A Review Literature on Synthesis of someTriazole Derivatives, Their Biological Characterization in Pharmaceutical Field

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Abstract

In a last century,a large numberof different molecules of hetero cyclic compound have been synthesis i.e. quinazolinone thiazolinone azetidinone etc. but in it triazole derivatives showgreat attraction towardsin heterocyclic compound and triazole molecules show very important part due to its efficacyagainst biological and pharmaceutical fieldand its molecules generally found in two isomeric form1,2,3 and 1,2,4 triazole moiety derivatives , and these isomeric form of derivativesis very important in biological and pharmaceuticalfieldi.e. microbial, fungal, tubucular cancer, bacterial etc .

Keyword*: triazole moiety ,pharmaceutical , biological activity, fungal activity and microbial activity .*

Introduction

Heterocyclic chemistry is a wide area of chemistry in it one or more ring with hetero atom present,which is other than carbon atom present in it , hetero atom which general form the ring is S , N , halogen ,oxygen,triazole unit cotaining derivatives antifungal drug ie Fluconazole, Isovucanazole, Itraconazole, Voriconazole, Pramiconazole, Ravuconazole And Posaconazole.Two isomeric form of triazole unit

Fig 1 1,2,3 and1,2,4 Triazole tautomeric form

Differentmolecules of triazole show very effective and useful nature –i.e. substituted azetidinyl indole triazole characterised as antibacterial properties [1.] novel1, 2, 4 triazole containing quinazolinyl pipridinyl and N (substituted phenyl) acetamide work as antibacterial and phyto phathogenic bacterium orazae pv [4]and·Workin the field of corrosion inhibitor for carbon steel [5] triazole nucleus are also very effective in anticancer protective molecules [10]triazole compoundin hetrocyclic chemistry containing triazole as well as amide unit is very effective as anti fungal characteristic [11] triazole nucleus function as biological and pharmaceutical properties in differentdisease[14] properties show as anticancer activity [16] bistriazole show properties as cytotoxicity nature[18] antifungal , antibacterial properties of novel 1,2,3 triazole [19] aryl suphanamide triazole derivatives show activity and valuable properties as antitubucular activity [22] unit of triazole function as anti proliferatives activity [24] in biological field triazole molecules and nuleus also function as anti fungal and anti tubucular nature and function against defferent properties . sor we notify charecterized triazole derivatives (nucleus) is very useful, beneficial ie –biological, medicinal, agricultural, and other important area .

Scheme 1

Synthesis of 4-[2-substituted alkyl/aryl-5-methoxy -3-indolyleno]-3-ethanthioate-5-(-substituted - phenyl,1,2,4triazole:Take compound 1ie- hydrazide 0.01 mole and potassium hydroxide KOH1.5 mole ,CS_2 1.0 mole are mix in a round bottom flask and add appropriate methanol to make proper solution and stirred for 2 h and than reflux 4 h,checked progress of thereaction and poured it into ice cold water and neutralised by conc. HCl and get desire compound 2. Now take solution of compd 2 (0.01mole) - and substituted aldehyde -(0.01) - molewere added separate into glacial acetic acid , Reaction mixtureis refluxedfor 10 hr and solvent is distilled off at a reduced pressure

to get triazole derivatives compound 3and take compound (3) 0.08mole in dry ether , CH_3COCl (0.16) mole was transfer into it slowly drop to drop with stirring and thismix content were poured to the crushed ice,the solid(4) was separated with water . Which is desire triazole derivatives .[1]

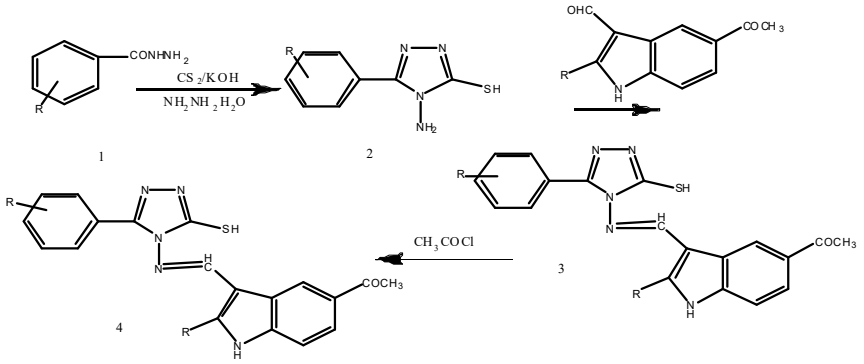


Figure 2

Scheme 2

Synthesis of 1-[3H-indol-2ylamino)methyl]-4-substituted 4,5 dihydro-1 H1,2,4,triazole-3- thiol :Take 1,3 benzothiazol-2-amine(1 mole in acetone and ethyl chloro acetate 1.0 molewas added drop wise in presence of potassium carbonate 4 gm and mixture was stirring and reflux it for 20 hr to yield acetate 6 and mixture of compound(6) are mixed with hydrazine hydrate and absolute ethanol are added and put it in microwave and irradiate for 6 min to get compound (7), salt form of compound is also prepared by reaction of compound(7) and , KOH, 0.01mole and $CS_2$0.01mole and ethyl alcohol then reflux, cool to ice and dry to obtained compound 8 which again reflux with aniline /amine to get optimum compound (9) .[2]

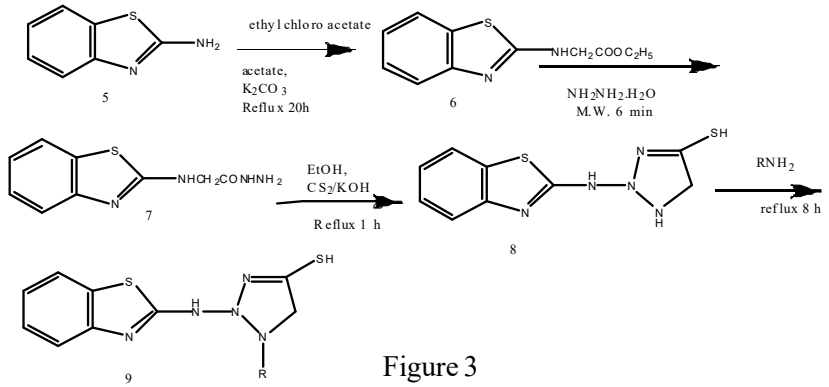


Figure 3

Scheme 3

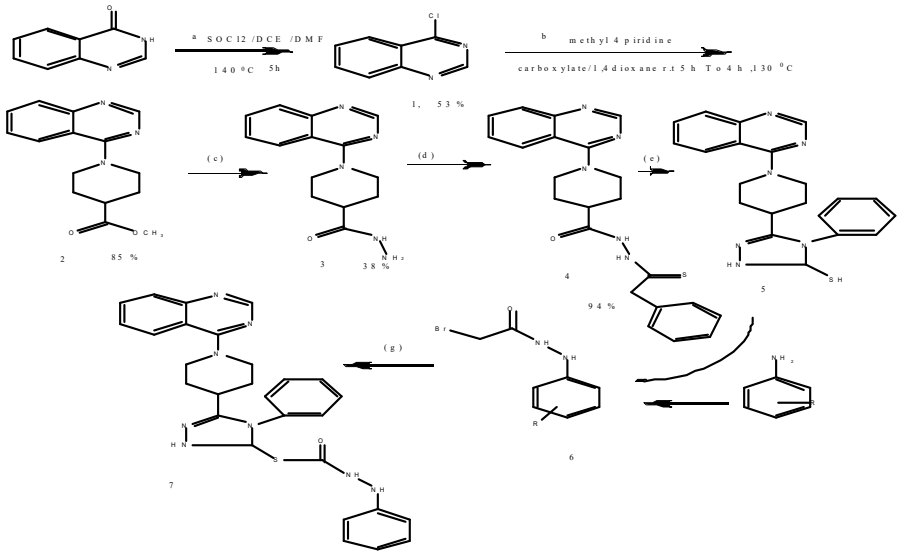


Figure 4

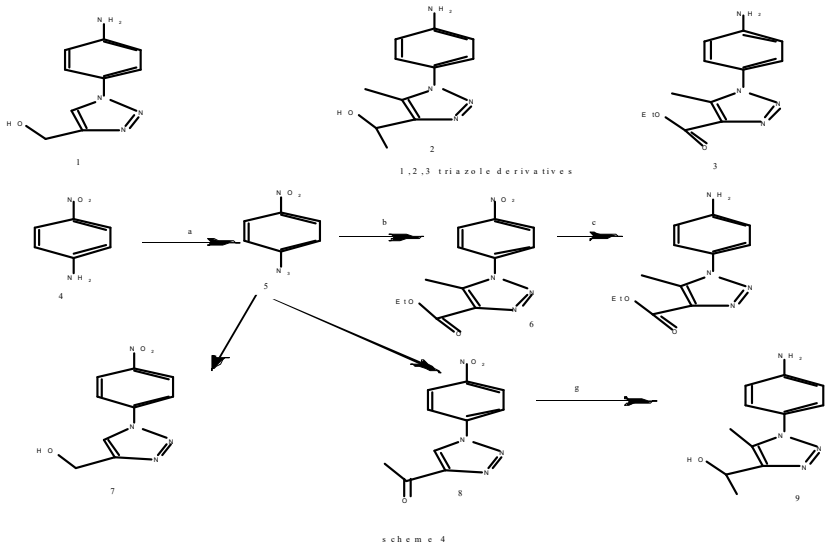
(a)- thionil chloride(1) $SOCl_2$,(2) DCE (3) DMF,139.8°C, 5 - h (b)-Methyl Pipridine Carboxylate/ 1,4dioxane r.t , 4-5 h, at 128°C (c)NH_2NH_2 Hydrate/CH_3OH, reflux,12.5 h (d) (1) PhNCS(2) C_2H_5OH,100°C, 5 hour (e)(1) 10% potassium corbonate ,110°C ,5h, (2) dil hydro chloric acid, neutral (Ph-7.0), (f)(1) $BrCH_2COBr$(2) Et_3N(3) 1,4dioxane 1,4 reflux .,5.5 hour (g) (1)Acetone, (2)K_2CO_3, 40 ^{0}C, reflux 3.5 h

Synthesis

Newly prepared 4-chloroquinazoline (1gm 0.08 mole , methyl 4 pipridine carboxylate(0.83 -ml,6.08 mole was shaking to 5h at ordinary temp.and it reflux for 4.5 h and cool, wash, dry to getpure form of precipitate of compound (2), then take ester of compound (2)300 gm 1.10 mole + NH_2NH_2 hydrate 01.00 ml in methanol (5ml) and stirre and refluxed for-14 h to obtained pure compound (3) yield 38 % mp -173 -175 ^{0}C then take the compound (3)- 0.304gram, 0.112 mol and -Phenyl isothiocynate0.16mol 1.33 m-moltransferto EtOH12 ml. It refluxed for 5h, pure white solid precipitate of compound 4 is obtained yield94%mp- 195 -196 ^{0}C.for obtained compound 5 takes sol^n of $K_2CO_{3(}$Aq) 10% 4 ml and add compound 4 , 100mg ,0.26mmol heated to refluxed 5.5 h . cool it , and neutralised with dil HClto obtainedTriazole (5)Mp 141-143 ,. Yield 86% ^{0}C colour white solid, to obtained compound 6. It is prepared by Barkar at all[3].

Amix content of substitute aniline (3.1mmol), triethyl amine 1.15mltake in dioxane dry (6ml,It stirre at 0^0C for 6 min now bromoacetyl bromide1.054 mol content dissolve in dioxane (dried) 6 mltransfer it dropwise and stirred continues for 5 h , then reaction mixture transfer into cold ice water, wash dry and finally compound of amide6 is obtained yield 58 to 95% , amixture of compound 5 which is a triazole, triazol 50.00mg, 0.13mmol), K_2CO_3 9mg 0.07mmol . and reaction mixture of compound 6 , (0.13mmol) is add to acetone 5 ml then stirre at 42^0C , 2-4 h then transfer into cold ice water then resulting compound 7 is obtained yield 58-92 %[4] .

Scheme 4



1,2,3,triazole derivatives

Reagent (a)$NaNO_3$ -HCl (b),$(C_2H_5)_3N$, Di methyl formamide,ethyl acetoacetate (C) Pd-C, $HCOONH_4$(d) (1)Ascorbic Acid ,copper sulphate,sodium bi corbonate, C_3H_4O alcohol,(propargylic) (e) Zinc,ammonium Chloride +H_2O (f) triethyl amine , Acetyl Acetone (g)sodium borohydride-CH_3OH,$CuSO_4$.hydrated .

A : Formation of a 1-(- 4-nitrophenyl)-1H-1,2,3,triazole-4yl-methanol(7):

Take 30ml6 N,p -nitro aniline 3.0gm,21.7mmol is transfer into it with magnetic stirrer now add $NaNO_3$ 1.5 gm21.74 mmol in 20ml H_2O drop wise maintain temperature 0-5^0C stirring for 1hand NaN_3 1.41gm , 21.74 mmol in 20m lH_2O with vigorously stirring then product 5 otained,

yellowish solid 90%yield now take compound 5, 1.2g 7.30mmolin tert- butanol 6 ml add , a content of ($C_6H_8O_6$ascorbic acid) -0.28g ,0.16mol copper sulphate hydrated,0.145 g,0.580 mmol(d)$NaNO_3$ 135mg 1.6mmol+ 5.0 ml. H_2O after it alcohol propargylic 0.520 ml9 mmol add it stirred for 24- 48 h the brownish solid product is obtainedyield 78%.

B: Synthesis of (1-(4-aminophenyl-1H1, 2, 3, triazole -4 ylmethanol

Take a susp^n of compound (7) ,1.54 gm 7.0 mmol in water 40 ml NH_4Cl 750 mg 14mmol and Zn crushed03.3250 gm ,50.80mmol add to it .then stirred at low pressure ,the product colour- white (s),Yield- 83% .

Formation 1-(5 methyl –(4 nitrophenyl)-1-H 1,2,3 triazole 4- yl-ethanone (8)

0.693 mg03.20 mmol of compound (5) and 1.70 ml DMF, the solid was solubilised by magnetic stirrer at , room temperature 1.20 ml of trimethyl amine , 0.90ml of ethyl acetone add into RBF and stirred for 24 h and product obtained in powder form is 75%yield (8)

1-(1-(4 aminophenyl)-5methyl-1H 1,2,3 triazole -4-yl) ethanol Synthesis (2)

Take 0.208 g of content (8)in methanol 5 ml 0.80 mlCuSO4 saturated Sol^{n}and in other flask0.190 g , sodium borohydridein 6ml water +methanol1:1 mixture, temp. ice water bath (5-10)^{0}C and portion of flask 2 transfer into flask 1st CuS black ppt is obtained .CuS filtere, methanol distilled, the concentratecontent part was solubilised in ethyl acetate and extract by water, the organic phase dried withNa_2SO_4anhyds.the solvent is dried at reduce pressure a purplish solid is obtained79 % yield .[5]

Scheme5

Synthesis of compound 5) ,1-(1H1,2,4 triazole -1-yl)-2-(2 ,4-difloro phenyl -3-substitute -2 propanol

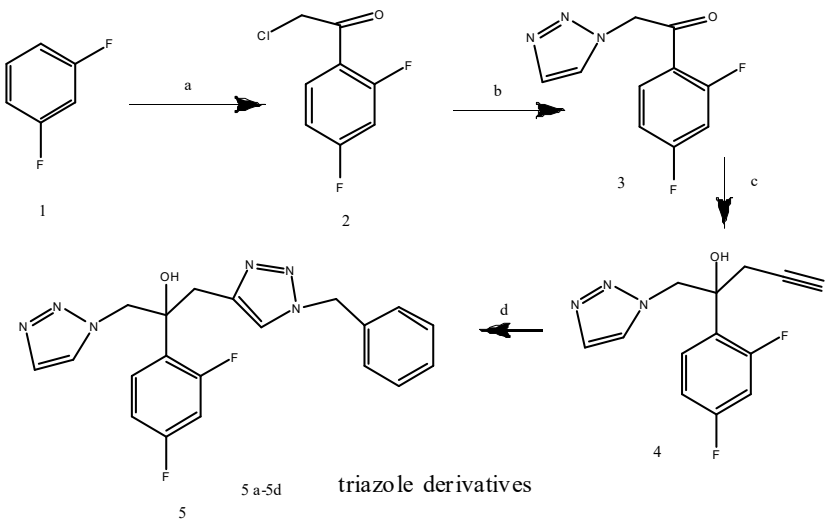


Figure 6

(a), 50 ^{0}C,$AlCl_3$, $ClCH_2COCl$,,5 h , 85 % (b)1- H-1,2,4 triazole , sodium bi corbonate,Toluenereflux ,5 h , 60 % (C)Zn, propargyclic Bromide DMF / THF 60^{0}C , 6h 95 % result (d)NaN_3 substituteBenzyl Bromide ascorbic Sodium,$CuSO_4$,DMSO, 86%Compound 2 is obtained by reaction of compound (1) and chloro acetyl chloride [6]and compound 4 is synthesised by nuceophilic addition of compound (3) propyl Bromide , presence of Zinc in DMF sol^{n}on 27 ^{0}C .[7] and the compound (5) is obtained by Click reaction between compound (4)and CuI catalyse 1,3dipolar cycloaddition with substituted azedomethyl benzene [8,9] .

Scheme 6

Synthesis of triazole : Synthsis 1 arial-5 methyl -1H – 1,2,3triazole 4-carboxylic acid

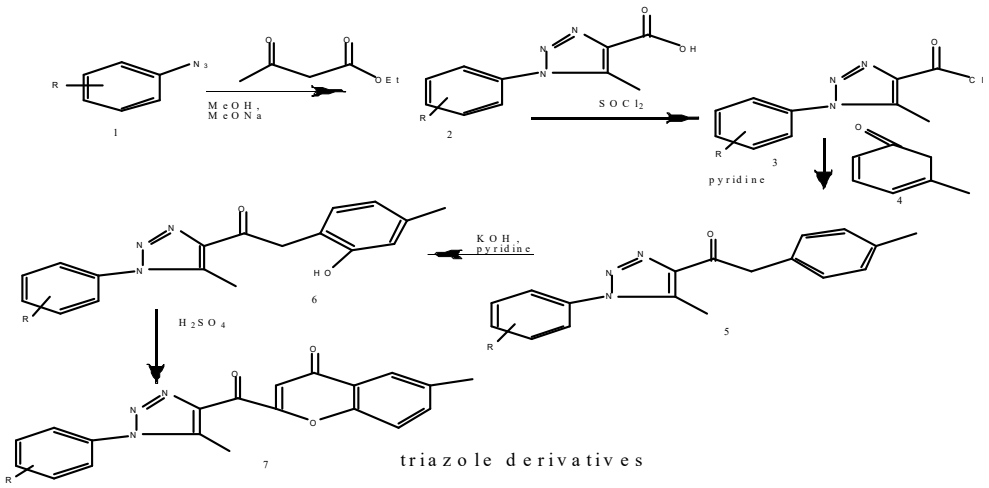


figure 7

the reaction of arial azide with ethyl chloro acetate to form triazole derivatives [1]

Scheme 7 :

To Synthesis new of triazole derivatives :

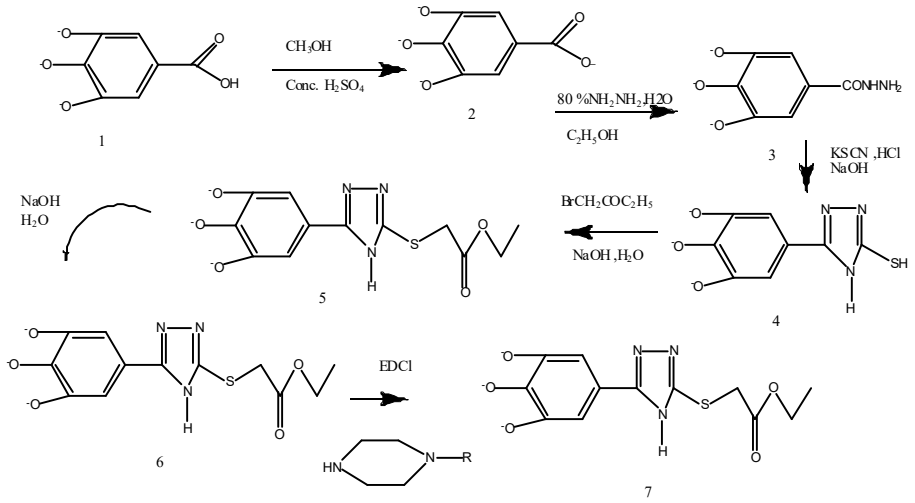
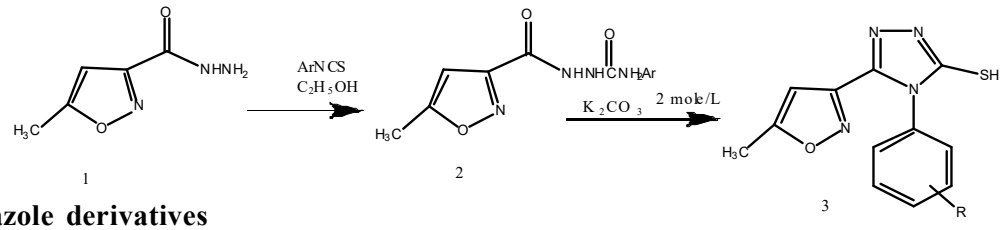


figure 8

The compound(1)is aromatic acid take0.01 molin methanolin which few drops of conc. H_2SO_4added and transfer into RBF and add ,0.01mol hydrazine in ethyl alcohol and stirrer

and reflux to form compound (2) and compound 2 is taken inRBF and reacted with potassium thiocynide in NaOH to form triazole derivatives of compound 3, [11,12] .

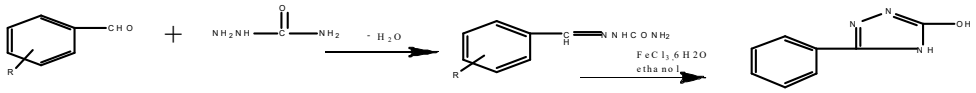
Scheme 8



triazole derivatives

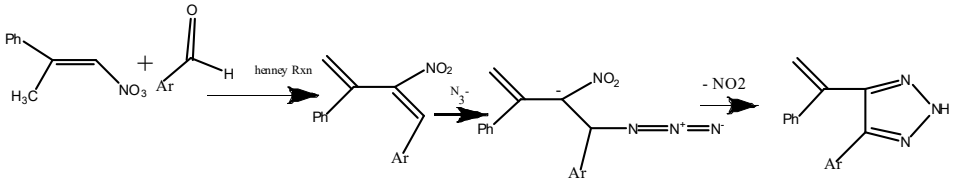
Taherpospour et all[13] have worked to achieved good yield on microwave assisted application to synthesis 1H-Phenanthro [9,10}[1,2,3]Triazole help of a 1:3 Dipolar cyclo addition reaction between Sodium azide vs 9 bromo phenanthreneunder condition potassium tert butoxide in DMSOsolvent .[13]

Scheme 9



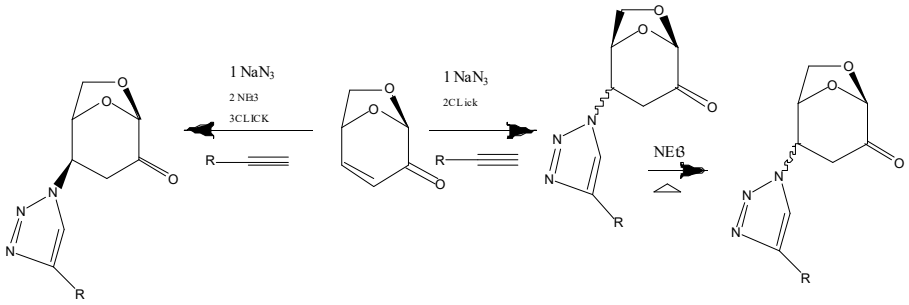
Gupta at, all.[14] have worked and studies 1 (Substitute Benzylidene Semicarbazide used for preparation , very active as well as biologically beneficial active molecules ie- 3 substitute phenyl 4 H – 1,2,4 , triazole moiety derivatives .

Scheme 10

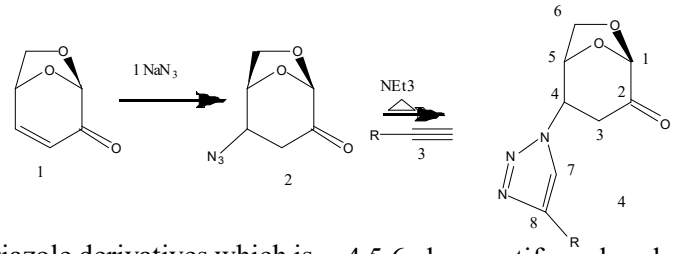


Sen Gupta Et All [15] reported and worked onLewis base – catalysed 3 component part cascade preparation 4 , 5 disubstitute 1,2,3 triazole of new NH triazole compound made byit , vinyl group C-4 allow easy change to different triazole moiety derivatives .

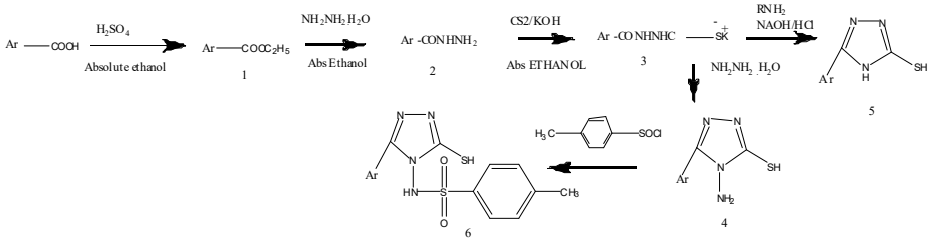
Scheme 11



Martin Tersa Flipe At, All ,is reported that inthis reaction 4 equiv .NaN_3 ,40 equiv.of AcOH, and 0.2 Equiv. of Et_3N , CH_2Cl_2 then the reaction performed and result comes about 81 % .á,â unsaturation presence in compound 1st as Michael acceptor and installation azide group at C-4 product the compound (2) It is reacted against different alkynes -3 Cu I catalysed to produced desire product 4



compound 4 is triazole derivatives which is used as an anticancer agent [16]compound 4,5,6 show antifungal and antibactericidal activity .

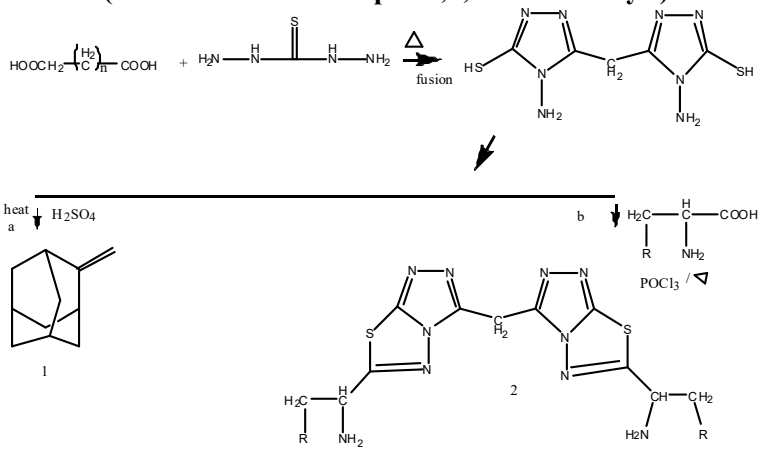


Dilip kumar at all[17] are synthesis to desire triazole derivative , compound (1)benzoic acid or 4 substituted benzoic acid 0.1 mol in ethanol in RBF and 5.7ml H_2SO_4 dissolve by ethanol 90 ml and refluxe 4 h. It transfer to chilled water, synthesis ester were extract with CCl_4 and was with 20%sodium bi carbonate and after drying on $MgSO_4$ pure compound1 is obtained then it reacted with hydrazine hydrate(0.01 mol)drop by drop and C_2H_5OH0.15mol and refluxed 4-5 h . acid hydrazide (2) is obtained and recrystallised

by ethanol, now take KOH 0.150 mol 100 ml $C_2H_5OH$and 0.10mol of compound 2treated with 0.150 mol , carbon disulphide and stirre for 12-16 h the solvent distille off – compound of potassium dithiocarbazinate (3)is obtained . and a suspension of compound (3),0.10mol in absolute alcohol NH_2NH_2 hydrate and 6 ml H_2O , it is refluxe 2-3 h ,solution colour change with evolution of H_2S gas cool and add 100ml distilled water then acidified by conc. HCl and then pure compound of triazole derivatives is obtained progress of the reaction is monitored by TLC and eluent used chloroform and acetone 4:1 yield 72-80 % the desire compound show activity against antibacterial andantifungal.[17]

Scheme 12

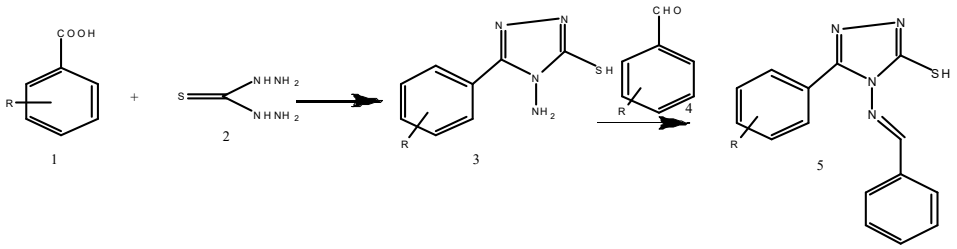
To synthesis bis –(4-N-amino 5- marcapto 1,2,4 triazole 3 yl) alkanes :



Take dicarboxylic acid 0.1 mol and thio carbohydrazide in 1:2 ratio and heated in RBF in oil bath until it melt the content maintained 15to 20 min at it now the product is cool and treated it with sodium bi carbonate to obtaineddesire compound of triazole derivatives is obtained then compound 1 and adamantane reacted 1:2 in DMF in ethanol on oil bath 4-5 h after it add few drop of H_2SO_4 , after cooling, filtration, drying recrystallised by DMFto obtained Schiffbase compound 2and again take 3 neck quick fit flask, fit it bydropping funnel,and attached a condenser to part 1phenylalanine and phosphorous oxy chloridewas added and refluxed for 2 hr at oil bath andafter concentratedcool and transfer to crushed ice water to obtained desire product[18]

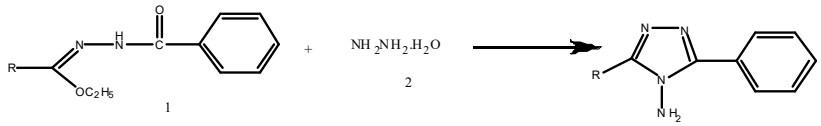
Scheme 13:

Synthesis 4 amino -5phenyl -4H- 1,2,4 – triazole-3-thiol



D .K .Jain et. all Synthesis the 1,2,4 - triazole moiety derivatives i.e. – a novelseries ,Schiff base of 4 benzylidine amino -5 -phenyl 4H 1,2,4- triazole 3 - thiol molecules which show antimicrobial agents to prepare the compound 3like substituted benzoic acid (0.01 mol) , and - thio carbonate 0.01 mol warm untilled it melt and it maintained at 145^0 C at 40min , Product obtained it cool and treat with sodium bi carbonate sol[n] to neutralize and wash withwater and recrystallised by ethanol and pure compound of triazole derivatives is obtained and to form Schiff base it reacted with substituted benzaldehyde 0.2mol to obtainedof triazole deririvatives 4 (benzylidene amino)-5 phenyl 4- H-1,2,4 triazole 3-thiol is obtained by adding substituted (0.2 mol) in ethanol and compound 3 is heated until a clear solution is obtained then few drop of con $H_2SO_4$is added and solution was refluxed for 6h on water bath and purified and obtained pure triazole derivatives .The base triazole derivatives work against anti bacterial and anti fungal activity. [19]

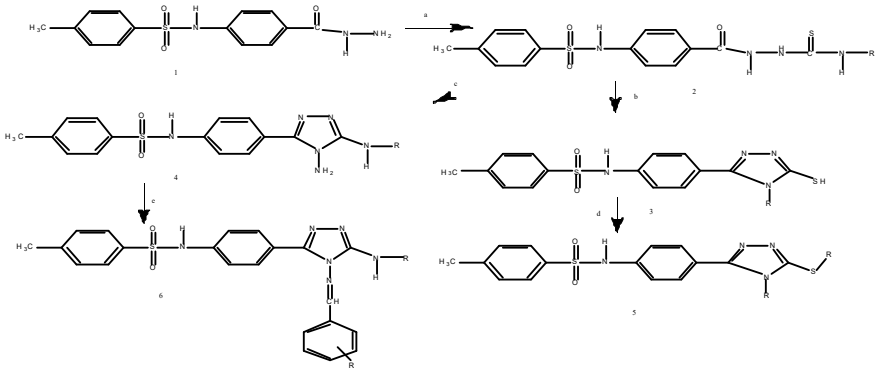
Scheme 14



The desire reagent 1 is obtained by reaction of salicyl aldehyde (0.01 mol) is dissolve in H_2O , KOH (0.01) mol alkohlic which contain in 100 ml ethanol ,then solvent C_2H_5OH is vaporise was removed and residue portion is dissolve by DMF 20 ml , suitable dihalide 0.005 ml and this content reflux 6min in this process Kcl is separate out ,now solvent remove[3]and obtained pure amino ester compound 1 now take ethanol25 ml 250 ml beaker , hydrazine 0.01 mol to iminoester hydra chloride 0.01 mol add ethanolabsolute and the reaction content is stirre 6h at 0-2 ^{0}C and 1- 2 h at normal temp. , then this Rx[n] content is transfer into beaker contain cold water -ice (40 ml + ice

10gm) Inthis condition precipitate formed and it dried, product recrystallised by 1:2 petroleum ether vs benzene to obtained pure triazole unit derivatives which show bacterial and fungicidal properties .

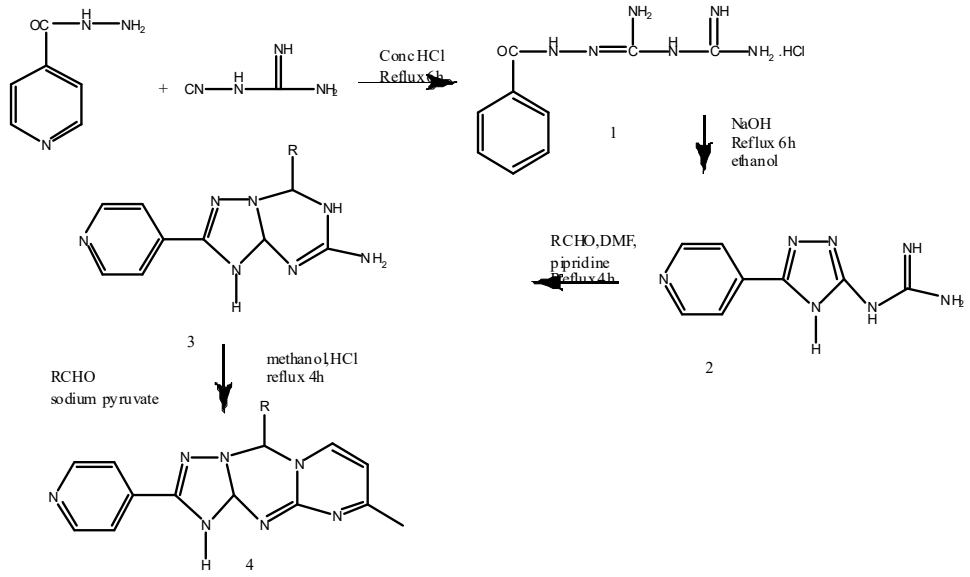
Scheme 15



(a) R-NCS/Dioxane (b) 2MNaOH/ Reflux (c) NH_2NH_2 (d)RX/KOH/ EtOH (e) 2,4,5, trimethoxy Benzaldehyde/EtOH/HOAc/ Reflux

To takeacid hydrazide 1.610 gm 0.002 molin dioxane 20ml substituted isothiocynate 0.002molwas added and stirred to over night then product 2 is obtained after purified. Now take compound (2) - 4 substituted 5–(4-tosylateimino)phenyl-4H-1,2,4 triazole-3- thiols and solid thiosemicarbazides(2) ,0.002molto 20ml 2M NaOH and refluxed for 10 h reaction , the progress of the reactionchecked and to cool and filtrate is acidified by AcOH then precipitate of desire compound (3) is obtained then a mixture of compound (3) thio-semicarbazide (3) 0.002 mol hydrated hydrazine0.025mol dissolve by methanol 20 ml, it reflux on water bath and checked the purity product form by ethyl acetate : petroleum ether 1:1 and content transfer into crushed ice and get desire compound (4) is now take the mixture of 1,2,4 triazole of 3 thiol (3) , 0.1 mol and alkyl halide or chloroacetamide derivatives 0.1 mol in ethanol 30ml containing KOH 0.12 mol was stirre at room temp.to obtained product 5,6 which show antimicrobial activity [21]

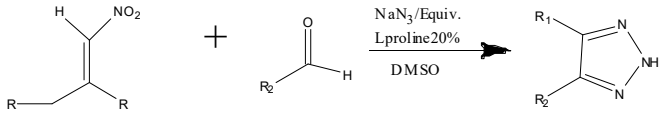
Scheme 16



Babu at .all, Synthesis a triazole derivatives in it isoniazide 0.05 mol and cynoquinadine 0.05 mole conc. HCl10 ml and 100 ml alcohol and refluxed 6h and cool ,dried and purified to separate the desire compound (1) mp-185 ^{0}C .Yield 87 %.

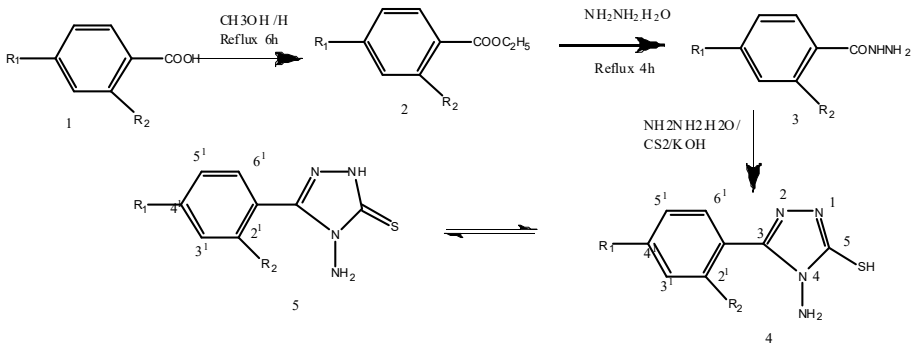
1-[amino(isonicotenoylcarbono hydrazonyl]quinidine HCl, and now take compound (1) 9.24 gm 0.02mol and 10% NaOH25 ml the content were refluxed 6h on water bath the resulting solution now cool to room temperature ,purified in 25 ml water and dry to obtained 2-(3-pyridnyl-1H-1,2,4, triazol -5yl quinidine(2) mp-306-310 ^{0}C yield 85 % .now compound (2) taken0.005 mole in RBFdissolve by DMF 25 ml and added suitable substituted benzaldehyde (0.01 mol 5 drop of pipridine and the mixture is refluxed 4 h and content was transfer into cold ice water and separate solid form collect by filtration and it is recrystallize by ethanol and water mix portion 80:20 , now take the solution of compound 3rd in RBF 0.01mole in methanol and sodium pyruvate 0.005 mole and formaldehyde 0.005 mole and 1.0 ml of conc HCl and content of the flask refluxe 4 h, cooled and separated solid form and it is collected by filtration method ,now again recrystallized by appropriate solvent and the desire product achievedas in the form of triazole derivatives [22]

Scheme 17



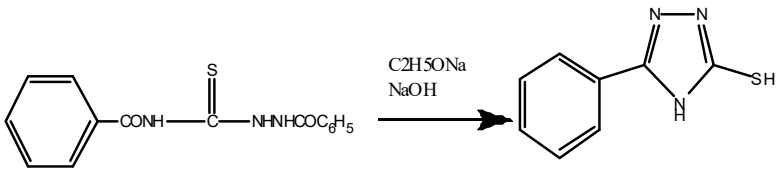
To synthesis a triazole derivatives from a base method nitro alkene –aldehyde coupling , nitro alkenes is reacted with aromatic aldehyde in presence of base $NaN_3$and a solvent for about 2 to 5 h to desire temperature or room temperature , the synthesised compound may be 4,5 di substituted 1,2,3 triazole in it â substituted alkene and aromatic aldehyde having any 6 carbon atom either substituted or not [23] .

Scheme 18



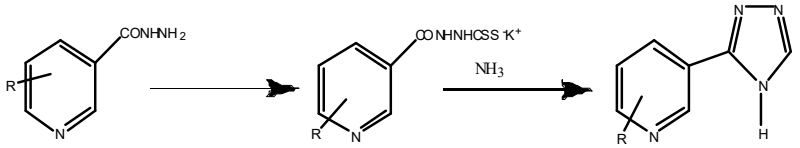
To form triazole compound(2) 60 ml methanol in RBF (1.50 mol) conc H_2SO_4 2,3 ml and benzoic acid derivatives and refluxed for 5 to 6 h then cool to room temperature and then content was concentrated to rotator evaporation and it dried over room temp. , recrystallised by ethanol to obtained compound(2) in ester form which take 0.01 mole and hydrazine hydrate 6.00gm .12mol in ethanolto reflux to 4-5 h . Now cool and dry compound 2 is obtained and recrystallised to proper solvent , then compound (2) acid Hydrazide (0.01mol) acidified is add ethyl alcohol contain KOH 1.6 gm and CS_2, 1.8 mlis add and mix content stirred for 11 h and now diluted it by ether , shake and stirred further 1-2 h, potassium salt is appliedfurther purification , 99%(0.02 mol 1.00 gmwas gradually added to the above potassium salt then dissolve in water 20 ml with stirring and mixture gentle reflux 3 h during which H_2S gas evolved and colour dark green obtained and it cool to5 ^{0}C and acidified, solid separateout it filter and obtained a triazole derivatives .[24]

Scheme 19



triazole derivatives are synthesis by Dharmesh and S , dayama et. all to synthesis 5 substituted 1- H 1,2,4 , triazole - 3- thione 4 by cyclisation into 1 benzoyl 3- thio semicarbazide (3) using aqueous sodium hydroxide/ sodium ethoxide and hydrazine hydrate[25].

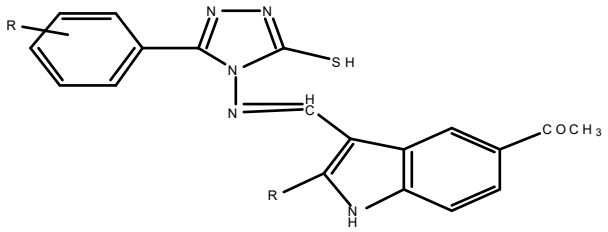
Scheme 20



21 Where R is various substituted aromatic ring part 1,2,4 triazole 5- thiol (2)was compound to various chloro acetanilides it ,which triazole show antifungal and anti tubercular activity [26] .

Triazole Derivatives And Their application In Biological AndPharmaceutical field

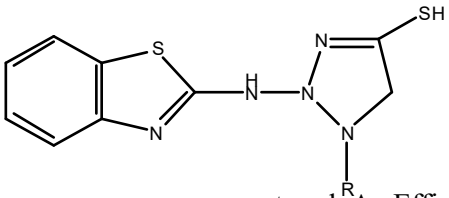
Scheme 1



compound 4 in scheme 1 it is a triazole derivatives, this molecules of triazole show Antibacterial Activity Of New Substituted Azetidinyl Indolyl Triazole Derivatives triazole unit cotaining derivatives antifungal drug ie Fluconazole, Isovucanazole, Itraconazole, Voriconazole, Pramiconazole, Ravuconazole And Posaconazole.etc show very effectivity against biologically protactivity. Now a days no of deffrent molecules have to synthesis which is very beneficial for alive nature

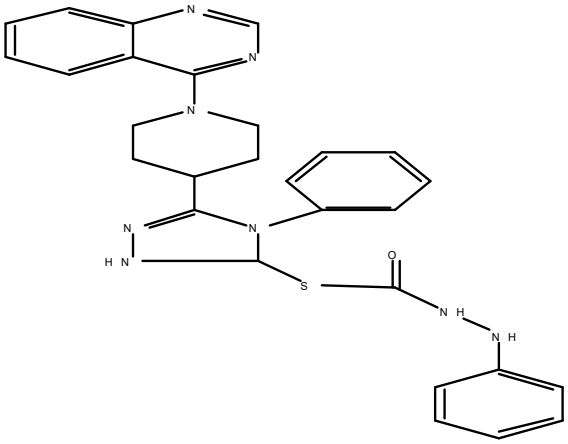
Scheme 2

Triazole derivatives of scheme 2 product8,9 show expected result against biological and pharmaceutical field.



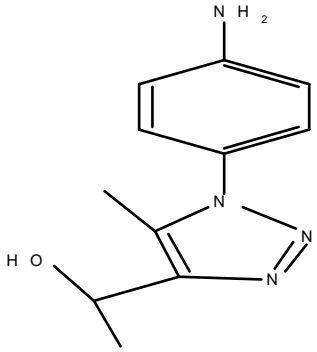
Scheme 3

The Quinazolinyl Pipridinyl unit , N (- Substitute Phenyl) Acetamide function partwork As Efficient Bactericides protect Phyto pathogenic Bacterium, Xanthomonase Orazae PV



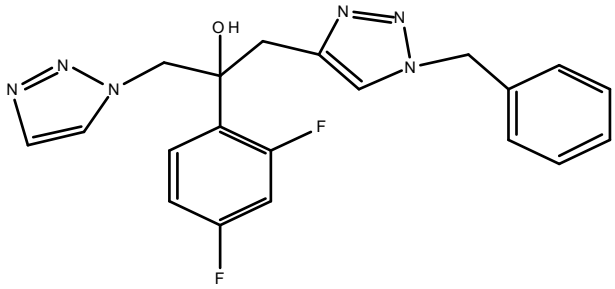
Scheme4

Scheme 4, product7, 8, of 1,2,3,Triazole Derivatives and It show properties against As Corrosion Inhibitor For Carbon Steel.



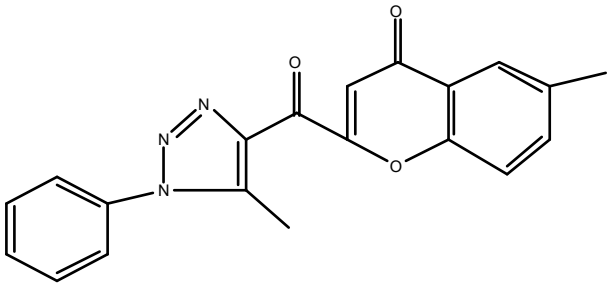
Scheme5

New Triazole Derivatives in scheme 5 p. 5 work As Antifungal Agents , and effected Molecular Docking properties it also work in the , Bio Organic And Medicinal area.



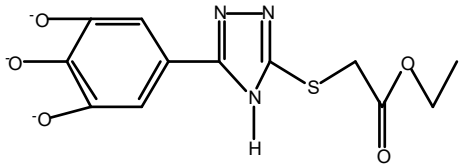
Scheme6

1,2,3, Triazole Derivatives in scheme 6 p-7 And Their work against Anti Cancer Activity.



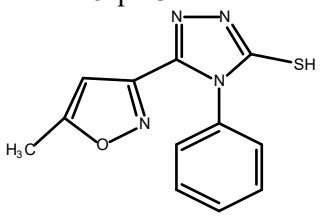
Scheme7

The compound , Novel 1,2,4 –Triazol unit Derivatives Contain An Amide Moiety in scheme7 p-7work as Antifungal Activity.



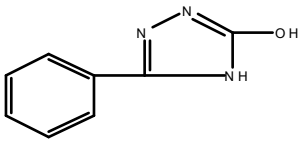
Scheme8

triazole derivatives of scheme 8 p -3 molecules is very effective in biological field



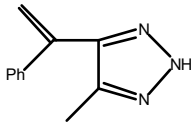
Scheme9

Triazole Derivatives in scheme 9 p-2 And Their work asAntimicrobial And Insecticidal activity .



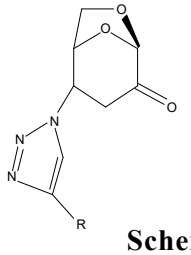
Scheme10

Triazole derivatives of product of scheme 10 p -3 show appreciable effective against biological activity.



Scheme11

In scheme 11 p-1, 2 Triazole moiety Derivatives Of Levoglucosenone protect Cancer activityand it show Effective Exploration antibacterial activity.

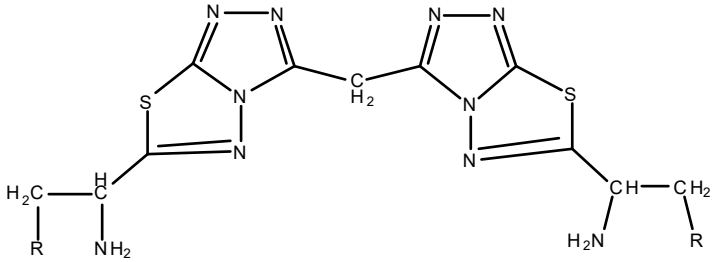


Scheme 12a

Triazole derivatives of product of scheme 12 p -4,5 show appreciable effective against biological activityas Anti Microbial.

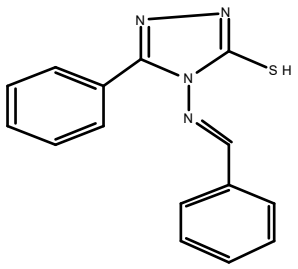
Scheme12b

Triazole Derivatives work As Probes For Cytotoxicity activity



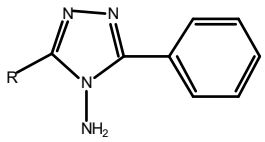
Scheme13

Triazole derivatives of product of scheme 13 p -5 show appreciable effective against biological activity Antifungal And antibacterial Activity Novel 1,2,3-Triazole Derivatives.



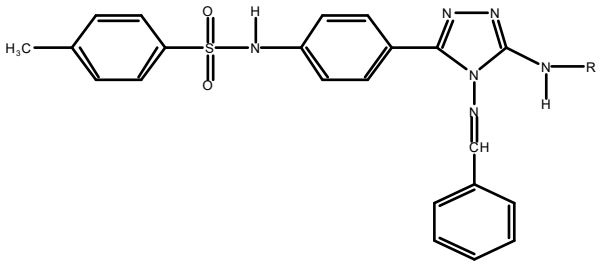
Scheme14

New compound Bis 1,2,4 –Triazole Derivatives show valuable nature against fungal and bacteriacidal activity.



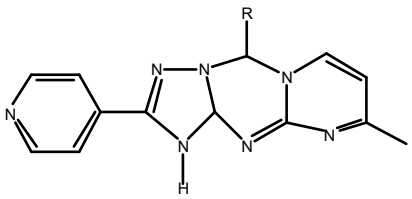
Scheme15

Triazole derivatives of product of scheme 15 p -5,6 show appreciable effective against biological activity Cytotoxic properties, Antimicrobial Activities Of new 1,2,4, Triazole moiety Derivatives In Corporating Aryl Sulphonamide.



Scheme16

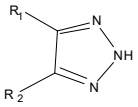
Product Of Novel Triazole Derivatives scheme 16 p -4 work as Of Antitubucular Activity.



Scheme17

Triazole derivaties Product Of Novel Triazole

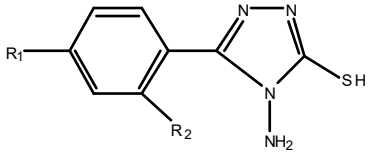
scheme 17 p -1 work as anti bacterial properties.



Scheme18

Scheme 18 compound 4,5 of 1,2,4 Triazole

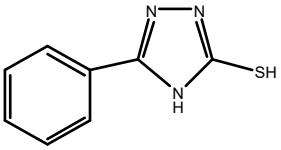
Derivative show valuable effectiveness, Activity against Antiproliferative.



Scheme19

Scheme 19 compound 1 represent Biological

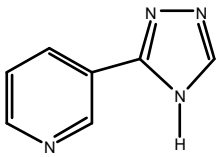
activity .



Scheme20

Scheme 20 Compound 2of triazole 1,2,4

derivatives show Antifungal And Anti Tubucular 1,2,4



Conclusion

Different derivatives of triazole which is two isomeric form ie 1,2,3 and 1,2,4 are very important . Drug of triazole ie flucanazole ,itraconazole ,isovucanazole and so many other drug which contain triazole moiety are very useful.BY the study and evolution of different molecules , it concludethat it work against antifungal ,antibacterial , antitubucular, corrosion inhibitor, in agriculture , antimicrobial etc . Over all we conclude that triazole derivatives are very effective against different diseases and various field in last decade and to develop new effective molecules in challenging field .

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