# New Yeast Strain Protein for Pharmaceuticals, Food and Cosmetics Industry

## TECHNOLOGY DESCRIPTION

This technology is a method to use novel yeast strain isolated from a spoiled orange for fast and high-yield expression of recombinant proteins.

## TECHNOLOGY FEATURES

In this technology, proteins are expressed in the novel yeast strain under the control of methylotrophic promoters. This invention provides the novel yeast host cells comprising expression vector for the expression of bacterial lipases. Expression can be induced with minimal amount of methanol. This system is able to replace the existing system in terms of efficient protein expressions. It can greatly benefit the pharmaceuticals, food and cosmetics industry.

## ADVANTAGES

- Used for enzyme production
- Improve protein expression efficiency
- Less toxic to the product
- Use minimal methanol for induction [0 -1.5% (v/v)]
- Fast in reaching optimum expression level (< 30 hours)
- Reliable to express recombinant proteins

## INDUSTRY OVERVIEW

**Prospect: Healthcare Industry**

The global protein expression market is expected to grow at a Compound Annual Growth Rate (CAGR) of 8.83% between 2013 and 2018, and to reach $1,396.68 million by 2018. The global protein expression market can be segmented into various expression systems such as insect cell, mammalian cell, prokaryotic, yeast, and others. This invention relates to the use of a novel yeast strain isolated from spoiled orange in for fast and high-yield expression of recombinant proteins. In preferred embodiments, the proteins are expressed in novel yeast strain under the control of methylotrophic promoters. This invention furthermore, provides the novel yeast host cells comprising expression vector for the expression of bacterial lipases. The possible market expansion is to the United States of America, Europe, Australia, and Japan in a form of collaboration development to sell protein expression kit. The major players in the protein expression market are Agilent Technologies, Inc. (U.S.), Bio-Rad Laboratories (U.S.), Life Technologies Corporation (U.S.), Merck Millipore (U.S.), New England Biolabs, Inc. (U.S.), Promega Corporation (U.S.), QIAGEN (Netherlands), Sigma-Aldrich Corporation (U.S.), Takara Bio, Inc. (Japan), and Thermo Fisher Scientific, Inc. (U.S.). Locally, once manufactured, the vaccine can be distributed to 132 Government Hospitals and 9 Special Medical Institutions with 1039, 1821, and 254 Health Clinics, Community Clinics, and 1Malaysia Clinics respectively with an additional 214 Private Facilities in Malaysia. In addition, the market can also be expanded to the 637 SMEs that operates in the Healthcare industry and another 342 SMEs in the Pharmaceutical industry.


**Prof. Dato' Dr. Abu Bakar Salleh**
**Faculty of Biotechnology and Molecular Sciences**