Towards a Comprehensive Proteome Analysis of Poplar Vascular Sap

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The long-distance transport system of xylem and phloem plays a pivotal role in growth/development of trees, long-distance signaling, and defense as it allocates water, nutrients, and hormones throughout the whole plant. We have discovered that the vascular sap from poplar (*Populus deltoides*) leaves contains a considerable amount of secreted proteins. Total proteins were extracted from the leaf sap and analyzed using 2-D SDS-PAGE MALDI TOF MS/MS and 2-D LC MS/MS followed by poplar protein database search to identify proteins. We will present our proteome analysis, functional classification, and potential applications of this information towards tree improvement.