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SYNTHESIS, CHARACTERIZATION AND BIOLOGICAL SCREENING OF NOVEL TRIAZOLO[1,5-a]PYRIMIDINES

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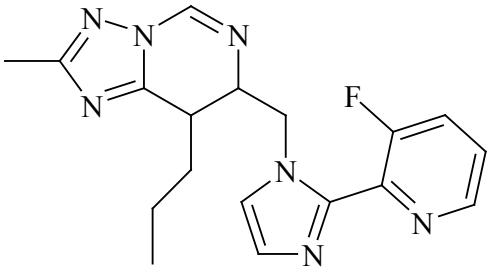
Abstract: A facile synthetic method for fused triazolopyrimidine derivatives were synthesized by the reaction of 2-bromopyridine-4-carbaldehyde with various 4-methyl-3-oxo-N-phenylpentan- amide and 3-aminotriazolewere afforded the triazolopyrimidine derivatives in moderate to good yield. The structures of the synthesized compounds have been assigned on the basis of elemental analysis, IR, NMR and Mass spectral studies. The compounds were evaluated for their antimicrobial screening against Gram-positive and Gram-negative bacteria.

Keywords: Triazolopyrimidine, Antimicrobial activity.

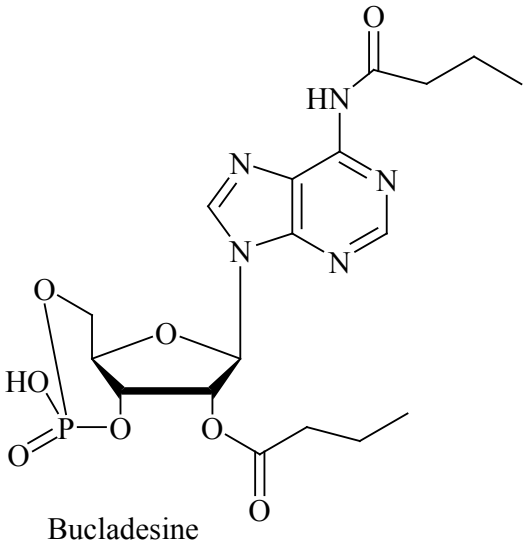
Introduction

The major topic in contemporary in medicinal chemistry is to search and synthesis of the heterocyclic compound[1-4]. Poly azo compounds possess a great important in the field of medicinal chemistry. Pyrimidine and hybrid pyrimidine as a building block of DNA & RNA play an important role in the biological system. Due to this, have considerable medicinal value, specifically, the pyrimidine ring can be found in DNA & RNA, antibiotics, anti-mycobacterial, CVs as well as plant & animal produc[5-13].More overtriazolopyrimidine also acts as a smooth muscle cell growth inhibitor[14]. In last decade's essramycin as a first triazolopyrimidine isolated from the nature[15].

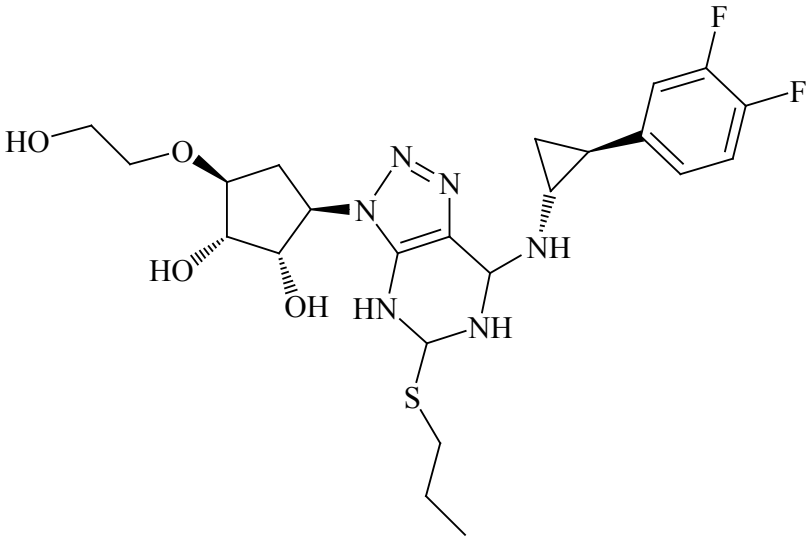
Adipiplon, possess a triazolopyrimidine nucleus act as a $GABA_A$receptor partial against and potential medication for the treatment of anxiety & insomnia[16-18]. Sulphonamides derivatives of triazolopyrimidine act as an acetohydroxyacid synthase inhibitors[19]. Ticagrelorwhich is act as a P_2Y_{12} receptor antagonist for the prevention of thrombotic events[20].Pyrimidines have a long



Adipiplon



Bucladesine



Ticagrelor

and famous history extending from the days of their finding as important ingredients of nucleic acids to their current use in the chemotherapy of AIDS. Triazolopyrimidine also acts as a transketolase inhibitor. N-heteroaryl derivatives of triazolopyrimidine derivatives have been possessed NAD(P)H oxidases inhibition & platelet activation properties.

In viewed of the above facts, we have synthesized a series of triazolopyrimidine derivative explore their biological potency. The targeted molecules KTP-(1a-1o) have been synthesized by the condensation of 2-bromopyridine-4-carbaldehyde with various 4-methyl-3-oxo-N-substitutedphenylpentanamide and 3-aminotriazole.

Materials and Methods

Melting points were determined in an open capillary tube and are uncorrected. IR spectra (KBr) were recorded on an SHIMADZU-IR &^{1}HNMR spectra ($CDCl_3$) δppm's were

recorded on a BRUKER spectrometer (400 MHz). Compounds were routinely checked for their homogeneity by TLC on silica gel plates.

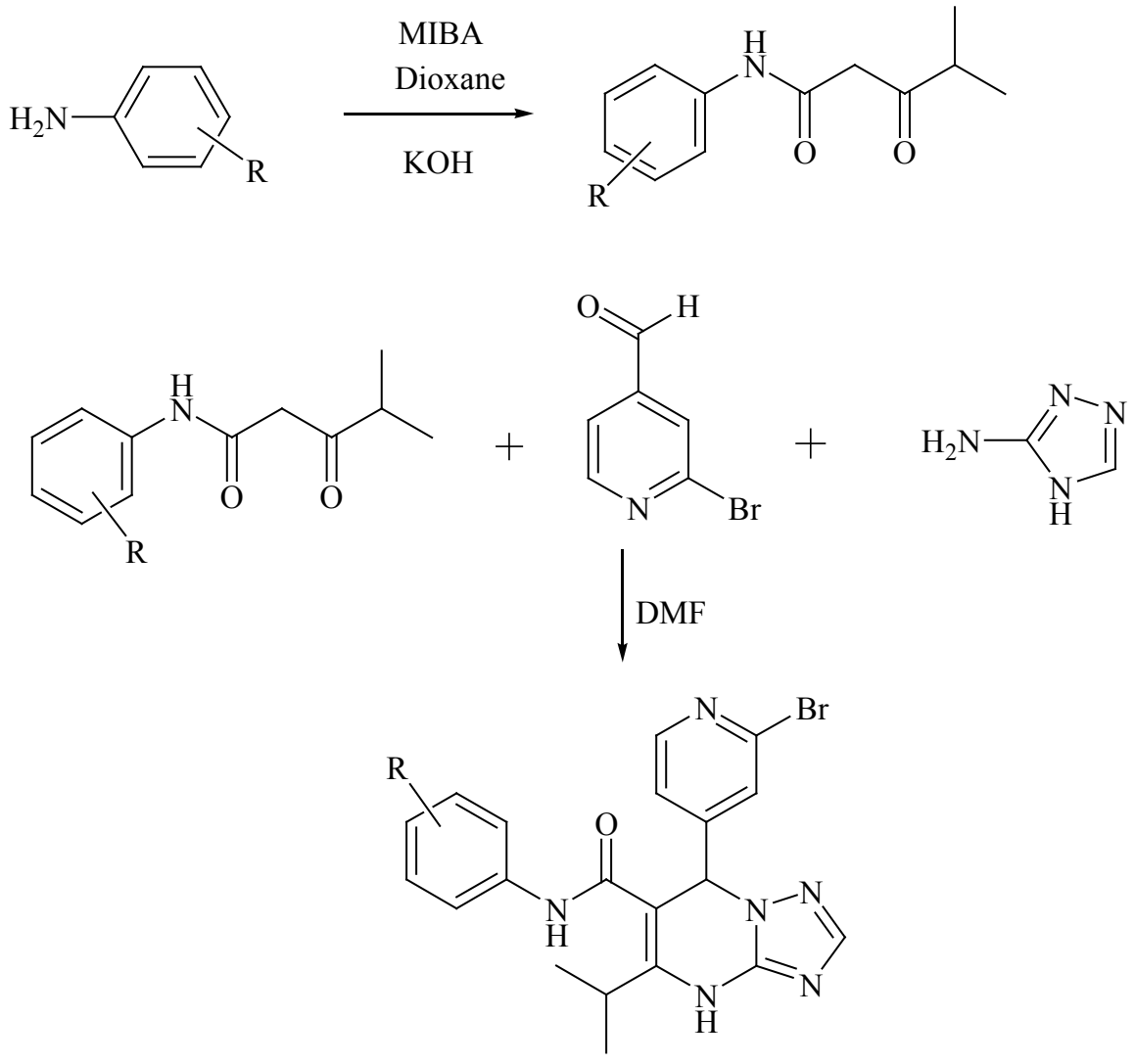
Experimental

General procedure for the synthesis of *7-(2-bromopyridin-4-yl)-4,7-dihydro-5-isopropyl-N-substitutedphenyl[1,2,4]triazolo[1,5-a]pyrimidine-6-carboxamide* KTP-(1a-1o): -

Take an equimolar mixture of 2-bromopyridine-4-carbaldehyde with various 4-methyl-3-oxo-N-substitutedphenylpentanamide and 3-aminotriazole was refluxed in DMF for 2-4 hrs and reaction monitored by TLC. After completion of the reaction, reaction mixtures poured onto the ice then filtered and crystallized from ethanol.

Similarly, other Triazolopyrimidines were prepared.

Reaction scheme



Triazolo Pyrimidine

Analytical Data

7-(2-Bromopyridin-4-yl)-N-(4-fluorophenyl)-4,7-dihydro-5-isopropyl-[1,2,4]triazolo[1,5-a] pyrimidine-6-carboxamide (KTP-1a)

Yield:- 92%; mp: 176 ºC; IR (cm^{-1}): 3205.69 (N-H stretching broad), 3030 (aromatic str.), 2924.90 (C-H stretching), 1664.57 (C=O str.), 1641.42 (C=N stretching), 1506,1400, 1325 (ring skeleton), 1462.04 (C-H bending), 1143.79 (N-H bending), 1076.28 (C-F stretching), 864.11 (aromatic p-disubstitutuion), 560.01(C-Br stretching).^{1}H NMR (400 MHz, DMSO-d_6) δ 10.22 (s, 2H), 8.69 (s, 1H), 8.51 (d, J=7.2 Hz, 1H), 7.71 (s, 1H), 7.49-7.45 (m, 2H), 7.20 (d, J=4.8 Hz, 2H), 7.14-7.08 (m, 2H), 6.82 (s, 1H), 3.13-3.07 (m, 1H), 1.25 (d, J=6.92 Hz, 3H), 1.19 (d, J=6.96 Hz, 3H).; Elemental Analysis for $C_{20}H_{18}BrFN_6O$; MS: m/z = 457.3.

7-(2-Bromopyridin-4-yl)-N-(4-chlorophenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1b)

Yield:- 88 %; mp: 169 ºC; IR (cm^{-1}): 3207.63 (N-H stretching broad), 3028.61 (aromatic str.), 2970.38 (C-H stretching), 1668.44 (C=O str.), 1643.35 (C=N stretching), 1527, 1396.46, 1323 (ring skeleton), 1460.18 (C-H bending), 1141.86 (N-H bending), 858.56 (aromatic p-disubstitutuion), 686.66 (C-Cl stretching), 552.25 (C-Br stretching).^{1}H NMR (400 MHz, DMSO-d_6) δ 10.28 (s, 2H), 8.68 (s, 1H), 8.50 (d, J=7.2 Hz, 1H), 7.72 (s, 1H), 7.50-7.48 (m, 2H), 7.32 (d, J=4.8 Hz, 2H), 7.20-7.19 (m, 2H), 6.83 (s, 1H), 3.13-3.06 (m, 1H), 1.26 (d, J=6.92 Hz, 3H), 1.19 (d, J=7.0 Hz, 3H).; Elemental Analysis for $C_{20}H_{18}BrClN_6O$; MS: m/z = 473.75.

7-(2-Bromopyridin-4-yl)-4, 7-dihydro-5-isopropyl-N-phenyl-[1, 2, 4] triazolo [1, 5-a] pyrimidi- ne-6-carboxamide (KTP-1c)

Yield:- 87%; mp: 188 ºC; IR (cm^{-1}): 3204.54 (N-H stretching broad), 3028.22 (aromatic str.), 2924.90 (C-H stretching), 1664.57 (C=O str.), 1641.42 (C=N stretching), 1508, 1403, 1328 (ring skeleton), 1462.04 (C-H bending), 1143.79 (N-H bending), 864.11 (aromatic p-disubstitutuion), 553.12 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ 10.26 (s, 2H), 8.50 – 8.46 (m, 2H), 7.90 (d, *J* = 1.1 Hz, 1H), 7.77 (d, *J* = 5.2 Hz, 1H), 7.59 – 7.47 (m, 2H), 7.32 – 7.22 (m, 2H), 7.13 – 7.03 (m, 1H), 6.17 (s, 1H), 2.78 (m, *J* = 6.6 Hz, 1H), 1.25 (d, J=6.8 Hz, 3H), 1.20 (d, J=6.9 Hz, 3H).; Elemental Analysis for $C_{20}H_{19}BrN_6O$; MS: m/z = 439.31.

7-(2-Bromopyridin-4-yl)-N-(3-chlorophenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1d)

Yield:- 78 %; mp: 147 ºC; IR (cm^{-1}): 3203.38 (N-H stretching broad), 3028.23 (aromatic str.), 2921.65 (C-H stretching), 1662.68 (C=O str.), 1650.27 (C=N stretching), 1504,1403, 1332 (ring skeleton), 1463.14 (C-H bending), 1144.50 (N-H bending),761.53 (C-F stretching), 745.18 (aromatic m-disubstitutuion), 666.30 (C-Cl stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ 10.27 (s, 2H), 8.51 – 8.44 (m, 2H), 7.90 (t, *J* = 2.0 Hz, 1H), 7.76 (d, *J* = 1.1 Hz, 1H), 7.73 – 7.60 (m, 2H), 7.39 (t, *J* = 7.6 Hz, 1H), 7.16 (d, *J* = 7.5 Hz, 1H), 5.92 (s, 1H), 2.80 (m, *J* = 12.7 Hz, 1H), 1.26 (d, J=6.9 Hz, 3H), 1.18 (d, J=6.8 Hz, 3H).;Elemental Analysis for $C_{20}H_{18}BrClN_6O$; MS: m/z = 473.75.

7-(2-Bromopyridin-4-yl)-4, 7-dihydro-5-isopropyl-N-(4-methoxyphenyl)-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1e)

Yield:- 75 %; mp: 221 ºC; IR (cm^{-1}): 3207.26 (N-H stretching broad), 3032 (aromatic str.), 2926.17 (C-H stretching), 1668.57 (C=O str.), 1643.48 (C=N stretching), 1508,1401,1321 (ring skeleton), 1462.07 (C-H bending),

1211.40 (C-O stretching), 1145.56 (N-H bending), 746.22 (aromatic m-disubstitutuion), 650.01(C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.26 (s, 2H), 8.51 – 8.43 (m, 2H), 7.76 (d, *J* = 1.0 Hz, 1H), 7.74 – 7.66 (m, 2H), 7.63 (d, *J* = 4.9 Hz, 1H), 7.00 – 6.92 (m, 2H), 5.92 (s, 1H), 3.80 (s, 3H), 2.82 (m, *J* = 6.4 Hz, 1H), 1.26 (d, J=6.93 Hz, 3H), 1.19 (d, J=6.96 Hz, 3H).; Elemental Analysis for $C_{21}H_{21}BrN_6O_2$; MS: m/z = 469.33.

7-(2-Bromopyridin-4-yl)-4,7-dihydro-5-isopropyl-N-p-tolyl-[1,2,4]triazolo[1,5-a] pyrimidine-6-carboxamide (KTP-1f)

Yield:- 86 %; mp: 174 ºC; IR (cm^{-1}): 3212.62 (N-H stretching broad), 3026.23 (aromatic str.), 2922.96 (C-H stretching), 1664.55 (C=O str.), 1643.46 (C=N stretching), 1501, 1412, 1326 (ring skeleton), 1464.02 (C-H bending), 1143.72 (N-H bending), 860.18 (aromatic p-disubstitutuion), 650.08 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ 10.25 (s, 2H), 8.52 – 8.46 (m, 2H), 7.90 (d, *J* = 1.2 Hz, 1H), 7.76 (d, *J* = 5.0 Hz, 1H), 7.54 (d, *J* = 7.3 Hz, 2H), 7.20 – 7.13 (m, 2H), 6.15 (s, 1H), 2.76 (m, *J* = 6.4 Hz, 1H), 2.31 (d, *J* = 1.1 Hz, 3H), 1.24 (d, J=6.9 Hz, 3H), 1.21 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{21}H_{21}BrN_6O$; MS: m/z = 453.34.

7-(2-Bromopyridin-4-yl)-4,7-dihydro-5-isopropyl-N-m-tolyl-[1,2,4]triazolo[1,5-a] pyrimidine-6-carboxamide (KTP-1g)

Yield:- 76 %; mp: 206 ºC; IR (cm^{-1}): 3203.55 (N-H stretching broad), 3027.32 (aromatic str.), 2924.70 (C-H stretching), 1662.37 (C=O str.), 1642.48 (C=N stretching), 1508,1411, 1320 (ring skeleton), 1460.14 (C-H bending) 1148.70 (N-H bending), 745.13 (aromatic m-disubstitutuion), 652.18 (C-Br stretching).^{1}H NMR (400 MHz, Chloroform-*d*) δ10.29 (s, 2H), 8.54 – 8.48 (m, 2H), 7.93 (d, *J* = 1.0 Hz, 1H), 7.72 (d, *J* = 7.4 Hz, 1H), 7.72 (d, *J* = 5.0 Hz, 1H), 7.63 (t, *J* = 1.9 Hz, 1H), 7.23 (t, *J* = 7.5 Hz, 1H), 6.98 (d, *J* = 7.4Hz, 1H), 6.16 (s, 1H), 2.76 (m, *J* = 6.4 Hz, 1H), 2.29 (d, *J* = 1.1 Hz, 3H), 1.25 (d, J=6.8 Hz, 3H), 1.18 (d, J=6.9 Hz, 3H).; Elemental Analysis for $C_{21}H_{21}BrN_6O$; MS: m/z = 453.34.

7-(2-Bromopyridin-4-yl)-4, 7-dihydro-5-isopropyl-N-(3-nitrophenyl)-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1h)

Yield:- 76 %; mp: 179 ºC; IR (cm^{-1}): 3210.11 (N-H stretching broad), 3033.21 (aromatic str.), 2928.94 (C-H stretching), 1666.17 (C=O str.), 1641.42 (C=N stretching), 1506, 1400, 1325 (ring skeleton), 1462.04 (C-H bending), 1360.20(C-NO_2 Str.), 1143.79.70 (N-H bending), 745.11 (aromatic m-disubstitutuion), 650.01 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ 10.25 (s, 2H), 8.51 – 8.43 (m, 2H), 8.12 (d, *J* = 7.6 Hz, 1H), 8.02 (t, *J* = 2.1 Hz, 1H), 7.93 (d, *J* = 7.5 Hz, 1H), 7.76 (d, *J* = 1.0 Hz, 1H), 7.66 – 7.58 (m, 2H), 5.92 (s, 1H), 2.54 (m, *J* = 6.4 Hz, 1H), 1.26 (d, J=6.8 Hz, 3H), 1.19 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{20}H_{18}BrN_7O_3$; MS: m/z = 484.31.

7-(2-Bromopyridin-4-yl)-N-(2-fluorophenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1i)

Yield:- 94 %; mp: 142 ºC; IR (cm^{-1}): 3203.29 (N-H stretching broad), 3024.65 (aromatic str.), 2921.87 (C-H stretching), 1664.54 (C=O str.), 1646.42 (C=N stretching), 1509,1404, 1329 (ring skeleton), 1462.04 (C-H bending), 1143.79 (N-H bending), 770.11 (aromatic o-disubstitutuion), 761.84 (C-F stretching), 650.57 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.27 (s, 2H), 8.52 – 8.42 (m, 2H), 7.95 – 7.86 (m, 2H), 7.73 (d, *J* = 5.1 Hz, 1H), 7.22 – 7.06 (m, 2H), 7.01 (t, *J* = 7.6Hz, 1H), 6.16 (s, 1H), 2.74 (m, *J* = 6.5 Hz, 1H), 1.26 (d, J=6.8 Hz, 3H), 1.19 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{20}H_{18}BrFN_6O$; MS: m/z = 457.3.

7 - (2 - B r o m o p y r i d i n - 4 - y l) - N - (2 - chlorophenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1j)

Yield:- 85 %; mp: 183 ºC; IR(cm^{-1}): 3211 (N-H stretching broad), 3031.12 (aromatic str.), 2924.90 (C-H stretching), 1664.57 (C=O str.), 1640.07 (C=N stretching), 1506,1400, 1325 (ring skeleton), 1460.18 (C-H bending), 1142.70 (N-H bending),765.10 (aromatic o-disubstitutuion), 761.53 (C-F stretching), 666.30 (C-Cl stretching), 650.01 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.26 (s, 2H), 8.52 – 8.43 (m, 2H), 7.94 – 7.86 (m, 2H), 7.73 (d, *J* = 5.1 Hz, 1H), 7.57 (d, *J* = 7.4 Hz, 1H), 7.41 (t, *J* = 7.5 Hz, 1H), 7.24 (t, *J* = 7.4 Hz, 1H), 6.17 (s, 1H), 2.77 (m, *J* = 12.7 Hz, 1H), 1.25 (d, J=6.9 Hz, 3H), 1.19 (d, J=7.0 Hz, 3H).; Elemental Analysis for $C_{20}H_{18}BrClN_6O$; MS: m/z =473.75.

7 - (2 - B r o m o p y r i d i n - 4 - y l) - N - (2 , 4-difluorophenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1k)

Yield:- 88 %; mp: 206 ºC; IR (cm^{-1}): 3205.69 (N-H stretching broad), 3030 (aromatic str.), 2924.90 (C-H stretching), 1664.57 (C=O str.), 1640.07 (C=N stretching), 1506,1400, 1325 (ring skeleton), 1460.18 (C-H bending), 1142.70 (N-H bending), 860.15 (aromatic p-disubstitutuion), 761.53 (C-F stretching), 650.01 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.26 (s, 2H), 8.55 – 8.45 (m, 2H), 7.91 (d, *J* = 1.2 Hz, 1H), 7.74 – 7.66 (m, 2H), 6.87 (t, *J* = 9.0 Hz, 2H), 6.18 (s, 1H), 2.77 (m, *J* = 12.6 Hz, 1H), 1.26 (d, J=6.8 Hz, 3H), 1.19 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{20}H_{17}BrF_2N_6O$; MS: m/z = 475.29.

7-(2-Bromopyridin-4-yl)-N-(4-ethylphenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1l)

Yield:- 81 %; mp: 227 ºC; IR (cm^{-1}): 3203.12 (N-H stretching broad), 3028.39 (aromatic str.), 2924.56 (C-H stretching), 1666.54 (C=O str.), 1642.07 (C=N stretching), 1507.23,1400.47, 1325.58 (ring skeleton), 1464.69 (C-H bending), 1151.70 (N-H bending), 860.64 (aromatic p-disubstitutuion), 653 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.27 (s, 2H), 8.50 – 8.41 (m, 2H), 7.93 (d, *J* = 1.2 Hz, 1H), 7.76 – 7.64 (m, 3H), 7.21 (d, *J* = 7.3 Hz, 2H), 6.17 (s, 1H), 2.74 (d, *J* = 12.8 Hz, 1H), 2.62 (q, *J* = 6.8 Hz, 2H), 1.25 (d, J=6.92 Hz, 3H), 1.20 (d, J=6.96 Hz, 3H).; Elemental Analysis for $C_{22}H_{23}BrN_6O$; MS: m/z =467.36.

7 - (2 - B r o m o p y r i d i n - 4 - y l) - N - (3 , 4-dichlorophenyl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1m)

Yield:- 74 %; MP: 234 ºC; IR (cm^{-1}):3205.44 (N-H stretching broad), 3034 (aromatic str.), 2934.90 (C-H stretching), 1664.57 (C=O str.), 1642.07 (C=N stretching), 1504, 1408, 1324.28 (ring skeleton), 1462.18 (C-H bending), 1146.70 (N-H bending), 764.10 (aromatic o-disubstitutuion), 666.30 (C-Cl stretching), 653.31 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.28 (s, 2H), 8.51 – 8.43 (m, 2H), 7.93 (d, *J* = 1.2 Hz, 1H), 7.77 – 7.64 (m, 2H), 7.52 (d, *J* = 7.5 Hz, 1H), 7.13 (d, *J* = 2.0 Hz, 1H), 6.17 (s, 1H), 2.77 (m, *J* = 6.4 Hz, 1H), 1.25 (d, J=6.9 Hz, 3H), 1.20 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{20}H_{17}BrCl_2N_6O$; MS: m/z = 508.2.

N-(2, 4-Dibromophenyl)-7-(2-bromopyridin-4-yl)-4, 7-dihydro-5-isopropyl-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1n)

Yield:- 91%; mp: 168 ºC; IR (cm^{-1}): 3205.69 (N-H stretching broad), 3030 (aromatic str.), 2924.90 (C-H stretching), 1664.57 (C=O str.), 1640.07 (C=N stretching), 1506,1400, 1325 (ring skeleton), 1460.18 (C-H bending),

1142.70 (N-H bending), 864.18 (aromatic p-disubstitutuion), 650.01 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ10.25 (s, 2H), 8.56 – 8.45 (m, 2H), 7.90 (d, *J* = 1.0 Hz, 1H), 7.82 (d, *J* = 2.0 Hz, 1H), 7.75 (d, *J* = 5.3 Hz, 1H), 7.62 (d, *J* = 7.6 Hz, 1H), 7.44 (d, *J* = 7.8 Hz, 1H), 6.16 (s, 1H), 2.77 (m, *J* = 6.6 Hz, 1H), 1.26 (d, J=6.8 Hz, 3H), 1.21 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{20}H_{17}Br_3N_6O$; MS: m/z = 597.1.

7-(2-Bromopyridin-4-yl)-4, 7-dihydro-5-isopropyl-N-(3-methoxyphenyl)-[1, 2, 4] triazolo [1, 5-a] pyrimidine-6-carboxamide (KTP-1o)

Yield:- 77 %; mp: 213 ºC; IR (cm^{-1}): 3209.33 (N-H stretching broad), 3033.23 (aromatic str.), 2926.97 (C-H stretching), 1664.53 (C=O str.), 1641.47 (C=N stretching), 1501,1413.28,1331.69 (ring skeleton), 1460.04 (C-H bending), 1215.30 (C-O stretching), 1147.79 (N-H bending), 745.18 (aromatic m-disubstitutuion), 652.24 (C-Br stretching). ^{1}H NMR (400 MHz, Chloroform-*d*) δ 10.29 (s, 2H), 8.55 – 8.42 (m, 2H), 7.75 (d, *J* = 1.1 Hz, 1H), 7.65 (dd, *J* = 5.1, 1.0 Hz, 1H), 7.33 (t, *J* = 1.5 Hz, 1H), 7.25 – 7.15 (m, 2H), 6.65 (d, *J* = 5.9 Hz, 1H), 5.91 (s, 1H), 3.75 (s, 3H), 2.84 (m, *J* = 6.4 Hz, 1H), 1.25 (d, J=6.8 Hz, 3H), 1.19 (d, J=6.8 Hz, 3H).; Elemental Analysis for $C_{21}H_{21}BrN_6O_2$;MS: m/z = 469.33.

Biological Evaluation

Microbial Assay

Bacterial culture was prepared in Muller Hinton broth at 37 ºC by keeping 24h. A sample solution was prepared in DMSO; if it is partial soluble then HCl added to a concentration of 0.016%. The compounds were plated at a single concentration in non-binding surface 96- well plates (Corning; Cat. No 3641, NBS). For bacterial inhibitor controls, Colistin, Polymyxin B, Vancomycin and Daptomycin were serially diluted two-fold across the wells, with compound concentrations ranging from 0.06 to 64 µg/mL. The resultant mid-log phase cultures were diluted to the final concentration of 5×10^5 CFU/mL, then 50 µL was added to each well of the plates, giving a final compound concentration of 32 µg/mL and a concentration range for the controls of 0.015 to 32 µg/mL. All the plates were covered and incubated at 37 ºC for 24 h.

Inhibition of bacterial growth was determined visually after 24 h, where the MIC is recorded as the lowest compound concentration with no visible growth.

Results and discussion

The condensation of different substituted aromatic amine with methyl butyl ketone in dioxane to furnished. The amide which on further condensation with 5-amino triazole & 2-bromo-4-formyl pyridine to generate our target molecule triazolopyrimidine (Scheme-1) via biginali reaction. The structure evolutions of the synthesized products were done on the basis of spectral Analysis (KTP 1a-1o). KTP-1i furnished the highest yield 94% the yield of the KTP-1a to 1o varied in between 74 to 94% as per the available data of the KTP-1a to 1o, it was predicted that if electron withdrawing group present at o-position or o/p both positions in aromatic amine increases the % of the yield while it is present at meta position decreasing % yield comparatively.

All the synthesized compounds have screened against different bacterial strain such as *Escherichia coli* **(ATCC 25922/ FDA control strain),** *K. pneumonia* **(ATCC 700603/MDR),** *A. baumannii* **(ATCC 19606/type strain),***P. aeruginos*in **(ATCC 27853/type strain)** and *S. aureus* ***(ATCC 43300/MRSA)*** at fixed concentration of 32µg/ml to check their potency. KTP-1n showed active against *S. aureus*atthis concentration while remaining are inactive.

Table- I:-Antimicrobial Activity of 7-(2-bromopyridin-4-yl)-4,7-dihydro-5-isopropyl-N-substitutedphenyl[1,2,4]triazolo[1,5-a]pyrimidine-6-carboxamide KTP-(1a-1o):-

WADI CompoundID	*Collaborator Compound ID*	*GN_001 E. coli ATCC25922*	*GN_003 K. pneumonia ATCC700603 (MDR)*	*GN_034 A. baumannii ATCC19606*	*GN_042 P. aeruginosin ATCC27853*	*GP_020 S. aureus ATCC43300 (MRSA)*
		GrowthInhibitionat 32µg/mL				
WADI_0134192	KTP-1A	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134193	KTP-1B	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134194	KTP-1C	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134195	KTP-1D	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134196	KTP-1E	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134197	KTP-1F	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134198	KTP-1G	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134199	KTP-1H	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134200	KTP-1I	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134201	KTP-1J	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134202	KTP-1K	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134203	KTP-1L	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134204	KTP-1M	Inactive	Inactive	Inactive	Inactive	Inactive
WADI_0134205	KTP-1N	Inactive	Inactive	Inactive	Inactive	**Active**
WADI_0134206	KTP-1O	Inactive	Inactive	Inactive	Inactive	Inactive

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