

## Evaluation of Anti-Bacterial Activity of Hydrolyzed Ovomucin Using Fish Pattie Produced from Tilapia (*Oreochromis mossambicus*)

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Fish patties contain higher amount of essential nutrients. Ovomucin is an egg white protein and can be used to produce bioactive peptides with various functional properties. This study was conducted to determine the effect of hydrolyzed ovomucin on the survival and growth of *Salmonella sp.* and *Escherichia coli* in vacuum packed fish patties made from Tilapia (*Oreochromis mossambicus*) during storage at -18°C for 28 days. Ovomucin (20 mg/ml) was hydrolyzed with heat inactivation at 100°C for 15 min. Fish patties contained fish (64%), bread crumbs (17%), ice (12%), vegetable oil (4%), salt (2%) and spices. Seven different treatments including ovomucin hydrolysate and curing salt in ratio of 125 ppm: 0 (as positive control), 0:100 ppm (Tr<sub>1</sub>), 62.5 ppm: 62.5 ppm (Tr<sub>2</sub>), 31.25 ppm: 93.75 ppm (Tr<sub>3</sub>), 93.75 ppm: 31.25 ppm (Tr<sub>4</sub>), 125 ppm of ovomucin (Tr<sub>5</sub>) and no additives (as negative control) were prepared as above mentioned procedure. Samples were cooked at 80°C to reach a core temperature of 72°C and cooled in cold water. Samples containing hydrolysates showed significant (P<0.05) antimicrobial activity compared with negative control. However, the effect of Tr<sub>2</sub> on *Salmonella* growth inhibition was higher than other treatments. Similar effects were found with *E. coli* growth inhibition. The combined antimicrobial effect of curing salt and hydrolyzed ovomucin was higher than using them alone, in both contaminated samples. Generally, all tested food-borne microbes were significantly (P<0.05) affected by adding curing salt and hydrolyzed ovomucin. It can be concluded that antimicrobial activity on foods can be much stronger when incorporated hydrolyzed ovomucin with curing salt. In addition, hydrolyzed ovomucin can be used as a prospective natural replacement of curing salt by 50% which is currently used in processed fish products.

**Keywords:** Antimicrobial, Fish Pattie, Hydrolyzed ovomucin