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LIPOSOMAL FORMULATIONS CONTAINING SESQUITERPENE LACTONES AS A PROMISING STRATEGY AGAINST GOUT

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Eremantholide C (EREC) and goyazensolide (GOIA), isolated from *Lychnophora trichocarpha* and *Lychnophora passerina*, respectively, have shown potential for the treatment of gout. However, they exhibited low gastrointestinal stability and toxicity. In this study, the sesquiterpene lactones EREC and GOIA were incorporated into liposomal nanocarriers as a strategy to enhance their pharmacological activities while minimizing their inherent toxicity. Liposomes were prepared using soybean phosphatidylcholine and characterized by nanometric size (~110 nm), narrow polydispersity index (<0.1), and zeta potential (~-4.5 mV). Encapsulation efficiencies reached ~70% for EREC and ~80% for GOIA. Both liposomal formulations (LIPO + EREC and LIPO + GOIA) demonstrated good stability over 12 months and under simulated gastrointestinal conditions. *In vitro* studies using Caco-2 cells revealed increased viability by the sulforhodamine B assay (IC_{50}= 0.2798 µg/mL for LIPO + EREC, and an IC_{50}= 0.9645 µg/mL for LIPO + GOIA). *In vivo* assays showed a significant reduction in neutrophil migration (~72% for LIPO + EREC, and ~85% for LIPO + GOIA) and pro-inflammatory cytokines (IL-1β, IL-6, TNF-α) production (>60% for both formulations) in a murine gout model induced by monosodium urate crystals. These results support the potential of liposomal formulations containing sesquiterpene lactones as effective candidates for the treatment of gout. The authors thank the support from their institutions and the financial support of Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG), Universidade Federal de Ouro Preto (UFOP), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Financiadora de Estudos e Projetos (FINEP).

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