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Expression profiling of squalene monooxygenase genes of sterol biosynthesis path

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Phytosterol are a group of sterol alcohols and these phytochemicals occur naturally in plants. They are important as structure components of plasma membranes and precursor of steroidal hormones in plants. The sterol biosynthetic pathway has been a topic of intense researches in recent years and several genes have been identified and functionally characterized in the model plant Arabidopsis thaliana. In this project, we are investigating the differences in the gene expression level of squalene monooxygenase(SQM) gene family members, catalyzing the first step toward sterol biosynthesis in the post squalene pathway in Arabidopsis thaliana. Samples of germinating seed and vegetative tissues were collected and gene expression studies with real – time reverse transcription polymerase chain reaction(RT-PCR) approach was performed. The SQM members showed differential expression during germination, seedling establishment and early vegetative stages. All the SQM gene, except SQM4, were found to be up-regulated in the imbibition stage following stratification treatment. SQM4 was absent during radicle emergence.