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APPLICATION OF ALGINATE²

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Abstract: Alginates have been widely applied and explored in many fields due to their significant advantages. They have a vast application in the food, pharmaceutical, and environmental areas due to their excellent gelling capacity. Concerns about environmental issues and pursuits of material functionalities have driven the development and application of biopolymers with diverse physical, chemical, and biological properties. Alginates are also used in 3D printing, fire-resistant materials, drug delivery, model foods and active packaging. Their excellent biocompatibility and biodegradability further extend their application to biomedical fields.

Keywords: alginate, application, gel formation, encapsulation, films, emulsions, fibers, food, environment

REFERENCES

Asadi, L.; Mokhtari, J.; Abbasi, M. (2021). *An alginate-PHMB-AgNPs based wound dressing polyamide nanocomposite with improved antibacterial and hemostatic properties*. J. Mater. Sci. Mater. Med. 2021, 32, 7.

Ahmad Raus R., W.M.F. Wan Nawawi, R.R. Nasaruddin. (2021). *Alginate and alginate composites for biomedical applications*. Asian Journal of Pharmaceutical Sciences, 16 (2021), 280-306.

Ahmad Raus R., W. M. F. Wan Nawawi, R. R. Nasaruddin. (2021). *Alginate and alginate composites for biomedical applications*,. Asian Journal of Pharmaceutical Sciences, Volume 16, Issue 3, 2021, 280-306.

Bennacef C., S. Desobry-Banon, L. Probst, S. Desobry. *Advances on alginate use for spherification to encapsulate biomolecules*. Food Hydrocolloids, 118 (2021), Article 106782.

Benselfelt T., L. Wågberg. (2019) *Unidirectional swelling of dynamic cellulose nanofibril networks: a platform for tunable hydrogels and aerogels with 3D shapeability*. Biomacromolecules, 20 (6) (2019), 2406-2412.

Bi D., X. Yang, L. Yao, Z. Hu, H. Li, X. Xu, et al. (2022). *Potential food and nutraceutical applications of alginate: A review*. Marine Drugs, 20 (2022), 564.

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