Integration of transcriptomics and metabolomics for elucidation of phytochemical diversity

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Integrated analysis of omics can provide the clues for identification of gene function and precise information about gene-to-metabolite and/or metabolite-to-metabolite networks in plants. We are running the project combining metabolome and transcriptome in *Arabidopsis thaliana*, a model plant, aiming integrated functional genomics (Curr. Opin. Biotechnol., **16**, 174-179 (2005) ; Proc. Natl. Acad. Sci. USA, **101**, 10205-10210 (2004); J. Biol. Chem., **280**, 25590-25595 (2005); Plant J., **42**, 218-235 (2005)). This strategy of integrated analysis of metabolome and transcriptome will be applicable to functional genomics not only for *A. thaliana* but also for unexplored plants expected rich in a variety of phytochemicals for human benefits. Recent these efforts towards metabolomics-base functional genomics will be presented.