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Synthesis and Anti-Gastric Cancer Effects of Novel 4-Aryl-1,4-dihydroprydines

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SUMMARY. Five novel 4-aryl-1,4-dihydroprydines (**1-5**) were synthesized via a one-pot three-component reaction by condensing aromatic aldehydes, ammonium acetate and ethyl acetoacetate in the presence of 4-(dimethylamino)pyridine (DMAP) as a highly efficient homogenous catalyst. The structures of the synthesized compounds have been deduced from IR, ^{1}H NMR, HRMS, and single crystal X-ray crystallography. Additionally, they were tested against MGC-803, BGC-823 and SGC-7901 human gastric cancer cell lines with the MTT assay. The experimental results of anti-tumor activity showed that compared with compounds **1~4**, compound **5** with thiophene ring exhibited better anti-tumor activity.

RESUMEN. Se sintetizaron cinco nuevas 4-aril-1,4-dihidropridinas (**1**-**5**) mediante una reacción de tres componentes en un solo recipiente condensando aldehídos aromáticos, acetato de amonio y acetoacetato de etilo en presencia de 4-(dimetilamino)piridina (DMAP) como catalizador homogéneo altamente eficiente. Las estructuras de los compuestos sintetizados se han deducido a partir de IR, ^{1}H NMR, HRMS y cristalografía de rayos X de cristal único. Además, se ensayaron contra las líneas celulares de cáncer gástrico humano MGC-803, BGC-823 y SGC-7901 con el ensayo MTT. Los resultados experimentales de la actividad antitumoral mostraron que, en comparación con los compuestos **1**-**4**, el compuesto **5** con anillo de tiofeno mostró una mejor actividad antitumoral.

KEY WORDS: 4-aryl-1,4-dihydroprydines, gastric cancer, X-ray.

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