

Effect of buffer on lipase activity during immobilization process and application of co-immobilization for high activity

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In our previous work, a method of pretreating lipases was developed and its process was optimized to prevent loss of its activity during covalent immobilization. In this study, the effects of various buffers and ionic strength on immobilization of *Rhizops oryzae* or *Candida rugosa* lipases were investigated to enhance the activities of immobilized lipases. Among various buffers, the optimal buffers and ionic strength for the immobilization of *R. oryzae* and *C. rugosa* lipases were determined to be the mixture of 0.25 M MOPs and sodium phosphate buffer (pH 6.5). Moreover, activities of immobilized *R. oryzae* and *C. rugosa* lipase under their optimal conditions were 3756.11 and 2845.21 U/g matrix, respectively. Moreover, co-immobilization was carried out using optimal buffer conditions and then activity of co-immobilized lipase was 16430.33 U/g matrix.