# OP25. SYNTHESIS, CHARACTERIZATION AND BIOLOGICALSTUDIES OF OXAMIDES

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The aim of this study is to synthesize and characterize a new class of oxamides and to study its biological significance. From the literature survey, it is investigated that this class of compound has significant biological application, but still insufficient information is available on biological studies of oxamides. Compounds of oxamides (1-10) were synthesized by reaction of aniline with oxalyl chloride. The structure of synthesized compounds were confirmed by 1H-NMR, EI-MS and IR spectroscopy. 1H-NMR was confirmed the trans conformation of compounds by giving the spectra of half protons because of plane of symmetry in structure. EI-MS predict the correct molecular mass of compound which was confirmed by CHN. Non- enzymatic (DPPH), enzymatic (lipoxygenase and xanthine oxidase) antioxidant activities and enzyme inhibition (α-glucosidase) studies of all synthesized compounds were performed. Oxamides exhibit promising antioxidant and enzyme inhibition activity. Most of the compounds showed significant antioxidant radical scavenging potential compared with the standard butylated hydroxy anisole (BHA). All compounds showed proficient inhibitory potential in different enzymatic assays. Compound 4 has a most promising efficacy for xanthine oxidase (XO) analogous with the standard allopurinol. This compound exhibit high inhibitory potential of XO in vitro reveal that it may restrain the production of active oxygen specie. Compound 1 was most potent lipoxygenase inhibitor. Most of the oxamides exhibit good inhibition for α- glucosidase, it is an enzyme which is related to glucose level in blood, the inhibitor of this enzyme can be used to cure diabetes type II. Further studies are still required to understand its pharmacological role to use oxamides in therapeutic drugs.

**Keywords:** Oxamides, spectroscopy, xanthine oxidase, α- glucosidase.