A Journal of the Bangladesh Pharmacological Society (BDPS)
Journal homepage: www.banglajol.info
Abstracted/indexed in Academic Search Complete, Agroforestry Abstracts, Asia Journals Online, Bangladesh Journals Online, Biological Abstracts, BIOSIS Previews, CAB Abstracts, Current Abstracts, Directory of Open Access Journals, EMBASE/Excerpta Medica, Google Scholar, HINARI (WHO), International Pharmaceutical Abstracts, Open J-gate, Science Citation Index Expanded, SCOPUS and Social Sciences Citation Index; **ISSN:** 1991-0088

**Bangladesh J Pharmacol 2016; 11: 348-352**

# Phytochemical investigation and *in vitro* antimicrobial activity of *Richardia scabra*

**Kathirvel Poonkodi[1] and Subban Ravi[2]**

*[1]Department of Chemistry, NGM College, Pollachi 01, Tamilnadu, India; [2]Department of Chemistry, Karpagam University, Coimbatore 21, Tamilnadu, India.*

## Article Info

Received: 22 August 2015
Accepted: 15 September 2015
Available Online: 20 March 2016

DOI: 10.3329/bjp.v11i2.24666

Cite this article:
Poonkodi K, Ravi S. Phytochemical investigation and *in vitro* antimicrobial activity of *Richardia scabra*. Bangladesh J Pharmacol. 2016; 11: 348 -52.

## Abstract

The present study was aimed to evaluate the phytochemical screening and antimicrobial activity of the petroleum ether and methanol extracts from the mature leaves of *Richardia scabra* from India. Disc diffusion method was used to determine the zone inhibition of the tested samples for antibacterial and agar plug method was used to determine the antifungal activity, while the microtube-dilution technique was used to determine the minimum inhibitory concentration. Both extracts showed significant antibacterial and antifungal activities when tested against 10 bacterial and four fungal strains. The minimum inhibitory concentrations of the methanol extract of *R. scabra* ranged between 12.5–100 µg/mL for bacterial strains. Alkaloids, steroids, flavonoids, fatty acids, terpenoids and simple sugar were detected as phyto-constituents of extracts. To the best of our knowledge, this is the first report against antimicrobial activity of common weed species *R. scabra* found in India.

## Introduction

Indigenous herbal remedies are widely used against many infectious diseases from long back. The plant and plant products are known to posses excellent antimicrobial properties and play a significant role in preventing infectious diseases (Vineet et al., 2010; Rios and Recio, 2005). In recent years, more number of plant based antibiotics are emerging, but the resistance developed by bacteria against antibiotics when used for long run leads to develop new drugs with affordable cost and no adverse effects.

Therefore, it is of great interest to carryout antimicrobial potential of unexplored plant *Richardia scabra* Linn belongs to the family *Rubiaceae*. Most of the members of the plants are mainly distributed in the tropical and subtropical regions with a few exceptions in temperate regions. Several plants in this family contain alkaloids as the main source such as coffee and quinine. Plants like *Spermacoce hispida* (Kaviarasan et al., 2008), *Randia dumetorium* Lamk, *Anthocephalus cadamba* Linn (Chandrashekar andPrasanna, 2009), *Ixora brachiata*, *Mitracarpus villosus* (Irobi and Daramola, 1994) and *Borreria hispida* (Kottai Muthu et al., 2010) have anti-oxidant, anti-inflammatory, antibacterial, anti-diabetic and antifungal properties.

So far, a few species of genus *Richardia* are evaluated for their phytochemical and pharmacological studies. In this view our tested plant *R. scabra* commonly known as Florida pusley or rough Mexican clover is native to North America and is considered as a weed species. It is also found in tea and maize fields in south India. There are very little information in literature about medicinal properties of this plant. However, oral reports from local herbal medical practitioners indicate that the extract of this plant is used to cure skin diseases, wound healing (Ayyanar and Ignacimuthu, 2005) posses diaphoretic properties (Senthil Kumar et al., 2006),