Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **37** (1): 165-9 (2018)

Received: July 22, 2017
Revised version: November 29, 2017
Accepted: December 1, 2017

Novel Pyran Derivatives: Inhibiting Human Non-Small Cell Lung Cancer Growth

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SUMMARY. The reaction of 3,5-cyclohexanedione with aromatic aldehyde and 2-thiophenecarboxaldehyde gave four novel pyran derivatives (**1-4**) and their structures were characterized via IR, ^{1}H NMR, HRMS, and single crystal X-ray crystallography. The *in vitro* anticancer activity of the synthesized products were studied and evaluated, in which three human non-small cell lung cancer cell lines including A549, NCI-H1299 and H1650 were used in the screening tests. The results showed that compared with compounds **1-3**, compound **4** with thiophene ring exerted rather potent activity.

RESUMEN. La reacción de 3,5-ciclohexanodiona con un aldehído aromático y 2-tiofenocarboxaldehído dio cuatro derivados de pirano novedosos (**1-4**) y sus estructuras se caracterizaron por IR, ^{1}H RMN, HRMS y cristalografía de rayos X de cristal único. La actividad anticancerígena *in vitro* de los productos sintetizados se estudió y evaluó, en la que se utilizaron tres líneas celulares de cáncer de pulmón no microcítico humano, incluidas A549, NCI-H1299 y H1650, en las pruebas de detección. Los resultados mostraron que, en comparación con los compuestos **1-3**, el compuesto **4** con anillo de tiofeno ejerció una actividad bastante potente.

KEY WORDS: non-small cell lung cancer, pyran, X-ray.

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ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)