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In Vitro Antioxidant and Apoptotic Activity of *Lablab purpureus* (L.) Sweet Isolate and Hydrolysates

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Abstract

Cancer is a disease that invades the lives of millions of people each year. Radiotherapy and chemotherapy are current treatment protocols however they have adverse effects to the human body. Peptides from legume protein are known for having positive biological activity. Peptides that possess radical scavenging activity and bioactive properties can be advantageous in prevention and treatment of chronic diseases. In this study, *Lablab purpureus* isolate and its hydrolysates (trypsin, pepsin and alcalase) were analysed for radical scavenging potential (DPPH, ABTS, superoxide radical scavenging and FRAP) and anticancer activity. Anticancer activity was confirmed with the peptides ability to induce apoptosis (caspase 3/7 activity and Annexin V). Cells lines, A549, MCF-7 and HEK293, treated with pepsin hydrolysate showed (IC₅₀ values of 119.6, 9.80 and 13.86 µg/ml) activity. Annexin V-PI staining showed cells in different stages of apoptosis (cells during early apoptosis; A549, 42%; MCF-7, 17%; HEK, 34%). Caspase 3/7 assay demonstrated that the peptide causes an increase in caspase activity. Peptides have the potential to act as chemo-preventative agents.

Biography: Shivon Sipahli

Shivon Sipahli is a Food Science and Technology Doctoral student at the Durban University of Technology.