

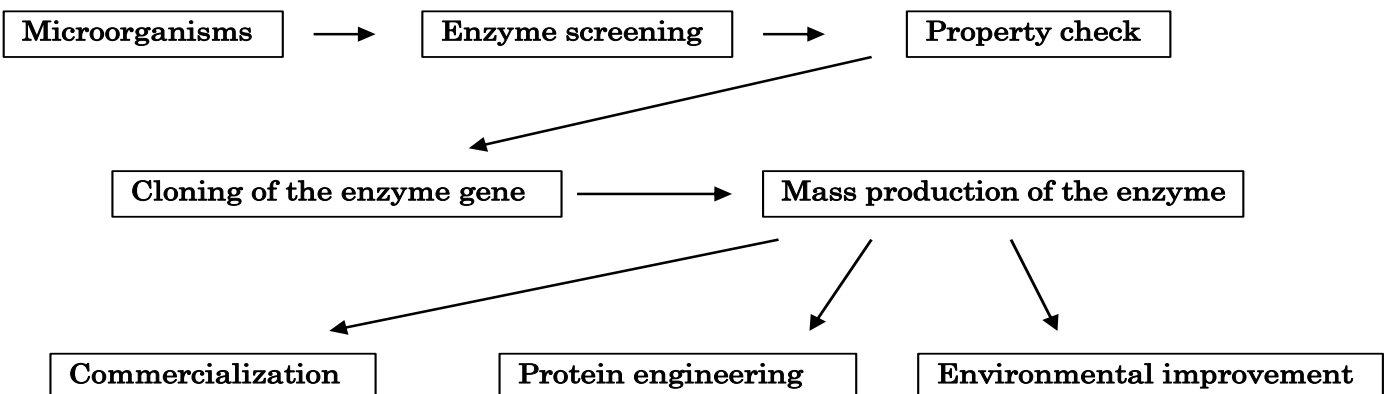
The development of the industrial enzyme using the genetic engineering



Name	SUZIKI Koji Ph.D	E-mail	ksuzuki@chem.ibaraki-ct.ac.jp
Status	Professor		
Affiliations 所属学会・協会	JSBBA(Japan Society for Bioscience, Biotechnology and Agrochemistry) , SBJ(The society for Biotechnology, Japan) , CSJ(The Chemical Society of Japan), and JSEE(Japanese Society for Engineering Education)		
Keywords	Biotechnology, enzyme, genetic engineering, protein engineering, bioremediation.		
Technical Support Skills 技術相談・提供可能技術	<ul style="list-style-type: none"> •The screening of the enzyme from microorganisms. •Cloning and expression of the enzyme gene. •The improvement on the protein using the protein engineering. 		
Message to the Industry 産業界へのメッセージ	I had experience in the successful commercialization of bio-products at the Institute of company. And I had also experience with the research at Institut Pasteur and Kitasato Institute Prof.Omura(Nobel Prize winner) lab. If you want the development of bio-products, I can its support.		

Research Contents The development of the diagnostic enzyme using the genetic engineering.

In clinical diagnosis field which diagnoses various symptoms of the disease, the measuring method of minor constituent using the enzyme has been developed. The enzymatic analytical method is able to analyze super sensitively, quickly, and high-precise the much sample without pretreating blood and urine comparison with the chemical method. In the enzymatic method, heat-resistance, stability, high sensitivity, etc. are being obtained the enzymes that accompanies and uses the development of the autoanalyzer apply. I succeeded in producing the many clinical diagnostic enzymes using the genetic engineering and protein engineering. Even if the enzyme inducer is added, the enzyme which produces only a trace amount is acquired from Lactobacillus, Pseudomonas, Bacillus, etc. The recombinant enzyme is possible for makes an E.coli transformant, even if there is no an inductive material. In the application of the protein engineering, it is also possible to change for substrate specificity. I attempt the development of the high-functional enzyme which following scheme showed.



The scheme of the enzyme product development.

Available Facilities and Equipment

Biohazards safety cabinet(class 2a)	DNA& protein electrophoresis systems
PCR	Spectrophotometer(UV-Vis.)
Bio shaker	Electroporation system
Rapid centrifugal machine	Bio autoclave