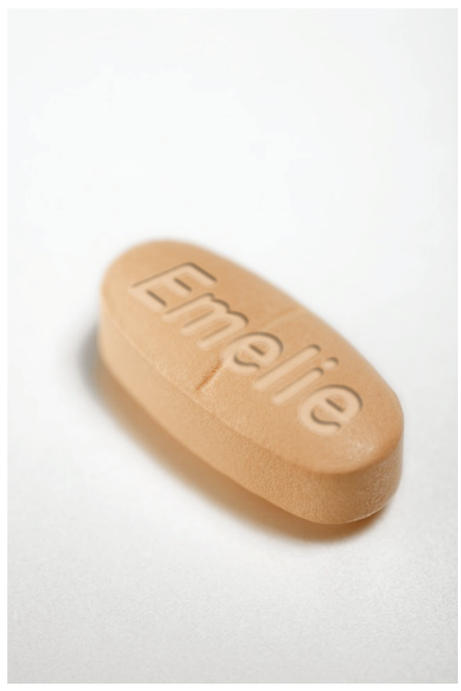
On September 30, 2004, Merck announced a voluntary worldwide withdrawal of their arthritis drug VIOXX®, after a study had indicated that the drug could double the risk of heart attack or stroke.

Two years later, this drug that in 2003 created a worldwide revenue of over $2.5 billion dollars had instead cost Merck almost $300 million in lawsuits with a total of 1 billion set aside for further legal expenses up through 2007. [1]

Introducing Personalized Medicine

Why do some people react differently than others to a drug?

How is it that that You might take a drug that will significantly improve Your life, while I risk death by taking the same pill?



ACCELPharma provides an answer for these questions. With a personalized approach to medicine, we apply pharmacogenomic methods to determine who will suffers such side-effects and who will not. Our assumption is that human biological diversity all comes down to the sequence of our DNA. By finding correlations between biological signs, such as a reaction to a drug, and the DNA of a person this reaction can be predicted.

With just a simple blood sample and Our test kit, blockbuster drugs like VIOXX® can be reintroduced to the market to once again create revenue and once again start helping people.

[1] - "Vioxx maker absolved in 7th trial" *MSNBC*. <http://www.msnbc.msn.com/id/13844314/>. July 13, 2006

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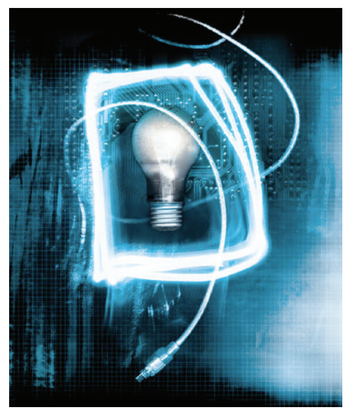

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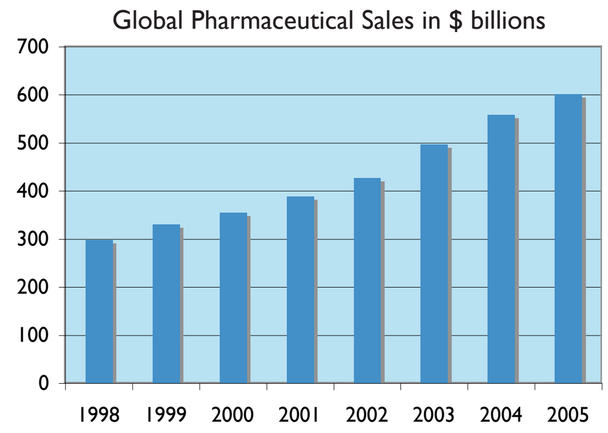
Business Plan

Market Overview

Fast growing pharmaceutical industry
- 9.5% per year



Great need of reducing cost in development of new pharmaceuticals
- Average cost per drug: $900 millions,
  75% of this cost is from drug faliure (2005)
- 10% improvement in predicting clinical trial
  failures save $100 million in drug development

Lack of sufficient data on correlation between the drug and the adverse effect
- Significant need for a prediction model
  which determines such correlation.

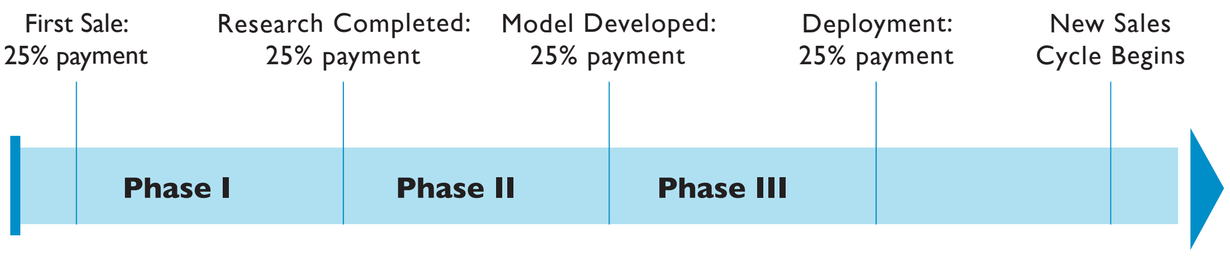
Competative Analysis

Product	Data Resource	Enable Drug Reintroduction	Genome Based	Application to Specific Field*	Range** of Application
IMH Health	Consulting Service	Yes	No	No	No	Broad
Monogram Biocience	Diagnostic Tool Kit	Yes	No	Yes	Yes	Narrow
ACCELPharma	Diagnostic Tool Kit	Yes	Yes	Yes	Yes	Broad

*The degree of accuracy for a specific type of disease or drug.
**The degree to which the data/model can be applied in testing various types of deseases or drugs.

Revenue Model

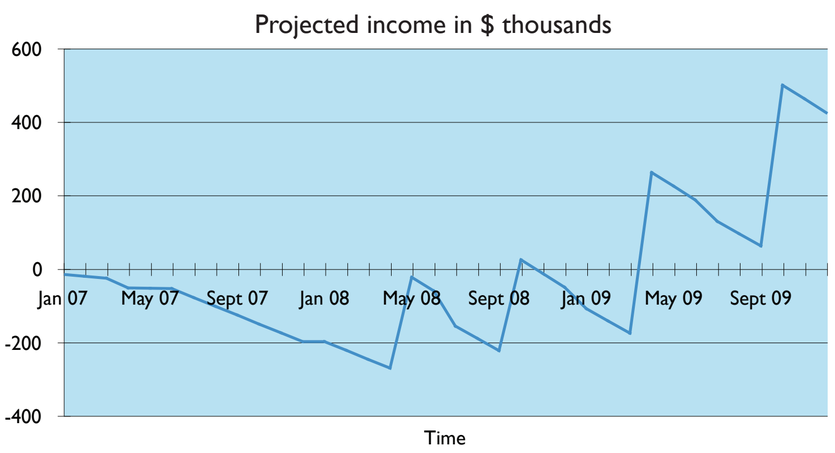
Fixed Price & Royalties



Projected Income

	2007	2008	2009
Net Sales		$570,000	$950,000
Total Expenses	($200,354)	$421,591	$474,772
Net Earnings	($200,354)	$148,409	$475,228

Accumulated Income



IMS Health Total Market Estimates and Global Pharma Forecasts (includes IMS Audited and Unaudited Markets)

Pricing

Contracts negotiations will be based on former one year sales of the drug with which we will be working. A gradient scale will be used so that our product will be based on the potential value it offers the client. We will use the following scale to negotiate contracts:

Drug Sales	Contract Price
< $10 million	$300,000
< $50 million	$500,000
< $500 million	$1,000,000
> $1 billion	$1,500,000

Possitive cash flow

After first sale which is estimated before April 2008.

Breakeven point

After second sale which is estimated before October 2008.

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