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NOVEL ANTI-TOXIN AGENTS

Background

Many bacteria secrete exotoxins that can cause major damage to the host by destroying cells or disrupting normal cellular metabolism. Some exotoxins transit through the host's endocytic pathway, where the chaperonin containing complex CCT/TRiC plays an important role in toxin delivery to the cytosol.

Description of the invention

Researchers of the University of Geneva have discovered that a class of lipids inhibits the activity of the CCT/TRiC complex and can thereby prevent or counter the action of toxins delivered to the cytosol through a CCT/TRiC dependent mechanism.

Therapeutic potential - Applications

The novel lipid-based anti-toxin agents have been shown to be effective against :

- Anthrax toxin from *Bacillus anthracis*

Based on the known delivery mechanism of these toxins, the novel anti-toxin agents are expected to also be effective against:

- Cholera toxin from *Vibrio cholerae*
- *Clostridium difficile* toxins A and B
- Shiga toxin from *Shigella dysenteriae* and some serotypes of *E. coli* (STEC)
- Some plant toxins such as Ricin from *Ricinus communis*

Advantages

- Active against a broad spectrum of toxins
- Active well below toxic concentration
- Could be used as a cure or in prevention
- Small molecule, therefore cheaper and easier to produce and to administer than antibody anti-toxins

The University of Geneva seeks to license this technology exclusively to a biopharma company.



Keywords: anti-toxin, CCT/TRiC, Anthrax toxin, Cholera toxin, Clostridium difficile toxin, Shiga toxin, ricin