



ORIGINAL

प्रैट कापलिय, भारत यारकार

The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र

Certificate of Registration of Design

डिजाइन सं. / Design No.

402288-001

આરીએ / ૧૦૦

10/12/2023

"VACCINES" से संबंधित है, का पंजीकरण, शेषी 24-01-2021। 1. Miss Snehal Bapusaheb Bagdane 2. Shraddha Vilasvring Mahale के नाम में उपाधि ग्रहण और संस्थाग्रन्थ में कार लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as 0
the number and date given above in class 24-01 in respect of the application of such
design to "DEVICE FOR PRODUCTION OF CANCER VACCINES" in the name of 1. Mis
Snehal Bapusaheb Bagdane 2. Shraddha Vilaysing Mahale.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधारीग प्राप्तियाँ के अनुराग में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the
Designs Rules, 2001,

*मार्गदर्शिकाता नारीय (पर्याय नोट द्वारा) उपर्याय अनुसूची की तीव्र हो ताकि दैवत का नाम दिव्यांगना का स्वामीविकार पर्यायिकत्व की तारीख से दस वर्षों के लिए हमारा विवरण अधिक विस्तृत हो। अधिकारी एवं उपर्याय के विवरों के अधीन, पाप वर्याय की अधिकारी अवधि के लिए विभिन्न रात्रों हाथी। इस प्रमाणन पर का उपर्याय विवरण कार्यानुषिती अधिक विस्तृत होता है।

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(54) Title of the invention : EDIBLE MUCILAGE-BASED FILM DERIVED FROM ADANSONIA DIGITATA FRUIT FOR FOOD PRESERVATION

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(57) Abstract :

The present invention relates to a biodegradable edible film composition comprising a mucilage extracted from *Adansonia digitata* fruit pulp, at least one polymer selected from the group consisting of polyvinyl alcohol, carboxymethyl cellulose, methylcellulose, hydroxypropyl methylcellulose, sodium alginate, calcium alginate, polylactic acid, and polyhydroxylalkanoates, and at least one plasticizer selected from glycerol, sorbitol, and polyethylene glycol. The composition optionally incorporates at least one crosslinking agent selected from calcium chloride, calcium lactate, calcium sulfate, and sodium tripolyphosphate, present in an amount ranging from 0.1% to 15% by weight. The invention further provides methods of preparing the film by dispersing and casting the formulation onto a substrate and drying to obtain a continuous film structure. The resulting film exhibits desirable properties including moderate solubility, controlled water vapor permeability, significant ultraviolet barrier performance, mechanical strength, biodegradability, and antioxidant activity, rendering it suitable for applications in food packaging, edible coatings, and active packaging systems aimed at extending shelf life and reducing spoilage of perishable products.

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