

ABSTRACT

Natural Antibacterial Activity of Thai Curry Paste in Thai Red Curry-Coconut Milk Base (Kang-Kati) model on *Salmonella* sp. and *Listeria monocytogenes*

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Past 5 years, *Salmonella* sp. and *Listeria monocytogenes* outbreaks occurred frequently in variety of food products. Foods, as natural antibiotics itself, might be alternative choice for food safety. Thai red curry is the cultural dish and become world popular dish. Thai curry paste, main ingredient in Thai red curry, composes of variety herbs including *Capsicum annuum* (chili), *Citrus hystrix* (Kaffir lime), *Cuminum cyminum* L. (Cumin), *Allium ascalonicum* L. (Shallot), *Allium sativum* (Garlic), *Cymbopogon citratus* (Lemongrass), *Alpinia galangal* (Galangal). Therefore, the objective of this study was to investigate antibacterial activity of Thai curry paste in Thai Red Curry-Coconut Milk Base (Kang-Kati) model on three food-borne pathogenic bacteria: *S. enteric* Enteritidis, *S. enterica* 4,5,12:i:- (human) US clone and *L. monocytogenes* 10403S. The cell count serial dilution method was used to evaluate antibacterial activity by using the Salmonella-Shigella agar and BHI agar. The Kang-Kati was taken every hour for 6 hrs. Thai red curry-coconut milk base (Kang-Kati) was prepared by Thai homemade authentic cooking method using UHT coconut milk, as it has been served in Thai cuisine and was inoculated with 1 % culture. The result showed that *S. enterica* Enteritidis level in Thai red curry (Kang-Kati) was significantly lower than in NB, as positive control, ($P < 0.05$) at 3rd and 4th hour: 3rd hr; 5.53 ± 0.027 and 5.65 ± 0.019 , and 4th hr; 5.62 ± 0.07 and 5.80 ± 0.03 log CFU/ml, respectively. While *S. enterica* 4,5,12:i:- (human) level in Thai red curry (Kang-Kati) was significantly lower than in NB, as positive control, ($P < 0.05$) since 4th - 6th hour: 4th hr; 5.72 ± 0.06 and 5.84 ± 0.01 , 5th hr; 5.80 ± 0.04 and 5.91 ± 0.03 , and 6th hr; 5.85 ± 0.04 and 5.96 ± 0.01 log CFU/ml, respectively. *L. monocytogenes* level in Thai red curry (Kang-Kati) was significantly lower than in BHI, as positive control, ($P < 0.05$) at 3rd and 4th hour: 3rd hr; 5.49 ± 0.01 and 5.61 ± 0.02 , and 4th hr 5.63 ± 0.02 and 5.70 ± 0.04 for log CFU/ml, respectively. The t-test has been done by using SAS on log CFU/ml with $P < 0.05$. Thai curry paste in Thai red curry-coconut milk base (Kang-Kati) showed the promising antibacterial activity, act as functional food, against all three food-borne pathogen.

Keywords: Food Natural Antibacterial, Thai Red Curry Paste, Kang-Kati, *Salmonella* sp. and *Listeria monocytogenes*
