

Correlation between type of alkali rinsing, cytotoxicity of bio-nanocellulose and presence of metabolites within cellulose membranes.

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The study aimed at evaluation of various types of alkali rinsing with regard to their efficacy in terms of removal, not only of bacteria but also bacterial metabolites, from cellulose matrices formed by three *Komagataeibacter xylinus* strains. Moreover, we tested the type of alkali rinsing on membrane cytotoxicity in vitro in fibroblast and osteoblast cells and we compared matrices' ability to induce oxidative stress in macrophages. We identified 11 metabolites of bacterial origin that remained in cellulose after rinsing. Moreover, our results indicated that the type of alkali rinsing should be adjusted to specific *K. xylinus* strains that are used as cellulose producers to obtain safe biomaterials in the context of low cytotoxicity and macrophage induction. The findings have translational importance and may be of direct significance to cellulose dressing manufacturers.

Słowa kluczowe

Alkali rinsing, Bacterial nanocellulose, Metabolite, cytotoxicity, Macrophages

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