

3rd International Summit on **GMP, GCP & Quality Control** September 25-26, 2014 Valencia Convention Centre, Spain

Plant-based expression of pharmaceutical proteins to improve global health

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Plants offer tremendous advantages as cost-effective, safe and efficacious platforms for the large-scale production of vaccines and other therapeutic proteins. Plant-derived vaccines provide a way by which to enhance vaccine coverage for children in developing countries, and have the potential via oral administration to elicit a mucosal immune response. Plants have the added advantage of simultaneously acting as an antigen delivery vehicle to the mucosal immune system while preventing the antigen from degradation as it passes through the gastrointestinal tract. Transgenic plants, transplastomic plants and plant virus expression vectors have been designed to express vaccine epitopes as well as full therapeutic proteins in plant tissue. This presentation describes the use of different strategies, with a particular emphasis on a novel virus expression vector system to produce vaccines and therapeutic proteins in plants as a suitable means by which to improve global health.

Biography

Kathleen L. Hefferon received her PhD from the University of Toronto. She became a post doctoral research fellow and then faculty member at Cornell University. She has written 2 books, edited 6 books, received 4 patents, and has written multiple research and review papers. Kathleen has taught several university courses both at Cornell and at the University of Toronto. She currently is conducting research programs in both universities.

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