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DEPARTMENT OF
SCIENCE & TECHNOLOGY
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TECHNOLOGY
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PENDING

(IN202311042999)

Surface-modified 3-acetyl-11-keto-ss-boswellic acid (akba)- loaded lyotropic liquid crystalline nanoparticles (lcnps) for topical treatment of rheumatoid arthritis

NEED

Rheumatoid arthritis (RA) treatments are limited by side effects and poor efficacy. The need for localized, sustained-release therapies that target specific sites in RA is pressing for better patient outcomes.

MARKET ANALYSIS

The global rheumatoid arthritis therapeutics market is expected to grow at a CAGR of 5.2%, reaching $58.4 billion by 2033 (source: GlobalData, 2023). The global transdermal drug delivery market is anticipated to grow at a CAGR of 7.9%, reaching $10.4 billion by 2033 (source: Market Research Future, 2024).

TECHNOLOGY OVERVIEW

This invention introduces surface-modified 3-Acetyl-11-keto-β-boswellic acid (AKBA)-loaded lyotropic liquid crystalline nanoparticles (LCNPs) for topical RA treatment. The technology enhances targeting, release control, and bioavailability, offering a promising solution for RA management through transdermal delivery.

Target Industries

Pharmaceutical companies specializing in arthritis treatments, drug delivery system innovators, research institutes focused on transdermal drug delivery. , Drug delivery system providers, nanoparticle formulation developers, pharmaceutical R&D labs focusing on autoimmune diseases.

TECHNOLOGY KEY FEATURES

AKBA-loaded LCNPs, particle size <150 nm, entrapment efficiency >65%, targeting agents (hyaluronic acid/chondroitin sulfate), sustained release over 72 hours, transdermal patch or microneedle delivery.

AT A GLANCE

- SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation, and Infrastructure)

Read more here

Technology is available for licensing/ co-development.

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