



Non-Toxic *Clostridium Botulinum* Strains for Assessing Botulinal Food Safety

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing strains of *Clostridium botulinum* with an inactivated botulinal neurotoxin gene for microbial challenge testing.

OVERVIEW

Clostridium botulinum produces the most poisonous toxin known and is a perennial concern to the food industry. Several outbreaks of botulism have occurred due to changes in food processing procedures and formulations.

Microbial challenge testing is a useful tool for determining the ability of a food to support the growth of pathogens like *C. botulinum*. Rigorous microbial challenge testing is performed routinely using a mouse bioassay or *in vitro* assays to ensure the botulinal safety of foods and to validate processes designed to kill or attenuate *C. botulinum*.

However, few facilities have been approved for testing with toxigenic strains of *C. botulinum*. Surrogate microorganisms can be used in place of *C. botulinum*, but they may respond differently to testing.

THE INVENTION

UW-Madison researchers have developed stable, mutant strains of *C. botulinum* in which the botulinal neurotoxin gene has been inactivated. These strains could be used for challenge studies to validate different food processing conditions and testing new food formulations.

APPLICATIONS

- Microbial challenge testing of foods and food processing methods

KEY BENEFITS

- By providing a better method of assessing the botulinal safety of foods, these strains

THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.



could lead to enhanced public health.

- Testing could be performed in many laboratories, rather than the select few currently approved for testing with toxigenic strains of *C. botulinum*.
- Mutant strains retain all characteristics of *C. botulinum* except its toxicity.
- Through their use in *in vitro* assays, these strains could minimize the use of animals in challenge testing.

ADDITIONAL INFORMATION

Tech Fields

Food & Supplements - Safety & quality

CONTACT INFORMATION

For current licensing status, please contact Andy DeTienne at adetienne@warf.org or 608-960-9857.

