APOGEE*biotechnology*
CORPORATION

Testimony of
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Submitted to the PA House Republican Policy Committee

November 17, 2010

Dr. Charles D. Smith founded Apogee in 2001 as a spinoff of the Penn State College of Medicine's Department of Pharmacology. Apogee is a leading example of research from Penn State moving into a commercial development entity. After leasing space from the Life Sciences Green House of PA, in the basement of the Penn State Hershey Medical Center for several years, Apogee was pleased to be the first corporate tenant at the Hershey Center for Applied Research in 2007. The core of Apogee's technology is the development of spingosinekinase inhibitors, which are specifically designed to turn off several of the engines that drive cancer cells to divide and grow too quickly, as well as the engines in cells that cause excessive and damaging inflammation.Hundreds of compounds were evaluated and chemically modified to improve specificity and efficacy until ABC294640 was chosen as our lead compound.

ABC294640 has been shown to be very effective in many diseases where excess cell growth and excess inflammation result in disease and damage. In variations on a common theme, ABC294640 has been shown to have clear efficacy in inflammatory bowel diseases including both ulcerative colitis and Crohn's disease; organ transplantation, such as liver and kidney; post surgical organ failure such as acute renal failure—the most common and deadly major complication following cardiac bypass surgery—ocular diseases such as diabetic retinopathy; and in both rheumatoid and osteoarthritis. Inflammation and the damage it causes have been shown to play a significant role in both radiation poisoning and traumatic brain injury. We have strong data in both these indications and are in discussions with the department of defense to fund the development of ABC294640 for these indications for our service men and women. This list of indications is an excellent example of how Apogee leaves no stone unturned in the constant search for money to develop our lead compound and treat any one of these indications.

Evidence of the marked efficacy of ABC294640 can be seen using two micro CTscans to compare the bone integrity of a rat paw in an arthritis model. After four weeks of testing in the arthritis model, the paw showed serious bone damage and degradation from inflammation processes. These animals had largely swollen paws and were unable to bear weight on them. After receiving ABC294640 treatment, the scan showed a smooth, intact bone with significant reductions in the inflammation and

corresponding bone damage. These animals had normal sized paws, minimal discomfort and were walking normally.

ABC294640 has also shown excellent efficacy in inflammatory bowel disease models that replicate both ulcerative colitis and Chrohn's disease. Using a cross section of rat colons to represent a patient with inflammatory bowel disease, a normal, healthy colon contains crypts and villi that absorb food and water as it passes through. The untreated animal that represented a patient with an inflammatory bowel disease suffered severe inflammation and ulcers that, if left untreated, couldresult in severe pain, gastrointestinal symptoms, weight loss and sometimes death. Across section showing ananimal treated with ABC294640 looked much closer to the normal animal than the untreated one, with only minor increases in inflammation in a few places. These animals again demonstrate a very positive effect of ABC294640 in alleviating inflammatory bowel disease. The animals actually gained weight and appeared very healthy.

Our research indicates that ABC294640 is effective in a wide variety of inflammatory diseases and disorders. But in order to move forward, we will shift our development efforts to proving the drug's efficacy in the treatment of advanced-stage cancer in humans. The regulatory pathfor testing a compound for cancer is much less cumbersome and expensive than testing for inflammatory diseases and disorders. From a cost perspective, we are able to spend more investment dollars in testing the compound against cancer than inflammatory diseases and disorders.

ABC294640 has been shown to be a very effective antitumor agent. Whenanalyzing cancer tumor cells, the untreated tumor cells looked healthy, robust and growing, an indication that the cancer is alive and well. The tumor cells that were treated with ABC294640 had large areas of death and ablation, showing good efficacy as an anticancer agent.

In preclinical experiments,ABC294640 dramatically reduced the rate of tumor growth when given as a single agent or in combination with existing cancer drugs.It has been effective in several types of cancer models to date including breast, lung colon, liver, kidney, brain, pancreatic and lymphoma.The Food and Drug Administration has agreed that ABC294640 is both safe and effective enough to enter human clinical trials in cancer patients with all types of solid tumors, including those listed above.

Today, we have an issued patent for this drug and a freedom to operate analysis. The compoundhas proven effective in preclinical animal models, certainly to a level that will satisfy the FDA. With animal research complete, we are ready to develop this lead drug. It has been proven to be safe in an FDA-mandated toxicology studies and has been manufactured in bulk and filled into 250 mg capsules for patients in the clinical trials.

The FDA has evaluated these processes and approved theInvestigational New Drug Application (IND) for ABC294640. This is a major milestone for a small biotechnology company—fewer than fiveINDs have been approved in Central Pennsylvania in the last five years. It is now time to develop this drug by giving it to human patients.

Apogee also just received word that our Orphan Drug Application for ABC294640 has been approved,

which will allow us to apply for additional grants through the Orphan Drug Program and will provide us tax credits through that program. We will continue to exhaust any and every funding avenue available to stretch resources.

We have been conducting research for over six years on these compounds using the traditional research funding avenues, mainly $8 million in Small Business Innovative Research grants from the National Institute of Health (NIH). We now have reached the development phase of the drug and the proverbial valley of death and we need $2 million to reach our next milestone.

Summary

Apogee Biotechnology has reached clinical trials in all types of cancer for its lead drug, ABC294640. The company needs $2 million to conduct clinical trials including the first clinical trial in cancer and the first clinical trial in arthritispatients. These trials will validate ABC294640 to large pharmaceutical companies, in hopes that they will invest in the final stages of development. Every large pharmaceutical company we've spoken with overwhelming agreesthat they like the novel target but wants human data before making the investment.

With $2 million, we can validate the compound and enter into a successful partnership with a pharmaceutical company. We would take the proceeds from this partnership and expand development into additional indications, as well as advance additional novel drugs for sphingosinekinase and other targets.

We feel our strength and specialty has been proven in the successful production and early development of new drugs. With funding to begin clinical trials, we would expand our current program and team to further this effort here in Central PA.We just need the money to get across this bridge.

We thank you for your attention and interest in helping our drug discoveryreach the market for human use and benefit.

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Effective Treatment of Inflammatory Diseases and Cancer

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About Us

2001

APOGEEbiotechnology CORPORATION + Lead Compound **ABC294640**

2007

HERSHEY CENTER FOR APPLIED RESEARCH
Here for tomorrow.

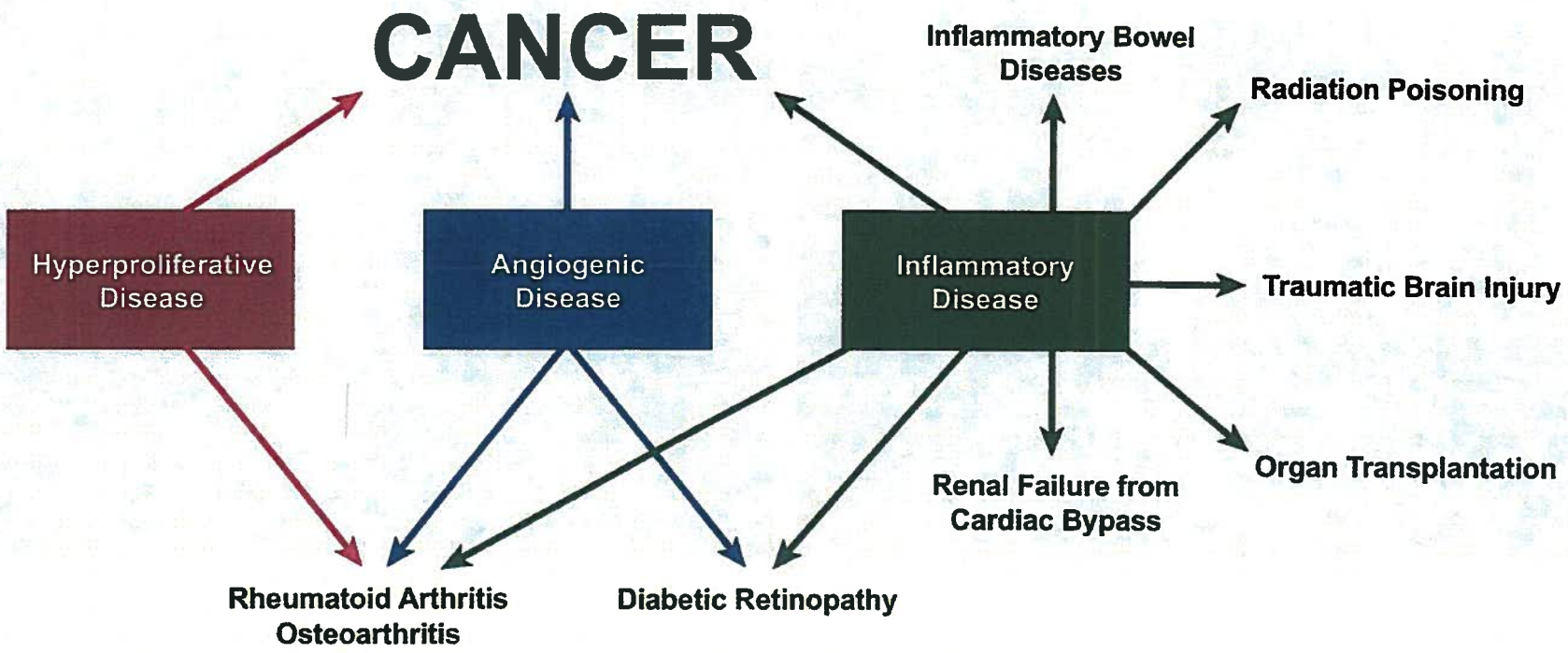
Today

Preclinical Trials Complete

IND Application Approved

Poised to Begin Clinical Trials

Potential Indications



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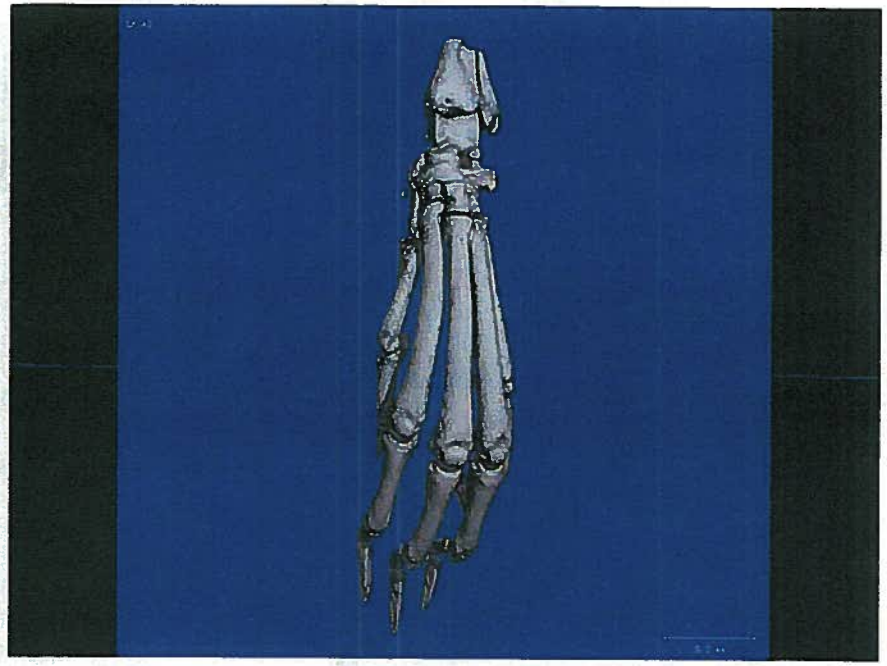
Prevents Bone Damage from Arthritis

Vehicle



ABC294640

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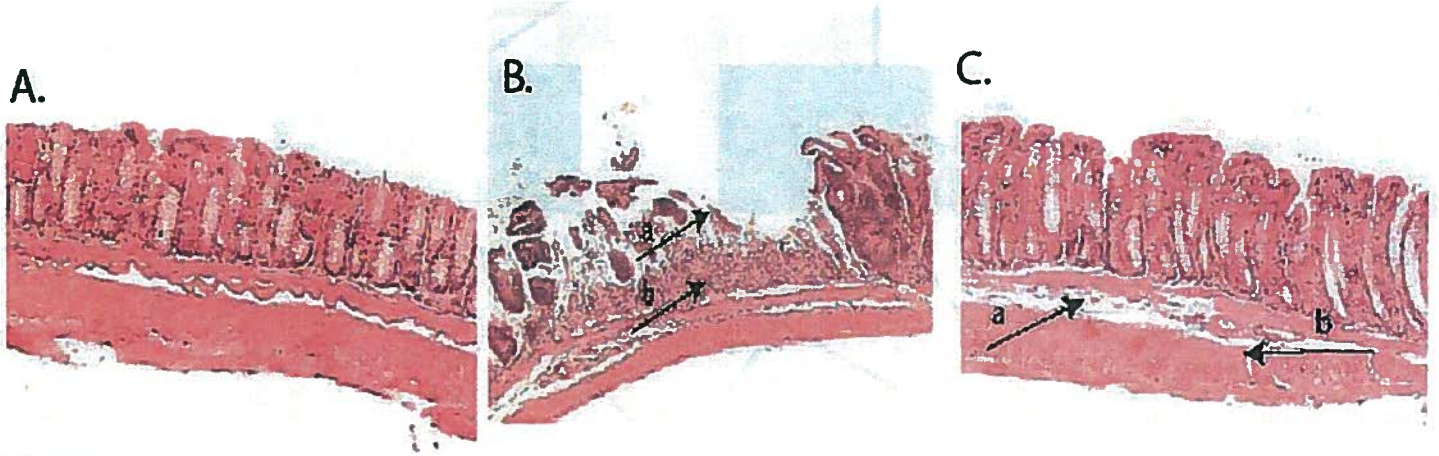
Reduces Severe Damage Caused By Inflammatory Bowel Disease (IBD)

Animal Model of Human IBD



Healthy Colon | Damaged by IBD | Prevented by ABC294640

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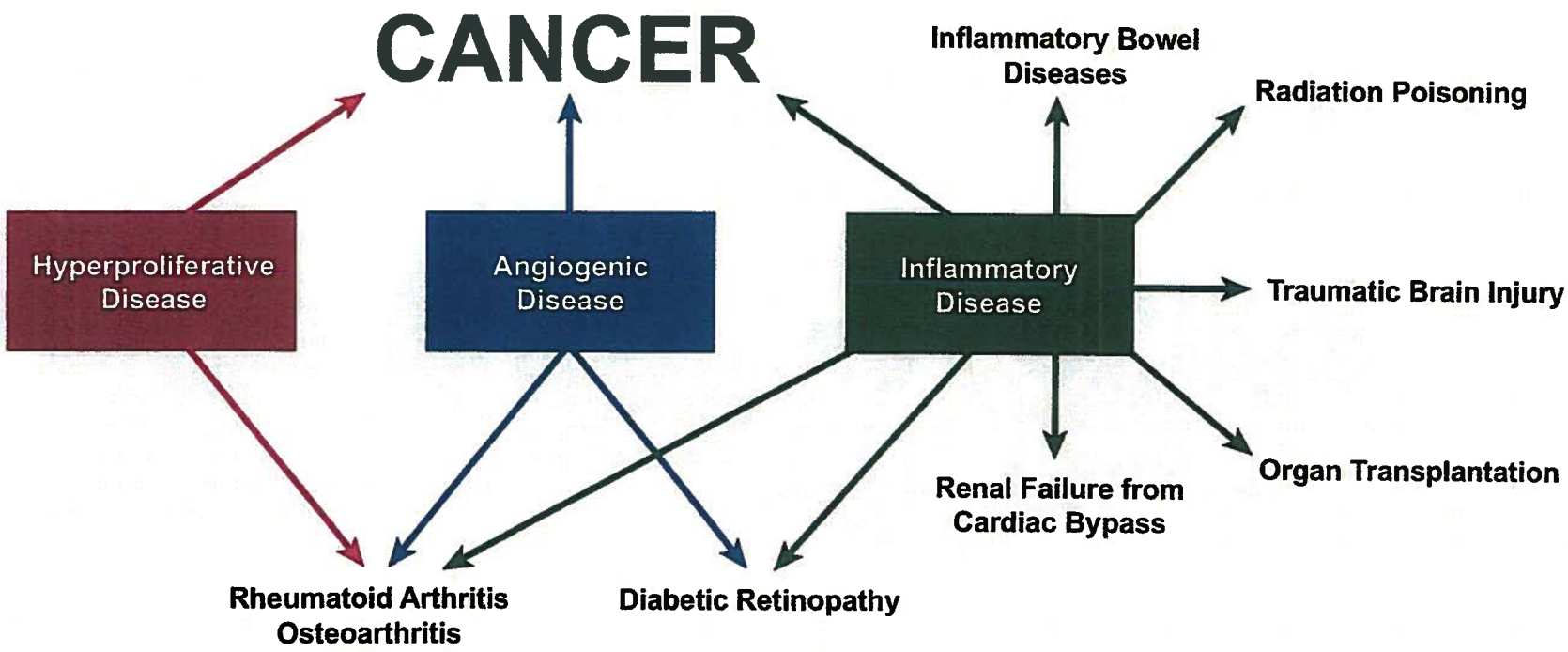
Potential Indications



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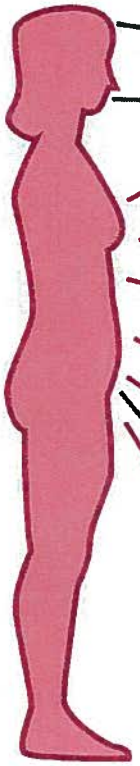
Big Picture

"Behind heart disease, cancer is the leading cause of death in the United States, with over 500,000 people dying each year."

(U.S. Dept of Health and Human Services, CDC, 2007)

Targets Several Deadly Advanced-Stage Cancers

Melanoma of Skin	3%
Oral	3%
Lung	**16%**
Pancreas	**2%**
Stomach	2%
Colon & Rectum	**12%**
Prostate	**32%**
Urinary	**9%**
Leukemia & Lymphomas	**7%**
All Other	14%



3%	Melanoma of Skin
2%	Oral
32%	**Breast**
13%	**Lung**
2%	**Pancreas**
13%	**Colon & Rectum**
4%	**Ovary**
8%	Uterus
4%	**Urinary**
6%	**Leukemia & Lymphomas**
13%	All Other

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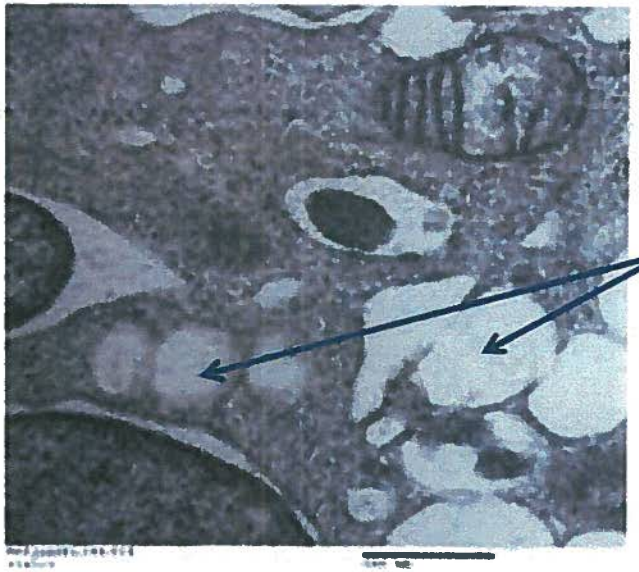
Compound Destroys Cancer Cells

Tumor



Our Drug Destroys
the Tumor

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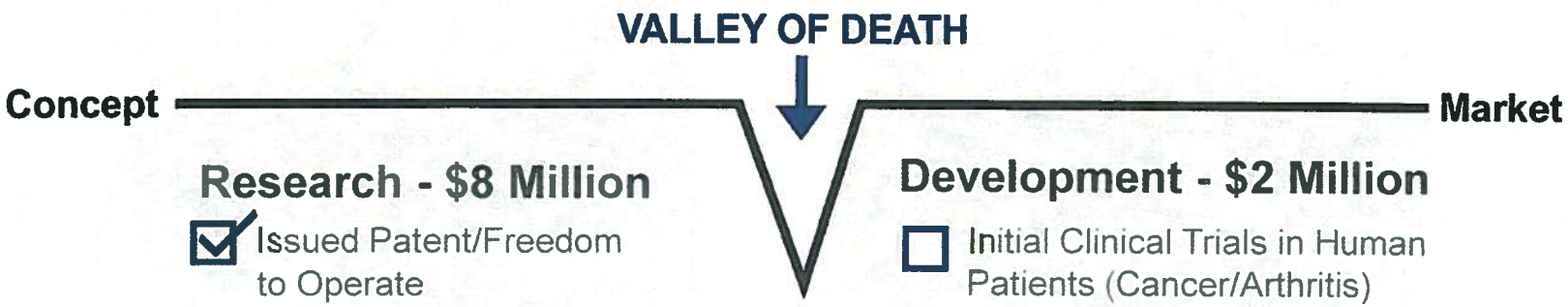
Critical Timing



Research - $8 Million

- ☑ Issued Patent/Freedom to Operate
- ☑ Preclinical Efficacy and Safety Demonstrated
- ☑ GMP Manufacturing Completed
- ☑ GLP Toxicology Package Completed
- ☑ **IND Application Approved by FDA 9/10/10**

Development - $2 Million

- ☐ Initial Clinical Trials in Human Patients (Cancer/Arthritis)

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Critical Need

$2 Million Infusion

- ☐ First Clinical Trial in Human **Cancer** Patients
- ☐ First Clinical Trial in Human **Arthritis** Patients
- ☐ **Large Pharmaceutical Backing**

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Effective Treatment of Inflammatory Diseases and Cancer