

## Analgesic activity and genotoxicity of *Morinda citrifolia*

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### Abstract

*Morinda citrifolia* (noni) has been used for thousands of years as a source of traditional medicine and has been recently commercially processed and internationally distributed. *M. citrifolia* has been subjected to considerable pharmacological effects claimed in the folk medicine and toxic effects. The purpose of this study was to evaluate the analgesic activity and genotoxicity of the alcoholic extract from the fruits of *M. citrifolia* using acetic acid-induced writhing response test in mice and *Bacillus subtilis* rec-assay, respectively. In writhing response test, the extract at various doses between 84-336 mg/kg produced a significant dose-dependent inhibition ( $p < 0.001$ ,  $n = 6$ ) of pain caused by acetic acid injection. The inhibitory effect of the 336 mg/kg dose of extract was similar to that produced by morphine in a dose of 1.5 mg/kg. In *B. subtilis* rec-assay, the alcoholic extract of *M. citrifolia* did not show any positive reaction while all 8 commercial *M. citrifolia* juice samples obtained from various places showed positive results with a clear relationship of dose-genotoxic response, compared to positive control (mitomycin C) and negative control (DW). The results obtained suggest the alcoholic extract of *M. citrifolia* exhibits marked analgesic activity and doesn't possess mutagenic activity while possible mutagens might be formed during processing. Further studies are necessary to evaluate its genotoxicity using another mutagenicity tests such as Ames' test and micronucleus test.

**Keywords :** *Morinda citrifolia*, analgesic activity, genotoxicity, writhing response test, Rec-assay