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Spray Freeze Drying - New Method to Prepare Frozen Particles Allows for Bulk Manufacturing

Advanced spray freeze-drying (SFD) technology rapidly manufactures bulk lyophilized drug products, stabilizing thermally sensitive materials for long-term storage.

Researchers at Purdue University have developed an advanced freeze-drying approach for drugs, vaccines, and other biologics. This technology is a spray freeze-drying (SFD) method that can potentially manufacture bulk lyophilized drug products at higher rates compared to conventional freeze-drying in trays and vials. This is due to the fact that small frozen particles have larger surface area available for sublimation. The frozen particles prepared by this method can be used to obtain a flowable, dry powder from a thermally sensitive material such as protein drug product, cell culture, or another material requiring reduced moisture for long-term stability.

Advantages:

-Allows for bulk manufacturing of lyophilized drugs

-Larger surface area available for sublimation

-Reduces moisture for long-term stability

Potential Applications:

-Lyophilized drug products

-Commercial scale SFD equipment

TRL: 3

Intellectual Property:

Technology ID

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Category

Biotechnology & Life Sciences/Bioprocessing & Biomanufacturing

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