

Biocompatible Adhesive with Improved Adhesion (Yissum)

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Patches derived from tree gum exudate stick to skin better

Categories	Chemistry & Materials, Adhesives, Life Science & Biotechnology , Drug delivery
Development Stage	Developing variety of adhesive materials with controlled composition and adhesiveness
IP Status	Scientific expertise - Know-How

Highlights

- Adhesive skin patches are used for a wide variety of purposes.
- Their main disadvantages are that they may be too adhesive (difficult to remove, not adhesive enough and fall off without being noticed (contraceptive patches), and they can cause irritation.
- If they are too adhesive, residues may be left on the skin after removal.
- New proprietary adhesive has improved material-skin adhesion and biocompatibility.

Our Innovation

Adhesive materials based on chemically and physically modified polysaccharides which are partially depolymerised to provide more effective adherence to a substrate. These are the first totally natural adhesives made from various tree exudates. At least three such exudates were found to work well.

Key Features

- The adhesives can be applied under different pH conditions.
- After the adhesive is removed, no remains are left on the skin, providing a good solution for both drug delivery and for other ingredients, such as essential oils, and for cosmetic purposes.
- Improved control of composition, adhesiveness, and elasticity
- The adhesive materials accommodate themselves to the skin structure and improved compatibility is achieved due to creeping of the material into skin crevices. The improved surface contact leads to better adhesiveness and better drug delivery.
- High manufacturability, entailing flexible pricing strategy
- All exudates from the same, or a botanically similar, family are generally recognized as safe (GRAS) and are FDA approved

Development Milestones


Seeking funding for ongoing work and industrial collaboration.

The Opportunity

- Transdermal patches are used for drug delivery and treatment against warts by diffusion of salicylic acid from the patch, as well as cessation of smoking and contraception
- Non-medicated uses include thermal and cold patches, weight loss patches, nutrient patches, skin care patches (therapeutic and cosmetic), aroma patches, patches that measure sunlight exposure, and aromatherapy by inclusion of essential oils into the adhesive materials

- Wound treatment
- Improved adhesive patches for ECG and other procedures
- Attachment of microelectronics for medical sensing, computer gaming, and surveillance operations

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