# SYNTHESIS, CHARACTERIZATION AND EVALUATION OF BIOLOGICAL ACTIVITIES OF BENZANILIDE DERIVATIVES

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Amides can be particularly used as an intermediate for the drugs as well as pharmaceuticals. In this research work eleven benzanilide derivatives were synthesized using benzoyl chlorides and aniline derivatives and characterized. In vitro antibacterial, antifungal and antioxidant activity of the synthesized compounds were evaluated. In order to check the purity of the synthesized compounds Thin layer chromatography was used. Structural characterization was done by using FTIR (Fourier-transform infrared spectroscopy) and GC-MS (mass spectrometry).The disc diffusion method was used to evaluate the antimicrobial and antifungal activities and corresponding activities were calculated by measuring the diameter of the zone of inhibition (ZOI) of microbial growth around the disc paper. The antimicrobial assay was determined against *Bacillus spp* and *Escherichia coli* while the antifungal assay targeted *Aspergillus spp* and *Trichoderma spp*. In both experiments Gentamycin served as a positive control and DMSO (Dimethyl sulfoxide) was utilized as the negative control. The antioxidant activity of the synthesized compounds was tested using DPPH assay compared to the standard antioxidant ascorbic acid. Based on the observed results the compounds 1,2,3,4,6,7,8 and 10 were found to inhibit the growth of the *Bacillus spp* and *Escherichia coli* with ZOI ranging from 6.3-10.3 mm and 6.8-10.1 mm respectively. Compounds 5,9 and 11 were found to be inactive against tested bacteria. The compound 6 N-(3,5bis(trifluoromethyl)phenyl) benzamide found to inhibit the growth of *Aspergillus spp* with the ZOI 7.1 mm. compounds 1,2,3,4,5,7,8,9,10 and 11 were showed no inhibition against Aspergillus spp. None of the synthesized compound show antifungal activity against *Trichoderma spp* or antioxidant activity by using DPPH assay.

**Keywords***: Benzanilides, Zone of inhibition, Antimicrobial activity*