CHEMISTRY JOURNAL OF MOLDOVA. General, Industrial and Ecological Chemistry. 2016, 11(2), 17-25
http://cjm.asm.md
http://dx.doi.org/10.19261/cjm.2016.11(2).03

RECENT TRENDS IN ALGINATE, CHITOSAN AND ALGINATE-CHITOSAN ANTIMICROBIAL SYSTEMS

Ivancic Albert

Faculty of Chemistry and Chemical Technology, Moldova State University, 60, Alexei Mateevici str., Chisinau MD2009, Republic of Moldova
Institute of Chemistry of Academy of Sciences of Moldova, 3, Academiei str., Chisinau MD2028, Republic of Moldova
e-mail: ivancicalbert@gmail.com; phone: (+373 68) 344 034

Abstract. Natural polysaccharides alginate and chitosan have been used extensively, separately or in mixtures (systems), in manufacturing of pharmaceutical products (antimicrobial) and not only. Alginates usually serve as basis for antimicrobial systems, while chitosan, in certain proportions, enhances their physicochemical and antimicrobial properties. Focusing on the recent literature (mostly since 2000), this review outlines the main synthetic approaches for the preparation of systems based on both polymers as well as identify potential areas of their application as antimicrobial agents. Various techniques used for systems preparation like microparticles, films, fibers, nanoparticles, sponges, applications and usefulness of these systems as carriers of antimicrobial compounds will also be discussed.

Keywords: alginate, chitosan, antimicrobial system, ionotropic gelation, drug.

Received: August 2016/ Revised final: October 2016/ Accepted: October 2016