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Synthesis and characterisation of some heterocyclic Compounds Containing more than two nitrogen

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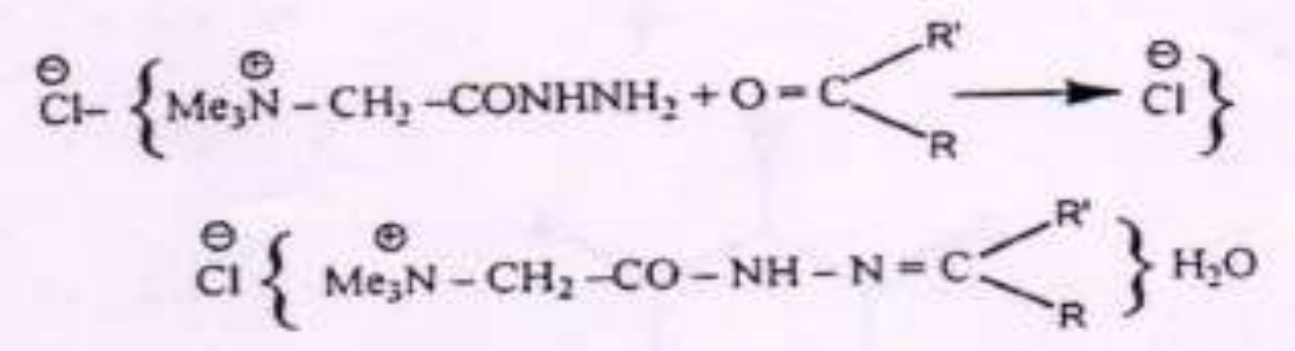
Abstract: Hydragides undergo a role of variety of reactions giving different products which depends upon the nature of hydrazide. The reagent employed and the reaction conditions on treatment with into diachydrazides. The action heat of primary hydrazides on heating.Split out a molecure of huydrazine and are converted into diacyihydrzides Diacylhdrrazides, as well as aclhdrazides may, be cyclised to give variety of hetrocyclic component containing ficve or six membered rind systems with three of four nitrogen atoms of azole or azine series. The results obtained were characterized and finally conformed alternative method of known synthesis.
(**Key Words** ; Hydrazides , Diacylhydrazides , azides azines)

Introduction

Carboxylic acid derivatives such as ester acid chloride, acid amide form acid hydrazide.Where treated with hydrazineunder normal condition. Simple carbonyle compounds are usually srstallkin with well-defined melting points. They ar used sometimes for the identification of carbonyl compounds.

Hydrazides containing a quarter ammonium group in the acid poertion of the molecule condense with Ketones to give condensation products which are soluble in aterr. Such hydrazides are called Girard Reagents ." They are sometimes used in separating harmones as water soluble compounds from acccompaining fats . The Ketone is their recovered by hydrolysing the hydrogone.



The reaction of hydrazides with other carbonyl company such 1,3- and 1,4-diketones has not been investigates so thoroughly.In reactionwith the these diketones, the hydrazides form heterocyclic compounds of azoles or azines series.

Hydrazides of βcalledγ –keto acids may be cyclised intramolecularly to give heterocyclic compounds.Many of which possess biological activity. Several such compunds have been synthesized recently. For example B- Ketoesters has been cyclised through the hydrazide into pyrazolone.

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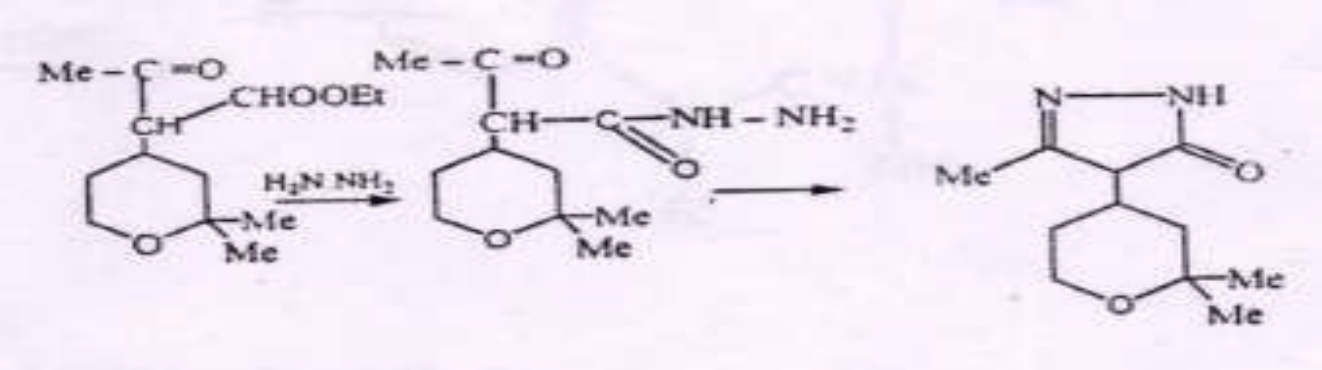
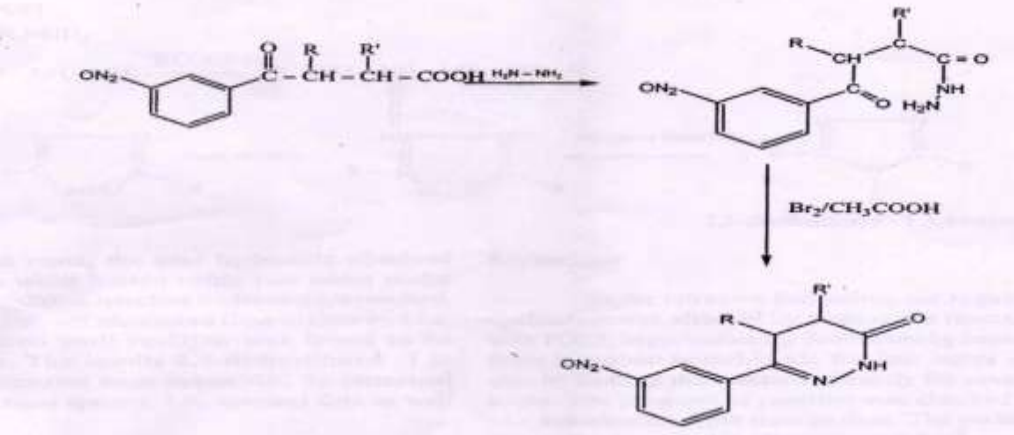
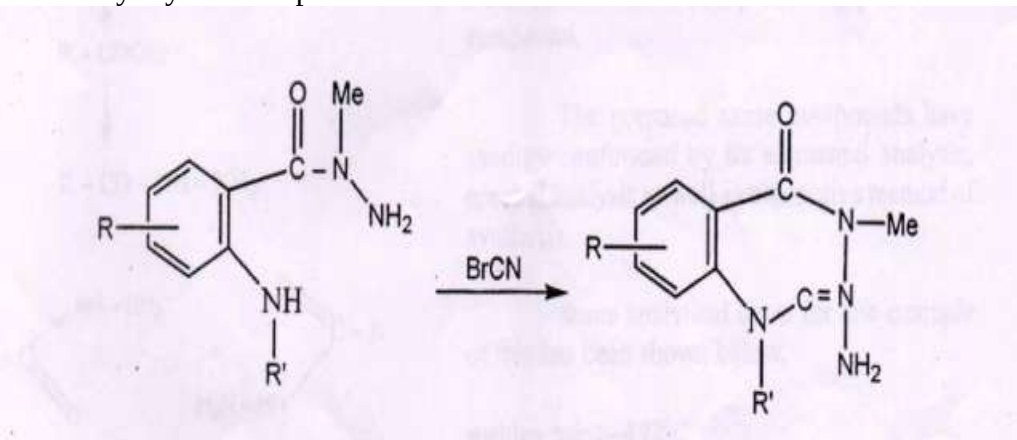


Similar cyclisation of the hydrazides of the r-Keto acid furnished the pyridazinoes.



The possibilities of cyyclisation giving different types of ring system, increase considerably when amyl hydrazides possess are ortho amino



Experimental

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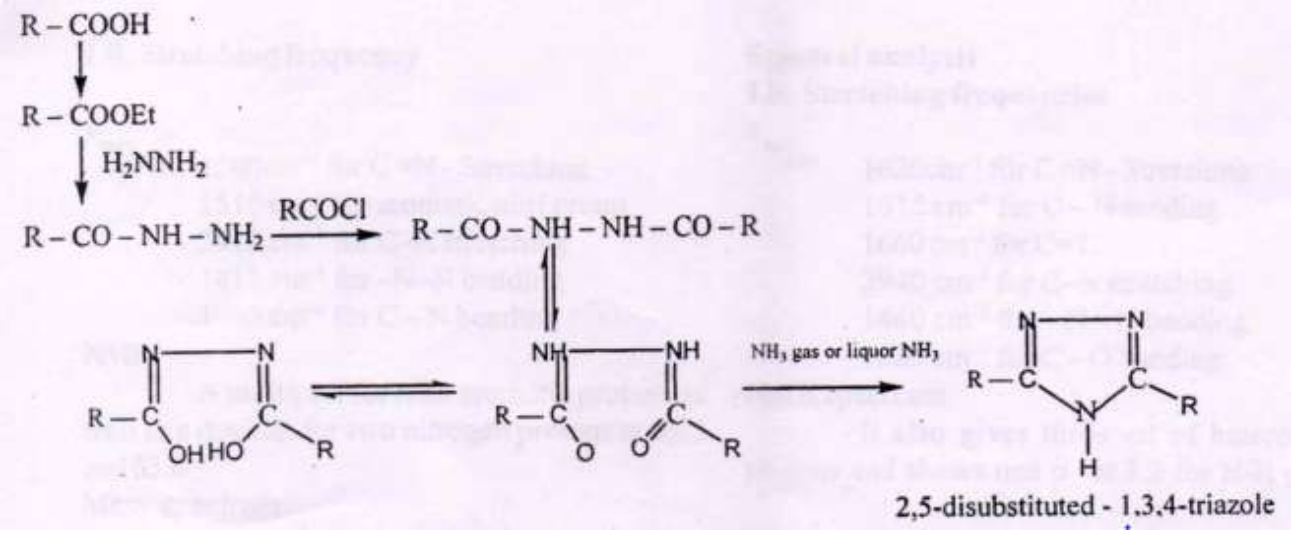
Cargboxylic acieds such as – pecolinic acid nicotinic acid, Furic acid and phenyl acetic acid were easily availaible . They were firstly converted into their respective hydrazides and were again treated with corresponding acid chloride again treated the results obtained were diacyl hydrazide.

Substituted in the aromatic ring. Bezotriazepines were
These diacyclhdrazides were forced to cyclise in the presense of ammonia gas to result 2,5-disubstituted 1,3,4- triazole compounds by the sequenc of reaction carrying out alternative known method as well as elemental analysis and spectral dates. E.g. uv. IR.Nmy and mass spectra.



In second route, the acid hydrazide obtained easlier is when heated using two notes under normal condition, tetrazine molecules are resulted. The results 3,6-disbustituted -1,2- dehydrotetrazinc were indentified by elemental analysis , mass spetra, I.R.spectral data as well as nmr.

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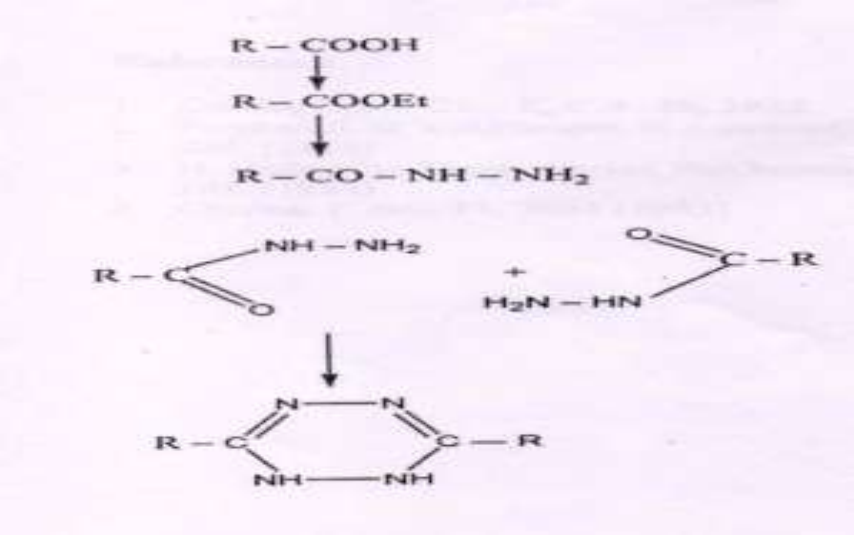

Explanation

In the tetrazine formation, the required cyclisation was affected by heating the reactants with POCL3 in pyrindine for four hours by heating them in carbon tetrachloride for four hours and also by heating the reactants for severals hours. The progess of reaction was checked by t.l.c examination from time to time. The yield of the cyclised product in all cases were fairly good.

Suice acedic reagents, are found to be more effective and at the same time basic reagents were also found good enough in bringing about such . The results had a sharp melting point pure compound.

The prepared azine compounds have shudure conformed by its elemental analysis, spectral analysis as well as alternative method of synthesis.

Some analytical dates for one example of this has been shown below.

Melting point – 172C

Mass spectra – (m/e)-295

Elemental analysis

Found N-23.80%

Calculated for C15H13N5O2 N-23.72%

I.R. Stretching frequency

1580cm-1 for C=N- Stretching
1515cm-1 for aromatic nitri group
2910cm-1 for C-H stretching
1415 cm-1 for N-N bending
1450 cm-1 for C-N bending

NMR

A multiple for nine aeromatic protons as well as doublet for two nitrogen protons at 83.2 and 83.6

Mass spectrum
(m/e)-29

In the earlier case of synthesis of triazole cyclisation also occurs under same labroratory condition analytical data of one example for the given compound is mentioned as shown below.
2,5-bis(a-funyl)-1,3,4-triazole
Melting point – 11C
Elemental analysis
N- 20.76%

Spectral analysis
I.R. Stretching frequencies
1620cm-1 for C=N-Stretching
1015cm-1 for C-N sending
1660cm-1 for C=C
2940cm-1 for C-N stretching
1440cm-1 for –N-N bending
NMR spectrum
It also gives three set of heterocyclic protons and shown one p at 3.2 for N-H proton
Mass spetra
[M/e]-201
All analytical dates are in the agreement of the structure of azine as well as azole compounds.

Acknowledgment
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