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Synthesis and Cytotoxic Evaluation of Nitrate Derivatives of NCME as Antitumor Agents

Li H. SHEN [1] *, Xin-Q. LU [2], Bin LI [1], Hai X. WANG [1], Le ZHANG [1] & Zhen Z. WU [1]

[1] *Handan Key Laboratory of Organic Small Molecule Materials, Handan University, No. 530 Xueyuan North Road, Handan 056005, China*

[2] *Affiliated Hospital of Hebei University of Engineering, Handan 056002, China*

SUMMARY. A series of new nitric oxide-releasing allocolchicinoid derivatives (**6a-f**, **8a-b**) were synthesized by coupling organic nitrate moiety with N-acetylcolchinol O-methyl ether (NCME). Their anti-cancer activities were tested against human hepatocellular carcinoma BEL7402, human ovary carcinoma A2780, human lung adenocarcinoma, and human breast carcinoma MCF-7 cell lines. The bioassay results demonstrate that most of the tested compounds displayed potent activity, particularly, compounds **6c** showed more significant cytotoxic activities than colchicine and NCME. The results show that nitrate derivatives of NCME are potential suppressors to human cancer.

RESUMEN. Se sintetizaron una serie de nuevos derivados de alocolchicinoides liberadores de óxido nítrico (**6a-f**, **8a-b**) mediante el acoplamiento del resto de nitrato orgánico con N-acetilcolinol O-metil éter (NCME). Sus actividades anticancerígenas se probaron contra líneas celulares de carcinoma hepatocelular humano BEL7402, carcinoma de ovario humano A2780 y adenocarcinoma de pulmón humano A549, así como células de carcinoma de mama humano MCF-7. Los resultados del bioensayo demuestran que la mayoría de los compuestos probados mostraron una actividad potente, particularmente, el compuesto **6c** mostró actividad citotóxica más significativa que la colchicina y la NCME. Los resultados muestran que los derivados de nitrato de NCME son potenciales supresores del cáncer humano.

KEY WORDS: colchicine, cytotoxicity, NCME, nitrates, synthesis.

* Author to whom correspondence should be addressed. *E-mail:* hdshenlihong@126.com

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