# Structural Elucidation Of Some Coordination Compounds By FTIR And UV

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**Abstract**

This paper is aimed to isolate and elucidate naringenin structure from Aglaia odorata L leaves. A method used in this study was the maceration extraction. Separation of compounds were done by column chromatography and thin layer chromatography (TLC). The purification of compound was tested by melting point test and elucidation structure of isolation result was carried out by spectrophotometer NMR(1H NMR and 13C NMR). The results are 3',5',7 tri-O-metil naringenin.

**Keywords:** Aglaia, Flavonoid, Meliceae, Naringenin.

## INTRODUCTION

The genus Aglaia of the family Meliceae comprises nearly 120 species mainly distributed in tropical rain forest of South Asia [1-2]. *Aglaia odorata* L is the species type of the genus and often used as traditional medicine for heart stimulant, febrifuge, treatment of cough, inflammation, injuries [3] and toxin by causing vomiting [4]. They also have interesting biological activities such as anticancer [5], insecticidal [6-8] and anti–leukemic activities [9]. The genus *Aglaia odorata* L was reported to be the main source of unique natural products: the aglains and the rocaglamidaes [10].

Phytochemical screening of *Aglaia Odorata* L, the presence of terpenoid, steroid, fenol, alkaloid and saponin was detected. Based on these data leaves of *Aglaia Odorata* Lis a potential source of secondary metabolite compounds.

In this study we investigate the major compound in a leave of *Aglaia Odorata* L. The structure were identified byUV-Vis spectrum, FT-IR and NMR Spectrophotometer.

## EXPERIMENTAL SECTION

### Plant Material

*Aglaia odorata* L leaves were collected from Patna, Bihar, India. The plants was identified in Magadh University.

**Figure 1. Pictures of *Aglaia Odorata* L**

### Chemicals

Hexane, ethyl acetate, methanol, silica gel 60 (0.063 to 0.200 mm), magnesium powder, cotton, FeCl3 5%, filter paper. And all other chemical used in this study were analitycal grade.

### Intrumentation

The equipments are a set of distillation apparatus, rotary evaporator (Heidolph Laborota 4000), ultraviolet visible spectrophotometer (Shimadzu PharmaSpec UV-1700), oven, electric bath, column chromatography, melting point apparatus (STUART SMP 10), TLC plates (silica gel 60 F254, Merck KGaA Darmstadt), UV light (l254

and 356 nm), FT-IR (Thermo Scientific Nicolet iS10), spectrophotometer NMRand analytic balance sheets, aluminum foil, and commonly used glassware in laboratories.

## PROCEDURES

### Extraction and isolation of Leaves*Aglaia odorata* L

Air dried leaves of *Aglaia odorata* L (2600 g)were extracted by maceration with n-hexane, ethyl acetate, and methanol respectively. The extract were dried using a rotary evaporator, and the obtained ethyl acetate extract (105 g) was subjected to column chromatography using suitable solvent system. Elucidation was carried out by gradient polarity system from 100% hexane to 100% methanol. Each fraction was monitored by TLC. Collected fractions were monitered and recombined based on TLC profiles. The same pattern of every stains on TLC were combined and then produced 38 (A-L') fractions.

Fraction I was purified by recrystallization with hexane and etyl acetate. The result of the recrystallization is light yellow powder. The purity of isolated compound was tested by melting point test and elucidation of structure was carried out by using NMR spectrophotometer (1H and 13C NMR).

## RESULTS AND DISCUSSION

The isolated pure compound was some light yellow powder form with melting point at 160-162oC. Light yellow color was visualized under ultraviolet light at λ 356 nm, Rf: 0,8 (Hexane:EtOAc 1:9), Spectrum UV; λmaks at 328 and 286 nm; IR (KBR), ν maks (cm-1), 3500, 2900, 1632,1537, 1427 and 1158. Spectrum 1H-NMR (CDCL3), 500 MHz (ppm);5.37(dd), 3.11 (dd), 2.80 (dd); 6.07 (d);6.04 (d); 6.98 (s); 6.91 (s); 6.98 (s); 3.81 (s); 3.90 (s); 12.03 (s)13C-NMR (CDCL3), 125 MHZ; (77.4448) (43.4238) (196.0231) (164.2443) (94.3634) (168.0593) (95.2122) (162.8900) (103.2141) (130.8632) (118.9319) (149.6138) (109.4516) (56.0809) (56.(0609). NMR data were comparison to those reported in the literature [11-12].

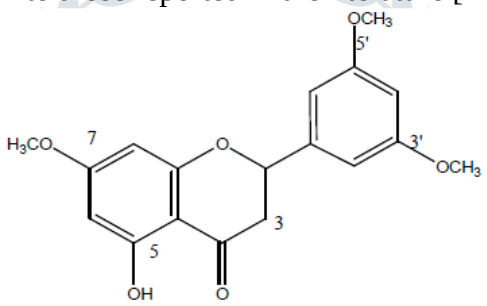


Figure-2: Structure of Isolated Compound from *Aglaia odorata* L (3',5', 7 tri-O-metil Naringenin)

## CONCLUSION

This paper concludes that the analysis of spectroscopy UV, 1H-NMR and 13C-NMR, the isolated compound is *Aglaia odorata* L etyl acetate extract, the compound is 3',5', 7 tri-O-metil Naringenin.

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