Uniwersytet Wrocławski

Repozytorium

Plik pochodzi z repozytorium Wydziału Chemii Uniwersytetu Wrocławskiego

Surfaktyna w technologii enkapsulacji : zastosowania farmaceutyczne i kosmetyczne = Surfactin in encapsulation technology : pharmaceutical and cosmetic applications

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Rok wydania

2025

Czasopismo

Wiadomości Chemiczne

Numer woluminu

79

Strony

1097-1125

DOI

10.53584/wiadchem.2025.11.10

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The increasing demands for the efficacy, safety, and stability of biologically active compounds are driving the development of modern, targeted delivery systems. Traditional administration routes are increasingly being replaced by encapsulation technologies due to the pharmacokinetic limitations of active substances, such as low bioavailability, lack of selectivity, or toxicity. Encapsulating an active compound within an appropriate carrier protects it from degradation, enables selective action, and allows for the use of lower doses, which translates into improved safety profiles and economic benefits. These delivery strategies are widely applied not only in pharmaceuticals but also in cosmetology, where new formulations can be tested more easily and quickly. Of particular importance are colloidal carriers of nanometric size, whose stability largely depends on the presence of surfactants, amphiphilic compounds capable of stabilizing phase boundaries. Special attention is given to microbiologically derived biosurfactants, which, in addition to favorable physicochemical properties, also exhibit therapeutic activities, including antimicrobial and anticancer effects. The selected carrier systems presented: micelles, liposomes, polymer-based carriers, and nanoemulsions stabilized with surfactin offer promising solutions for the effective delivery of active compounds in both pharmaceutical and cosmetic applications.

Słowa kluczowe

surfactin, encapsulation, carrier, cosmetology, pharmacy

surfaktyna, enkapsulacja, nośnik, kosmetologia, farmacja

Licencja otwartego dostępu

OTHER

Pełny tekst licencji:

Adres publiczny

http://dx.doi.org/10.53584/WIADCHEM.2025.11.10

Plik został wygenerowany dnia 2026-08-22 14:32:05

Adres w repozytorium https://old.chem.uni.wroc.pl/pl/repozytorium/1xc8RB_.