

## Synthesis of Some New Mannich Bases Derivative from Pyrazyne and $\alpha$ -Amino Acid

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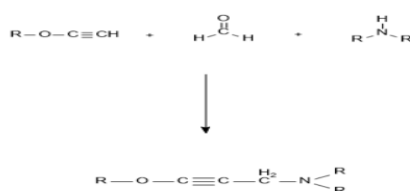
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**Annotation:** the aim of this work Synthesis some new mannich bases compound by the derivative from ether actylene pyrazin with alpha amino acid the product bioactive has gined a lot of attention because they numerous signifies medicine and biological use their structure were identified by (FT-IR , H1NMR C13NMR ) and were screened invitro antimicrobil for biological activity.

**Keywords:** pyrazine, propargyl bromide, biological activity, amino acetylene.

The classical mannich reaction a three component condition between structurally diverse substrate substrate (H-X) containing at least one active hydrogen atom an aldehyde compound and an amine the maanich reaction has been suggested in many bio synthesis have apart spectrum of biological activity<sup>(1-7)</sup> use as anti-choline agent hyper tensive agent and anti-cancer mannich bases have found new numerous particle application<sup>(8-11)</sup> in paint and polymer chemistry used by the petroleum industry

important in this synthesis pyrazine with propargyl bromide and formaldehyde presence of alpha amino acid by using dioxane and catalyst CuCl was showing



### Experimental

Melting point were characterized the purity of the compounds was checked using percolated T.L.C

plates using benzene, methanol (4:1) solvent system and were the products were characterized by FT-IR Spectra, HNMR and ENMP and CNMP spectra were recorded on a Bruker 400MZ with tetramethy silane as internal standard in DMSO-C as solvent

### A- Synthesis of ether acetylene (A1)

Dissolve (0.01 mole 2,5-P-hydroxy phenyl-3,6-diphenyl pyrazine in (10 gam sodium hydroxide dissolve 60 ml ethanol) and stirred of 10 minutes added drop-wise 0.02 mole) propargyl bromide to well stirred reaction mixture which was refluxed 70 c for 4 hour the reaction was stopped and the mixture was cooled to room temperature. An ice water was added to mixture and the crude product was extracte twice by ethylene chloride

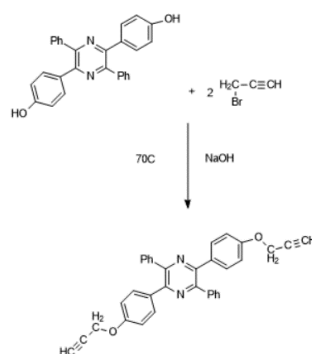
### (A2, A3, A4) Synthesis Mannich reaction

A mixture of Ether acetylene 0.01 mole with 0.02 mole formaldehyde and 0.02 mole amino acid in presence of 0.2g cucl as catalyst in (20ml) of dioxane Stirred reaction refluxed 70 c for 90 minute th was reaction mixture then filtration to get rid Cucl The product was extracted by ethanol

### Result and discussion

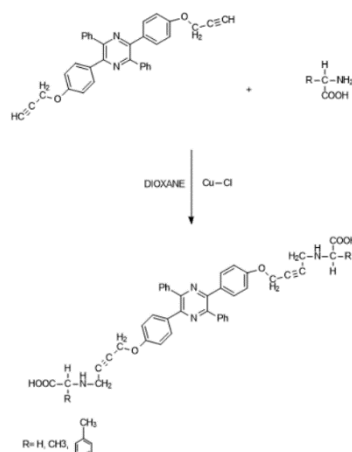
Ether actylene was prepared getting 75 % using 2,5-di-p-hydroxy phenyl-2,5-di-phenyl pyrazine with propargyl bromid shown in schem1

The reaction was conclude to occurs via SN2 mechanism the new ether actylene compound characterized melting point (165c) spectral the FT-IR disappearance (OH) group  $1431\text{ cm}^{-1}$  for R-O-R and  $2371\text{ cm}^{-1}$  for alkyne group,  $3436\text{ cm}^{-1}$  for H of alkyne and  $1630\text{ cm}^{-1}$  C=C of pyrazine



Second part reaction between ether actylene with alpha-amino acid alycine , alanine , phenylalanine

As shown in schem2



The new mannich compound have been characterized by their melting point and spectral FT-IR showed bands (H-N) in  $2950\text{ cm}^{-1}$  and OH in  $3500\text{ cm}^{-1}$  as well the disappeared  $\text{C}\equiv\text{C}$  in ( $2150\text{ cm}^{-1}$ ) because symmetry at because at both bond of acetylene group which supports the success of mannich reaction.

A1= 3,6-di phynel pyrazine -2,5 bis (3-proo-2gnyloxy)

$^1\text{H NMR}$ (DMSO- $d_6$ ) ppm = 1.9 ( $\text{C}\equiv\text{C}$ ), 4.3 (O-CH<sub>3</sub>), 7.3-8.4 (H Aromatic)

$^{13}\text{C NMR}$  (DMSO- $d_6$ ) = 80 ( $\text{C}\equiv\text{C}$ ), 66 (O-CH<sub>3</sub>)

120( $\text{C}=\text{C}$ ), 162 ( $\text{C}=\text{N}$ )

A2= 3,6-di phynel pyrazine -2,5 diyl bis (oxy) bis (but-2-yne-4,1-di aceteic acid

$^1\text{H NMR}$ (DMSO- $d_6$ ) ppm = 3.24 ( $\text{CH}_2\text{-N}$ ), 4.61 (O-CH<sub>3</sub>), 7.3-8.11 (H Aromatic), 11.5(OH), 3.45 ( $\text{CH}_2\text{-C}=\text{O}$ )

$^{13}\text{C NMR}$  (DMSO- $d_6$ ) = 37.2 For ( $\text{CH}_2\text{-NH}$ )

80.5 ( $\text{C}\equiv\text{C}$ ), 68 (O-CH<sub>3</sub>), 127-128 ( $\text{C}=\text{C}$ ), 160 ( $\text{C}=\text{N}$ )

A3= 3,6-di phynel pyrazine -2,5 diyl bis (oxy) bis (but-2-yne-4,1-di ozandiy di propanoic acid acid

$^1\text{H NMR}$ (DMSO- $d_6$ ) ppm = 1.6(CH<sub>3</sub>), 3.15( $\text{CH}_2\text{-NH}$ ),

3.35(NH), 4.25(O-CH<sub>3</sub>), 7.3-8.4 (H Aromatic), 10.15 (OH)

$^{13}\text{C NMR}$  (DMSO- $d_6$ ) =27 for (CH<sub>3</sub>), 37.5 for ( $\text{CH}_2\text{-NH}$ ) 82 ( $\text{C}\equiv\text{C}$ ), 72 (O-CH<sub>3</sub>) 120( $\text{C}=\text{C}$ ), 162 ( $\text{C}=\text{N}$ ), 176 ( $\text{C}=\text{O}$ )

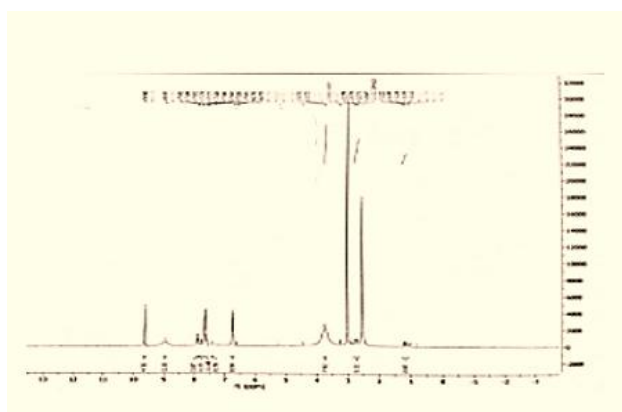
A4= 3,6-di phynel pyrazine -2,5 diyl bis (oxy) bis (but-2-yne-4,1-di azamdiyl di benzolic acid

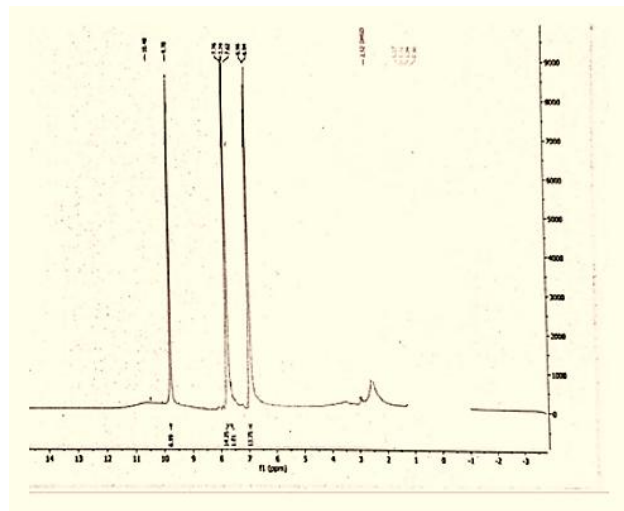
$^1\text{H NMR}$ (DMSO- $d_6$ ) ppm = 2.27( $\text{CH}_2\text{-Ph}$ ), 3.21( $\text{CH}_2\text{-N}$ ),

3.34(NH), 4.72(O-CH<sub>3</sub>), 7.3-8.25 (H Aromatic), 11.25 (OH).

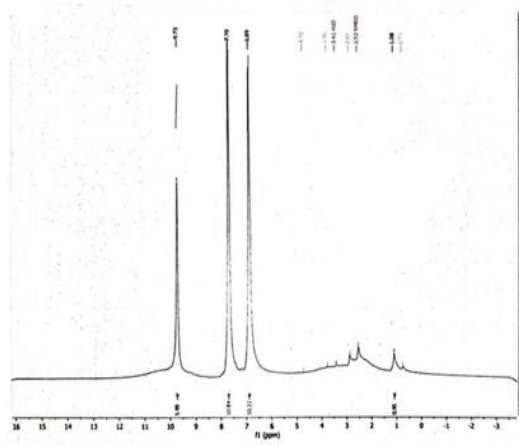
$^{13}\text{C NMR}$  (DMSO- $d_6$ ) =36 for (CH<sub>3</sub>), 37.2 for ( $\text{CH}_2\text{-NH}$ ) 85 ( $\text{C}\equiv\text{C}$ ), 75 (O-CH<sub>3</sub>) 135-142( $\text{C}=\text{C}$ ), 162 ( $\text{C}=\text{N}$ ), 178 ( $\text{C}=\text{O}$ )

The prepared compound where project for their antibacterial activity gram positive staphylococcus coil and Escheichia (Table 1)

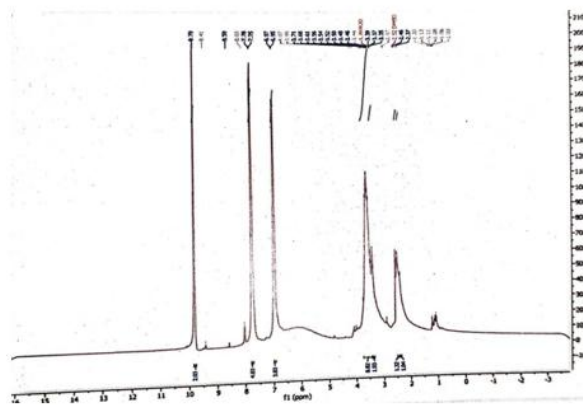




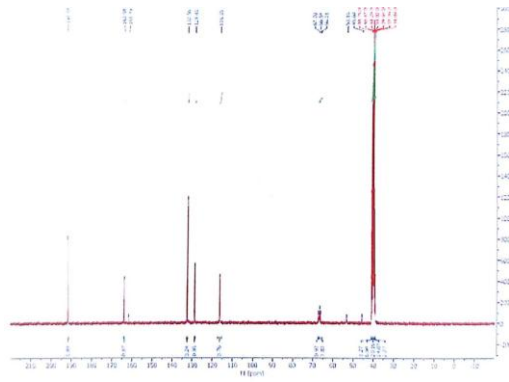
A3



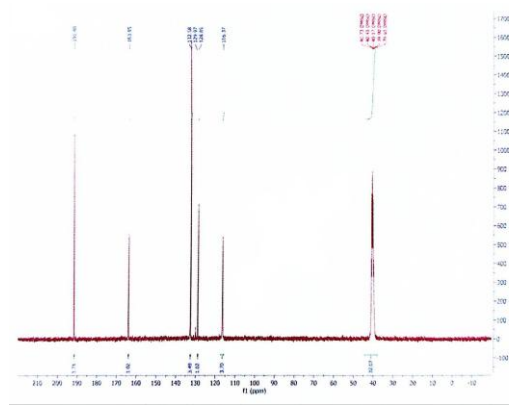
A4



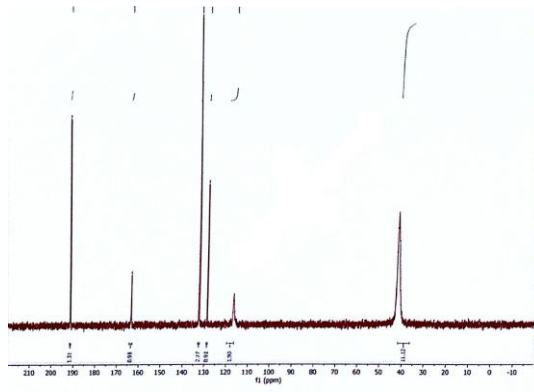
C<sub>13</sub>NMR A1



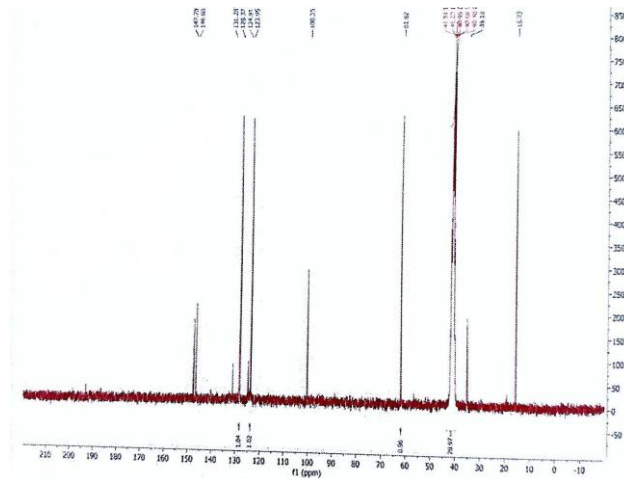
C<sub>13</sub>NMR A2



C<sub>13</sub>NMR A3



C<sub>13</sub>NMR A4



Study biological activity of new mannich buses the result given in table 2

Comp. No	Type of bacteria Inhibition zone 5mg, 10mg, 20 mg/mole	
	Psudomonas aeruginosa	Enterococcus
A1	7-5, 8, 12	8
A2	7.4, 9, 13	8.2
A3	15, 20	16, 24
A3	17, 25	16, 22

## Conclusion

The synthesis of new mannich compounds by Ether acetylene reaction with alpha amino (Glycine, Alanine, Phenyl alanine) and formaldehyde in presence of CuCl in medium on dioxane synthese good yield, etheractylene of pyrazine, were used successfully as key Starting materials for the Synthesis of new compound may be used as a medical compounds in future

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