Short Communication Journal of Nutrition Science Research 2021
Vol.6 No.1

Anacardic acid, a phenolic compound found in the shell of the cashew nut inhibits adipocyte differentiation via modulation of histone H3K9 acetylation- Jin-Taek Hwang- Korea Food Research Institute

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In the present study, we evaluated the anti-obesity effect of Anacardic acid, a phenolic lipid found in cashew nut (Anacardium occidentale) and elucidated the underlying mechanisms focused on the epigenetic enzymes. We sought to investigate the effect of Anacardic acid on 3T3-L1 adipocyte differentiation. Oil-red O staining revealed that Anacardic acid reduced MDI-stimulated lipid accumulation in 3T3-L1 cells, in the absence of observable cytotoxicity. Western blot analysis showed that fatty acid synthase (FAS) and peroxisome proliferator activated receptor gamma (PPARγ) expressions were significantly increased by 7 days in MDIstimulated 3T3-L1 cells, whereas treatment of Anacardic acid markedly decreased the MDI-stimulated FAS and PPARγ expressions. In addition, total lysine acetylations were significantly enhanced in MDI-stimulated 3T3-L1 cells and were decreased by Anacardic acid. Interestingly, histone H3K9 acetylation, an epigenetic modification marker was significantly increased by 7 days in MDIstimulated 3T3-L1 cells, whereas treatment of Anacardic acid markedly decreased the MDI-stimulated Histone H3K9 acetylation. Taken together, these results suggest that Anacardic acid inhibits the MDI-stimulated adipocyte differentiation in 3T3-L1 and may involve the targeting of histone H3K9 acetylation. Conclusion & Significance: The data suggest that the present rose hip food supplement alleviate pain and stiffness caused by exercise in animals and humans. The present remedy might reduce NSAID abuse in sportsmen and in ordinary people who want to improve their physical performance. Half of them have never even received nutritional advice. Interestingly, patients concentrate on eliminating such foods instead of increasing the consumption of nutritional ingredients while attempting to improve their dietary habits. High-fiber foods, coffee and beans, while banana, rice and yogurt are more likely to be linked to an improvement in symptoms. In addition, a population-based Canadian IBD cohort may demonstrate that patients with IBD can appear to substitute sugar-laden beverages for diets rich in nutrients. This apprehension does not benefit IBD patients, but rather leads to the restriction of certain foods in IBD patients with a corresponding major effect on social life, and to the possible risk of nutritional deficiencies, including iron, vitamin B12, calcium and vitamin D. This pattern of prevention of particular foods is even more pronounced in patients with Crohn's disease stricture, the induction of an inflammatory response within the gut is the liability of several prospective candidates. Microparticles and food chemicals such as emulsifiers or thickeners may also lead to intestinal and likely subsequent systemic inflammation, in addition to proteins, lipids and carbohydrates. Phenolic lipids, organic compounds found in the cashew nutshell, are anacardic acids They also cause an allergic skin rash on contact, known as urushiol-induced contact dermatitis, in the acid form of urushiol. Anacardic acid is a liquid that is yellow. In ethanol and ether, it is partly miscible, but almost immiscible with vapor. Chemically, anacardic acid is a mixture of many organic compounds which are closely related. Every consists of a salicylic acid that has 15 or 17 carbon atoms replaced with an alkyl chain. The alkyl group can be saturated or unsaturated; the combination of saturated and unsaturated molecules is anacardic acid.