CURRICULUM VITAE

김유리

이화여자대학교 식품영양학과

[학력]

1992	이화여자대학교 식품영양학과, 학사
1999	The Ohio State University, Human Nutrition, 석사
2005	Tufts University, Nutritional Biochemistry and Metabolism, 박사

[경력]

현재	이화여자대학교 식품영양학과, 교수
현재	이화여자대학교 글로벌미래평생교육원장, 이화리더십개발원장, 문화예술교육원장
2017-2018	Yale University, School of Medicine, 교환교수

[관심분야]

여러 기능성 물질 (비타민 A, 감미료, phytochemicals)의 항암, 항비만, 항당뇨 효과 및 분자적 기전

[논문]

1. Y. Kim, Y. Oh, Y.S. Kim, J-H Shin, Y.S. Lee, Y. Kim (2024) β-carotene attenuates muscle wasting in cancer cachexia by regulating myogenesis and muscle atrophy Oncology Rep 51:9
2. Y Kim, H. Han, Y. Oh, H. Shin, G. Park, S. Park, J.A. Manthey, Y. Kim, Y. Kim (2024) A combination of rebaudoside A and neohesperidin dihydrochalcone suppressed weight gain by regulating visceral fat and heaptic lipid metabolism in ob/ob mce. Food Sci Biotechnol 33:913-923
3. M Kwon, Y Kim, J Lee, J.A. Manthey, Y Kim, Y Kim (2022) Neohesperidin dihydrochalcone and neohesperidin dihydrochalcone-O-glycoside attenuate subcutaneous fat and lipid accumulation by regulating PI3K/AKT/mTOR pathway in vivo and in vitro. Nutrients 14:1087
4. NY Kim, Y. Kim, YS Kim, J-H Shin, LP Rubin, Y Kim. (2020) β-carotene exerts anti-colon cancer effects by regulating M2 macrophage and activated fibroblasts. J Nutr Biochem 82:108402
5. E Kim, Y Kim, J Lee, J-H Shin, PR Seo, Y Kim (2020) Leucrose, a natural surcrose isomer, suppresses dextran sulfate sodium (DSS)-induced colitis in mice by regulating macrophage polarization via JAK1/STAT6 signaling. J Funct Foods 74:104156

Functional sweeteners and metabolic diseases: effect and mechanism

Yuri Kim

Dept of Nutritional Science and Food Management, Ewha Womans University, Republic of Korea

Metabolic disorders are diseases that disrupt normal metabolism and include obesity, dyslipidemia, type 2 diabetes mellitus (T2DM), and non-alcoholic fatty liver diseases (NAFLD). Type 2 diabetes is characterized as a metabolic disorder involving glucose and fat metabolism that are compromised by hyperglycemia and insulin resistance. Patients with type 2 diabetes also have a higher risk of atherosclerotic cardiovascular diseases due to dyslipidemia. The liver is largely responsible for metabolizing lipids, and dysregulation of lipid metabolism can lead to lipid accumulation and the development of metabolic disorders, such as obesity, diabetes, and hyperlipidemia. In addition, obesity is a major risk factor for these diseases. Evidence shows the association between overconsumption of added sugars with the development of insulin resistance caused by dysregulation of insulin action, dyslipidemia, and fat accumulation in adipocytes and the liver. Sugar reduction strategies often rely on the use of alternative sugars that are designed to substitute sugar and mimic its sensory profile, but also exert beneficial effects on obesity-related metabolic disorders. Consequently, numerous studies have been conducted to develop new types of sugars and sugar substitutes that have nutritional and beneficial effects that can help manage metabolic diseases. Xylobiose (XB) is a dimer of D-xylose and is a major component of xylooligosaccharides (XOS). The beneficial effects reported for XOS have included an ability to revitalize the growth of intestinal bifidobacteria, to activate the immune system, and to suppress colon cancer. Phylloduclin is one of isocoumarin derivatives and a well-known natural sweetener. It is known to be 400-800 times sweeter than sucrose. The beneficial effects reported for phyllodulcin have included an ability for anti-fungal, anti-ulcer, and anti-diabetic effects. Neohesperidin dihydrochalcone (NHDC) is one of intense sweeteners. It is extracted and processed from hesperidin, its parent flavanone. The relative sweetness of NHDC is 250-2000 times higher than sucrose solution. We reported anti-diabetic and anti-obesity effects of these sweeteners by regulating hepatic and adipocytic metabolism. Results from these studies suggested that various sweeteners could be potential functional sweeteners for preventing diabetic and obesity-related metabolic disorders.