

## CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

Name(s)	Project Number
Olivia J. Cevasco	A
Ulivia J. Cevasco	
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	36258
Project Title	$\sim$
Healing Tears	
	$\bigcirc$
Abstract	
<b>Objectives/Goals</b> The objective of this study is to determine if human tears can kill an equiva	Patamoult of Staphylococcus
aureus as Bactine, Neosporin, Isopropyl Alcohol, and sterile water.	nent anothe of Staphylococcus
Methods/Materials	$\langle \bigcirc$
I used the Kirby Bauer antibiotic susceptibility testing method. I built an in	subater using a 18 1/4" x 18" x
I used the Kirby Bauer antibiotic susceptibility testing method. I built an in 16" cardboard box, desk lamp, and an insulated styrofoam board I used 21 100 6mm sensitivity discs, 1.2mL of human tears, Bacine, Neosopria, Isor	tryptic soy agar petri dishes,
100 6mm sensitivity discs, 1.2mL of human tears, Bactine, Neosopris, Isor	oropyl Alcohol, and sterile
water, 21 sterile cotton swabs, tweezers, 5 sterile pipettes, and a Vernier Ca experiments, I used 60 petri dishes, 300 sensitivity discs, and 3 on Vernier Ca	liper. For my scouting
Isopropyl Alcohol, and sterile water.	nan tears, Bactine, Neosporni,
Results	
I used a Vernier Caliper to measure the zone of inhibition per sensitivity dia are as follows: human tears and sterile water killed less than 0.1mm/of Stap	sc in millimeters and the results
are as follows: human tears and sterile water killed less than 0. mm of Stap	h. aureus, Bactine killed an
average of 24mm of Staph. aureus, Neosporin killed an average of 18.3mm	of Staph. aureus, and
Isopropyl Alcohol killed an average of 15.86mm of Staph. areus. Conclusions/Discussion	
My results indicate that Staph. aureus is resistant to human tears and sterile	water but Staph aureus is
susceptible to Bactine, Neosporin, and Isopropyl Alcohol. believed that he	uman tears would kill nearly an
l equivalent amount of Staphylococcus auraus for Bactine Meosporin, Isopropyl Alcohol, and sterile water	
because tears contain antimicrobials, such as hysoxyme, that kill bacteria to keep bodies healthy on a	
because tears contain antimicrobials, such as Lysoxyme, that kill bacteria to keep bodies healthy on a daily basis. I disproved my hypothesis because tears and sterile water did not kill any bacteria, but Bactine, Neosporin, and Isopropyl Alcoholkilled the bacteria. From my results, you can infer that if you have an open wound, applying Bactine to kill the bacteria would be the best option. For further study, I	
Bactine, Neosporin, and Isopropyl Alcohol filled the bacteria. From my results, you can infer that if you	
would use pure Lysozyme as my positive control and water as my negative control. Even though I found	
that tears cannot kill Staphylococcup aureus, I am determined to find a type	of wound bacteria that tears
can kill.	or would bacteria that tears
Summary Statement	
	sporin Isopropul Alashal and
I found that human tears cannot kill as much Staph. Aureus as Bactine, Neosporin, Isopropyl Alcohol, and sterile water.	
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Help Received	
I received no help for this experiment. I researched, preformed this experiment, and constructed an	
incubator independently.	