ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/314176529

Effect of natural sugars and an artificial sweetener on biofilm formation of Candida species.

Conference Paper · July 2016

CITATIONS
0

READS
13

5 authors, including:

Gayan Kanchana Wijesinghe
University of Sri Jayewardenepura
7 PUBLICATIONS **2** CITATIONS
SEE PROFILE

Manjula Weerasekera
University of Sri Jayewardenepura
55 PUBLICATIONS **61** CITATIONS
SEE PROFILE

Chinthika Gunasekara
University of Sri Jayewardenepura
54 PUBLICATIONS **61** CITATIONS
SEE PROFILE

Nilwala Kottegoda
University of Sri Jayewardenepura
58 PUBLICATIONS **309** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Project Development of graphene based devices View project

Project Molecular characterisation and disease severity of leptospirosis in Sri Lanka View project

All content following this page was uploaded by Gayan Kanchana Wijesinghe on 02 March 2017.

The user has requested enhancement of the downloaded file.

Sri Lanka Medical Association

129th Anniversary International Medical Congress

"Moving from Millennium Development Goals to Sustainable Developments Goals"

SLMA
2016

Sri Lanka Medical Association

higher UPoD compared to females throughout the period. During this period, UPoD due to CVD increased from 9.3 to 10.1, UPoD from DM increased from 1.0 to 3.1, UPoD from CA increased from 3.5 to 5.0 and UPoD from COPD remained around 2.3.

Conclusions

UPoD due to CVD, DM and CA have shown an increasing trend from 2002 to 2010 and we would expect more premature deaths in the age group 30 to 70 if the same trend continues over the next decade. Therefore achieving 25% reduction in mortality in 2025 could be challenging for Sri Lanka.

Free Paper Session 6 – Miscellaneous

OP038

Effect of natural sugars and an artificial sweetener on Biofilm formation of *Candida* species

Jayarathna P D T A[1], Wijesinghe G K[1], Weerasekara M M[1], Gunasekara T D C P[1], Fernando S S N[1], Kottegoda N[2],

[1]*Department of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardanepura*

[2]*Department of Chemistry, Faculty of Applied Science, University of Sri Jayewardanepura*

Introduction

As biofilms are ubiquitous life forms, biofilm formation may vary under different nutritional conditions such as fermentable sugars leading to many oral complications including dental caries and periodontal diseases. In the present study we investigated the effect of two different concentrations of sugars and an artificial sweetener on biofilm formation of Candida species.

Objectives

The aim of the study to investigate the effect of two different concentrations of sugars and an artificial sweetener on biofilm formation of Candida species.

Method

The growth rates of planktonic cells of *C.albicans* and *C.tropicalis* was determined by inoculating 96-well plates with 10^6 cells/ml of organisms suspended in 5% and 10% sweetening agents supplemented medium and measuring the optical density (OD_{492}) at 2 hour intervals.

C.albicans, C.tropicalis and 1:1 mixed species adhesion and Biofilm growth rate assays in the presence of 5% and 10% glucose, sucrose and saccharin were quantified using MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) and Crystal Violet (CV). The Biofilm architecture was assessed using Scanning electron microscopy (SEM).

Results

Highest growth rate of planktonic *Candida* was observed with 5% glucose regardless of species. No significant growth was observed with 5% and 10% saccharin. While both glucose and sucrose (5% and 10%) showed significant positive effect on adhesion of *C.albicans*, *C.troplicalis* and mixed species, 5% saccharin significantly reduced the adhesion of monospecies of *C.albicans* and *C.tropicalis*. A maximum Biofilm growth rate was observed with 5% sucrose for all species. While 5% saccharin had no significant effect, 10% saccharin reduced the growth of all three Biofilms.

Conclusions

5% saccharin did not promote the adhesion of C. albicans and mixed species, however 10% saccharin promoted the adhesion. Although 10% saccharin promoted the adhesion it did not facilitate the growth of Candida biofilms.

OP039

Detection of BK virus (BKV) in renal transplant recipients in National Hospital of Sri Lanka (NHSL).

Premathilake MIP[1,2], Jayamaha CJS[2]

[1]*Faculty Of Medicine, University of Colombo*

[2]*Medical Research Institute, Colombo*

View publication stats