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### Molecular and cellular pathways contributing to brain aging: focus on isothiazolinone

#### Abstract:

A significant number of emerging pollutants resulting from point and diffuse pollution is present in the environment. These are chemicals that are not commonly monitored but have the potential to enter the environment and cause adverse ecological and human health effects. Recent evidence demonstrated that a new family of organic pollutants released directly or indirectly into the environment through wastewater was represented by isothiazolinone family. Doing a search on Pubmed, we find few results on these compounds, even less on any toxic effects that they could have and unfortunately even less on their mechanism of action. Until today some authors demonstrated that after the exposure there was the release the up-regulation of kinases (MAPK) signaling pathway, and as a consequences with cell death, and neurodegeneration. With this background in our mind we evaluated for the first time whether exposure to CMIT/MIT induced cell death and how it did so. In our study, we have shown that CMIT/MIT exposure inhibits SHSY5Y cell proliferation and induces apoptosis associated with up-regulation of MAPK pathway. Therefore, these findings suggest that CMIT/MIT from consumer products might be one of public health threatening-risk factor in various diseases.

#### Biography

**Marika Cordaro** graduated in biology at the University of Messina in 2015. She has completed his PhD in “Applied Biology and Experimental Medicine” at University of Messina, Italy in the year 2017. She is a researcher in physiology, with particular interest in cell physiology and molecular mechanism underling inflammation. In particular, Dr Cordaro, during her research activity, produced about 120 articles that attest a diffuse interest in the field of inflammation and oxidative stress neurological disorder-related. Her research is involved in preclinical studies for the discovery of physiological cellular response that could be used as new potential therapeutic targets. Cordaro have knowledge about animals research, behavioral alterations, biochemical and molecular biology and immunohistochemical analysis.