

## **Środowisko niewodne – miejsce katalizy enzymatycznej**

Renata Bancierz<sup>1</sup>, Grażyna Ginalska<sup>2</sup>

<sup>1</sup>Zakład Biochemii, Uniwersytet Marii Curie-Skłodowskiej, Lublin

<sup>2</sup>Katedra i Zakład Biochemii, Uniwersytet Medyczny, Lublin

## **Nonaqueous media – site of enzymatic catalysis**

### **Summary**

Lipases, esterases, acylases, glycosidases, aldolases are the most used enzymes in synthetic organic chemistry. Among the biocatalysts, lipases are the most frequently used. This class of enzymes is able to catalyze the hydrolysis of carboxylic acid esters in aqueous medium on the reverse reaction in organic solvents. The use of enzymes in organic solvents is now well established and there are several advantages of conducting enzymatic reaction in water poor media such as increased solubility of hydrophobic substrates, shifting of thermodynamic equilibrium in favour of synthesis over hydrolysis and increased thermostability of the enzyme. However, the practical application of enzyme in organic solvents has been hampered by the low catalytic activities compared to those expressed in water. This review highlights recent research on the stabilization of enzymes using both chemical and biological means to increase the lifetime of the biocatalyst.

### **Key words:**

lipase, organic solvents, stabilization, modification

### **Adres do korespondencji:**

Renata Bancierz, Zakład Biochemii, Uniwersytet Marii Curie-Skłodowskiej, ul. Akademicka 19, 20-033 Lublin