commonly name as sour banana, sugar banana and 'anamalu' grown in Sri Lanka demonstrated that the ethanol extract of sour banana, *Musa balbisiana* ABB (Family: Musaceae) had the highest AChE inhibitory activity. Therefore, this study was focused on the bio-assay guided screening of potent antioxidants and AChE inhibitors from the ethanol extract of the fruit pulp of *Musa balbisiana* ABB with the intension to eventually isolate potential antioxidants and AChE inhibitors. Nearly three month old chopped fruit pulp of *Musa balbisiana* ABB were subjected to Soxhlet extraction using methanol as a solvent. Excess solvent was distilled off and the resulted ethanol extract was subjected to flash column chromatography using silica as the stationary phase with wet loading and a 1:1 mixture of ethyl acetate and methanol as the mobile phase. After carrying out thin layer chromatographic analysis for each eluate, fractions with similar retention factor was combined to obtain seven samples. The antioxidant activities and AChE inhibitory activities of seven major fractions and the crude ethanol extract were evaluated using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay and Ellman's colorimetric assay, respectively. Ascorbic acid and donepezil were used as the standard compounds in DPPH assay and Ellman's assay, respectively. Among the seven combined fractions analysed, the fourth fraction exhibits the lowest IC_{50} value of 176.90 ± 0.66 mg L^{-1} representing the highest antioxidant activity for DPPH assay and the fifth fraction demonstrates the lowest IC_{50} value of 26.53 ± 0.59 mg L^{-1} signifying the highest AChE inhibitory activity for Ellman's assay. The highest IC_{50} values that demonstrates the lowest activities belongs to the first fraction and the fourth fraction for DPPH assay and Ellman's assay, respectively. In conclusion, the ethanol extract of *Musa balbisiana* ABB constitutes of potential AChE inhibitors as well as antioxidants. Therefore, *Musa balbisiana* ABB can be used as an edible source of promising antioxidants and AChE inhibitors. Bio-assay guided isolation of potential natural AChE inhibitors and antioxidants is currently underway with an intension of developing a nutraceutical/pharmaceutical agent targeting the management of AD.

Keywords: Bio-assay guided screening, Antioxidant activity, Acetylcholinesterase inhibitory activity, *Musa balbisiana* ABB

Abstract No: TO 4

Effect of Cooking on Antioxidant Properties of Selected Traditional Rice Varieties

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Rice (*Oryza sativa* L.) is the staple food for Sri Lankans. Currently over 300 different Sri Lankan traditional rice varieties are grown under all agro-climatic conditions in Yala and Maha seasons. Recent researches conducted have shown that traditional rice varieties contain naturally occurring antioxidant compounds. Present study evaluates the antioxidant properties of selected raw and cooked traditional rice varieties namely Suduheenati, Masuran, Rathdel and Kahawanu and the effect of cooking on the antioxidant properties of rice. Total phenolic content (TPC) was determined by the Folin-Ciocalteu method using gallic acid as the standard. The antioxidant potential was evaluated using 1,1-diphenyl-2-picryl-hydrazyl (DPPH) radical scavenging and ferric reducing antioxidant power (FRAP) assays using ascorbic acid as the standard. Mean TPC, DPPH and FRAP of raw rice flour were in the range of 3.9-6.8 mg Gallic Acid Equivalents (GAE) /g, 4.7-6.9 mg Ascorbic acid Equivalents (AE) /100g and 11.3-13.3 mg AE /100g respectively. Mean TPC, DPPH and FRAP of cooked rice flour were in the range of 3.3-6.3 mg GAE /g, 4.5-6.7 mg AE /100g and 10.9-12.9 mg AE /100g respectively. Mean TPC, DPPH and FRAP of freshly cooked rice were in the range of 1.1- 2.0

mg GAE /g, 1.4-2.2 mg AE /100g and 3.5-4.2 mg AE /100g respectively. The mean TPC and DPPH radical scavenging activities for both raw and cooked rice flour were in the order of *Suduheenati* > *Masuran* > *Rathdel* > *Kahawanu*. The order of FRAP for both raw and cooked rice flour were in the order of *Suduheenati* > *Masuran* > *Kahawanu* > *Rathdel*. Among raw and cooked rice flour, red rice (*Suduheenati, Masuran*) had significantly (P≤0.05) high antioxidant properties compared to white rice (*Rathdel, Kahawanu*). Cooking has reduced the TPC of red rice flour significantly (P≤ 0.05) whereas the reduction was not significant (P≥ 0.05) in white rice flour, DPPH scavenging activity and antioxidant power of FRAP have also reduced but not significantly (P≥ 0.05) for rice flour of the selected varieties. A positive significant correlation (P≤ 0.01) was observed between mean TPC contents and DPPH radical scavenging activity (r =0.919) and FRAP (r =0.910) for cooked rice flour with four samples, indicating that phenolic compounds present in rice provide the antioxidant activity by both the radical scavenging mechanism and reduction of oxidized intermediates in the chain reaction. The selected rice varieties exhibited high FRAP activity compared to DPPH radical scavenging activity indicating that reduction of oxidized intermediates in the chain reaction occurs more predominantly.

Keywords: Antioxidant properties, Traditional rice, Red and white rice, Raw and cooked rice

Abstract No: TO 5

Antioxidant Properties of Selected *Hela Suwaya* Herbal Porridge

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Herbal porridges that contain high amounts of plant materials are rich sources of antioxidants. These are made by incorporating rice, different leaf extracts and coconut milk. Commercial availability of easy to prepare porridges is currently a trend due to the lifestyle changes of people. No research has been done previously to study the antioxidant potential of commercially available herbal porridges. Thus in the present study the antioxidant potentials and total phenolic content of commercially available four *Hela Suwaya* herbal porridges were determined. Preparation of four (white, green, blue and yellow) porridges was done according to the written instructions provided with the specific pack, by using rice/flour mixture and the pre-prepared packet of spices supplied within the pack separately. It requires few ingredients including coconut milk to be added fresh as instructed. Folin-Ciocalteu method was used to determine the total phenolic content (TPC), whilst 2, 2-diphenyl-1-picrylhydrazyl (DPPH) and potassium ferric reducing antioxidant power (PFRAP) assays were performed to measure the antioxidant activities of porridges. Gallic acid (GA) and ascorbic acid (AA) was used as the standards. All the selected herbal porridges exhibited high antioxidant capacity as well as high amount of total phenolic compounds. The total phenolic contents of porridges were found to vary from 50.7 – 113.2 mg Gallic Acid Equivalents (GAE)/100 mL. Antioxidant potentials of porridges ranged from 5.7 – 9.5 mg Ascorbic acid Equivalents (AAE)/100 mL and 6.7 – 20.2 mg AAE/100 mL in DPPH assay and FRAP assay respectively. The Green porridge that was made incorporating rice, spices and mainly gotukola had the highest TPC and antioxidant potential. Types of rice and spices used are almost similar in all other porridges as well. The white porridge that was made using the least amount of herbs showed the least TPC and antioxidant potential. Results obtained indicated that the antioxidant potential varied significantly (P≤0.05) from porridge to porridge. There was a positive significant (P≤0.01) correlation between antioxidant activities and total phenolic content for the DPPH assay (r = 0.95) and for the FRAP assay (r = 0.87) even with four samples analyzed. These findings show that commercially available *Hela Suwaya* herbal porridges are a good source