Research Article CODEN: IJPRNK ISSN: 2277-8713
Amar P Patil, IJPRBS, 2014; Volume 3(1): 60-64 IJPRBS

INTERNATIONAL JOURNAL OF
PHARMACEUTICAL RESEARCH AND BIO-SCIENCE

IN VITRO ANTI-ARTHRITIC ACTIVITY OF *CASSIA TORA* LINN. LEAVES

AMAR P. PATIL, AJINKYA CHAVAN, TOHID ALIAS NAVAJ BAXU, SATYAJIT SATHE
Sant Gajanan Maharaj Rural Pharmacy College, Mahagaon, Site: Chinchewadi Maharashtra, India.

Accepted Date: 31/12/2013; Published Date: 27/02/2014

Abstract: Rheumatoid arthritis is a major ailment among rheumatic disorders[1]**.** It is a chronic condition with multiple causation and affects the people in their most active period of their life. Traditional ethno medical uses indicate the selected medicinal plant *cassia tora* is used to treat wound, ulcer and skin disease. Literature reveals that pharmacognostical evaluation has reported for the presence of glycosides, proteins, saponins, carbohydrate, tannins, flavonoids etc. since no further scientific study has been made in vitro anti arthritic activity so an attempt has been made to carry out the present research work[2]. The present study reveals with the in-vitro anti arthritic activity using effect of membrane stabilization and protein denaturation using different concentration. The results are compared with standard drug. The aqueous extract of the selected medicinal plant showed significant activity.

Keywords: *Cassia tora*, anti- arthritic, membrane stabilization, protein denaturation.

PAPER-QR CODE

Corresponding Author: Mr. AMAR P. PATIL

Access Online On:

www.ijprbs.com

How to Cite This Article:

Amar P Patil, IJPRBS, 2014; Volume 3(1): 60-64

INTRODUCTION

*cassia tora*Linn (leguminosae) leaves were collected from warnanagar and authenticated by Dr. S. Y.Jadhav, head of department of botany, Y. C. Mahavidyalaya Warananagar. The plant materials were deposited in our college herbarium for future reference.

The reported pharmacological activities of Cassia tora are as follows[3].

1. Antigenotoxic properties of Cassia tora.
2. Antihepatotoxic effects of Cassia tora.
3. Antimutagenic effects of Cassia tora.
4. Antinociceptive activity of Cassia tora.
5. Antioxidant effects of Cassia tora.
6. Hepato-protective effect of Cassia tora.
7. Hypolipidemic activity of Cassia tora.
8. Hypotensive action of Cassia tora.
9. Larviciadal activity of Cassia tora.
10. In vitro antihelmintic activity of Cassia tora.
11. Radical scavenging effects of Cassia tora.
12. Anti-inflammatory activity of Cassia tora.

EXPERIMENTAL WORK:

cassia tora Linn. Leaves were air dried and powdered. The extraction was carried out by Soxhlation based onincreasing polarity. Extract was concentrated under reduced pressure to get crude extract which is stored in desiccators for future use.

MATERIAL AND METHODS:

Procedure:

1. Inhibition of protein denaturation: [4,5]

1. Test solution (0.5ml) consists of 0.45ml of bovine serum albumin (5%w/v aqueous solution) and 0.05 ml of test solution of various concentrations.

2. Test solution (0.5ml) consists of 0.45ml of bovine serum albumin (5%w/v aqueous solution) and 0.05 ml of distilled water.

3. Product control solution (0.5ml) consist of 0.45 ml distilled water and 0.05 ml of test solution (250ug/ml).

4. Standard solution (0.5ml) consists of 0.45ml of bovine serum albumin (5%w/v aqueous solution) and 0.05ml of Diclofenac sodium (250ug/ml). The pH of all solution is adjusted to 6.3 by using a small amount of 1N hydrochloric acid. All the samples are incubated at 37ºc for 20 minutes and heated at 57ºc for 3 minutes. After cooling add 2.5 ml of phosphate buffer to above solution. The absorbance was measured using UV visible spectrometer at 416nm.

5. The percentage protein denaturation can be calculated by

Percentage inhibition =100-(O.D of test solution – O D of product control)×100

O.D of test control

2. Effect of membrane stabilization: [4,5]

The reaction mixture (4.5ml) consists of 2ml hypotonic saline (0.25%NaCl), 1ml of 0.15m phosphate buffer pH 7.4 and 1ml of test solution in normal saline. 0.5ml of 10%RBC in normal saline was added. For control, 1ml of isotonic saline was added instead of test solution. RBC was lacked in product control. Mixture was incubated at 56ºC for 30 minutes. The tubes were cooled under running tap water for 20 minutes. The mixture was centrifuged and the absorbance of the supernatant liquid was read at 560nm. The percentage membrane stability was calculated as follows.

Percentage inhibition = 100- (O.D of test solution – O D of product Control)×100

O.D of test control

The control represents 100% lysis. The results are compared with acetyl salicylic acid (250ug/ml)

RESULT AND DISCUSSION:

Anti- arthritic effect of *cassia tora* Linn.leaves was studied by testing various in vitro studies. The effect of the selected plant on inhibition of protein denaturation and effect of membrane stabilization was 87.22 % and 87.25% respectively for the aqueous extract of the selected plant leaves. The results were compared with the standard drug Diclofenac sodium and acetyl salicylic acid at the concentration of 250ug/ml. The results are tabulated in Table 1 and 2.

Table 1. Inhibition of protein denaturation:

Sr. No.	Content	Concentration (ug/ml)	%Protein inhibition
1.	Standard	250	88.25
2.	Aqueous extract	250	87.22
	Ethanolic extract	250	65.25

Table 2.The effect of membrane stabilization:

Sr. No.	Content	Concentration (ug/ml)	%Protein inhibition
1.	Standard	250	86.23
2.	Aqueous extract	250	87.25
	Ethanolic extract	250	65.37

CONCLUSION:

The aqueous extract posse's anti- arthritic activity and it was comparable to the standard drug.

REFERENCES:

1. Jayasutha J, Nithila M.J.S; Evaluation of Wound healing activity of Ethanolic extract of *Aristolochiabracteata*and *Cassia tora* on Wistar Albino rats. *Int J PharmTech Res* 2011, 1547-1550.

2. Chidume F.C, Kwanashie H.O, Adekeye J.O, Wambebe C, Gamaniel K.S; Antinociceptive and smooth muscle contracting activities of the methanol extract of *Cassia tora* leaf*JEthnopharmacol*2002, 205-220.

3. SuhaAbudoleh, Ahmad Disi, EyadQunaibi and TalalAburjai; Anti-Arthritic Activity of the Methanolic Leaf Extract of Urticapilulifera L. on Albino Rats *American Journal of Pharmacology and Toxicology* 2011; 6 (1): 27-32.

4. Pandey S; Various techniques for the evaluation of anti-arthriticactivity in animal models *J. Adv. Pharm. Tech. Res.* 2010; 1(2): 164-170.

5. Tripathi KD; *Essentials of medical pharmacology* JP, NewDelhi, 2003, 185.