Abstract

Introduction

Among the 70 species of Citrus genus that belong to Rutaceae family, the C. sinensis which is commonly known as sweet orange is the most important species of this genus Citrus. The fruit is widely used as edible fruit, as flavoring agent and used for their essence, also the peel of the citrus fruit contains flavonoids glycosides (hesperidin, neohesperidin, naringin, eriodyten, eriocitrin). Essential oils are another constituents of Citrus spp. That has wide pharmacological actions and anti-bacterial, antiseptic, and preservative activities. In addition, to its traditional use as aromatherapy and insecticide.

About 4%-6% of the global population suffers from various forms of anxiety disorders; that are thought to be caused by a disturbance of the functions of neurotransmitters, such as GABA. Pharmacological and psychological treatments have remained the conventional interventions for anxiety disorders. However, pharmacological treatment causes many side-effects. Therefore, research has been conducted to identify safer, more selective medications from natural product possessing anxiolytic effect with less side effects.

Methodology

C. sinensis var. Valencia, Shamouti, and Navel, were collected, extracted and subjected to TLC, HPLC, and GC-MS to detect the presence of flavonoids and essential oils. Then the extracts were administered to Swiss albino mice intraperitoneally and tested for sedative anxiolytic effects using elevated plus maze, and hot plate test.

Result and conclusion

This work showed that the extraction of leaves and peels of C. sinenses for all tested varieties have high amount of hesperidin and lesser amounts of naringin, which are responsible for the sedative and anxiolytic effects.

The extraction of essential oils from the peels of C. sinensis var. Shamouti, Navel, and Valencia showed that they contain many components of essential oils. The higher percentage was limonene (84.88, 77.08, and 55.32) respectively which is responsible for the sedative and anxiolytic effects.

This work showed that the extraction of leaves and peels of C. sinenses for all varieties have high amount of hesperidin and lesser amount of naringin, which might be responsible for the sedative and anxiolytic effects that is increased proportionally with increasing the dose.

The major essential oil present in the peel of C. sinenses was limonene which is responsible for the sedative and anxiolytic effects, in addition to minor amount of other constituents.