

## EDITORIAL

# Advancement in Biomedical Sciences

The information related with Biomedical Sciences has undergone exponential growth. These advances extend across various biological disciplines and innovations, such as physiology, pathology, cell biology, genetics, biochemistry, molecular biology, cancer biology, infectious diseases, immunobiology, neurobiology, pharmacology, developmental biology, drug repurposing, material science, engineering, toxicity, molecular diagnostics, molecular fingerprinting and informatics. According to the latest article published in *Nature*, biochemistry, cell biology and genetics are the biggest fields by article count but microbiology, biomedical engineering, research related with CRISPR and microbiome are the fastest rising areas among the top ten fields of research (1).

Much research has been done in understanding the role of human genetic variation in diseases. Genomic medicine is still progressing so that each individual's genetic fingerprint will be available and used by clinicians. All these will contribute to precision medicine. On the other hand, new techniques for the detection of dynamic processes in living organisms and new human molecular sensors for detecting important biomolecules are part of the advancement in biomedical sciences.

For this reason, this special issue focuses on some of the essential areas such as drug discoveries harnessing molecules derived from natural resources targeting the common non-communicable diseases such as cancer and asthma (Daud et al., Chau Ling et al., Latifah et al., Sharifah et al., Azrina et al. and Nur Fariesha et al.) to multi potential of bio-properties from microbes (Noraina et al.). Different works are devoted to the innovation of detection for infectious diseases and population genetics (Hui-Yee et al. and Suhaili et al.) since disease affects individuals and populations and understanding the interface between the Biomedical Sciences and human communities is part of the efforts of Biomedical Scientists to improve the health of the world.

Today, small interfering RNAs (siRNAs) have been considered as one of the most noteworthy developments for the study of gene function and have been documented to be used for therapeutic purposes. Thus, the developments of effective siRNA delivery systems support the advances in Nanomedicine. Nonetheless, siRNA technology faces multiple obstacles regarding efficient delivery and effectiveness, hence proper assessment is important to reduce the hurdles. Therefore, this special issue also includes an article focusing on the analysis of siRNA knockdown (Rabiatul et al.).

Bioinformatics and computational biology incorporate the study of biological data and applies computational procedures to break down substantial procurement of biological data to create new forecasts or search of new science. With the aid of bioinformatics and computational tools, networks for a potential drug targets can be determined. Thus, bioinformatics and computational biology play a great role not only in the drug discovery but also in drug development. Thus, this special issue also addresses the use of *in silico* analysis on expressed genes for the identification of pathways (Nurulisa et al.).

We hope that this special issue on the Advancement of Biomedical Sciences can contribute to the discussion of the scientific community to enhance some gaps that can be filled in future works.

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### Reference

1. Catherine A (2019) Small Advances Amount to Big Changes in Biomedical Sciences. *Nature* 569, S5