Rabbit muscle lactate dehydrogenase 5; a regulatory enzyme.


Abstract

Lactate dehydrogenase isozyme 5 from rabbit skeletal muscle is activated by citrate, cis-aconitate, isocitrate, alpha-ketoglutarate, succinate, fumarate, malate, aspartate, and glutamate. In the presence of these activators the shape of the pyruvate saturation curve is changed from sigmoid to hyperbolic. Lactate dehydrogenase isozyme 1 from rabbit heart gives a hyperbolic pyruvate saturation curve and is not activated by these compounds. Oxalacetate is a competitive inhibitor of both isozyme 5 and isozyme 1 but at low concentration it activates the former. These results indicate that lactate dehydrogenase isozyme 5 from rabbit skeletal muscle is an allosteric protein and a regulatory enzyme, while lactate dehydrogenase isozyme 1 from rabbit heart is apparently neither.

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