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Differential Display Reverse Transcription Polymerase Chain Reaction (DDRT-PCR) for Grey Oyster Mushroom Samples Grown with Acoustic Sound Treatment

Abstract

Grey oyster mushroom is the most often farmed and marketed type of mushroom for household consumption in Malaysia. The mushroom cultivation takes a long time due to its complicated mycelium growth. Several treatments were introduced such as acoustic sound treatment to increase the growth rate and quality of the crop, but there is no in-depth study regarding the genetic expression of the genes affected. This study aims to evaluate the Differential Display Reverse Transcriptase-Polymerase Chain Reaction (DDRT-PCR) for grey oyster mushroom samples grown with acoustic sound treatment. The mushroom was subjected to the treatment and the RNA was extracted from the mushroom samples and converted into cDNA before undergoing DDRT-PCR. Ten Differential Expressed Transcripts (DETs) that were successfully identified based on the differences between the intensity and absence of amplicons were sent for gene sequencing and BLAST through the NCBI database to obtain relevant results regarding the possible gene annotation. Seven out of ten DETs hit potential genes encoding for housekeeping and structural and development functions. The results showed that acoustic sound treatment did affect the expression of certain genes differently as captured by DDRT-PCR analyses and offers new ideas for the development of ecological agriculture.