

ABSTRACT

Tetragenococcus halophilus is a lactic acid bacteria (LAB), which plays an important role in *moromi* fermentation of soy sauce production process to improve the soy sauce flavor and aroma characteristics. The proteolytic activity from *T. halophilus* serves as an important factor to speed up the fermentation process, hence improving the productivity of soy sauce production. *T. halophilus* was found to inhabit food fermented products with high salt concentration. However, the isolates of high protease activity of *T. halophilus* have not yet been obtained, and due to its importance, the starter culture of high protease activity of *T. halophilus* is needed. Therefore, this study wants to isolate and identify *T. halophilus* from various high salt fermented food products, and to qualitatively characterize the protease from *T. halophilus* isolates. This study was done by conducting isolation media preparation, sample inoculation from various high salt fermented food products (two and four weeks fermented raw soy sauce *moromi*, traditionally produced shrimp paste from traditional factory in Jakarta and homemade factory in Jember, and a traditionally produced anchovy paste), identification of isolates, purification of identified isolates of presumptive *T. halophilus*, characterizing the protease producing isolates qualitatively, and molecularly identified the protease producing isolates. Total of 21 isolates were successfully obtained and identified as presumptive *T. halophilus*. Seven isolates were obtained as presumptive protease producing *T. halophilus* with higher protease activity than *B. subtilis*. Those seven presumptive protease producing isolates were identified as *Tetragenococcus muriarticus*, so the identification process was unsuccessful to obtain the protease producing *T. halophilus*.

Keywords: ***Tetragenococcus halophilus*, Microbial Isolation, Microbial Identification, Protease, Soy Sauce Moromi**