Identification of Extracellular Protein Markers for Stress in Poplar

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Genetic and environmental factors that affect physiological processes determine the capacity of a tree to grow and tolerate biotic and abiotic stresses, but the mechanism is poorly understood. We developed techniques to obtain extracellular proteins from poplar (*Populus deltoides*) and analyzed total proteins using 2-D SDS-PAGE/MALDI TOF MS/MS and 2-D LC MS/MS followed by poplar protein database search to identify proteins. The identified proteins were monitored in trees that were challenged by biotic and abiotic stresses. We will present our findings and their applications towards tree improvement.

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