



Institute of Biodiversity Medicine





BACKGROUND

Biodiversity refers to variety and variability of all lifeforms in their ecological environments and it contributes significantly to human health and well-being. The application of botany knowledge to treat disease and promote health has been prevalent since time immemorial. Developments in science and technology, across a diversity of cross-disciplinary fields such as genomics and artificial intelligence, continue to generate opportunities to explore, exploit, and advance the field for greater impact on medicine, health and wellness.

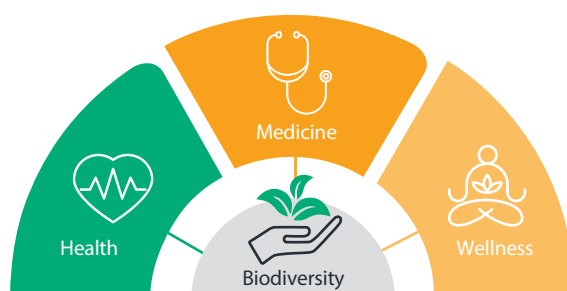
The SingHealth Duke-NUS Institute of Biodiversity Medicine (BD-MED), a joint initiative by Singapore Health Services and Duke-NUS Medical School, aims to drive and accelerate biodiversity research that can promote all aspects of human health and wellness. It has three signature programs: 1) Herbal Biodiversity and Medicine, 2) Food Biodiversity and Nutrition and 3) Urban Biodiversity and Wellness.

VISION

To be a global leader in translating biodiversity studies to impact medicine and health.

MISSION

Empowered by our rich local-regional biodiversity and through cutting-edge research, BD-MED strives to preserve our biodiversity heritage while delivering novel nutritional and medicinal benefits, creating positive health impact and economic value.



SIGNATURE PROGRAMMES

● Herbal Biodiversity and Medicine

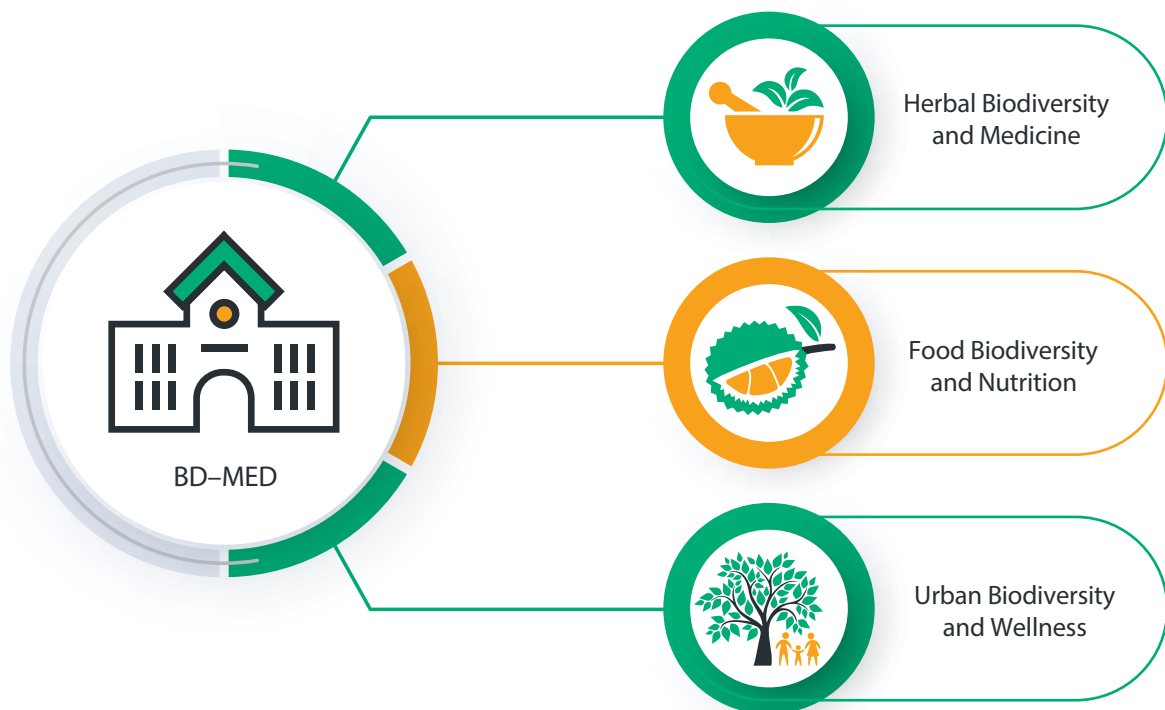
This programme aims to discover and understand local and regional herbal plants beneficial to human health and well-being. By leveraging the advancements in molecular biology, BD-MED hopes to identify molecular pathways and novel phytochemicals to accelerate drug discovery and provide alternative therapeutic and nutritional options. It also seeks strategic partnerships with healthcare practitioners, institutions and regulatory bodies to initiate appropriate clinical studies to ensure their safe and effective clinical use.

● Food Biodiversity and Nutrition

Factors such as rapid urbanisation and improved quality of life are set to double the world population by the year 2039, putting increased pressure on food sources, sustainability and security. This programme aims to generate new knowledge and technologies in plant-based food biodiversity, contributing to food sufficiency and security in the country and region. It also hopes to enhance health and nutritional values of fruits and vegetables through discovering and manipulating their biology (e.g. plant metabolic pathways). The understanding of the importance of these biological properties will also guide novel cultivation techniques to select for their desired traits.

● Urban Biodiversity and Wellness

This programme aims to study how natural flora and their biodiversity can enhance our living environment and promote wellness. It will look into the biology underlying their appearance, colour, smell, etc., and examine how they may affect our mental health. By customisation, one can select the appropriate flora for specific environments to maximise their positive impact on our emotions and moods. This programme also aligns with Singapore's National Biodiversity Strategy and Action Plan (NBSAP) launched by NParks in 2009 to integrate living and breathing green spaces into our urbanised settings to safeguard our biodiversity.





DIRECTOR'S BIO

Professor Teh Bin Tean is a Singapore Translational Research (STaR) Awardee and an investigator at the National Cancer Centre of Singapore (NCCS) and the Duke-NUS Medical School. He obtained his MD from the University of Queensland, Australia and his PhD from the Karolinska Institute, Sweden. His translational works on Asian cancer has been recognised by the prestigious Singapore President's Science Award (2015) and the American Association for Cancer Research (AACR) Team Science Award (2018). Professor Teh has made seminal discoveries not only in the field of Asian Cancer Genomics, but also contributed to biodiversity by co-creating the world's first complete genome of Durian.