WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 9, Issue 3, 664-673. Research Article ISSN 2277– 7105

SYNTHESIS AND ANTIBACTERIAL ACTIVITY STUDIES OF 8, 9- DI HYDRO- 7H - BENZO - N-(BENZYLOXY)-2-(4-METHYL-COUMARIN-4/6-YLOXY)-ACETAMIDES AND ITS DERIVATIVES

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Article Received on
28 Dec. 2019,

Revised on 18 Jan. 2020,
Accepted on 07 Feb. 2020

DOI: 10.20959/wjpr20203-11377

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ABSTRACT

Synthesis, spectral analysis and bioactivity of new coumarin derivatives are described in this paper. Twele new coumarin derivatives were synthesized in moderate to good yields by coupled with hydroxyl amines via acid chloride method. The structures of all the newly synthesized molecules were assigned by elemental analysis and spectral data. The synthesized compounds were screened for their antibacterial activities strains using Cup plate method.

KEYWORDS: Antibacterial activity, hydroxyl amines, benzyl halides.

INTRODUCTION

Coumarins and their derivatives are biologically and pharmaceutically interesting compounds known for their use as additives in food, perfumes, cosmetics, pharmaceuticals, and platelet aggregation and agrochemicals.[1,2] Coumarins have also been reported to exhibit several biological activities, such as antimicrobial, anticancer, antifungal, anti-HIV and antioxidant properties[3-6], and they also served as versatile precursors for many organic transformations in the synthesis of a number of drug-like molecules.[7,8] Moreover, coumarin-based dyes and pigments are organic fluorescent materials exhibiting unique photochemical and photo physical properties, which render them useful in a variety of applications such as dye lasers, anion sensors, organic light-emitting diodes and solar cells.[9,10]

EXPERIMENTAL

All the reagents were obtained commercially (SD fine, India) and used with further purification. Melting points were determined by open capillary method. The IR spectra (in KBr pellets) were recorded on a" Perkin-Elmer FTIR spectrophotometer".^{1}H NMR ($CDCl_3$ 400 MHz) and ^{13}C NMR (DMSO-d_6, 100.6 MHz) were recorded on spectrometer TMS as internal standard (chemical shifts and ppm). Mass spectra were recorded on a VG micromass70-70H instrument. The purity of the compounds were checked by TLC on silica gel plates using a mixture of n-hexane and ethyl acetate.

I. General procedure for the synthesis of 8, 9- di hydro- 7H- benzo-N-benzyloxy-2-(coumarin-4-yloxy)-acetamides (5a-f)

Synthesis of 8, 9 - di hydro - 7H- benzo- N-(4-fluorobenzyloxy)-2-(coumarin-4-yloxy)-acetamide (5a)

To a stirred solution of 8, 9 di hydro 7H benzo 2-(coumarin-4-yloxy)-acetic acid (**3a**) (150mg, 0.68 mmol) in chloroform (15 mL) was added catalytic amount of dimethyl formamide. Thionyl chloride (1.5 mL) was added dropwise and stirred for "2 h" at reflux temperature. Solvents were removed under vacuum, acid chloride was dissolved in $CHCl_3$ (15 mL) and kept aside under nitrogen atmosphere. O-(4-fluorobenzyl)-hydroxylamine **(4)** (114mg, 0.81 mmol) was dissolved in chloroform (15 mL). To this catalytic amount of pyridine was added. Acid chloride dissolved in chloroform was added drop wise to the oxyamine at room temperature and stirring continued for 1 hour. After completion of the reaction by TLC reference, water (30 mL) was added and layers separated. Organic layer was washed with 1N HC1 (30 mL), 10% $NaHCO_3$ (30 mL), brine solution (30 mL), dried over Na_2SO_4 and concentrated to yield the crude oxyamide. Crude oxyamide **(5a)** was taken into 15mL of diethyl ether, stirred for 30 min. Filtered the solid to get pure compound as light brown solid **(5a)**.Yield = 120mg, mp: 163-165 °C, IR (KBr): 1186 (C-O-C), 1672 (-CONH), 1724 (-C=O), 3179 (-CONH) cm^{-1}.

^{1}H NMR ($CDC1_3$, 400 MHz): δ 4.79 (s, 4-OCH_2), 4.85 (s, l'-OCH_2), 5.86 (s, H-3), 7.19-7.24 (m, H-3'& H-5), 7.38-7.5 (m, H-2', H-3'& H-6, H-8), 7.67-7.71 (m, H-7), 7.96 (d, J=9.2Hz, H-5), 11.59(s, OONH).^{13}C NMR (DMSO-d_6, 100.6 MHz) : δ 66.8 (4-OCH_2), 76.7 (l'-OCH_2), 91.7 (C-3), 115.3 (C-8), 115.3 (C-4a), 115.7 (C-5), 116.8 (C-6), 123.9 (C-21 & C-6'), 124.8 (C-4′), 131.7 (C-7), 132.3 (C-3' &C-5'), 133.3 (C-l′), 153.1 (C-8a), 161.8 (2-O=O), 164.7 (C-4), 163.5 (O=C-NH). DIPMS: m/z at 399 (M+l).

Employing the similar procedure as mentioned for **5a**, compounds **5b-f** were obtained.

8, 9-di hydro- 7H- benzo-N-(2-Fluorobenzyloxy)-2-(coumarin-4-yloxy)-acetamide (5b)

Brown solid, mp: 140-142 °C. IR (KBr): 1027 (C-O-C), 1621 (-CONH), 1712 (-C=O), 3087 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 4.65 (s, 4-OCH_2), 5.15 (s, l'-OCH_2), 5.64 (s, H-3), 7.04-7.34 (m, H-5', H-6 & H-6'), 7.37-7.51 (m, H-8 & H-31), 7.68-7.71 (m, H-4'& H-7), 7.78-7.81 (m, H-5), 11.59 (s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz): δ 66.8 (4-OCH_2), 76.7 (l'-OCH_2), 91.7 (C-3), 115.9 (C-3′), 116.8 (C-4a), 122.8 (C-8), 123.0 (C-5), 123.9 (C-5'), 124.6 (C-6), 124.9 (C-l'), 131.5 (C-7), 132.5 (C-6′), 133.3 (C-4′), 133.3 (C-8a), 153.1 (C-21), 161.8 (2-C=O), 163.6 (O=C-NH), 164.7 (C-4). DIPMS: m/z at 415 (M+l).

8, 9-di hydro - 7H- benzo - N-(4-Chlorobenzyloxy)-2-(coumarin-4-yloxy)-acetamide (5c)

Off-white solid, mp: 218-220 °C. IR (KBr): 1077 (C-O-C), 1669 (-CONH), 1728 (-C=O), 3176 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 4.79 (s, 4-OCH_2), 4.86 (s, l'-OCH_2), 5.86 (s, H-3), 7.38-7.42 (m, H-21, H-6'& H-31), 7.43-7.46 (m, H-5'& H-6, H-8), 7.67-7.69 (m, H-7), 7.96 (d, J=7.6Hz, H-5), 11.59(s,O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz) : δ 66.8 (4-OCH_2), 76.6 (l'-OCH_2), 91.8 (C-3), 115.3 (C-8), 116.8 (C-4a), 123.9 (C-5), 124.6 (C-6), 128.8 (C-7), 131.2 (C-3′& C-5′), 133.4 (C-2′& C-6′), 133.5 (C-4′), 135.1 (C-l′), 153.1 (C-8a), 161.8 (2-C=O), 163.5 (O=C-NH), 164.7(0-4). DIPMS: m/z at 459 (M+l).

8, 9-di hydro- 7H- benzo-N-(2,4-Dichlorobenzyloxy)-2-(coumarin-4-yloxy)-acetamide (5d)

White solid, mp: 167-169°C. IR (KBr): 1029 (C-O-C), 1666 (-CONH), 1714 (-C=O), 3086 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 4.78 (s, 4-OCH_2), 4.97 (s, l'-OCH_2), 5.85 (s, H-3), 1.37-1 Al (m, H-5', H-6′& H-8), 7.58-7.7 (m, H-3'& H-6, H-7), 7.93 (d, J=7.2Hz, H-5), 11.59(s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz): δ 66.7 (4-OCH_2), 73.7 (l'-OCH_2), 91.7 (C-3), 115.3 (C-8), 116.8 (C-4a), 123.8 (C-5), 124.6 (C-6), 127.8 (C-5′), 129.3 (C-7), 132.8 (C-6'), 133.2 (C-3'), 133.3 (C-2′), 134.4 (C-4′), 134.8 (C-l1), 153.1 (C-8a), 161.8 (2-C=O), 163.7 (O=C-NH), 164.7 (C-4). DIPMS: m/z at 399 (M+l).

8, 9-di hydro - 7H- benzo - N-(4-Bromobenzyloxy)-2-(coumarin-4-yloxy)-acetamide (5e)

Light orange solid, mp: 228-230 °C. IR (KBr): 1072 (C-O-C), 1628 (-CONH), 1728 (-C=O), 3175 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 4.78 (s, 4-OCH_2), 4.84 (s, l'-OCH_2), 5.86 (s, H-3), 7.38-7.43 (m, H-21, H-6'& H-6, H-8), 7.58-7.6 (m, H-3'& H-7, H-5'), 7.95 (d, J=7.2Hz, H-5), 11.59(s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz) : δ 66.8 (4-OCH_2),

76.7 (l'-OCH_2), 91.8 (C-3), 115.3 (C-8), 116.8 (C-4a), 122.1 (C-41), 123.9 (C-5), 124.6 (C-6), 131.5 (C-7), 131.7 (C-21 & C-6'), 133.4 (C-3′& C-5′), 135.5 (C-l′), 153.1 (C-8a), 161.8 (2-C=O), 163.5 (O=C-NH), 164.7 (C-4). DIPMS: m/z at 450 (M+l).

8, 9-di hydro_ 7H_ benzo_N-(2-Cyanobenzyloxy)-2-(coumarin-4-yloxy)-acetamide(5f)

Off white solid, mp: 150-151 °C. IR (KBr): 1022 (C-O-C), 1622 (-CONH), 1714 (-C-O), 2232 (-CN), 3093 (-CONH) cm $^{-1}$. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 4.77 (s, 4-OCH_2), 5.05 (s, l'-OCH_2), 5.83 (s, H-3), 7.37-7.41 (m, H-6'& H-8), 7.6-7.69 (m, H-4', H-5'& H-7, H-6), 7.8-7.85 (m, H-3'& H-5), 11.59(s, 0=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz): δ 66.8 (4-OCH_2), 76.7 (l'-OCH_2), 91.7 (C-3), 112.5 (C-2′), 115.3 (-CN), 116.9 (C-8), 117.7 (C-4a), 123.9 (C-5), 124.6 (C-6), 129.9 (C-61), 131.3 (C-7), 133.5 (C-4′), 133.6 (C-3′), 133.7 (C-5′), 139.1 (C-l′), 153.1 (C-8a), 161.8 (2-C=O), 163.8 (O=C-NH), 164.7 (C-4). DIPMS: m/z at 406(M+1).

II.General procedure for the synthesis of 8, 9-di hydro- 7H- benzo - N-benzyloxy-2-(4-methyl-coumarin-6-yloxy)-acetamides (6a-f)

Synthesis of8, 9-di hydro 7H benzo N-(4-fluorobenzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamide (6a)

To a stirred solution of 8, 9- di hydro 7H benzo2-(4-methyl-coumarin-6-yloxy)-acetic acid **(3b)** (150mg, 0.6 mmol) in chloroform (15 mL) was added catalytic amount of DMF. Thionyl chloride (1.5 mL) was added dropwise and stirred for 2 h at reflux temperature. Solvents were removed under vaccum, acid chloride was dissolved in $CHCl_3$ (15 mL) and kept aside under N_2 atmosphere. O-(4-fluorobenzyl)-hydroxylamine **(4)** (107mg, 0.7 mmol) was dissolved in chloroform (15 mL). To this catalytic amount of pyridine was added. Acid chloride dissolved in chloroform was added dropwise to the oxyamine at room temparature and continued for 1 h. After completion of the reaction by TLC reference, water (30 mL) was added and layers separated. Organic layer was washed with 1N. HC1 (30 mL), 10% $NaHCO_3$ (30 mL), brine solution (30 mL), dried over Na_2SO_4 and concentrated. Crude oxyamide **(6a)** was taken into 15 mL of diethylether, stirred for 30 min and filtered. White solid, yield = 150mg; mp: 120-121 °C, IR (KBr): 1052 (C-O-C), 1571 (-CONH), 1675 (-C=O), 3271 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 2.39 (s, 4-CH_3), 4.61 (s, 6-OCH_2), 4.95 (s, l'-OCH_2), 6.3 (s, H-3), 7.01-7.06 (m, H-3' & H-5', H-5 & H-7), 7.24 (d, J=9.2Hz, H-21), 7.37-7.41 (m, H-6' & H-8), 9.15 (s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz) : δ 18.5 (4-CH_3), 66.8 (6-OCH_2), 76.6 (l'-OCH_2), 109.9 (C-5), 115.4 (C-3), 115.6 (C-7), 117.9 (C-3′& C-

5'), 120.0 (C-4a), 120.5 (C-8), 131.5 (C-2' & C-6'), 132.4 (C-l′), 148.1 (C-8a), 153.2 (C-4), 154.3 (C-6), 160.2 (2-C=O), 161.3 (C-4'), 164.9 (O=C-NH). DIPMS: m/z at 399 (M+l).

Employing the similar procedure as mentioned for **6a**, compounds **6b-f** were obtained.

8, 9-di hydro - 7H- benzo - N-(2-fluorobenzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamide(6b)

White solid, mp: 150-151 °C. IR (KBr): 1062 (C-O-C), 1682 (-CONH), 1715 (-C=O), 3314 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 2.41 (s, 4-CH_3), 4.62 (s, 6-OCH_2), 5.07 (s, l'-OCH_2), 6.31 (s, H-3), 7.02-7.14 (m, H-5′ & H-6′, H-5 & H-7), 7.26 (d, J=8.8Hz, H-3′), 7.34-7.37 (m, H-4′), 7.43 (dd, J=1.6Hz, J=1.6Hz, H-8), 9.15 (s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz): δ 18.0 (4-CH_3), 66.7 (6-OCH_2), 70.9 (l'-OCH_2), 109.9 (C-5), 115.2 (C-3), 115.8 (C-7), 117.8 (C-3'), 117.9 (C-4a), 120.0 (C-5'), 120.5 (C-8), 124.8 (C-l′), 131.2 (C-6′), 131.3 (C-4′), 132.3 (C-8a), 148.1 (C-4), 153.3 (C-6), 154.4 (C-2′), 160.2 (2-C=O'), 165.0 (0=C-NH). DIPMS: m/z at 415 (M+l).

8, 9-di hydro - 7H- benzo-N-(4-chlorobenzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamide(6c)

White solid, mp: 115-117 °C. IR (KBr): 1088 (C-O-C), 1678 (-CONH), 1712 (-C=O), 3323 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 2.39 (s, 4-CH_3), 4.61 (s, 6-OCH_2), 4.95 (s, l'-OCH_2), 6.3 (s, H-3), 6.99-7.01 (m, H-5 & H-7), 7.24 (d, J=9.2Hz, H-2'), 7.37-7.45 (m, H-5', H-3'& H-6' & H-8), 9.07 (s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz): δ 18.5 (4-CH_3), 66.8 (6-OCH_2), 76.6 (l'-OCH_2), 109.92 (C-5), 115.4 (C-3), 115.6 (C-7), 117.9 (C-3′ & C-5'), 120.0 (C-4a), 120.5 (C-8), 131.5 (C-2′ & C-6'), 132.4 (C-l′), 148.1 (C-8a), 153.2 (C-4), 154.3 (C-6), 160.2 (2-C=O), 161.3 (C-4′), 164.9 (O=C-NH). DIPMS: m/z at 374.3 (M+l), 460 (M+l+2).

8, 9-di hydro - 7H- benzo-N-(2,4-dichlorobenzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamide(6d)

White solid, mp: 150-151 °C. IR (KBr): 1058 (C-O-C), 1692 (-CONH), 1730 (-C=O), 3313 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 2.4 (s, 4-CH_3), 4.62 (s, 6-OCH_2), 5.09 (s, l'-OCH_2), 6.32 (s, H-3), 7.02 (s, H-5), 7.07 (d, J=8.8Hz, H-7), 7.25-7.29 (m, H-5′ & H-6'), 7.4-7.45 (m, H-3' & H-8), 9.12 (s, 0=C-NH). ^{13}C NMR ((DMSO-d_6, 100.6 MHz) : δ 18.5 (4-CH_3), 66.8 (6-OCH_2), 76.6 (l'-OCH_2), 109.9 (C-5), 115.2 (C-3), 117.9 (C-7), 120.0 (C-4a), 120.5 (C-8), 127.8 (C-5′), 129.2 (C-6′), 132.8 (C-31), 132.9 (C-2′), 134.2 (C-4′), 134.5 (C-l′),

148.1 (C-8a), 53.2 (C-4), 154.3 (C-6), 160.2 (2-C=O), 165.1 (O=C-NH). DIPMS: m/z at 399(M+l).

8, 9-di hydro- 7H- benzo - N-(4-Bromobenzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamide (6e)

Orange solid, mp: 155-156 °C. IR (KBr): 1065 (C-O-C), 1680 (-CONH), 1715 (-C=O), 3329 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 2.4 (s, 4-CH_3), 4.61 (s, 6-OCH_2), 4.93 (s, l'-OCH_2), 6.32 (s, H-3), 7.01-7.06 (m, H-5 & H-7), 7.26-7.29 (m, H-8, H-2' & H-6'), 7.47-7.5 (d, J=8.4Hz, H-5′ & H-3′), 9.01 (s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz): δ 18.6 (4-CH_3), 66.8 (6-OCH_2), 76.6 (l'-OCH_2), 109.9 (C-5), 115.2 (C-3), 117.9 (C-7), 120.0 (C-4a), 120.5 (C-4′), 122.0 (C-8), 131.3 (C-2′ & C-6′), 131.6 (C-3′ & C-5′), 135.6 (C-l′), 148.1 (C-8a), 153.2 (C-4), 154.3 (C-6), 160.2 (2-C=O), 165.0 (O=C-NH). DIPMS: m/z at 450 (M+l).

8, 9-di hydro - 7H- benzo - N-(2-cyanobenzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamide (6f)

White solid, mp: 181-182 °C, IR (KBr): 1064 (C-O-C), 1681 (-CONH), 1709 (-C-O), 2225 (CN), 3273 (-CONH) cm^{-1}. ^{1}H NMR ($CDC1_3$, 400 MHz): δ 2.41 (s, 4-CH_3), 4.64 (s, 6-OCH_2), 5.19 (s, l'-OCH_2), 6.3 (s, H-3), 7.06-7.12 (m, H-5 & H-7), 7.26 (d, J=9.2Hz, H-3'), 7.34-7.38 (m, H-6'), 7.64-7.7 (m, H-8, H-41 & H-5'), 9.43 (s, O=C-NH). ^{13}C NMR (DMSO-d_6, 100.6 MHz) : δ 18.7 (4-CH_3), 66.7 (6-OCH_2), 74.8 (l'-OCH_2), 109.9 (C-5), 112.2 (C-2′), 115.2 (C-3), 117.7 (C-7), 117.9 (-CN), 119.9 (C-4a), 120.5 (C-8), 129.8 (C-6′), 131.2 (C-4′), 133.7 (C-3′), 133.8 (C-5′), 139.3 (C-l′), 148.1 (C-8a), 153.3 (C-4), 154.3 (C-6), 160.2 (2-C=O), 165.2 (O=C-NH). DIPMS: m/z at 406 (M+l).

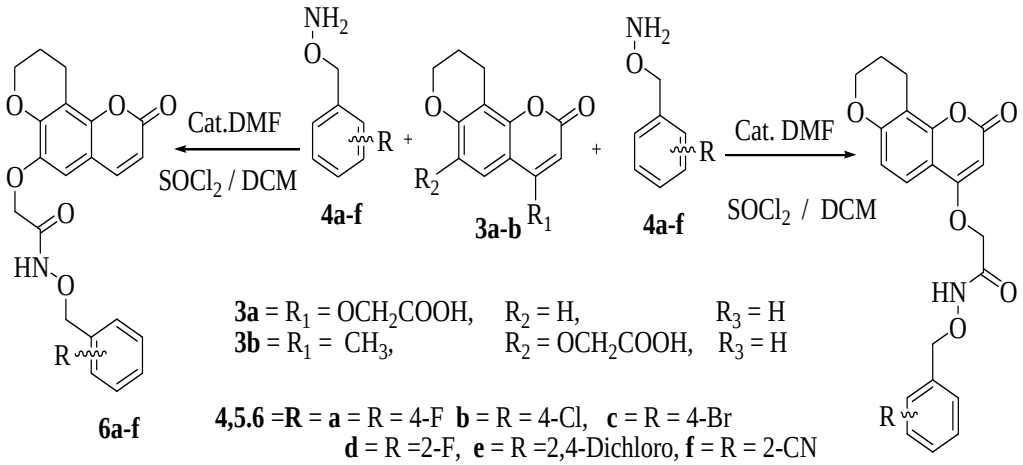
RESULTS AND DISCUSSION

Chemistry

We have successfully eighteen novel compounds (**5a-f** and **6a-f**) in good yields via 2-(coumarin-4-yloxy)-acetic acid **(3a-c)** by employing the reaction sequences shown in various schemes (**scheme 1).**

The reaction sequence employed for the synthesis of title compounds is shown in (**Scheme-1**). which was, then, submitted to the reaction with amide coupling of 8, 9- di hydro 7H-benzo-2-(coumarin-4-yloxy)-acetic acid **(3a-b)** with O-substituted benzylhydroxylamines **(4a-f)**via acid chloride method at room temperature to gave 8, 9 di hydro 7h benzoN-benzyloxy-2-(coumarin-4-yloxy)-acetamides (5a-f), 8, 9- di hydro- 7H- benzo- N-benzyloxy-

2-(4-methyl-coumarin-6-yloxy)-acetamides **(6a-f).** The ^{1}H NMR ($CDC1_3$, 400 MHz) spectrum of N-(4-fluorobenzyloxy)-2-(coumarin-4-yloxy)-acetamide **(5a)** the newly formed amide proton appeared at δ 11.59 (s, O=C-NH), 4-OCH_2 & l'-OCH_2 appeared at δ 4.79 (s), 4.85 (s) and other protons at 5.86 (s, H-3), 7.19-7-24 (m, H-3' & H-5'), 7.38-7.5 (m, H-21, H-3' & H-6, H-8), 7.67-7.71 (m, H-7), 7.96 (d, J=9.2Hz, H-5). In the ^{13}C NMR ($CDC1_3$, 100.6 MHz) the newly formed amide carbon appeared at δ 163.5 (O=C-NH), other carbons appeared at 164.7 (C-4), 161.8 (2-C=O), 153.1 (C-8a), 133.3 (C-1'), 132.3 (C-31 & C-5'), 131.7 (C-7), 124.8 (C-41), 123.9 (C-21 & C-6'), 116.8 (C-6), 115.7 (C-5), 115.3 (C-4a), 115.3 (C-8), 91.7 (C-3), 76.7 (l'-CH_2), 66.8 (4-OCH_2). The DIPMS of **5a** showed the quasi-molecular ion peak at m/z 344 (M+l).



Scheme-1 Synthesis of title compounds (5a-f and 6a-f).

Antibacterial Activity

All the newly prepared compounds **(5a-f and 6a-f)** were screened for the antibacterial activity is done by the paper disc method. Organisms used: Escherichia coli (Gram-negative) Staphylococcus aureus (gram-positive).

After solidification of media, petriplates inoculated with actively growing culture of Escherichia coli and Staphylococcus aureusseparately as follows. Filter paper discs of 5 mm diameter were dipped in the test solution of different concentrations. After drying the disc, it was kept on Antibiotic med-3 agar in petriplates seeded with 1 ml bacterial culture of Escherichia coli and Staphylococcus aureusand incubated for 24 hrs at 37°C. The antibacterial screening data showed that almost all the compounds **5a-f** and **6a-f** are active and showing moderate to good antibacterial activity. Among the screened **5b**, **5e, 5f, 6e,** and **7f** in which respectively showed high activity against all the micro-organism employed. The

activities of these compounds are almost equal to the standards the remaining compounds showed moderate to good antibacterial activity.

Table-1: Antibacterial activity.

	Escherichia coli (Gram-negative) (Cone. µg/ml)			Staphylococcus aureus (gram-positive) (Cone. µg/ml)		
comp.	200	100	50	200	100	50
5a	22	21		12	21	9
5b	12	14	12	31	24	22
5c	11	13	8	-	14	7
5d	-	-	11	18	-	11
5e	18	19	30	28	19	23
5f	12	12	22	23	32	22
6a	23	19	17	11	19	17
6b	11	-	-	22	-	-
6c	22	11	17	13	11	17
6d	13	-	11	14	-	11
6e	14	11	11	26	29	19
6f	12	6	8	3	6	8

CONCLUSION

We have successfully synthesized twele novel 8, 9 di hydro 7h benzoN-(benzyloxy)-2-(4-H/Methyl-coumarin-4/6/7-yloxy)-acetamides **5a-f**and **6a-f** with o-substituted benzylhydroxylamines **(4a-f)** via acid chloride method 8, 9 di hydro 7h benzo2-(coumarin-4-yloxy)-acetic acid **(3a-c)**in good yields. The structures of all the compounds were confirmed by their spectral data. All the newly synthesized compounds were screened for their MIC and zone of inhibition against two strains of bacteria. Amongst the compounds screened, most of the compounds have shown moderate to good antibacterial and antifungal properties whereas some compounds have shown promising antifungal properties, which were further used to determine MBC and MFC against some selected strains of bacteria and fungi.

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