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Mixed Solvent Micelle Formulation Procedure

Polymeric nanoparticle formulation enables long-term, sustained ocular delivery of a repurposed antiangiogenesis drug for a safer, more cost-effective treatment alternative for wet age-related macular degeneration.

Researchers at Purdue University have developed a new procedure for creating polymer micelle formulations such as polymer lung surfactant therapeutics that are used to treat respiratory distress syndrome (RDS). RDS is a disease of native lung surfactants that causes a severe decrease in blood oxygenation and affects approximately 190,000 patients in the United States each year. Traditional manufacturing methods pose challenges for producing polymer micelles employed in Purdue's efforts to develop an artificial polymer lung surfactant. The equilibrium-nanoprecipitation (ENC) method created by Purdue researchers minimizes variation between batches and pre-treats bulk amphiphilic block copolymers to alleviate mixing nonuniformity. The ENC technique has been tested with three unique batches of RDS therapeutics using dynamic light scattering to verify the composition of each batch.

Advantages:

-Uniformity

-Large-Scale Manufacturing

-Efficiency

Potential Applications:

-Pharmaceuticals

-Nanotechnologies

-Scientific Research

-Drug Discovery

Technology Validation:

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Category
Pharmaceuticals/Drug Delivery & Formulations
Pharmaceuticals/Pharmaceutical Manufacturing & Methods

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The compositions and batch consistency for solvent micelle formations produced using the new procedure developed by Purdue researchers have been verified by dynamic light scattering (DLS).

Recent Publication:

"Polymer Lung Surfactants"

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Intellectual Property:

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