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RESEARCH FOCUS

Bacterial small RNAs and their synthetic analogue nucleic acid aptamers

by Prof. Dr. Tang Thean Hock, (Universiti Sains Malaysia)

Our research area focuses in non-coding RNA, nucleic acid aptamer and molecular diagnostic. The pervasive nature of transcription in bacteria suggests that transcription is not just restricted to protein coding genes (mRNAs) but also includes non-protein coding genes. non-protein coding genes are referred to small RNAs, having the size between 25–500 nts. Imparting a myriad of functions in virulence and pathogenesis, the species-specific nature of these molecules can also be exploited in diagnostics. The synthetic version of npcRNAs or aptamers, are single-stranded nucleic acids specific against a potpourri of targets. Since its inception in 1990, aptamers have begun to usher in a new era of therapeutic and diagnostic, especially as a potential complementation or substitution of antibody-based diagnostics.



Fascinated by the immense potential of small RNAs, our research group has identified a multitude of small RNAs from a variety of pathogenic microorganisms such as *Mycobacterium tuberculosis*, *Salmonella typhi*, and *Vibrio cholerae*. Virulence roles were ascribed to these small RNAs and the most important milestone achieved was the deployment of these molecules as the important diagnostic markers for the development of nucleic acid-based amplification test. Equally excited with the diagnostic potentiality of aptamers, thus far, we have isolated aptamers against variety of pathogenic microorganism biomarkers such as NS1 protein of dengue virus, ESAT-6 protein of *Mycobacterium tuberculosis* and cancer biomarkers such as PTTG1 and progesterone receptor. Specificity of these aptamers against their cognate targets galvanizes our efforts to harness them in aptamer-based diagnostics (aptanostics) in a variety of formats such as aptamer-based ELISA assay, aptamer-based dot blot and aptahistostaining.

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msbmb 45

18-19 AUGUST 2021

**INTERNATIONAL MEETING –
45th ANNUAL CONFERENCE OF THE MALAYSIAN
SOCIETY FOR BIOCHEMISTRY AND MOLECULAR
BIOLOGY**

in conjunction with the
**2nd INTERNATIONAL HEALTH AND MEDICAL SCIENCE
CONFERENCE**
18–19 August 2021
Kuala Lumpur, Malaysia

Dear Colleagues,

In light of the COVID-19 pandemic and uncertainty in the coming months ahead, I wish to announce the postponement of the 45th Annual Conference of the MSBMB & 2nd International Health and Medical Science Conference originally scheduled to be held 12–13th August 2020 at Berjaya Hotel, Kuala Lumpur to 18–19th August 2021.

The Organising Committee is acutely aware of the disruptions brought on by this crisis and felt that this decision was in the best interest of our members, conference participants and business partners.

If you have submitted abstracts or registration details prior to this announcement, please contact the conference secretariat at 45msbmb@gmail.com. Abstract submission and registration will close for now and reopen in January 2021. We hope that you will maintain your interest to join us next year.

Please visit our conference website at www.msbmb45.com for any further updates to the programme.

Thank you,
Anthony Ho Siang Hock, PhD
Chair, MSBMB45 & IHMSC2

Malaysian Journal of Biochemistry and Molecular Biology (MJMBM)

SCOPUS and MYCITE-indexed
E-ISSN 2600-9005; www.mjmbm.org

The MJMBM was founded in 1997 by MSBMB. It was published two-times a year prior to 2010. From 2016 onwards, the Journal publishes online 3 times per year (in April, August and December). The journal publishes research papers in all areas of biochemistry, biophysics and molecular biology, which include DNA and RNA biology, gene expression, glycobiology, enzymology, protein structure and function, lipid chemistry, plant biochemistry and physiology, microbiology, immunology, natural product chemistry, biomedical science, research methods and bioinformatics.

For more information, email mjmbmonline@gmail.com

I love Science!

MSBMB Science Outreach Program

in collaboration with the Royal Microscopical Society (UK) and University of Nottingham (Malaysia)



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March 2020: Assoc. Prof. Dr. Fung Shin Yee (UM), Dr. Lee Sau Har (Taylor's University) and Dr. Fazril Razif (UM) held the MSBMB Science Outreach Program hands-on workshop for students (ages 10-12) at Sekolah Kebangsaan Seksyen 1 Bandar Kinrara (Puchong, Selangor; 31 January 2020) and Sekolah Kebangsaan Sungai Udang (Klang, Selangor; 19 February 2020). They were exposed to the basics of DNA and was provided hands-on experience isolating DNA from a banana. Subsequently, they used microscopes to view various crystal structures and insects whilst learning how to calculate magnification scales. They also performed two volcano experiments based on different chemical reactions.



The goal of the program is to spread our scientific knowledge to a wider community through talks, lab visits, in-school workshops and community presentations. This will enable interested MSBMB members to connect with the public. It will also aid us in sharing our research and scientific issues with the community, and cultivate interest in science education. We welcome your comments and suggestions on how to further improve the program.

For more information, do get in touch with us!
Contact syfung@um.edu.my



28th FAOBMB Conference
2nd CBSL Conference
11-13 June 2020
Colombo, Sri Lanka

1 April 2020: The Federation of Asian and Oceanian Biochemists and Molecular Biologists (FAOBMB) Executive Committee has made the difficult decision to cancel the 28th FAOBMB Conference, which was scheduled to take place from 11 - 13 June 2020 in Colombo, Sri Lanka.

The FAOBMB Executive Committee did not reach this decision easily or without careful research and serious consideration. With the uncertainty of the weeks and months ahead, we believe it is most prudent to cancel this meeting. This decision was made after a thorough review and discussion of all factors impacting the conference, including advisories from the World Health Organization (WHO) and State and Federal governments of our members, and, coupled with the extensive travel restrictions our members and colleagues must observe.

The FAOBMB Executive Committee also discussed the possibility of postponing the 28th FAOBMB Conference to early 2021. However, as the 16th FAOBMB Congress will be held in November 2021 in New Zealand, the Committee noted the logistical issues in arranging two FAOBMB meetings in the same year. It is clear that all of these elements significantly affect the ability of delegates, speakers, presenters of proffered papers, and exhibitors to participate fully in this important annual event of the FAOBMB. The health, safety, and security of all conference attendees are the FAOBMB's highest priorities. FAOBMB Award winners for 2020 and 2021 will now be invited to speak at the Congress. The 16th FAOBMB Congress will be an exciting meeting.

The FAOBMB Executive Committee extends its heartfelt appreciation to the College of Biochemists Sri Lanka and members of the Conference Organising Committee for their judicious efforts and extensive preparations for the conference. The Committee also acknowledges the contributions and support from the Government of Sri Lanka and the National Science Foundation of Sri Lanka.

Please refer to the conference website (faobmb2020.com) for detailed instructions regarding hotel reservation cancellations, registration refunds and meeting logistics which will be made available as soon as possible.

The FAOBMB's heartfelt sympathies go out to everyone impacted by this global health crisis.

Professor Akira Kikuchi
President of FAOBMB

We want you to join us!

Membership in the Malaysian Society for Biochemistry and Molecular Biology is open to anyone who has an appropriate university degree or equivalent qualification in biochemistry, molecular biology or in a related discipline. The categories of membership in the Society are as follows:

No	Membership Type	Fee (Conditions)
1.	Ordinary Member	Joining RM10 (One time payment) Membership RM50 (effective Jan 1st 2016)
2.	Life Member	RM600 (One time payment) *Ordinary Members in good standing for 5 years continuously and are at least 40 years of age

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