

of  $\gamma$ -OR to cholesterol did not inhibit the efficiency of cholesterol micellarization during simulated digestion. High concentration of  $\gamma$ -OR (500 and 1500  $\mu$ M) did not significantly decrease the efficiency of micellarization of cholesterol (0, 50, 100, 200 and 400  $\mu$ M) in synthesis micelles. Nevertheless,  $\gamma$ -OR at 20-fold molar ratio to cholesterol significantly decreased cholesterol uptake by Caco-2 cell. In addition,  $\gamma$ -OR showed the inhibitory effect on the HMG-CoA reductase activity as Simvastatin. These findings suggest that the hypocholesterolemic activity of  $\gamma$ -OR is supposed to be due to the inhibition of cholesterol biosynthesis, instead of the inhibition of cholesterol micellarization.

#### P95-02

##### THE STUDY OF ANTIOXIDANT FUNCTION FROM LOQUAT LEAF TEA

Takayuki Nakano<sup>1</sup>, De-Xing Hou<sup>2</sup>, Humio Hashimoto<sup>3</sup>, Yusuke Sakata<sup>3</sup>, Hiroyoshi Tamaki<sup>4</sup> and Makoto Fujii<sup>2</sup>

<sup>1</sup>Department of Health and Nutrition, Kagoshima Immaculate Heart University; <sup>2</sup>Department of Biochemical Science and Technology, Kagoshima University; <sup>3</sup>Department of Horticultural science, Kagoshima University; <sup>4</sup>Totsukawa Farm

Loquat leaf tea made of the Totsukawa farm was extracted with a hot water and the extract was freeze-dried. The dry matter was divided into four fractions. Compared with the extract, the radical scavenging capacity of the extracted fraction in water, 30%, 70% methanol and 50% acetone was 9.5%, 116%, 163% and 29% respectively at 10 $\mu$ g/ml. 70% methanol extract exerted marked inhibition of growth of HL60 with induction of apoptotic cell bodies and nucleosomal DNA fragmentation.

Supplementation with the extract resulted in reducing the plasma total cholesterol and triglyceride. Male KK-Ay mice were fed on diets with or without the extract and were monitored a weekly blood glucose levels. At the end of the experiment period, the OGTT was carried out, and a reduction in blood glucose concentration from 30 to 90 minutes after the administration of glucose and the lowering the area under the curve during the 120 minutes were observed. Moreover, a significant reduction in the rate of the plasma Hb-A1c was observed. In chronic administration of the extract, the systolic blood pressure of SHR was significantly decreased against the control.

These results indicate that the loquat leaf tea may be useful in prevention and improvement of diseases such as hyperlipidemia, hyperglycemia and hypertension.

#### P95-03

##### IN VIVO METABOLISM OF NOBILETIN AND TANGERETIN IN RATS

Ohta, Chiho

Nakamura Gakuen University, Fukuoka, JPN

Nobiletin (NBL) and tangeretin (TNG) are famous polymethoxy-flavonoids which are found abundantly in the peel of citrus fruits such as Citrus depressa Hayata and possesses anti-carcinogenic and anti-inflammatory activity. Our previous study showed that NBL was demethylated to form 3 monohydroxy (OH)- and 2 dihydroxy (diOH)-metabolites by animal liver microsomes and TNG was metabolized to 3 OH- and a diOH-metabolites. Here, we analyzed the metabolites in the urine and feces of male rats treated orally with NBL and TNG each at a dose of 250 mg/kg. Rat urine and feces were collected during 2 days after treatment. The metabolites extracted with ethyl acetate were analyzed by HPLC. In the urine of rats treated with NBL or TNG, 4'-OH-NBL and 4'-OH-TNG were major metabolites and comprised about 70% and 80% of total metabolites, respectively. In rat feces, about 20% of unchanged TNG given was detected, whereas less than 0.1% of unchanged NBL given was found. Major fecal metabolites were 4'-OH- and 3',4'-diOH-NBL in

NBL metabolism and 4'-OH-TNG in TNG metabolism. These results suggest that NBL is absorbed more effectively than TNG in rats, and also that in common to NBL and TNG, 4'-OH-metabolites are major in rat urine and feces.

#### P95-04

##### DIFFERENCES IN COMPOSITION OF NUTRIENTS IN UNRIPE AND RIPE CARICA PAPAYA

Rahman, Mohammad T.; Ishak, Ishahir; Suhaimi, Shazlan N. International Islamic University Malaysia, Kuantan, Pahang, MYS

Papaya (*Carica papaya*) is one of the popular fruits in the tropical and subtropical countries in the world. Several countries such as Brazil, Nigeria, Congo, Indonesia, Malaysia and India are among the major producers of papaya. The nutritional importance of papaya is due to its balanced sugar, protein and total fat content. Other biologically active compounds include flavanoids, alkaloids that contribute to the flavor, color. Identification of biochemical composition of papaya may vary depending on the method of extraction and solvents used. We have analyzed here the difference in protein, carbohydrate, fat, alkaloid and flavanoid contents of ripe and unripe C. papaya pulp using acetone and phosphate buffered saline as extraction solvents. Protein content, analyzed both by the Bradford method and SDS-PAGE, was found to be higher in ripe papaya pulp than that in unripe ones. Carbohydrate, flavanoid, steroid and lipid contents as well were generally higher in ripe papaya than in unripe ones. Different methods such as acid sulfuric method for the detection of carbohydrate and thin layer chromatography for the detection of other components were performed for the analyses.

#### P95-05

##### YELLOW PULP OF *Parkia biglobosa* AS A SOURCE OF MINERALS, MICRONUTRIENTS, PHENOLIC AND ANTIOXIDANT COMPOUNDS

RAKETA, COMPAORE W.<sup>1</sup>; Philippe, Nikiema A.<sup>1</sup>; Alain, Atebo E.<sup>2</sup>; Joseph, Hounhouigan D.<sup>3</sup>; Philippe, THONART<sup>4</sup>; Alfred, TRAORE S.<sup>1</sup>

<sup>1</sup>University of Ouagadougou/UFR-SVT/CRSBAN, Ouagadougou/kadiogo, BFA; <sup>2</sup>UNICEF, Uganda, Kampala/Uganda, UGA; <sup>3</sup>University of Abomey-Calavi, Faculty of Agronomics Sciences, Cotonou/benin, BEN; <sup>4</sup>University of Liege, Centre Wallon de Biologie Industrielle, Liege/Belgium, BEL

**RATIONALE AND OBJECTIVES:** Yellow pulp of *Parkia biglobosa* is frequently used in Burkina Faso. The health-related properties of this pulp claimed by folklore use could be partially attributed to the presence of bioactive compounds. However, variability in nutrient and bioactive compounds has not been reported.

The objective of this study was to give published information about use, role, nutritional, microbiological and functional properties of this pulp.

**MATERIALS AND METHODS:** A study conducted during 18 months along 4 areas has permit to understand traditional, culinary and therapeutic uses of this pulp. So, 20 samples for each area have been taken for analysis.

**RESULTS:** Carbohydrates content is about 53.05%  $\pm$  0.94. Sodium, potassium and Calcium contents in ppm were respectively 311.16  $\pm$  59; 16604  $\pm$  69, and 177  $\pm$  0.07. Significant difference was not found between samples of 4 areas when using Duncan test.

The main phenolic compound revealed by HPLC were total phenols (0.041%  $\pm$  0.02), flavonoids (0.13%  $\pm$  0.02) and proanthocyanosides (1.40%  $\pm$  0.05) while antioxidant capacity was positive with  $\beta$  carotene test and DPPH. Vitamin A and C are the natural antioxidant present into pulp.

The results leading us to suspect that this pulp could be an