

Mutagenesis and Transformation of *Aspergillus terreus* Based on the Nitrate Reductase Pathway

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Aspergillus terreus is an efficient producer of different extracellular enzymes which are used in food industries. Thus, we are interested in developing a genetic transformation system based on the nitrate structural gene *niaD*. In order to develop this system the nitrate assimilation pathway in *A. terreus* was studied and spontaneous mutants defective in the genes required for nitrate assimilation were obtained on the basis of chlorate resistance. Of particular interest were *niaD* mutants which failed to grow on nitrate but grew as wild type on other sole nitrogen sources.

Afterwards the transformation system was developed for mutants defective in nitrate reductase of *A. terreus* using pSTA10 vector containing *niaD* gene from *A. niger*. The transformation frequency obtained was *c.a.* 0.5 per ug DNA. The vector appeared to be mitotically stable and Southern hybridization analysis of transformants showed that transformation events occurred by integration into to the recipient genome. To assess the amount of product made by the transformants, nitrate reductase assays were carried out under inducing conditions.

Experiments to improved transformation frequency and to characterize the integration are now in progress.

Online: <http://www.fgsc.net/ecfg/ecfg3.html>