

## Comparative evaluation of hyaluronic acid production by *Streptococcus thermophilus* isolated from yoghurt

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**ABSTRACT:**

Hyaluronic acid (HA) is also known by the name hyaluronan. The necessity for using this fabulous material lead to investigate non-pathogenic strains which produce this material. The most non-pathogenic strain is *S. thermophilus*. The lack of literature on microbial production of this substance by the strain prompted us to examine the microbial production of HA from it and also to examine optimization of culture conditions where HA is produced. The bacteria *Streptococcus salivarius sub. thermophilus* was obtained from the Bank of Scientific and Industrial Research of Iran (PTCC 1738). To separate *S. thermophilus* strains from yogurts, three types of yogurts were used. They were cultured by pour-plate and surface methods on STA medium. To identify the isolated strains, biochemical tests and Polymerase Chain Reaction (PCR) were used. Bacterial strains isolated from yoghurts were identified as *S. thermophilus* MN-BM-A02, *S. thermophilus* JIM8232 and *S. thermophilus* MN-ZLW-002. To separate the capsule strains, each strain was cultured on STB medium and then they were centrifuged. In order to purify the samples, ethanol and charcoal were used. To optimize production, variety of sources of carbon, nitrogen, temperature and pH were studied.

**Keywords:**

Hyaluronic acid, *Streptococcus thermophilus*, FTIR.