

Biotech Industry Innovators SP07

Development of drugs to target diseases of the skeleton

I would like to propose a company to screen drugs for diseases related to the skeleton such as osteoporosis, osteopetrosis and bone metastasis. Osteoporosis is a common disease in post-menopausal women and leads to very high expenses in health care. Upon removal of the inhibitory effect of estrogen on bone turnover during menopause, women undergo rapid degradation of their bones by the bone-resorbing osteoclasts. A similar problem is associated with cancer metastasis to bone. Bone residing tumors, such as cancers of the breast and the prostate, lead to the activation of the osteoclasts

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coalition:

Plant and Life Science

needs:

Team Members, Investors

programs:

Biotech SP07 class - L415014/MGT 500U

url:

None

Advanced Microbial Diagnostics

One in four Americans suffer from food-borne illnesses every year, most of which are caused by unidentified pathogenic bacteria. Despite this fact, out-dated methods are currently used to monitor food for bacterial contamination and for medical diagnosis and treatment. Our company is developing a method that involves sequencing a common genetic barcode found in all bacteria and using our custom software tool (the 'Phylotest') to allow the rapid and reliable identification of bacteria. We are an early stage company looking for financial and logistical support while we develop our business plan.

One in four Americans suffer from food-borne illnesses every year, most of which are caused by unidentified pathogenic bacteria, in addition to the millions of people around the world that die every year from infectious disease. Despite this fact, out-dated methods are currently used to monitor food for bacterial contamination and for medical diagnosis and treatment. Our company is developing a method that involves sequencing a common genetic barcode found in all bacteria and using our custom user-friendly software tool (the 'Phylotest') to allow the rapid and reliable identification of bacteria. Potential markets include all clinical microbiology labs, in addition to the food industry, as the FDA has recommended genetic testing of food products to identify bacterial contamination. We are an early stage company looking for financial and logistical support while we continue to develop our business plan.

Peter Turnbaugh

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Biotech SP07 class - L415014/MGT 500U

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url:
None

BLAST Database Update Service

I have an idea for a tool company that requires a minimum investment, provides a useful service, and could begin generating revenue in less than a year. The most widely used tool to search sequence databases is the Basic Local Alignment Search Tool, or BLAST. Most companies who use BLAST run it locally on their own servers. With the explosive growth of sequence data, keeping their BLAST databases updated is a real problem. My idea is an updating service for BLAST databases. We would download the most recent data sets, build the databases, and update them directly on the customers' servers

I have an idea for a tool company that requires a minimum investment, provides a useful service, and could begin generating revenue in less than a year. Since the completion of the human genome project in 2001, our knowledge of DNA sequences has grown exponentially. We have genome sequences for 53 animals, 47 fungi, and over 300 bacteria. The most widely used tool search sequence databases is the Basic Local Alignment Search Tool, or BLAST. For reasons of efficiency and secrecy, most companies who use BLAST run it locally on their own servers. With the explosive growth of sequence data, keeping their BLAST databases updated is a real problem. My idea is an updating service for BLAST databases. It would download the most recent data sets, build the BLAST databases, and update them directly on the customers' servers on a monthly basis. Such a product that would offer both financial and competitive benefits by saving employee time while keeping on the cutting edge.

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<http://www.insilicode.com>

CoolMist Inhaler

Pulmonary drug delivery is the preferred route of administration of aerosolized drugs in the treatment of respiratory diseases. However, absorption in the lung is often limited by the efficiency of delivery. Most inhalation devices on the market today require patients to co-ordinate inhalation with delivery of the medication from the device, leading to highly variable results. The CoolMist inhaler overcomes the variability issue using a unique flow control mechanism and the patient's natural breathing cycle to deliver a consistent amount of drug irrespective of breathing patterns.

Pulmonary drug delivery is the preferred route of administration of aerosolized drugs in the treatment of respiratory diseases. However, absorption in the lung is often limited by the efficiency of delivery. It has been reported that only 10-40% of the dose typically reaches the lung, while the majority is wasted. Most inhalation devices on the market today require patients to co-ordinate inhalation with delivery of the medication from the device, leading to highly variable results. The CoolMist inhaler overcomes the variability issue using a unique flow control mechanism and the patient's natural breathing cycle to deliver a consistent amount of drug irrespective of breathing patterns.

The pulmonary drug delivery market is projected to reach over \$18 billion by 2011, with a

Biotech Industry Innovators SP07

significant portion going towards inhalation devices. The CoolMist inhaler is at the early stage of product design and testing. A prototype is expected within one to two years.

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Team Members, Product Development, Research Partners

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Biotech SP07 class - L415014/MGT 500U

url:

None

Tissue-promoting Fibrin Sealant

I would like to propose a company to develop a novel and superior fibrin sealant that stimulates tissue growth, enabling tissue to heal better after bleeding. Other fibrin sealant products new to the market simply clot the wound for hemostatic purposes and do not function to allow tissue to heal faster. Using tissue engineering techniques, I would like to improve on its use. The market for fibrin sealants currently reside primarily in hemostatic agents for surgery but are expanding due to its potential use in minimally invasive surgery as a substitute for sutures.

I would like to propose a company to develop a novel and superior fibrin sealant that stimulates tissue growth, enabling tissue to heal better after bleeding. Fibrin sealant is created by naturally taking advantage of the coagulation cascade by applying larger than normal amounts of the proteins fibrinogen and thrombin with calcium chloride to create an effectively insoluble clot. Fibrin sealants are used regularly by surgeons today to commonly stop bleeding during surgery. Other fibrin sealant products new to the market simply clot the wound for hemostatic purposes and do not function to allow tissue to heal faster. Using tissue engineering techniques, I would like to improve on its use with knowledge that is accepted in the scientific community for short-term studies. The market for fibrin sealants currently reside primarily in hemostatic agents for surgery but are expanding due to its potential use in minimally invasive surgery as a substitute for sutures.

Matthew Wood

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Team Members, Advisors, Product Development, Market Analysis, Finance and Accounting, Investors

programs:

Biotech SP07 class - L415014/MGT 500U

url:

None

Pesticide Resistant Beneficial Insects for Agriculture

I have a plan that will improve pest control methods for the agricultural industry while reducing its reliance on chemical pesticides. Not only will it provide health and environmental benefits for society, it won't require farmer to drastically change their current methods.

Biotech Industry Innovators SP07

It involves selling so-called beneficial insects that prey on pests. Unlike existing competitors, these beneficial insects would survive pesticide applications and provide farmers another front in the war on crop loss due to insect damage.

One of the unintended consequences using pesticides to control pests is that both the unwanted target and the natural predator(s) of the pest are destroyed. These predators which prey upon the pest insect population are called beneficial insects. Beneficial insects can offer the farmer another vital mode of action for a pest management plan and their absence represents the loss of a significant resource. Most traditional farmers would be very resistant to the idea of abandoning chemical pesticides in favor of more environmentally friendly or organic methods. A way to combine the two methods would allow farmers to both improve control of insect pests and reduce the use of chemical pesticides.

The plan is to create populations of several species of beneficial insect which are resistant to commonly used chemical pesticides. These insects or their eggs or larvae would then be sold to farmers and applied to fields as a complement to traditional pesticides.

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Biotech SP07 class - L415014/MGT 500U

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None

Bacterial production of Hydrogen

Hydrogen is touted as the fuel of the future, however today it is extracted from oil using electricity derived from fossil fuels. It's been shown that certain bacterias produce Hydrogen in their normal metabolism. I propose a business producing hydrogen from this natural process.

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No information provided

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Biotech SP07 class - L415014/MGT 500U

url:

None
