

A New compound from the pods of *Cassia glauca* LAM.

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Abstract : As per the published literature on the constituents of the plants. It was found that the plants of *Cassia* genus contain many kinds of compounds such as polyphenols, tannins, flavonoids etc. Many of them are useful for human beings. Keeping in view the present work on the pods of *cassia glauca* was under taken. It was collected from Haridwar (U.P.) it was grinded to powder and dried in shade. It was then refluxed in a soxhlet (2 Litrs) with PE, Benzene and ethyl acetate for twelve hours. The E.A. turned yellow. It was distilled and concentrated to small volume (10ml), column chromatographed over silica gel G. Its purity and homogeneity were tested and left overnight for crystallization. A yellow coloured compound was obtained. Its m.p. was determined as 185°C. Its mol. Formula was found to be $C_{22}H_{22}O_{12}$.

(Keywords: Glycoside, Aglycone. Hydrolysate, chromic acid oxidation, *cassia glauca* pods, Acidic hydrolysis.)

Introduction

Drugs wether synthetic or obtained from natural sources have played important role in improving quality of and life span of human being. Many plants products have found wide applications in treatment of breast cancer liver disease, HIV, asthma and rheumatological disorders. The plant continue to remain primary source of drugs, Genus *Cassia*, vast and predominantly tropical genus obtained in equatorial and the monsoon region belongs to more than 600 species as hurbs, shurbs& trees of laguminosae family.

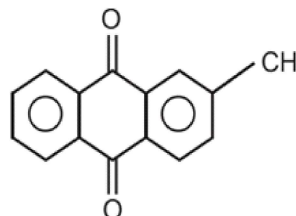
Experimental

The compound was subjected to various chemical to test for identification. The compound

responded +velyMolish's Test but it neither reduced fehling Solⁿ. nor gave +vecolour test with aniline hydrogen phthalate reagent (Haugh) showing it to be a glycoside in which reducing group C. was involved in glycosidic linkage. The compound on hydrolysis with 7% H_2SO_4 gave a compound (aglycone) and its hydrolysate was found to have a sugar moiety. Recrystallised aglycone showed m.p. 209°C and its mol. formula found to be $C_{16}H_{12}O_7$ by as usual method. The hydrolysate on neutralization with $BaCO_3$ gave (+)ve test for Carbohydrate.

To indetify the Carbohydrate the Osazone of it was prepared with 2:4 DNP and its structure was viewed through microscope. Its structure corresponded to that of galactose. So it must be galactose. This was also supported by its Rf value .18 (.16)

The aglycone on Zn-dust distillation gave compound 2-methyl anthroquinone. This showed that the basic skeleton of the compound is 2-methyl anthraquinone.



The aglycone subjected to various standard colour reactions to identify. It reduced both Zn/HCl and Zn/NaOH (Houben). On treatment with 5N NaOHaqueous solution, it produced red colour on heating. On the basis of the above re-

actions it was concluded to be anthraquinoid compound. This was also supported by its $\lambda_{\text{etOH}}^{\text{max}}$ 433 nm in the UV visible range. Alcoholic Solⁿ of the aglycone produced green colour with FeCl₃ solution showing that it has –OH (Phenolic) group and did not give pink colour with CerricAmm. nitrate solⁿ. Hence it has no –OH (alcoholic) group in side chain performing Zeisel test with the aglycone, it gave +ve test showing that it has –OCH₃ group. I.R. of the aglycone was done. Its IR graph showed peaks at 3400cm⁻¹ and also at 2925 cm⁻¹ and 1190cm⁻¹. The former proved phenolic (OH) group and both of the compound showed the presence of –OCH₃ group in the aglycone.

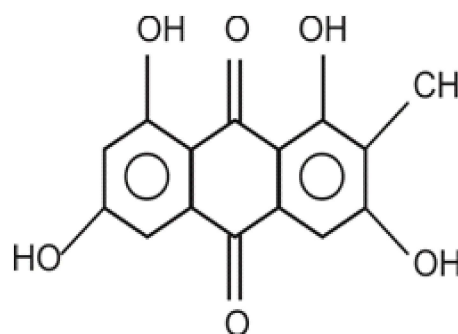
Results and Discussion

The quantitative analysis of both –OH groups and –OCH₃ groups was done by acetylation method and Zeisel's method res. The acetyl product was 48.71% showing that it had four -OH group. In –OCH₃ group estimation the yield of AgI was 9.8% showing that the aglycone has one –OCH₃ group. The fixation of the position of –OH group and –OCH₃ group was done by following reactions. The aglycone on treatment with 10% KOH and formamidesolⁿ, produced red colour showing the presence of 1, 8 –dyhydroxy system in the compound. The aglycone was treated with Conc. H₂SO₄, It did not produced red colour showing the absence of 1, 5-dihydroxy system in the compound. The aglycone subjected to “Shibata et al” test. It responded +vly showing the presence of 1, 3-dyhydroxy system in the compound.

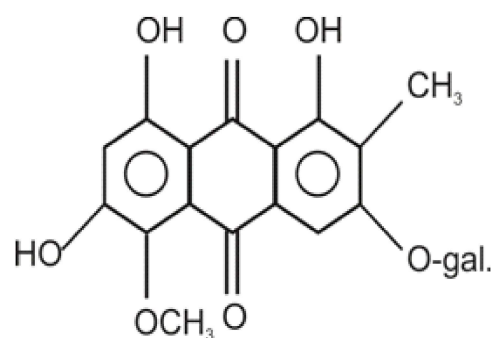
The aglycone dissolved in 5% Na₂CO₃ solⁿ. that shows the presence of b-OH group in it. As the glycone showed +ve ‘shibata et al’ test but the original compound did not give this test, hence it showed the position 3 of the aglycone is engaged in glycosidation considering the above test it was derived that as the aglycone showed the presence of b-hydroxy group in aglycone, it must be at the position 6 or 7. But it did not

respond +ve the “Feige” test for vicinal –OH groups hence the remaining one-OH group must be at position 6.

Taking all the above tests together it may be concluded that the aglycone had the following structure.



Since the aglycone showed the presence of 1,3-dihydroxy system but the original compound did not show the above reactions, hence the carbohydrate (galactose) must be linked with the aglycone with the position 3 of the aglycone. As such all the elements of the mol. Formula were accounted, the final structure of the original compound was given as follows



It is a new anthraquinone glycoside not reported so far.

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