



# Mutagenic potential of *Cordia ecalyculata* alone and in association with *Spirulina maxima* for their evaluation as candidate anti-obesity drugs

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**ABSTRACT.** Obesity is one of the most important nutritional disorders, and can be currently considered as an epidemic. Although there are few weight reduction drugs available on the market, some new drug candidates have been proposed, including *Cordia ecalyculata*, a Brazilian plant with anorectic properties, and *Spirulina maxima*, a cyanobacterium with antioxidant and anti-genotoxic activity. In this study, we evaluated the mutagenic potential of *C. ecalyculata* at doses of 150, 300, and 500 mg/kg alone and in association with *S. maxima* at doses of 75, 150, and 250 mg/kg, respectively, through an *in vivo* micronucleus test, using mice of both sexes, and an *in vitro* micronucleus test and comet assay, using human peripheral blood. For all tests, cyclophosphamide was used as a positive control. The results showed that treatment of 300 mg/kg *C. ecalyculata* and the combination treatment of 500 mg/kg *C. ecalyculata* with 250 mg/kg *S. maxima*

resulted in anorectic effects. The mutagenic tests did not reveal any clastogenic or genotoxic activity for any treatment, indicating that these candidates could be marketed as weight-reduction drugs. Moreover, the drugs contain chemo-preventive substances that can protect against tumorigenesis, which has been associated with obesity.

**Key words:** *Cordia ecalyculata*; *Spirulina maxima*; Micronucleus; Comet assay; Mutagenesis