



PRESS RELEASE

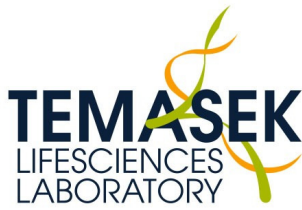
Meeting Singapore's Strategy for Chemicals - Green Factories for Essential Oil Production

30 April 2012, Singapore - Temasek Life Sciences Laboratory (TLL) is pleased to announce that the institute has been awarded a grant close to S\$10 million by the Singapore National Research Foundation (NRF) under its Competitive Research Programme to develop plant system and microbial systems for the sustainable production of valuable chemicals from plants.

The flavours and fragrances (F&F) industry is expanding steadily with a current market value of approximately US\$19 billion. F&F are used as natural flavour enhancers for food products, fragrance in perfume and cosmetic industries and in aromatherapy. A large proportion of F&F compounds used today are terpenoids derived from essential oils extracted from leaves, stems and flowers of many types of plants. However, the production of essential oil is severely hampered by the low oil yield and large requirement for farm land.

With the above considerations in mind, the project aims to transform glandular trichomes of aromatic plants which are the specialized organs that produce terpenes into a much more productive and versatile factory for the production of known or novel flavours and fragrances compounds. Based on the knowledge gained from the transformation of trichomes in aromatic plants, TLL also hopes to develop alternative microbial platforms for the production of F&F compounds using synthetic biology approach which will lead to greater values to be captured in Singapore.

"We are pleased to be awarded the grant from NRF to develop capabilities in the area of flavours and fragrances. This area of research is one of the new opportunities TLL has identified to help address the demand for the sustainable production of valuable chemicals from plants." said Prof Chan Soh Ha, Executive Director of TLL.

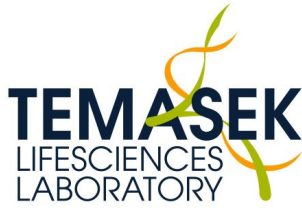


“By leveraging on the experiences of TLL’s plant and microbial biotechnology group, we believe that the proprietary technologies developed can help seed and channel TLL’s life science and biotechnology efforts towards a new industry sector to create a niche market for flavours and fragrances which have the potential to benefit the economy.” said Prof Chua Nam-Hai, Chairman of TLL’s Strategic Research Management Committee.

The project will be led by Dr Ji Lianghui who is an Associate Director in the TLL’s Strategic Research Program (SRP). He currently heads a group of 14 researchers in the field of plant transformation and microbial biotechnology. He is an expert in genetic manipulation of recalcitrant plants and microbes as well as bioprocess development. His research has resulted in the filing of six PCT patents and one trade secret, among which four patents have been commercialized. Dr Ji has been a manager of major commercial collaboration projects as well as projects involving multiple laboratories within the SRP group in TLL. He is the author of 11 publications, four being the corresponding author of recent papers published over the past 3 years. In addition, he has mentored and provided guidance to students in his laboratory.

Dr Ji will be working closely with Prof Chua Nam Hai on this project. Prof Chua is an eminent scientist in the area of plant biology and translational science research in this project. He also heads a research group in TLL and he has been involved in various research efforts in Singapore since 1985. Prof Chua will play a significant role in this project and his vast professional experience and invaluable advice will contribute to the success of the project. In addition, Dr Ji will be joined in his efforts by another two Co-PIs, Dr Sarojam Rajani and Dr Ye Jian as well as a collaborator, Prof Yang Tiankui.

“In view of the increasing demand for flavours and fragrances, we hope to develop technologies for the growing global market as well as for Singapore.” said Dr Ji Liang Hui, Associate Director of TLL’s Strategic Research Program. “The platform technologies that we develop from this project can also be utilized to develop other essential oils for multinational companies who may use them as feedstock in their products.”



In conjunction with TLL's 10th anniversary celebrations, TLL is organizing an international conference on "Next Generation Technologies on Bioenergy and Biomass Utilisation" on 2-4 August 2012. The main objective of this conference is to provide a good networking opportunity for information exchange between researchers and industry professionals on the latest scientific advances and to promote the development of new technologies for clean and sustainable bioenergy utilisation. This conference will also feature internationally renowned speakers from the academia and industry. For more information, please visit the conference website: www.ngtbiomass.org.

About Temasek Life Sciences Laboratory (TLL)

TLL is a non-profit organisation established in 2002 to undertake cutting-edge research in molecular biology and genetics utilising a broad range of model organisms. TLL is affiliated to the National University of Singapore and Nanyang Technological University. Our vision is to create an environment which can attract the brightest young minds worldwide, support their research and challenge them to be leaders in their own fields.

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