Research Article

# Synthesis and characterization of 2-[2-amino-4-aryl-6H-1,3-oxazin-6-yl]naphthalen-1-ol

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**ABSTRACT**

2-Acetyl-1-naphthol have been synthesized from 1-naphthol by refluxing 1-naphthol with glacial acetic acid in presence of fused $ZnCl_2$. Chalcones were synthesized from from 2-acetyl-1-naphthol by condensing it with aromatic aldehydes. Then these chalcones were cyclized with urea in the presence of alcoholic KOH to give titled oxazins. The synthesized compounds were characterized by elemental analysis, 1H NMR, IR Spectroscopy.

**Keywords:** Synthesis, characterization, oxazin.

## INTRODUCTION

The oxazine derivatives are an important class of heterocyclic compounds which are well known for their use as a monomer for polymer formation[1], antibacterial[2,3], photochromic agents[4], antituberculor[5], antimalarial[6] , antitumor[7,8] and anti-HIV agents[9,10] . In addition, oxazine nucleus is a part of many biologically important natural products[11,12] and other synthetic bioactive molecules[13-15] including Efavirenz, a benzoxazinone derivative for the treatment of HIV-1 infections[16] . Hence, a series of novel titled oxazines has been prepared and characterized by IR and NMR spectral analysis.

## EXPERIMENTAL

All the melting points were taken in silicon oil bath with open capillary tubes and are uncorrected. IR spectra were recorded on a Nicolet-Impact 400 FT-IR spectrometer. $^1$H NMR spectra were recorded on a Brucker AC300 FNMR spectrometer (300 MHz), using TMS as an internal standard. Microanalysis of nitrogen was obtained by Kjeldahal's Method. Thin Layer Chromatography on silica gel-G, was used to check the purity of the compounds.

## RESULTS AND DISCUSSION

### Synthesis of 2-Acetyl- 1-naphthol

2-Acetyl-1-naphthol was prepared by refluxing 1-naphthol with glacial acetic acid in presence of fused $ZnCl_2$.

### Synthesis of 1-(1-hydroxynaphthalen-2yl)-3-aryl-prop-2-ene-1-one

1-(1-hydroxynaphthalen-2yl)-3-aryl-prop-2-en-1-one were synthesized from 2-acetyl -1-naphthol by condensing it with aromatic aldehydes.

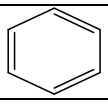
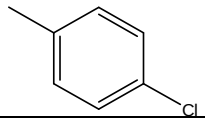
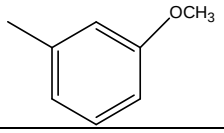
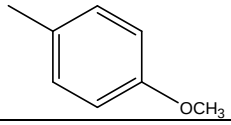
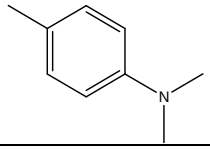
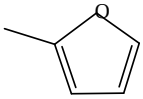
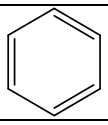
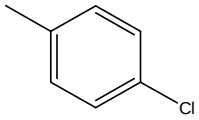
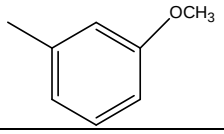
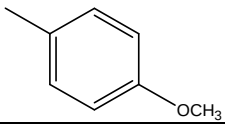
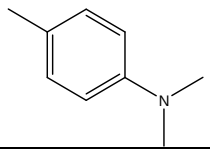
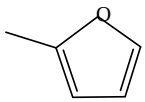
### Synthesis of 2-[2-amino-4-aryl-6H-1,3-oxazin-6-yl]naphthalen-1-ol

Titled oxazine obtained by the action of urea with KOH in ethanol on 1-(1-hydroxynaphthalen-2-yl)-3-aryl-prop-2-ene-1-one.

### Spectral interpretation of (13)

**IR** ($\nu_{max}$) ($cm^{-1}$) : 3203 (OH, str), 3334 ($NH_2$, str ), 2995 (CH str in Ar), 1613 (NH, bend ), 1153 (C-O-C)
**NMR** ($\delta$ ppm): 5.4 (s, 2H, -$NH_2$), 2.1(d, 1H), 3.1(d, 1H), 7.0-8.9 ( m, 9H, Ar-H) , 11.14 (s, 1H, OH)

**Table 1: PHYSICAL DATA OF SYNTHESIZED COMPOUNDS**

| S. No. | Compound | Ar | Melting Point $^0$C | % Yield | % Nitrogen | | R.F. Value |
|---|---|---|---|---|---|---|---|
| | | | | | Found | Calculated | |
| 1 | 1 | - | 98$^0$C | 72% | - | - | - |
| 2 | 2 |  | 102$^0$C | 63% | - | - | - |
| 3 | 3 |  | 123$^0$C | 73% | - | - | - |
| 4 | 4 |  | 117$^0$C | 73% | - | - | - |
| 5 | 5 |  | 133$^0$C | 69% | - | - | - |
| 6 | 6 |  | 113$^0$C | 76% | - | - | - |
| 7 | 7 |  | 126$^0$C | 71% | - | - | - |
| 8 | 8 |  | 183$^0$C | 67% | 8.83 | 8.86 | 0.73 |
| 9 | 9 |  | 159$^0$C | 61% | 7.93 | 7.99 | 0.63 |
| 10 | 10 |  | 173$^0$C | 56% | 8.05 | 8.09 | 0.61 |
| 11 | 11 |  | 189$^0$C | 72% | 8.08 | 8.09 | 0.67 |
| 12 | 12 |  | 176$^0$C | 68% | 11.63 | 11.70 | 0.76 |
| 13 | 13 |  | 183$^0$C | 73% | 9.13 | 9.15 | 0.66 |

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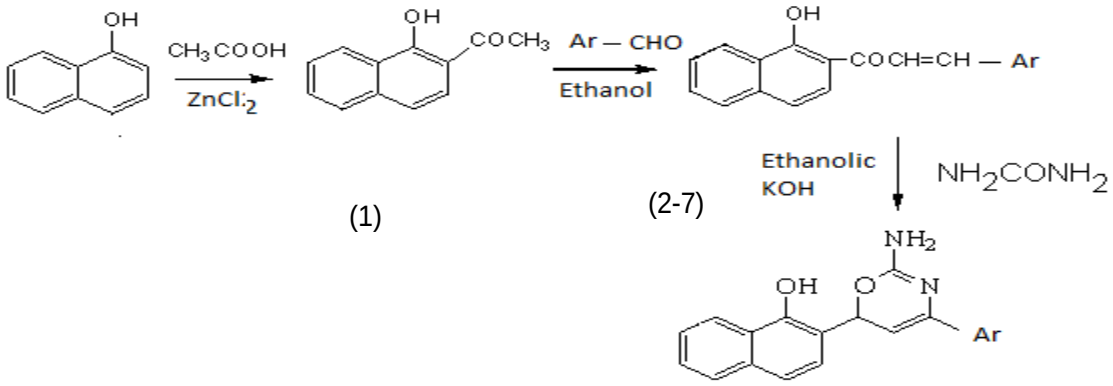
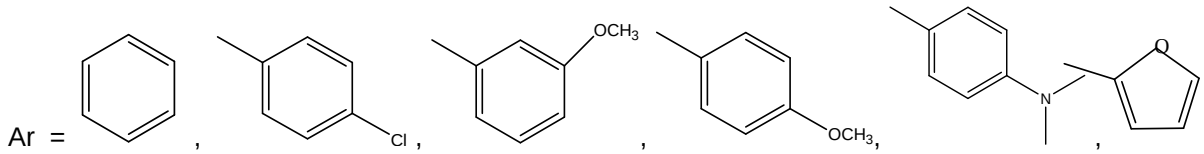
**SCHEME**

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