



OFFICE OF RESEARCH AND TECHNOLOGY TRANSFER

ENHANCED PRODUCTION OF HIGH VALUE COMPOUNDS IN PLANTS

PATENT PENDING INNOVATION ENABLES REPEATABLE YIELD INCREASE OF VALUABLE COMPOUNDS IN PLANTS OF UP TO 250,000 TIMES

Key Features:	<ul style="list-style-type: none">➤ Technology successfully overcomes internal regulatory mechanisms in plants that otherwise limit accumulation of certain compounds➤ Early stage data indicates significantly higher yield (up to 250,000 times)➤ Method can be applied to various plant components, including cell suspension, root, and shoot cultures➤ Method can be utilized with any plant that produces a compound of interest, including monocots, dicots, and gymnosperms➤ Production of any compound of interest, including but not limited to phenolics, terpenoids, and alkaloids, can be enhanced using the process.
Applications:	<ul style="list-style-type: none">➤ Production of bioactive compounds with health benefits➤ Drug discovery and pharmaceuticals, including anti-cancer treatments➤ Dietary supplements
Project Summary:	<p>Arkansas State University is developing and seeking licensees and collaborators for development of a method for improved production of naturally occurring compounds in plant material.</p> <p>The technology provides significant product yield increase compared to existing systems and methods. It utilizes a combination of inducer, trapping agent, and precursor to overcome plant regulatory mechanisms that usually tend to limit the accumulation of certain compounds.</p> <p>The method has been successful at laboratory scale using hairy root cultures.</p>
Potential Markets Overview:	<ul style="list-style-type: none">➤ The global pharmaceutical industry revenue is forecasted to reach an estimated \$1.2 trillion by 2018, with 6% annual growth over the next five years (2013-2018). The industry is expected to register growth led by aging population, changing lifestyles, hectic daily activities, unhealthy eating habits, increasing incidence of chronic diseases across the entire global population providing growth opportunities for the industry players. The U.S. will remain the world's biggest market. <i>Source: www.marketresearch.com.</i>➤ The global drug discovery outsourcing market is forecasted to grow with a CAGR of 11.5% between 2013 and 2018 and its market value will likely reach \$25 billion by 2018. Nearly half of the global drug discovery research will be performed by third parties. <i>Source: Yahoo Finance.</i>➤ The global cosmeceuticals market should reach \$31.84 billion by 2016 growing with a CAGR of 7.7% between 2012 and 2016. Huge potential is concentrated among the Asian countries, such as Japan, China, and India, which are set to attract major players. <i>Source: www.researchandmarkets.com.</i>
Development Status:	Method has been successfully tested in the laboratory. Results are proven and repeatable.
Patent Status:	Patents pending.
Commercialization Status:	Available to be licensed and for collaborative development.