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Alcohol dehydrogenase in cultured human skin fibroblasts. Human fibroblast alcohol dehydrogenase.

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Abstract

Studies of ethanol oxidation and other metabolic pathways in humans are often limited by the availability of a reproducible test material. Because of this we have tested human fibroblasts for ethanol metabolism and alcohol dehydrogenase content. Seven different cell lines have been studied and found to contain an enzymatic activity identified as alcohol dehydrogenase by the following criteria: it is NAD+-dependent, the Km for ethanol is like human liver, it is completely inhibited by 25 microM 4-pentylpyrazole. The fibroblast activity was analyzed by isoelectric focusing and found to contain several isozymes also present in the human liver sample. In addition, fibroblasts contain 2 major isozymes which migrate anodally to any isozymes previously reported in human liver. Thus, fibroblasts appear to be useful material for comparing enzymatic aspects of ethanol metabolism in alcoholics and nonalcoholics.

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