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CHEMISTRY RESEARCH ARTICLE

Synthesis and Characterization of series of 1-((4-Phenyl-1*H*-imidazol-1-yl)methyl)-1*H*-1,2,3-triazoles

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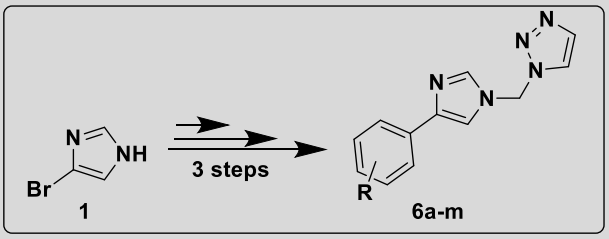
ABSTRACT

A new series of 1-[(4-aryl-1*H*-imidazol-1-yl) methyl]-1 *H* -1, 2, 3-triazoles **(6a–m)** were prepared by an easy and effective synthesis approach. First, 4-bromo-1 *H* -imidazole **(1)** was N-propargylated with 3-bromoprop-1-yne **(2)** to produce 4-bromo-1-(prop-2-yn-1-yl)-1 *H* -imidazole **(3)**. The corresponding 4-aryl-1-(prop-2-yn-1-yl)-1 *H* -imidazoles**(5a–m)** were obtained in good to outstanding yields by Suzuki–Miyaura cross-coupling the crucial intermediate 3 with different substituted arylboronic acids **(4a–m)**. Lastly, the target 1-[(4-aryl-1*H*-imidazol-1-yl) methyl]-1 *H* -1, 2, 3-triazoles **(6a–m)** was obtained by regioselective azide–alkyne cycloaddition employing sodium azide. Rapid access to structurally varied imidazole–triazole hybrids for additional biological and medicinal chemistry research is made possible by the established technology, which is operationally straightforward, effective, and widely adaptable. (**Scheme I& Table 1-4**)

Key words:4-Bromo-1H-imidazole, Suzuki–Miyaura cross-coupling, Click chemistry, 1,2,3-Triazoles, Imidazole–triazole hybrids.



Graphical Abstract

1. INTRODUCTION

Due to their extensive application in functional materials, medicines, and agrochemicals, nitrogen-containing heterocyclic compounds are among the most significant types of organic molecules. Imidazole derivatives have garnered significant interest among these heterocycles due to their wide range of biological actions, which include enzyme inhibitory, antibacterial, antifungal, anticancer, and anti-inflammatory qualities.[1–3] Imidazole-based scaffolds are also present in numerous clinically approved drugs owing to their excellent pharmacokinetic behavior and versatile binding characteristics. [4] The 1, 2, 3-triazole ring is another privileged heterocyclic that has emerged as an indispensable structural motif in medicinal chemistry. The remarkable stability, hydrogen-bonding capability, dipole moment, and bioisosteric nature of triazoles significantly enhance receptor binding affinity and metabolic stability. [5–6]

The development of copper-catalyzed azide–alkyne cycloaddition (CuAAC), commonly referred to as "click chemistry," has revolutionized the synthesis of 1, 2, 3-triazoles by providing highly regioselective and efficient synthetic routes under mild conditions.[7]

Molecular hybridization, involving the combination of two or more pharmacologically active heterocyclic scaffolds within a single molecular framework, has become an effective strategy in modern drug discovery. Imidazole–triazole hybrids have demonstrated promising antibacterial, antifungal, antiviral, anticancer, and anti-inflammatory activities because the two heterocyclic systems often exhibit synergistic pharmacological effects.[8–10]

Cross-coupling reactions, particularly the Suzuki–Miyaura reaction, represent one of the most versatile carbon–carbon bond-forming methodologies for constructing functionalized aromatic compounds.[11] the incorporation of aryl substituents through Suzuki coupling considerably enhances molecular diversity and facilitates structure–activity relationship (SAR) studies.[12]. Considering the significant biological importance of imidazole and triazole pharmacophores, the present work describes an efficient synthetic strategy involving N-propargylation of 4-bromoimidazole, Suzuki cross-coupling with phenylboronic acid, and subsequent azide-mediated cyclization to afford a novel imidazole–triazole hybrid [13–15]. The current work describes an effective synthetic strategy that involves N-propargylation of 4-bromoimidazole, Suzuki cross-coupling with phenylboronic acid, and subsequent azide-mediated cyclization to afford a novel imidazole–triazole hybrid, given the significant biological importance of both imidazole and triazole pharmacophores. The presented technology provides an effective pathway to heterocyclic conjugates with a variety of structures that could be useful models for further research in medicinal chemistry.

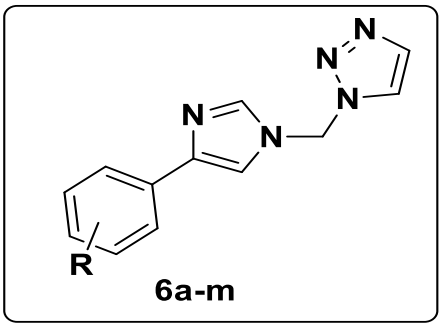


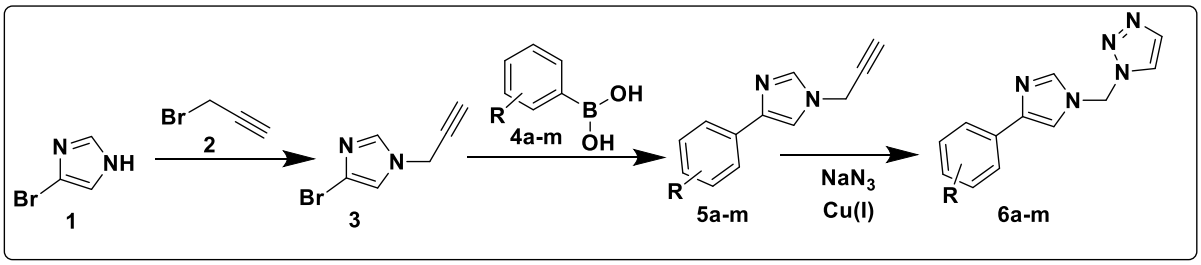
Fig: 1 Designed Target 6a-m

2. EXPERIMENTAL

Melting points were determined using a Cintex melting point apparatus and are uncorrected. Thin-layer chromatography (TLC) was performed by using Merck silica gel 60 F254 precoated plates (0.25 mm) and column chromatography was performed by using Silica gel (particle size 100-200 mesh). ^{1}H NMR spectra were recorded on a Bruker AMX 400 MHz spectrometer, 100MHz for ^{13}C NMR spectra. Chemical shift values were given in ppm (δ) with TMS as an internal standard. Mass spectra were determined on Agilent LC-1100 (LC-MS) series instrument. Elemental analyses were performed on a Carlo Erba 106 and Perkin Elmer model 240 analyzers.

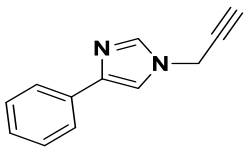
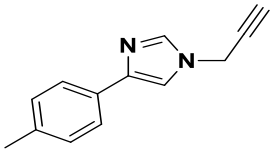
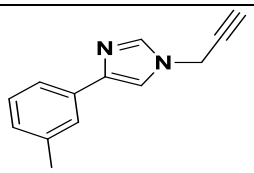
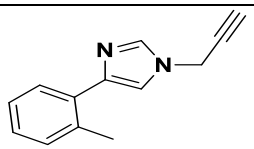
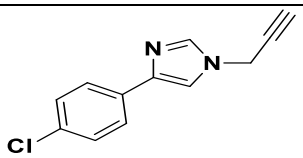
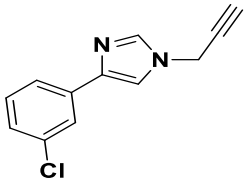
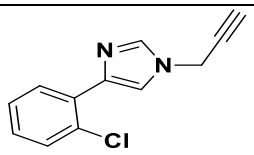
3. RESULTS AND DISCUSSION

4-bromo-1H-imidazole **(1)** is treated with propargyl bromide **(2)** to give an intermediate **3**. It is further more reacts with phenylboronic acid **(4a-m)** Suzuki cross-coupling reaction to offered **(5a-m)**. This is treated with NaN3/ CuSO4: Sodium ascorbate to yield series of 1-((4-phenyl-1H-imidazol-1-yl) methyl)-1H-1, 2, 3-triazoles **(6a-m)** viz Click protocols in Scheme I. The structures of the products have been elucidated on the basis of 1H NMR, 13C NMR MS data and elemental analysis. (**Scheme I& Table 1-4**).



Scheme I Synthesis of series of 1-((4-Phenyl-1*H*-imidazol-1-yl) methyl)-1*H*-1, 2, 3-triazoles**6a-m**

Table 1: Names & Structures of compounds (5a-5m)

Entry	IUPAC Name	Structure
5a	4-phenyl-1-(prop-2-yn-1-yl)-1H-imidazole	
5b	1-(prop-2-yn-1-yl)-4-(p-tolyl)-1H-imidazole	
5c	1-(prop-2-yn-1-yl)-4-(m-tolyl)-1H-imidazole	
5d	1-(prop-2-yn-1-yl)-4-(o-tolyl)-1H-imidazole	
5e	4-(4-chlorophenyl)-1-(prop-2-yn-1-yl)-1H-imidazole	
5f	4-(3-chlorophenyl)-1-(prop-2-yn-1-yl)-1H-imidazole	
5g	4-(2-chlorophenyl)-1-(prop-2-yn-1-yl)-1H-imidazole	

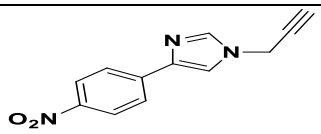
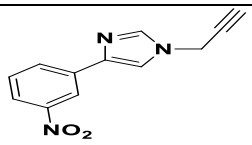
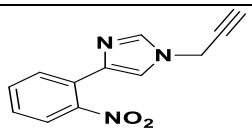
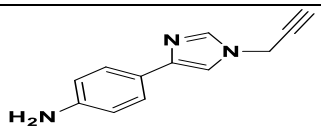
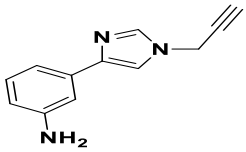
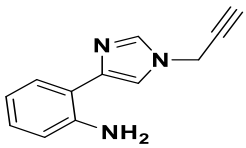
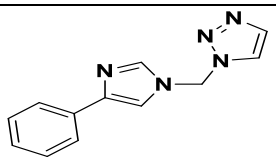
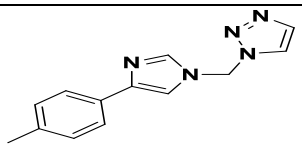
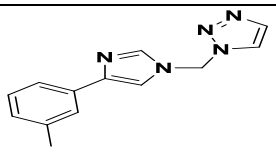
5h	4-(4-nitrophenyl)-1-(prop-2-yn-1-yl)-1H-imidazole	
5i	4-(3-nitrophenyl)-1-(prop-2-yn-1-yl)-1H-imidazole	
5j	4-(2-nitrophenyl)-1-(prop-2-yn-1-yl)-1H-imidazole	
5k	4-(1-(prop-2-yn-1-yl)-1H-imidazol-4-yl)aniline	
5l	3-(1-(prop-2-yn-1-yl)-1H-imidazol-4-yl)aniline	
5m	2-(1-(prop-2-yn-1-yl)-1H-imidazol-4-yl)aniline	

Table 2: Names & Structures of compounds (5a-5m)

Entry	IUPAC Name	Structure
6a	1-((4-phenyl-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6b	1-((4-(p-tolyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6c	1-((4-(m-tolyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	

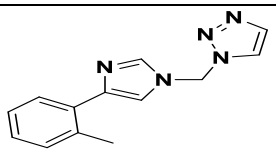
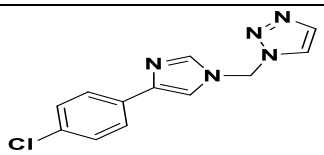
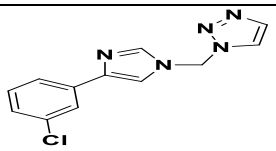
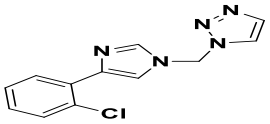
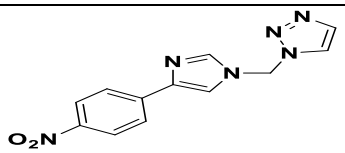
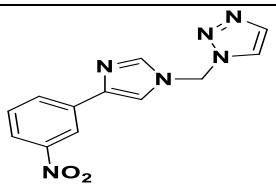
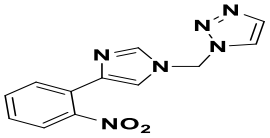
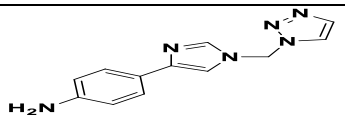
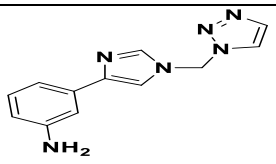
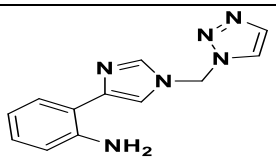
6d	1-((4-(o-tolyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6e	1-((4-(4-chlorophenyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6f	1-((4-(3-chlorophenyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6g	1-((4-(2-chlorophenyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6h	1-((4-(4-nitrophenyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6i	1-((4-(3-nitrophenyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6j	1-((4-(2-nitrophenyl)-1H-imidazol-1-yl)methyl)-1H-1,2,3-triazole	
6k	4-(1-((1H-1,2,3-triazol-1-yl)methyl)-1H-imidazol-4-yl)aniline	
6l	3-(1-((1H-1,2,3-triazol-1-yl)methyl)-1H-imidazol-4-yl)aniline	
6m	2-(1-((1H-1,2,3-triazol-1-yl)methyl)-1H-imidazol-4-yl)aniline	

Table 3: Spectral data of synthesized compounds (5a-5m)

Entry	^{1}H NMR (400 MHz, DMSO-d6) (δ, ppm)	^{13}CNMR (100 MHz, DMSO-d6) (δ, ppm)	MS(LCMS): $[M+H]^{+}m/z$
5a	7.70–7.76 (m, 2H), 7.52 (s, 1H), 7.35–7.45 (m, 3H), 7.18 (s, 1H), 5.02 (d, *J* = 2.4 Hz, 2H), 3.48 (t, *J* = 2.4 Hz, 1H).	142.5, 137.0, 133.2, 128.8, 127.5, 125.9, 121.8, 79.4, 75.8, 39.2.	183
5b	7.72 (s, 1H), 7.58 (d, *J* = 8.1 Hz, 2H), 7.25 (d, *J* = 8.1 Hz, 2H), 7.18 (s, 1H), 5.04 (d, *J* = 2.4 Hz, 2H), 3.48 (t, *J* = 2.4 Hz, 1H), 2.32 (s, 3H).	142.6, 137.8, 136.9, 130.5, 129.4, 125.7, 121.8, 79.4, 75.8, 39.2, 21.1.	197
5c	7.73 (s, 1H), 7.55 (s, 1H), 7.48 (d, *J* = 7.7 Hz, 1H), 7.30 (t, *J* = 7.7 Hz, 1H), 7.18 (s, 1H), 7.13 (d, *J* = 7.7 Hz, 1H), 5.03 (d, *J* = 2.4 Hz, 2H), 3.47 (t, *J* = 2.4 Hz, 1H), 2.34 (s, 3H).	142.7, 138.4, 136.8, 133.1, 129.1, 128.3, 126.5, 123.0, 121.7, 79.4, 75.8, 39.2, 21.4.	197
5d	7.69 (s, 1H), 7.47 (d, *J* = 7.6 Hz, 1H), 7.31 (t, *J* = 7.5 Hz, 1H), 7.24 (t, *J* = 7.4 Hz, 1H), 7.18 (d, *J* = 7.5 Hz, 1H), 7.11 (s, 1H), 5.02 (d, *J* = 2.4 Hz, 2H), 3.46 (t, *J* = 2.4 Hz, 1H), 2.36 (s, 3H).	141.8, 136.9, 136.5, 132.4, 130.4, 129.2, 126.8, 125.5, 121.5, 79.3, 75.7, 39.2, 20.1.	197
5e	7.78 (d, *J* = 8.5 Hz, 2H), 7.73 (s, 1H), 7.49 (d, *J* = 8.5 Hz, 2H), 7.22 (s, 1H), 5.05 (d, *J* = 2.4 Hz, 2H), 3.50 (t, *J* = 2.4 Hz, 1H).	141.6, 137.1, 133.3, 132.2, 129.2 (2C), 127.3 (2C), 122.0, 79.2, 76.0, 39.3.	217
5f	7.86 (s, 1H), 7.77 (d, *J* = 7.8 Hz, 1H), 7.74 (s, 1H), 7.48 (t, *J* = 7.9 Hz, 1H), 7.39 (d, *J* = 8.0 Hz, 1H), 7.23 (s, 1H), 5.05 (d, *J* = 2.4 Hz, 2H), 3.50(t,*J*=2.4Hz,1H).	141.4, 137.2, 134.4, 134.0, 130.9, 127.6, 125.8, 124.3, 122.1, 79.2, 76.0, 39.3.	217
5g	7.78 (s, 1H), 7.58 (dd, *J* = 7.8, 1.5 Hz, 1H), 7.5((dd, *J* = 7.8, 1.5 Hz, 1H), 7.39 (td, *J* = 7.6, 1.5 Hz 1H), 7.32 (td, *J* = 7.6, 1.4 Hz, 1H), 7.18 (s, 1H) 5.05 (d, *J* = 2.4 Hz, 2H), 3.49 (t, *J* = 2.4 Hz, 1H).	140.3, 137.0, 133.6, 131.4, 130.6, 129.8, 127.8, 127.0, 121.6, 79.1, 76.1, 39.3.	217
5h	8.28 (d, *J* = 8.8 Hz, 2H), 8.02 (d, *J* = 8.8 Hz, 2H), 7.82 (s, 1H), 7.31 (s, 1H), 5.08 (d, *J* = 2.4 Hz, 2H), 3.53 (t, *J* = 2.4 Hz, 1H).	147.0, 140.8, 139.1, 137.5, 127.2 (2C), 124.3 (2C), 122.5, 79.0, 76.3, 39.4.	228
5i	8.55 (t, *J* = 1.9 Hz, 1H), 8.19 (ddd, *J* = 8.2, 2.2, 1.0 Hz, 1H), 8.10 (dt, *J* = 7.8, 1.4 Hz, 1H), 7.82 (s, 1H), 7.67(t, *J* = 8.0 Hz, 1H), 7.30 (s, 1H), 5.08 (d, *J* = 2.4 Hz, 2H), 3.53 (t, *J* = 2.4 Hz, 1H).	148.5, 140.7, 138.0, 135.0, 131.6, 130.4, 122.8, 122.5, 120.7, 79.0, 76.3, 39.4.	228

5j	8.02 (dd, *J* = 8.1, 1.3 Hz, 1H), 7.87 (s, 1H), 7.78 (td, *J* = 7.7, 1.3 Hz, 1H), 7.66 (td, *J* = 7.6, 1.2 Hz, 1H), 7.55 (dd, *J* = 7.8, 1.2 Hz, 1H), 7.24 (s, 1H), 5.07 (d, *J* = 2.4 Hz, 2H), 3.52 (t, *J* = 2.4 Hz, 1H).	149.2, 139.8, 137.4, 132.9, 131.5, 129.5, 127.8, 124.9, 122.1, 79.0, 76.3, 39.4.	228
5k	7.62 (s, 1H), 7.46 (d, *J* = 8.5 Hz, 2H), 7.10 (s, 1H), 6.61 (d, *J* = 8.5 Hz, 2H), 5.18 (br s, 2H, NH_2), 5.00 (d, *J* = 2.4 Hz, 2H), 3.44 (t, *J* = 2.4 Hz, 1H).	148.5, 142.8, 136.4, 127.0 (2C), 123.8, 120.8, 114.5 (2C), 79.5, 75.6, 39.1.	198
5l	7.64 (s, 1H), 7.18 (t, *J* = 7.8 Hz, 1H), 7.12 (s, 1H), 6.98 (t, *J* = 1.9 Hz, 1H), 6.92 (ddd, *J* = 7.8, 1.9, 1.0 Hz, 1H), 6.53 (ddd, *J* = 8.0, 2.2, 1.0 Hz, 1H), 5.20 (br s, 2H, NH_2), 5.01 (d, *J* = 2.4 Hz, 2H), 3.45 (t, *J* = 2.4 Hz, 1H).	149.0, 142.3, 136.5, 133.4, 129.5, 120.9, 115.8, 114.2, 111.8, 79.5, 75.7, 39.2.	198
5m	7.67 (s, 1H), 7.31 (dd, *J* = 7.8, 1.4 Hz, 1H), 7.13 (s, 1H), 7.06 (td, *J* = 7.7, 1.4 Hz, 1H), 6.73 (dd, *J* = 8.0, 1.2 Hz, 1H), 6.60 (td, *J* = 7.5, 1.1 Hz, 1H), 5.35 (br s, 2H, NH_2), 5.01 (d, *J* = 2.4 Hz, 2H), 3.45 (t, *J* = 2.4 Hz, 1H).	146.8, 140.7, 136.5, 130.1, 128.2, 121.0, 120.4, 117.2, 115.5, 79.4, 75.7, 39.2.	198

Table 4: Spectral data of synthesized compounds (6a-6m)

Entry	**^{1}H NMR (400 MHz, DMSO-d6) (δ, ppm)**	**^{13}CNMR (100 MHz, DMSO-d6) (δ, ppm)**	**MS(LCMS) : *m/z***
6a	8.62 (s, 1H, H-3 of 1,2,4-triazole), 8.05 (s, 1H, H-5 of 1,2,4-triazole), 7.68–7.76 (m, 2H, Ar–H), 7.58 (s, 1H, imidazole-H), 7.34–7.44 (m, 3H, Ar–H), 7.20 (s, 1H, imidazole-H), 5.62 (s, 2H, NCH_2N).	152.3 (CH, triazole C), 145.1 (CH, triazole C), 142.4 (Cq, imidazole C attached to phenyl), 136.8 (CH, imidazole C), 133.0 (Cq, ipso-Ar C), 128.8 (2CH, Ar C), 127.5 (CH, Ar C), 125.8 (2CH, Ar C), 121.9 (CH, imidazole C), 54.6 (CH_2, NCH_2N).	226
6b	8.61 (s, 1H), 8.04 (s, 1H), 7.56 (s, 1H), 7.52 (d, *J* = 8.1 Hz, 2H), 7.18 (d, *J* = 8.1 Hz, 2H), 7.14 (s, 1H), 5.60 (s, 2H), 2.31 (s, 3H).	152.2, 145.0, 142.3, 137.4, 136.7, 130.1, 129.4 (2C), 125.6 (2C), 121.6, 54.5, 21.1.	240
6c	8.61 (s, 1H), 8.04 (s, 1H), 7.57 (s, 1H), 7.45 (s, 1H), 7.38 (d, *J* = 7.7 Hz, 1H), 7.26 (t, *J* = 7.7 Hz, 1H), 7.16 (s, 1H), 7.10 (d, *J* = 7.6 Hz, 1H), 5.60 (s, 2H), 2.33(s, 3H).	152.2, 145.0, 142.2, 138.3, 136.7, 133.0, 129.0, 128.2, 126.3, 122.9, 121.7, 54.5, 21.4.	240

6d	8.62 (s, 1H), 8.05 (s, 1H), 7.60 (s, 1H), 7.42 (dd, *J* = 7.7, 1.4 Hz, 1H), 7.29 (td, *J* = 7.5, 1.4 Hz, 1H), 7.23 (td, *J* = 7.4, 1.2 Hz, 1H), 7.17 (dd, *J* = 7.6, 1.2 Hz, 1H), 7.13 (s, 1H), 5.61 (s, 2H), 2.35 (s, 3H).	152.2, 145.0, 141.4, 137.0, 136.7, 131.5, 130.3, 129.0, 126.7, 125.6, 121.4, 54.5, 20.2.	240
6e	8.63 (s, 1H), 8.07 (s, 1H), 7.69 (s, 1H), 7.66 (d, *J* = 8.5 Hz, 2H), 7.47 (d, *J* = 8.5 Hz, 2H), 7.24 (s, 1H), 5.63 (s, 2H).	152.4, 145.2, 141.6, 137.1, 133.4, 131.8, 129.2 (2C), 127.2 (2C), 122.1, 54.7.	260
6f	8.64 (s, 1H), 8.08 (s, 1H), 7.82 (s, 1H), 7.72 (d, *J* = 7.8 Hz, 1H), 7.70 (s, 1H), 7.48 (t, *J* = 7.9 Hz, 1H), 7.38 (d, *J* = 8.0 Hz, 1H), 7.25 (s, 1H), 5.64 (s, 2H).	152.4, 145.2, 141.4, 137.2, 134.4, 133.7, 130.8, 127.5, 125.7, 124.2, 122.2, 54.7.	260
6g	8.64 (s, 1H), 8.08 (s, 1H), 7.72 (s, 1H), 7.57 (dd, *J* = 7.8, 1.5 Hz, 1H), 7.49 (dd, *J* = 7.8, 1.4 Hz, 1H), 7.40 (td, *J* = 7.6, 1.5 Hz, 1H), 7.33 (td, *J* = 7.5, 1.3 Hz, 1H), 7.20 (s, 1H), 5.64 (s, 2H).	152.4, 145.2, 140.3, 137.1, 133.6, 131.3, 130.6, 129.7, 127.8, 127.0, 121.8, 54.7.	260
6h	8.66 (s, 1H), 8.29 (d, *J* = 8.8 Hz, 2H), 8.10 (s, 1H), 8.02 (d, *J* = 8.8 Hz, 2H), 7.80 (s, 1H), 7.31 (s, 1H), 5.68 (s, 2H).	152.6, 147.1, 145.4, 140.8, 139.0, 137.5, 127.1 (2C), 124.4 (2C), 122.5, 54.9.	271
6i	8.67 (s, 1H), 8.54 (t, *J* = 1.9 Hz, 1H), 8.19 (ddd, *J* = 8.2, 2.2, 1.0 Hz, 1H), 8.11 (s, 1H), 8.08 (dt, *J* = 7.8, 1.4 Hz, 1H), 7.81 (s, 1H), 7.67 (t, *J* = 8.0 Hz, 1H), 7.30 (s, 1H), 5.68 (s, 2H).	152.6, 148.5, 145.4, 140.7, 137.5, 134.9, 131.5, 130.4, 122.8, 122.5, 120.7, 54.9.	271
6j	8.68 (s, 1H), 8.12 (s, 1H), 8.03 (dd, *J* = 8.1, 1.3 Hz, 1H), 7.84 (s, 1H), 7.78 (td, *J* = 7.7, 1.3 Hz, 1H), 7.65 (td, *J* = 7.6, 1.2 Hz, 1H), 7.54 (dd, *J* = 7.8, 1.2 Hz, 1H), 7.26 (s, 1H), 5.68 (s, 2H).	152.6, 149.2, 145.4, 139.8, 137.4, 132.9, 131.4, 129.5, 127.8, 124.9, 122.2, 54.9.	271
6k	8.58 (s, 1H), 8.01 (s, 1H), 7.54 (s, 1H), 7.43 (d, *J* = 8.5 Hz, 2H), 7.10 (s, 1H), 6.58 (d, *J* = 8.5 Hz, 2H), 5.58 (s, 2H), 5.15 (br s, 2H, NH_2).	152.1, 148.6, 144.9, 142.6, 136.5, 127.0 (2C), 123.6, 120.8, 114.4 (2C), 54.4.	241
6l	8.59 (s, 1H), 8.02 (s, 1H), 7.56 (s, 1H), 7.15 (t, *J* = 7.8 Hz, 1H), 7.11 (s, 1H), 6.95 (t, *J* = 1.9 Hz, 1H), 6.88 (ddd, *J* = 7.8, 1.9, 1.0 Hz, 1H), 6.50 (ddd, *J* = 8.0, 2.2, 1.0 Hz, 1H), 5.58	152.1, 149.0, 144.9, 142.2, 136.6, 133.2, 129.4, 120.9, 115.7, 114.1, 111.7, 54.4.	241

	(s, 2H), 5.20 (br s, 2H, NH_2).		
6m	8.60 (s, 1H), 8.03 (s, 1H), 7.58 (s, 1H), 7.28 (dd, *J* = 7.8, 1.4 Hz, 1H), 7.10 (s, 1H), 7.04 (td, *J* = 7.7, 1.4 Hz, 1H), 6.70 (dd, *J* = 8.0, 1.2 Hz, 1H), 6.57 (td, *J* = 7.5, 1.1 Hz, 1H), 5.59 (s, 2H), 5.40 (br s, 2H, NH_2).	152.1, 146.8, 144.9, 140.6, 136.6, 130.0, 128.1, 121.0, 120.3, 117.1, 115.4, 54.4.	241

CONCLUSION

In the current study, we have synthesized 1-((4-Phenyl-1H-imidazol-1-yl) methyl)-1H-1, 2, 3-triazoleswith an excellent yields and high purity.

REFERENCES

1. Grimmett, M. R. **Imidazole and Benzimidazole Synthesis**; Academic Press: London, **1997**.
2. Joule, J. A.; Mills, K. *Heterocyclic Chemistry*; Wiley: Chichester, UK, **2013**.
3. Kappe, C. O. Recent Advances in the Chemistry of Imidazoles. *Eur. J. Med. Chem.***2000**, *35*, 1043–1052.
4. Bansal, Y.; Silakari, O. The Therapeutic Journey of Imidazole Derivatives. *Bioorg. Med. Chem.***2012**, *20*, 6208–6236.
5. Kolb, H. C.; Finn, M. G.; Sharpless, K. B. Click Chemistry: Diverse Chemical Function from a Few Good Reactions. *Angew. Chem., Int. Ed.***2001**, *40*, 2004–2021.
6. Moses, J. E.; Moorhouse, A. D. The Growing Applications of Click Chemistry. *Chem. Soc. Rev.***2007**, *36*, 1249–1262.
7. Rostovtsev, V. V.; Green, L. G.; Fokin, V. V.; Sharpless, K. B. A Stepwise Huisgen Cycloaddition Process: Copper(I)-Catalyzed Regioselective Ligation of Azides and Terminal Alkynes. *Angew. Chem., Int. Ed.***2002**, *41*, 2596–2599.
8. Tornøe, C. W.; Christensen, C.; Meldal, M. Peptidotriazoles by Cu(I)-Catalyzed Cycloaddition. *J. Org. Chem.***2002**, *67*, 3057–3064.
9. Agalave, S. G.; Maujan, S. R.; Pore, V. S. Click Chemistry: 1,2,3-Triazoles as Pharmacophores. *Chem.–Asian J.***2011**, *6*, 2696–2718.
10. Bozorov, K.; Zhao, J.; Aisa, H. A. 1,2,3-Triazole-Containing Hybrids in Medicinal Chemistry. *Bioorg. Med. Chem.***2019**, *27*, 3511–3531.
11. Miyaura, N.; Suzuki, A. Palladium-Catalyzed Cross-Coupling Reactions of Organoboron Compounds. *Chem. Rev.***1995**, *95*, 2457–2483.
12. Suzuki, A. Cross-Coupling Reactions of Organoboranes: An Easy Way to Construct Carbon–Carbon Bonds. *Angew. Chem., Int. Ed.***2011**, *50*, 6722–6737.
13. Nicolaou, K. C.; Rigol, S. A Brief History of Click Chemistry. *Angew. Chem., Int. Ed.***2019**, *58*, 11206–11241.
14. Meldal, M.; Tornøe, C. W. Cu-Catalyzed Azide–Alkyne Cycloaddition. *Chem. Rev.***2008**, *108*, 2952–3015.
15. El-Gazzar, A. B. A.; Youssef, M. M.; Youssef, A. M. Imidazole Derivatives as Promising Medicinal Scaffolds. *Eur. J. Med. Chem.***2018**, *143*, 1772–1805.