CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
J1803

Project Title
Building an Endotoxin Detection Home Test Kit

Abstract

Objectives/Goals
Goal 1-Find a filter paper that can be used for a dipstick test
Goal 2-Make a color graduating test so that if there is more endotoxin, the shade of yellow would be darker and if there is less endotoxin, then the shade of yellow would be lighter
Goal 3-The test must be quick and easy to use
Goal 4-The test must have a negative control embedded into the paper so not to show a false positive
Goal 5-The test must be able to work at different temperatures
Goal 6-The test must be able to work in the real world, i.e with ready-to-eat salad

Methods/Materials
endotoxin (dead E. coli and Salmonella)
Limulus Amebocyte Lysate (LAL)
Chromogenic Assay
Deionized water
Pyrogen-free test tubes
Serological pipettes
Micro-pipettors
Micro-pipette tips
Reagent water
5 different types of filter paper
Cambrex LAL test kit
2 different brands of Ready To Eat Salad

Results
The test (filter paper) did turn yellow in the presence of endotoxin. The color change also corresponded to the amount of endotoxin detected. When there was more endotoxin detected, the yellow color change was darker, when there was less endotoxin detected the color change was lighter.

Conclusions/Discussion
I was successful in building a prototype that can be used at home to detect endotoxin (presence of Salmonella, E.coli) . Furthermore, I did meet all of my goals.

Summary Statement
I have built a prototype test kit that can be used at home to test for the presence of endotoxin (Salmonella, E.coli) in Ready To Eat Salad

Help Received
Used Lab Equipment at Schmahl Science Workshop