



# CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

<b>Name(s)</b> <b>Felicia N. Markfield</b>	<b>Project Number</b>  31796
<b>Project Title</b> <b>Hair Control</b>	
<b>Objectives/Goals</b> The objective was to determine if a variety of hair samples treated with the Keratin Complex Treatment were stronger and would react less to humidity than hair samples not treated with the treatment. <b>Abstract</b> <b>Methods/Materials</b> I tested my own hair, natural blonde hair, and highlighted hair. I had the Keratin Complex treatment performed on my hair and took samples before and after the procedure. I did the same for other hair samples. I then tested the hair sample's reaction to humidity by constructing 8 homemade hygrometers. Each hygrometer was made of one of the hair samples. I labeled each hygrometer. I placed the hygrometers in a small bathroom with a hot shower running and recorded the initial humidity in the room with an electric hygrometer. After 5 minutes I recorded humidity, and measured any expansion of hair samples. I waited 15 minutes and recorded any changes in hair samples. I repeated the experiment two more times over the next days and recorded results in notebook. I then tested the strength of samples with a strength tester. I taped a strand of each hair onto the strength tester. I attached a plastic bag to the other end of the hair with a paperclip. I then added marbles into the plastic bag until the bag broke. I counted the marbles in the bag and recorded results in notebook. I repeated procedure three times for each hair sample. <b>Results</b> My untreated hair expanded an average of .83cm when exposed to humidity, while my hair that was treated with the Keratin Treatment expanded an average of .17cm. The natural blonde untreated hair expanded an average of 1.27cm, while the natural blonde treated hair expanded an average of .33cm. The highlighted untreated hair expanded an average of .9cm, while the highlighted treated hair expanded an average of .2cm. All of the untreated hair samples expanded an average of .96cm while the hair that was treated only expanded an average of .18cm. For the strength test my treated hair and the natural blonde treated hair both were able to hold an average of 33 marbles. The highlighted treated hair was able to hold an average of 28 marbles. My untreated hair held an average of 25 marbles, and both the natural blonde and highlighted untreated hair held an average of 24 marbles. <b>Conclusions/Discussion</b> My conclusion is that hair treated with the Keratin Hair Treatment does react less to humidity and is stronger than hair that is not treated with the treatment.	
<b>Summary Statement</b> My project examines the strength and resistance to humidity hair has when treated with the Keratin Complex Treatment.	
<b>Help Received</b> Monica Saldana, who helped me collect hair samples, gave me information on hair and the products used, and performed the Keratin Complex Treatment on my hair. Also my mother who paid for the treatment and other supplies. My mother also helped me make the hygrometers.	