

Dongdong Han, Biological Sciences

University: University of Missouri

Year in School: Freshman

Hometown: Columbia, Missouri

Faculty Mentor: Dr. Grace Sun and Dr. Agnes Simonyi, Biochemistry

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An assessment on resveratrol and its cellular protective properties

Dongdong Han, Agnes Simonyi, and Grace Sun

Resveratrol is a polyphenolic compound found abundantly in plants such as knotweed or grapes. Under normal circumstances, it is in plants as a phytoalexin – an antibiotic produced by plants for defense under insults. Based on previous studies, it also has properties that protect cells from damage caused by free radicals or reactive oxygen species. In order to test the effectiveness of resveratrol as a protective agent, an experiment was designed using an immortalized astrocyte cell line, DiTNC. These cells were divided into control, resveratrol and non-resveratrol groups. They were cultured in a standard six well plate, with two wells per group. Menadione (25 and 50 micromolar), a compound that generates reactive oxygen species in cells, was added to four wells, two of which contained pre-incubated resveratrol (50 micromolar). The cells were left to incubate in an incubating oven at 37 Celsius. Photos are taken at intervals of 30 minutes, 60 minutes, and 120 minutes. Menadione caused cells to project processes and then causes them to become shrunken and rounded within 30 min. When the pictures from the resveratrol group was compared to the non-resveratrol group, a significantly less amount of cells from the resveratrol group were found to be either free floating or shrunken, suggesting that these cells survived for a longer period. An MTT test will also be performed in order to quantify the data. The results show that resveratrol has a fair effect on protecting cells from reactive oxygen species and that this chemical warrants further investigations.