



## Investment Report

### Meridian Bioscience, Inc. (NASDAQ: Vivo)\*

**Please note:** As of October 3, 2005, the clients and the officers of the Fredric E. Russell Investment Management Co in Tulsa, Oklahoma have a position of 126,900 shares in Meridian Bioscience with a total cost of \$1,262,261.92 and a market value of \$2,620,485.00, a percentage gain of 107.6% (We initiated this position less than a year ago in November, 2004).

The next time you are about to order a hamburger at your favorite fast food outlet (we all have our expensive temptations and one of mine is the Sonic #2 hamburger with mustard) you may want to think twice. If you bite into that meat, especially if you order a burger medium rare or rare, you are at risk of getting an *E. coli 0157:H7* (*Escherichia coli 0157: H7*) infection, a powerful and dangerous bacterium that can quickly wreak havoc in your body.

If *E. coli 0157:H7* is not diagnosed accurately and fast, people can die, especially from kidney failure. With *E. coli 0157:H7* present, the kidneys cannot do their filtering job, waste builds up in the kidneys, and the blood becomes toxic.

Controlling the spread of *E. coli 0157:H7* is a massive challenge. *E. coli 0157:H7*, moreover, is only one of many infectious organisms that present problems to the global health system, but opportunities for Meridian Bioscience, Inc. (Nasdaq: VIVO). And this makes me very excited.

There are about 75,000 reported cases of *E. coli 0157:H7* infections in the United States every year. Undercooked ground beef is usually the catalyst for the disease. Meat often becomes contaminated during slaughter, and then the *E. Coli 0157:H7* bacterium becomes embedded in the meat when it is ground. If the meat is not cooked enough before it is consumed, the *E. coli 0157:H7* survive.

But eating undercooked meat is not the only way to get *E. coli 0157:H7*:

The heartiness in a small infectious dose of *E. coli 0157:H7* allows the pathogen to spread in many ways. People have been infected by drinking contaminated water, by swimming in a contaminated lake, by playing at a contaminated swimming pool or by crawling on a contaminated carpet. The most common cause of food-borne outbreaks has been the consumption of undercooked ground beef. But *E. coli 0157:H7* outbreaks have also been caused by contaminated bean sprouts, salad greens, cantaloupe, salami, raw milk, and unpasteurized apple cider....Person-to-person transmission has been responsible for a significant proportion of *E. coli 0157:H7* illnesses ....through....poor hygiene.<sup>1</sup>

(Schlosser, Eric; *Fast Food Nation; Perennial, 2002, page 201*)<sup>1</sup>

**Meridian Bioscience, Inc.** (Nasdaq: Vivo) makes diagnostic kits to give quick identification of *E. coli 0157:H7* and other diseases. Meridian's test kits can often produce results in hours and sometimes in less than ten minutes. The tests are inexpensive, priced between three and thirty dollars. With a quick answer, with a quick yes or no to the issue of whether a patient has a serious infectious disease, the primary doctor can quickly set up a treatment strategy, saving the patient, the hospital and the health insurance company money.

A few weeks ago, when I was thinking about the domestic influenza vaccine shortage, I began to wonder how this country and other countries will battle, and much less control, the spread of infectious diseases.

I did some study of infectious diseases and I came across **Meridian Bioscience, Inc.** I went to the company's web site and read their government filings, with special attention to the 10-K's, their annual filings with the U.S. Securities and Exchange Commission. I also read the company's last five annual reports.

I was intrigued. I wanted to learn more about the company. I know a few of the doctors who are affiliated with **Pathology Laboratory Associates**, the professional group that helps run the Regional Medical Laboratory (RML) at the St. John Health System in Tulsa. (The RML serves many hospitals, nursing homes, and laboratories in the Tulsa area and throughout the state of Oklahoma and works closely with **Pathology Laboratory Associates** throughout the state.)

One of my pathologist friends, whom we will call Dr. X., arranged a visit to the headquarters of the RML so we could learn more about how large reference or referral laboratories like RML work with **Meridian**, and what the professionals at **Pathology Laboratory Associates** think of **Meridian's** product lineup.

So on Tuesday, November 15 at 1:25 P.M. Brad Hall and I took the elevator to the basement of our office building, the **Robert W. Davis Tower**, which is part of the St. John Health System complex in Tulsa. We entered the tunnel to the hospital and we walked to St. John's newest building, the Williams Building. We took the elevator to the fourth floor of the Siegfried Tower and pushed through the double doors to the laboratory of the hospital, which occupies the entire fourth and fifth floors of the tower, about eighty thousand square feet. (The laboratory is spotless and is a well-organized example of the best of modern medicine.)

We were headed to a 1:30 P.M. meeting with the man who heads up the laboratory's immunology, microbiology, and serology departments, a doctor whom we will call Dr. Y. (Many of my friends at **Pathology Laboratory Associates** are publicity shy and do not want their names publicized.)

Dr. Y has a clean but not oversized office with his medical texts and encyclopedias arranged in an orderly and impressive display. He is very intense and analytical and at times during our conversation we feared that he wanted to put us, as well as some of his laboratory specimens, under his microscope. (Brad and I did not want to be victims of his excellent microscopic management.)

Dr. Y was clearly in charge of his subject as he spoke rapidly, giving example after example of the challenges facing modern medicine in controlling the spread of infectious diseases. He noted, for instance, that the **Epstein-Barr** virus, which causes a variety of diseases including mononucleosis, an affliction sometimes called the kissing disease, can be transmitted, almost effortlessly from one person to another. What can occur in a day care center, he added, is a good example of the powerfully insidious reach of **Epstein-Barr**.

How does this happen? One child, harboring the virus, puts his hand in his mouth, touches a toy, and then puts the toy down. The other child picks up the toy, and catches the infection. This kind of easy and apparently innocent transmission of disease occurs without thought, and therefore is covertly dangerous. **Epstein-Barr** is one of many diseases that RLM sees.

If a person has the symptoms of influenza or **E. Coli 0157:H7** infection, herpes or stomach ulcers or many other diseases, Dr. Y noted, RML will also get some business. When a patient is sick, the patient's primary doctor will direct the patient to RML's office on the first floor of the Wheeling Building in Tulsa. There technicians will take samples of blood, urine, stool, or other body fluids.

Then a courier delivers these samples to the hospital pathology laboratory on the fourth floor where technicians, using **Meridian** test kits, analyze the samples for the presence of respiratory, gastrointestinal, viral, and parasitic infectious diseases. The tests are easy enough to administer and analyze so that an M.D. does not have to do the work. A laboratory technician can do it.

Dr. Y noted that infectious diseases are spreading. There are many reasons for this unfortunate development. In an unappetizing and frightening irony, for example, but a very powerful one, he observed that the very success that medicine has achieved with antibiotics has produced an intractable and vicious problem. The overuse of antibiotics, Dr. Y pointed out, has given some bacteria an unexpected opportunity, that is if you look at opportunity from the point of view of the bacteria.

Think of the situation this way. Medicine has launched antibiotics so often that the bacteria have learned the modus operandi of the antibiotics. The bacteria have learned the strategy, the game plan of the antibiotics and through mutation, have now, neutralized the antibiotics, making them less effective in the struggle for control of the body. The bacteria have a new life now or, one could say, the bacteria have taken on a life of their own.

Now, it can be accurately said, the body's immune system is more vulnerable to the onslaught of diseases that the antibiotics were designed to attack. Truly, the bacteria have turned the tables on the antibiotics.

*C. difficile* is one disease that has enjoyed resurgence because of the overuse of antibiotics. We asked Dr. Y how this unfortunate turn of events could have happened? Dr. Y replied that the antibiotics unwittingly kill the very valuable normal bacteria flora that protect the gastrointestinal system, fight disease and keep the digestive tract in good shape. As the antibiotics flush out or kill the highly beneficial flora, the body becomes vulnerable to *C. difficile*.

*C. difficile* is common in hospitals and nursing homes. This is an unsavory or unappetizing and certainly a visceral irony. A sick person enters the hospital to be cured of one affliction, and in many cases becomes afflicted with *C. difficile*. (You might say that it is easy to get into a hospital, but very *C. difficile* to get out.)

Or consider this. With the nation's prison facilities and jails overcrowded to capacity limits, it is no surprise that sickness and disease are rampant.

At the Jess Dunn Correctional Facility in Taft, Oklahoma, [The Oklahoma Eagle](#) reported on November 25, inmates are suffering from Methicillin Resistant Staphylococcus aureus, otherwise known as MRSA. This infection has become more difficult to treat because staph bacteria have become resistant to penicillin based antibiotics.

*C. difficile* is one of many infectious diseases making life miserable for millions of people around the world. And [Meridian](#) has a low cost test that diagnoses *C. difficile* in a matter of minutes.

Or consider stress, another global problem that [Meridian's](#) tests are fighting. Stress is inescapable in the modern world, with people consuming meals in five minutes and driving carelessly and aggressively. Stress is so common that it was long thought to be the cause of gastric or stomach ulcers.

But it turns out that a bacterium, Helicobacter pylori, known commonly as H. pylori, causes stress. [Meridian's](#) Premier Platinum HpSA and ImmunoCard STAT! HpSA are two powerful and patented products that [Meridian](#) sells. Laboratory technicians use these tests to diagnose H. pylori. Within minutes of giving the test, the laboratory technician can determine whether the disease exists.

The pressure to control hospital costs has also led to a major consolidation among referral laboratories and has encouraged formation of multi-hospital alliances that have consolidated buying practices. (Regional Medical Laboratory, operated by the St. John Health System, does the testing for small labs and for hundreds of doctors whose offices are in the St. John complex. According to [Meridian's](#) president, John Kraeutler, this trend favors [Meridian](#).

The global spread of infectious diseases and the rising demand for better healthcare ought to benefit [Meridian](#) for many years.

In the meantime, [Meridian](#) is doing extremely well. On Thursday, November 18, 2004 [Meridian](#) reported its fourth quarter (ended September 30) results, and its twelve months' numbers or results for fiscal year 2004. We have incorporated these results in Table 1 below. Please note that for the fourth quarter the company's net income improved 58% over the comparable quarter in fiscal 2003.

**Table 1**  
**2004-1998**  
**Meridian Bioscience, Inc. (NASDAQ: VIVO)<sup>1</sup>**  
Selected income statement statistics for 2004-1998 fiscal years

	2004	2003	2002	2001 <sup>2</sup>	2000	1999	1998
<b>Net Sales *</b>	\$79,606	\$65,864	\$59,104	\$56,527	\$57,096	\$53,927	\$33,169
<b>Income from Operations *</b>	\$14,658	\$12,789	\$9,994	(\$12,507)	\$9,354	\$6,527	\$8,351
<b>Net Income*</b>	\$9,185	\$7,018	\$5,031	(\$10,275)	\$7,111	\$2,073	\$4,958
<b>Diluted Net Income per Share</b>	\$0.60	\$0.48	\$0.34	(\$0.70)	\$0.49	\$0.14	\$0.34
<b>Cash Dividend</b>	\$0.40	\$0.34	\$0.28	\$0.26	\$0.23	\$0.20	\$0.22

(\*millions **except** per share figures)

<sup>1</sup> **Fiscal year ends on September 30.**

<sup>2</sup> **Includes non-cash write- off of manufacturing and inventory costs. Cash flow from operations was positive in 2001, as it has been for every year summarized in the above table.**

Meanwhile, certain industry practices, which are likely to continue, should be a boon for the business of **Meridian**.

Much like the human immunodeficiency virus (HIV) responsible for causing AIDS, the *E. Coli 0157:H7* bacterium is a newly emerged pathogen whose spread has been facilitated by recent social and technological changes. *E. Coli 0157:H7* was first isolated in 1982; HIV was discovered in the following year. People who are infected with HIV can appear healthy for years, while cattle infected with *E. Coli 0157:H7* show few signs of illness. *E. Coli 0157:H7* was most likely responsible for some human illnesses thirty or forty years ago. But the rise of huge feedlots, slaughterhouses, and hamburger grinders seems to have provided the means for this pathogen to become widely dispersed in the nation's food supply. American meat production has never before been so centralized; thirteen large packinghouses now slaughter most of the beef consumed in the United States. The meat-packing system that arose to supply the nation's fast food chains--an industry molded to serve their needs, to provide massive amounts of uniform ground beef so that all of McDonald's hamburgers would taste the same--has proved to be an extremely efficient system for spreading disease.<sup>2</sup> (*Schlosser, Eric; Fast Food Nation, Perennial, 2002; page 196*)<sup>2</sup>

**The writer of this report, Fredric E. Russell, has the following academic background: B.A., Swarthmore College, Swarthmore, PA, 1965; M.A., and M.B.A., Washington University, St. Louis, MO, 1967 and 1972, respectively. He also holds a CPA certificate. He has taught accounting and finance at the university level.**

He believes his love for writing and his usually correct grammar come from spending four years improving his writing skills at Deerfield Academy in Deerfield, Mass., and from reading everything well written he can find. **Jennifer Nguyen** created the graphics and the tables in this letter, and assisted in the research effort for the letter. The firm has managed taxable and non-taxable accounts since 1987.

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P.S. I am indebted to Dr. X and to Dr. Y of **Pathology Laboratory Associates, Tulsa, OK** for their invaluable assistance with this letter.