



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Elizabeth S. Koo</b>	<b>Project Number</b> <b>S1510</b>
<b>Project Title</b> <b>Effect of Trans-Resveratrol, a Natural Polyphenolic Compound, on Body Weight, Size and Behavior of Baby Gallus gallus</b>	
<b>Objectives/Goals</b> Imagine a world in which chickens are not given massive doses of antibiotics and synthetic compounds that affect not only the chickens but also the people who consume the chickens. With my project, a safer alternative to these antibiotics and synthetic compounds might be found. This alternative is resveratrol, which comes from the skin of grapes and is found in red wine. The purpose for testing resveratrol on baby chickens was to see if it could make the chickens grow more. Resveratrol also has antiviral and antifungal effects.	
<b>Abstract</b> <b>Methods/Materials</b> Materials: Nine Two-week Old Chicken, Trans-Resveratrol, Chicken Feed, 3 Cages, Water, Scale, 3 Bowls filled with water, Three color sharpies, heat lamp, ruler. Separate the chicken into three groups with three chickens in each group. There will be three groups: P group (high dosage of resveratrol), R group(low dosage of resveratrol), and B Group(control). I diluted 125 mg of resveratrol with 10 ml of water. 2 ml of the solution was poured into 500 ml of water. This is the drinking source for P Group chicken. R Group's dosage is 1/4 of that. I weighed all chickens, and measured their leg length and wing span daily. They were fed 6 oz of the Chicken Feed, and given 500 ml of water every 12 hours. The project lasted for 12 days. On the last day, I calculated an average percentage of change in weight, leg length, and wingspan from day 0.	
<b>Results</b> The average percentage of change in weight from Day 0: P group chickens: 145%, R Group chickens: 136%, B Group chickens: 115%. The average percentage of change in leg length from Day 0: P Group chickens: 63%, R Group chickens: 56%, B Group chickens: 55%. The average percentage of change in wing span from Day 0: P Group chickens: 66%, R Group chickens: 66%, B Group chickens: 54%.	
<b>Conclusions/Discussion</b> My hypothesis was correct. P Group chickens' growth increased the most by 145%; 30% more than B Group chickens. This is because resveratrol has the same functions as estrogen, a female hormone. It can bind to proteins called estrogen receptor genes (ER), which causes the enzyme SIRT1 to be turned on. After SIRT1 is turned on, more mitochondrias are produced, therefore more ATP is made. This increases the metabolism, and the growth of the P group chickens. However, a long-term experiment is needed before resveratrol can replace antibiotics or synthetic compounds.	
<b>Summary Statement</b> My project ist the effect of trans-resveratrol on the growth, size and behavior of baby gallus gallus.	
<b>Help Received</b> Mother helped with weighing and measuring chicken and board.	