

Miniaturization of Diamine Oxidase

TECHNOLOGY DESCRIPTION

This technology focuses on modification of protein structure through computational and bio-molecular approach to facilitate the biosensor and fishery industry.

TECHNOLOGY FEATURES

This technology focuses on the development of reliable mini protein by miniaturizing the huge molecule of native diamine oxidase with the size of 704 amino acid. The process do not change the natural activity and characteristics of the native enzyme. A smaller and stable mini protein which retained its conformational state and catalytic activity can be produced. This technology can also be utilized in pharmacology industry to determine histamine release under stress or to synthesize therapeutic peptides.

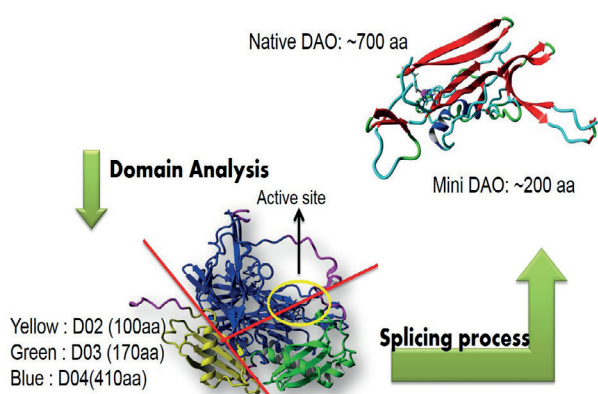
ADVANTAGES

- Maintain the natural activity of the native enzyme
- More stable protein
- Can be used in food and allergy monitoring

INDUSTRY OVERVIEW

Prospect Industry: Fishery and Pharmacology industry, Food and bioprocessing industry

In general, enzyme based biosensors are used to evaluate the freshness of fish. Biosensors present attractive, efficient alternative techniques by providing quick and reliable performances. There is good potential for application of biosensors for monitoring food quality and safety in food and bioprocessing industries in Malaysia. The industry is projected to generate annual revenue of Euro 25 billion (RM 100 billion) by 2020. The global biosensors market was valued at USD 12.46 billion in 2013 and is expected to grow at a CAGR of 8.1% from 2014 to 2020, to reach USD 21.64 billion in 2020. Growing need for analytical information in healthcare, food quality analysis, environmental monitoring, defence and agriculture is driving the growth of the global biosensors market. Potential market is likely to be among manufacturers, wholesalers and government enforcement agencies which monitor the quality of food especially fish. In addition, another potential market can be seen in the pharmacology industry where producers utilize biosensors for monitoring quality and safety of products.



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