



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Shino Kawazu	Project Number J1609
Project Title The Effect of Different Water Sources on Lactic Acid Bacteria Activity	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this experiment is to learn how different mineral contents of water and sugar (tested separately) affect lactic acid bacteria activity. Its purposes include understanding moderation, finding a potential alternative to obtain energy, helping nutrition balance and preventing muscle fatigue.</p> <p>Methods/Materials Bottles, rice bran, sugar, varying waters, irrigation tubing, shutoff valves, pH strips, thermometer. Used personally made device to measure gas production with the water displacement method. Measured temperature, gas level, and acidity at least once a day. For second trial, used same types of waters but used different kinds of sugars.</p> <p>Results Of the two trials already conducted, experiment has shown varying results; sometimes, but not always, higher mineral content of the water and/or sugar resulted in more gas production and when graphed, there were logarithmic and linear functions.</p> <p>Conclusions/Discussion Within the trials already completed, there seems to be a general positive correlation between mineral content of water/sugar and gas produced by the lactic acid bacteria. The intention/origin of the water and the seasons also affect overall gas production. It is concluded that it is crucial for humans to consume minerals - as already shown through other studies - but this experiment supports this idea from the perspective of lactic acid bacteria.</p>	
Summary Statement I showed the total gas produced by lactic acid bacteria are dependent on the mineral contents of water and sugar.	
Help Received My parents assisted with the building of devices for the experiment. My Biology teacher reviewed the procedures and results.	