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Der Pharma Chemica, 2013, 5(5):223-227
(http://derpharmachemica.com/archive.html)

ISSN 0975-413X
CODEN (USA): PCHHAX

N′-(4-(Trifluoromethyl)phenyl)-1-isopropyl-*1H*-benzo[*d*][1,2,3]triazole-5-carboxamides

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ABSTRACT

*1-Substituted benzotriazole-5-carboxylic acid **(1)** react with 4(trifluoromethyl) benzenamine **(2)** in as catalyst HOBt under EDC-HCl, solvent DMF give N'(4-(tryfluoromethyl)phenyl)-1-isopropyl-1H-benzo[d][1,2,3] triazole-5-carboxamide **(3a-J)** in good yields.*

Keywords: 1-Substituted benzotriazole-5-carboxamides, isopropyl, HOBt, EDC-HCl, THF, triethylmine.

INTRODUCTION

The 1,2,3-triazole ring system has been the subJect of considerable research mainly due to its usefulness in synthetic organic chemistry and also because of the pharmacological properties shown by some of its derivatives. In this context, we decided to explore the 1,2,3-triazole ring system as a new scaffold for cannabinoid ligands. These receptors are involved in many biochemical processes and are thus interesting therapeutic targets. Unfortunately, rimonabant the first potent and selective antagonist to reach the pharmaceutical market as antiobesity agent has been recently withdrawn due to possible depressive effects.

Concerning synthetic issues the most classical approach to the synthesis of 1,2,3-triazoles involves thermal 1,3-dipolar cycloaddition of azides with alkynes, as initially proposed by Huisgen. This reaction suffered from a lack of selectivity yielding a mixture of N1/N3- and N2-substituted 1,2,3-triazoles when azides react with unsymmetrical disubstituted alkynes. The discovery of copper (I) and ruthenium (II) catalyzed cycloadditions opened the field of highly efficient "click chemistry" between azides and alkynes. However, using these conditions only N1/N3-substituted 1,2,3-triazole isomers can be prepared. Few methods are available for the selective preparation of N2-substituted-1,2,3-triazoles and they are limited to N2-hydroxymethyl-, N2-allyl-, or N2-aryl-1,2,3-triazoles We finally prepared the regioisomer N2-alkyl-1,2,3-triazoles by alkylation of NH-1,2,3-triazoles. The structural assignment of the different regioisomers was fully illustrated using NMR techniques.

MATERIALS AND METHODS

General: - Melting points were determined on a Polmon instrument (model no. MP-96).IR spectra were recorded on Perkin-Elmer 337 spectrometer, and ^{1}H NMR (400 MHz) were recorded on a VarianGemini 200 spectrometer using TMS as internal standard (chemical shifts and ppm). UV spectra were obtained on a Shimadzu UV-visible spectrophotometer (model UV-1601). Mass spectra were recorded on a VG micromass LCMS 2010 instrument.

General procedure for the synthesis of N′-1-isopropyl-1H-benzo[d][1,2,3] triazole-5-carboxamides (3a-J)

i. N′(4-(tryfluoromethyl) phenyl-1-isopropyl-1H-benzo[d][1,2,3]triazole-5-carboxamide(6a)

1-isopropyl-1H-benzo(d)[1,2,3] triazole-5-carboxylic acid **(1)** (0.5gm, 2.61 mmols) react with 4(trifuoromethyl) benzenamine **(2)** (0.25 ml, 2.61 mmols) in a catalyst HOBt (0.35g, 2.61 mmol), EDC-HCl(0.5g ,2.61mmol) triethylamine (0.3 ml ,2.61 mmol) and DMF (5ml) solvent in 12 hours at room temperature. After completion of reaction the reaction mixture was quenched with water, extracted with EtOAc, washed with water, dried over sodium sulphate and concentrated under reduced pressure to obtain the crude compound, the crude was chromatographed with silica gel (60-120 mesh) elution with pet.ether:ethyl acetate to give N′(4-(tryfluoromethyl)phenyl)-1-isopropyl-1H-benzo[d][1,2,3] triazole-5-carbohydrazide **(3a)**. (0.4 g) (65% yield), which was recrystallised from DCM and Pentane, obtained brown color solid, m.p 171.3-173.0 ^{0}C.

IR (KBr, υ): 1727, 1688 (S, C=O), 1592 (C=N) 1273, 1090 (S, C-O) cm^{-1}.; UV: (MeOH): 278 (log ε 9.0), 288 (log ε 8.0), 308 (log ε 6. 0), 320 (log ε 4.0).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 1.5 (1, 3H, d, *J* = 6.3), 1.5 (2, 3H, d, *J* = 6.3), 7.4 (7, 1H, ddd, *J* = 8.2, *J* = 5.4, J=1.3), 7.4 (8, 1H, ddd, *J* = 8.2, *J* = 5.3, *J* = 1.3), 7.5 (9, 1H, ddd, *J* = 8.2, *J* = 5.3), 7.5 (10, 1H, ddd, *J* = 8.2, *J* =5.4), 7.8 (11, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (12, 1H, dd, *J* = 8.6, *J* = 3.3), 8.8 (13, 1H, dd, *J* =3.3, *J* =1.7), 5.1 (23, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 165.9 (C=0), 143.2 (C-16), 145.0 (C-15), 144.6 (C-4), 134.2 (C-6), 132.5 (C-9), 130 (C-13), 129 (C-12), 127.5 (C-11), 126.8(C-10), 125.0 (C-8), 122.2 (C-5), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).
FABMS: m/z 349 (M+1), m/z 347 (M-1).

Employing a Similar procedure as mentioned **3a** compound **3b-J** were prepared from compound **1**

ii. N′ (4-(tryfluoromethyl)benzyl)-1-isopropyl-1H-benzo[d][1,2,3]triazole-5-carboxamide(3b)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain light brown color solid, (0.65 gm) (75% yield), mp, 168 ^{0}C.

IR (KBr, υ): 1751, 1695 (S, C=O), 1592 (C=N) and 1265, 1080 cm^{-1} (S, C-O) cm^{-1}.; UV:(MeOH): 274 (log ε 7.6), 280 (log ε 8.5), 291 (log ε 8.9), 309 (log ε 6.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 1.5 (1, 3H, d, *J* = 6.3), 1.5 (2, 3H, d, *J* = 6.3), 7.5 (7, 1H, ddd, *J* = 8.5, *J* = 4.5), 7.52 (8, 1H, ddd, *J* = 8.5, *J* = 4.5), 7.4 (9, 1H, ddd, *J* = 8.5, *J* = 4.5), 7.4 (10, 1H, ddd, *J* = 8.5, *J* = 4.5), 7.9 (11, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (12, 1H, dd, *J* = 8.6, *J* = 3.4), 8.8 (13, 1H, dd, *J* = 3.4, *J* = 1.7), 4.9 (14, 2H), 5.2 (24, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 163.8 (C=0), 142.2 (C-16), 138.0 (C-15), 134.6 (C-6), 132.2 (C-10), 131.5 (C-14), 126.6 (C-13), 127.0 (C-12), 125.5 (C-11), 112.2 (C-10), 120.8 (C-9), 127.2 (C-8), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 363 (M+1), m/z 361 (M-1).

iii. 1-isopropyl-N-phenyl-1H-benzo[d][1,2,3]triazole-5-carboxamide(3c)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain brown color solid, (0.48 gm) (69% yield), mp, 155 ^{0}C.

IR (KBr, υ): 1707, 1687 (S, C=O), 1591 (C=N) and 1271, 1110 (S, C-O) cm^{-1} .; UV: (MeOH): 283 (log ε 9.6), 293 (log ε 10.0), 309 (log ε 8.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 1.5 (1, 3H, d, *J* = 6.3), 1.5 (2, 3H, d, *J* = 6.3), 7.3 (4, 1H, ddd, *J* = 7.2, *J* = 7.4, *J* = 1.1, *J* = 1.1), 7.2 (5, 1H, ddd, *J* = 8.1, *J* = 7.8, *J* = 4.3, *J* = 1.3), 7.2 (6, 1H, ddd, *J* = 8.2, *J* = 7.8, *J* = 4.799, J = 1.4), 7.462 (7, 1H, ddd, *J* = 8.1, *J* = 4.752, *J* = 1.1), 7.4 (8, 1H, ddd, *J* = 8.1, *J* = 4.9, *J* = 1.1), 7.8 (9, 1H, dd, *J* = 8.6, *J* = 1.7), 7.8 (10, 1H, dd, *J* = 8.4, *J* = 3.4), 8.8 (11, 1H, dd, *J* = 8.6, *J* = 1.7), 5.1 (20, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 164.4 (C=0), 142.2 (C-16), 135.6 (C-15), 134.6 (C-6), 132.2 (C-10), 129.5 (C-14), 126 (C-13), 124.4 (C-12), 121.5 (C-11), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 281 (M+1), m/z 279 (M-1).

iv. N-benzyl-1-isopropyl-1H-benzo[d][1,2,3]triazole-5-carboxamide(3d)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain brown color solid, (0.46 gm) (67% yield) mp, 182 ^{0}C.
IR (KBr,υ): 1741, 1694 (S, C=O), 1591(C=N) and 1230, 1130 (S, C-O).; UV: (MeOH): 283 (log ε 10.2), 296(log ε 11.9), 305 (log ε 12.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 1.5 (1, 3H, d, *J* = 6.3), 1.5 (2, 3H, d, *J* = 6.3), 7.2 (4, 1H, ddt, *J* =7.7, *J* = 7.4, *J* = 1.2), 7.2 (5, 1H, ddd, *J* = 7.8, *J* = 7.5, *J* = 4.8, J = 1.8), 7.3 (6, 1H, ddd, J = 7.7, J = 7.7, J = 5.0, *J* = 1.8), 7.2 (7, 1H, ddd, *J* = 7.8, *J* = 5.4, *J* = 1.2), 7.2 (8, 1H, ddd, *J* = 7.6, *J* = 4.8, *J* = 1.2), 7.9(9, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (10, 1H, dd, *J* = 8.6, *J* = 3.4), 8.8 (11, 1H, dd, *J* = 3.3, *J* = 1.7), 4.5 (12, 2H), 5.1 (21, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 167.4 (C=0), 144.5 (C-16), 141.6 (C-15), 134.2 (C-6), 132.2 (C-10), 130.2 (C-

14), 128.6 (C-13), 127.5 (C-12), 127.5 (C-11), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 295 (M+1), m/z 293 (M-1).

v. 1-isopropyl-N-p-tolyl-1H-benzo[d][1,2,3]triazole-5-carboxamide(3e)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain brown color solid, (0.49 gm) (76% yield) mp, 175 ^{0}C. IR (KBr): 1728, 1692 cm^{-1} (S, C=O), 1692 cm^{-1} (C=N) and 1253, 1077 cm^{-1} (S, C-O).; UV:(MeOH): 267 (log ε 8.2), 274 (log ε 8.2), 297 (log ε 7.3).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 2.2 (1, 3H), 1.5 (2, 3H, d, *J* = 6.3), 1.5 (3, 3H, d, *J* = 6.3), 7.0 (5, 1H, ddd, *J* = 8.2, *J* = 5.0, *J* = 1.3), 7.131 (6, 1H, ddd, *J* = 8.0, *J* = 4.7, *J* = 1.3), 7.1 (7, 1H, ddd, *J* = 8.2, *J* = 4.7, *J* = 1.3), 7.0 (8, 1H, ddd, *J* = 8.0, *J* = 5.0, *J* = 1.3), 7.8 (9, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (10, 1H, dd, *J* = 8.6, *J* = 3.2), 8.8 (11, 1H, dd, *J* = 3.2, *J* = 1.7), 5.1 (21, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 164.2 (C=0), 144.5 (C-16), 132.2 (C-15), 132.6 (C-6), 131.8 (C-10), 131.5 (C-14), 130.6 (C-13), 129.2 (C-12), 121.5 (C-11), 111.2 (C-7), 54.5 (C-23), 19.2(C-1).; FABMS: m/z 295 (M+1), m/z 293 (M-1).

vi. 1-benzyl-1-isopropyl-N-(1-p-tolyl-1H-benzo[d][1,2,3]triazole-5-carboxamide(3f)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain brown color solid, (0.54 gm) (84% yield) mp, 175 ^{0}C. IR (KBr): 1737, 1701 cm^{-1} (S, C=O), 1593 cm^{-1} (C=N) and 1230, 1190 cm^{-1} (S, C-O).; UV:(MeOH): 267 (log ε 7.8), 275 (log ε 7.8) 298 (log ε 8.9).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 2.247 (1, 3H), 1.5 (2, 3H, d, *J* = 6.3), 1.5 (3, 3H, d, *J* = 6.3), 7.0 (5, 1H, ddd, *J* = 8.2, *J* = 4.8, *J* = 1.2), 7.0 (6, 1H, ddd, *J* = 8.0, *J* = 4.9, *J* = 1.2), 6.8 (7, 1H, ddd, *J* = 8.2, *J* = 4.9), 6.8 (8, 1H, ddd, *J* = 8.0, *J* = 4.8), 7.9 (9, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (10, 1H, dd, *J* = 8.6, *J* = 3.4), 8.8 (11, 1H, dd, *J* = 3.4, *J* = 1.7), 4.4 (12, 2H), 5.1 (22, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 167.3 (C=0), 144.2 (C-16), 138.0 (C-15), 136.6 (C-6), 134.2 (C-10), 132.5 (C-14), 130.4 (C-13), 128.6 (C-12), 127.5 (C-11), 126.8(C-10), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 309 (M+1), m/z 307 (M-1).

vii. 1-isopropyl- N-(4-methoxyphenyyl)-1H-benzo[d][1,2,3]triazole-5-carboxamide(3g)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain light brown color solid, (0.65 gm) (75% yield), mp, 168 ^{0}C.; IR (KBr): 1736, 1695 cm^{-1} (S, C=O), 1587 cm^{-1} (C=N) and 1284, 1150 cm^{-1} (S, C-O).; UV:(MeOH): 274 (log ε 7.6), 280 (log ε 8.5), 291 (log ε 8.9), 309 (log ε 6.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 3.7 (1, 3H), 1.5 (2, 3H, d, *J* = 6.3), 1.5 (3, 3H, d, *J* = 6.3), 7.3 (5, 1H, ddd, *J* = 8.7, *J* = 5.3, *J* = 1.2), 7.3 (6, 1H, ddd, *J* = 8.8, *J* = 5.3, *J* = 1.2), 6.6 (7, 1H, ddd, *J* = 8.7, *J* = 5.3), 6.6 (8, 1H, ddd, *J* = 8.8, *J* = 5.3), 7.8 (9, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (10, 1H, dd, *J* = 8.6, *J* = 3.2), 8.8 (11, 1H, dd, *J* = 3.2, *J* = 1.7), 5.1 (22, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 164.6 (C=0), 156.6 (C-16), 144.5 (C-15), 134.6 (C-6), 132.2 (C-10), 130 (C-13), 128.4 (C-12), 127.5 (C-11), 125.0 (C-9), 122.2 (C-8), 113.2 (C-7), 55.6 (C-23), 19.2 (C-1).; FABMS: m/z 311 (M+1), m/z 309 (M-1).

viii. 1-isopropyl-N-(1-p-tolylethyl)-1H-benzo[d][1,2,3]triazole-5-carboxamide(3h)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain light pink color solid, (0.53 gm) (68% yield), mp, 186 ^{0}C. ; IR (KBr): 1741, 1710 cm^{-1} (S, C=O), 1695 cm^{-1} (C=N) and 1284, 1190 cm^{-1} (S, C-O).; UV:(MeOH): 266 (log ε 8.1), 270 (log ε 8.2), 296 (log ε 5.1), 267 (log ε 8.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 2.2 (1, 3H), 1.5 (2, 3H, d, *J* = 6.3), 1.5 (3, 3H, d, *J* = 6.3), 1.4 (4, 1H, d, *J* = 6.6), 1.4 (4, 1H, d, *J* = 6.6), 1.4 (4, 1H, d, *J* = 6.6), 7.0 (6, 1H, ddd, *J* = 8.2, *J* = 4.8, *J* = 1.3), 7.0 (7, 1H, ddd, *J* = 8.2, *J* = 4.7, *J* = 1.3), 6.9 (8, 1H, ddd, *J* = 8.2, *J* = 4.7), 6.9 (9, 1H, ddd, *J* = 8.2, *J* = 4.8), 7.9 (10, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (11, 1H, dd, *J* = 8.6, *J* = 3.4), 8.8 (12, 1H, dd, *J* = 3.4, *J* = 1.7), 5.1 (22, 1H, hept, *J* = 6.3), 5.1 (23, 1H, q, *J* = 6.6).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 164.9 (C=0), 144.5 (C-16), 143.3 (C-15), 136.0 (C-6), 132.8 (C-10), 132.1 (C-14), 130.0 (C-13), 128.9 (C-12), 126.5 (C-11), 125.8(C-10), 111.2 (C-7), 50.0, 24.3 (C-17), 22.2 (C-21), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 323 (M+1), m/z 321 (M-1).

ix. 1-isopropyl-N-(naphthalen-3-yl)-1H-benzo[d][1,2,3]triazole-5-carboxamide(3i)

Recrystallised from 10% ethyl acetate and n-hexane, to obtain off-white color solid, (0.438 gm) (58% yield), mp, 210 ^{0}C. ; IR (KBr): 1747, 1695 cm^{-1} (S, C=O), 1575 cm^{-1} (C=N) and 1243, 1160 cm^{-1} (S, C-O).; UV:(MeOH): 276 (log ε 4.2), 287 (log ε 8.2), 246 (log ε 5.1), 280 (log ε 5.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 1.5 (1, 3H, d, *J* = 6.3), 1.5 (2, 3H, d, *J* = 6.315), 7.4 (4, 1H, ddd, *J* = 7.7, *J* = 6.8, *J* = 5.1, *J* = 1.3), 7.5 (5, 1H, ddd, *J* = 8.4, *J* = 6.8, *J* = 1.8), 7.4 (6, 1H, ddd, *J* = 8.1, *J* = 7.8, *J* = 5.4), 7.4 (7, 1H, ddd, *J* = 8.1, *J* = 3.5, *J* = 1.8), 7.8 (8, 1H, dd, *J* = 8.6, *J* = 1.7), 7.7 (9, 1H, ddd, *J* = 7.7, *J* = 5.4, *J* = 4.8, *J* = 2.7, *J* = 1.8), 7.8 (10, 1H, ddd, *J* = 7.8, *J* = 5.3, *J* = 5.1, *J* = 2.7, *J* = 1.8), 7.4 (11, 1H, ddd, *J* = 8.4, *J* = 5.3, *J* = 4.8, *J* = 3.5, *J* = 1.3), 7.9 (12, 1H, dd, *J* = 8.6, *J* = 3.2), 8.8 (13, 1H, dd, *J* = 3.2, *J* = 1.7), 5.1 (24, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 168.9 (C=0), 142.2 (C-16), 140.0 (C-15), 136.6 (C-6), 132.2 (C-10), 131.9 (C-14), 130.2 (C-13), 127.9 (C-12), 127.4 (C-11), 126.1(C-10), 125.9 (C-9), 125.2 (C-8), 125.3 (C-8), 124.4 (C-17), 121.0 (C-18),117.3 (C-21), 106.1 (C-22), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 331 (M+1), m/z 329 (M-1).

x. 1-isopropyl- N-(4-methoxybenzyl)-1H-benzo[d][1,2,3]triazole-5-carboxamide(3J)

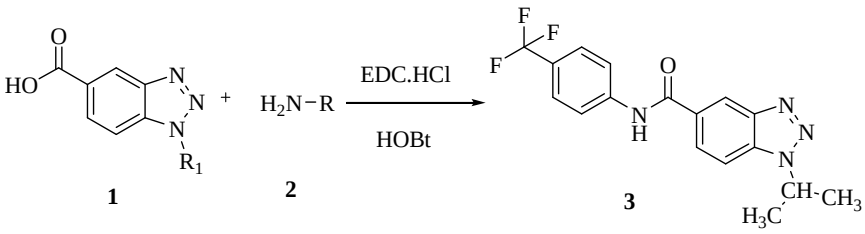
Recrystallised from 10% ethyl acetate and n-hexane, to obtain light brown color solid, (0.65 gm) (85% yield), mp 173^0 C. ; IR (KBr): 1726, 1696 cm^{-1} (S, C=O), 1592 cm^{-1} (C=N) and 1273, 1190 cm^{-1} (S, C-O).; UV:(MeOH): 274 (log ε 7.6), 280 (log ε 8.5), 291 (log ε 8.9), 309 (log ε 6.2).; ^{1}H NMR (400 MHz) ($CDCl_3$): δ 3.7 (1, 3H), 1.5 (2, 3H, d, *J* = 6.3), 1.5 (3, 3H, d, *J* = 6.3), 7.3 (5, 1H, ddd, *J* = 8.7, *J* = 5.3, *J* = 1.2), 7.3 (6, 1H, ddd, *J* = 8.8, *J* = 5.3, *J* = 1.2), 6.6 (7, 1H, ddd, *J* = 8.7, *J* = 5.3), 6.6 (8, 1H, ddd, *J* = 8.8, *J* = 5.3), 7.8 (9, 1H, dd, *J* = 8.6, J = 1.7), 7.9 (10, 1H, dd, *J* = 8.6, *J* = 3.2), 8.8 (11, 1H, dd, *J* = 3.2, *J* = 1.7), 5.1 (22, 1H, hept, *J* = 6.3).; ^{13}C NMR (70 MHz) ($CDCl_3$): δ 167.2 (C=0), 155.7 (C-16), 143.4(C-15), 134.6 (C-6), 134.1 (C-10), 132.2 (C-14), 129.6 (C-13), 127.7 (C-12), 127.1 (C-11), 122.2 (C-8), 111.2 (C-7), 54.6 (C-23), 19.5(C-1).; FABMS: m/z 325 (M+1), m/z 323 (M-1).

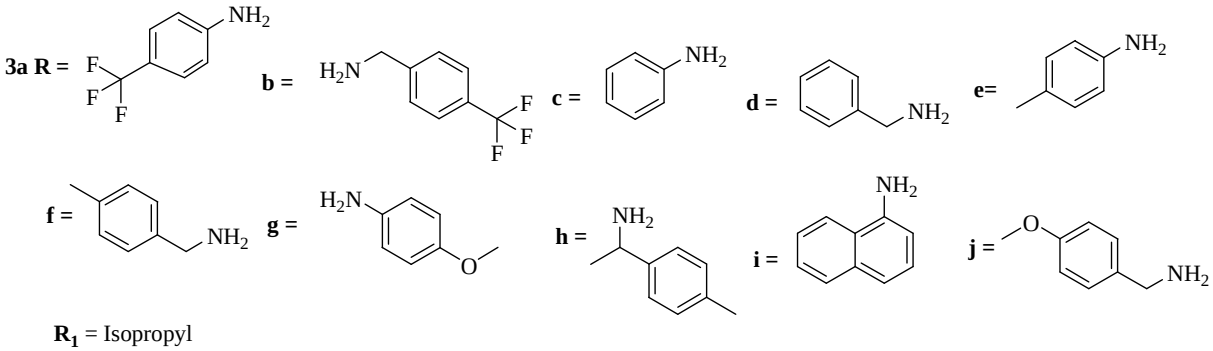
RESULTS AND DISCUSSION

Equimolar amount of 1-isopropyl-1H-benzo(d)[1,2,3] triazole-5-carboxylic acid **(1)** and 4(trifluoromethyl) benzenamine **(2)** react in a catalyst HOBt under EDC-HCl is DMF solvent in 12 hours at room temperature to give N'(4-(tryfluoromethyl)phenyl)-1-isopropyl-1H-benzo[d][1,2,3] triazole-5-carboxamide **(3a).** The carbonyl group showed peak at 1688 cm^{-1}. In the ^{1}H-NMR ($CDCl_3$, 400MHz) spectrum the 4(trifluoromethyl) phenyl protons are appeared at *δ* 7.4 (7, 1H, ddd, *J* = 8.2, *J* = 5.4, *J* = 1.3), 7.4 (8, 1H, ddd, *J* = 8.2, *J* = 5.3, *J* = 1.3), 7.5 (9, 1H, ddd, *J* = 8.2, *J* = 5.3), 7.5 (10, 1H, ddd, *J* = 8.2, *J* = 5.4), 7.8 (11, 1H, dd, *J* = 8.6, *J* = 1.7).The benzo[d][1,2,3]triazole protons are appeared at *δ* 7.8 (11, 1H, dd, *J* = 8.6, *J* = 1.7), 7.9 (12, 1H, dd, *J* = 8.6, *J* = 3.3), 8.8 (13, 1H, dd, *J* = 3.3, *J* = 1.7), the isopropyl CH and methyl protons are appeared at *δ* 5.1 (23, 1H, hept, *J* = 6.3) and 1.5 (1, 3H, d, *J* = 6.3), 1.5 (2, 3H, d, *J* = 6.3). In the ^{13}C-NMR ($CDC1_3$, 70 MHz) the 4(trifluoromethyl) phenyl carbons appeared at 143.2 (C-16), 145.0 (C-15), 130 (C-13), 129 (C-12), 127.5 (C-11), 126.8(C-10). The benzo[d][1,2,3]triazole carbons are appeared at *δ* 144.6 (C-4), 134.2 (C-6), 132.5 (C-9), 125.0 (C-8), 122.2 (C-5), 111.2 (C-7). The isopropyl CH and methyl carbons are appeared at *δ* 54.6 (C-23), 19.5(C-1).

In the DIPMS spectrum N'(4-(tryfluoromethyl)phenyl)-1-isopropyl-1H-benzo[d][1,2,3] triazole-5-carboxamide **(3a)** quasimolecular ion peak observed at m/z 349[M+H].

Scheme-1





R_1 = Isopropyl

CONCLUSION

In this paper, a series of benzo[d][1,2,3] trizole derivations were synthesized and their chemical structures were confirmed by means of 1H NMR, IR and elemental analysis convenient and practical method, for the preparation of benzo[d][1,2,3] trizole amides and derivatives in good to excellent yields. These compounds are assayed for antibacterial activity. N-alkylated Benzotrizoles are to improve anti-helical activity of analogues of 1*H*benzotriazole and 1*H*-benzimidazole their *N*-alkyl derivatives were synthesized and tested for antihelicase activity against

enzymes of selected Flaviviridae including hepatitis C virus (HCV), West Nile virus (WNV), Benzotriazole derivatives have chemical and biological properties that are versatile in the pharmaceutical industry.

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