

Efficient One-Pot Synthesis of 2*H*-indazolo[2,1-*b*]phthalazine-1,6,11-trione Derivatives Catalyzed by Y(OTf)₃

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Abstract—In this study, substituted 2*H*-indazolo[2,1-*b*]phthalazine-1,6,11-triones, that may possess biological activity, have been synthesized via one-pot three-component cyclocondensation reaction of aromatic aldehydes, cyclic 1,3-dione and phthalhydrazide in ethanol catalyzed by Y(OTf)₃ with good to excellent yields. The structures of all synthesized compounds, 3,4-dihydro-13-phenyl-2*H*-indazolo[2,1-*b*]phthalazine-1,6,11(13*H*)-trione (**4a**), 13-(4-cyanophenyl)-3,4-dihydro-2*H*-indazolo[2,1-*b*]phthalazine-1,6,11(13*H*)-trione (**4b**), 3,4-dihydro-3,3-dimethyl-13-(4-cyanophenyl)-2*H*-indazolo[2,1-*b*]phthalazine-1,6,11(13*H*)-trione (**4c**), 3,4-dihydro-3,3-dimethyl-13-phenyl-2*H*-indazolo[2,1-*b*]phthalazine-1,6,11(13*H*)-trione (**4d**), and 3,4-dihydro-13-(4-isopropylphenyl)-3,3-dimethyl-2*H*-indazolo[2,1-*b*]phthalazine-1,6,11(13*H*)-trione (**4e**) have been elucidated from IR, NMR and mass spectral data.

Keywords: indazolo[2,1-*b*]phthalazine-trione, green chemistry, one-pot, multicomponent, Y(III) triflate

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