Asian Journal of Pharmaceutical Education and Research
Vol -7, Issue-2, April-June 2018
ISSN: 2278 7496

RESEARCH ARTICLE Impact Factor: 5.019

# ANTIOXIDANT ACTIVITY OF SEED EXTRACT OF *PSORALEA CORYLIFOLIA* LINN.

**Dr. Roli Shukla***

Department of Chemistry Govt. MLB, Bhopal (M.P.)

*Corresponding Author's E mail: k2pavni@gmail.com

Received 15 Mar. 2018; Revised 18 Mar.2018; Accepted 28 Mar. 2018, Available online 15 Apr. 2018

**ABSTRACT**

The present study aimed to characterize the hydroalcoholic extracts prepared from seed of *Psoralea corylifolia* linn. The antioxidant potential of extract was evaluated using DPPH *in vitro* antioxidant models. This study, has to some extent, validated the medicinal potential of the seed of *Psoralea corylifolia* linn. Further studies are necessary to evaluate the *in vivo* antioxidant potential of the tested extracts, but the *in vitro* experiments already performed and confirmed as potential health source.

**Keywords:** Antioxidant, Hydroalcoholic, *Psoralea corylifolia*, DPPH

## INTRODUCTION

Antioxidant is a molecule that inhibits the oxidation of other molecules. Oxidation is a chemical reaction that transfers electron or hydrogen from substances to an oxidizing agent. Oxidation reactions can produce free radicals. In turn, these radicals can start chain reactions, when the chain reactions occur in a cell, it can cause damage or death to the cell. Antioxidants terminate these chain reactions by removing free radical intermediates and inhibit other oxidative reactions [1-2]. They do so by being oxidizing themselves. Antioxidants are often reducing agents such as, thiols, ascorbic acid or polyphenols [3].

*Psoralea corylifolia*, also known as Babachi, is an erect annual herb, belonging to the largest families of flowering plants – Leguminosae used in Ayurvedic medicine as well as in traditional Chinese medicine almost throughout India [4]. A number of chemical constituents, including flavonoids and coumarins, have been isolated from this plant. Some of these compounds exhibit antioxidant [5], antiplatelet [6], estrogenic [7], immunomodulatory, and antitumor properties [8], anti inflammatory activities [9]. Various studies have reported antibacterial effects [10].

## METHODS

### Preparation of herbal extracts

The above said herbs were selected and procured from the approved supplier. They were washed with water and then powdered. The powder was taken and extraction was carried out by maceration using

75% methanol and concentrated. The concentrated extract was spray dried and the dried powder was taken to check the antioxidant activity.

**DPPH radical scavenging assay**

DPPH radical scavenging activity was done using the reported method; the reaction mixture containing 1 mL of DPPH solution (0.1 mmol /L, in 95% ethanol v/v) with different concentrations of the standard and extract was shaken and incubated for 20 min at room temperature and the absorbance was read at 517 nm against a blank. The radical scavenging activity was measured as a decrease in the absorbance of DPPH and calculated using the following equation [11]

Effect of scavenging (%) = [1-A sample (517nm) /A control (517nm)] ×100

## RESULTS AND DISCUSSION

***In vitro* free radical scavenging activity (2, 2-diphenyl-1-picrylhydrazyl - DPPH)**

**Table No. 1 *In vitro* free radical scavenging activity of Ascorbic acid & Extract**

| | % Inhibition | |
|---|---|---|
| **Conc.** | **Ascorbic acid** | **Extract** |
| 10 | 44.65517 | 29.98 |
| 20 | 48.62069 | 48.69 |
| 40 | 65.34483 | 59.98 |
| 60 | 69.65517 | 65.56 |
| 80 | 77.41379 | 70.23 |
| 100 | 84.13793 | 73.36 |
| $IC_{50}$ | 26.97 | 33.17 |

The decrease in absorbance of DPPH radical caused by antioxidants, because of the reaction between antioxidants molecules and radical, progresses, which results in the scavenging of the radical by electron donation. $IC_{50}$ for standard ascorbic acid was found to be 26.97µg/ml and for extract was found to be 33.17µg/ml. Thus the anti-oxidant activity of sample was found to be less than the standard.

## CONCLUSION

In the present study Hydroalcoholic extract of *Psoralea corylifolia* used to determine antioxidant potential. Extractions were performed using the maceration using 75% methanol. The antioxidant capacity was measured by the free radical scavenging DPPH method. $IC_{50}$ for standard ascorbic acid was found to be 26.97µg/ml and for extract was found to be 33.17µg/ml. Thus the anti-oxidant activity of sample was found to be less than the standard.

## REFERENCE

1. Ames BN, Shigenag M.K and Hagen TM. Oxidants, antioxidant and the degenerative diseases of aging. Processing of the National Academic Science. 1993; 90: 7915-22
2. Shenoy K and Shirwaiker A. Anti-inflammatory and free radical scavenging studies of Hyptis snravolens. Indian drug. 2002; 39: 574-577
3. Sies H. Oxidative stress, oxidants and antioxidants. Experimental physiology. 1997; 82: 291-295.
4. Sharma PV. Dravyaguna Vijnan. Vol II, Varanasi: lndia. 1986.
5. Guo J, Weng X, Xinchu W, Hou W, Qinghua L and Kaishun B. Antioxidants from Chinese medicinal herb-P. corylifolia L. Food Chem. 2005;91:87–92.
6. Tsai WJ, Hsin WC and Chen CC. Antiplatelet flavonoids from seeds of *Psoralea corylifolia*. J. Nat. Prod. 1996;59:671–672.
7. Lim SH, Ha TY, Ahn J and Kim S. Estrogenic activities of P. corylifolia L. seed extracts and main constituents. Phytomedicine. 2011; 18: 425–430.
8. Latha PG, Evans DA, Panikkar KR and Jayavardhanan KK. Immunomodulatory and antitumour properties of P. corylifolia seeds. Fitoterapia, 2000; 71: 223–231.
9. Ferra´ndiz ML, Gil B, Sanz MJ, Ubeda A, Erazo S, Gonza´lez E, Negrete R, Pacheco S, Paya´ M and Alcaraz MJ. Effect of bakuchiol on leukocyte functions and some inflammatory responses in mice. J Pharm Pharmacol, 1996; 48: 975–980.

10. Khatune NA, Islam ME, Haque ME, Khondkar P and Rahman MM. Antibacterial compounds from the seeds of Psoralea corylifolia. Fitoterapia, 2004; 75(2): 228–230,
11. Yamaguchi T, Takamura H, Matoba T and Terao J. Biosci Biotechnol Biochem. 1998; 62: 1201-1204.