

ISOLATION OF NAPHTHAQUINONE FROM BARK OF *THESPESIA POPULNEA*.

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ABSTRACT: The 2 hydroxy1, 4 naphthaquinone [Thespesone] was isolated from bark of *Thespesia populnea* which is belonging to family Malvaceae. The isolated compound then analysed by IR, NMR, UV.

Keywords: *Thespesia Populnea*, chemical constituents, Napthaquinone.

INTRODUCTION

Thespesia Populnea (L.) Linn. Which is belonging to the family Malvaceae. The plant is fast growing, medium-sized evergreen tree, upto 10 m tall with yellow, cup-shaped flowers having maroon centre and distributed throughout coastal forests of India and also largely grown as a roadside tree (Ayurvedic pharmacopoeia, 2006). It is commonly known as Kapitana in sanskrit and Portia tree in english. The various chemical constituents were isolated from the *Thespesia Populnea* are Gossypol (Datta SC et al 1972), 7 Hydroxy-2,3,5,6-tetrahydro-3,6,9-Trimethylnaphto [1,8-B,C] Pyran-4,8-Dione (Milbrodt et al 1997), Kaempferol, Quercetin (Kasim et al, 1975), Kaempferol 3-glucoside, Quercetin 3-glucoside, rutin (Datta et al, 1973), Nonacosane, lupenone, myricyl alcohol, lupeol, β -sitosterol and β -sitosterol- β -D-glucoside (Seshadri et al, 1975), 5, 8-dihydroxy-7-methoxyflavone, 7-hydroxyisoflavone and Thespones (Neelakantan et al, 1983). Mansonones D E and F Populneol, Thespesin (Srivastva et al, 1963). In the present study the thespones was isolated from the bark of *Thespesia Populnea* and characterized.

MATERIAL AND METHODS

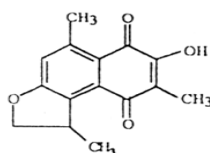
Authentication of the Plant Material:

The plant was authenticated by Botanical survey of India, Pune as *Thespesia populnea* Linn. (Malvaceae) with a voucher no BSI/WRC/Herbarium/2011.

Extraction and isolation of compound

The bark of *Thespesia Populnea* was collected and cut in to small pieces then dried in hot air oven at 55^oC. The hexane extract was prepared using soxhlet apparatus for about 32hr and concentrated under vaccum. Isolation of compound rich fraction was done by column chromatography on silica gel having mesh size 60-120 by using solvent system i.e. chloroform and methanol and characterised by UV, IR and NMR.

RESULTS



Thespesone

In Thespesone melting point was found to be 156^oC. Molecular formula- C₁₅H₁₄O₄. The NMR signal of CH₂ group appears at δ~ 3.24 of B ring, δ~ 4.69 and δ ~ 4.57 in C ring. CH₃ group appears at δ~ 1.48 of C ring, δ~1.70 of B ring and 2.38 of A ring. Signal of CH group in C ring appears at δ~ 4.28 and aromatic proton of A ring appears at δ~6.94 and confirms the structure of Thespesone. The Infrared spectrum of thesesone seen at different frequencies like -C=O at 1728, C=C at 1530, OH at 3300. Spectral data for thesesone as UV-Vis: (DMSO) λ_{max} 289. From these spectral studies the compound isolated thus confirms as thesesone.

DISCUSSION

1,4-naphthoquinones were studied for cytotoxic evaluation [Jaime A]. anti-diabetic activity (Neeli et al, 2007). Antiproliferative Activity (Acharya et al, 2008), Trypanocidal Activity (Pinto, 2009), Antimicrobial activity (Lim, 2007) 2006), antifungal activity (Errante et al, 2003), Antiplasmodial activity (Onegi et al, 2002), antitumor activity (Kim et al, 2006), Cancer chemopreventive activity (Ito et al, 2001), Hematological activity (Munday et al, 1991) gives idea about the use of phytoconstituent in the treatment of various diseases.

ACKNOWLEDGEMENTS

All authors thanks to Dr. P. D. Chaudhari, Principal Modern college of Pharmacy and university of pune for providing the facilities and their support to carryout the research work.

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