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## **Firm creating BSE test applicable to live animals**

With support from the National Institutes of Health, a Maryland company is developing a test intended to be the most rapid and sensitive method of detecting BSE.

Innovative Biosensors Inc., College Park, Md., says the test is also intended to be the first one able to detect BSE in live animals.

“Our hope is to have this tool available in the marketplace for the food testing community both here and in Europe in 2006,” IBI President and CEO Joe Hernandez told *Food Chemical News* .

Currently, the company is using a \$110,000 NIH grant for additional development of its test through March, with the prospect of a second \$750,000 NIH grant in the offing.

The company’s researchers are focusing on the detection of the BSE prion by using technology developed at MIT and licensed exclusively to IBI for food supply and medical testing.

Originally, Hernandez said, MIT researchers intended for the technology called CANARY (Cellular Analysis and Notification of Antigen Risks and Yields) to be used as a more sensitive and faster way to detect a biological weapons attack.

“More than \$18 million has been put into its biodefense applications,” Hernandez

said. “What we’re beginning to do is expand it into areas of importance to the food industry, as well as subsequently to the clinical diagnostic market.”

Already, the company is marketing a test under the BioFlash brand that uses the technology to detect *E. coli* O157:H7 in ground beef, fresh produce and food surfaces in less than five minutes. “What we are providing is a faster way to really get a confident answer from a food processor perspective,” Hernandez says.

### **Single shift answer**

For BSE, Hernandez said IBI is intending to offer the food industry the ability to shorten the detection of the disease from 24 hours to seven hours. “It would give processors the ability to get an answer in one production shift — and without losing sensitivity as to the result.”

Key to the technology’s application to food processing, Hernandez noted, is that in addition to being able to detect bacteria, viruses and nucleic acids, it can also detect proteins. “And prion is obviously a protein infectious condition,” he said.

Because the technology’s sensitivity is so great, he said, prion can be detected in samples of animal products, such as blood and urine, which may not have much protein present.

“Obviously, the ideal situation is one where you would test the blood of an animal,” Hernandez said. “There’s still a lot of unknown science on cattle and prion, and prion in blood of cattle. There’s a lot of evidence of prion in sheep, elk and deer present in blood. So, the application is animal specific.”

The first drawback of existing BSE technologies, such as polymerase chain reaction and other immuno-based assays, Hernandez said, is that “the animal has to be dead, because you obtain samples from the central nervous system. But more importantly, their sensitivities leave a lot to be desired.”

Asked if IBI's prion detection technology would allow all U.S. live cattle to be tested, Hernandez said, "we're just going to make a tool available, and it's up to the regulatory agencies — and the consumer and the producer — to really make a decision on how best to deploy it."

As for what price IBI might ask for its BSE test, Hernandez said, "one of the things that makes our technology so attractive is that in fact you can manufacture it in a pretty inexpensive fashion. But we'll let the market drive the price of the value of what we're proposing."

IBI's scientific advisory board includes Arnold Weinberg, a professor at Harvard Medical School and an infectious disease expert; and Edward Richter, founder of Silliker Laboratories of Ohio Inc., an expert in food quality, safety and defense.

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