

**P0213****Transcriptome Analysis in Leaves, Flowers and Initial Fruit Development of *Coffea arabica* L**

Date: Monday, January 12, 2015

Room:

Suzana Tiemi Ivamoto , Instituto Agronômico do Paraná, Londrina, Brazil
 Osvaldo Reis Júnior , Universidade Estadual de Campinas, Campinas, Brazil
 Leonardo Murai Sakuray , UEL, Londrina, Brazil
 Priscila Mary Yuyama , UFRGS, Porto Alegre, Brazil
 Marcelo Falsarella Carazzolle , Genomics and Expression Laboratory - University of Campinas (UNICAMP), Campinas, Brazil
 Gonçalo Amarante Guimarães Pereira , Genomics and Expression Laboratory - University of Campinas (UNICAMP), Campinas, Brazil
 Douglas S. Domingues , Instituto Agronômico do Paraná, Londrina, Brazil
 Luiz F. P. Pereira , Embrapa Café, Londrina, Brazil

Coffee oil is rich in kaurane family diterpenes, mainly cafestol (CAF) and kahweol (KAH), which are related with plant defense mechanisms, nutraceutical and sensorial beverage characteristics. In plants, the cytochrome P450s gene family (CYPs) is usually involved in most of plant secondary metabolites, which probably includes the diterpenes. We measured CAF and KAH by HPLC in flowers as well as fruit perisperm in several stages (30 to 210 days after flowering – DAF). CAF levels were detected mainly in flowers as well as in the perisperm decreasing after 120 DAF. On the other hand, KAH concentration increased with perisperm development reaching a peak at 120 DAF. Based on this HPLC analysis of diterpenes, 12 RNA-Seq libraries were obtained for *Coffea arabica*: leaves, flowers and perisperm tissue from fruits. 41.881.572 high quality sequences were generated using Illumina HiSeq2000 technology. De novo assembly generated 65,480 unigenes, which includes 242 CYPs candidate genes. For five CYPs genes we observed a similar pattern between gene transcription and diterpenes concentration levels. Three CYPs (*CaCYP76F2_1*, *CaCYP82C4*, *CaCYP74A1*) had transcriptional patterns similar to CAF accumulation and two CYPs (*CaCYP71A4_1* and *CaCYP701A3*) were related with KAH accumulation. These five CYPs warrant further investigation as potential candidate genes involved in the final stages of CAF and KAH biosynthetic pathway providing us important clues and valuable information for future analysis of coffee diterpenes synthesis. This is the first work with Illumina sequencing of coffee fruit during their initial development stages.

Back to: [Genes & Pathways \(Gene Expression, Proteomics, Metabolomics\): Functional Analysis - Odd](#)

[<< Previous Poster](#) | [Next Poster >>](#)

[Home/Search](#)

[Browse by Type](#)

[Author Index](#)

[Poster Categories](#)

[Meeting Information](#)

When:

January 10 - 14, 2015

Where:

San Diego, CA