SUSTAINABLE PRODUCTION OF PHYTO-INGREDIENTS USING HAIRY ROOT CULTURES

TECHNOLOGY OVERVIEW

Hairy root cultures of plants present a suitable alternative to plant cell suspension cultures for the production of phyto-ingredients as they are genetically stable, lack geotropism, often grow as fast as or faster than plant cell cultures and do not require hormones in the medium. The greatest advantage of hairy roots is that hairy root cultures often exhibit about the same or greater biosynthetic capacity for secondary metabolite production compared to their mother plants.

POTENTIAL APPLICATIONS

It offers promise for mass production of high-value secondary metabolites and enzymes, with therapeutic or industrial application e.g. pharmaceuticals, pigments and flavours. The system allows biotransformation of compounds that will help easy produce valuable secondary metabolites which are difficult to synthesise.

MARKET OPPORTUNITIES

1. Pharmaceuticals - The global pharmaceutical market is expected to exceed sales worth $1.1 Trillion by 2017. The U.S. is still the world's biggest market.

2. Drug discovery. - According to reports the global market for drug discovery technology and products is projected to reach $79 Billion in 2017.

COMMERCIALISATION

The potential to reliably produce high-value novel compounds from rare and/or unexplored plants. The customisable platform consists of a genetically and biochemically stable plant root production system forming a controlled process generating repeatable results.

CONTACT DETAILS

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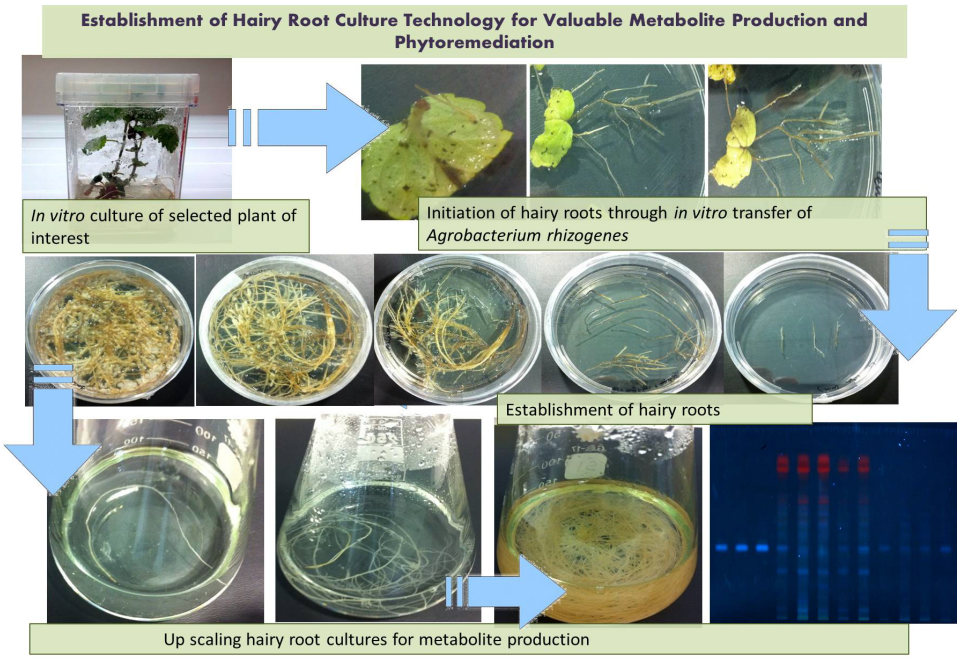

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Whether you are looking for new ideas to improve your current business flow, need access to research and technology expertise, or require facilities to bring your innovative ideas to life, we may be the partner for you.

At Republic Polytechnic (RP), we bridge the gap between knowledge and application by facilitating information and technology transfer to industry partners. Taking a holistic approach, our team of experts can assess your business needs, provide consultancy, conduct feasibility studies, and render support to help increase your company's competitiveness.

Facilities and Equipment
RP is home to state-of-the-art facilities and the latest technology, which are on par with industry standards. You can access these facilities by collaborating with RP on joint projects or through facility and equipment rentals.

Research and Development
Transform your ideas into reality. RP's multi-disciplinary applied R&D centres can work with you in many different ways, including exploiting new technologies, developing new products and streamlining processes.

Current Opportunities for Collaboration and Commercialisation

- Innovative Single-tube Multiplex Diagnostic Platform for Dengue and Chikungunya Viruses
- Low Cost Wireless Patient Weight Measurement System for the Physically Impaired and Bedridden
- New Catalysts for Sustainable Liquid Biofuels
- New Chemical Entities with Potential Applications in Photodynamic Therapy
- Thermoelectric Micro-coolers for Electronic and Optoelectronic Applications
- Visual Sentiment Analytics for Social Media Analysis
- Wireless Proximity Sensing for Safety and Security Applications
- Wireless Stress Monitoring System
- Portable Hydrogen Generator and Low Cost Hydrogen Fuel Cell System Development
- All-Solid-State Lithium Ion Thin Film Micro Battery
- Cloud-based Logistics Tracking

For more details, visit **http://www.rp.edu.sg/Industry.aspx**, or email us at **help-otd@rp.edu.sg.**