

1,3-propanediol dehydrogenase from *Klebsiella pneumoniae*: purification and characterization

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Klebsiella pneumoniae is able to metabolize glycerol as a sole source of carbon and energy. In the absence of an external oxidant, glycerol is fermented by a dissimilatory process involving two pathways. Among the rest, glycerol is dehydrated by glycerol dehydratase to form 3-hydroxypropionaldehyde, which is reduced to the major fermentation product 1,3-propanediol (PDO) by the NADH-linked 1,3-propanediol dehydrogenase (PDH), thereby regenerating NAD⁺. PDH activity was measured spectrophotometrically (E₃₄₀) at 37°C. The assay mixture contained 2mM NAD⁺, 30mM Ammonium sulfate, 0.1M Potassium carbonate (pH 9.7) and 0.1M PDO. PDH was purified from *Klebsiella pneumoniae* and determined the activity, recyclability, pH effect, and stability of immobilized enzymes.