Bioprocessing Technology Institute
A*STAR
CREATING GROWTH, ENHANCING LIVES

Building "designer" plant cell walls for a sustainable future

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3.00pm

BTI Boardroom
Level 6, Centros

Hosted by Dr Ho Ying Swan

Seminar Abstract

The research is focused on understanding the synthesis of mixed linkage glucan (MLG), a major soluble dietary fibre found abundantly in the cell wall of cereals. Due to its resistance to digestion and absorption in the small intestine, it is beneficial to human health in lowering the risk of diet-related diseases including colorectal cancer. It is known that CELLULOSE SYNTHASE-LIKE (CSL) F (and CSLH) are the catalytic subunits of the MLG synthase; however, the exact biochemical activity of either protein has not yet been shown experimentally. It was still unclear how many proteins were required in the MLG biosynthesis and assembly pathway and how they were being regulated. To answer these questions, biochemical, cell biological and molecular approaches were adopted, and primarily applied to our model system, suspension-cultured cells (SCCs) of the grass species *Lolium multiflorum* (Italian ryegrass). The goal is to understand how the grasses make their cell wall that will enable targeted manipulation of wall composition to improve plant crops for applications in human nutrition and other applications, such as biofuels and biomaterials.

About the Speaker

Ho Yin Ying received her BSc (Hons) in 2011 at the University of Adelaide and then moved to Melbourne to attend the University of Melbourne where she was awarded her PhD in 2018. Her PhD project focused on elucidating the molecular mechanism of mixed linkage glucan biosynthesis in cereals using transdisciplinary approaches. While completing her thesis, Yin Ying spent two years in Adelaide Proteomics Centre at the University of Adelaide as a research associate, working on validating potential ovarian cancer biomarkers using mass spectrometry-based targeted quantitative proteomics. In April 2019, she joined the metabolomics laboratory at BTI, A*STAR where her focus is on advancing analytical tools for metabolite identification, targeted and non-targeted metabolomics and the use of these platforms to study cell- and animal-based models for drug development.