

Maqui, Calafate, and Blueberry fruits extracts treatments suppress the pathogenic interaction amongst human adipocytes and macrophages

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Abstract

BACKGROUND: Obesity occurs due to a positive energy imbalance, leading to the expansion of adipose tissue. This phenomenon triggers a chronic low-grade inflammatory state, which is associated with comorbidities development. It is, therefore, of great interest to investigate new counteracting nutritional strategies. In this regard, polyphenol-rich Chilean native fruits, *Aristotelia chilensis* (Maqui) and *Berberis microphylla* (Calafate), and also the non-Chilean *Vaccinium corymbosum* (Blueberry), have been associated with antioxidant and anti-inflammatory features.

OBJECTIVE: To evaluate Maqui, Calafate, and Blueberry aqueous extracts treatments on the pathogenic response of human activated macrophages and visceral adipocytes.

METHODS: THP-1 monocyte human cell line and differentiated human visceral preadipocytes were activated (with lipopolysaccharide and TNF- α , for 48 and 24 h, respectively), and treated with the aqueous extracts. Inflammation and oxidative stress markers were assessed.

RESULTS: Lower NO and IL-6 secretion, and inhibited apoptosis in activated macrophages, were observed. Also, decreased gene expression of MCP-1 and secretion of IL-6, inhibited apoptosis, and increased levels of GSH in activated adipocytes were detected.

CONCLUSIONS: Maqui, Calafate, and Blueberry extracts showed anti-inflammatory and antioxidant responses in human macrophages and adipocytes.

Palabras clave

Palabras clave de autor: [Aristotelia chilensis](#); [berberis microphylla](#); [vaccinium corymbosum](#); [adipocytes](#); [macrophages](#); [polyphenols](#); [inflammation](#)

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