International Research Journal of Biological Sciences _____ ISSN 2278-3202
Vol. **6(2),** 54-57, February **(2017)** *Int. Res. J. Biological Sci.*

Short Communication

Evalution and in-vitro activity of leaves alexandrina and trigolla foenum-graecum (fenugreek) on blood clotting time

Priyanka R. Kolhe, Nazia D. Khan, Zia H. Khan and S.M. Mular
Department of Biochemistry, Shri. Shivaji College of Arts, Commerce and Science, Akola, MS, India
onlynazia247@gmail.com

Available online at: www.isca.in, www.isca.me
Received 19th October 2016, revised 1st February 2017, accepted 6th February 2017

Abstract

Senna Alexandrina Mill is well known plant in Asian countries including ecological activities. The drug have been used as folk remedy in India in the form of decoction and infusion to be an effective against variety of skin condition like psoriasis, acne, wound etc. The plant extract showed antibacterial activity but not showed antifungal active against fungi .The herb of senna Alexandrina were subjected for successive extraction using different solvent and extract were subjected to antimicrobial evaluation against gram positive, Gram Negative bacterial and Fungal organism by cup plate technique. The phytochemical analysis carried out presence of Alkaloids, Carbohydrate, protein, saponin. Trigonella Foenum is believed to have been brought into cultivation in the near East and also in India it is commonly known as Fenugreek seed which contain iron, vitamin A, and other alkaloid. The antioxidant slow agein and heip prevent disease. antimicrobial properties also get food preservation .The Fenugreek is to control blood sugar in both insulin dependent and insulin independent (type I, II) diabetes mellitus. It potentially effective as a cancer chemo preventive and rising level of Vitamin C, Vitamin E and other antioxidant in blood stream. .The Activity of Senna Alexandrina and Trigonella Foenum on blood clotting was investigated that the extract can be used to manage bleeding. These were performed using the Duke method, the Lee and White method.

Keywords: Senna Alexandrina, Trigonella Foenum-graecum (Fenugreek), clotting time, methanol, petroleum Ether.

Introduction

In recent time, herbal medicine have become an integral part of primary health care system of many nation. Senna Alexandrina Mill. occur naturally from Mali East wards to Somali and Kenya. It also native in Asia from the Arabian Peninsula to India and Sri lanka. Cesalpinidea is often treated as sub family, Caesalpiniaceae of large Family Leguminosae. It is closely related to mimosaceae and Papilionaceae. They are well known in folk medicine for their laxative and purgative use[1].

The medicinal properties of cassia species are due to their content of hydroxynthroquinoe derivative. The genus cassia Angustifollia vah (Indiansenna). The commercial cultivation take place in India and Srilanka . S. Alexandrina Mill, a small shrub about 2 feet high and stem erect, smooth, and pale green bearing leaflets in four and five pairs .The pods are broadly oblong about 2 inches long by 718 inch broad and contain about six seed[2], it work by interacting with the bacteria in intestinal contraction. These contractions are caused by the Anthraquinone that is contained in senna. These dimeric glycoside anthraquinone derivates are known as senna glycoside or sennoside. Senna Alexandrina is anticoagulant plant are those that decrease the ability of Fluidization of blood thinner. This effect occur because they are substance that block the coagulation effect of vitamin k. Trigonella Foecum- graecum (Fenugreek) belong to the family Leguminosae that grow predominantly in Asia, Northern Africa and Middle East fenugreek seed contain 23%- 26% protein, 6% - 7% fat and 58% carbohydrate of which 25% is dietary fiber[3]. saponins and rich in flavonoids. Fenugreek has been widely used as flavorings agent and in folk medicine. Several benefits effect such as appetite stimulation[4], Anti-inflammatory[5], Antipyretic[6], Antimicrobial[7], Antioxidant, Anti-cancer[8] and Antitherogenic[9] have been reported.

Cyminum an aromatic plant from the family Umbeliferae is used as flavoring and seasoning and balance blood sugar level in some studies of animal and human with both diabetes and high cholesterol level. study also show that serum cholesterol level in diabetic and perhaps in other reduce by Fenugreek doses the use of Fenugreek is likely to after the diabetic patient n need for insulin or other medication used to control blood sugar. Fenugreek may have some benefit for soothing skin that is irritated by eczema or other condition. It has been also use for warm poultice relive muscle aches. It also balance the blood sugar level, and contain choline which aid thinner process. It should not used with other medication from that have been increased risk of bleeding. The sugar lowering affect show in non diabetic individual with normal cholesterol level. Fenugreek that are being taken to control Diabetic may need to have dosage adjusted which should be done under medicine . Fenugreek is gluey substance. Its ability to balance the hormone level aids in treating PMN and menopause.

may be less effective monoamine oxidase n inhibitor (MACIS) increase the activity when used in conjunction with Fenugreek. The objective of this study were determine the effect of Senna Alexandrina and Trigonella Foecum-graecum extract on clotting time the study also sought to investigate the effect of varying dosages of various extract on clotting time.

Materials and methods

This study was carried out department of biochemistry of Shri Shivaji Collage Akola and the material and method used for this study are as described hereafter.

Fresh leaves of Senna Alexandrina were obtained from our college campus following identification by a botanist in the same collage. Trigonella Foenum–graecum (Fenugreek) leaves was collected from general vegetable marked n of Akola .Both plant leaves were rinsed in distilled water and dried under shade at room temperature. Both leaves were powdered and stored 60 gm of powder drug was extracted separated with Methanol, Petroleum ether. Arouse extract by continuous hot percolation in Soxlet apparatus and with water by cold maceration for 3 days . All the extract were filtered using Muslin cloth then the extraction used for blood clotting activity.

Clotting time

The Lee and White method was used[10]. Nine Pyrex glass test tubes were arranged in three pairs and marked experimental Sample tube and corresponding control sample tubes. To the first pair of tubes. 1ml each of freshly collected human blood was added and 1 drop of the prepared extract was quickly added to the blood in the experimental sample tube but not to the control sample Tube. Both tubes were carefully shaken and the stop watch started immediately. After 2 minutes, both tubes were then observed at 15 seconds intervals by very gently tilting them to see if the blood had clotted completely. Clotting was considered to be complete when the tube could be inverted without significant movements of blood in each tube to clot (i.e experimental and control clotting times) were recorded to the nearest 15 seconds. The procedure was then repeated for the remaining pair of Pyrex glass tube and the mean clotting times for both experimental and control samples was determined. For the effect of various doses of extract on clotting time, the clotting time experiment just described was again repeated only this time without control tubes and amount of the extract added to the blood was varied as follows 25ul, 50ul,75ul respectively and the resulting clotting time recorded. Clotting times obtained with the extract were plotted against the dosage of the extract used.

Result and discussion

Results of study are given in following figures.

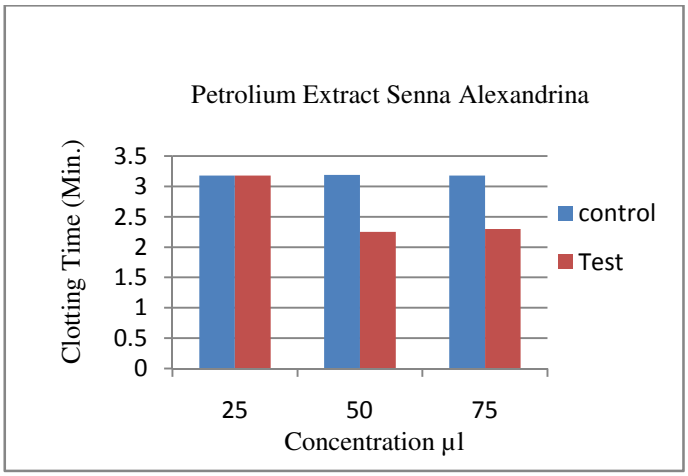

Figure-1: Effect of petroleum extract of Senna Alexandrina on human blood clotting time

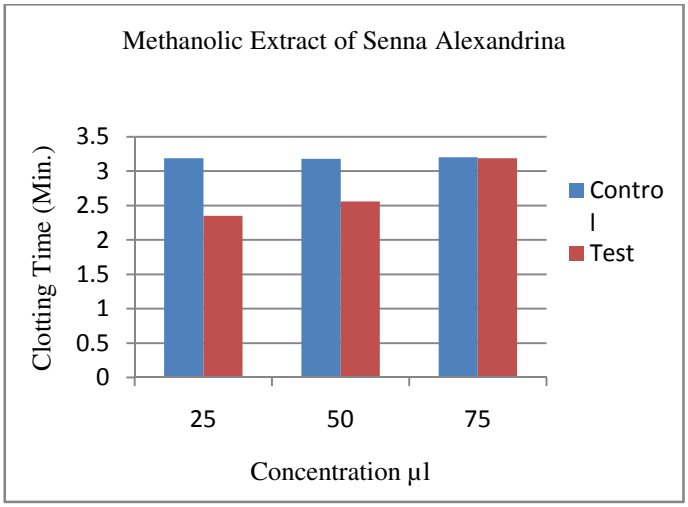

Figure-2: Effect of Methanolic Extract of Senna Alexandrina on Human Blood Clotting Time

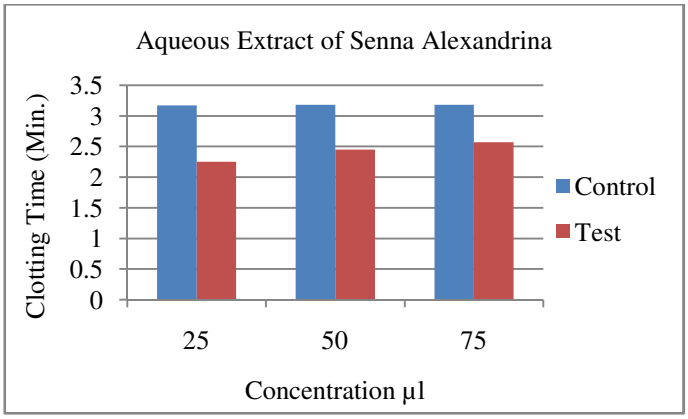

Figure-3: Effect of Aqueous Extract of Senna Alexandrina on Human Blood Clotting Time

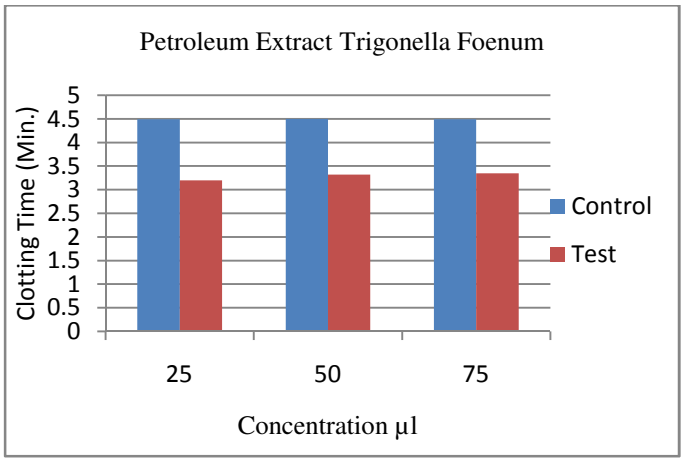

Figure-4 Effect of Petroleum Extract of Trigonella Foenum (Fenugreek) on Human Blood Clotting Time

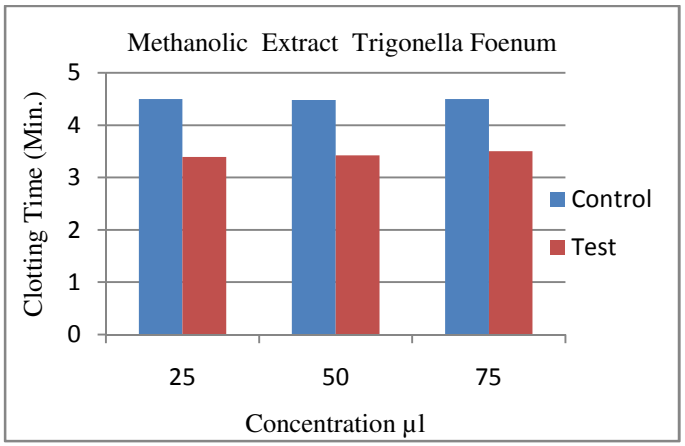

Figure-5: Effect of Methanolic Extract of Trigonella Foenum (Fenugreek) on Human Blood Clotting Time

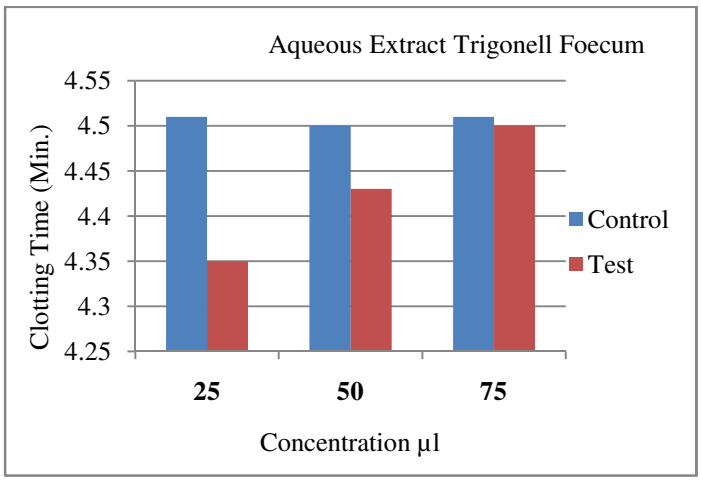

Figure-6: Effect of Aqueous Extract Trigonella Foenum (Fenugreek) on Human Blood Clotting Time

Conclusion

Senna Alexandrina Mill. Our study show that different extract of Senna Alexandrina have coagulant properties. Methanoic extact of Senna Alexandrina is high clotting time as compared to Petroleum and aqueous extract it show low blood clotting time.

In the Trigonella Foecum of plant Aqueous extract show highest blood clotting time as compare to petroleum, and methanoic extract .it indicate the positive hemostatic effect it show lowest blood clotting time . This dependent on the dosages of the extract added to blood.

References

1. Abo K.A., Lasaki S.W. and Adeyemi A.A. (1999). Laxative and antimicrobial properties of Cassia species growing in Ibadan. *Nigeria Journal of Natural product and medicine*, 3(1), 47-50.
2. Dziedzic S.Z. and Hudson B.J.F. (1984). Phenolic acid and reiated compound as antioxidant for edible oils. *Food chem.*, 14(1), 45-51.
3. Lu Fu-rong, Shen Lin, Qin You, Gao Lan, Li Heng and Dai Yi (2008). clinical observation onTrigonella foenum-gracum L. total saponin in combination with sulfonylureas in the treatment of type 2 diabetes mellitus. *Chinese Journal of Integrative Medicine*, 14(1), 56-60.
4. Petit P., Sauvaire Y., Ponsin G., Manteghetti M., Fave A. and Ribes G. (1993). Effects of a fenugreek seed extract on feeding behaviour in the rat: Metabolic-endocrine correlates. *Pharmacology Biochemistry and Behavior*, 45(2), 369-374. doi:10.1016/0091-3057(93)90253-P
5. Ahmadiani A., Javan M., Semnanjan S., Barat E. and Kamalinejad M. (2001). Anti-inflammatory and antipyritic effects of Trigonella foenum-graecum leaves extract in the rat. *Journal of Eth- nopharmarcology*, 75(2), 283-286. doi:10.1016/S0378-8741(01)00187-8
6. Randhir R., Lin Y.T. and Shetty K. (2004). Phenolics, their antioxidant and antimicrobial activity in dark germinated fenugreek sprouts in response to peptide and phytochemical elicitors. *Asia Pacific Journal of Clinical Nutrition*, 13(3), 295-307.
7. Broca C., Manteghetti M., Gross R., Baissac Yves, Jacob Marc, Petit Pierre, Sauvaire Yves and Ribes Gérard (2000). 4- Hydroxyisoleucine: Effects of synthetic and natural ana-logues on insulin secretion. *European Journal of Pharmacology*, 390(3), 339-345. doi:10.1016/S0014-2999(00)00030-3
8. Jayadev R, Patlolla M.R., Swamy M.V. and Raw C.V. (2004). Diosgenin, a steroid saponin of Trigonella foenum grae- cum (Fenugreek), inhibits azoxymethane-induced aber-rant crypt foci formation in F344 rats and induces

apop-tosis in HT-29 human colon cancer cells. *Cancer Epidemiology and Prevention Biomarkers*, 13(8), 1392-1398.

9. Sowmya P. and Rajyalakshmi P. (1999). Hypocholesterolemic effect of germinated fenugreek seeds in human subjects. *Plant Foods for Human Nutrition*, 53(4), 359-365.

10. Anil JP (2014). Bleeding Time and clotting Time. Encyclopedia of Ayurvedic Medicinal plant 2012, http//www.Indianmedicineplant.info.