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Physiochemical and Microbiological Study of Different Brands of Ceftriaxone Sodium Available in Libyan Market

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Cephalosporin it is considered to be equivalent to cefotaxime in terms of safety and efficacy. It has broad spectrum activity against Gram-positive and Gram-negative bacteria, Ceftriaxone sodium is marketed under the trade. The five brands of Ceftriaxone sodium, Triaxon (U.A.E), Ceftriaxone (INDIA), Zetraxon (SWITZERLAND), Cefaxon (TUNISIE) and Nevakson (TURKEY) were physically and chemically characterized. The basic function groups was identified by Infra-Red (IR) spectrophotometer. The particle size and moisture content of ceftriaxone sodium brands was determined by light obscuration particle count test and Karl-Fischer titration, respectively. The validate a stability-indicating LC method for quantitative determination of ceftriaxone was studied using different storage conditions. The bactericidal activity of ceftriaxon sodium and their brands were investigated by using *Escherichia coli* (*E. coli*), *Pseudomonas aeruginosa* (*P. aeruginosa*), *Staphylococcus aureus* (*S. aureus*), and methicillin-resistant *staphylococcus aureus* (MRSA). The resultant bactericidal activity of Ceftriaxone sodium brands against this bacteria were exhibited similarity of bacterial activity.

Keywords: Ceftriaxone, IR, HPLC, bactericidal activity and bacteria.

<http://www.isaet.org/proceeding.php?catid=87&type=2&mode=detail>

<http://www.isaet.org/images/extraimages/phpFv.pdf>





Pharmaceutical Evaluation of Five Different Generic Brands of Prednisolone Tablets in Libyan Market Using Various Validated Methods

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Generic medicines are those where patent protection has expired, and which may be produced by manufacturers other than the innovator company. Use of generic medicines has been increasing in recent years, primarily as a cost saving measure in healthcare provision. Generic medicines are typically 20 – 90 % cheaper than originator equivalents. Physicians often continue to prescribe brand-name drugs to their patients even when less expensive pharmacologically equivalent generic drugs are available. Because generics are less expensive than their brand-name counterparts, the cost-savings to the patient is not the only factor that physicians consider when choosing between generic and brand-name drugs. Unfortunately Physicians in general and Libyan Physicians in particular tend to prescribe brand-name drugs, even without evidence of their therapeutic superiority, because neither they nor their insured patients bear these drugs' increased cost with respect to generic substitutes. This study is to compare the quality of five different prednisolone tablets of the same strength from different companies under different trade names: Julphar, October pharma, Akums, Actavis, Pfizer compared them with pure prednisolone reference (BPCRS).

Keywords: Generic medicines, prednisolone and brand drugs

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Studying the effects of *Rutagraveolens* on spontaneous motor activity, skeletal muscle tone and strychnine induced convulsions in albino mice and rats

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Rutagraveolens a plant commonly found in North Africa and south Europe. It is reported that *Rutagraveolens* used traditionally for epilepsy and some other illnesses. The acute and sub-acute effects of alcoholic extract residue were tested for possible antiepileptic and skeletal muscle relaxation activity. The effect of extract on rat spontaneous motor activity (SMA) was also investigated using open field. We previously proved the anticonvulsant activity of the plant against pentylenetetrazol and electrically induced convulsions. Therefore in this study strychnine was used to induce convulsions in order to explore the mechanism of anticonvulsant activity of the plant. The skeletal muscle relaxation activity of *Rutagraveolens* was studied using pull-up and rod hanging tests in rats. At concentration of 5%w/v the extract protected mice against strychnine induced myoclonic jerks and death. The pull-up and rod hanging tests pointed to a skeletal muscle relaxant activity at higher concentrations. *Rutagraveolens* extract also significantly decreased the number of squares visited by rats in open field apparatus at all tested concentrations (3.5-20%w/v). However, the significant decrease in number of rearings was only noticed at concentrations of (15 and 20%w/v). The results indicate that *Rutagraveolens* contains compound(s) capable to inhibit convulsions, decrease SMA and/or diminish skeletal muscle tone in animal models. This data and the previously generated data together point to a general depression trend of CNS produced by *Rutagraveolens*.

Keywords: *Rutagraveolens*, antiepileptic and skeletal muscle relaxation activity

<https://waset.org/abstracts/18601>



Phytochemical study of the stem barks of *Prosopis africana*

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Prosopis Africana can be found growing wild in Northern and the Middle Belt of Nigeria and it is the only known species of its genus found in Africa. In folk medicine, the stem bark is used as remedies for skin diseases, caries, fevers gonorrhea, tooth and stomach-ache, dysentery and bronchitis. Chemical investigation of the stem bark resulted in isolation and characterization of novel flavanones using chromatographic and spectroscopic techniques.

Keywords: Flavanone, African plant, NMR, MS.





Efficacy Enhancement of Hydrophobic Antibiotics Employing Rhamnolipid as Biosurfactant

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Antibiotic resistance has become a global public-health problem, thus it is imperative that new antibiotics continue to be developed. Major problems are being experienced in human medicine from antibiotic resistant bacteria. Moreover, no new chemical class of antibiotics has been introduced into medicine in the past two decades. The aim of the current study presents experimental results that evaluate the capability of biosurfactant rhamnolipid on enhancing the efficacy of hydrophobic antibiotics. Serial dilutions of azithromycin and clarithromycin were prepared. A bacterial suspension (approximately 5×10^5 CFU) from an overnight culture in MSM was inoculated into 20ml sterile test tube each containing a serial 10-fold dilution of the test antibiotic(s) in broth with or without 200 mg L^{-1} rhamnolipid. The tubes were incubated for 24 h with vigorous shaking at 37°C . Antimicrobial activity in multiple antibiotic-resistant gram-negative bacteria pathogens and gram-positive bacteria were assessed using optical density technique. The results clearly demonstrated that the presence of rhamnolipid significantly improved the efficiency of both antibiotics. We hypothesized that the addition of rhamnolipid at low concentration, causes release of LPS which results in an increase in cell surface hydrophobicity. This allows increased association of cells with hydrophobic antibiotics resulting in increased cytotoxicity rates.

Keywords: Biosurfactants, rhamnolipid, azithromycin, clarithromycin, hydrophobic antibiotics.

http://www.jofamericanscience.org/journals/amsci/am1001/017_22880am100114_93_98.pdf



Formulation of Highly Dosed Drugs Using Different Granulation Techniques: A Comparative Study

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Paracetamol tablets and cimetidine tablets were prepared by single-step granulation/tabletting and by compression after high shear granulation. The addition of PVP (polyvinylpyrrolidone) was essential for single-step granulation/tabletting of formulation containing high concentrations of paracetamol or cimetidine. Paracetamol tablets without and with PVP obtained by single-step granulation/tabletting exhibited a significantly higher tensile strength, a significantly lower disintegration time, a lower friability and a faster dissolution compared to those prepared by compression after high shear granulation. Cimetidine tablets with PVP obtained by single-step granulation/tabletting exhibited a significantly lower tensile strength, a significantly lower disintegration time and a faster dissolution compared to those prepared by compression after high shear granulation. Single-step granulation/tabletting allowed to produce tablets containing up to 80% paracetamol or cimetidine with a dissolution profile complying with the USP requirements. For pure paracetamol or pure cimetidine the addition of crospovidone as a disintegrant was required to obtain a dissolution profile that complied with the pharmacopoeial requirements. Long term and accelerated stability studies of paracetamol tablets produced by single-step granulation/tabletting over a period of one year showed no significant influence on the tablet tensile strength, friability and dissolution. Although a significant increase of the disintegration time was observed, it remained below 10 min. These results indicated that single-step granulation/tabletting could be an efficient technique for the production of highly dosed drugs such as paracetamol and cimetidine.

Keywords: granulation, tabletting, crospovidone and disintegration.

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Development of a Clinical Pharmacy Graduate Program at the University of Tripoli College of Pharmacy

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The implementation of clinical pharmacy in the syllabus of pharmacy schools in Libya was begun as long as 4 decades ago. The term clinical pharmacy was firstly described as an individual equally skilled and trained in both the practice and science of pharmacy. Although the Pharmacy Commission effectively articulated a societal need for such highly trained individuals, pharmacy academic institutions in the country have made limited progress in developing programs to train “clinical pharmacists”. Obstacles to develop such programs are multifactorial. Firstly, the misunderstanding of term itself among medical staff and the possible interferes with responsibilities. This hesitation was manifested varied answers on what is the unique contribution will this individual make to the medical practice environment? What kind of unique knowledge base and clinical skills will this individual need to be successful in medical area? What mechanism(s) should be utilized to effectively and efficiently train these individuals for their career in medical practice? In what environment (*e.g.*, giant pharmacies or clinical wards, academic or research) will these new trainees eventually function? And most importantly, how will the profession, academia and society at large benefit from individuals trained in this manner? Despite the lack of a national pharmaceutical science consensus on these most important issues, institutional consensus should be easier to achieve. However, college of pharmacy in the capital Tripoli has made limited, but promising progress toward the development and implementation of such programs. In 2001, the University of Tripoli, College of Pharmacy introduced a new graduate credit hours program initiative intended to recruit pharmacy students with new syllabus who will derive new knowledge through observation, study and practice that is focused on drug therapy and problem solving outcomes in patients, and the factors and mechanisms determining those outcomes. This program’s main focus is in the area of applied pharmacotherapy and basic medical sciences





including anatomy, histology, physiology, clinical biochemistry and Pathophysiology. Other equally important areas of emphasis including toxicology, pharmacy practice and hospital pharmacy are also included in the syllabus. To date, clinical pharmacy training programs have been the primary supplier of clinical pharmacy profession in most teaching hospitals in the country. Although products of these programs have made significant contributions to medical practice over the past 10 years, we believe that continuation to our Clinical Pharmacy Program will offer students and graduates numerous career advantages.





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