

Research Using Pertussis and Cholera Toxins

The [List Labs Citation Database](#) is a robust tool for researchers. It offers thousands of papers showing how List Labs products are used experimentally. Researchers can search keywords specific to their fields of study and learn how others in that field have used our toxins and antigens.

In this article, we will explore experimental applications for two of our most popular products: [Pertussis Toxin](#) (Products [#180](#), [#181](#) and [#184](#)) and [Cholera Toxin](#) (Product [#100B](#)). This article is not exhaustive – we will focus on recent research – but it offers a survey of ways in which List Labs is helping to get science done.

Pertussis Toxin Applications (h2 tag)

Experimental autoimmune encephalomyelitis (EAE) is an induced autoinflammatory condition of the central nervous system. It is used in rodents as a model of demyelinating diseases such as multiple sclerosis and of T-cell-mediated autoimmune disease in general. Inducing EAE usually uses isolated myelin proteins or homogenate along with pertussis toxin to open the blood-brain barrier and allow T-cells access to the CNS. Many citations in the database note this use of those products.

But that's far from the only way researchers have found to use List Labs' pertussis toxin. An international team of researchers found that pertussis toxin [reduces cellular damage following ischemic strokes](#). Another used it in their [study of myocarditis](#). A Michigan team used pertussis toxin to develop an innovative [high-molecular-weight mass spectrometry application](#). And of course several research groups used it developing [assays](#) and [treatments](#) for whooping cough.

Cholera Toxin Applications (h2 tag)

The applications for cholera toxin are equally diverse. Besides [treatments for cholera](#), researchers recently used the toxin to study the role of [bone morphogenetic proteins](#) and [mesenchymal stem cells](#) in breast cancer, as well as [TRAIL therapy](#) to treat such cancers. Other cancer researchers looked at [hemocyanin as a treatment for bladder cancer](#), using List's cholera toxin.

Investigators studied [vaccines against Helicobacter pylori](#), which is known to cause peptic ulcers and is a risk factor for gastric cancer.

Food allergies are a serious and growing problem. Our citation database lists studies that used cholera toxin to aid in the [study of allergies](#) to several common foods ([especially peanuts](#)). Cholera toxin was also studied as an [adjuvant for intranasal vaccines](#), and used to investigate the role of [immunoglobulin E \(IgE\) in anaphylactic shock](#)—an extreme and potentially fatal allergic reaction.

Cholera toxin was even used to study the cellular mechanisms of *Yersinia pestis*, the pathogen that causes [bubonic plague](#).

This is only a brief survey of recent research using two of List Labs' more popular products. It illustrates both the wide range of applications for List's bacterial toxins and the utility of the List citation database as a tool to facilitate your literature surveys.