



# The Antimicrobial from Lactic Acid Bacteria Against *Staphylococcus aureus* cause of Dairy Cow Sub Clinic Mastitis

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Received: 📅 January 24, 2020

Published: 📅 January 29, 2020

## Abstract

The aim of this study is to know the antimicrobial activity produced by Lactic Acid Bacteria (LAB) against *Staphylococcus aureus* cause of dairy cow's sub clinic mastitis. The antimicrobial is produced by LAB which isolate from cattle intestine or can inhibit the growth *Staphylococcus aureus*, The failure of this bacteria growth was indicated by formation of clear zone surrounding the colonies on Brain Heart Infusion Agar plate In Vitro The antimicrobial produced by Lactic Acid Bacteria developed to be used for therapeutic of dairy cows sub clinic mastitis [1-3].

**Keywords:** Lactic acid bacteria, *Staphylococcus aureus*, sub clinic mastitis

## Introduction

Management of dairy cows' industry still represent problem having an effect on to health udder and milk production that is the happening of case chafe udder referred as mastitis. Mastitis represent very disease harm among other things produce milk reduce, the milk composition changes so that the low milk quality, costly medication, earlier culling dairy cows and also the risk residue existence medicines or antibiotic residue in milk which is not safety to consumer. It's needed really correct and good handling management processing out.

Lactic acid bacteria (LAB) metabolites that is Bacteriocin represent as antibacteriial which can kill bacteria. Bacteriocin yielded by source of lactic acid bacteria represent as antibacterial consisted of polypeptide result of synthesis system ribosome, having activity to bacteria pathogen cause of subclinical mastitis [4]. The potential of Bacteriocin as antibacterial can inhibit growth of *Staphylococcus aureus*, which can cause mastitis disease, hence this research study, expressing, digging Bacteriocin produced by lactatic acid bacteria as antibacterial come from crosscut cattle intestine and application as therapeutic of case dairy cows sub clinical mastitis [5].

Intend this research is isolation Bacteriocin produced by lactic acid bacteria isolate come from cattle intestine and also express and potency Bacteriocin as antibacterial. Research target is known and potency Bacteriocin produced of lactic acid bacteria isolate from cattle intestine for effort therapeutic to sub clinical mastitis of dairy cows [6-8].

## Methods

This research covers some phase there are first phase: isolation, selection and identify lactic acid bacteria (LAB) producer bacteriocin and also characterization bacteriocin, second phase cover application bacteriocin for therapy of sub clinic mastitis of dairy cows [9]. LAB from cattle intestine obtained, media used Mann Rogosa Sharpe (MRS-OXOID-CM 0359) after incubation at room temperature, chamber during 72hr, LAB is hereinafter was done selection in medium of MRS In order to arranged in layers with media Brain Heart Infusion ( BHI Agar-Oxoid ) have inoculation with indicator bacteria there are *Staphylococcus aureus*. Identify LAB with sequencing 16s RNA method. Hereinafter characterization of bacteriocin and then test of heat resistance, resistance enzyme, test activity to bacteria of indicator there are *Streptococcus aureus*,

Second phase research is application bacteriocin of therapy to sub clinical mastitis of dairy cows. Usage bacteriocin of therapy sub clinical mastitis done intramammaric dose and used 800 AU per quarter [10]. Result identify LAB pursuant to Sequencing 16's RNA is *Pediococcus pentosaceus*, Bacteriocin yielded by *Pediococcus pentosaceus* having characteristic of resisten to heat of temperature 800 °C during 15 minute and 100 °C during 15 minute, inactivated by trypsin, having activity as antibacterial to *Staphylococcus aureus* [11].

## Conclusion

Bacteriocin produced by Lactic Acid Bacteria that *Pediococcus pentosaceus* having characteristic as antibacterial by in-Vitro and in-Vivo that is potency as antibacterial to *Staphylococcus aureus* and potential for therapeutical of sub clinical mastitis of dairy cows.

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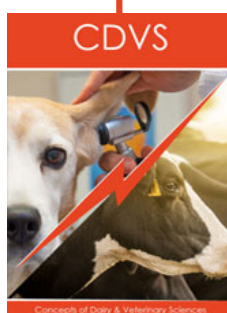
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DOI: [10.32474/CDVS.2020.03.000163](https://doi.org/10.32474/CDVS.2020.03.000163)



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