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(57) Abstract :
The present invention provides a simple, rapid, and cost-effective Thin Layer Chromatography (TLC) method for the detection of natural and synthetic steroids in herbal formulations used for arthritis treatment. It focuses on formulations containing Boswellia serrata, Commiphora mukul, and Commiphora wightii, commonly known for their anti-inflammatory properties. Specific TLC solvent systems were developed and optimized for the identification of marker compounds such as boswellic acid, guggulsterone E and Z, as well as synthetic corticosteroids like dexamethasone and prednisolone. Marketed guggul-based tablets were analyzed for phytochemical, pharmacognostical, and physicochemical properties. The TLC profiles revealed the presence of both natural markers and, in some cases, synthetic steroidal adulterants. This invention offers a reliable screening tool for quality control laboratories and regulatory authorities to ensure the authenticity, safety, and efficacy of herbal anti-arthritic products.

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