Characterization of Constituents in Abelmoschus Esculentus L. (Lady's Finger) Responsible for Its Starch Hydrolase Inhibitory Activity

By **Ms. Manuela Demleitner**
FST Visiting Student, 1st State Exam Food Chemistry
Technische Universität München

All are welcome !

Abstract

Abelmoschus Esculentus L. fruit skin, seeds and mature seeds were extracted and fractionated with focus on their starch digestion inhibitory activity. They were extracted separately using an ethanol acetone water-acetic acid mixture (200/200/95/5 by volume). The extracts were dried, reconstituted in water and fractionated using liquid liquid extraction with a sequence of solvents (n hexane, chloroform, ethyl acetate, n butanol). The activity of each solvent extract was measured and the active solvent fractions were further separated using Sephadex LH 20 with a gradient (20% change per step) elution from 100% water to 100% methanol. The activity of all fractions was tested using the starch turbidity assay on α amylase and α glucosidase. It was revealed that only extracts from unripe seeds could inhibit α amylase and α glucosidase. Active components were concentrated by LH 20 separation in 100 % H2O, 80% and 100% methanol fractions. LC MS analysis showed that the two methanolic fractions with IC50 of 0.012 mg/mL and 0.045 mg/mL (AE 2.81 and 0.74) for α amylase and 0.020 mg/mL and 0.065 mg/mL (AE 0.74 and 0.23) for α glucosidase. They consisted of primarily proanthocyanidins with (epi)gallocatechin extension units including monomers, oligomers and polymers. The water fraction contained several unknown and seemingly highly polar compounds that show very high inhibitory activity with IC50 of 0.035 mg/mL and an AE of 0.43 for α glucosidase and 0.0067 mg/mL and an AE of 4.97 for α-amylase. The structures of these compounds remains to be characterized.

Host: Dr. Leong Lai Peng **Date:** 11th April 2014, Friday
Time: 12 to 1 pm **Venue:** Seminar Room S14-06-19

A Highly Selective and Sensitive Near Infrared Fluorescent Probe for Detection of Cellular Hydrogen Sulfide and Imaging of H2S in Mice

By **Dr. Wu Haixia**
Research Fellow ; Ph.D. degree in Inorganic Chemistry from the Shandong University

Abstract

We report herein a synthesis of a near infrared (NIR) fluorescent probe for selective detection and imaging of H2S. The probe takes advantage of CuII-cyclen complex as a reaction center for H2S and quencher of BODIPY (boron-dipyrromethene) derivative as fluorophore, which excites at 680 nm and emits at 765 nm. The nonfluorescent highly selective probe is could only be turned on by H2S but not by other potential interfering biomolecules including reactive oxygen species, cysteine and glutathione. In a chemical system, it can detect H2S with limit of detection of 80 nM and limit of quantitation of 270 nM. The probe was successfully delivered to RAW264.7 and HEK293 cells using cationic liposome made of DOTAP as a surfactant for detection of endogenously formed H2S and in vivo imaging of H2S in a mice model.