



FOR IMMEDIATE RELEASE

**CAMBRIA BIOSCIENCES' INNOVATIVE TECHNOLOGY YIELDS NEW
UNDERSTANDING OF INSECTICIDE MODE OF ACTION**

- Insecticide Target Profile Enables Product Differentiation-

-Broad Applications for CNS Drug Discovery-

WOBURN, MA – August 7th, 2006 - Cambria scientists announced today that the Company's chemical genetics platform has advanced the understanding of the mechanism of action of widely used insecticides. Cambria's Dr. Scott Chouinard, an invited speaker at the 11th IUPAC International Congress of Pesticide Chemistry in Kobe, Japan, described how Cambria's powerful chemical-to-gene technology can lead to better understanding and management of existing insecticides, and pave the way for discovering a new generation of insecticide products.

Dr. Leo Liu, Cambria's President, commented, "We are very excited that our team's unique approach was successful in uncovering the neural mode of action of insecticides. These results demonstrate the power of Cambria's chemical genetics technology to identify and validate novel insecticide targets that would not have been discovered by other means. This kind of scientific understanding can help guide product development and field practices in order to sustain the effectiveness of insecticides for crop protection, animal health, and human public health. We believe that these technologies also have broader applications to help discover drugs for human central nervous system diseases that as yet have no effective treatments."

Dr. Chouinard first described how a powerful chemical-to-gene platform can illuminate insecticide resistance, which can develop in insect pests to older insecticides that have been used for decades. By industrializing the laboratory fruit fly *Drosophila melanogaster*, the Cambria team identified fly mutants resistant to dieldrin, a widely-used older agricultural insecticide. Remarkably, they found that the genetic mutation in the dieldrin target in these flies was identical to one that was previously found in natural insect populations that had become resistant to dieldrin applied in the field. These results demonstrated that controlled studies conducted in a laboratory organism can replicate and predict what occurs in the real world, thereby allowing scientists to study the relationship between insecticide structure and function using advanced molecular techniques available only in the laboratory.

Dr. Chouinard then described a second series of experiments concerning spinosyn A, a component of a more recently marketed natural product insecticide that is used to control a wide range of insect pests of plants and animals, but whose specific protein target was previously unknown. In collaboration with scientists at Dow AgroSciences, Dr. Chouinard's team isolated multiple genetic mutations in *Drosophila* that caused altered responses to spinosyn A. They found that these mutations were all located in a gene encoding for a nicotinic acetylcholine receptor, which is part of a family of proteins critical to central nervous system functions. The collaborating research groups used genetic engineering methods to express the nicotinic acetylcholine receptor protein in cells, and then used sophisticated labeling and electrophysiology experiments to prove conclusively that spinosyn binds specifically to that protein.

Dr. Chouinard added, “Knowing the specific mode of action of a compound has far-reaching applications. Our results provide key insights into the structure-function relationship between an insecticidal compound and its protein target in the insect central nervous system. This opens up the possibility of discovering a newer generation of insecticides to provide growers with more options and reduce the likelihood of pest insects becoming immune to control, which in turn could threaten world food supplies. In the case of spinosyn, we also used our genetic and biochemical expertise together with our strain collection to show that spinosyn acts differently from other insecticides. This finding has the added benefit of helping manufacturers explain their products to consumers in a rational scientific way that leads to the best choices for each intended purpose.”

The research on insect nicotinic acetylcholine receptors reported by Dr. Chouinard was funded in part by a U01 Cooperative Agreement grant to Cambria from the U.S. National Institutes of Health to develop novel strategies to control the mosquito insect vectors that transmit malaria and other life-threatening human infectious diseases.

About Cambria Biosciences

Cambria Biosciences LLC is a biopharmaceutical company dedicated to neurodegenerative diseases and other central nervous system disorders. The Company’s approach uses living genetic model systems that faithfully recapitulate disease processes to discover new drug leads for these underserved medical conditions. The Company’s chemical genetics discovery platform encompasses novel high-throughput disease models and screening assays to discover physiologically active compounds and their mechanism of action. Cambria leverages its technology platform for other applications, including agriculture and animal health, and has partnered with industry leaders in these fields to accelerate the discovery and development of safe and effective new products.

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