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In vivo Cytotoxicity of Polysubstituted Pyrazole Derivatives against Liver Cancer Cell Line

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SUMMARY. A group of pyrazole compounds was systematically screened to investigate their antitumor potency against the liver HEPG2 cell line by monitoring their inhibition of the growth of this human cancer cell line. The biochemical analysis of relevant enzymes such as aspartate and alanine aminotransferases (AST and ALT) and alkaline phosphatase (ALP), in addition to bilirubin in the serum of rats, was carried out for the promising compounds showing significant anticancer activity. The cytotoxicity evaluation results revealed that compound **2** was the most potent and selective against liver cancer cells *in vivo* (half-maximal growth inhibition [GI_{50}] mean graph-mid-point [MG-MID], 7.7 μM).

RESUMEN. Un grupo de compuestos de pirazol fue analizado sistemáticamente para investigar su potencia antitumoral contra la línea celular HepG2 de hígado mediante el control de la inhibición del crecimiento de esta línea celular de cáncer humano. El análisis bioquímico de las enzimas pertinentes, tales como aspartato y alanina aminotransferasas (AST y ALT) y fosfatasa alcalina (ALP), además de la bilirrubina en el suero de ratas, se llevó a cabo para los compuestos que mostraran actividad anticancerígena significativa. Los resultados de la evaluación de citotoxicidad revelaron que el compuesto **2** fue el más potente y selectivo contra células de cáncer de hígado *in vivo* (inhibición de la mitad del crecimiento máximo [GI_{50}], representando el punto medio del gráfico [MG-MID], 7,7 M).

KEY WORDS: cytotoxic activity, 1,3-diaryl-pyrazole derivatives, liver HEPG2 cancer cell line.

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