Activity staining of isocitrate lyase after electrophoresis on either native or sodium dodecyl sulfate polyacrylamide gels

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Abstract

Isocitrate was cleaved into succinate and glyoxylate by isocitrate lyase (ICL) in the glyoxylate cycle. We used lactate dehydrogenase as an ancillary enzyme to further metabolize the glyoxylate to glycolate in the presence of NADH. 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) and 2,6-dichlorophenol-indolphenol (DCPIP) were used in the coupling reactions for detecting ICL activity after electrophoresis on either native or sodium dodecyl sulfate (SDS) polyacrylamide gels. This fast and sensitive method can be used in the process of ICL enzyme purification and characterization.