Effect of organic solvents on permeabilization of *Ochrobactrum anthropi* SY509

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Abstract

Permeabilization was known to solve cell membrane barrier problem of whole cell biocatalyst. The use of organic solvent is advantageous from the viewpoint of cost, simplicity, and efficiency.[1)] In this study, *Ochrobactrum anthropi* SY509 containing denitrifying enzymes such as nitrate reductase and nitrite reductase was permeabilized with different organic solvents. Treatment with organic solvents resulted in lower permeability barrier due to delipidation from the cell membrane.[2)] In addition to death of cells reduced energy loss for the synthesis of cell mass. Therefore, permeabilized cells showed higher enzyme activity with no viability. Among various organic solvents, 0.5% (v/v) chloroform selected as most efficient permeabilizing reagent. And the change of membrane structure and residual amount of phospholipids accounted for the effect of permeabilization.

References

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