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Preparation and charal terization some of Mannich derivative of ether acetylene pyrazine compound and biological activity

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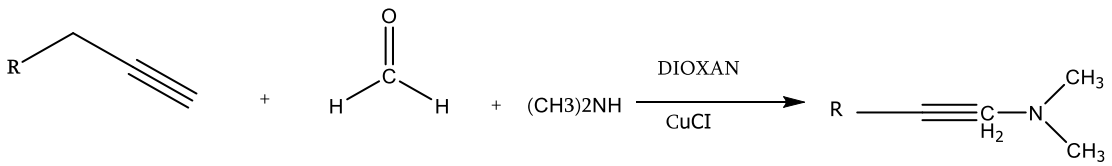
Abstraet

In this paber involves synthesized of some new mannich bases compounds derivative by using ethers acetylene pyrazine material by multicompoundreactionof di-2,5-[3-prop-ynyloxy-3,6-di-p-tolyl pyrazine-2,5-di(2-propynl-oxy)-phenyl3,6-di-phenylpyrazine-2,5-di(2-propynl-oxy)-phenyl3,6-di-p-chorophenypyrazine-2,5-di(2-propynl-oxy)-phenyl3,6-di-p-bromophenylpyrazine-2,5-di(2-propynl-oxy)-phenyl-3,6-di-p-nitro phenyl pyrazine,with di ethyl amine and di methyl amine yielded.series of new mannich bases Their the structures were ident fied by FT-IR -^{1}HNMR,^{13}CNMR the synthetic compound were screned in vitro antimrcro bialfo biological activity

Key words :ether acetylene pyrazine,Mannich bases di methyl amine, di ethlyl amine, biological activity

Introduction

The mannich bases compounds have aboard spectrum of biological activity [1] because amino group and acetylene group[2] Themannich reaction has been suggested in many bio synthetic bath ways especially for alkaloids Mannich[3,4,5,6,7] and cance, anti malarin,anti microtso anti fubecular anti- inflammatory and anti convulsant molecules. and can be readity converted to derivatives that polssess useful appllcation [9,10] in paint and polymer chemistry ,Mannich amino methyl amine consists of the condenydion [11,12] one active hydroyen,alkyl ketone,phenol NH-hetro cycles with formaldehyde and primary or secondary amine in this study prepared new mannich bases from ethers acetylene pyrazine



The products were characterization bymelting point end are uncorrected the purity of the compound was checked using perolated T.L.C-platets using benzene.methanol (9:1) and rdeutifed by FT.IR,HNMR and ^{13}CNMR

1-synthesis of ether acetylene pyrazine (13)

dissolve (0.01 mole) substitution oxuzole in (50 ml) ethanol added (2gm NaoH dissolve 10 ml water) and stirred 10 mint added drop-wise (0.02mole) propargyl bromide to well stirred reaction mixture the was refluxed to 60- 70 ^{0}Cfor(4h) the reaction was stopped and mixture an ice water added to the reaction mixture and the erude product was eltracted (3×15) ethylene di chloride the organic layer was evaporated and crystals pioduct by ethanol

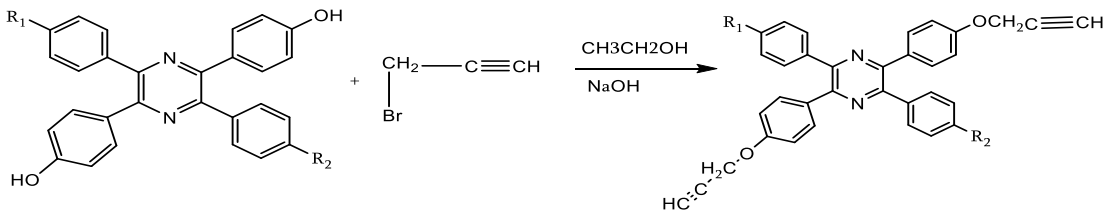
2-preapation of Mannich reaction from ether acetylene(13)

Amixture of (3-propynl oxy- sub pyrazine) (0.01mole)with 0.01mole formaldehyde and 0.01mole dimethyl amine or di ethyl amine in

presence of (0.2gm)(CuCl) as cataly is in 50ml pure dioxane to well stirred reaction with refluxed (90min) the reaction was then filtration to get ricud and pour the filter cold water (50ml) and the crude organic produce was the extracted by chloro form was collected and recrystallized from ethanol

Result and Discussion

The perecursor required for our present study were prepared five new acetylene compounds was reacted symmetrical and un symmetrical pyrazine with alkyl halide (RX) by substitution reaction uis SN2 mechanism to produce a terminal ethers acetylene as shown in figure (2) the newly acetylene compound characterized melting point ,spectral FT-IR disappearance of 1431Cm^{-1}for R-o-R 2371cm^{-1} for C≡C stretch ,and 3436 for C≡CH hydrogen of alkyne

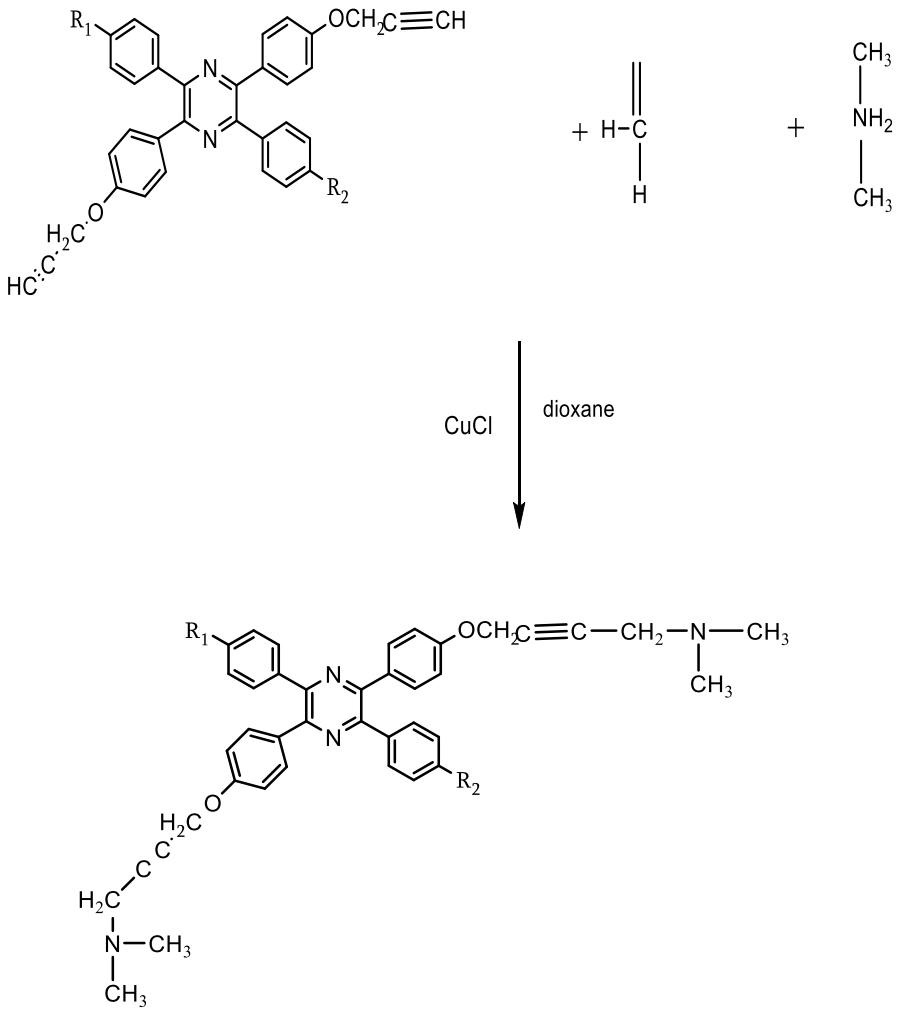


R_1=CH_3,H,Br,Cl,$N(CH_3)_2$

R_2=CH_3,H,Br,Cl

Schem(2)

The new compound Mannich bases product by reaction ether acetylene pyrazine with dimethyl amine or di ethyle amine characterized MPC, C.H.N analysis , FT-IR ,^{1}HNMR ,^{13}CNMR and study of the biological activity



Schem(3)

comp	C≡C	C=N	C–X
1	2170	1585	
2	2160	1570	
3	2180	1580	C–Cl 660
4	2130	1575	C–Br 740
5	2180	159	

Table(1)- IR spectrarl

The five new Mannich bases identified by ^{1}HNMR and ^{13}NMR compound(1)2,5-di(2-propynl-oxy)-phenyl3,6-di-phenylpyrazine, ^{1}HNMR-DMSO/1-3ppm of CH_3, 2.3ppmCH_2 , 2.6N$(CH_3)_2$,6.8-7.3 Aromatic

^{13}CNMR-DMSO/30,60,116-142,159

Compound(2) 2,5-di(2-propynl-oxy)-phenyl3,6-toluene pyrazine

^{1}HNMR-DMSO/1-3ppm of CH_3 ,2.4ppm CH_2 ,2.7 $N(CH_3)_2$ 6.9-7.2 Aromatic

13CNMR-DMSO/35 ,65,130,157

compound(3)2,5-di(2-propynl-oxy)-phenyl3,6-di-p-chorophenyl pyrazine
^{1}HNMR-DMSO/ 2-3ppm of CH_2 ,3.2 $N(CH_3)_2$,6. 9-7.7 Aromatic

^{13}CNMR-DMSO/60,108-136 ,46 ppm for C-Cl ,157 C=N

Compound(4)2,5-di(2-propynl-oxy)-phenyl3,6-di-p-bromophenylpyrazine

^{1}HNMR-DMSO/ 2-3ppm of CH_2 ,3.4 NCH_3 ,7.2 -7.9 Aromatic

^{13}CNMR-DMSO/ 37,155,112,157

Compound(5)2,5-di(2-propynl-oxy)-phenyl3,6-di-p-nitro phenyl pyrazine

^{1}HNMR-DMSO/ 2.6ppm of CH_3 ,3.4 $N(CH_3)_3$,7.5 -78Aromatic

^{13}CNMR-DMSO/ 65,146,157,162

An antitacterial activity has been managed according to kir by Bauer method the prepared compounds were projected for their anti bacterial activity against gram negative bacterial staphylococcus and salmotyphi

Table(2)

comp	staphyloccus	salmolyphi
1	+++	++
2	++	+++
3	+++	+++
4	+++	+++
5	+++	+++

Conclusion

In conclusion synthesis of new ethers acetylene reacted with second amiat and formaldehyde give new mannich good yield and this compounds may to used as amedicl in future

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