Studying of Applications of Normal and Cyclic Amides Compounds

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ABSTRACT :
The past work(1) involved synthesized several amide derivatives , while in present paper we will study its chemical applications like (DSC – Analysis , Solubility in different solvents , chromatography behavior) for some compounds [1- 8] due to their importance in many fields like (organic chemistry , analytical chemistry , in organic chemistry as a ligands and reagents) .

I.INTRODUCTION

Amid compounds have the general formula (R-CO-NH_2) And amine group in amide can be substituted (N- substituted amide and N,N- substituted amide) or un substituted (N,N-un substituted amide) [(1)].There are many compounds on the container Amide group of great importance in the human body, such as nucleic acids [(2)], Peptides, protein and nature's most fundamental connecting group[(3,4)] for example enzymatic catalysis (nearly all know enzymes are proteins), transport/storage (hemoglobin), immune protection (antibodies) and mechanical support (collagen) and amide bond also present in useful molecules including numerous industrially important compound[(5)] as fiber lubricants, wax additives and plasticizers[(6)] and in the field of agriculture which was prepared with the effectiveness of the compounds against Aphid[(7-10).] Amides are pervasive in nature and technology as structural materials. The amide linkage is easily formed, confers structural rigidity, and resists hydrolysis. Nylons are polyamides, Amide linkages constitute a defining molecular feature of proteins, the secondary structure of which is due in part to the hydrogen bonding abilities of amides, and got a special importance in the pharmaceutical industry because play an active role in biological system and other fields[(11-21)] .Some of them are used to treat different diseases like medicine of the thyroid gland.

II. EXPERIMENTAL WORK

All chemicals and instrumentals carried out in college of education. Chemical Studying carried out in chemistry department in high purity , and some instrumental like chromatography , thermal systems .

STEP-1: Synthesized Compounds In Our Past Work[(1)]
In our previously paper, we synthesized (8) compounds , but now we will study the chemical Analysis in this work.
STEP-2: Studying of Chromatography applications.
STEP-3: Studying of Thermal applications .
STEP-4: Studying of solvents effect and its polarity on amide compounds.

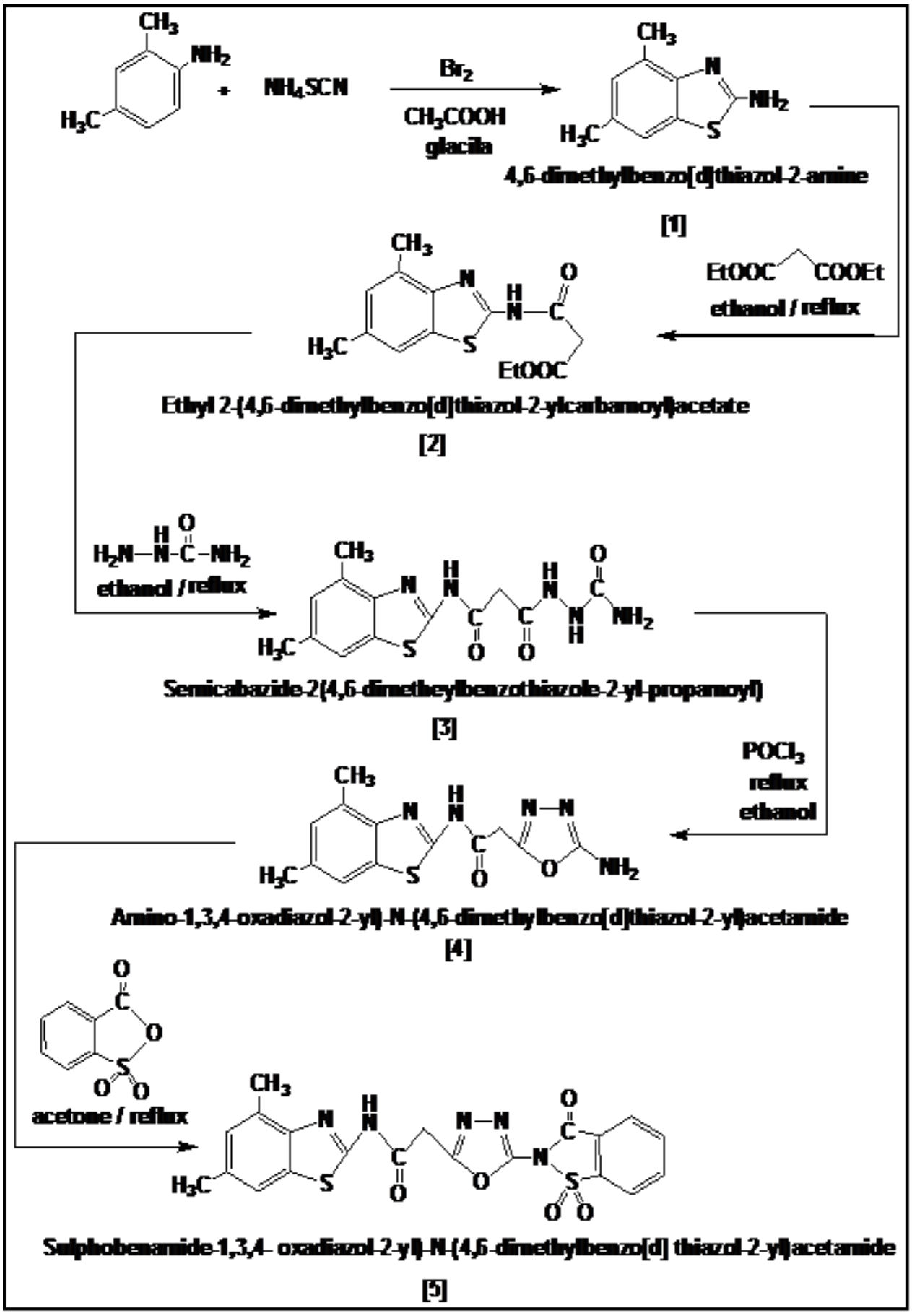

Fig.1. Amide Compounds [1 -5].

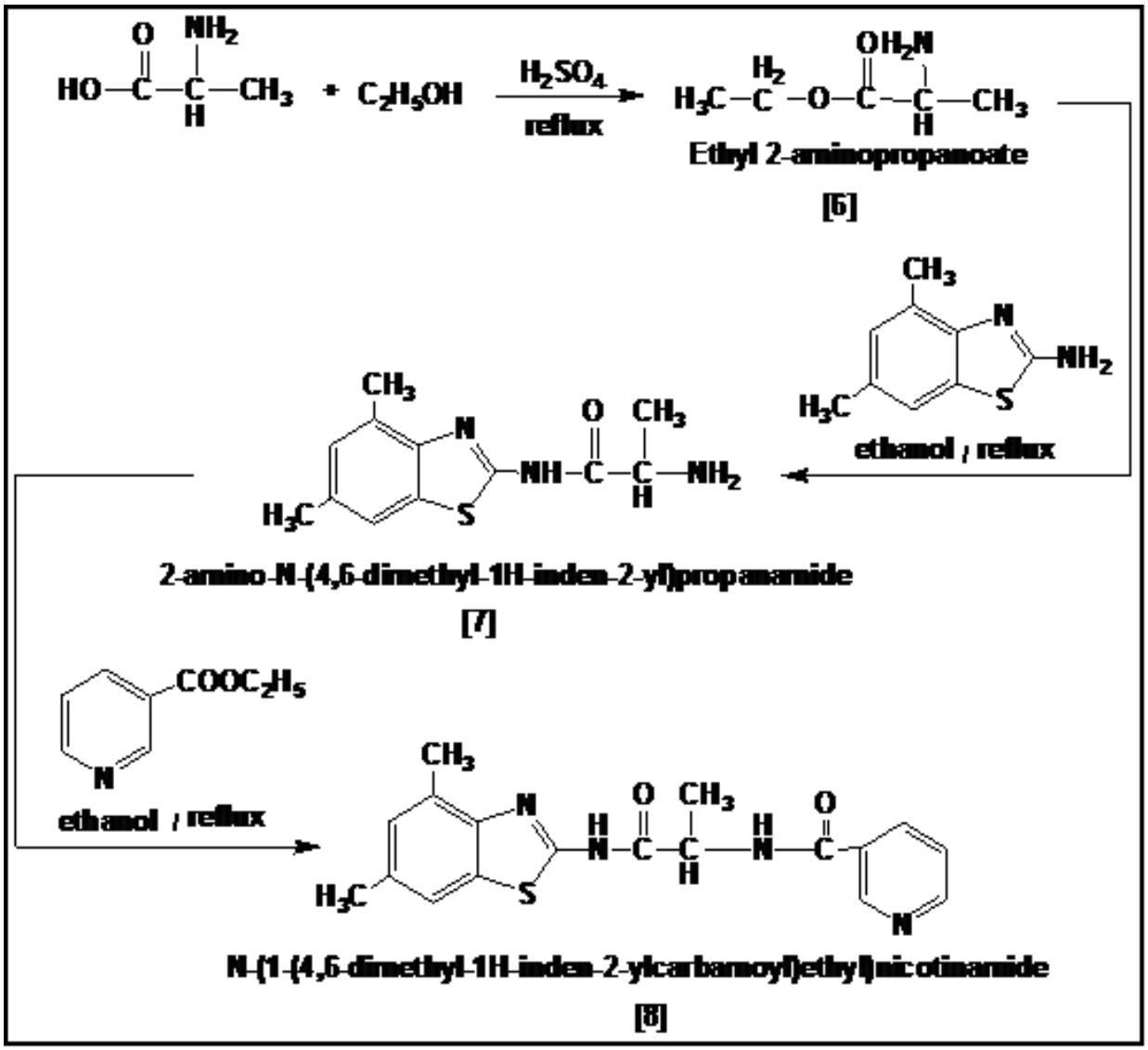

Fig.2. Amide Compounds [6-8]

III.RESULTS AND DISCUSSION

In past paper of our work, we synthesized these Amide compounds but now we will study of chemical applications like (DSC – Analysis , Solubility in different solvents , chromatography behavior) for some compounds :

Chemical Studying :

Analysis of Compounds [some compounds] by Chromatography Method[9, 19] :

Preparation of diluted solutions[9, 19] ((concentration of 1ppm for vehicles)) of compounds [5 ,6 ,7 ,8] after dissolved with ethanol was also attended by a mixture of compounds which prepared by mixing 10ml of each solution individually after shaking continuous., injected models by using a syringe(Hamilton) with a capacity of 10ml individually and then injected the mixture, and then install the measurement conditions through the use of nitrogen a gas flow of 25ml/min bus speeds and injection temperature was 25C؛ degrees higher than the temperature separation column and then use a flame ionization detector is 50C؛ higher than the temperatures of the column either column temperature programmed gradual increase of of(90-160)C؛, taking into consideration the maximum temperature to avoid damage to the column ., all data are shown in figures (3- 6).

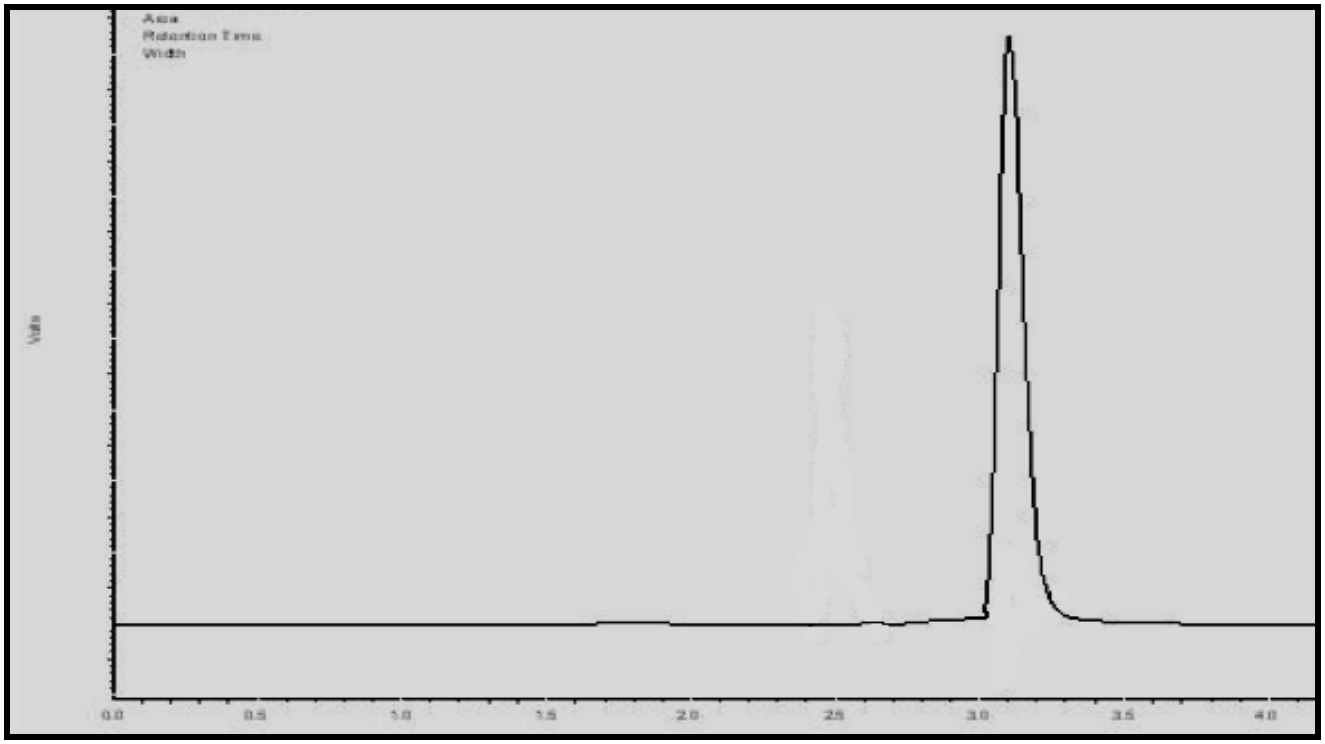

Fig .3: Chromatogram of Compound [5]

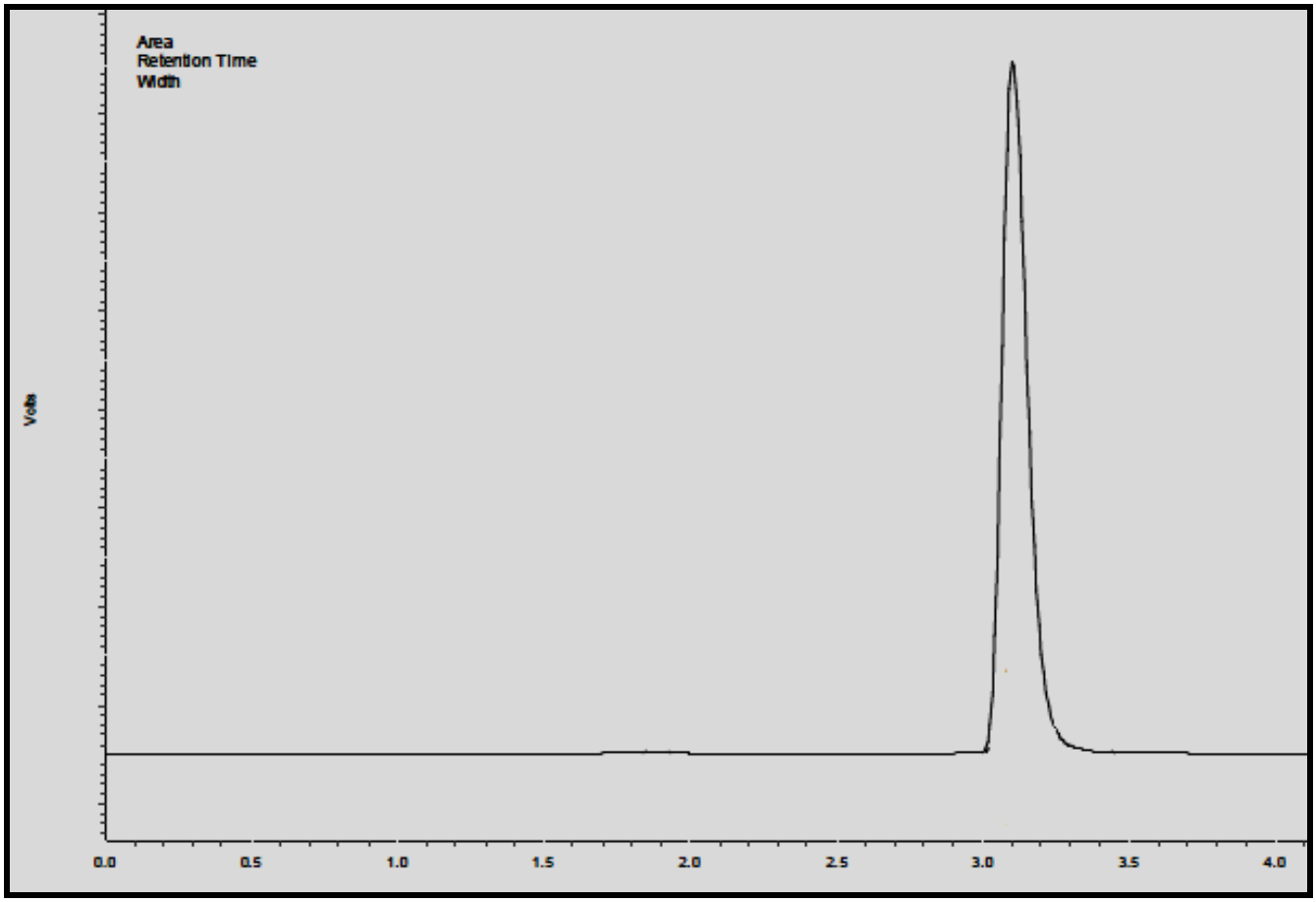

Fig. 4: Chromatogram of Compound [6]

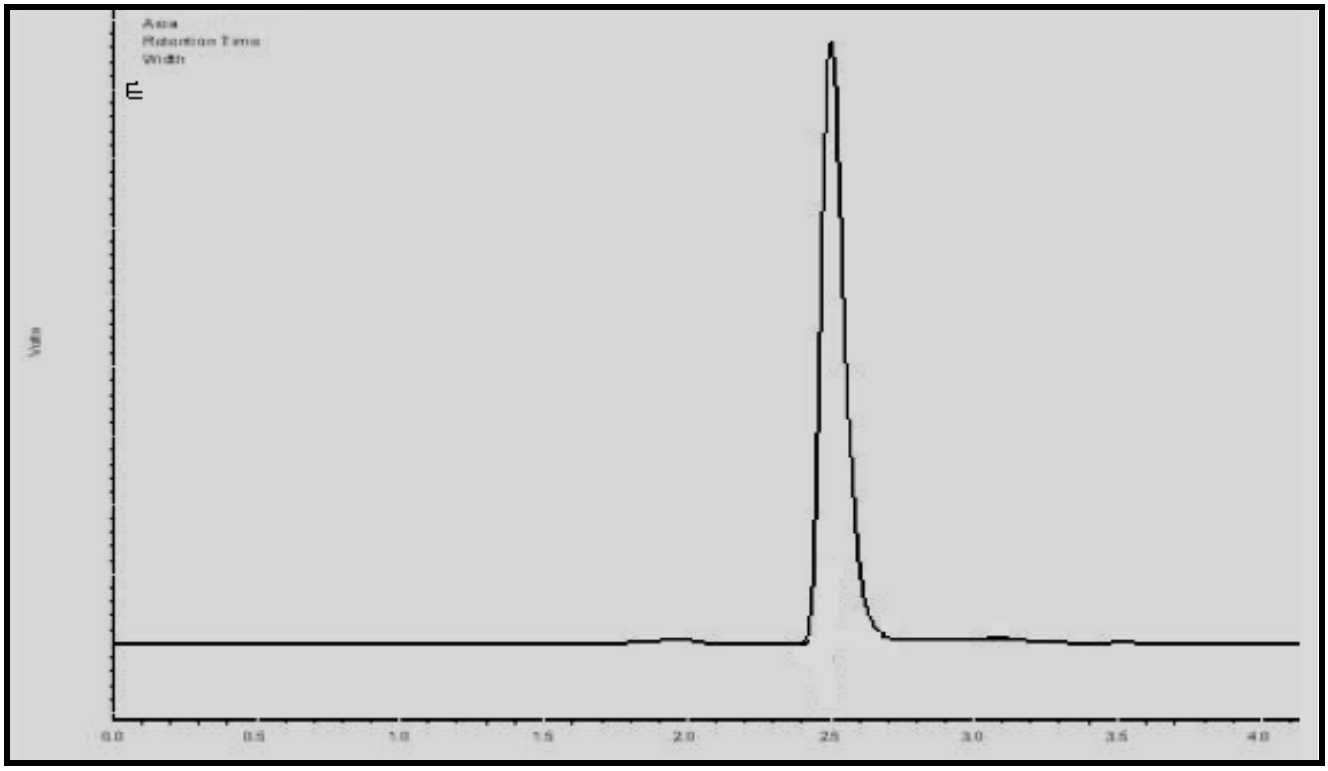

Fig. 5: Chromatogram of Compound [7]

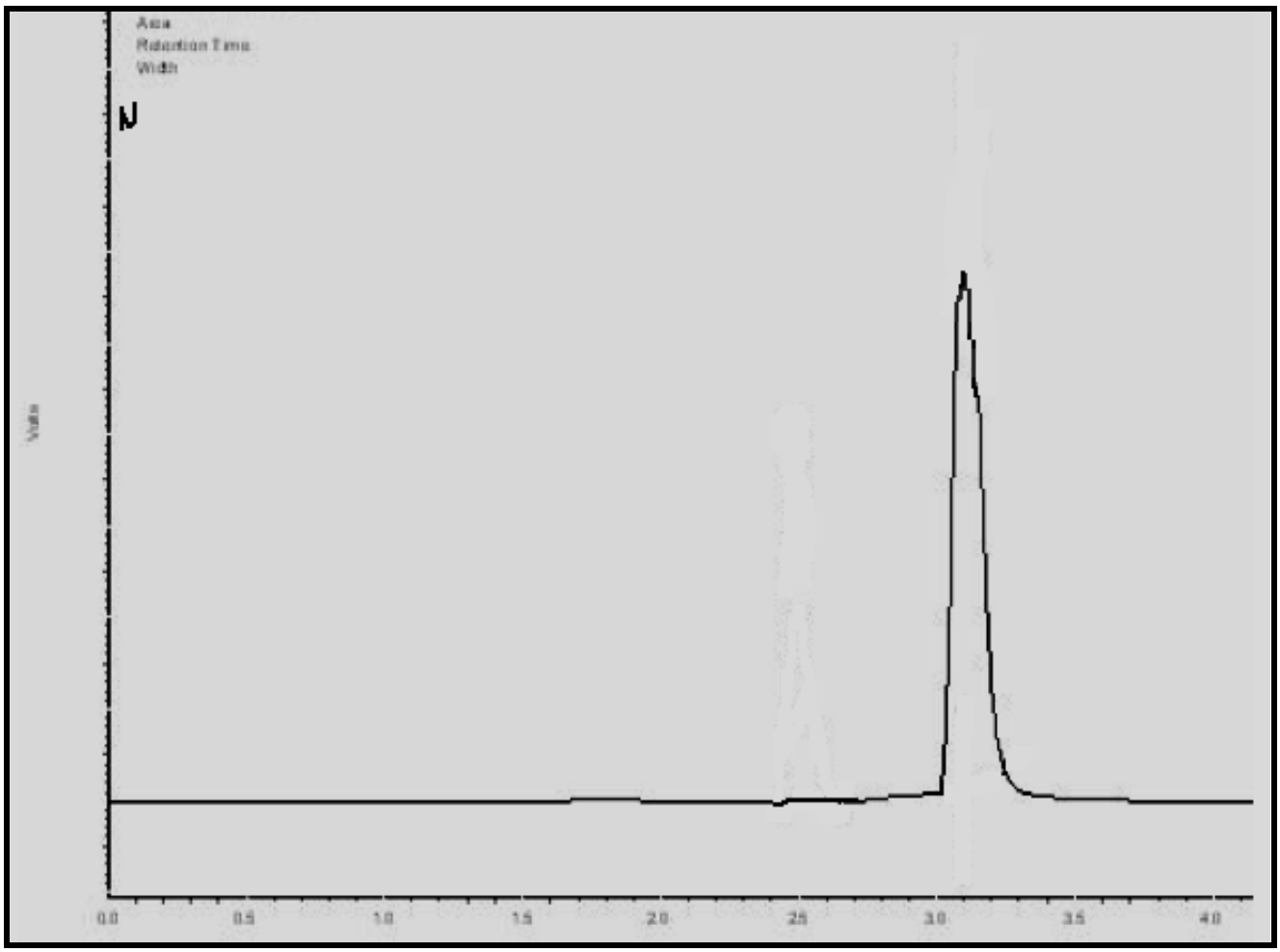

Fig. 6: Chromatogram of Compound [8]

Studying of Solubility :

The solubility of compounds was studied in different solvents according to polarity of solvents , the results are listed in table (1).

Table (1) : Solubility of Compounds in Various Solvents.

Compounds	Solvents					
	Ethanol	Methanol	CH_2Cl_2	Benzene	CCl_4	Ether
[5]	+	+	-	-	-	-
[6]	+	+	-	-	-	-
[7]	+	+	-	-	-	-
[8]	+	+	-	-	-	-

DSC – Analysis :

DSC – measurements[16] of some compounds carried out for amide as a cycles and normal structure in some figures (7 - 10) ,DSC- Curves showed high stability[16] toward high temperature:

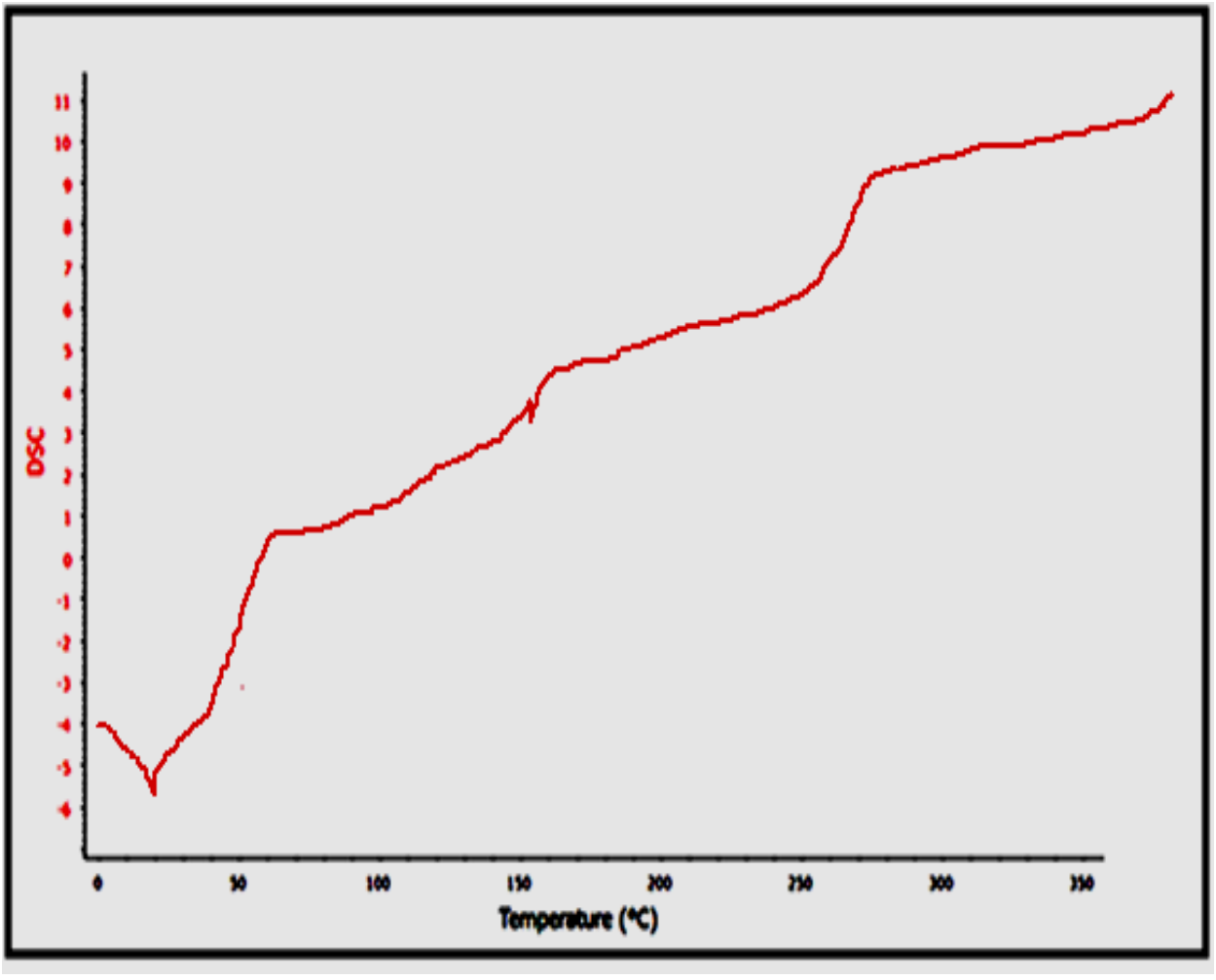

Fig . 7 : DSC of Compound [5]

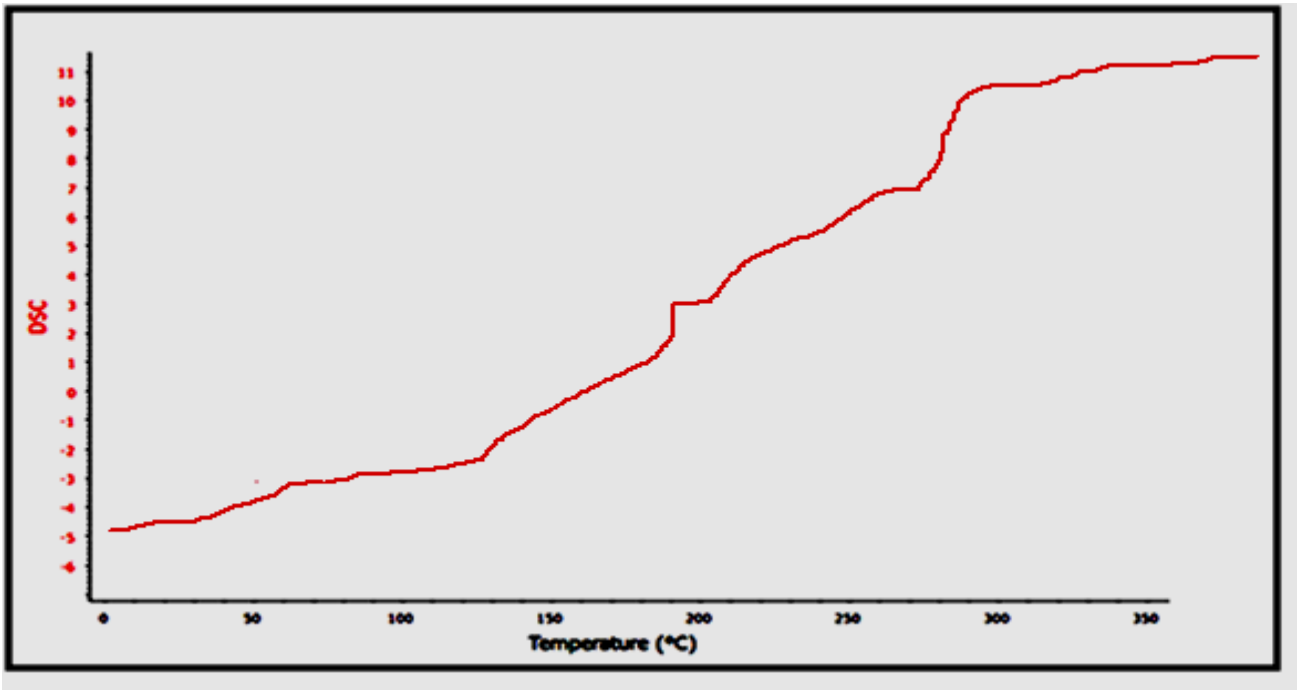

Fig . 8: DSC of Compound [6]

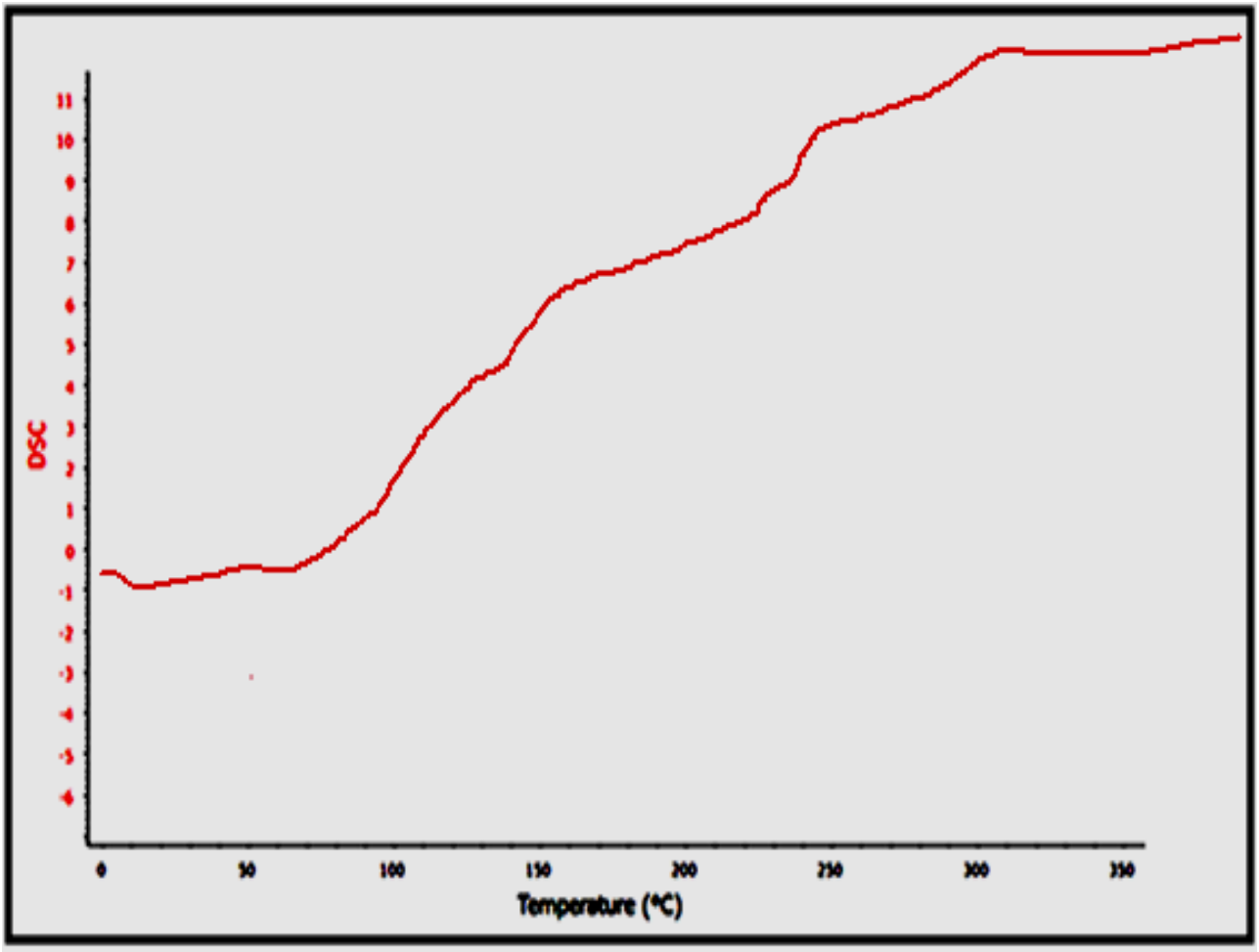

Fig .9: DSC of Compound [7]

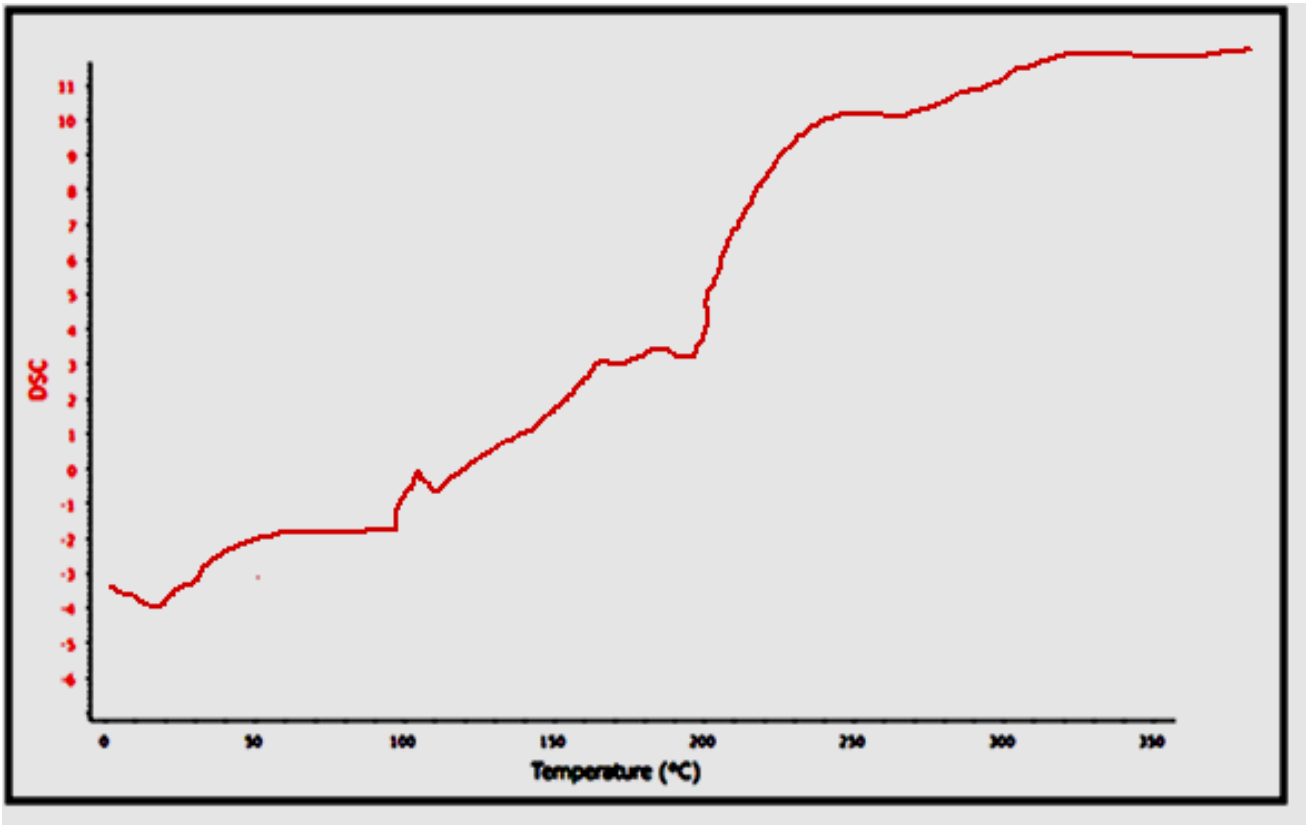

Fig .10 : DSC of Compound [8]

CONCLUSION

All prepared amide compounds (normal and cyclic)) gave good stability in thermal curves and good separation in chromatography technique .

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