

Accepted Manuscript

Development of milk chocolate supplemented with microencapsulated *Lactobacillus plantarum* HM47 and to determine the safety in a Swiss albino mice model



Reshma B. Nambiar, Periyar Selvam Sellamuthu, Anand Babu Perumal

PII: S0956-7135(18)30362-1
DOI: 10.1016/j.foodcont.2018.07.024
Reference: JFCO 6237
To appear in: *Food Control*
Received Date: 06 March 2018
Accepted Date: 18 July 2018

Please cite this article as: Reshma B. Nambiar, Periyar Selvam Sellamuthu, Anand Babu Perumal, Development of milk chocolate supplemented with microencapsulated *Lactobacillus plantarum* HM47 and to determine the safety in a Swiss albino mice model, *Food Control* (2018), doi: 10.1016/j.foodcont.2018.07.024

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

1 **Development of milk chocolate supplemented with microencapsulated *Lactobacillus***
2 ***plantarum* HM47 and to determine the safety in a Swiss albino mice model**

3 Reshma B Nambiar, Periyar Selvam Sellamuthu*, Anand Babu Perumal,
4 Department of Food Process Engineering, School of Bioengineering, SRM Institute of
5 Science and Technology, Kattankulathur- 603203, Chennai, Tamilnadu, India

6 *Correspondence author: TEL: +91-9444821490. E-mail: periyar.india@gmail.com.

7 **Abstract**

8 Our study aimed to evaluate the survivability and safety of *Lactobacillus plantarum*
9 HM47 strain supplemented in milk chocolate during storage and transit through
10 gastrointestinal tract of mice. The milk chocolate was supplemented with microencapsulated
11 *Lactobacillus plantarum* HM47 isolated from human breast milk. Water activity (a_w), pH,
12 and sensory attributes of the milk chocolates containing *L. plantarum* HM47 were analyzed.
13 The HM47 were found to be viable up to 180 days of storage at 25°C ($>8 \log \text{CFU/g}$) and the
14 overall acceptability results suggested that the addition of probiotic had no significant effect
15 ($p>0.05$) on the sensory attributes of the milk chocolate. An acute oral toxicity of the
16 microencapsulated *Lactobacillus plantarum* HM47 in albino mice demonstrated no treatment
17 related illness or mortality and feed consumption when compared to control mice. The 28 day
18 administration of probiotic powder and probiotic milk chocolate to mice demonstrated that
19 there was no observed adverse effect in the haematological parameters and vital organs of
20 mice. Also the consumption of the probiotic powder and probiotic milk chocolate
21 significantly ($p<0.05$) enhanced the intestinal lactic acid bacteria (LAB) count and suppressed
22 the enteric pathogenic bacterial count in mice suggesting the colonization of HM47 in the
23 intestine. Thus, the present study suggest that the milk chocolate could be used as a good

Download English Version:

<https://daneshyari.com/en/article/8887788>

Download Persian Version:

<https://daneshyari.com/article/8887788>

[Daneshyari.com](https://daneshyari.com)