

Jan Pero

Vice President of Research

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Dr. Janice Pero, Vice President of Research at Myriant, has over 25 years of experience in research management and is an expert in metabolic engineering, focusing on the genetic engineering and molecular biology of *Bacillus*, *E. coli*, *C. glutamicum* and *Streptomyces*. Prior to joining Myriant, Dr. Pero was President of OmniGene Bioproducts, after serving as Vice President of Research and Development, Microbial Products and Processes at both BioTechnica International and OmniGene, Inc. Dr. Pero was a founder of BioTechnica International and joined the company full-time in 1982. Prior to joining BioTechnica, Dr. Pero was an Associate Professor of Biology at Harvard University. Dr. Pero received a Ph.D. in Biochemistry and Molecular Biology from Harvard University and was a *summa cum laude* graduate of Oberlin College majoring in chemistry.

Title: Production of Succinic Acid from Renewable Feedstocks

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Abstract: Myriant has developed a sustainable, fermentation process for the commercial production of succinic acid (SAC) from renewable feedstocks. We are currently building a 30 million lb/yr plant in Lake Providence, Louisiana that will initially use both grain sorghum and 95% dextrose for SAC production. Sorghum hydrolysis, fermentation and downstream separation and purification of SAC were piloted at the 20,000 liter scale in Mexico City from late 2009 through early 2011 to provide the data to design the plant in Louisiana which is funded in part by an award from the Department of Energy (DoE).

As part of the DOE award, Myriant has also been engineering and evolving our SAC production strain, originally licensed from the U. of Florida, to grow on biomass hydrolysates. Lignocellulosic biomass based sugar hydrolysates with five carbon and six carbon sugars from various feedstocks have been evaluated for their fermentability by Myriant's proprietary succinic acid producing organism, called WH3. The originally licensed strain was optimized to grow on glucose. Strain WH3 was evolved from this strain on a xylose medium for production of succinic acid and subsequently evolved in concentrated bagasse hemicellulose hydrolysate for tolerance to toxins. The genome of WH3 has been sequenced and mutations discovered are being moved to Myriant's lactic acid production strains and other related strains. Further improvements are currently underway using both directed genetic engineering and metabolic evolution to select for strains capable of even more efficient fermentation of hemicellulose hydrolysates.

In addition, Myriant has used genetic engineering to develop derivatives of its glucose production strain that perform equally well with sucrose or glycerol as a feedstock. Myriant now possess a feedstock flexible collection of strains that grow and produce SAC on glucose, sucrose, sorghum, glycerol, xylose, or biomass hydrolysate.