



Trends in **Molecular Biology** • Special issue

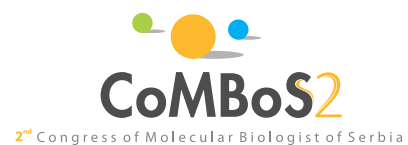
Abstract Book

CoMBoS²

2nd Congress of Molecular Biologist of Serbia

Belgrade • 2023

ISBN-978-86-82679-15-8



**CoMBoS2 – the Second Congress of Molecular Biologists of Serbia,
Abstract Book – Trends in Molecular Biology, Special issue**

06-08 October 2023, Belgrade, Serbia

Online Edition

<https://www.imgge.bg.ac.rs/lat/o-nama/kapacitet-i-oprema/istrazivacka-delatnost>

<https://indico.bio.bg.ac.rs/e/CoMBoS2>

IMPRESSUM

PUBLISHER:

**Institute of Molecular Genetics and Genetic Engineering (IMGGE),
University of Belgrade**

FOR THE PUBLISHER:

Dr. Sonja **Pavlović**

EDITOR:

Dr. Zorana **Dobrijević**

EDITORIAL REVIEW BOARD:

Prof. Dr. Silvana **Andrić**

Dr. Valentina **Ćirković**

Dr. Ivica **Dimkić**

Prof. Dr. Branko **Jovčić**

Prof. Dr. Gordana **Matić**

Ass. Prof. Dr. Milena **Milutinović**

Dr. Aleksandra **Stanković**

Dr. Nemanja **Stanisavljević**

Dr. Maja **Stoiljković**

EDITOR IN CHIEF:

Prof. Dr. Dušanka **Savić-Pavićević**

DESIGN:

Ivan **Strahinić**

All rights reserved

Institute of Molecular Genetics and Genetic Engineering (IMGGE),

University of Belgrade

Belgrade, 2023

ISBN 978-86-7078-173-3

© Copyright 2023 by Institute of Molecular Genetics and Genetic Engineering (IMGGE), University of Belgrade
Belgrade • 2023

Content

Welcome speech 4

Congress Organizers 5

MolBioS Award Winner 9

Plenary speakers 10

Session plenary speakers

- MOLECULAR BIOMEDICINE 11
- MOLECULAR BIOTECHNOLOGY 13
- MOLECULAR MECHANISMS OF CELL FUNCTIONS 16

Abstracts

- Session PLENARY LECTURES 20
- Session MOLECULAR BIOMEDICINE 25
 - PLENARY LECTURES 26
 - INVITED LECTURES 31
 - POSTERS 38
- Session MOLECULAR BIOTECHNOLOGY 100
 - PLENARY LECTURES 101
 - INVITED LECTURES 107
 - POSTERS 112
- Session MOLECULAR MECHANISMS OF CELL FUNCTIONS 126
 - PLENARY LECTURES 127
 - INVITED LECTURES 134
 - POSTERS 139
- MolBioS Student Session 157

Project Corner 182

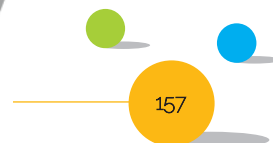
Congress Friends 190

Sponsors 191

Abstracts

MOLBIOS
STUDENT
SESSION

2nd Congress of Molecular Biologist of Serbia



UTILIZING METABOLITES FROM *CURCUMA LONGA* FOR THE DEVELOPMENT OF PH-RESPONSIVE TEST STRIPS

Nebojša Radović,¹ Ksenija Stojanović¹

¹University of Belgrade - Faculty of Chemistry, Belgrade, Serbia

Introduction: Metabolites from *Curcuma longa* show pH-dependent color-changing properties. During this study, test strips were developed using *Curcuma longa* metabolites, which enable the rapid estimation of acidity/alkalinity in natural and artificial samples.

Methods: Commercially available *Curcuma longa* powder (5.00 g) was mixed with ethanol (45 mL) and subjected to 30 minutes of ultrasonic extraction. After 60 minutes of settling, the resulting suspension was filtered and supplemented with ethanol to reach a final volume of 50 mL. Circular pieces of filter paper were immersed in 15 mL of the colored filtrate in Petri dishes for 10 minutes. The impregnated pieces of filter paper were then dried at 65°C for 10 minutes and cut into desired rectangular shapes.

Results: Analysis of the prepared test strips' behavior was conducted across a pH range from 0 to 14, encompassing various solutions (HCl, NaOH, and buffered solutions) whose pH values were measured by a pH meter. The test strips exhibited a yellow-orange color at pH values below 8.5, while a brown color was observed at pH values of 8.5 and above.

Conclusion: The experimental data obtained in this investigation demonstrate significant agreement with the literature value for the first pK_a of curcumin ($pK_{a1}=8.4$), a compound displaying the distinctive orange color found in dry *Curcuma longa* powder, and possessing pH-dependent color-changing characteristics. Therefore, test strips prepared from an ethanolic extract of *Curcuma longa* powder constitute a promising tool for the routine assessment of acidity/alkalinity across various samples in molecular biology, (bio)chemistry, pharmacy, medicine, and related fields.

Key words: *Curcuma longa*, metabolites, test strips, acidity/alkalinity estimation

Acknowledgements: This study was supported by the Ministry of Science, Technological Development and Innovation of Republic of Serbia (Contract number: 451-03-47/2023-01/200168).