Time-series analysis of the transcriptome of the re-establishment of desiccation tolerance by ABA in germinated Arabidopsis thaliana seeds

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Titre: Time-series analysis of the transcriptome of the re-establishment of desiccation tolerance by ABA in germinated Arabidopsis thaliana seeds

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Résumé en anglais: Expression analyses of time series have become a very popular method for studying the dynamics of a wide range of biological processes. Here, we present expression analysis of a time series with the help of microarrays used to study the re-establishment of desiccation tolerance (DT) in germinated Arabidopsis thaliana seeds. Mature seeds of A. thaliana are desiccation tolerant (survive the loss of most of their water content), but they become desiccation sensitive while progressing to germination. Yet, there is a small developmental window during which DT can be re-established by treatment with the plant hormone abscisic acid (ABA). We studied germinated A. thaliana seeds at the stage of radicle protrusion during ABA incubation for 0 h, 2 h, 12 h, 24 h and 72 h. We describe in detail the methodology applied for generating and analyzing this expression data of time series. The microarray raw data ([http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE62876 [11]]) may be valuable for further studies on this experimental system, such as the construction of a gene co-expression network [1].

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