



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Sarah Cohen; Hannah Schalyo	Project Number S2204
Project Title Evaluation of the Effect of Paraben Exposure on Sea Urchin (Strongylocentrotus purpuratus) Fertility	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Evaluation of the effect of parabens on sea urchin fertility through sperm exposure and in vitro fertilization.</p> <p>Methods/Materials Used potassium chloride solution to remove sea urchin gametes. Used propyl- and methylparaben as main chemicals of exposure. Analyzed success of fertilization and effects of paraben exposure through microscope.</p> <p>Results The results show that all concentrations of Methyl- and Propylparaben exposure are detrimental to the sea urchin sperm and fertility. The higher concentrations of paraben exposure had increasingly negative effect on the organisms, as opposed to the lower concentrations.</p> <p>Conclusions/Discussion Based on our research, it has been found that parabens can alter fertility rates when directly exposed to sea urchin gametes. While lower levels of paraben exposure are had a smaller effect on fertility, higher levels made a significant difference in the success of sea urchin fertilization. Therefore, a need for further testing on human fertility is necessary before the amount of parabens found in food and cosmetic could be limited by FDA restrictions.</p>	
Summary Statement We showed that paraben exposure has adverse effects on the survival of sea urchin embryo and sperm motility.	
Help Received We designed the methods ourselves based off of previous research. Our research teacher reviewed our results.	