



**ICoBios**  
International Conference of  
Biology for Student 2022

# PROGRAM BOOK AND ABSTRACTS

## INTERNATIONAL CONFERENCE OF BIOLOGY FOR STUDENT VIRTUAL, 27-28 AUGUST 2022

"Exploring and Teaching the Complexity of  
Tropical Biology from Molecule to Biosphere"

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## CHAIRMAN ICoBioS 2022's Welcome Remark

Dear All the participants and the committee,

First of all, I would like to praise and thank Allah Subhanahu Wa Ta'ala, the Almighty God for the abundance of His grace and mercy so that this event can be carried out. A big thank you and a sense of pride to the entire event committee and all parties who have been involved in this activity, both from Academics, the Indonesian Biology Generation (Genbi) and the Indonesian Biology Student Association (Ikahimbi) who have worked together to make the event a success." International Conference of Biology for Students (ICoBioS)". I also thank all the keynote speakers who have taken the time to join us and to all of our sponsors for all their support during the preparation and implementation of the event.

The "International Conference of Biology for Student (ICoBioS)" is a collaborative activity between Academics, Generation of Indonesian Biology (Genbi) and the Indonesian Biology Student Association (Ikahimbi) which aims to connect all biology and life science students and provide opportunities for them to present their findings to colleagues and the rest of the scientific community. This event will be held on 27-28 August 2022 with several programs, namely keynote talks, oral presentations, lightning talks for industry and the Open Bio Project Competition.

We hope that this ICoBioS event can be a place to publish research results as well as a place to see leading research ideas from the participants. Thank you very much for your participation and I hope you can enjoy this conference with fun and can give a good impression to the participants. See you at the next ICoBioS event.

Greetings,

Anggun Wirawan Aco

Deputy Secretary General II of the Indonesian Biology Student Association  
for the 2021-2023

## About ICoBioS 2022

The golden age of biology is upon us. We have broken through what once was one of the most significant challenges in biology by decoding the human genome. We have now started to be able to answer some of biology's complex and intriguing questions. The fast-changing field of biology demands constant knowledge sharing and transfer from experts to students and early career scientists to keep up with the latest updates in the area.

In light of this, The Indonesian Biology Student Association (IKAHIMBI), Generation of Biology (GENBI) and AKADEMISI are teaming up to bring the first International Conference of Biology for Students (ICOBIO), a premier student conference in biology and life science-related topics. We aim to connect all biology and life-science students and provide an opportunity for students to present their findings to colleagues, peers and the diverse scientific community. Therefore, the students will gain confidence and experience delivering their ideas and study results to a broader audience.

ICOBIO will take place virtually from 27-28 August 2022. The programs include keynote talks, oral presentations, lightning talks for industry, and an Open Bio project Competition. ICOBIO will provide a welcoming and inspiring platform for students and aspiring scientists passionate about biology to connect with other like-minded people. Any student can also apply as a volunteer to help prepare for the conference, through which they can gain valuable skills and experience.

## About AKADEMISI

AKADEMISI is a professional event organizer that focuses on academics settings. We help manage the conference and help with the international output publication in Scopus-indexed journals and Proceedings.

AKADEMISI also developed our own conference management system (CoSy) to provide a more efficient conference workflow.

Find out more about us: <http://akademisi.co.id>

## COMMITTEE

### Chairman

Anggun Wirawan Aco

### Secretary

Hana Wulandari

Sais Sularsah

Bayu Rahmad Riyadi

### Treasury

Didik Utomo

### Scientific Committee

Heri Santoso

Muhammad Badrut Tamam

## KEYNOTE SPEAKER



**Prof. Dr. Budi S. Daryono, M.Agr.Sc.**  
The Indonesian Biology Consortium (KOBI) Chairman



**Prof. Dr. Endang Sukara**  
Professor of Biology at Faculty of Biology, Universitas  
Nasional (UNAS)  
Research Professor in Microbiology, Indonesian Institute  
of Sciences (LIPI)



**Prof. Dra. Herawati Susilo, M.Sc.,  
Ph.D.,**  
Professor at Department of Biology, Universitas Negeri  
Malang (UM)

## KEYNOTE SPEAKER



**Prof. Dr. Chan Kok Gan**  
Universiti Malaya



**Prof. Dr. Fahrul Huyop**  
Universiti Teknologi Malaysia

Saturday, 27 August 2022		
Time (WIB)	Agenda	Pembicara
08:30 - 08:35	Opening zoom	MC (Fadilah Asri)
08:35 - 08:40	Opening by Master of Ceremony	MC (Fadilah Asri)
08:40 - 08:45	Indonesian Anthem	MC (Fadilah Asri)
08:45 - 08:50	Welcome Remark by ICoBioS 2022 Chair	Anggun Wirawan Aco
<b>Moderator: Badrut Tamam</b>		
08.50 - 09.35	<b>Keynote Speech 1</b>	Prof. Dr. Budi S. Daryono, M.Agr.Sc.
09.35 - 10.20	<b>Keynote Speech 2</b>	<b>Prof. Dr. Chan Kok Gan</b>
10.20 - 11.05	<b>Keynote Speech 3</b>	<b>Prof. Dra. Herawati Susilo, M.Sc., Ph.D.,</b>
11.05 - 11.10	<b>Breakout room announcement</b>	MC (Fadilah Asri)
11.11 - 12.30	<b>BREAK</b>	
12:30 - 15:45	<b>Oral Presentation Session</b>	
<i>Closing by moderator</i>		



Sunday, 28 August 2022		
Time (WIB)	Agenda	Pembicara
09:00 - 09:05	Opening zoom	MC (Fadilah Asri)
<b>Moderator: Hilyatuz Zahroh, <u>M.Si</u></b>		
09:05 - 09:50	<b>Keynote Speech 4</b>	<b>Prof. Fahrul Huyop</b>
09.50 - 11.35	<b>Keynote Speech 5</b>	<b>Prof. Dr. Endang Sukara</b>
11.35 - 11.40	<b>Breakout room announcement</b>	MC (Fadilah Asri)
11.40 - 12.30	<b>Break</b>	
12:30 - 16:15	<b>Oral Presentation Session</b>	
14.15 – 15.50	<b>Open Bioproject Competition</b>	
15.50 – 15.55	<b>Closing by MC</b>	

## Antiviral Effect of Lemongrass Extract (*Cymbopogon nardus*) by Inhibit Expression of TNFR-1 Protein via Bioinformatic Study

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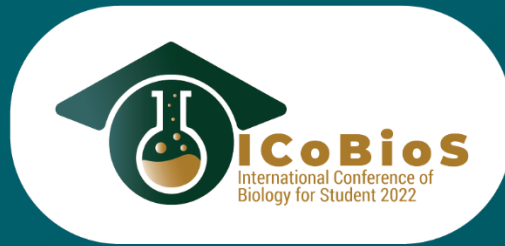
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### Abstract

Citronella grass (*Cymbopogon nardus*) is a plant containing many metabolite compounds which prevent and treat various diseases, one of which is anti viral infection. Antioxidant compounds found in citronella have been shown to improve the immune system by increasing cytokines. Viral infection can increasing inflammation. The inflammation causing protein damage so that Tumor Necrosis Factor Receptor-1 (TNFR-1) is overexpressed. This current research aims to determine the potential of compounds present in the citronella plant stem as anti-inflammation through inhibition of TNFR-1 protein. The method was a bioinformatics approach, namely the in-silico method which provided a simulation of binding protein ligands to TNFR-1 as inhibitor mechanism. The results of this study indicated that there was a potential for citronella compounds, namely torreyol binding to TNFR-1. Torreyol compounds interact with TNFR-1 via the positions Leu127, Asn148, Thr135, Cys137, Asn134, and Gln133 with Van der Waals bonds, pi-alkyl bonds on Tyr103, and hydrogen bonds on Glu147 and Val136. From the results above, it can be concluded that the Torreyol compound is predicted to act as an inhibitor of TNFR-1 protein activity because it inhibits the binding site of the native ligand on TNFR-1. The stability of the binding interaction produced by Torreyol allows a response to TNFR-1 inhibitor activity. By inhibiting the activity of TNFR-1 inhibitors, it is possible to inhibit the anti inflammation when viral infection into the body.

### Keywords

*Cymbopogon nardus*, viral infection, TNFR-1 protein, anti-inflammation, bioinformatics.



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