

## ABSTRACT

### Natural Antibacterial Activity of Thai Red Curry Paste in Thai Red Curry (Kang Panaeng ) model against *Salmonella sp.* and *Listeria monocytogenes*

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Foods with natural antibiotic properties become one of consumer concern. *Salmonella sp.* and *Listeria monocytogenes* are important cause of human illness and have been reported about the outbreak in many years and many countries. Panaeng curry is the traditional Thai food and popular dish. Panaeng curry main ingredients compose of many types of including *Capsicum annum* (chili), *Cymbopogon citratus* (lemongrass), *Allium ascalonicum* (Shallots), *Allium sativum* (garlic), shrimp paste, sugar, salt, and peanuts. The objective of this research is to investigate the antibacterial activity of Thai curry paste in fresh coconut milk based curry (Kang-Panaeng) model against *S. enterica* Enteritidis, *S. enterica* 4,5,12:i:-(human) US clone and *L. monocytogenes*10403S. The Thai curry paste in-vitro antibacterial activity was evaluated by standard plate count method on SS agar and BHI media every hour for 6 hours at room temperature. Panaeng curry was prepared by Thai homemade authentic cooking method. The t-test has been done by using SAS on log CFU/ml with  $P < 0.05$ . The result show that the log CFU/ml of *S. enterica* Enteritidis (Human) in Kang Panaeng was significant lower than in positive control (NB) ( $P < 0.05$ ) at 5<sup>th</sup> - 6<sup>th</sup> hour: 5<sup>th</sup>hr;  $8.05 \pm 0.072$  and  $6.45 \pm 0.017$ , and 6<sup>th</sup>hr;  $8.11 \pm 0.070$  and  $6.71 \pm 0.448$  log CFU/ml, respectively. While the log CFU/ml of *S. enterica* 4,5,12:i:-(human)US clone in Kang Panaeng was significant lower than in positive control (NB) ( $P < 0.05$ ) since 1<sup>st</sup>-6<sup>th</sup> hour: 1<sup>st</sup>hr;  $6.32 \pm 0.100$  and  $5.94 \pm 0.066$ , 2<sup>nd</sup>hr;  $7.26 \pm 0.068$  and  $6.17 \pm 0.044$ , 3<sup>rd</sup>hr;  $7.30 \pm 0.071$  and  $6.32 \pm 0.015$ , 4<sup>th</sup>hr;  $7.93 \pm 0.505$  and  $6.37 \pm 0.011$ , 5<sup>th</sup>hr;  $8.01 \pm 0.482$  and  $6.40 \pm 0.025$ , and 6<sup>th</sup>hr;  $8.34 \pm 0.029$  and  $6.45 \pm 0.012$  log CFU/ml, respectively. For *L. monocytogenes* 10403S, the log CFU/ml in Kang Panaeng was significant lower than in positive control (BHI), since 2<sup>nd</sup>-6<sup>th</sup> hour: 2<sup>nd</sup>hr;  $7.23 \pm 0.012$  and  $6.39 \pm 0.059$ , 3<sup>rd</sup>hr;  $7.30 \pm 0.023$  and  $6.44 \pm 0.023$ , 4<sup>th</sup>hr;  $7.39 \pm 0.010$  and  $6.46 \pm 0.010$ , 5<sup>th</sup>hr;  $7.44 \pm 0.006$  and  $7.39 \pm 0.011$ , and 6<sup>th</sup>hr;  $7.46 \pm 0.006$  and  $7.42 \pm 0.015$  log CFU/ml, respectively. The Panaeng curry paste in Thai red curry model showed promising antibacterial activity against food-borne pathogenic bacteria, *S. enterica* Enteritidis, *S. enterica* 4,5,12:i:-(human) US clone and *L. monocytogenes* 10403S.

**Keywords:** Natural antibacterial, Panaeng curry paste, *S. enterica* Enteritidis, *S. enterica* 4,5,12:i:-(human) US clone, *L. monocytogenes* 10403S.

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