

## Case study - Seeds

### Metabolite profiling and quantitative genetics of natural variation for flavonoids in *Arabidopsis*.

Jean-Marc Routaboul, Christian Dubos, Gilles Beck, Catherine Marquis, Przemyslaw Bidzinski, Olivier Loudet and Loic Lepiniec. *Journal of Experimental Botany*. 2012. Vol 63

#### Overview

- **Keywords:** Arabidopsis, flavonoids, metabolite profiling, natural variation, quantitative trait loci
- **Aim of the study:** Identification of genes controlling flavonoid metabolism
- **Application:** Flavonoid extraction and analysis by LC-MS
- **Sample name:** Arabidopsis
- **Sample type:** Seeds
- **Material:** FastPrep-24™ homogenizer
- **Buffers:** Acetonitrile/Water (3/1; v/v) or Methanol/Acetone/water/Trifluoroacetic acid (30/42/28/0.05; v/v/v/v)

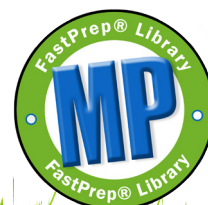
#### Protocol and Parameters

1. Three representative seed aliquots from the three biological repeats were pooled before flavonoid extraction.
2. All seed samples were ground for 90 s at maximum speed with a FastPrep-24™ homogenizer in 1 ml of solvent mix.
3. A 4 µg aliquot of apigenin was added as an internal standard.
4. Following centrifugation, the pellet was extracted further with 1 ml of the same solvent mix overnight at 4 °C.

#### Conclusion

- The use of FastPrep-24™ system succeeded in full homogenization of seeds, allowing flavonoid extraction, quantification and complete analysis of their metabolism by LC-MS method.

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