Yerba mate (Ilex paraguariensis) inhibits lymphocyte activation in vitro.
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Abstract
Yerba mate (YM) has been shown to have anti-inflammatory properties in several studies. However, this effect has been found mainly in obesity-related inflammation. The aim of this work was to study the effect of YM on cultured peripheral blood mononuclear cells to see whether it has anti-inflammatory properties. We stimulated peripheral blood mononuclear cells in vitro with phytohemagglutinin (PHA) in the presence of yerba mate and determined their activation by measuring the expression of CD25 by flow cytometry. We observed that YM treatment produced a dose-dependent reduction in PBMC activation (CD25 positive cells) when they were stimulated with PHA. This effect was also observed in T cells' (CD3 positive) subpopulation. Microarray analysis revealed the differential expression of 128 genes in YM-treated cells. According to a protein-protein interaction database, these genes were highly connected and they are involved in the inflammatory response. In summary, it was demonstrated that YM produces a reduction in the amount of activated cells under the stimulation of PHA. Therefore, it might be used in diseases with an inflammatory component.

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