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Anticancer Activities of Some Novel Synthesized Thiazole and Thiohydantoin Derivatives

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***SUMMARY*. A series of new compounds carrying 1,3-thiazole and 2-thiohydantoin scaffold were synthesized and structurally confirmed by different spectroscopic methods such as IR, ^{1}H-NMR, ^{13}C-NMR and mass spectroscopy along with elemental analyses. All the synthesized compounds were examined for their cytotoxic activity versus HepG2 cell line. Compound 4 and its acetylated derivative showed the least IC50 values within the tested compounds. Additionally, compounds 4 and 6 were evaluated against VEGFR-2. The results revealed that compound 4 showed good VEGFR-2 inhibitory activity. Moreover, cell cycle analysis of compound 4 appeared cell cycle arrest at both G1 and G2/M phase of cell cycle profile of HepG2 cells.**

RESUMEN. Se sintetizaron y confirmaron estructuralmente una serie de nuevos compuestos con andamiaje de 1,3-tiazol y 2-tiohidantoína mediante diferentes métodos espectroscópicos como IR, ^{1}H-NMR, ^{13}C-NMR y espectroscopía de masas junto con análisis elementales. Todos los compuestos sintetizados fueron examinados por su actividad citotóxica versus la línea celular HepG2. El compuesto 4 y su derivado acetilado mostraron los menores valores de CI50 dentro de los compuestos probados. Además, los compuestos 4 y 6 se evaluaron frente a VEGFR-2. Los resultados revelaron que el compuesto 4 mostró una buena actividad inhibidora de VEGFR-2. Además, el análisis del ciclo celular del compuesto 4 pareció detener el ciclo celular tanto en la fase G1 como en la G2/M del perfil del ciclo celular de las células HepG2.

KEY WORDS: anticancer activities, cytotoxic activity, kinase assay, thiazole, thiohydantoin.

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