



Prof. Naveed and Prof. Ruqaiyyah's farewell tea party with the School of Science and Technology faculty and staff members.

Research Publications

1. Song HL, Ding LY, Abdul K, Pazil AP, Rahmah I, Hazril Rafhan AH, Ahmad K, Le TT & Gopalasamy RC. Peninsular Malaysia's forgotten pheasant: recent records and distribution of the Crested Argus *Rheinardia ocellata*. Forktail 2019, 34:48-51.

Significance of findings: One of tropical Asia's most poorly known pheasants, the spectacular Crested Argus *Rheinardia ocellata*, is known to occur in two disjunct populations—in Vietnam and Laos (nominate subspecies *ocellata*), and the east-central part of Peninsular Malaysia (subspecies *nigrescens*). The little-studied Malaysian population, which is almost entirely restricted to Taman Negara National Park, has been sporadically surveyed since the late 1970s. Our study collates recent records of the Crested Argus in Peninsular Malaysia (2014-2016) from camera-trap surveys, and presents new information on its distribution. Our data extend the known range of the species outside Taman Negara into the Dungun Timber Landscape, Terengganu state. We infer the current altitudinal range of the species in Malaysia to extend from 850 to nearly 1,400 m, with no overlap with the ecologically similar Great Argus *Argusianus argus*. In view of the steep declines suffered by populations in Vietnam and Laos due to rampant hunting, and threats to the Malaysian population from forest degradation and increased poaching, we recommend (1) strengthened law enforcement across its range and (2) further research to clarify the taxonomic relationship between the two widely separated populations.

2. Reginald K, Pang SL & Chew FT. Blo t 2: Group 2 allergen from the dust mite *Blomia tropicalis*. Scientific Reports volume 9, Article number: 12239 (2019). <https://doi.org/10.1038/s41598-019-48688-y>

Significance of findings: *Blomia tropicalis* has been recognized as a cause of allergic diseases in the tropical and subtropical regions. Here we report the immuno-characterization of its group 2 allergen, Blo t 2. Allergen Blo t 2 was amplified from the cDNA of *B. tropicalis* using degenerate primers, expressed in *Escherichia coli* as a recombinant protein and purified to homogeneity. The mature protein of Blo t 2 was 126 amino acids long with 52% sequence identity to Der p 2 and apparent molecular mass of 15 kDa. Circular dichroism spectroscopy showed that Blo t 2 is mainly a beta-sheeted protein. We confirmed the presence of three disulfide bonds in recombinant (r) Blo t 2 protein using electrospray mass spectrometry. Thirty-four percent of dust-mite allergic individuals from the Singapore showed specific IgE binding to rBlo t 2 as tested using immuno dot-blot. IgE-cross reactivity assays showed that Blo t 2 had between 20-50% of unique IgE-epitopes compared to Der p 2. IgE binding of native and recombinant forms of Blo t 2 were highly concordant ($r^2 = 0.77$, $p < 0.0001$) to rBlo t 2. Dose-dependent in vitro histamine was observed when rBlo t 2 was incubated with whole blood of Blo t 2 sensitized individuals, demonstrating that it is a functional allergen. Nine naturally occurring isoforms of Blo t 2 were identified in this study, each having between 1-3 amino acid variations compared to the reference clone. Blo t 2 is a clinically relevant allergen of *B. tropicalis* as it has unique IgE epitopes compared to major group 2 allergens from *Dermatophagoides* spp.

Research Publications

3. Yeo Y, Tan BL, Lim LW, Tan KO, Heng BC, and Lim WL. Human Embryonic Stem Cell-Derived Neural Lineages as *In Vitro* Models for Screening the Neuroprotective Properties of *Lignosus rhinocerus* (Cooke) Ryvardeen. *BioMed Research International* 2019, Article ID 3126376, 19 pages. <https://doi.org/10.1155/2019/3126376>

Significance of findings: In the biomedical field, there is growing interest in using human stem cell-derived neurons as *in vitro* models for pharmacological and toxicological screening of bioactive compounds extracted from natural products. *Lignosus rhinocerus* (Tiger Milk Mushroom) is used by indigenous communities in Malaysia as a traditional medicine to treat various diseases. The sclerotium of *L. rhinocerus* has been reported to have medicinal properties, including various bioactivities such as neurogenic, anti-inflammatory, and anticancer effects. This study aims to investigate the neuroprotective activities of *L. rhinocerus* sclerotial extracts. Human embryonic stem cell (hESC)-derived neural lineages exposed to the synthetic glucocorticoid, dexamethasone (DEX), were used as the *in vitro* models. Excess glucocorticoids have been shown to adversely affect fetal brain development and impair differentiation of neural progenitor cells. Screening of different *L. rhinocerus* sclerotial extracts and DEX on the hESC-derived neural lineages was conducted using cell viability and neurite outgrowth assays. The neuroprotective effects of *L. rhinocerus* sclerotial extracts against DEX were further evaluated using apoptosis assays and Western blot analysis. Hot aqueous and methanol extracts of *L. rhinocerus* sclerotium promoted neurite outgrowth of hESC-derived neural stem cells (NSCs) with negligible cytotoxicity. Treatment with DEX decreased viability of NSCs by inducing apoptosis. Coincubation of *L. rhinocerus* methanol extract with DEX attenuated the DEX-induced apoptosis and reduction in phospho-Akt (pAkt) level in NSCs. These results suggest the involvement of Akt signaling in the neuroprotection of *L. rhinocerus* methanol extract against DEX-induced apoptosis in NSCs. Methanol extract of *L. rhinocerus* sclerotium exhibited potential neuroprotective activities against DEX-induced toxicity in hESC-derived NSCs. This study thus validates the use of human stem cell-derived neural lineages as potential *in vitro* models for screening of natural products with neuroprotective properties.

Happy 62nd
Independence
Day, Malaysia!



Department Events

1. Congratulations and Welcome to the New Interim Head of Department of DBS

Professor Abhi Veerakumarasivam has been appointed the Interim Head of Department of Biological Sciences of the School of Sciences and Technology by the Vice-Chancellor of Sunway University Professor Graeme Wilkinson with effect on August 13, 2019. Congratulations to Prof. Abhi on his new role, and wishing him every success.

2. Farewell of Profs. Naveed and Ruqaiyyah

Date: 20th and 21st August 2019

Two events were held to celebrate the contributions of and gratitude towards Profs. Naveed and Ruqaiyyah's to the School of Science and Technology and the Department of Biological Science in particular. A tea party with SST members included heartwarming speeches by the Dean, Prof Serge, the interim Head of Biological Science, Prof. Abhi, and some faculty members from DBS. After a group photo session, Prof. Naveed addressed the staff and expressed his thanks to the members for a good working environment as well as his hopes and aspirations for the department and the university in general. An informal lunch session was held on the following day with DBS faculty and staff members.

Thank you Profs. Naveed and Ruqaiyyah for your contribution to the department and the university. Best wishes for your future endeavors!



Department Events

3. Sunway-Cambridge Partnership Workshop

Date: 20th August 2019

Venue: iLabs, Menara Sunway

The Sunway-Cambridge partnership workshop was designed to foster the long term strategic research partnerships between Sunway University and the University of Cambridge. The key targeted outcomes of this workshop were to develop initial project concepts for potential partnerships, and to deliver an action plan outlining potential collaborative projects. Eight faculty members of DBS attended this workshop.

The workshop started with a keynote presentation by the ex-Vice Chancellor of Cambridge University and Distinguished Professor at Sunway University entitled “What does it mean to be a global collaborative University and truly contribute to society”. The Borysiewicz Biomedical/Biological Sciences Postdoctoral Fellows then introduced their research projects and shared their experience with global challenge projects. The Fellows worked alongside participants (from Sunway University, Ministry of Health and other partners) to develop new concepts with wide benefits to the Sunway community in general and a view to broader collaboration with Cambridge.



Department Events

4. Orientation for postgraduate students

Date: 23rd August 2019

The new post-graduate students of DBS from the August 2019 intake were given an orientation briefing by the interim Head of Department, Prof. Abhi, Program Leader for M.Sc, Dr. Chen Jit Ern and Program Leader for PhD Life Sciences, Dr. Babu. A total of 17 M.Sc. Life Sciences and 3 PhD students have enrolled this intake, and we wish them all the best in their studies.



DBS members in action

Student Appreciation of Teaching Awards



Congratulations to Prof. Abhi, Assoc. Prof. Dr. Shyamala and Dr. Yow Yoon Yen in receiving the Student Appreciation of Teaching Awards during the Teaching Appreciation Day held on 29th July 2019.

Dr. Jane wins the Hubert Curien Partnership - Hibiscus (PHC-Hibiscus) grant

Dr Jane Gew Lai Ti and Prof Mohammed Kheireddine Aroua of Research Centre for Carbon Dioxide Capture and Utilisation (CCDCU) together with Prof Patrick Cognet and Yolande Peres of National Institute Polytechnic of Toulouse have received a grant from Hubert Curien Partnership - Hibiscus (PHC-Hibiscus) initiated by the Ministry of Education (MOE) in collaboration with the Ministry of Europe and Foreign Affairs (MEAE) and Ministry of National Education, Higher Education and Research (MESRI), France. The 2-year grant is for RM 66,000 to study the “Conversion of glycerol to value-added products through biocatalysis reaction using microreactor”.

In conjunction with this grant, Dr Jane received SSHN Scholarship for young researcher (SSHN: High Level Scientific Stay) from Malaysia France University Centre (MFUC), Embassy of France.



From L-R: Dr. Philippe Arnaud (Attaché of scientific and university cooperation, Embassy of France in Malaysia), Prof. Mohamed Kheireddine Aroua (Sunway University), Prof. Patrick Cognet (INP-Toulouse, France) and Dr. Jane Gew Lai Ti.

Dr. Jane receives travel grant by American Chemical Society (ACS)

Dr. Jane Gew Lai Ti received 2 travel grants (amounting to RM3200 including accommodation, return air tickets and meal allowance) from American Chemical Society (ACS) Malaysia Chapter and Sandia National Laboratories, respectively, to attend 2 workshops in Universiti Sains Malaysia, Penang. These workshops were the Chemical Security Training Workshop (29-31 July 2019) and the Chemical Supply Chain Security Workshop (31 July - 2 August 2019).

DBS members in action

Dr. Yow Yoon Yen receives FRGS grant

Dr. Yow Yoon Yen received the FRGS Grant (Phase 1/2019) for her project entitled “Investigation of cellular and molecular mechanisms of *Gracilaria manilaensis*-mediated functional recovery enhancement following peripheral nerve injury in an *in vivo* model”. Approved amount RM 118,800.00 was for 3 years.

DBS faculty present at 27th FAOBMB & 44th MSBMB Conference

The Federation of National Societies of Biochemistry and Molecular Biology (FAOBMB) and the Malaysian Society for Biochemistry & Molecular Biology (MSBMB) held a joint conference from the 19th - 22nd August at the Berjaya Times Square Hotel, Kuala Lumpur. The theme for this year’s conference was “Biomolecules: Networks & Systems”, with a Special International Union of Biochemistry and Molecular Biology Symposia on “Mosquito-borne illnesses”.

DBS members who participated in the conference were Dr Chen Jit Ern who gave an oral presentation entitled, “Heat-activated retrotransposons in the algal symbiont of corals, *Symbiodinium microadriaticum*”, Dr Khalisah Zulkefli who gave an oral presentation entitled, “Identification of a role for Rab11 in endosomal-lysosomal system homeostasis using CRISPR/Cas9”, and Prof Abhi who was panelist on the Career Development Forum.



DBS members' completion of (PGCAP)



The PGCAP (Postgraduate Certificate in Academic Practice) is a Masters-level program that is a British Teaching Qualification for university lecturers. It is co-taught by tutors from Lancaster University and Sunway University, and is delivered in three modules.

During the certificate presentation ceremony on the 7th of August 2019, Drs. Kavita and Jane Gew received certificates for the completion of module 1, Dr. Babu received his certificate for the completion of module 2, while Dr. Yow received her certificate for the completion of module 3 and the full certificate for PGCAP.

Funding opportunities

1. Jeffrey Cheah Travel Grants for Southeast Asia Studies: The application for this travel grant is open for scholars who wish to travel to Harvard University during the Spring term (Feb - May 2020). Details of the grant, application processes and the application form are published in the following website: <http://jci.edu.my/travel-grant-application-guide/>

Closing date for the application is 1st October 2019 (5 pm).

Upcoming events

1. *Joint Academic Microbiology Seminars (JAMS KL)*

The Joint Academic Microbiology Seminars Kuala Lumpur (JAMS KL) is a bi-monthly discourse that gathers microbiologists and scientists from various institutions to discuss, network and collaborate in a casual atmosphere. Each JAMS KL meeting features short talks by several speakers in their respective microbiology fields, followed by informal discussion over food and drinks. This event is free and is especially beneficial for young individuals (early-career researchers and postgraduate students) to develop more confidence in themselves as scientists and widen their professional network.

Details of the first JAMS KL:

Date: 24th October 2019 (Thursday)

Time: 10.00 am - 12.30 pm

Venue: Eatropica (Level 6, Menara 1 Sentrum, 50470 Kuala Lumpur)

Register at <https://jamsklseminar01.eventbrite.com>

More details: <https://jams.org.au>

2. *Scientific Writing Workshop*

Following the successful 'Grant Writing Workshop' an in-house workshop focusing on scientific writing skills and improving publication success and citations will be held during the semester break (between 7th - 11th October). Details on this workshop will be disseminated soon. Your participation is encouraged.

Please share your updates (publications, events, funding) via [this link](#) by the 25th of each month, to be published in the up-coming bulletin.