The relationship between oxidative stress and apoptosis in plants

Science, Biology

Topic al Affiliation The relationship between Oxidative Stress and Apoptosis in Plants Tor, Y. S., Yazan, L. S., Foo, J. B., Wibowo, A., Ismail, N., Ismail, M., Yazan, L. S., Yeap, S. K. (June 05, 2015). Induction of apoptosis in MCF-7 cells via oxidative stress generation, mitochondria-dependent and caspase-independent pathway by ethyl acetate extract of Dillenia suffruticosa and its chemical profile. Plos One, 106.)

The Articles main objective is to expound on how cell death is induced in a MC7-cells culture via different biological processes such as generating oxidative stress by using a Dillenia suffruticosa Ethyl Acetate extract. In this article, the authors unravel that from a previous intense research, they deduced that EADs boost induction of oxidative stress in MCF-7 cells that results to cell death since a pre-treatment with antioxidants such as ascorbic acid significantly reduces the extract cytotoxicity. The article is purely qualitative research that was done to establish the relationship between Oxidative stress, Reactive Oxygen Species and apoptosis in plants. The article seeks to answer biological cascades which occur when programmed cell death is induced in MCF-7 cell through oxidative stress, mitochondria dependent and caspace – independent pathways.

In this context, D. suffruticosa plant was selected and tested. It was found out that after six hour pre-treatment with α-tocopherol and ascorbic acid significantly increased the viability of MCF-7 cells treated with EADS in a time and dose-dependent manner to 110% and 99%, respectively, compared to the cells treated with 50 µg/mL of EADs alone (66%) at 24 hours (P