



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Aishik Chakraborty	Project Number J0503
Project Title Is There a Natural Substitute for Sunscreen?	
Objectives/Goals To find a natural substitute for sunscreen from turmeric, beet root, and sandalwood.	
Abstract	
Methods/Materials Materials: one grinder made of rock for Sandalwood. A kitchen Blender. One ounce of beet root. An ounce of sandalwood. An ounce turmeric. 85 SPF sunscreen. sunlight. An UV detector. 30 microscope slides. clipboard, pencil and paper. Method: Make paste of beet using kitchen blender. prepare turmeric paste using same blender. make sandalwood paste using rock grinder. Take a microscope slide and then take a bit of specimen at the tip of slide and smear it on the other slide. Make sure smearing is even. leave it to dry for a day at a dark place without UV. Take UV meter is out and make sure the UV level is 6 and then hold a plain glass slide underneath the meter and put the results on a piece of paper. Do the same thing 5 times. repeat the same procedure for the plain microscope slide except do it with each specimen, and keep on doing it until all 25 slides are finished. Measure absorbance.	
Results I got different results than I expected. Turmeric blocked the most UV radiation followed by Sandalwood and beet root the least. Turmeric absorbed 33% and reflected the rest. UV index is from 5 to 2. sunscreen absorbed 47% and reflected the rest. For sunscreen the UV index was from 5 to 1. All the specimen formed a coating. Sandalwood formed the thickest coating. Turmeric the second most and beet the least. Sunscreen didn't coat.	
Conclusions/Discussion My conclusion is that Turmeric would make the best natural sunscreen. I think turmeric blocked the most because it contained the anti-oxidant known as Curcuma.	
Summary Statement Is there a Natural Sunscreen (turmeric, beet root, and sandalwood) that can block UV closest to commercial sunscreen?	
Help Received My mom helped me in grinding specimen, dad helped me in explaining logarithms and spreading the specimen, and I would like to thank my science lab teacher Mrs Scott for helping me check parts of the notebook.	