

**A Novel Synthesis of 1,2,3triazole substituted pyrimidine, pyrazole by using
1,2,3triazolchalcone**

UNDER PEER REVIEW

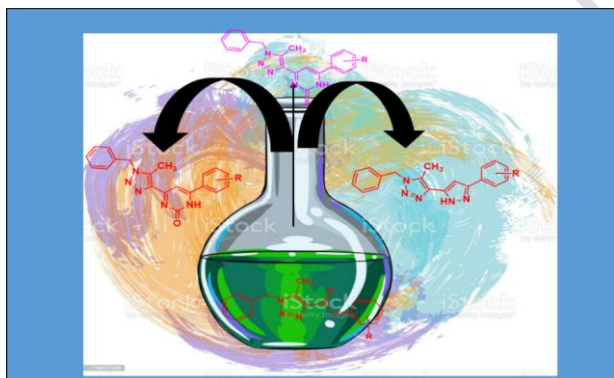
Abstract:

Germes are unique creatures that adapt to different lifestyles and the resilience of the environment in extreme or difficult conditions. The germ's genetic architecture can bear a significant signature not only in its sequential position, but also in the way of life it adapts. It is a societal challenge to find new chemical entities capable of treating microbial infections. This review is intended to focus on the important chemical component, of triazole substituted pyrimidine and pyrazole derivatives and its antimicrobial activity.

Keywords : (E)-1-(1-benzyl-1H-1,2,3-triazol-4-yl)-3-phenyl Substituted prop-2-en-1-one, urea, thiourea, hydrazine hydrate.

Comment [U1]: The article abstract shows that this is a review, however this is not a review article. The type of study as well as its objectives must be clear in the abstract of the article.

Graphical Abstract



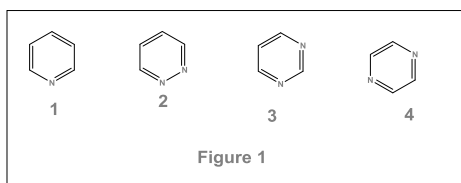
Introduction:

Comment [U2]: The closing of the introduction can be improved, justifying the importance of the study, as well as clarifying, in a clearer and more detailed way, the objective of the study.

Antimicrobial resistance has become a rapidly growing global issue. Among the two million people who become infected with bacterial infections in US hospitals every year, 70% of cases today involve strains that resist at least one drug.[1] In communities and hospitals around the world, the number of people suffering from antibiotic-resistant infections continues to grow.[2] A major cause for concern in the UK is methicillin-resistant *Staphylococcus aureus* (MRSA), which was at low levels a decade ago, but now accounts for ca. 50% of all *S. aureus* isolates.[3] Significant investments and research in the field of anti-infectious drugs are now desperately needed to prevent a public health crisis. The main cause for antibiotic resistance is antibiotic use. In the case of an antibiotic, it has been well documented that resistance is primarily caused by continued dependence and careless use of these antibacterial.[4] and more and more proof is obtained suggesting that the same can be true for the emergence of resistance .[5][6] The potential cross-resistance of antibiotics and its bias due to the common resistance mechanism are particularly concerning.[7][8] Metal strength is observed due to contaminated environments.[9][10] The result of continued exposure to the antibacterial environment is an enrichment of bacteria that are inherently resistant to antimicrobials or have developed a resistance mechanism to these substances.[11][12] Structural modification of the antimicrobial drugs to which resistance has developed has proven to be an effective way to extend the life of antifungal agents like azoles.[13] Antiviral agents like non-nucleoside reverse transcriptase inhibitors.[14]

Heterocyclic compounds are abundant in nature and are of great importance, to live because their structural subunits exist in a number of natural products such as vitamins, hormones and antibiotics.[15][16]. As a result, they have brought considerable attention to the design of biologically active molecules.[17][18] As well as advanced organic chemistry[19][20] Additionally within the own family of heterocyclic compounds nitrogen containing heterocyclic are an vital elegance of compounds in the medicinal chemistry and additionally contributed to the society from organic and commercial factor which helps to recognize lifestyles procedures.[21] Totally unsaturated membered six-ring containing nitrogen is called azine [22] or pyridine (1); with two nitrogen atoms is known as diazine [23], and with a nitrogen at 1,2-position, it is known as pyridine (2), at 1,three-function as pyrimidine (3), and at 1,4-position is known as pyrazine (4) [figure1].However our main focus is on biological activities of pyrimidine as well as pyrazole .

Figure 1:



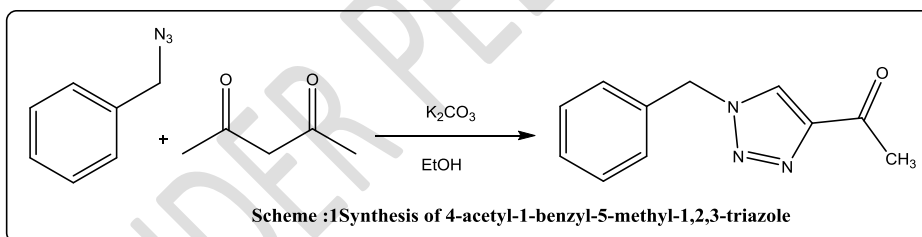
Experimental Section

All chemicals, reagents and solvents were of commercially high purity grade purchased from Avra Synthesis Pvt. Ltd. and Merck Pvt. Ltd. India. ^1H NMR and ^{13}C NMR spectra were recorded in CDCl_3 on Bruker Avance 300 MHz spectrometer and the chemical shifts are reported as δ values in parts per million (ppm) relative to TMS, with coupling constant (J) values in Hertz (Hz). In ^1H NMR, the abbreviation of splitting refers as s=singlet, d=doublet, t=triplet, q=quartet, m=multiplet, dd=doublet of doublet and bs=broad singlet.

Materials and Methods

1. General procedure for Synthesis of 4-acetyl-1-benzyl-5-methyl-1,2,3-triazole

Fig 2:



A mixture of benzyl azide (3.00 g, 0.022mole), acetyl acetone (2.25 g, 0.0225mole), potassium carbonate (6.23 g, 0.045mole) and absolute ethanol (95%, 15 ml) was taken in a round bottomed flask which was equipped with stirrer. The reaction mixture was stirred at 75°C for 30 min. The progress of the reaction was monitored by TLC. After the completion of the reaction, the solvent was removed under vacuum residual mass obtained excess of ice-water was added and neutralized with 10% HCl (20 ml). The product was extracted with diethyl ether (20 ml) and the extract was dried over anhydrous sodium sulphate. Evaporation of the solvent gave the crude product, which was purified by column chromatography using petroleum ether: ethylacetate (98:3) as eluent and recrystallized from absolute ethanol.[24]

Comment [U3]: Figures and Tables must have a title. Figures and Tables must be cited in the text and included as per the citation. I suggest presenting the Tables in the results section.

Comment [U4]: General information regarding the type of study is lacking, as well as information regarding the conduct of the processes that facilitate reading and understanding.

2. Genral procedure for Synthesis of (E)-1-(1-benzyl-1H-1,2,3-triazol-4-yl)-3-phenyl Substituted prop-2-en-1-one [1]

A mixture of 4-acetyl-1-benzyl-5-methyl-1,2,3-triazole,(0.2 g,0.009mole) and aromatic/hetero aromatic aldehydes, (1.0 equiv) and 50% aqueous sodium hydroxide solution (1 ml) was stirred for 4–7 min at room temperature and poured into excess of crushed ice and neutralized with dilute hydrochloric acid. The chalcone derivatives which precipitated as solids were filtered and recrystallized from ethanol.[25]

Fig 3:

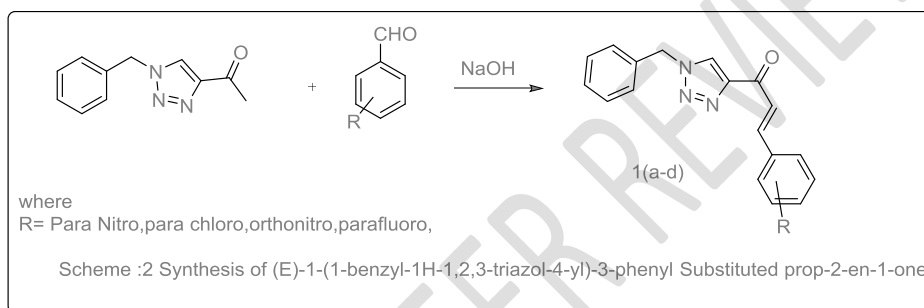
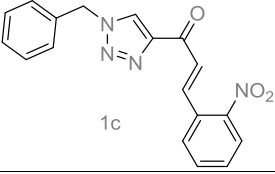
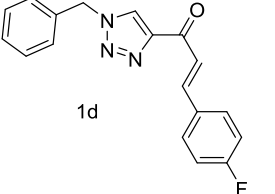


Table:1 Characterisation data of Synthesised (E)-1-(1-benzyl-1H-1,2,3-triazol-4-yl)-3-phenyl Substituted prop-2-en-1-one

Product	Colour	Yield and Melting Point
 1a	Yellowish ur	70% 191 ⁰ C
 1b	White colour	85% 170 ⁰ C

 <p>1c</p>	Yellowish Brown Colour	72% 193 ⁰ C
 <p>1d</p>	Brown Colour	75% 188 ⁰ C

3. Genral procedure for synthesis of 1- benzyl-5-methyl 1,2,3triazole pyrimidine:

A mixture of chalcone (2.5 g, 10 mmol) and different nucleophilic reagents, like urea and thiourea (10 mmol), was dissolved in alcoholic sodium hydroxide (4 g NaOH and 10 mL ethanol) and was stirred for about 2-3 hours with a magnetic stirrer and it was then poured into 400 ml of cold water with continuous stirring for an hour, and after that, we kept the mixture in a refrigerator for 24 hours precipitate obtained was filtered, washed, and recrystallized (mostly in ethanol). [25]

4. General procedure for synthesis of 1- benzyl-5-methyl 1,2,3 triazole pyrazole

Here we dissolved a mixture of chalcone (2.5 g, 10 mmol) and different nucleophilic reagents, namely, hydrazine hydrate (10 mmol), 50 ml ethanol, and furthermore we added a few drops of conc. HCl, the reaction mixture was refluxed for 4 hrs and after that, we poured the mixture to crushed ice. Precipitate obtained was filtered, dried, and recrystallized from ethanol. [25]

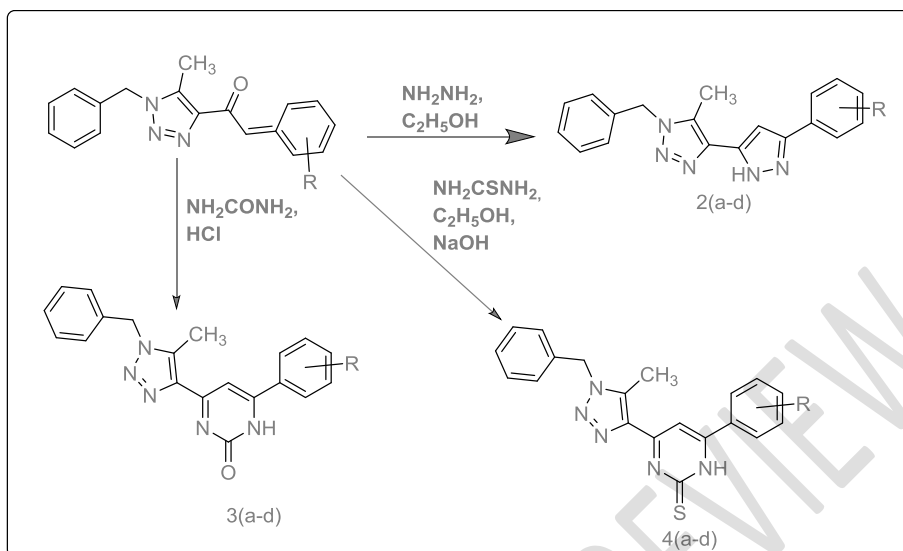


Fig 4:

Table:2 Characterisation data of Synthesised 1-benzyl-5-methyl-4-(3-phenyl-1H-pyrazol-5-yl)-1H-1,2,3-triazole(2a-d)

Product	Colour	Yield and Melting pt
<p>2a</p>	Yellowish colour	65% 167 ^o C
<p>2b</p>	White colour	70% 165 ^o C

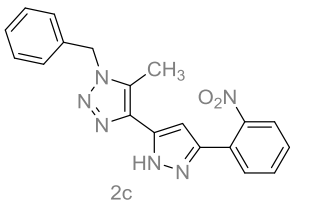
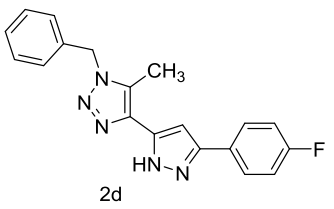
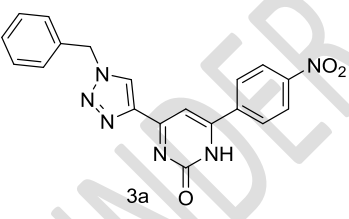
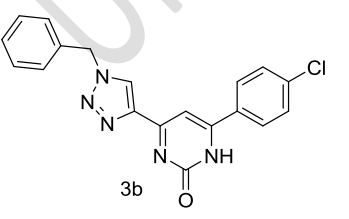
 <p style="text-align: center;">2c</p>	Brownish colour	75% 163⁰C
 <p style="text-align: center;">2d</p>	Yellow colour	70% 167⁰C

Table: 3 Characterisation data of Synthesised 4-(1-benzyl-1H-1,2,3-triazol-4-yl)-6-(substituted phenyl)pyrimidin-2(1H)-one (3a-d)

Product	Colour	Yield and Melting pt
 <p style="text-align: center;">3a</p>	Yellowish flakes	70% 173⁰C
 <p style="text-align: center;">3b</p>	White flakes	75% 178⁰C

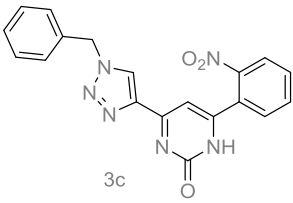
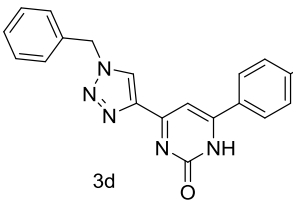
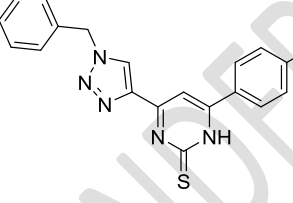
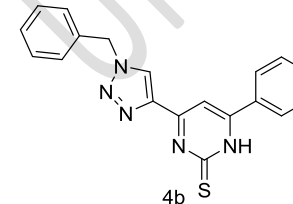
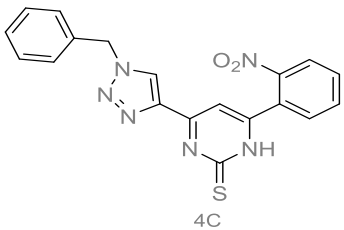
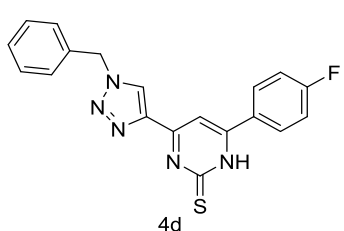
 <p>3c</p>	Orange flakes	78% 173^oC
 <p>3d</p>	White Flakes	80% 169^oC

Table: 4 Characterisation data of Synthesised 4-(1-benzyl-1H-1,2,3-triazol-4-yl)-6-(substituted phenyl)pyrimidin-2(1H)-one (4a-d)

Product	Colour	Yield and Melting at
 <p>4a</p>	Brownish Crystals	80% 178^oC
 <p>4b</p>	White crystals	85% 177^oC

 <p style="text-align: center;">4C</p>	Orange stals	Colour 80% 170^oC
 <p style="text-align: center;">4d</p>	White Crystals	75% 168^oC

Spectral data of Synthesised compounds

Compound 1a:

¹H NMR(DMSO-d⁶): δ 5.27 (2H, s), 5.73 (1H, d, $J = 10.0$ Hz), 6.82 (2H, d, $J = 8.0$, 1.1, 0.5 Hz), 7.18-7.45 (6H, 7.25 (d, $J = 10.0$ Hz), 7.28 (d, $J = 7.8$, 1.6, 1.3, 0.5 Hz), 7.32 (t, $J = 7.7$, 1.6 Hz), 7.39 (t, $J = 7.7$, 1.8, 0.5 Hz)), 7.62 (2H, d, $J = 8.0$, 1.7, 0.5 Hz), 7.83 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 114.3 (2C, s), 124.3 (1C, s), 126.3 (1C, s), 127.7-127.8 (3C), 127.7 (s), 127.8 (s), 128.4 (2C, s), 128.6 (2C, s), 130.0 (1C, s), 131.0 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 148.4 (1C, s), 178.4 (1C, s).

m/z: 334(100%), 335(19.5%)

Compound 1b:

¹H NMR: (DMSO-d⁶) δ 5.28 (2H, s), 5.81 (1H, d, $J = 9.7$ Hz), 7.22-7.46 (6H, 7.28 (d, $J = 7.8$, 1.6, 1.3, 0.5 Hz), 7.32 (t, $J = 7.7$, 1.6 Hz), 7.39 (t, $J = 7.7$, 1.8, 0.5 Hz), 7.40 (d, $J = 9.7$ Hz)), 7.47-7.62 (4H, 7.54 (d, $J = 8.1$, 1.5, 0.5 Hz), 7.56 (d, $J = 8.1$, 1.4, 0.5 Hz)), 7.84 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 124.3 (1C, s), 126.3 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 128.7 (2C, s), 129.8-130.1 (3C, 129.9 (s), 130.0 (s)), 131.0 (1C, s), 133.6-133.8 (2C, 133.7 (s), 133.7 (s)), 135.9 (1C, s), 178.4 (1C, s).

m/z: 323(100%), 324(19.5%), 325(32%)

Compound 1c:

¹H NMR(DMSO-d⁶): δ 5.28 (2H, s), 5.87 (1H, d, J = 9.5 Hz), 7.18-7.48 (10H), 7.25 (d, J = 8.3, 1.4, 1.3 Hz), 7.24 (t, J = 1.5, 0.5 Hz), 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.32 (t, J = 7.7, 1.6 Hz), 7.34 (d, J = 7.8, 1.5, 1.3 Hz), 7.39 (t, J = 7.7, 1.8, 0.5 Hz), 7.40 (d, J = 9.5 Hz), 7.41 (d, J = 8.3, 7.8, 0.5 Hz), 7.85 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 115.0 (1C, s), 115.4 (1C, s), 124.3 (1C, s), 126.3 (1C, s), 127.2 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 130.2 (1C, s), 130.6 (1C, s), 131.0 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 161.2 (1C, s), 178.4 (1C, s).

m/z: 334.11 (100.0%), 335.11 (19.5%), 336.11 (1.8%).

Compound 1d:

¹H NMR(DMSO-d⁶): δ 5.28 (2H, s), 5.91 (1H, d, J = 9.5 Hz), 7.22-7.61 (9H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.38 (t, J = 8.0, 0.5 Hz), 7.39 (t, J = 7.7, 1.8, 0.5 Hz), 7.40 (d, J = 9.5 Hz), 7.43 (d, J = 8.0, 1.6, 1.2 Hz), 7.54 (d, J = 8.1, 1.7, 1.2 Hz)), 7.79-7.90 (2H, 7.84 (d, J = 1.7, 1.6, 0.5 Hz), 7.85 (s).

¹³C NMR: δ 52.7 (1C, s), 124.3 (1C, s), 126.3 (1C, s), 127.0 (1C, s), 127.2 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 128.7 (1C, s), 130.0 (1C, s), 130.4 (1C, s), 130.6 (1C, s), 131.0 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 178.4 (1C, s).

m/z: 307.11 (100.0%), 308.12 (19.5%).

Compound 2a

¹H NMR(DMSO-d⁶): δ 2.52 (3H, s), 5.28 (2H, s), 6.70 (2H, d, J = 8.2, 1.2, 0.5 Hz), 6.81-7.02 (3H, 6.87 (d, J = 8.2, 1.4, 0.5 Hz), 6.97 (s)), 7.24-7.45 (3H, 7.30 (t, J = 7.3, 1.5, 1.2 Hz), 7.38 (d, J = 7.9, 7.3, 1.1, 0.4 Hz)), 7.82 (2H, d, J = 7.9, 1.4, 0.4 Hz).

¹³C NMR: δ 9.6 (1C, s), 52.8 (1C, s), 108.1 (1C, s), 114.3 (2C, s), 127.3 (2C, s), 127.8 (1C, s), 128.4 (2C, s), 129.4 (2C, s), 133.5 (1C, s), 133.6-133.8 (2C, 133.7 (s), 133.7 (s)), 135.9 (1C, s), 137.1 (1C, s), 148.3-148.6 (2C, s), 148.4 (s), 148.5 (s).

m/z: 360.13 (100.0%), 361.14 (20.5%)

Compound 2b

¹H NMR(DMSO-d⁶): δ 2.54 (3H, s), 5.37 (2H, s), 6.97 (1H, s), 7.24-7.53 (5H, 7.30 (tdd, J = 7.3, 1.5, 1.2 Hz), 7.38 (dddd, J = 7.9, 7.3, 1.1, 0.4 Hz), 7.46 (ddd, J = 8.4, 1.4, 0.5 Hz)), 7.60 (2H, ddd, J = 8.4, 1.4, 0.5 Hz), 7.82 (2H, dtd, J = 7.9, 1.4, 0.4 Hz).

¹³C NMR: δ 9.6 (1C, s), 52.8 (1C, s), 108.1 (1C, s), 127.3 (2C, s), 127.8 (1C, s), 128.4 (2C, s), 128.6-128.8 (4C, 128.7 (s), 128.7 (s)), 133.5 (1C, s), 133.6-133.8 (3C, 133.7 (s), 133.7 (s), 133.7 (s)), 135.9 (1C, s), 137.1 (1C, s), 148.5 (1C, s).

m/z: 349.11 (100.0%), 351.11 (32.0%), 350.11 (20.5%).

Compound 2c

¹H NMR(DMSO-d⁶): δ 2.54 (3H, s), 5.22 (2H, s), 6.53-6.76 (2H, 6.60 (d, J = 7.9, 7.6, 1.2 Hz), 6.70 (d, J = 8.1, 1.2, 0.5 Hz)), 6.81-7.03 (3H, 6.87 (d, J = 7.9, 1.3, 0.5 Hz), 6.95 (d, J = 8.1, 7.6, 1.3 Hz), 6.97 (s)), 7.24-7.45 (3H, 7.30 (t, J = 7.3, 1.5, 1.2 Hz), 7.38 (d, J = 7.9, 7.3, 1.1, 0.4 Hz)), 7.82 (2H, d, J = 7.9, 1.4, 0.4 Hz).

¹³C NMR: δ 9.6 (1C, s), 52.4 (1C, s), 108.1 (1C, s), 115.8 (1C, s), 121.2 (1C, s), 127.3-127.3 (3C, 127.3 (s), 127.3 (s)), 127.8 (1C, s), 128.2 (1C, s), 128.3-128.5 (3C, 128.4 (s), 128.4 (s)), 133.5 (1C, s), 133.6-133.8 (2C, 133.7 (s), 133.7 (s)), 137.1 (1C, s), 144.3 (1C, s), 148.5 (1C, s).

m/z: 360.13 (100.0%), 361.14 (20.5%).

Compound 2d

¹H NMR(DMSO-d⁶): δ 2.52 (3H, s), 5.37 (2H, s), 6.87-7.02 (3H, 6.93 (d, J = 8.5, 1.2, 0.6 Hz), 6.97 (s)), 7.19-7.45 (5H, 7.25 (d, J = 8.5, 1.2, 0.6 Hz), 7.30 (t, J = 7.3, 1.5, 1.2 Hz), 7.38 (d, J = 7.9, 7.3, 1.1, 0.4 Hz)), 7.82 (2H, d, J = 7.9, 1.4, 0.4 Hz).

¹³C NMR: δ 9.6 (1C, s), 52.8 (1C, s), 108.1 (1C, s), 115.4 (2C, s), 127.3 (2C, s), 127.8 (1C, s), 128.4 (2C, s), 130.1 (2C, s), 133.5 (1C, s), 133.6-133.8 (2C, 133.7 (s), 133.7 (s)), 135.9 (1C, s), 137.1 (1C, s), 148.5 (1C, s), 162.5 (1C, s).

m/z: 333.14 (100.0%), 334.14 (20.5%)

Compound 3a

¹H NMR(DMSO-d⁶): δ 5.34 (2H, s), 6.47 (1H, s), 6.80 (2H, d, J = 8.0, 1.1, 0.4 Hz), 7.22-7.40 (5H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz)), 7.77-7.92 (3H, 7.83 (d, J = 8.0, 1.5, 0.4 Hz), 7.87 (s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 114.3 (2C, s), 124.3 (1C, s), 127.1 (2C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 132.3 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 146.0 (1C, s), 148.4 (1C, s), 151.7 (1C, s), 157.7 (1C, s).

m/z: 363.09 (100.0%), 365.09 (32.0%), 364.09 (20.5%).

Compound 3b

¹H NMR(DMSO-d⁶): δ 5.34 (2H, s), 6.67 (1H, s), 7.22-7.40 (5H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz), 7.49-7.66 (4H, 7.55 (d, J = 8.7, 1.6, 0.5 Hz), 7.60 (d, J = 8.7, 1.5, 0.5 Hz)), 7.89 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 124.3 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 128.5 (2C, s), 128.7 (2C, s), 132.3 (1C, s), 133.6-133.8 (2C, 133.7 (s), 133.7 (s)), 135.9 (1C, s), 146.0 (1C, s), 151.7 (1C, s), 157.7 (1C, s).

m/z: 363.09 (100.0%), 365.09 (32.0%), 364.09 (20.5%), 366.09 (6.6%).

Compound 3c

¹H NMR(DMSO-d⁶): δ 5.34 (2H, s), 6.48 (1H, s), 7.00-7.40 (7H, 7.06 (d, J = 8.3, 1.2, 0.5 Hz), 7.16 (d, J = 7.7, 7.6, 1.2 Hz), 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz)), 7.65-7.80 (2H, 7.73 (d, J = 8.3, 7.6, 1.4 Hz), 7.72 (d, J = 7.7, 1.4, 0.5 Hz)), 7.87 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 115.8 (1C, s), 121.5 (1C, s), 124.3 (1C, s), 124.9 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.2 (1C, s), 128.3-128.5 (3C, 128.4 (s), 128.4 (s)), 133.7 (1C, s), 135.9 (1C, s), 145.5 (1C, s), 146.0 (1C, s), 151.7 (1C, s), 157.7 (1C, s).

m/z: 374.11 (100.0%), 375.12 (20.5%), 375.11 (2.2%).

Compound 3d

¹H NMR(DMSO-d⁶): δ 5.34 (2H, s), 6.70 (1H, s), 7.22-7.48 (7H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz), 7.42 (d, J = 8.4, 1.2, 0.5 Hz), 7.77-7.94 (3H, 7.83 (d, J = 8.4, 1.5, 0.5 Hz), 7.89 (s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 115.4 (2C, s), 124.3 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 131.9 (2C, s), 132.3 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 146.0 (1C, s), 151.7 (1C, s), 157.7 (1C, s), 162.5 (1C, s).

m/z: 347.12 (100.0%), 348.12 (20.5%).

Compound 4a

¹H NMR(DMSO-d⁶): δ 5.31 (2H, s), 6.29 (1H, s), 6.86 (2H, d, J = 8.0, 1.1, 0.5 Hz), 7.22-7.40 (5H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz)), 7.64 (2H, d, J = 8.0, 1.6, 0.5 Hz), 7.81 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 114.3 (2C, s), 124.3 (1C, s), 127.1 (2C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 132.3 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 146.0 (1C, s), 148.4 (1C, s), 151.7 (1C, s), 178.8 (1C, s).

m/z: 390.09 (100.0%), 391.09 (20.5%), 392.09 (4.5%)

Compound 4b:

¹H NMR(DMSO-d⁶): δ 5.33 (2H, s), 6.48 (1H, s), 7.22-7.40 (5H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz), 7.47-7.73 (4H), 7.54 (d, J = 8.6, 1.5, 0.5 Hz), 7.66 (d, J = 8.6, 1.7, 0.5 Hz)), 7.83 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 124.3 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 128.5 (2C, s), 128.7 (2C, s), 132.3 (1C, s), 133.6-133.8 (2C, 133.7 (s), 133.7 (s)), 135.9 (1C, s), 146.0 (1C, s), 151.7 (1C, s), 178.8 (1C, s).

m/z: 379.07 (100.0%), 381.06 (32.0%), 380.07 (20.5%), 382.07 (6.6%)

Compound 4c:

¹H NMR(DMSO-d⁶): δ 5.31 (2H, s), 6.34 (1H, s), 6.80-7.04 (2H, 6.86 (d, J = 8.1, 1.1, 0.5 Hz), 6.97 (d, J = 7.8, 7.4, 1.1 Hz), 7.22-7.40 (5H, 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz)), 7.57-7.74 (2H, 7.64 (d, J = 8.1, 7.4, 1.4 Hz), 7.68 (d, J = 7.8, 1.4, 0.5 Hz)), 7.81 (1H, s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 115.8 (1C, s), 121.5 (1C, s), 124.3 (1C, s), 124.9 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.2 (1C, s), 128.3-128.5 (3C, 128.4 (s), 128.4 (s)), 133.7 (1C, s), 135.9 (1C, s), 145.5 (1C, s), 146.0 (1C, s), 151.7 (1C, s), 178.8 (1C, s).

m/z: 390.09 (100.0%), 391.09 (20.5%), 392.09 (4.5%).

Compound 4d:

¹H NMR: δ 5.33 (2H, s), 6.45 (1H, s), 7.17-7.40 (7H, 7.23 (d, J = 8.4, 1.2, 0.5 Hz), 7.28 (d, J = 7.8, 1.6, 1.3, 0.5 Hz), 7.30 (t, J = 7.7, 1.6 Hz), 7.34 (t, J = 7.7, 1.8, 0.5 Hz), 7.74-7.87 (3H, 7.80 (d, J = 8.4, 1.5, 0.5 Hz), 7.82 (s).

¹³C NMR: δ 52.7 (1C, s), 97.5 (1C, s), 115.4 (2C, s), 124.3 (1C, s), 127.7-127.8 (3C, 127.7 (s), 127.8 (s)), 128.4 (2C, s), 131.9 (2C, s), 132.3 (1C, s), 133.7 (1C, s), 135.9 (1C, s), 146.0 (1C, s), 151.7 (1C, s), 162.5 (1C, s), 178.8 (1C, s).

m/z: 363.10 (100.0%), 364.10 (20.5%), 365.09 (4.5%).

Biological activity :

All recently pre-arranged mixtures were evaluated for antibacterial activity against *B.Subtilis* and *A.aerogenes* by utilizing plate dispersion method .[26] The circles of every fixation were put in three-fold on supplement agar medium cultivated with new bacterial societies separately. The brooding was completed at 37⁰c for 24 hrs.

Results of the examination has been accounted for in the Table 5

Compound Number	Minimum Inhibitory concentration Mg/disk meter of Zone of inhibition in mm)	
	B.s	A.nor
2a	5(10.2)	5(9.7)
2b	<5(7.4)	5(8.2)
2c	5(11.4)	10(10.2)
2d	10(9.2)	<5(7.1)
3a	<5(7.8)	5(9.1)
3b	5(9.1)	5(8.6)

3c	5(9.2)	5(8.7)
3d	5(9.1)	5(8.2)
4a	5(10.1)	5(9.7)
4b	<5(7.3)	5(8.1)
4c	5(11.3)	10(10.3)
4d	10(9.3)	<5(7.2)

RESULTS AND DISCUSSION:

A series of 1- benzyl-5-methyl 1,2,3 triazole pyrazole ,4-(1-benzyl-1H-1,2,3-triazol-4-yl)-6-(substituted phenyl)pyrimidin-2(1H)-one derivatives were synthesised by using the intermediate (E)-1-(1-benzyl-1H-1,2,3-triazol-4-yl)-3-phenyl Substituted prop-2-en-1-one. Here these compounds were Confirmed by spectral analysis and these compounds were Screened for pharmacological activities like antimicrobial by using B.Subtilis and A.aerogenes. Here nitro substituted derivatives showed promising results than other derivatives .

Comment [U5]: The discussion and results session needs to be re-elaborated and properly organized. Important data are missing in this session, such as the meetings of the current study, comparison studies, as well as limitations, positive points and final conclusions of the present study.

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