



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Francisco J. Tejada, Jr.</b>	<b>Project Number</b> <b>J0405</b>
<b>Project Title</b> <b>What Conditions Affect the Lactate Dehydrogenase Enzyme?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this study is to determine some conditions that affect the reaction rate of the lactate dehydrogenase (LDH) enzyme. How does changing the amount of enzyme present affect the reaction rate of LDH? How does changing the degree of acidity, measured as pH, affect the reaction rate of LDH? How does changing the amount of reactant present, pyruvate, affect the reaction rate of LDH? Does cibacron blue (CB) inhibit the reaction rate of LDH? If so, what type of inhibition is observed? <b>Methods/Materials</b> First, a set of conditions were used to monitor LDH reaction rate. In order to answer each question of the objectives, all conditions remained identical except for the condition being tested. <b>Results</b> As more enzyme is added to the reaction the LDH reaction rate increases. LDH performs its reaction the fastest at pH 7. As more substrate is added to the reaction, LDH reaction rate increases. Cibacron blue was observed to inhibit LDH competitively. <b>Conclusions/Discussion</b> Predictions made about LDH reaction rate under different conditions were identical to the results obtained. But an incorrect prediction about increasing pyruvate was made.	
<b>Summary Statement</b> The purpose of this project is to determine what conditions affect the reaction rate of lactate dehydrogenase enzyme.	
<b>Help Received</b> Kathy McNamara Schroeder at San Diego State University donated the materials, equipment and procedures for this project. I performed all of the experimental work myself. My brother Genaro Hernandez showed me some math and graphing techniques used in this project. My brother also guided	