PREVALENCE, VIRULENCE, ANTIBIOGRAM PROFILES, AND GENETIC RELATIONSHIP OF STAPHYLOCOCCUS EPIDERMIDIS FROM MEAT IN SOUTHERN THAILAND

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Abstract. Staphylococcus epidermidis is a gram-positive bacterium responsible for nosocomial infection worldwide and also is considered one of the causes of food poisoning. S. epidermidis was investigated in raw meats in this study. Of 603 bacterial isolates from 100 raw meat samples obtained from open markets in southern Thailand, nine samples based on recN molecular markers yielded 14 S. epidermidis strains, one from beef, four from chicken and nine from pork. Eight S. epidermidis strains from chicken and pork harbored atlE encoding surface-associated autolysin, responsible for rapid initial attachment to polymer surface, and one strain from beef contained atlE and ica operon, encoding polysaccharide intercellular adhesion proteins. Fifty, seven and forty-three percent of the strains demonstrated formation of strong, moderate and weak biofilms, respectively. Antibiogram profile revealed 50% of strains were fusidic acid-resistant and no strain methicillin- or multidrug-resistant. DNA profiling by BOX-PCR classified at 80% genetic similarity the 14 strains into six clusters, with S. epidermidis strains from different pork samples showing highest (97%) genetic relatedness. These results provide primary data on S. epidermidis properties from raw meats in this region of the country, which will contribute to a fuller picture of the epidemiology of this pathogen in southern Thailand and to the development of a public health program of control and prevention.

Keywords: Staphylococcus epidermidis, meat, virulence factor, Thailand