



An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)
Bhulabhai Desai Road
Mumbai – 400026
Ph: 022-23512642 / 23523304
sophiacollegemumbai.com

eNeuro

New Research

Development

LDB1 Is Required for the Early Development of the Dorsal Telencephalon and the Thalamus

Veena Kinare,¹ Surajjana Pat,² and Shubha Tale²

<https://doi.org/10.1523/JNEUROSCI.0356-18.2019>

¹Department of Life Sciences, Sophia College for Women, Mumbai 400026, India and ²Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai 400005, India

Abstract

LIM domain binding protein 1 (LDB1) is a protein cofactor that participates in several multiprotein complexes with transcription factors that regulate mouse forebrain development. Since Ldb1 null mutants display early embryonic lethality, we used a conditional knockout strategy to examine the role of LDB1 in early forebrain development using multiple Cre lines. Loss of Ldb1 from E8.75 using Foxg1Cre caused a disruption of midline boundary structures in the dorsal telencephalon. While this Cre line gave the expected pattern of recombination of the floxed Ldb1 locus, unexpectedly, standard Cre lines that act from embryonic day (E)16.5 (Emx1Cre) and E11.5 (NesCre) did not show efficient or complete recombination in the dorsal telencephalon by E12.5. Intriguingly, this effect was specific to the Ldb1 floxed allele, since three other lines including floxed Ad and mTetG reporters, and a floxed Lox2 line, each displayed the expected spatial patterns of recombination. Furthermore, the incomplete recombination of the floxed Ldb1 locus using NesCre was limited to the dorsal telencephalon, while the ventral telencephalon and the diencephalon displayed the expected loss of Ldb1. This permitted us to examine the requirement for LDB1 in the development of the thalamus in a context wherein the cortex continued to express Ldb1. We report that the somatosensory VB nucleus is profoundly shrunken upon loss of LDB1. Our findings highlight the unusual nature of the Ldb1 locus in terms of recombination efficiency, and also report a novel role for LDB1 during the development of the thalamus.

Key words: Cre recombinase activity; forebrain; inefficient floxing; Ldb1; somatosensory thalamus

Significance Statement

The role of transcriptional co-factor LIM domain binding protein 1 (LDB1) in mouse forebrain development was examined using a floxed Ldb1 line and standard Cre driver lines Foxg1Cre, Emx1Cre, and NesCre. Foxg1Cre revealed that LDB1 is a key regulator of early telencephalic midline development. Curiously, the floxed Ldb1 locus appeared to be selectively resistant to Cre-mediated recombination in the dorsal telencephalon using Emx1Cre and NesCre. Recombination improved with time in the case of Emx1Cre. NesCre recombined the floxed Ldb1 locus efficiently in the ventral telencephalon and in the diencephalon, where a critical requirement for this factor in the development of the somatosensory VB nucleus of the thalamus was revealed. Our findings highlight the importance of assessing the extent of recombination when interpreting conditional loss-of-function phenotypes.

Introduction

LIM domain binding protein 1 (LDB1, also called NLI/CLIM2) is a protein cofactor with an impressive list of

binding partners, and is found in multiprotein complexes in several systems including the nervous system and the hematopoietic system, associated with transcription fac-

Received September 1, 2018; revised January 16, 2019; accepted February 19, 2019. This article was first published February 19, 2019.

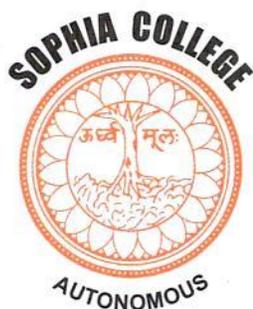
This article is freely available online at www.jneurosci.org.

Copyright © 2019 the authors 0270-6474/19/390356-18\$15.00/0

Correspondence should be addressed to Dr. Shubha Tale, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai 400005, India. E-mail: shubha@tifr.res.in.



ATTESTED TRUE COPY
A.P. Pabli
PRINCIPAL
SOPHIA COLLEGE
(AUTONOMOUS)
MUMBAI-400 026.



An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com

© 2019 JETIR April 2019, Volume 6, Issue 4

www.jetir.org (ISSN-2349-5162)

IN-VITRO ANTIOXIDANT AND FREE RADICAL SCAVENGING ACTIVITY OF *LEUCAS INDICA* AND *ALTERNANTHERA TENELLA*.

¹ChayanikaBharadwaj and ²Prabha G. Shetty

¹PG Student, ²Associate Professor

Department of Chemistry,

Sophia College for Women, Mumbai, India.

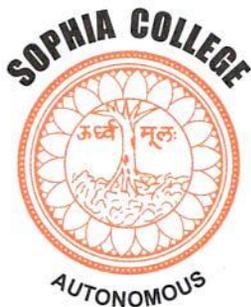
ABSTRACT

This study focuses on the antioxidant potential of two weeds, *Alternanthera tenella* and *Leucas indica* that are used for their medicinal properties since ages.

The total antioxidant capacity of the ethanolic extracts was determined using phosphomolybdenum assay. The IC₅₀ value for *L. indica* was 6.485±0.00103mg/cm³ and that for *A. tenella* was 17.27±0.00129 mg/cm³. The free radical scavenging activity was determined using DPPH assay. The IC₅₀value for *L. indica* was found to be 2.737mg/cm³ and that for *A. tenella* to be 1.964mg/cm³. The total phenolic content determined using Folin – Ciocalteu method was found to be 154.6± 0.156mg GAE /g for *L. indica* and 4.9 ± 0.067 mg GAE /g for *A. indica*. The reducing nature was determined using FRAP assay and Ferrozine assay. The reducing capacity measured by FRAP assay was 4.630±0.0006 mg Fe equivalent/g for *L. indica* and 2.080±0.0037 mg Fe equivalent/g for *A. tenella*. The ferric reducing capacity by ferrozine assay was 1.0186±0.0003 mg AE/g for *L. indica* and 0.4814±0.0318 mg AE/g for *A. tenella*.

This study indicates that *A. tenella* and *L. indica* are both potential antioxidants. However, *L. indica* showed better antioxidant properties compared to *A. tenella*.





An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road
Mumbai – 400026
Ph: 022-23512642 / 23523304

sophiacollegemumbai.com



Journal of Emerging Technologies and Innovative Research

(An International Scholarly Open Access Journal, Peer-
reviewed, Refereed Journal)
Impact factor 7.95 Calculate by Google Scholar and
Semantic Scholar | AI-Powered Research Tool,
Multidisciplinary, Monthly, Multilingual Journal

UGC Approved Journal no 63975(19)

ISSN: 2349-5162 | ESTD Year : 2014

Volume 11 | Issue 10 | October 2024

JETIR **E**XPLORE- Search Thousands of research papers

ENHANCED BY Google



Home	Editorial / RMS ▼	Call For Paper	Research Areas	For Author ▼	Current Issue	Archives ▼	FAQs	Contact Us
------	-------------------	----------------	----------------	--------------	---------------	------------	------	------------

Published in:

Volume 6 Issue 5
May-2019
eISSN: 2349-5162

UGC and ISSN approved
7.95 impact factor UGC
Approved Journal no
63975

7.95 impact factor
calculated by Google
scholar

Unique Identifier

Published Paper ID:
JETIR1905H92

Registration ID:
205470

Page Number

578-586

Title

Antioxidant capacity and free radical scavenging activity of Pterocarpus marsupium and Vitis vinifera by using different in vitro model-A comparative study

Authors

Crissan Miranda
Fieme Rodrigues
Prabha Shetty

Abstract

The present study was to evaluate the antioxidant potential and the total phenolic content of P.marsupium bark and V.vinifera seeds extract. Antioxidant potential of selected plants was investigated in aqueous and ethanolic solvent under two conditions 1hr and overnight extraction. The free radical scavenging activity was determined using DPPH (2,2-diphenyl-1-picrylhydrazyl) assay in the concentration range of 0.5mg/ml to 30.0mg/ml. The scavenging activity of all the extracts was compared with standards namely Butylated hydroxytoluene (BHT), Gallic acid and Ascorbic acid. IC50 of aqueous P. marsupium overnight extract was found to be 1.10 ± 0.263 mg/ml and that of aqueous V.vinifera (1hr) extract was found to be 3.075 ± 0.074 mg/ml for DPPH. Total phenolic content was determined by Folin-Ciocalteu method and expressed in terms of Gallic acid equivalent. The aqueous overnight extract of P. marsupium and ethanolic overnight extract of V.vinifera showed highest phenolic content (30.88 ± 0.090 mg/ml and 33 ± 0.090 mg/ml).

Download PDF



Downloads

0002915

Print This Page



Impact Factor:

7.95

Impact Factor

Calculation click here

Current Call For Paper

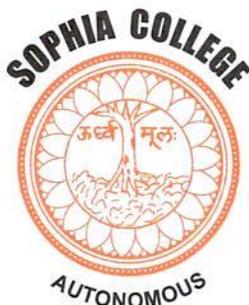
Volume 11 | Issue 10
October 2024



ATTESTED TRUE COPY

A.P. Pabli

PRINCIPAL
SOPHIA COLLEGE,
(AUTONOMOUS)
MUMBAI-400 026.



An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com



International Journal of Advanced Scientific Research and Management, Volume 3 Issue 12, Dec 2018

www.ijasrm.com

ISSN 2455-6378

Developmental Toxicity of Cyfluthrin in Embryo-larval Stages of Zebrafish

Sandhya Kadiru¹

¹Department of Zoology, Sophia College,
Mumbai, Maharashtra, India – 400 026

Abstract

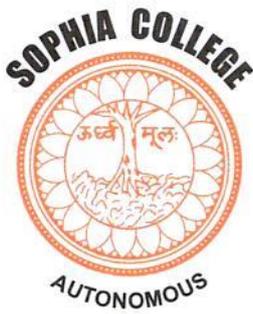
Cyfluthrin is widely used as an agricultural and household pesticide and is both a contact and oral poison for insects, especially chewing and sucking insects. Research work has been carried out on toxicity of cyfluthrin in rats, birds, annelids and arthropods. However so far, there is no data available on the developmental toxicity of cyfluthrin to zebrafish (*Danio rerio*) in its early life stages. In this study, acute toxicity and developmental effects of cyfluthrin were evaluated for embryo-larval zebrafish at 24, 48, 72 and 96 hpf (hours post fertilization). The results showed that the 96 hpf LC₅₀ of cyfluthrin to embryos was 3.443 µg/L. Cyfluthrin increased the frequency of spontaneous contractions and hatch rate, while it reduced the body length significantly in a dose and

toxic pesticides is also common in India. Data with the National Crime Records Bureau shows that in 2015, some 7,060 people in India died due to accidental pesticide poisoning^[31].

Some of the widely used pesticides are those compounds belonging to pyrethroid family. The synthetic pyrethroids (SPs) are among the most potent and effective insecticides available for agricultural and indoor pest control^[28]. Generally, SPs are characterized as low mammalian and avian toxic. However, most aquatic invertebrates and fish are highly susceptible to SPs.^[9,10,17,20]

Cyfluthrin is a type II SP that acts on nerve axons by inhibiting neurotransmitter delivery via inhibition of the calcium ion channels coupled with a





An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com

© 2019 JETIR May 2019, Volume 6, Issue 5

www.jetir.org (ISSN-2349-5162)

Anticandida and immunomodulating activity of Apple cider vinegar; its use in treating denture stomatitis and as a root canal irrigate.

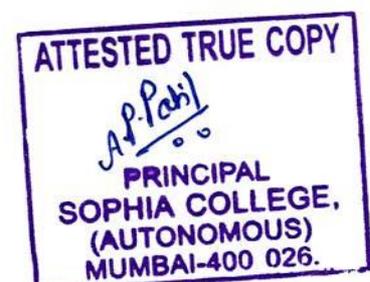
Gulafsha Khan, Mrs. Jyoti Mantri.

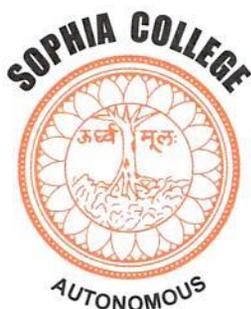
Student, Professor

Department of Microbiology,

Sophia College (Autonomous), Affiliated to the University of Mumbai, Mumbai, India.

- I. *Abstract: Antibiotic resistance is rising to dangerously high levels in all parts of the world, making alternative antimicrobials essential. The high prevalence of oral candidiasis and the restricted number of antifungal agents available to control it, justifies the development of new therapies for use in daily clinical practice. The medical impact of C. albicans typically depends on its ability to form virulent factors and biofilms, which attach to surfaces, such as tissues and implanted medical devices and also dentures. These biofilms serve as drug-resistant reservoirs of cells that can multiply and cause denture stomatitis and subsequent bloodstream infections. Chlorhexidine gluconate is a widely used potent oral antiseptic that has side effects such as toxicity, burning sensation, teeth staining, disagreeable smell, and taste. This study compares activity of apple cider vinegar with Chlorhexidine gluconate, in combating denture stomatitis caused by Candida albicans. Macro-dilution technique was used to determine the minimum inhibitory concentration (MIC) and minimum fungicidal concentration (MFC) of apple cider vinegar and chlorhexidine. Apple cider vinegar showed MIC/MFC of 2500 µg/ml whereas chlorhexidine showed MIC/MFC of 7.8 µg/ml. The effect of ACV (test), CHX (standard) and distilled water (control) on inhibition of biofilm formation by Candida albicans using acrylic resin was studied by comparing the number of colony-forming units (cfu/ml) of the adhered microorganisms. The mean value of cfu/ml in the control group (distilled water), standard group (Chlorhexidine) and ACV (test) were 3×10^5 , 8×10^2 and 5×10^1 respectively. This study further aims to assess the effect of ACV on the virulence factors, germ tube of C. albicans and phagocytic activity of monocytes that are the key effectors of innate immunity using flow cytometer.*





An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com

© 2019 JETIR May 2019, Volume 6, Issue 5

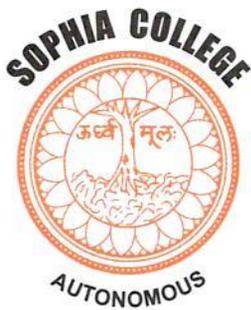
www.jetir.org (ISSN-2349-5162)

EVALUATION OF A TOPICAL FORMULATION CONTAINING EXTRACTS OF TURMERIC, POMEGRANATE AND BANANA PEEL ON *STAPHYLOCOCCUS AUREUS* PATHOGENESIS AND STUDYING ITS WOUND HEALING PROPERTIES.

¹RUKIYA SAFA PATEL, ²JYOTI MANTRI
STUDENT, PROFESSOR
DEPARTMENT OF MICROBIOLOGY,
SOPHIA COLLEGE (AUTONOMOUS), MUMBAI.

Abstract: *Staphylococcus aureus* causes a range of infections, ranging from a simple boil to antibiotic-resistant infections to flesh-eating infections. Increased resistance to conventional antimicrobials has complicated the treatment of wound infections caused by *Staphylococcus aureus*. Phytochemicals, which are naturally present in plants have tremendous therapeutic potential and can be exploited in overcoming these infections. In this study, peels of pomegranate and banana, an agro-industrial waste were tested for their therapeutic properties to investigate their effectiveness as a new source of antimicrobials and wound healing agents. Powdered peel extracts of pomegranate and banana along with turmeric were prepared to study their antimicrobial activity along with their effect on *Staphylococcus aureus* pathogenesis. MIC/MBC values were determined and the presence of important phytochemicals were analyzed. A topical gel was formulated and evaluated for its physicochemical characteristics, stability and wound healing properties (Angiogenesis). According to the achieved results, banana peel extract showed the highest antimicrobial activity as compared to the other two. The virulence factors like Proteinase and Phospholipase of *S. aureus* were inhibited by the tested extracts. Therapeutically important phytochemicals such as tannins, flavonoids, glycosides, terpenoids and saponins were present in the studied extracts. The formulated gel showed enhanced angiogenesis, indicating its role in wound healing as evaluated by using chorioallantoic membrane assay.





An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com



International Journal of Pharmacy and Biological Sciences-IJPBS™ (2019) 9 (1): 850-859

Online ISSN: 2230-7605, Print ISSN: 2321-3272

Research Article | Biological Sciences | Open Access | MCI Approved

UGC Approved Journal

Isolation and Screening of Streptomyces Species Producing Anti-Microbial Compounds Active against Multi-Drug Resistant Pathogens causing Respiratory Tract Infections

Arjuman Surti* and Vinita D'souza

Department of Microbiology, Sophia College, Bhulabhai Desai Road, Breach Candy, Mumbai 400026, Maharashtra.

Received: 12 Oct 2018 / Accepted: 10 Nov 2018 / Published online: 1 Jan 2019

Corresponding Author Email: arjumansurti@gmail.com

Abstract

Background: The members of the family Actinomycetaceae, are the largest known group of microbes that act as reservoirs of biologically active compounds i.e. antibiotics. **Aim:** The current study was carried out with an aim to isolate Actinomycetes from soil samples and screen for antibiotic producers effective against Multi-Drug Resistant (MDR) pathogens causing Respiratory Tract Infections (RTIs). **Methods:** Twenty-one isolates were obtained from various soil samples in our study, and were subjected to primary screening for antibiotic production by agar strip method, Wilkins overlay method, agar diffusion and disc diffusion assays. Identification of Actinomycetes was carried out on the basis of morphological, cultural,





An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

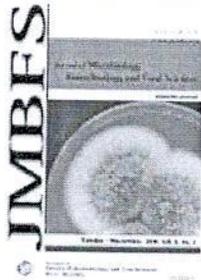
Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com



JMBFS

Journal of Microbiology, Biotechnology and Food Sciences

International peer-reviewed scientific online journal



Published by
Faculty of
Biotechnology and
Food Sciences

CHARACTERIZATION OF DYE DEGRADING POTENTIAL OF SUSPENDED AND NANOPARTICLE IMMOBILIZED CELLS OF *PSEUDOMONAS AERUGINOSA* AR-7

Arjuman Surti*, Rubina Ansari

Address(es): Dr. Arjuman Surti,
Department of Microbiology, Sophia College, Bhulabhai Desai Road, Breach Candy, Mumbai 400026, Maharashtra.

*Corresponding author: arjumansurti@gmail.com

doi: 10.15414/jmbfs.2018.8.2.774-780

ARTICLE INFO

Received 27. 3. 2018
Revised 2. 9. 2018
Accepted 7. 9. 2018
Published 1. 10. 2018

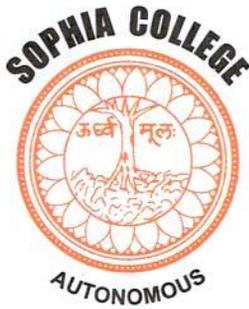
Regular article

OPEN ACCESS

ABSTRACT

The commercial use and unrestricted disposal of synthetic dyes in soil and water-bodies, following the industrial revolution, has led to a major threat towards environmental safety. The azo-dye, Remazol Black B (RBB) is one of the most commonly used synthetic reactive dyes in textile industries. In the present study, the decolorization and biodegradation of RBB were investigated using a bacterium isolated from the marine environment, which was later identified as *Pseudomonas aeruginosa* AR-7 by 16S rRNA analysis. *P. aeruginosa* AR-7 showed 99% decolorization at 100mg/L dye concentration when cultured at optimum conditions of incubation i.e., 96h at 37°C under static conditions using minimal salts medium (pH 7-9) supplemented with 0.1% glucose and yeast extracts. However, the dye degradation ability of the isolate was reduced to 29% on increasing the dye concentration to 500mg/L. In addition, *P. aeruginosa* AR-7 showed decolorization and degradation of RBB in wastewater obtained after dyeing a cotton fabric. In further experiments, the Fe₃O₄ nanoparticles were synthesized using co-precipitation method and were used to immobilize the cells of *P. aeruginosa* AR-7 by adsorption, in order to compare the RBB degrading abilities of the free and coated cells. The prepared nanoparticles (50-150nm) were characterized by FTIR and SEM analysis to study its structural properties. Also, upon magnetization studies using SOLID magnetometer, Fe₃O₄ nanoparticles were shown to have a magnetization of about 63emu/g. Interestingly, the





An Institution of
the Society for the Higher Education
of Women in India

Office of the Principal

Sophia College (Autonomous)

Bhulabhai Desai Road

Mumbai – 400026

Ph: 022-23512642 / 23523304

sophiacollegemumbai.com

International Journal of Scientific Research and Review

ISSN NO: 2279-543X

Developmental Toxicity of Phosmet in Embryo-larval Stages of Zebrafish

Sandhya Kadiru

Department of Zoology, Sophia College (Autonomous), Mumbai, Maharashtra, India – 400 026

Abstract

Pesticides have become ubiquitous environmental pollutants and a part of the pesticides used for domestic and agricultural purpose reaches aquatic ecosystems. Pesticides, while eliminating pests can potentially affect non-target species, such as aquatic organisms. Phosmet is an organophosphate used in control of aphids, suckers, mites, and fruit flies. In this study, developmental toxicity of phosmet at concentrations of 50, 100, 150, 200 and 250 $\mu\text{g/L}$ was observed in zebrafish (*Danio rerio*) embryos at 24, 48, 72 and 96 hpf (hours postfertilization). The results showed that 96 hpf LC_{50} of phosmet to zebrafish embryos was 172.772 $\mu\text{g/L}$. Phosmet increased the hatch rate of embryos, while reducing their hatchability. Exposure to phosmet induced morphological abnormalities like yolk sac edema, pericardial edema, failure of hearts to loop properly and decreased rate of heart beat. This study shows that phosmet causes lethality and significant developmental defects in zebrafish in early life stages on short term exposure.

Keywords

Phosmet, Zebrafish, Developmental toxicity, Acute toxicity

