

Novel AnnexinA1 tripeptide (ANXA1sp) improves acute kidney injury after deep hypothermic circulatory arrest

Value Proposition

Heart disease is the leading cause of death in industrialized nations across the world, with treatments often requiring surgery such as coronary artery bypass graft (CABG) or even transplantation. Although cardiac surgery is relatively common, it carries a high risk of complications stemming from ischemia-reperfusion injury. Two of the most common complications – perioperative myocardial injury / infarction (PMI) and acute kidney injury (AKI) – remain a major concern for patients undergoing cardiac surgery with current prophylaxis and treatment options unsatisfactory and only focused on managing the symptoms. This technology is intended to be administered perioperatively to a cardiac surgery patient to reduce risk of PMI and AKI.

Technology

This technology is a novel short peptide that with anti-inflammatory activity intended to be administered to patients before, during, and/or after cardiac surgery. When used in animal models of cardiac surgery, this technology significantly reduces biomarkers of myocardial injury including cardiac troponin (cTn1), heart-type fatty acid binding protein (HFABP), cardiac myeloperoxidase (MPO), and caspase-3. Importantly, this technology is similarly effective in reducing biomarkers of cardiac injury associated with intraoperative hyperglycemia. In models of AKI, this technology significantly reduces levels of the renal biomarker glutathione S transferase-mu (GST-mu), inflammatory cytokines, and renal tubular cell apoptosis.

Advantages

Current prophylaxis for PMI and AKI involve close monitoring of cardiac and renal physiology, with the administration of beta-blockers, statins, or other common cardiovascular drugs to keep cardiovascular physiology within defined parameters. Recent meta-analyses suggest that these interventions are largely ineffective and, in some cases, may even be harmful. This technology provides a novel means to prevent complications of cardiac surgery by controlling the inflammatory response, without requiring the use of glucocorticoids and their associated toxicity and side-effects.



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Patents

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Title: COMPOSITIONS AND METHODS FOR THE
TREATMENT OF CARDIAC-SURGERY-ASSOCIATED ACUTE
KIDNEY INJURY WITH ANNEXIN A1 PEPTIDE

Country: United States of America