Journal of
Insights in Nutrition and Metabolism

Abstract

Estimation of phenol & flavonoid and evaluation of antioxidant potential of methanolic fruit extract of Solanum nigrum L.

Heena Shabnam. H
University of Madras, India

Abstract:
Cells are regarded as the basic structural and functional unit of every organism. In contrast, it is believed that life has originated from basic chemicals by free radicals, largely initiated by ionising radiation from sun. Paradoxically, the same reactions creating life are also responsible for many diseases, aging and death, simply called oxidative stress mediated diseases which is the focus of this study. In this regard, a free radical is known as a molecule or molecular fragment that contains one or more unpaired electrons in its outer orbital. Oxiadative reactions ensure that the molecular oxygen is completely reduced to water. The products of the partial reduction of oxygen are highly reactive called Reactive Oxygen Species (ROS). The characteristics of ROS include extreme reactivity which on generation of ROS by chain reaction causes damage to various tissues resulting in various metabolic disorders linked to cancer and neurodegenerative diseases such as Memory loss, Alzhemiers disease, Chronic Inflammatory diseases, Cardiovascular diseases, Mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episodes (MELAS) etc.. As most of the study focus on the whole plant, leaves and ripe berries of Solanum nigrum L., there are only few reports about the bioactive ingredients of unripe berries (Eltayeb et al, 1997, Jagadeeshan et al, 2017). The study reveals that phytochemicals present in the methanolic fruit extract of Solanum nigrum L. unripe berries plays an important role in scavenging free radicals. The assays such as DPPH assay, Metal chelating assay, Hydroxyl assay, Gallic acid assay for phenol estimation and Quercetin assay for flavonoid estimation, showing potential antioxidant activity in a concentration dependent manner. Hence, the unripe fruit of the Solanum nigrum L. could be used as the antioxidant supplement for treating oxidative stress mediated cell damage.

Biography:

Heena Shabnam. H, a diligent learner and an ambitious student is currently pursuing her master's degree in Biotechnology from University of Madras, India. She completed her undergraduation in the same field from Kongunadu Arts and Science College, Coimbatore affiliated to Bharathiar University, India. She has attended many workshops and conferences relating to her field of interest. She was placed as a Summer Research Fellow by Indian Academies of Sciences in 2019 in the Department of Medical Genetics and Evolutionary Genetics at CSIR-Centre for Cellular and Molecular Biology, Hyderabad and gained experience in many molecular techniques. She was also selected as a summer trainee as part of CSIR-NEIST summer online research training program 2020 and did a case study on the "Use of Nanotechnology and DNA Fingerprinting Techniques for Tracking Criminals (Murderers & Rapists)". She completed her undergraduation project in the area of Plant Biotechnology entitled "Estimation of Phenol and Flavanoid and Evaluation of Antioxidant Potential of Methanolic extract of Solanum nigrum". She was a member of KASC-I Hub Start up Unit under Kongunadu Arts and Science College, Coimbatore affiliated to Bharathiar University, India, where she gained one year of work experience in "Biofertilizer and Biopesticide Production Unit".

Webinar on Food safety | December 13, 2020 | Dubai, UAE.

Citation: Heena Shabnam. H. ; Estimation of phenol & flavonoid and evaluation of antioxidant potential of methanolic fruit extract of solanum nigrum L.; Food Safety 2020; December 13, 2020; Dubai, UAE.