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 α,β -unsaturated compounds derived from arylamines as possible new treatment against leukemiaSánchez-Labastida Luis Angel, Bribiesca-Carlos José, Andrade-Jorge Erik, Vasquez-Moctezuma Ismael and Trujillo-Ferrara José Guadalupe
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L5178 cells are an experimental lymphocytic leukemia in mice, associated with hyperplasia of the lymphoid tissues and a high number of circulating malignant lymphocytes and lymphoblast, this cellular line was used to evaluate the activity of a maleimide and a maleimide of phenethylamine, as a possible new treatment for leukemia. Previous studies have shown that α, β -unsaturated compounds have important pharmacological properties, as an anti-tumoral activity, this through reducing glutathione levels and increasing oxidative stress, causing cytotoxicity, reduced viability, and death by apoptosis. As the first step, α, β -unsaturated compounds were designed from phenylethylamine, the two best candidates were selected. New green synthesis techniques were designed for both compounds and were synthesized, the chemical structure and purity were confirmed by NMR 1H and 13C, mass spectrometry and IR. The compounds were tested in an *in vitro* experiment with L5178-Y cell culture (50,000 cells approximately per well), treated with the compounds at concentrations of 1×10^{-3} to 1×10^{-9} M in both cases. Maleimide derivative showed an activity on cells in concentrations of 1×10^{-6} to 1×10^{-4} M, evidenced by the MTT assay at 24 and 48 hours, after that, the field was opened at a concentration between 1×10^{-6} to 10×10^{-6} M, and an EC_{50} of 5×10^{-6} was obtained. For the case of maleimide, an activity was observed at 1×10^{-3} to 1×10^{-5} M, and the open field between 1×10^{-5} to 1×10^{-4} M showed an EC_{50} of 3×10^{-5} M. The experiment results lead us the possibility to evaluate these compounds in an *in vivo* models such as survival experiments or LD_{50} in mice.

Biography

Sánchez-Labastida Luis Angel is a third year Medical student at Escuela Superior de Medicina of Instituto Politécnico Nacional. In 2013, he started working in the Department of Molecular Biology, and in 2015, in the Biochemistry department, searching for possible treatments against cancer.

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