Isolation and biological evaluation of opioid receptor modulators from Phagnalon rupestre growing in Egypt

Amany K Ibrahim, Eman S Habib, Safwat A Ahmed, Juan Francisco Leon and Stephen J Cutler
Suez Canal University, Egypt

Pain is the most common symptom in many medical conditions and has a significant impact on productivity and quality of life. Naturally occurring opiates and their synthetic analogues represent the most potent analgesics to date. Opioid ligands are also useful in the management of various types of addiction. The action of opioid agents is mediated by opioid receptors. Unfortunately, binding to these receptors also results in some undesirable side effects, such as respiratory depression, constipation, nausea, vomiting and sedation. Therefore, there is still a need to search for safer and more efficacious opioid agents. The aim of this study was to investigate extracts of plants growing in Egypt for potential opioid receptor affinity in order to isolate compounds possessing opioid receptor modulator activity. We investigated the binding affinity of 20 Egyptian plant extracts towards opioid receptors. Phagnalon rupestre F. Asteraceae showed promising activity (more than 50% receptors affinity) and was chosen for further investigation. The methanolic extract of this plant was fractionated using solvents of different polarities to obtain five fractions. The fractions were tested in vitro to determine their binding affinity towards opioid and cannabinoid receptors. The active fractions were subjected to various chromatographic separation procedures to obtain pure compounds. Several compounds were isolated and spectroscopically identified from the fraction (20% Ethyl acetate/Hexane). However, the activity of the isolated compounds was less than that of the plant extract.

Biography
Amany K Ibrahim completed her PhD from University of Mississippi, USA and SCU, Faculty of Pharmacy. She is the Head of the Department of Pharmacognosy, Faculty of Pharmacy, Suez Canal University. She has published more than 23 papers in reputed journals and has been serving as a Peer-Reviewer for reputed journals of her field.

am_kamal66@yahoo.com

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