EuroSciCon

6th Edition of International Conference on

Pharmacognosy and Medicinal Plants

April 16-17, 2018
Amsterdam, Netherlands

Ibrahim Siddig Hamid et al., Am J Ethnomed 2018, Volume 5
DOI: 10.21767/2348-9502-C1-005

IN VITRO SUSCEPTIBILITY OF ISOLATED SHIGELLA FLEXNERI AND SHIGELLA DYSENTERIAE TO THE ETHANOLIC EXTRACTS OF TRACHYSPERMUM AMMI AND PEGANUM HARMALA

Ibrahim Siddig Hamid and **Ikram Mohamed Eltayeb**
University of Medical Sciences and Technology, Sudan

Statement of the Problem: Bacillary dysentery which is caused by one or more types of *Shigella* species, highly prevalent in hot countries with poor sanitation like Sudan especially in children is a potentially serious disorder if left untreated. It can lead to dehydration in children or liver abscess if it is spread from intestine to the liver stream. Options of treating Shigellosis with antimicrobials are becoming limited because of globally emerging antimicrobial resistance and the long use of these synthetic drugs causing many side effects. Therefore, the search for effective and safer antimicrobial agents from plants has become an area of interest in active research. The purpose of this study is to investigate the antimicrobial activity of the ethanol extracts of *Peganum harmala* and *Trachyspermum ammi* against isolated ***Shigella flexneri and Shigella dysenteriae*** causing bacillary dysentery.

Methodology: *T. ammi* and *P. harmala* were extracted by 96% ethanol using Soxhlet apparatus. The antimicrobial activity of the extracts was investigated according to the disc diffusion method and the minimum inhibitory concentrations of the extracts were determined.

Findings: All tested bacteria (*Shigella flexneri and Shigella dysenteriae*) were found to be sensitive against *T. ammi* seed extracts, while the same bacteria were resistant for amoxicillin and amoxicillin + clavulanic acid and insensitive for P. harmala. The tested bacteria were also sensitive to gentamycin 5 mg/ml, but it has a lower inhibition zone than that of T. ammi 100 mg/ml.

Conclusion & Significance: *T. ammi* ethanolic extract possessed antimicrobial activity as stated in literature.

Recommendations: Further investigations should be carried out to find the bioactive compounds for developing new antibiotic.

Recent Publications

1. Darabpour E, Motamedi H, Poshtkouhian Bavi A, Nejad S and Mansour S (2011) Antibacterial activity of different parts of *Peganum harmala* L. growing in Iran against multi-drug resistant bacteria. Excli Journal 10:52–263.
2. Mukherjee P K, Kumar V, Kumar N S and Heinrich M (2008). The Ayurvedic medicine Clitoria ternatea from traditional use to scientific assessment. Journal of Ethnopharmacology 120(3):291–301.
3. Niyogi S K (2005) Shigellosis. Journal of Microbiology 43(2):133–143.
4. Vasudevan K, Vembar S, Veeraraghavan K and Haranath P S (1999) Influence of intragastric perfusion of aqueous spice extracts on acid secretion in anesthetized albino rats. Indian Journal of Gastroenterology 19(2):53–56.
5. Choudhury S, Ahmed R, Kanjilal P B and Leclercq P A (1998) Composition of the seed oil of *Trachyspermum ammi* (L.) Sprague from Northeast India. Journal of Essential Oil Research 10(5):588–590.

Figure 1: Minimum inhibitory concentration of *T. ammi* ethanol extract against A(*Shigella dysentery*) and B(*Shigella flexneri*)

Biography

Ibrahim Siddig Hamid has his expertise in evaluation and passion in research, search and discovery of natural drugs from plant origin. His open and contextual evaluation model based on responsive constructivists creates new drugs for improving and treating of infectious diseases

ibrahimsiddig95@gmail.com