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DEPARTMENT OF
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PENDING

(IN202311080116) Dual adhesive drug delivery patch

NEED

98% of large biomolecules administered through injections cause patient discomfort and require medical supervision. Patches available today struggle to deliver high-molecular drugs due to poor skin permeability. But what if there was a needle-free way to bypass the skin barrier—without breaking it?

TECHNOLOGY OVERVIEW

This patent introduces a dual-adhesive transdermal patch designed to deliver large biomolecules through the skin. It strips the stratum corneum, then flips to expose the bioadhesive side, allowing unidirectional, sustained drug release directly to target tissues. It supports peptides, proteins, nucleic acids, and vaccines.

TECHNOLOGY KEY FEATURES

Dual-adhesive layers, stratum corneum stripping, 25–500µm patch thickness, compatible with proteins and RNA/DNA, unidirectional release, polymeric reservoir, customizable based on drug's molecular weight and solubility.

MARKET ANALYSIS

Transdermal drug delivery market is projected to reach $89.2B globally by 2033, growing at 8.7% CAGR. Demand is driven by non-invasive delivery of biologics and personalized therapies. [Source: Market Research Future, 2024]

Target Industries

Biopharmaceutical and peptide drug developers, and/or transdermal system integrators and medical polymer innovators, and/or healthcare startups in personalized or needle-free biologic delivery platforms

AT A GLANCE

SDG 3 (Good Health & Well-Being), SDG 9 (Industry, Innovation & Infrastructure)

Read more here

Technology is available for licensing/ co-development.

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