

Pectin-cellulose hydrogels as new prebiotics.

Protective prebiotics which do not undergo digestion and simultaneously are a source of nourishing substances are necessary to assure delivery of probiotic microorganisms to colon. Poly- and oligosaccharides belong to the group of such prebiotics. In the frame of doctoral thesis a method of synthesis of bacterial cellulose containing pectic compounds additionally cross-linked with Ca²⁺ and Fe²⁺ ions will be developed. The hydrogels will be used as matrices to encapsulation of bacteria *Lactobacillus* and *Bifidobacterium* species and *Saccharomyces* yeast. In order to evaluate the effectiveness of the hydrogels to protection of microorganisms simulation of digestion will be conducted. Chemical composition, nanomechanical properties and supramolecular structure of new biomaterials will be determined.

Scientific supervisor: dr hab. J. Cybulska, prof. IA PAN

Profile of the candidate:

- Master of Science degree on chemistry, biology, biotechnology, food science or similar,
- good knowledge on chemistry and biochemistry,
- practical laboratory experience in chemistry,
- high motivation to conduct scientific research
- good communication skills including a very good command of the English language,
- ability to work independent.