

I. INTRODUCTION

1.1 HISTORY OF THE HOST INSTITUTION

The institute was initially started as the Institute of Science and Technology for Research and Development, handling projects in vaccine development and biomedical instrumentation research and development from 1980 to 1982. In 1984, the Thalassemia Research Center was established under the institution, followed by the establishing and recognizing the Institute of Molecular Biology and Genetics Research in 1995 and 1997, respectively. Finally, a budget was approved to construct and establish a new research facility in the Mahidol University Salaya Campus that was based on the merging of the two institutes mentioned, which led to the establishment of an institute known as the Institute of Molecular Biosciences, shortened for MB, in 2009 and placed under the Mahidol University organizational structure. The institute focuses on the molecular biology research field where each comprehensive research laboratory belongs to different branches, including the Molecular Agriculture and Medical Bioscience Cluster, Center of Applied Shrimp Research and Innovation, Thalassemia Research Center, Vaccine Development Center, Neuroscience Research Center, and Biomedical Instrument Center. The institute aims to achieve the institutional goal of producing innovations, knowledge, and scientific personnel for advancing the regional economy and health by focusing the institute's research area on human diseases' importance and bioproducts and agriculture improvements in the region. Additionally, the institution provides international programs in Molecular Genetics and Genetic Engineering, System Biosciences, and Neurosciences for postgraduate education.

1.2 VISION AND MISSION OF THE HOST INSTITUTION

The Institute of Molecular Biosciences believes in the institute's vision to become a world-class research institution in terms of academic research, technology, international networking cooperation, ability to attract skilled professionals outside the institute for creating innovations and producing more research, and sustainable income for continuous self-improvement and organizational support. Alongside the mentioned visions, the institution also carries missions including; (1) fostering knowledge of technology, science, and innovations for the benefit of the Kingdom of Thailand and also the societies in the world by creating an excellent quality of basic and applied research; (2) creating an excellent quality of graduate studies by supporting graduate students in their potential to generate research that is leveled with international standards; (3) creating an excellent quality of service in academic for achieving sustainable income and service to aid both societies and users needs; and (4) develop effective and efficient development and management of

human resources with a consistent quality level with international standards, and an ability to adapt with changes.

1.3 MAIN ACTIVITY OF THE HOST INSTITUTION

The Institute of Molecular Biosciences is actively nurturing graduate students with excellent international standard education programs to generate potentially highly skilled and adaptable human resources in the molecular biology field, medical and agriculture. The institute is also actively involved in numerous and various research projects, in both medical and agriculture, internally or in collaboration with highly skilled professionals from outside the institution to produce international standard research publications. Lastly, maintaining sustainable income to support the institute organization for continuously improving the quality of the institute as an academic research institution for graduate students nurturing and generating innovations and technology for the benefit of society.

1.4 ORGANIZATIONAL STRUCTURE IN THE INSTITUTION

The BioEnergy laboratory, led by Asst. Prof. Kusol Pootanakit, Ph.D, is placed under the Molecular Agricultural Biosciences Cluster led by Assoc. Prof. Kanokporn Triwitayakorn, Ph.D. The director of The Institute of Molecular Biosciences is Professor Narattaphol Charoenphandhu, MD, Ph.D.

1.5 STUDENT DEPARTMENT IN THE INSTITUTION

The research internship project was placed under the BioEnergy research laboratory led by Assistant Prof. Kusol Pootanakit, Ph.D. belongs to the Molecular Genetics and Genetic Engineering academic program.