



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

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| Name(s) Haya Belbese | Project Number J0501 |
| Project Title The Road to the Cure of Alzheimer's | |
| <p style="text-align: center;">Abstract</p> <p>Objectives So the objective of this project is to test the effect of BA 42 and lead on neuronal cells and the astrocytes cells. Astrocytes are the most abundant glial cells and are vital for the proper function of the central nervous system (CNS). This project will also use 4 natural remedies and Vitamin E to test their effects on defending the neuronal cells and the astrocytes cells.</p> <p>Methods Protective action of several natural compounds (turmeric, vitamin E, walnut, ginger, olive leaf) were studied in the culture neuroblastoma Shsy5y cells after the addition of glia astrocytes cells, lead and beta-amyloid 42 added at different concentrations to the culture medium. Cells were incubated with beta-amyloid 42, lead and natural products for 24 hours, and cell viability and cell death were evaluated by MTS assay.</p> <p>Results As the results have shown, the higher concentration of the beta-amyloid lowered the cell viability of the Astrocytes and Shsy5y cells. The highest number of viable cells were the ones treated with walnut. Following the walnut, the olive tree leaf was able to protect the cells as well, but not as much as the walnut. Surprisingly, the higher concentration of beta-amyloid, the higher cell viability for the cells treated with turmeric. The vitamin E, and ginger had little to no effect on protecting the cells.</p> <p>Conclusions In conclusion, walnut and olive leaf were able to increase cell viability more than the glial cells (Astrocytes) alone. These 2 natural remedies can play a big factor in slowing down the Alzheimer's progress and hopefully even stop its devastating effect.</p> | |
| Summary Statement This study aims to look at natural substances and their influence on reducing the risk to developing Alzheimer s | |
| Help Received I got training on how to use certain lab equipment | |