Acta Scientific MICROBIOLOGY (ISSN: 2581-3226)

Volume 6 Issue 8 August 2023

Editorial

Pros and Cons of Lactococcus and Lactic Acid Bacteria

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Received: May 29, 2023

Published: July 01, 2023

Lactococcus considered as one of emerging synthetic bacteria providing benefits in the fields of bioengineering, biotherapeutics production, vaccination driven and a biosensor detectable bacterial model in now a days. Recent reports on Lactococcus lactis as a DNA based vaccine is quite interesting and expression of heterogeneous protein systems for biotherapeutics production and probiotic usage of the organism serves as a attractive tool in microbioengineering. Lactococcus is a gram positive organism with better benefits as probiotic and considered to be safe in consumption which can serve as a potential tool for treating dreadful infections caused by harmful microbes like *P. aeroginosa*.

Lactobacillus is gram negative bacteria and considered to be safe as probiotic with out causing side effects till now. Lactic acid bacteria and its uses is not limited to food and dairy industry but also extended to usage as heterogeneous protein systems for antigen delivery in the next generation vaccination. Diacetyl and acetaldehyde are two major compounds responsible for the flavour and aroma of yoghurt and dairy products in dairy industry and bioengineering of Lactococcus by expression of biosensors can act as a control agent for aroma and flavor by utilising and studying detection mechanism of compounds diacetyl and acetaldehyde used by bacteria.

DNA vaccines of Lactococcus can deliver DNA directly to the gastrointestinal tract and can help in preventing the entry of harmful microbes that can cause gastro intestinal disorders and diseases. Needleless vaccination can be possible by utilising Lactococcus as a vector for the delivery of antigens and. microbioengineering can help in developing Lactococcus as a synthetic organism with more health benefits and as a treatment aid for multiple diseases and disorders.

Finally future generation techniques can be complementing with the present technological needs for the successful generation of recombining bacteria with biosensing ability and needleless vaccination through oral and mucosal administration and penetration.