

Abstract:

Polyphenol content and antimutagenicity in the leaves of 12 cultivars of sweetpotato (*Ipomoea batatas*) was compared with 12 kinds of commercial vegetables to evaluate the use of sweetpotato leaf as a functional food. There was a remarkable cultivar difference in the polyphenol content of the sweetpotato leaf and the sweetpotato leaf had much higher polyphenol content than other commercial vegetables. The ethanol extract from the sweetpotato leaf effectively inhibited the reverse mutation induced not only by Trp-P-1, Trp-P-2, IQ, and B[a]P, but also by dimethyl sulfoxide extracts of grilled beef on *Salmonella typhimurium* TA 98. These results suggest that sweetpotato leaves have a high polyphenolic content, which may influence the antimutagenicity properties of the leaves. The antimutagenicity of main caffeoylquinic acid derivatives isolated from sweetpotato leaves was 3,4,5-tri-O-caffeoylquinic acid (3,4,5-triCQA) > 3,4-di-O-caffeoylquinic acid (3,4-diCQA) = 3,5-di-O-caffeoylquinic acid (3,5-diCQA) = 4,5-di-O-caffeoylquinic acid (4,5-diCQA) > ChA in this order. The caffeoylquinic acid derivatives effectively inhibited the reverse mutation in proportion to the number of caffeoyl groups bound to quinic acid.