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Markets for industrial enzymes produced by filamentous fungi

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The application of recombinant DNA technology has been remarkable and nearly replaced commonly used traditional methods. Traditional industrial microbiology long depended on the discovery of valuable strains and mutagenesis of such strains to improve its secretion capacity of enzymes and secondary metabolites on the industrial scale. Commodities included industrial enzymes and biopharmaceuticals. The purpose of genome manipulation by the crossing of different strains or genetic recombination of naked DNA to the genome is of increased production of valuable metabolites. We optimized a transformation method to either for removal of innate genes, introduction of heterologous genes, or combination of both. We have been used selected whole or partial genes to manipulate target fungi toward the development of strains overproducing invaluable proteins. We have also used the whole genome sequence information of fungal genomes in public databases and functional genomics approach to select genes to manipulate and eventually contributing greatly to the development of overproducing industrial strains overproducing proteins or secondary metabolites. I will briefly review 1) filamentous fungi as a host for production of recombinant proteins and secondary metabolites, 2) markets of industrial metabolites, 3) a new approach to manipulate up to five genes at the same time in the system that ProxEnrem uses.