**Cloning and Expression of the *Bacillus Pumilus* F3 Lipase Gene into *Bacillus Subtilis* and Determining of Comparative Expression Level Between Native and Recombinant Enzyme**

**Abstract**

**Aim and Background:** Lipases are the valuable biocatalysts which have many applications in the industry. It is widely used in catalyzing chemical reactions such as water, alcoholic, acidic hydrolysis and also esterification. Bacterial lipases are the most important kinds of enzymes in the industry because they have special advantages such as the high stability in organic solvent, the ability of soft catalyzation of hydrolytic reactions, facility in production process and it’s relatively low cost. *Bacillus pumilus* is one of the most considerable bacterial sources of this enzyme but the main problem for producing this enzyme is low expression and secretion. The aim of this research is the production of recombinant lipase from native strain in secreting manner for increasing the level of expression in *Bacillus subtilis.*

**Materials and methods**: Lipase-coding gene of *bacillus pumilus* was cloned into pWB980 plasmid by genetic engineering. After this step, construction plasmids were transferred to *Bacillus subtilis* WB600 as a host. Then expression and secretion level between native and recombinant forms was evaluated and compared.

**Results:** Secretory form of lipase enzyme was expressed in *Bacillus subtilis*. An expression level of this enzyme is higher than normal strain.

**Conclusion**: Recombinant lipase production in *Bacillus subtilis* is a suitable method for increasing the expression of this enzyme

**Key words**: Lipase, Cloning, *Bacillus subtilis*, secretory expression