

**NOVEL COMPOUNDS FROM CONDENSATION REACTION BETWEEN
2-ACETILPYRIDINE AND 2-FORMILPYRIDINE.
SYNTHESIS, CRYSTAL STRUCTURE AND BIOLOGICAL EVALUATION**

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Abstract. Two new structure of (2,4-dihydroxy-2,4,6-tri(pyridin-2-yl)cyclohexyl)(pyridin-2-yl) and (4-hydroxy-2,4,6-tri(pyridin-2-yl)cyclohexane-1,3-diyl)bis(pyridin-2-ylmethanone) were synthesized and characterized. Due to the condensation reaction between 2-acetylpyridine and 2-formylpyridine, catalysed with Na₂CO₃ in aqueous solution and microwave irradiation, the product 1,3-bis(pyridin-2-yl)prop-2-en-1-one in a good yield was obtained. The reaction mechanism for obtaining the new compounds was proposed following the retrosynthetic analysis reactions of the products and confirmed by FTIR-ATR spectroscopy and ¹H and ¹³C NMR. The obtained compounds exhibit moderate antimicrobial and antifungal activity. The antioxidant activity of compounds was also studied.