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### Abstracts

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**PO115****THE ASSOCIATION BETWEEN SIRT1 GENE AND KOREAN CHILDREN OBESITY: SEOUL-KURO COHORT STUDY***S.L. Choi<sup>1</sup>, S.M. Kim<sup>2</sup>, M. Lee<sup>1,3</sup>*<sup>1</sup>Department of Food and Nutrition, Sungshin Womens University, Seoul, Republic of Korea,<sup>2</sup>Department of Family Medicine, School of Medicine, Korea University Guro Hospital, Seoul, Republic of Korea<sup>3</sup>Research Institute of Obesity Sciences, Sungshin Womens University, Seoul, Republic of Korea

**Background and objectives:** Sirtuin 1 (SIRT1) is the longevity gene protected cells against oxidative and genotoxic stress. The association of SIRT1 polymorphism with Korean childhood obesity is not reported. The purposes of this study are confirming whether SIRT1(rs7895833) would be related to the children obesity and reducing the prevalence of adult obesity based on 3 years of the follow-up study.

**Methods:** The subjects were 3rd grade elementary school students 491 (boy: 246, girl: 245) at 2007 and we measured anthropometries, blood chemistry and dietary intakes. The 6th grade students on 2010, the obesity risk factors were re-examined. 219 (boy: 101, girl: 118) subjects were followed and the follow-up rate was 44.24%.

**Results:** Anthropometric parameters increased, however, biochemical and nutrient intake decreased after 3 years. Most of children, 88% of normal children and the 85% of obese children, kept their BMI for 3 years. That means it was hard to change BMI in children because of many environmental reasons. However, it was focused that 15% of normal children became obese. The relative frequencies of GG wild type, GA heterozygote and AA mutant type of SIRT1 were 57.1%, 38.8%, and 4.1%. In obese girl, the number of GA/AA variants were significantly higher than that in normal (64.0% vs 38.7%, respectively,  $P < 0.05$ ). Although the energy and cholesterol intakes were remarkably higher in the GG type than in GA/AA types, children with GG tend to decrease BMI and WC. Moreover, the more carbohydrate intakes, the less plasma TG and HOMA-IR was shown in obese girls with GG in particular.

**Conclusions:** SIRT1 polymorphism was associated with obesity in Korean children. GG wild type might protect hypertriglyceridemia and insulin resistance in obese children

**Key words:** SIRT1, children obesity, cohort study

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**PO116****EVALUATION OF POLYPHENOLS AND ANTIOXIDANT ACTIVITY OF COFFEE AND COFFEE BEVERAGES***G. Kroyer<sup>1</sup>, M. Zakaria<sup>1</sup>*<sup>1</sup>Institute of Chemical Engineering, University of Technology, Vienna, Austria

**Background and objectives:** Coffee is one of the most popular beverages. Beside caffeine as bioactive ingredient other nutritional-physiological active compounds may contribute to the valuable properties of coffee beverages. Coffee has been identified as a rich source of polyphenols which are well-known for their antioxidant properties and health benefits. Green and roasted coffee beans from different origins (Coffea Arabica from Nicaragua, Brazil and Ethiopia and Coffea Robusta from Ecuador) as well as coffee beverages prepared by commonly used procedures as espresso and filter coffee were analyzed in regard to their content of polyphenols and their antioxidant properties.

**Methods:** Total polyphenols were determined using the Folin-Ciocalteu assay. Antioxidant activities were determined with the DPPH\* radical scavenging method as well as with the ABTS-radical assay in terms of their Trolox Equivalent Antioxidant Capacity TEAC.

**Results:** In the different coffee beans and coffee beverages the content of total polyphenols was determined in the range of 39,6 to 55,8 mg/g with the highest amounts in Robusta coffee from Ecuador followed by the Arabicas in the order Ethiopia, Nicaragua and Brazil. The same trend was observed with the corresponding coffee beverages with higher amounts in espresso (32,6 - 39,7 mg/g) than in filter coffee (26,4 - 29,2 mg/g). All the coffee beans and coffee beverages possessed high antioxidant capacity in the same order and in correlation to the content of polyphenol compounds with TEAC-values of 0,15 - 0,41 mmol TE/g.

**Conclusions:** In conclusion the highest antioxidant activity was observed in Robusta from Ecuador, green coffee beans showed higher antioxidant activity than roasted coffee beans and espresso better radical scavenging capacity than filter coffee. The results of this study indicate that coffee beverages have high antioxidant and radical scavenging properties in correlation with the content of polyphenols and are a good source of dietary antioxidants.

**Key words:** coffee, polyphenols, antioxidant activity