# **Titre d’article**: n vivo Acute Toxicity, Analgesic Activity and Phytochemical Characterization of Solenostemma argel (Del) Hayne Essential Oil

**Abstract :**

Introduction: Solenostemma argel is a Saharan plant used in traditional medicine to cure pain. The present work investigated the quantitative analysis of the composition of the essential oil of S. argel leaves (EOSA) as well as its acute toxicity and anti-nociceptive activity. Materials and Methods: The chemical characterization of EOSA was carried out by GC-MS and NMR. EOSA acute oral toxicity study was performed according to the OECD-420 method. EOSA anti-nociceptive activities were evaluated by acetic acid-induced abdominal writhing test, hot plate test, and formalin test. Results: Twenty components were identified by GC-MS including Linanool (57.10%), terpineol (12.95%), trans-geraniol (12.65%), and nerol (4.67%). The main compound linalool was isolated by NMR. The EOSA at 250 and 400 mg/kg significantly attenuated acetic acid-induced writhing by 72.71 and 92.41%, respectively. Moreover, Ingestion of EOSA at doses of 250 and 400 mg/kg caused a significant and dosedependent anti-nociceptive effect in both neurogenic and inflammatory phases of formalin-induced licking. EOSA impacts the pain latency in the hot plate test. Conclusions: The results of this study showed that EOSA has an anti-nociceptive effect on central and peripheral pain