Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **40** (7): 1693-7 (2021)

Received: June 4, 2021
Accepted: June 14 2021

Nursing Application Value of a New Heterocycle Compound Against Coronary Heart Disease by Protecting Arterial Endothelial Cells

Shanshan JIANG, Hui SHI, Tian LIANG & Heying LI *

Department of Cardiology, the First Affiliated Hospital of Harbin Medical University, Harbin, Heilongjiang, China

SUMMARY. The new heterocycles compound 1-(4-aminophenyl)-3-morpholino-5,6-dihydropyridin-2(1H)-one (**1**), designed using 1-(4-nitrophenyl)piperidin-2-one (**2**) as start material, was successfully obtained via multiple synthesis route and finally characterized by IR, ^{1}H NMR, and single crystal X-ray crystallography. Its therapeutic activity and nursing application value against coronary heart disease was evaluated and the mechanism was explored at the same time. Firstly, the ELISA assay was conducted to measure the levels of the inflammatory cytokines released by the arterial endothelial cells. Besides, the activation levels of the NF-κb signaling pathway in the arterial endothelial cells was determined by the real time RT-PCR.

RESUMEN. El nuevo compuesto de heterociclos 1-(4-aminofenil)-3-morfolino-5,6-dihidropiridin-2 (1H) -ona (**1**), diseñado usando 1-(4-nitrofenil) piperidin-2-ona (**2**) como material de partida, se obtuvo con éxito a través de múltiples rutas de síntesis y finalmente se caracterizó por IR, ^{1}H NMR y cristalografía de rayos X de cristal único. Se evaluó su actividad terapéutica y valor de aplicación de enfermería contra la enfermedad coronaria y al mismo tiempo se exploró el mecanismo. En primer lugar, se realizó el ensayo ELISA para medir los niveles de citocinas inflamatorias liberadas por las células endoteliales arteriales. Además, los niveles de activación de la vía de señalización de NF-κb en las células endoteliales arteriales se determinaron mediante RT-PCR en tiempo real.

KEY WORDS: coronary heart disease, heterocycles compound, X-ray crystallography,

* Author to whom correspondence should be addressed. *E-mail:* 2541@hrbmu.edu.cn

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