

Impact of berry polyphenolics on lowering obesity-induced inflammation: Evidence in molecular and animal models

Ock K. Chun

University of Connecticut, USA

Considerable attention has been directed to the health benefits of berries in preventing chronic diseases. The benefits are mainly attributed to the antioxidant and anti-inflammatory properties of anthocyanins in berries. Since individual anthocyanins have different antioxidant properties, it is probable that berries having different anthocyanin compositions exert different biological and physiological effects. This study aimed to compare the anti-inflammatory effects of three types of berries differing in major anthocyanins (malvidin in blueberry, cyanidin in blackberry, and delphinidin in blackcurrant, respectively). Anthocyanin fractions of blueberry, blackberry and blackcurrant were obtained by solid phase extraction from 80 % methanol crude extracts. RAW 264.7 macrophages were treated with 5, 10, and 25 ug/mL berry extracts for 12 h. Then, cells were treated with LPS for 12 h and mRNA abundance of TNF-alpha and IL-1beta was determined by real-time PCR. Blackberry extract suppressed the gene expression by 15-20% at 25 ug/mL. The other berry extracts also suppressed TNF-alpha and IL-1-beta to a lesser extent. The findings suggest that anti-inflammatory effects of berries vary depending on their anthocyanin compositions and that blackberry extract may possess a more potent anti-inflammatory property than the blueberry and blackcurrant extracts.

Biography

Ock K. Chun received her Ph.D from Seoul National University and completed postdoctoral studies from Cornell University and Michigan State University. She is an assistant professor in the Department of Nutritional Sciences of the University of Connecticut. She has published more than 60 papers in reputed journals and serving as an editorial board member of peer-reviewed journals.

ock.chun@uconn.edu