The Cytotoxicity and Inhibitory Effect of Ortho-Amino Phenyl Mercury(II) Chloride against Growth of Some Bacteria (*invitro*)

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Abstract

It was found that 0.2g of Ortho-Aminophenylmercury(II)chloride (OAPMC) dissolved in HCl/water added in to Muller-Hinton Agar medium, inhibited the growth of three reference strains bacteria [*Escherichia coli* ATCC25922, *Pseudomonas aeruginosa* ,ATCC27853 and S*taphylococcus aureus, ATCC25923*] in addition to five clinical isolates (S*taphylococcus aureus* , *Streptococcus Pyogenes*, *Pseudomonas-aeruginosa*, *Escherichia-coli* and *Klebsiella aerogenes*). Higher concentrations of (OAPMC) solution into the medium inhibited growth of bacteria under study was more strongly. The minimal inhibitory concentration (MIC) and the cytotoxicity of (OAPMC) were studied against human blood and it was found that it had no hemolytic effects at different concentrations. Antibiotic sensitivity was tested for (OAPMC) and the results were evaluated: a susceptible intermediate and resistant respectively.

ألسميه الخلويه والتأثير المثبط للمركب أورثو أمينو فنيل كلوريد الزئبق ضد نمو بعض انواع البكتيريا (مختبريا).

الخلاصة

وجد ان 0.2g من المركب (OAPMC) المذاب في مزيج من الماء و(HCL) قد ثبط نموثلاث سلالات مرجعيه بالاضافه الخمس عزلات سريريه كماوجد ان التراكيز العالية من المركب المضاف الى الوسط الزرعي يؤدي الى تثبيط النمو بشكل اكثر.

تمت دراسة التركيز الادنى المثبط وكذلك السمية الخلوية لكريات دم الانسان ووجد انه لايوجد تحلل لكريات الدم عند تراكيز مختلفة من المركب.كماتم دراسة الحساسيه الدوائيه لعشرة انواع مختلفه من المضادات الحيويه ومقارنته بأقل تركيزمن المركب (OAPMC) حسب الجدول العالمي لشركة (Bioanalysis).

وتعتبر هذه الدراسة هي الخطوة الاولى لدراسة هذا المركب الجديد والذي يمكن الاستفادة منه كدواء في المستقبل.

Introduction

Mercury is one of the hazardous metals found in the environment; it can be found chemically as elemental Hg°, inorganic as [Hg(I) and Hg(II)], and organic [mostly as Hg(II)] forms[1]. Some of the organic compounds having mercury have been found to be potent antiseptic agents; in these compounds mercury is found to be covalently bonded to the organic molecule[2]. These compounds are found to be bacteriostatic in action by inhibiting sulphydryl SH-containing enzymes of bacteria and less toxic than inorganic mercurial[3]. The commonly used inorganic mercurial are yellow mercuric oxide, mercuric oxide eye ointment; some of the important organic mercurial are Thiomersol and Nitromersol; their dilute aqueous