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ANALYSIS OF THE MECHANISM OF ACTION BY MOLECULAR DOCKING STUDIES OF ONE ETHNO VETERINARY HERBAL PREPARATION USED IN BOVINE MASTITIS

PUNNIAMURTHY N[1], SUJATHA P L[2], PREETHA S P[3] & N. RAMAKRISHNAN[4]

[1, 4]EVM Herbal Training and Research Centre, TANUVAS, Thanjavur, Tamil Nadu, India

[2]College of Food and Dairy Technology, TANUVAS, Chennai, Tamil Nadu, India

[3]Department of Veterinary Pharmacology & Toxicology, Madras Veterinary College, Chennai, Tamil Nadu, India

ABSTRACT

Mastitis, a disease in dairy cattle characterized by inflammation due, but not necessarily limited, to microbial infection in the mammary gland. Mastitis leads to loss in terms of reduction in milk, milk discards, early culling, increasing labour cost and veterinary services. The mammary tissue damage decreases the number and the activity of epithelial cells, caused by bacterial factors and host immune system through necrosis or apoptosis, which can be differentiated by the changes in morphological, biochemical and molecular characters of the dying cells. However, bacteria and their products contribute to the initial development of the disease. *Staphylococcus aureus* is a pathogen with a broad range of hosts and mastitis is a major disease caused by it. It has the ability to colonize the host tissue, causing more acute relapsing infection than other *staphylococcus* species. Many strategies have been employed in the treatment among which the topical application of herbal paste comprising *Aloe Vera*, turmeric powder and lime has been effective against the infection though the mechanism of action is not fully understood. The present study uses the *in silico* approach to find the effect of the herbal preparation against the infection. The bioactive compounds were tested for its effect against the target proteins of *S. aureus* using molecular docking studies.

KEYWORDS: Mastitis – in-Silico – Computer Aided Drug Discovery