

# Local Isolates Bacteria Producing Nanocellulose

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## Abstract

Nanocellulose has recently highly significant attention in the materials community, because excellence of its properties and its great potential application in numerous applications in fabrication of bioproducts such as food industry, biomedical materials, textile manufacturing, fiber-based paper and products packaging, and advanced functional bionanocomposites. Bacterial cellulose has the advantage of its high chemical purity, compared with the types of plant cellulose which are usually associated with hemicelluloses and lignin. This research was aimed to explore the ability of local isolates bacteria to produce bacterial nanocellulose (BNC). Several local bacteria were isolated from rotten fruits by using Hestrin-Schramm's medium. A total of 26 candidate isolates were successfully isolated from 19 samples of rotten fruits that have been used as microbial sources. Static production tests on liquid HS medium, only 2 isolates were selected, namely isolates from Salak and Chili, which were able to produce BNC. Both isolates were able to produce about 0.033 grams of wet BNC for 3 days of culture. This capability is still being tested and compared to commercial strains that has known ability to produce BNC. Strains that are able to produce BNC in the largest yield, will be tested further and will be reported in the near future.

**Keywords:** *nanocellulose, bacterial nanocellulose, BNC, bioproducts, Hestrin-Schramm' smedium*

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