World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:10, No:01, 2016

Design and Facile Synthesis of New Amino Acid Derivatives with Anti-Tumor and Antimicrobial Activities

Authors : Hoda Sabry Othman, Randa Helmy Swellem, Galal Abd El-Moein Nawwar

Abstract : N-cyanoacetyl glycine is a reactive polyfunctional precursor for synthesis of new difficult accessible compounds including pyridones, thiazolopyridine and others. The key step of this protocol is the formation of different ylidines which underwent Michael addition with carbon nucleophiles affording various heterocyclic compounds. Selected compounds underwent pharmacological evaluation, in vitro against two cell lines; breast cell line (MCF-7),and liver cell line(HEPG2). Compounds 14, 15a and 16 showed IC50 values 8.93, 8.18 and 8.03 (µ/ml) respectively for breast cell line (MCF-7), while the standard drug (Tamoxifen) revealed IC50 8.31. With respect to the liver cell line (HEPG2), compounds 14 and 15a revealed IC50 18.4 and 13.6(µ/ml) respectively while the IC50 of the standard drug(5-Flurouracil) is 25(µ/ml). The antimicrobial activity was also screened and revealed that oxime 7 and ylidine 9f showed a broad-spectrum activity.

Keywords : antitumor, cyanoacetyl glycine, heterocycles, pyridones
Conference Title : ICCIS 2016 : International Conference on Chemical Industry and Science
Conference Location : Jeddah, Saudi Arabia
Conference Dates : January 26-27, 2016