INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

Methods and Compositions for the Prevention of Cardiomyopathy and Muscle Injury in Muscular Dystrophy

Technology number: 3015

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Category
Therapeutics and Vaccines

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OVERVIEW

Regenerative therapeutic use of P188 for cardiac damage in Duchenne Muscular Dystrophy

- Corrects cardiac myocyte function and prevents acute cardiac death in DMD
- Treatment of cardiac complications in DMD

BACKGROUND

Duchenne Muscular Dystrophy (DMD) is a severe genetic disorder characterized by rapid muscle degeneration and weakness. It primarily affects young males due to its X-linked recessive inheritance pattern. Symptoms typically manifest before the age of six, progressively worsening to affect voluntary muscles, the heart, and respiratory muscles. Historically, treatments have focused on symptomatic relief and supportive care, such as physiotherapy and corticosteroids, but these do not halt the progression of the disease. Cardiac and respiratory failure are the leading causes of mortality among DMD patients, with survival rarely extending beyond the early 30s. Existing treatments for the cardiac aspects of DMD are limited and often ineffective, underscoring the urgent need for innovative therapies that can address cardiac muscle degeneration directly and improve survival rates.

INNOVATION

University of Michigan researchers have pioneered a novel approach using P188 (Poloxamer 188) as a regenerative therapeutic for cardiac muscle damage caused by DMD. In vitro and knockout animal studies have demonstrated that P188 effectively restores cardiac myocyte function under dystrophic conditions, addressing a major cause of heart failure and potentially preventing acute cardiac death in DMD patients. P188 has a well-documented history in medical applications, including clinical trials for treating Acute Chest Syndrome in sickle cell anemia patients. This innovation holds significant potential for treating cardiac complications in DMD, improving longevity and quality of life for patients.