

Effect of Solvent pH on the Activity of Immobilized Lysosomal Enzymes on TiO₂

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To immobilize the effective enzymes on nanoparticles for stabilizing the activity of free enzymes has developed the pharmaceutical field. In this study, we examined the effect of different pH of solvent on the immobilization of lysosomal enzymes extracted from *Saccharomyces cerevisiae* and hen' egg white on TiO₂ nanoparticles extensively used in many research fields. Each of the lysosomal enzymes immobilized on TiO₂ was used to examine the antimicrobial activity using *Escherichia coli*, and the degradation of melanin for a week and by measuring contents of peroxidase in immobilized lysosomal enzyme, we can determine the decrease of melanin in lysosomal enzymes immobilized on TiO₂. We found that not only the immobilization efficiency but also other results of immobilized lysosomal enzymes extracted from *S. cerevisiae* were higher more than those extracted from hen's egg white with pH 4. Therefore, it suggests that the various activities of lysosomal enzymes immobilized on TiO₂ are facilitated by sources and the pH differences.