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Metabolic Profiling of *Ac/Ds* inserted rice(*Oriza sativa* L.) mutants using GC-FID

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Objectives

Ac/Ds based two-element transposon tagging system is a powerful tool to establish a database of gene function with activation tagging in plants. Additionally, the advantage of GC-FID is that it can separate a large number of metabolites in plants. The main aim of this research was to use metabolite profiling based on GC-FID to access the alterations in the composition and concentration of metabolites, caused by *Ac/Ds* insertion in rice. We are establishing analytical method reproducible profiling of metabolites

Materials and Methods

We used rice leaf (*Ac/Ds* insertion line) as plant material. 3rd and 4th leaf from each mutant line was immediately frozen in liquid nitrogen, lyophilized, weighed and pulverized with a mortar and pastle and stored at -80°C. About 0.5g of rice leaves were extracted with 10㎖ of a solution of $CHCl_3$:MeOH(4:1) at room temperature for 1hr. The extracts were derivatised chemically and demanded separation by GC-FID in order to screen metabolites. Data set was analyzed by Matlab software with PCA (Principal Component Analysis).

Results and Discussion

The most significant differences occurred in the retention time 30-40 minute. PCA score correlation plots deduced from these chromatogram differences gave clues as to nature of genuine differences among *Ac/Ds* insertion line in rice. To obtain reproducible data, Analytical methodology must be established. GC-FID enables the rapid comparison of derivatised compounds in metabolic profiles. Major peaks for chromatogram per plant samples were being identified by GC-FID/MS.

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