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Ministry of Higher Education and Scientific Research
University of Al-Mustansiriya
College of Science

New Synthesis and Characterization of Some Saccharin Derivatives That Have Biological Activity

A Thesis

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جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الجامعة المستنصرية
كلية العلوم

تحضير وتشخيص بعض مشتقات السكرين الجديدة ذات الفعالية البايولوجية

رسالة
مقدمة إلى كلية العلوم - الجامعة المستنصرية
وهي جزء من متطلبات نيل درجة الماجستير في
الكيمياء العضوية

من قبل

هيلين عبد الحسن محمود

بأشراف

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Abstract

The saccharin derivatives are very important compounds because they are use in the medical and industrial fileds , so it have received much attention by the researchers. This study includes synthesis of a series new amino saccharin derivatives.

The synthesized compound have been characterized by the spectral analysis such as (FT-IR), (U.V) and (^{1}H-NMR) and determination of their physical properties such as melting points and also studying their biological activity such as inhibition- kill position of the same derivatives .

This work includes the following steps :

1. Synthesis of saccharin in the acid form [H$_1$] by the reaction of sodium saccharin with 10% HCl .

2. Synthesis of N-alkyl saccharin [H$_2$-H$_4$] by the alkylation of sodium saccharin with different alkyl halide and (DMF) as a solvent.

3. Synthesis of starting material 3-hydrazinylidene saccharin [H$_5$] or N-ethyl-3- hydrazinyliden saccharin [H$_6$] by the reaction of saccharin [H$_1$] or N-ethyl saccharin [H$_2$] with hydrazine 99% and ethanol as a solvent.

4. Synthesis of new Schiff's bases [H$_7$-H$_{17}$] (stage one) ، [H$_{18}$-H$_{23}$] (stage two) through the reaction of starting material [H$_5$] or [H$_6$] with different aromatic aldehydes.

5. Synthesis of new heterocyclic derivatives of saccharin which includes some new Thiazolidone derivatives by the reaction of some Schiff's bases (stage one) to obtain the derivatives [H_{24}-H_{28}] or the reaction of some Schiff's bases (stage two) to obtain the derivatives[H_{29}-H_{30}] with α-mercapto acetic acid.

6. Synthesis of derivative [H_{31}] by the reaction of saccharin[H_1] with Acetyl chloride and glacial acetic acid as a solvent.

7. Synthesis of new amino derivatives of saccharin [H_{34}-H_{38}] or [H_{39}-H_{43}] by the reaction of saccharin derivative [H_{32}] or [H_{33}] with chloro acetyl chloride in the presence of triethyl amine and dioxin , benzene as a solvent. then refluxing the products with different secondary amines using ethanol as a solvent.

8. Synthesis of derivative [H_{44}-H_{45}] by the reaction of starting material [H_5] or [H_6] with 4-chloro phenyl isothiocyanate and dioxin as a solvent.

9. Synthesis of thiazole derivative [H_{46}-H_{47}] by the reaction of compound [H_{44}] or [H_{45}] with chloro acetic acid in the presence of potassium hydroxide and ethanol as a solvent.

10. Synthesis of the derivatives [H_{48}-H_{49}] by the reaction of saccharin[H_1] with different molar ratio of methyl amine.

11. Synthesis of the derivative [H_{50}] by the reaction of [H_{33}] with (KSCN) in acetone as a solvent , This compound was treated with appropriate different aromatic aldehydes to prepare [H_{51}-H_{52}] and glacial acetic acid as a solvent.