Carica papaya increases regulatory T cells and reduces IFN-ã+ CD4+ T cells in healthy human subjects.

ABSTRACT

Fruit and vegetables have therapeutic potential as they dampen inflammation, have no known side-effects and as whole foods have prospective additive and synergistic benefits. Th1 (IFN-γ(+) CD4(+))/Th2 (IL-4(+)CD4(+)) T cells play a vital role in mediating inflammatory responses and may be regulated by regulatory T cells (Tregs). Effects of Carica papaya on cells of healthy individuals were determined using flow cytometry methods. Significant down-regulation of IFN-γ(+) CD4(+) (p=0.03, n=13), up-regulation of IL-4(+) CD4(+) (p=0.04, n=13) T cells and up-regulation of CD3(+) CD4(+) CD25(+) CD127(-) (p=0.001, n=15) Tregs were observed after papaya consumption. In vitro cultures showed up-regulation of Tregs in male subjects and was significantly associated with levels of IL-1β in culture supernatants (R(2) =0.608, p=0.04, n=12). Other inflammatory cytokines were significantly suppressed. Papaya consumption may exert an anti-inflammatory response mediated through Tregs and have potential in alleviating inflammatory conditions.

Keyword: Carica papaya; Healthy human subjects.