البحث السابع (رقم 7 في قائمة البحوث المقدمه للترقيه و33 في قائمة البحوث الكلية)

Title	High pressure assisted synthetic approach for novel 6,7-dihydro-5*H*-benzo[6,7]cyclohepta[1,2-*b*]pyridine and 5,6-dihydrobenzo[*h*]quinoline derivatives and their assessment as anticancer agents منهجية جديدة لتخليق العديد من مشتقات 6،7- ثنائي هيدرو بنزو[7، 6] سيكلوهيبتا[2،1-b] بيريدين و 5،6 ثنائي هيدرو بنزو[h] كينولين بمساعدة الضغط العالي وتقييمها كعوامل مضادة للسرطان
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Abstract:

A novel, expedient and effective methodology for the synthesis of distinctly substituted 6,7-dihydro-5*H*-benzo[6,7]cyclohepta[1,2-*b*]pyridine and 5,6-dihydrobenzo[*h*]quinoline systems has been developed with a new synthetic platform. This process includes ammonium acetate-mediated cyclocondensation reactions of 3-oxo-2-arylhydrazonopropanals with benzosuberone and tetralone precursors, respectively, using the high-pressure Q-tube reactor, which has been found to be superior to both conventional heating and microwave irradiation. The novel protocol benefits from its high atom efficiency, economy, ease of workup, broad substrate scope and is also applicable to gram-scale synthesis. To identify and confirm the newly synthesized targeted compounds, the X-ray single crystal as well as all possible spectroscopic methods were utilized. The cytotoxicity of the newly synthesized 6,7-dihydro-5*H*-benzo[6,7]cyclohepta[1,2-*b*]pyridine **4a–j** and 5,6-dihydrobenzo-[*h*]quinolines derivatives **6a–e** were preliminary examined toward three cell lines of human cancer; lung cancer (A549), breast cancer (MCF-7) and colon cancer (HCT-116), by applying the MTT colorimetric assay. The achieved results reflected the promising profile of the

prepared compounds in this study against cancer cells and have shown that members from the synthesized 6,7-dihydro-5*H*-benzo[6,7]cyclohepta[1,2-*b*]pyridine **4a–j** exhibited promising cytotoxicity's against MCF-7, and A549 cancer cells respectively, while the HCT-116 (colon) cancer cells were inhibited by certain examples of 5,6-dihydrobenzo[*h*]quinoline derivatives **6c,d**. These promising results could serve as a good primary base for further research into the design of anticancer drugs.