**SYNTHESIS AND BIOEVALUATION OF NEW CARBOXYLIC ACIDS HYDRAZIDES WITH POTENTIAL BIOLOGIC ACTIVITY**

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Starting from isoniazid and carboxylic acids as precursors, six hydrazides of 2-(4-substituted phenoxymethyl)-benzoic acids were synthesized and characterized by appropriate means (1H-, 13C-NMR, IR, elemental analysis). Their biological properties were evaluated in terms of apoptosis (Annexin V-FITC Apoptosis Detection Kit I and qRT-PCR), antioxidant activity (DPPH method), cell cycle blocking (flowcytometry and qRT-PCR) and drug metabolism genes expression on HCT-8 and HT-29 cell lines. In vitro antimicrobial tests were carried out by the micro plate Alamar Blue assay (MABA) for the anti-mycobacterial activities and by an adapted agar-disk diffusion technique for other non-tubercular strains: Escherichia coli, Enterobacter cloacae, Citrobacter koseri, Morganella morganii, Acinetobacter baumanii, Klebsiella pneumonia, Salmonella typhimurium, Serratia marcescens, Shigella sonnei, Stenotrophomonas maltophilia, Pseudomonas aeruginosa, Peudomonas putida, Staphylococcus hominis, Enterococcus faecalis, Staphylococcus aureus and coagulase-negative staphylococci. The best anti-oxidant and antibacterial activities (including anti-Mycobacterium tuberculosis effects) were proved by compound 6. Compounds 4, 5 and 6 determined blocking of G1 phase. Also, compound 4 proved to be the most toxic, inducing apoptosis in 54% of cells after 72 hours, an effect that can be predicted by the increased expression of mRNA caspase 3 and 7 after a 24 hours reatment. All compounds induced expression of NAT2, CYP1A1 and CYP2C19 genes in HCT-8 cells indicating that newly synthesized compounds could be metabolized on other pathways than NAT2, spanning adverse effects of isoniazid. In conclusion, compound 6 had the best antibacterial activity and, along with compounds 4 and 5, seemed to have anti-tumoral potential. Acknowledgements. We are grateful for the support of the grants: PNII-TE-13/2011 and PNII-PCCA-90/2012.