



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY**

Name(s) Yuqi Geng	Project Number S0508
Project Title Future of Central Nervous System Sedatives and Analgesics: Common ITS Sequence among Traditional Chinese Medicine	
<p style="text-align: center;">Abstract</p> <p>Objectives The purpose of this research is to look for possible common ITS sequences among nine well-known Traditional Chinese Herbal Medicine with similar analgesic and sedative effects on the human central nervous system.</p> <p>Methods Tested nine distinguishing primers among the ITS regions of plants genomes. The main procedures involved in this research were seed and leave tissue DNA extractions, polymerase chain reaction (PCR) and agarose gel electrophoresis.</p> <p>Results The experiment result has shown that the ITS-F and ITS-R primer pair (safflower-specific) successfully amplified DNA fragments of five other species. Therefore, a common sequence may exist among the six species.</p> <p>Conclusions The possible common sequence found may be used to find substitutes for rare TCM with the same functions. And this research is one of the first to investigate the relationship between plant genome sequences and medicinal functions as well as to implement distinguishing genetic markers among distantly related plants.</p>	
Summary Statement I found a common sequence among distantly related plants with similar medicinal functions.	
Help Received Dr. Massoudi explained some concepts of PCR to me, and I did all of the experiments in his seed service lab (non-research lab).	