

Chemical modification of lipases

ABSTRACT

Since the industrial uses of lipase is expanding, research and development on this enzyme is strategically focusing on modifying its chemical, physical and biological properties. Surface residue of enzymes are reactive chemically and thus a potential target for chemical modification. We have carried out chemical modification via reductive alkylation on lysine residue of T1 and *Candida rugosa* lipase (CRL) using propionaldehyde. Through molecular dynamics (MD) and circular dichroism (CD), intrinsic and extrinsic fluorescence studies, the altered properties of T1 lipase were examined. Reductive alkylation using propionaldehyde caused the unfolding of enzymes as observed in chemically modified *Candida rugosa* and T1 lipase. As the effect of reductive alkylation is not localized at the modified site, the formation of molten globule could be observed in modified T1 lipase.

Keyword: Lipases; Enzymes