

21st Annual European Pharma Congress

May 20-22, 2019 | Zurich, Switzerland



Ganapathy Sivakumar

University of Houston, USA

Biomanufacturing of biopharmaceuticals

Plant-based drugs to treat human lethal diseases have been elicited with cutting-edge clinical research. Colchicine is an important alkaloid-based drug used to treat gout, cardiovascular disease, etc. However, plant-based biopharmaceuticals and industrial-scale development pose several challenges in biomanufacturing. Biorhizome is a new technology to enhance the colchicine biomanufacturing. Nevertheless, the biochemical pathways and regulatory networks in the biorhizomes that control colchicine biosynthesis are yet to be characterized, leaving a significant barrier to improving colchicine biomanufacturing. The presentation will emphasize the biomanufacturing of biopharmaceuticals and improving the commercial-scale biorhizome-based colchicine.

Recent Publications

1. Sivakumar G (2017). Upstream biomanufacturing of pharmaceutical colchicine. *Critical Reviews in Biotechnology*, DOI: 10.1080/07388551.2017.1312269.
2. Sivakumar G, Kamran A, Phillips GC (2017). Biorhizome: A biosynthetic platform for colchicine biomanufacturing. *Frontiers in Plant Science*, 8: 1137.
3. Gentile L, Uccella NA, Sivakumar G (2017). Soft-MS and computational mapping of oleuropein. *International Journal of Molecular Sciences*, 18: 992.
4. Gentile L, Uccella NA, Sivakumar G (2017). Oleuropein: Molecular dynamics and computation. *Current Medicinal Chemistry*, DOI: 10.2174/0929867324666170912102623.

Biography

Ganapathy Sivakumar's research is primarily focused on biomanufacturing and biotech implications of biopharmaceuticals. He has extensively studied the plant-based small molecules pathway biochemistry, synthetic biotechnology and metabolic & bioprocess engineering. He is internationally recognized in the field of biopharmaceuticals and a pioneer in biomanufacturing of biorhizome-based colchicine. He has over 50 publications. He is also on the editorial board of several journals. He serves as an expert of grant proposals as well as numerous scientific journals. His laboratory focuses on metabolic and bioprocess engineering of colchicine pathway and developing potential anticancer medicine.