Preventing Septic Shock and Death with Peptide Antibodies

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WARF: P120312US01

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing methods for treating systemic inflammatory response syndromes, including sepsis, by inhibiting the sPLA$_2$-IB digestion enzyme.

Overview

More than half a million people develop severe sepsis and 215,000 die each year, costing billions of dollars in the Unites States alone. Sepsis is a type of severe inflammatory response syndrome (SIRS) triggered by a pathogenic microorganism. Animals and humans undergoing intensive (e.g., ventilated) healthcare are particularly vulnerable to infection, which can lead to fatal organ failure.

Current treatments focus on antibiotics, fluid replacement and fever drugs. Yet recent evidence suggests that addressing host inflammation could help prevent sepsis from progressing to shock and death.

The Invention

UW–Madison researchers have identified gastrointestinal tract, e.g., mucosal, inflammation as a key factor in SIRS. From this breakthrough, they have developed oral peptide antibodies to control the inflammation and/or prevent translocation of intestinal luminal bacteria into systemic circulation. The antibodies specifically bind sPLA$_2$-IB, a pancreatic enzyme traditionally thought to only be involved in the digestion of dietary phospholipids. The antibodies are prepared using standard techniques and may be humanized or avian egg yolk antibodies. They are preferably administered as an oral pharmaceutical.

Applications

- Adjunct treatment for SIRS, including sepsis

Key Benefits

- Targets host inflammation
- Reduces the role of the gastrointestinal tract in driving sepsis progression
- Adds level of protection
- Pharmaceutical can be given easily and safely.

Additional Information

Related Technologies

- WARF reference number P09241US02 describes liquid crystal devices that could support early diagnosis of sepsis.

Tech Fields

- Animals, Agriculture & Food : Animal health
- Therapeutics & Vaccines : Inflammation

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842