

Biochemical and Molecular Study of anticarcinogenic activity of Novel thalidomide derivatives on Female Albino Mice bearing Solid tumor

A Thesis Submitted

**To
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دراسة بيوكيميائية وجزئية لنشاط مشتقات الثاليدوميد الجديدة على الخلايا السرطانية الصلبة فى إناث الفئران البيضاء

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قسم الكيمياء
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من

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ABSTRACT

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The aim of this study was to evaluate the biochemical and molecular effect of novel thalidomide derivatives on female albino mice bearing solid tumor compared with the parent thalidomide. Solid tumor was induced by (S.C) injection of 4×10^5 (EAC) cells and after seven days from induction, mice were treated every next day for 14 days with 200 μ l of 1.25 mM/kg body weights of thalidomide and its derivatives. The treatment with novel thalidomide derivatives revealed: a reduction in tumor volume ($p < 0.001$) as well as a regulation in nitric oxide concentration ($p < 0.01$). A correction to the values of albumin, ALT, glucose and LDH ($p < 0.001$). In addition, down-regulation to the ICAM-1 mRNA expression in comparison with mice bearing solid tumor ($p < 0.001$).

Keywords: Thalidomide; Dithiocarbamate; Antitumor; ICAM-1 mRNA

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اسم الطالب: بيشوي يوسف عبده الأعرج

عنوان الرسالة: دراسة بيوكيميائية وجزئية لنشاط مشتقات الثاليدوميد الجديدة على الخلايا السرطانية الصلبة في إناث الفئران البيضاء

الدرجة: رسالة ماجستير في العلوم (كيمياء حيوية)، كلية العلوم، جامعة القاهرة، ٢٠١٠

تهدف هذه الدراسة الى تقييم التأثير البيوكيميائي والجزئي لمشتقات جديدة من الثاليدوميد علي الخلايا السرطانية الصلبة في إناث الفئران البيضاء بالمقارنة لدواء الثاليدوميد. تم أستحداث الأورام الصلبة بحقن 4×10^6 من خلايا الإبرلش تحت جلد الفئران وبعد مرور ٧ أيام من أستحداث هذه السرطانات، تم معالجة الفئران كل ثاني يوم لمدة ١٤ يوم بحقن ٢٠٠ ميكروليتر من تركيز ١,٢٥ ملي مول لكل كيلو جرام من الفئران بدواء الثاليدوميد ومشتقاته. أسفر العلاج بمشتقات الثاليدوميد الجديدة عن تقليل حجم السرطانات الصلبة وأيضاً تعديل في تركيز أوكسيد النيتريك. بالإضافة الي تعديل قيمة كل من الألبومين، ALT ، الجلوكوز و LDH. أخيراً، إنخفاض معدل ترجمة ICAM-1 mRNA بالمقارنة بالفئران الحاملة للأورام الصلبة.

الكلمات الدالة: الثاليدوميد، ثنائي الثيوكربامات، مضاد للأورام، ICAM-1 mRNA.

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المُلَخَّص العَرَبِي

**THIS THESIS IS DEDICATED
WITH ALL RESPECT
TO
MY SPIRIT FATHER
H. G. Bishop Isidoros**

**THIS THESIS IS DEDICATED
WITH ALL RESPECT
TO
ALL MY FAMILY
SPECIALLY
MY FATHER AND MY MOTHER**

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