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Detection of Amino Acids from the seeds of *Polyalthia longifolia*

Kavita S.Mundhe* , **Sucheta A.Gaikwad, Asha A.Kale,Dr. N.R.Deshpande, Dr.R.V.Kashalkar**

Dr.T.R.Ingle Research Laboratory, Department of Chemistry, S.P.College, Tilak Road, Pune- 411030,India.

Emails: mundhekavita@gmail.com, Rajashree_kashalkar@yahoo.com

Abstract: A tall tree, *Polyalthia longifolia*, commonly called **Ashoka**, from family Annonaceae have various medicinal values. Various extracts were prepared from seeds of *Polyalthia longifolia*. Detection of amino acids was carried out in different mobile phases using paper chromatography technique. The results obtained were compared with standard amino acids. Proline was found to be present in different mobile phases. Total 18 amino acids were detected from different extracts. The maximum separation and detection of amino acids was observed in IPA: H_2O: Acetic Acid mobile phase.

Key Words : *Polyalthia longifolia*, paper chromatography, amino acids.

Introduction

Natural products are having a great importance in Ayurveda from ancient times. The *Polyalthia longifolia*, have various medicinal values[1]. The present study deals with detection of amino acids from the seeds of *Polyalthia longifolia*.

It is a tall handsome, evergreen ornamental avenue tree. It is grown along the road sides, in gardens and in parks. It belongs to the family Annonaceae. Flowering starts from March to May. Fruits develop in the month of July to September[2].

Litereature survey reveals that anti microbial activity of various parts of *Polyalthia longifolia* of species var. pendu a: have been investegated[3]. The bark is a good source of fibre[2]. The wood is light and has good quality. Considering the medicinal importance of the plant, study of amino acids from it is undertaken.

Experimental

The fruits of Polyalthia longifolia of family Annonaceae were obtained from Pune, Maharashtra, India. Whatman filter paper no.1 was used for paper chromatography.

The air shade dried seeds were pulverized and used to prepare different extracts of definite concentrations using chloroform, acetone, ethonal and water. The following mobile phases were used for detection of amino acids.

Phase I Pyridine : IPA : Acetic Acid : Water (8:8:1:3)
Phase II Butanol : Pyridine : Acetic Acid : Water (6:10:1:3)
Phase III IPA : Water : Acetic Acid (5:4:1)
Phase IV Ethyl Alcohol : Water : Acetic Acid (7:1:2)
Phase V IPA : Water : Acetic Acid (5:2:3)

The chromatographic paper was dried and spots were developed using ninhydrin as a spraying reagent. The different extracts showed the presence of various amino acids in different mobile phases as reported in the tables shown below.

Table I Amino Acids Detected in Phase I

Name of amino acids	R_f for standard amino acids	R_f for sample
L-Histidine Monohydrochloride	0.08	0.08
DL-2-Amino-n Butyric acid	0.43	0.43

Table II Amino Acids Detected in Phase II

Name of Amino Acids	R_f for standard amino acids	R_f for sample
L-Glutanic acid	0.05	0.06
DL-Threonine	0.20	0.20
L-Leacine	0.22	0.22

Table III Amino Acids Detected in Phase III

Name of amino acids	R_f for standard amino acids	R_f for sample
L-Glutanic acid	**0.74**	**0.75**
DL-Phenyl alanine	**0.89**	**0.90**
Glycine	**0.92**	**0.91**
L-Proline	**0.79**	**0.77**
L-Tyrosine	**0.77**	**0.76**
DL-2-Amino-n Butyric acid	**0.89**	**0.89**

Table IV Amino Acids Detected in Phase IV

Name of amino acids	R_f for standard amino acids	R_f for sample
L-hysine monohydrochloride	0.62	0.61
DL-Methionine	0.86	0.86
L-Proline	0.72	0.72
L-hydroxy-proline	0.78	0.78

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Table V Amino Acids Detected in Phase V

Name of amino acids	R_f for standard amino acids	R_f for sample
DL-Threonine	**0.61**	**0.61**
DL-isoleucine	**0.83**	**0.83**
L-Proline	**0.70**	**0.73**

Results and Discussion

The amino acids are the basic units of proteins and therefore are detected. The seeds of *Polyalthia longifolia* were found to be a rich source of various amino acids. Qualitative estimation of amino acids by paper chromatography showed the presence of Proline in almost all the phases L-Glutanic acid is found in phase II and III. DL-Threonine is found in pahase II and IV. Other amino acids were found in different mobile phases

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