



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Eric S. Chen	Project Number S0506
Project Title MicroRNA: A New Way to Fight Pancreatic Cancer	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My project is to evaluate microRNA (miRNA) as a new treatment for pancreatic cancer. I believe restoring tumor suppressor miRNAs in pancreatic cancer cells will make them less aggressive and more sensitive to chemotherapy.</p> <p>Methods/Materials I first examined the expression of tumor suppressor miRNA in pancreatic cancer cell line BxPC-3 by a method called Taqman Real-Time PCR assay. By using liposomes with the miRNAs in transfection, I increased the expression of the miRNAs in the pancreatic cancer cells. Additionally, I examined proliferation and sensitivity of BxPC-3 cells transfected with miR-148a to the chemotherapy drug Gemcitabine. I also performed Western blot analysis to study the downstream targets of miR-148a.</p> <p>Results My results showed that miR-148a was greatly reduced in the pancreatic cancer cell line BxPC-3. I also found that upon expression of miR-148a, cell proliferation is reduced, and that the cells were more sensitive to chemotherapy drug Gemcitabine because miR-148a controls apoptosis of cancer cells.</p> <p>Conclusions/Discussion My conclusion is that restoring the expression of tumor suppressor miRNAs in pancreatic cancer suppresses the tumorigenic traits and has the potential to help treatment of pancreatic cancer by making it more susceptible to chemotherapy.</p>	
Summary Statement I try to find a new treatment for pancreatic cancer.	
Help Received Used lab equipment at UCSD under the supervision of Dr. Gen-Sheng Feng	