



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Jessica Fang</b>   | <b>Project Number</b><br><b>J2110</b> |
| <b>Project Title</b><br><b>Chunky Milk</b>  |                                       |
| <b>Abstract</b><br><b>Objectives/Goals</b><br>My project was to determine how much casein and whey protein would be produced from different types of Lucerne milk. I believe that whole milk will produce the most protein.<br><b>Methods/Materials</b><br>Five different kinds of Lucerne milk were used, along with the same amount and type of vinegar. They were whole milk, 2% milk, 1% milk, nonfat milk, and 100% lactose free whole milk. The mixture of milk and vinegar was microwaved for 1 minute. It was then filtered using a coffee filter and the protein was then weighed in grams. Each variation was done 10 times.<br><b>Results</b><br>100% lactose free whole milk consistently had the most amount of casein and whey protein. Nonfat milk consistently had the least amount of protein.<br><b>Conclusions/Discussion</b><br>This experiment is not only testing which kind of milk produces the most protein, but also whether or not the protein amount stated on the milk cartons are true. The results show that 100% lactose free whole milk produced the most, whole milk, 2% milk, 1% milk, and nonfat milk had the least amount of protein. This shows that the more fat a milk contains, the larger the amount of protein is. |                                       |
| <b>Summary Statement</b><br>This project is examining how different types of milk and their protein amount is affected by adding acetic acid and heat through microwaves.   |                                       |
| <b>Help Received</b><br>Borrowed a scale from a friend  |                                       |