ISSN (Online): 0975-8232,
ISSN (Print): 2320-5148

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

An International Journal published monthly

An Official Publication of Society of Pharmaceutical Sciences and Research

INDEXED IN Embase An Elsevier Product

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TUE 05 CHEMICAL SYNTHESIS OF BILE ACIDS AND THEIR PHYSICO-CHEMICAL PROPERTIES

TUE 05 AN OVERVIEW ON COVID-19 OUTBREAK: EPIDEMIC TO PANDEMIC

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Volume 13 (2022) - Issue 10, October

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RESEARCH ARTICLES

12. ANTIAPOPTOTIC MECHANISM FOR THE IMPLEMENTATION OF THE HEPATOPROTECTIVE EFFECT OF PYRIMIDINE DERIVATIVES

The present study aimed to study the effect of the drug Xymedon and its conjugate with L-ascorbic acid exhibiting hepatoprotective activity on the apoptosis of rat liver cells against the background of the influence of hepatotoxic agent tetrachloromethane. Though the general effects of Xymedon and its conjugates with various biogenic acids have been studied, the molecular markers affected by the c...

A. A. Parfenov , A. B. Vyshtakalyuk *, I. V. Galyametdinova, V. E. Semenov and V. V. Zobov
Institute of Fundamental Medicine and Biology of Kazan Federal University, 5 Tovarisheskaya Str., Kazan, Russia.
DOI: 10.13040/IJPSR.0975-8232.13(10).3922-31
3922-3931

Abstract HTML Full Text PDF

13. EFFECT OF AQUEOUS EXTRACT OF CRYPTOLEPIS SANGUINOLENTA ADMINISTRATION ON THE METABOLISM OF CHLOROQUINE VIA CYTOCHROME P450 ISOZYMES

Concurrent administration of herbal medicines and conventional drugs is a common practice globally, especially as the patronage of medicinal plants increases across the world. This study aimed to determine the effect of Cryptolepis sanguinolenta administration on the metabolism of chloroquine by evaluating specific Cytochrome P450 isozymes. Reconstituted freeze dried Cryptolepis sanguinolenta was ...

M. M. Sakyiamah
Phytochemistry Department, Centre for Plant Medicine Research (CPMR), P.O. Box 73, Mampong-Akuapem, E/R, Ghana.
DOI: 10.13040/IJPSR.0975-8232.13(10).3932-39
3932-3939

Abstract HTML Full Text PDF

14. INVESTIGATING AND SEQUENCING OF THIOL-SPECIFIC ANTIOXIDANT GENE IN A SYRIAN STRAIN OF LEISHMANIA TROPICA

Cutaneous leishmania is a common medical problem in Syria, which has become yet more widespread in most of the Syrian governorates after the current war. An effective vaccine is needed to prevent a large scale spread of leishmaniasis in the country. In this regard, protein vaccination has shown promising prospects of creating this much-needed vaccine. Thiol Specific Antioxident (TSA) plays a funda...

Hassan Al Khoury * and Shaden Haddad
Department of Biochemistry and Microbiology, Damascus University, Damascus Syria.
DOI: 10.13040/IJPSR.0975-8232.13(10).3940-43
3940-3943

Abstract HTML Full Text PDF

15. NEUROTHERAPEUTIC EFFECT OF BERGENIN ON CUPRIZONE-INDUCED DEMYELINATION BY REGULATING NEUROLOGICAL FUNCTIONS ASSOCIATED WITH MOTOR ACTIVITY, OXIDATIVE STRESS, AND HISTOLOGICAL ALTERATIONS IN THE CORPUS CALLOSUM OF C57BL/6 MICE

Multiple sclerosis (MS) is a chronic demyelinating disease of the central nervous system characterized by Neuroinflammation, oligodendrocyte loss, and axonal pathology. Bergenin, a chief phytochemical constituent of Bergenia species, has been shown to exert anti-inflammatory and antioxidant effects. The cuprizone (CPZ) model is an established mouse model of MS and causes demyelination and induces ...

Akila Murugan and Sumathi Thangarajan *
Department of Medical Biochemistry, Dr. A. L. M Post Graduate Institute of Basic Medical Sciences, University of Madras, Taramani, Chennai, Tamil Nadu, India.
DOI: 10.13040/IJPSR.0975-8232.13(10).3944-52
3944-3952

Abstract HTML Full Text PDF

16. A TRAILBLAZING ENDEAVOUR TO EXPLORE THE ROLE OF TULASI PUSHPA AS SANDHANA DRAVYA (FERMENTING AGENT) IN SANDHANA KALPANA

Sandhāna kalpanā (Fermentation process) is a unique procedure implemented in Ayurveda for the preparation of fermented alcoholic and acidic medicinal formulations. Sandhāna dravyās (fermenting agents) act as fermentation initiators in them. The commonly used Sandhāna dravyās are Dhātakipuṣpā (flowers of Woodfordia fruticosa), madhūkapuṣpā (flowers of Madhuka indica) and yeast. Almost...

Aansu Susan Varghese *, N. K. Sangeetha Nandakumar, Abhayakumar Mishra, Arun Mohanan, P. K. Vineeth and N. V. Ramesh
Department of Rasashastra and Bhaishajya Kalpana (Medicinal Chemistry and Pharmacy), Amrita School of Ayurveda, Amritapuri, Amrita Vishwa Vidyapeetham, Kerala, India.
DOI: 10.13040/IJPSR.0975-8232.13(10).3953-59
3953-3959

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ISSN (Print): 2320-5148

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An Official Publication of Society of Pharmaceutical Sciences and Research

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INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

An International Journal published monthly

An Official Publication of Society of Pharmaceutical Sciences and Research

INDEXED IN Embase An Elsevier Product

Volume 10 (2019) - Issue 8, August

REVIEW ARTICLES

Title	Views	PDF	Cited
1. NANOCARRIERS AS DELIVERY SYSTEMS FOR THERAPEUTICS AGENTS Nanotechnology is emerging as a field in pharmacy and medicine that is expected to elicit significant therapeutic benefits especially in the field of drug targeting. The development of effective nanocarriers capable of carrying therapeutic agents specifically and safely to a desired site of action is one of the most challenging tasks facing drug formulation researchers. Serious research attemp... F. H. Farah 3487-3507 Department of Pharmaceutical Sciences, College of Pharmacy and Health Sciences, Ajman University, Ajman, United Arab Emirates. DOI: 10.13040/IJPSR.0975-8232.10(8).3487-07 Abstract HTML Full Text PDF Citation	3146	1474	5
2. THERAPEUTIC APPLICATIONS OF MUSHROOMS AND ITS COMPOSITIONAL ANALYSIS BY HIGH THROUGHPUT SCREENING TECHNIQUES Mushrooms can be considered as a prolific resource for drugs as per previous literature surveys. Their constituent bioactive components are broadly classified such as phenols, flavonoids, triterpenoids, saponins. Whole mushrooms or mainly fruiting bodies extracts and compounds isolated from their mycelium are of immense pharmacological importance. Extraction employing suitable solvents leads to th... D. Chatterjee *, S. Das and D. Halder 3508-3518 Department of Food Technology and Biochemical Engineering, Jadavpur University, Kolkata, West Bengal, India. DOI: 10.13040/IJPSR.0975-8232.10(8).3508-18 Abstract HTML Full Text PDF Citation	2337	1110	1
3. BISPHENOL- A INDUCED OXIDATIVE STRESS AND ITS FERTILITY ASPECTS Bisphenol-A (BPA), 2,2-bis(4-hydroxyphenyl) propane is an emerging environmental toxicant with endocrine disrupting properties and toxic effects on living organisms. BPA is ubiquitously present in consumer products current in our daily lives. As it is released from consumer products and deposited in the environment, thus creating the potential for human exposure through oral, inhaled, and dermal r... M. Sharma, R. Sharma, P. Gupta and S. Srivastava * 3519-3531 Department of Zoology, Reproductive Physiology Lab, University of	2674	965	3

Rajasthan, Jaipur, Rajasthan, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3519-31

Abstract | HTML Full Text | PDF | Citation

4. AN OVERVIEW OF THERAPEUTIC POTENTIAL OF THYMOQUINONE 2662 1141 3

Herbal medication has attracted much attention in recent years and is being used as an alternative to chemical medicines. Some evidence supports the positive effects of medicinal plants in the prevention and treatment of different types of diseases. Thymoquinone (TQ) is the most abundant component of Nigella sativa seeds, and most of the properties of Nigella sativa are attributed primarily to TQ....

S. Agarwal, R. Srivastava and N. Mishra *
Food and Nutrition, Department of Home Science, University of Allahabad, Allahabad, Uttar Pradesh, India.
3532-3539
DOI: 10.13040/IJPSR.0975-8232.10(8).3532-39

Abstract | HTML Full Text | PDF | Citation

5. A REVIEW OF PHARMACOLOGICAL ACTIVITY OF MARINE ALGAE IN INDIAN COAST 2858 1285 6

Indian coastline stretches about 5700 km covering 9 states on the mainland and about 7500 km including islands and union territories. Seaweeds, a renewable natural resource, found growing in large quantities along the Indian coast. Seaweeds are currently worldwide interest in finding new and safe promising organisms for health. It is one of the important essential producers of biomass in the marin...

A. Sharma *, R. Koneri and D. K. Jha
Department of Pharmacology, Karnataka College of Pharmacy, Bengaluru, Karnataka, India.
3540-3549
DOI: 10.13040/IJPSR.0975-8232.10(8).3540-49

Abstract | HTML Full Text | PDF | Citation

6. GREEN SYNTHESIS: A NOVEL APPROACH FOR NANOPARTICLES SYNTHESIS 2619 972 0

There are different types of conventional approaches are used for the synthesis of nanoparticles like physical and chemical techniques. But above approaches used for nanoparticles synthesis is not eco-friendly due to the production of toxic compounds during nanoparticles formation. Therefore, interest in the green synthesis of nanoparticles has been increased. The green synthesis of nanoparticles ...

R. S. Sandhu, R. P. Agarwal and S. Kumar *
Faculty of Bio-Design Innovation Centre, Rani Durgavati University, Saraswati Vihar, Pachpedi, Jabalpur, Madhya Pradesh, India.
3550-3562
DOI: 10.13040/IJPSR.0975-8232.10(8).3550-62

Abstract | HTML Full Text | PDF | Citation

7. POLYELECTROLYTE COMPLEXATION AND IONOTROPIC GELLATION: THE POTENTIAL NOVEL APPROACH TO DESIGN HYDROGEL PARTICULATE FOR SUSTAINED, MODULATED DRUG DELIVERY SYSTEM: A REVIEW 1954 674 2

The interest in using natural and chemically modified polysaccharides as a part of drug development has increased in the past two decades. For potential carriers in controlled, modulated drug delivery, great interest has also been focused on biopolymer-based hydrogels. Due to their advantages like biocompatibility, biodegradability, and low cost, biopolymers have been widely used in the developmen...

W. Akram *, R. Joshi and N. Garud
School of Studies in Pharmaceutical Sciences, Jiwaji University, Gwalior, Madhya Pradesh, India
3563-3574
DOI: 10.13040/IJPSR.0975-8232.10(8).3563-74

Abstract | HTML Full Text | PDF | Citation

8. NEBULIZED DRUG DELIVERY: AN OVERVIEW 5770 970 0

Inhaled Pharmacological therapy is key to treatments for patients with asthma and COPD. People who suffered from COPD died every year in low- and middle-income countries. The primary reason for COPD is tobacco smoking or second-hand smoke. Another risk factor is air pollution, dust, and fumes. Current

guidelines endorsed inhaled pharmacology therapy as the favorable route of administration for tre...

S. Prajapati, S. Saha, C. D. Kumar and B. Sahoo*
Orbicular Pharmaceutical Technologies Pvt. Ltd., Hyderabad, Telangana, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3575-82
Abstract HTML Full Text PDF Citation

Objective: Diabetes mellitus is an interminable metabolic disorder that has highly affected human health and quality of life. Conventional agents are being applied to control this disorder along with lifestyle management. But they are not totally effective and nobody has ever been diagnosed with full recovery of diabetes. Medicinal plants have been used for greater extent for control of diabetes m...

S. Laha and S. Paul *
Laboratory of Cell & Molecular Biology, Department of Botany, University of Calcutta, Kolkata, West Bengal, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3583-91
Abstract HTML Full Text PDF Citation

Though conventional medicines are slow in action, they represent safety in contrast to the synthetics that are regarded as somewhat unsafe to human and environment. The uses of many traditional herbs in the treatment of many diseases, which are usually free from side effects, are economical and also easily accessible to humans. Plants have formed the basis of sophisticated traditional medicine sys...

A. C. Udayashankar *, M. Nandhini, S. B. Rajini and H. S. Prakash
Department of Studies in Biotechnology, University of Mysore, Manasagangotri, Mysore, Karnataka, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3592-96
Abstract HTML Full Text PDF Citation

The scenario of pharmaceutical drug delivery are expeditiously challenging, but conventional pharmaceutical dosage forms are still dominating. Immediate release dosage forms are those wherein ≥85% of labeled amount dissolves within 30 min. Superdisintegrants are used to improve the efficacy of solid dosage forms. The basic approach used in the formulation of the tablet is the use of superdisinte...

N. Sharma *, S. Pahuja and N. Sharma
Swami Vivekanand College of Pharmacy, Banur, Punjab, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3607-18
Abstract HTML Full Text PDF Citation

Diabetes or Madhumeha as per Ayurveda is a disease in which there is improper functioning of insulin and as a result, the sugar level in the blood increases. Diabetes may cause heart problem, kidney failure, blurred vision if not treated timely with proper medication. Medicinal plants have been used since ancient times for the treatment and management of diabetic mellitus (DM) in traditional medi...

S. Singh *, A. Mazumder and G. S. Chakarabarthy
Noida Institute of Engineering and Technology (Pharmacy Institute), Greater Noida, Uttar Pradesh, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3619-26
Abstract HTML Full Text PDF Citation

Diabetes is a metabolic disorder, which is characterized by insulin deficiency, insulin resistance, and aberrant metabolism in glucose, protein, and lipid. The primary causes of diabetes are Genetic and

environmental factors. Diabetes is a chronic progressive disease that leads to both microvascular and macrovascular complications. This disease affects around 5% of the world population now. But, r...

S. Jain * and G. Joshi
Ambe Durga Education Society's Dadasaheb Balpande College of Pharmacy (DBCOP), Near Swami Samarth Mandir, Besa, Nagpur, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3627-34
3627-3634

Abstract | HTML Full Text | PDF | Citation

14. A SURVEY ON ANTICANCER PROPERTIES OF INDIAN MEDICINAL PLANTS – A BROAD SPECTRUM ANALYSIS — 5405 | 1108 | 4

Several plants across the world possess specific therapeutic and diagnostic properties. The identification of the properties among them is the most difficult task. Several researchers have used several methodologies to express the therapeutic properties in the plants. The interest of scientists among the anticancer studies has been increasing widely as cancer has become one of the deadliest diseas...

K. Saranya, V. Mahilvasagan, R. Kanakadurga, V. P. M. Babu * and N. G. R. Babu
Department of Biotechnology, Adhiyamaan College of Engineering (Autonomous), Hosur, Tamil Nadu, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3635-40
3635-3640

Abstract | HTML Full Text | PDF | Citation

15. RELEVANCE OF GREEN CHEMISTRY 12 PRINCIPLES IN ORGANIC SYNTHESIS — 4505 | 839 | 4

Green chemistry or sustainable chemistry focuses on designing products and processes that minimize the generation or use of hazardous substances. Green chemistry, though not a new area, has recently gained much importance because of increasing environmental concerns. Industries now focus on adopting processes which are mainly non- hazardous, easier to undertake, lesser energy and time consuming, ...

A. Kulshrestha and J. Pandey *
Department of Chemistry, Amity University Uttar Pradesh, Lucknow Campus, Lucknow, Uttar Pradesh, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3641-47
3641-3647

Abstract | HTML Full Text | PDF | Citation

16. EXPERIMENTAL MODELS TO STUDY TUMOUR ANGIOGENESIS – IN-VITRO, EX-VIVO AND IN-VIVO APPROACH — 1786 | 662 | 1

Angiogenesis is the formation of new blood vessels from preexisting vasculature. It is a key process in some physiological conditions such as wound healing, growth and reproduction. Any disturbance in mechanisms of angiogenesis plays a key role in the pathogenesis of some diseases through the over-proliferation of blood vessels such as cancers, psoriasis, arthritis, retinopathies, obesity, asthma,...

K. A. Jamani, T. K. Praveen and A. Wadhwani *
Department of Pharmaceutical Biotechnology, JSS Academy of Higher Education & Research , JSS College of Pharmacy, Ooty, Tamil Nadu, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3648-59
3648-3659

Abstract | HTML Full Text | PDF | Citation

RESEARCH ARTICLES

Title	Views	PDF	Cited

17. CHEMICAL COMPOSITION AND ANTIBACTERIAL ACTIVITY OF MEDICINALLY USEFUL ESSENTIAL OIL FROM THE INFLORESCENCE OF EUPHORBIA HELIOSCOPIA L. GROWN IN EGYPT — 2966 | 1022 | 4

The genus Euphorbia has about 2000 members making it one of the largest ones among the flowering plants. Euphorbia helioscopia L. As the chemical composition of the essential oil from Euphorbia helioscopia developed in Egypt has not yet been explored, along these lines the present to extricate the essential oil and investigate the oil chemical composition and antimicrobial activity. Essential oil ...

A. M. Beltagy
Department of Pharmacognosy, Faculty of Pharmacy, Damanhour University, Damanhour, Egypt
3660-3667

DOI: 10.13040/IJPSR.0975-8232.10(8).3660-67

Abstract | HTML Full Text | PDF | Citation

18. LESS TOXIC NANOPARTICLES OF PLATINUM BASED ANTI-CANCER DRUG

1963 942 0

Objectives: The objective of this research was dose reduction and toxicity reduction. Dose reduction: various anti-cancer drugs are very costly, and their high dose increases cost. If bioavailability is enhanced, the dose shall be reduced thereby; the cost will also decrease. Dose reduction will also reduce toxicity, and the preparation will become more tolerable. Method: In this study, the nanopa...

V. Deva *, S. Singh and M. M. Abdullaha
Dr. Abdul Kalam Technical University, Lucknow, Uttar Pradesh, India.

3668-3683
DOI: 10.13040/IJPSR.0975-8232.10(8).3668-83

Abstract | HTML Full Text | PDF | Citation

19. THE INFLUENCE OF ETHANOL EXTRACTS OF RAMBUTAN LEAVES (NEPHELIUM LAPPACEUM L.) AGAINST OBESITY AND INSULIN RESISTANCE IN RATS

2674 974 1

Ethanol extracts of rambutan leaves have been investigated for their anti-diabetes properties using the glucose tolerance method as well as insulin deficiency through alloxan induction. This study aimed to further evaluate these properties in obese and insulin resistant animals. The rat models were feeding with foods high in carbohydrates, fats, and propylthiouracil. The animal models were divided...

E. Susilawati *, I. K. Sukmawati, Noranisa, N. S. Hayati and W. Aligita
Department of Pharmacology, Bandung School of Pharmacy, Bandung, West Java, Indonesia.

3684-3690
DOI: 10.13040/IJPSR.0975-8232.10(8).3684-90

Abstract | HTML Full Text | PDF | Citation

20. PHYTOCHEMICAL SCREENING AND ANTINOCICEPTIVE ACTIVITY OF MIMOSA DIPLOTRICHA LEAVES

2419 927 2

Though possessing a lot of ethnopharmacological use, Mimosa diplotricha did not explore thoroughly for its bioactivity & the phytoconstituents responsible for its bioactivity. The purpose of the current work was to conduct phytochemical screening and antinociceptive activity of methanolic extract and its different fractions of Mimosa diplotricha leaves. Phytochemical screening of methanolic ex...

J. Naima, M. R. Islam, N. M. Proma, S. R. Afrin, M. R. Hossain and M. K. Hossain *
Department of Pharmacy, University of Chittagong, Chittagong, Bangladesh.

3691-3696
DOI: 10.13040/IJPSR.0975-8232.10(8).3691-96

Abstract | HTML Full Text | PDF | Citation

21. FORMULATION AND EVALUATION OF ORODISPERSIBLE DOSAGE FORMS INCORPORATING DRUG NANOPARTICLES CONTAINING CLOPIDOGREL BISULPHATE

2340 958 2

Clopidogrel bisulphate (CB) is the rate of dissolution often controls a sparingly soluble orally administered drug and the rate of absorption. Reports suggest that the drug has poor water solubility which may be challenging for developing liquid dosage forms of Clopidogrel bisulphate. Hence in the present study, we sought to develop orodispersible nanoparticles to enhance the solubility by an anti...

A. D. Paul *, K. Kavitha, P. Sharma and B. Srivastava
School of Pharmaceutical Sciences, Jaipur National University, Rajasthan, Rajasthan, India.

3697-3714
DOI: 10.13040/IJPSR.0975-8232.10(8).3697-14

Abstract | HTML Full Text | PDF | Citation

22. MICROSCOPIC CHARACTERISATION OF ROOT, STEM AND LEAVES OF AN UNRESOLVED SPECIES: RUBUS INDICUS (ROSACEAE)

1574 600 0

The genus, Rubus is considered as highly potent plant crop and possesses economical, medicinal and ecological importance. Rubus plant species have been utilized inbreeding programme and has identified various pharmaceutical compounds. However, the taxonomy of the genus Rubus has been in a state of flux,

because of the absence of comprehensive work and associated taxonomic disputes. Among the genus...

B. Narayanan *, H. C. Mana and U. B. Thara
Research and Development Centre, Bharathiar University, Coimbatore, Tamil Nadu, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3715-20
3715-3720

Abstract | HTML Full Text | PDF | Citation

23. IMMUNOMODULATING, ANTI-BACTERIAL AND ANTI-CANCER POTENTIAL OF ZA'ATAR (THYMUS VULGARIS) AND ITS COMBINATION WITH ESSENTIAL OIL (OLIVE AND BALSAM OIL) — 2535 | 758 | 2

Introduction: Thymus vulgaris (za'atar) is one of the most famous and traditional spices of Arab countries. Extracts of Thymus vulgaris (zatar) found to be useful as traditional medicine. The current studies are aiming to further explore the phytoconstituents of Thymus vulgaris and its biological activity. Methodology: The present study investigated the phytochemical constituent of za'atar and...

S. Soomro *, V. R. Chidrawar, M. Imran and H. O. Alshammari
Department of Basic Health Sciences, Faculty of Pharmacy, Northern Border University Rafha, Saudi Arabia.
DOI: 10.13040/IJPSR.0975-8232.10(8).3721-26
3721-3726

Abstract | HTML Full Text | PDF | Citation

24. IN-VITRO TRANSPORT EVALUATION OF GARCINIA MANGOSTANA L. PERICARP EXTRACT LOADED CREAM AND GEL — 1461 | 566 | 3

Garcinia mangostana L. pericarp (GMP) has been known as a traditional medicine in Asian countries. The bioactive from GMP has been recognized to be related to complex phenolic compounds linked with free radical scavenging activity. This research aimed to study the effects of topical formulation types (gel, oil in water cream and water in oil cream) of GMP extract on the in-vitro release and in-vit...

R. Kuswahyuning *, N. Yuniarti, I. Lesmana and N. Fadhilah
Faculty of Pharmacy, University of Gadjah Mada, Yogyakarta, Indonesia.
DOI: 10.13040/IJPSR.0975-8232.10(8).3727-34
3727-3734

Abstract | HTML Full Text | PDF | Citation

25. DESIGN, SYNTHESIS AND COMPARATIVE PHARMACOLOGICAL ASSESSMENT OF NOVEL FLUOROQUINOLONE DERIVATIVES — 1148 | 612 | 0

One of the proposed groupings of the fluoroquinolones describes the excellent broad-spectrum activity forms an invaluable part of the present anti-infective armory of the clinicians. The fluoroquinolones are most significant weapons can be credited for saving more human lives than any other area of medicinal therapy. In this current research segment, the novel C-3 substituted fluoroquinolone scaff...

P. P. Majalekar *, P. K. Shirote, V. Nalawade and P. Shelake
Department of Pharmaceutical Chemistry, Appasaheb Birnale College of Pharmacy, Sangli, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3735-40
3735-3740

Abstract | HTML Full Text | PDF | Citation

26. SYNTHESIS AND ANTIBACTERIAL SCREENING OF SCHIFF BASES DERIVED FROM 3-(5-BROMOTHIOPHEN-2-YL)-1-(4-CHLOROPHENYL)-1H-PYRAZOLE-4-CARBALDEHYDE — 1717 | 645 | 1

A series of new Schiff bases were synthesized by condensation of 3-(5-bromothiophen-2-yl)-1-(4-chlorophenyl)-1H-pyrazole-4-carbaldehyde with different aromatic aldehydes. The 3-(5-bromothiophen-2-yl)-1-(4-chlorophenyl)-1H-pyrazole-4-carbaldehyde was prepared from 1-(1-(5-bromothiophen-2-yl)ethylidene)-2-(4-chlorophenyl)hydrazine by the Vilsmeier Haack reaction. The 1-(1-(5-bromothiophen-2-yl)ethyl...

S. V. Manohare * and S. S. Thakare
Department of Chemistry, Adarsha Science, J. B. Arts, and Birla Commerce Mahavidyalaya, Dhamangaon Rly, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3741-45
3741-3745

Abstract | HTML Full Text | PDF | Citation

27. FORMULATION AND IN-VITRO CHARACTERIZATION OF 5-FLUOROURACIL AND FLAVONOID DUAL LIPID DRUG CONJUGATES LOADED SELF NANOMULSIFYING DRUG DELIVERY SYSTEM FOR CANCER TARGETING

1349 543 0

Objective: The Failure in chemotherapy is mainly because of the resistance of the chemotherapeutic drugs towards the neoplastic cells. The main reason behind this study was to develop a novel combination of 5-Fluorouracil (5-FU) lipid curcumin conjugates for the treatment of cancer. Methods: In this study, the lipid group stearic acid and oleic acid was conjugated with the parent drug moiety 5-Flu...

C. Karthika and R. Sureshkumar *
Department of Pharmaceutics, JSS College of Pharmacy, Ooty, (Affiliated to JSS Academy of Higher Education and Research, Mysuru, Tamil Nadu, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3746-54
3746-3754

Abstract HTML Full Text PDF Citation

28. EVALUATION OF EFFECT OF AYURVEDIC PREPARATIONS ON NEPHROPATHY IN DIABETIC WISTAR RATS

1459 487 0

Introduction: Type 2 diabetes, which is the most common type, is often a result of excess body weight and physical inactivity in genetically predisposed individuals. Over due course of time diabetes can cause blindness, kidney damage, neurological problems, and coronary artery disease. Improvement in glycemic control is important factors in delaying the onset and progression of diabetes-related co...

M. S. Bhosale, J. S. Dawane, V. A. Pandit * and P. S. Khatavkar
Department of Pharmacology, Bharati Vidyapeeth (Deemed to be University) Medical College, Pune, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3755-62
3755-3762

Abstract HTML Full Text PDF Citation

29. ISOLATION AND STRUCTURAL ELUCIDATION OF DEGRADATION PRODUCTS OF RANOLAZINE

1680 817 0

Degradation studies are important to know the potentials degradation products and to develop a stability indicating method. Ranolazine active pharmaceutical ingredients subjected to in detailed forced degradation study using several stressing agents (HCl, NaOH, H2O2). Degradation products of Ranolazine under hydrolytic and oxidative stress conditions were identified, and their stabilities were ass...

S. Guduru, V. V. S. R. N. A. K. Mutha, B. Vijayabhaskar, J. Narkedimilli, M. Kaliyaperumal, R. B. Korupolu, K. B. Bonige and C. S. Rumalla *
Department of Medicinal Chemistry, GVK Biosciences Pvt. Ltd., IDA Mallapur, Hyderabad, Telangana, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3763-69
3763-3769

Abstract HTML Full Text PDF Citation

30. PHYTOCHEMICAL SCREENING, POLYPHENOLS CONTENT AND A NOVEL SOURCE OF ANTIBACTERIAL AND ANTIOXIDANT ACTIVITIES OF ESSENTIAL OIL OF LAURUS NOBILIS FROM MOROCCO

1607 630 0

Bacterial resistance and oxidative stress are an important etiology of chronic diseases. This is the reason why new alternatives were established to overcome the incidence of some pathologies. Thus, the present study was aimed to evaluate the antibacterial activity of the extracted oil against bacteria that causes nosocomial infections in neonatal intensive care by using disc diffusion method. The...

A. Tariq *, F. E. Kamari, I. Aouam, Y. E. Atki, B. Lyoussi and A. Abdellaoui
Laboratory of Physiology Pharmacology and Environmental Health, Department of Biology, Faculty of Sciences Dhar Mehraz, University Sidi Mohamed Ben Abdellah, Atlas, Fez, Morocco.
DOI: 10.13040/IJPSR.0975-8232.10(8).3770-76
3770-3776

Abstract HTML Full Text PDF Citation

31. QUANTITATIVE SIMULTANEOUS ESTIMATION OF ASPIRIN AND OMEPRAZOLE BY RP-HPLC METHOD IMPLEMENTING AQbD APPROACH IN PHARMACEUTICAL DOSAGE FORM

1629 598 2

A simple, accurate, rapid and precise reverse phase high performance liquid chromatographic method has been developed for the simultaneous determination of Aspirin (ASP) and Omeprazole (OMP). By using box benchen design method have been developed and optimized. Effective chromatographic separation

achieved using C18 column (250 × 4.6 mm, 5 µm) as a stationary phase and mobile phase consisted of ...

C. Chandarana * and P. Kapupara
Department of Quality Assurance, School of Pharmacy, RK University, Rajkot, Gujarat, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3777-84
Abstract HTML Full Text PDF Citation

32. POTENTIAL ANTIBACTERIAL AND ANTIOXIDANT PROPERTIES OF AQUEOUS, ETHANOL AND METHANOL EXTRACTS OF TECTARIA MACRODONTA C. CHR

1396 640 0

Tectaria macrodonta C. Chr. locally known as Kaali negro in Sikkim is a rhizome and spore-bearing terrestrial fern, traditionally used in folk medicine. In the present study, the aqueous, ethanol and methanol extracts of the rhizomes of Tectaria macrodonta C. Chr were evaluated for its potential antibacterial and antioxidant properties. The phytochemical analyses of different solvent extracts were...

B. Paudyali * and B. Singh
Department of Microbiology, School of Life Sciences, Sikkim University, Gangtok, Sikkim, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3785-94
Abstract HTML Full Text PDF Citation

33. THE POTENTIAL ROLE OF FLAVONOIDS IN THE CONTROL OF OXIDATIVE STRESS FOR TYPE II DIABETES

1375 505 0

Introduction: Antioxidant properties of flavonoids may guard against oxidative damage to cells, DNA, or lipids. The ample literature about flavonoids can affirm the structural and pharmacological cherishing of this class of phytochemicals. The presence of aromatic rings in the flavonoid molecule consent the receiving and donation of electrons from free radical species, which abets to curb the free...

S. R. Nelli *, N. K. Sharma, P. M. Kumar and S. S. Singh
Cancer and Translational Research Lab, Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Dr. D. Y. Patil Vidyapeeth, Pune, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3795-99
Abstract HTML Full Text PDF Citation

34. SELECTIVE ISOLATION AND CHARACTERIZATION OF NOCARDIOPSIS FLAVESCENS VJMS-18 FROM COASTAL REGIONS OF ANDHRA PRADESH, INDIA

1357 522 0

Objective: To evaluate the antimicrobial potential of Nocardiopsis flavescens isolated from the marine environment. Methods: Attempts were made to isolate actinomycete strains from marine coastal regions of Andhra Pradesh, India. The soil samples collected were pre-treated with calcium carbonate, diluted and plated on three different media to isolate actinomycetes. All the isolates were screened f...

M. S. Mogili and V. Muvva *
Department of Botany and Microbiology, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3800-07
Abstract HTML Full Text PDF Citation

35. COMPATIBILITY STUDIES BETWEEN PACLITAXEL AND EXCIPIENTS IN THE PREFORMULATION PHASE OF NANOCRYSTAL FORMULATION

1694 721 0

Paclitaxel is one of the best anti-cancer drugs and recently known as the best anti-cancer products of natural origin. The purpose of the present work was to study the physicochemical properties and compatibility of paclitaxel with the selected surfactants employed in nanocrystal formulations. The melting point and loss on drying of paclitaxel were found 216 °C and 0.11% respectively. A log P val...

A. Gammitta, P. Srinivas, A. V. Reddy and S. Pedireddi *
Vijaya College of Pharmacy, Munaganoor, Hyderabad, Telangana, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3808-15
Abstract HTML Full Text PDF Citation

36. SURFACE MODIFICATION AND NON-COVALENT FUNCTIONALIZATION OF SINGLE-WALLED CARBON NANOTUBES AND THEIR CHARACTERIZATION

1674 742 2

Single-walled carbon nanotubes (SWNTs) though emerged as a promising material for delivery of biomolecules into various cells, due to their high cytotoxicity, they are limited in use in many biological systems and also in humans. The present research explores the preparation of functionalized SWNTs of low cytotoxicity and biocompatibility by altering the size and surface functionalization. Noncova...

K. N. Lalitha, G. K. Mohan and A. Uma *
Centre for Biotechnology, Institute of Science and Technology (Autonomous), Jawaharlal Nehru Technological University, Kukatpally, Hyderabad, Telangana, India.
3816-3824
DOI: 10.13040/IJPSR.0975-8232.10(8).3816-24

Abstract HTML Full Text PDF Citation

37. ANTIBACTERIAL ACTIVITY OF NIGELLA SATIVA EXTRACTS AGAINST EXTENDED SPECTRUM B-LACTAMASE PRODUCING ESCHERICHIA COLI ISOLATES

3678 507 0

The most striking feature of natural products in connection to their long-lasting importance in drug discovery is their structural diversity that is still largely untapped. Most natural products are not only sterically more complex than synthetic compounds but also differ in regards to the statistical distribution of functionalities. The chemical diversity and unique biological activities of a wid...

W. Parveen * and A. Subhashini
Department of Plant Biology and Plant Biotechnology, Quaid-E-Millath Government College for Women, Chennai, Tamil Nadu, India.
3825-3830
DOI: 10.13040/IJPSR.0975-8232.10(8).3825-30

Abstract HTML Full Text PDF Citation

38. DERIVATIVE SPECTROPHOTOMETRIC METHOD FOR SIMULTANEOUS ESTIMATION OF VINBLASTINE SULFATE AND MOXIFLOXACIN HYDROCHLORIDE

1149 583 0

Objective: To develop a simple, accurate and precise method for the simultaneous estimation of Moxifloxacin hydrochloride (MOX) and Vinblastine sulfate (VIN). Methods: The normal spectrum of VIN and MOX were converted to its second derivative spectrum and the amplitude minima of VIN and MOX were measured at 214 nm and 297 nm, respectively. MOX and VIN solution were simultaneously determined in 0.1...

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Department of Pharmaceutical Analysis and Quality Assurance, Himalayan Pharmacy Institute, Majhitar, Sikkim, India.
3831-3836
DOI: 10.13040/IJPSR.0975-8232.10(8).3831-36

Abstract HTML Full Text PDF Citation

39. ANTIOXIDANT POTENTIAL, TOTAL PHENOLIC AND FLAVONOID CONTENT OF ROOTS OF SEVEN ASPARAGUS SPECIES FROM NORTH-WEST INDIA

1425 532 3

The aim of current study was to compare the total phenolic content (TPC), total flavonoid content (TFC) and antioxidant activity of roots of seven Asparagus species from North-West India. Total phenolic content measured by Folin-Ciocalteu method ranged from 3.85 ± 0.25 (A. racemosus) to 7.74 ± 0.03 (A. falcatus), 3.42 ± 0.14 (A. racemosus) to 7.22 ± 0.12 (A. falcatus) and 1.12 ± 0.13 (A. offi...

M. Kapoor, P. Mawal * and R. C. Gupta
Department of Botany, Punjabi University, Patiala, Punjab, India.
3837-3842
DOI: 10.13040/IJPSR.0975-8232.10(8).3837-42

Abstract HTML Full Text PDF Citation

40. INFLUENCE OF PIOGLITAZONE ON IMMUNOMODULATORY ACTIVITY OF AZATHIOPRINE IN RODENT MODELS

1141 450 0

The present study was designed to investigate the antioxidant and immunomodulatory activity of Azathioprine-Pioglitazone combination therapy to check whether it has added on benefit over monotherapy with Azathioprine or Pioglitazone in rodent models. The test drugs in combination showed better inhibition of free radicals in both H2O2 radical scavenging assay and nitric oxide scavenging assay than ...

P. V. Babu *, V. Soundarya and M. G. Raju
Department of Pharmacology, Gokaraju Rangaraju College of Pharmacy, Bachupally, Hyderabad, Telangana, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3843-49
3843-3849

Abstract | HTML Full Text | PDF | Citation

41. SYNTHESIS AND SCREENING N-(2, 4′-DIOXO-1, 2-DIHYDRO-3′H-SPIRO [INDOLE-3, 2′-[1,3]THIAZOLIDIN]-3′-YL)-2-HYDROXYBENZAMIDES FOR ANTI-BACTERIAL ACTIVITY

2849 489 0

A novel synthesis of N-(2, 4'-dioxo-1, 2-dihydro-3'H-spiro [indole-3, 2'-[1, 3] thiazolidin]-3'-yl)-2 -hydroxybenzamide derivatives were synthesized by cyclization of isatin hydrazones with thioglycolic acid. The synthesized compounds were characterized by spectral data (IR, 1H-NMR, Mass) and evaluated for antibacterial activity against various strains of bacteria at the concentrations of 200 µg/...

N. S. Devi *, B. Srinivas and M. Sarangapani
Medicinal Chemistry Division, University College of Pharmaceutical Sciences, Kakatiya University, Warangal, Telangana, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3850-55
3850-3855

Abstract | HTML Full Text | PDF | Citation

42. IN-VITRO ANTIDIABETIC ACTIVITY OF 2-(3,4-DIHYDROXYPHENYL)-3,5,7-TRIHYDROXY-4H-CHROMEN-4-ONE ISOLATED FROM THE METHANOLIC EXTRACT OF ANDROGRAPHIS ECHIOIDES LEAVES

1555 732 0

In the present study the 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxy-4H-chromen-4-one isolated from the methanolic extract of leaves of Andrographis echioides was studied for alpha-amylase and alpha-glucosidase inhibition using an in-vitro model. The isolation was done using column chromatography using gradient elution with different mobile phase. Structural elucidation was carried out on the basis...

S. Gurupriya *, L. Cathrine and P. Pratheema
P. G. and Research Department of Chemistry, Holy Cross College, Tiruchirappalli, Tamil Nadu, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3856-64
3856-3864

Abstract | HTML Full Text | PDF | Citation

43. QUALITY CONTROL, CHEMICAL COMPOSITION AND ANTIOXIDANT ACTIVITY OF SOME MARKETED PEPPERMINT OIL SAMPLES

3018 771 3

This work aimed to evaluate the quality of some commercial peppermint oil products available in the Egyptian market. Also, analysis of peppermint oil extracted from Mentha piperita L. leaves marketed in Egypt. Thus, quality control of both herb extracted and purchased oil products. Essential oils were analyzed using GC/MS, and the main ingredients of each peppermint oil sample were quantified. The...

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Department of Pharmacognosy, Faculty of Pharmacy, Damanhour University, Damanhour, Egypt.
DOI: 10.13040/IJPSR.0975-8232.10(8).3865-72
3865-3872

Abstract | HTML Full Text | PDF | Citation

44. FORMULATION AND IN-VITRO EVALUATION OF MUCOADHESION AND FLOATING MICROSPHERES OF ETODOLAC USING IONIC GELATION METHOD

1540 648 0

The purpose of this study is to formulation and evaluation of floating and mucoadhesion microspheres of etodolac using ionic gelation method. The floating and mucoadhesion microspheres were studied for micromeritic properties were found to be within limits. The percentage yield of floating microsphere formulation F1 to F6 and mucoadhesive microspheres M1 to M3 were in the range of 77.14 ± 0.64 to...

R. S. Sura
Department of Pharmacy, University of Technology, Osmania University, Hyderabad, Telangana, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3873-82
3873-3882

Abstract | HTML Full Text | PDF | Citation

45. PHYSICOCHEMICAL CHARACTERIZATION OF 99mTECHNITIUM – LUTEOLIN AS RADIOPHARMACEUTICAL PREPARATION FOR ANTIOXIDANT COMPOUND

1599 469 0

The objective of this study was to formulate luteolin with radioisotope Technetium-99m (99mTc) to be 99mTc-Luteolin as an antioxidant compound. After optimization, this radiopharmaceutical preparation should be examined for its physicochemical characteristics, such as radiochemical purity, stability, lipophilicity, protein plasma binding, electronic charge, and stability test. The formulation was ...

D. Ramdhani, M. E. Sriyani and R. Mustarichie *
Department of Pharmaceutical Analysis and Medicinal Chemistry, Faculty of Pharmacy, Universitas Padjadjaran, Sumedang, Indonesia.
3883-3890
DOI: 10.13040/IJPSR.0975-8232.10(8).3883-90

Abstract HTML Full Text PDF Citation

46. FORMULATION AND EVALUATION OF MOXIFLOXACIN MICROSPHERES IMPLANT FOR INTRA-PERIODONTAL POCKETS

1492 588 0

Periodontal disease is one of the most prevalent oral diseases is caused by the gram-negative bacterial infection of periodontal pocket identified by inflammation of subgingival plaque and degeneration of alveolar bones, teeth, dental cementum, and periodontal ligaments. 80% of American adult and more than 50% of the Indian community suffers from this chronic inflammatory infection depicting the s...

R. Maurya *, M. P. Singh and K. M. Kymonil
Department of Pharmaceutics, School of Pharmacy, Babu Banarasi Das University, Lucknow, Uttar Pradesh, India.
3891-3897
DOI: 10.13040/IJPSR.0975-8232.10(8).3891-97

Abstract HTML Full Text PDF Citation

47. PROTECTIVE ROLE OF HONEY AND ROYAL JELLY ON CISPLATIN INDUCED OXIDATIVE STRESS IN LIVER OF RAT

1370 515 2

Background: Cisplatin is active cytotoxic agents in the treatment of cancer and has many adverse side effects, including hepatotoxicity. Honey and royal jelly are natural products and having antioxidants properties. Aim of the study: To investigate the protective role of combined administration of honey and royal jelly against cisplatin-induced changes in biomarkers of oxidative stress in rat live...

B. B. Waykar * and Y. A. Alqadhi
Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India.
3898-3904
DOI: 10.13040/IJPSR.0975-8232.10(8).3898-04

Abstract HTML Full Text PDF Citation

48. FLAVONOIDS OF BOERHAVIA DIFFUSA – GC-MS ANALYSIS AND INHIBITORY ACTIVITY AGAINST PATHOGENIC MICROBES

1739 700 2

Boerhavia diffusa is a species of flowering plant in the four o'clock family, Boerhavia belongs to family Nyctaginaceae the plant holds the tremendous potential of medicinal value and has been traditionally used in various ailments like syphilis, leukoderma, blood disorders to name a few. The present study focuses on the GC-MS analysis of extracts of all the plant parts of B. diffusa which reveal...

R. Bhardwaj * and R. A. Sharma
Department of Botany, The IIS University, Jaipur, Rajasthan, India.
3905-3914
DOI: 10.13040/IJPSR.0975-8232.10(8).3905-14

Abstract HTML Full Text PDF Citation

49. EFFECT OF CO-ADMINISTRATION OF QUERCETIN ON GOAT INTESTINAL PERMEABILITY OF BERBERINE CHLORIDE

1677 543 0

The purpose of the present study was to explore the effect of co-administration of bioenhancer quercetin on membrane permeability of poorly permeable berberine chloride, on goat intestinal membrane model. The effect of co-administration of quercetin was investigated at 2, 6, and 10 mg concentrations. The study revealed a beneficial effect of low concentration of quercetin on % cumulative drug rele...

S. B. Narade * and Y. V. Pore
Department of Pharmaceutical Chemistry, Government College of
3915-3919

Pharmacy, Karad, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3915-19

Abstract | HTML Full Text | PDF | Citation

50. DESIGN AND IN-VITRO EVALUATION OF ANTI-AMOEBIC TABLETS ON COLON DRUG DELIVERY SYSTEM

1625 585 0

The present study aims to formulate colon targeted drug delivery of Metronidazole compression coated tablets by using different ratios of chitosan and pectin. Carbopol 934P coating is given for compression coated tablets which makes them able to release the drug at the pH of the colonic fluid. Core tablets of Metronidazole (400 mg) were prepared by using swellable and pH dependent polymers like ch...

R. Malshetty, M. M. Iqbal *, N. Fatima, T. Tadmale and R. Saraswat
Mesco College of Pharmacy, Mustaidpura, Hyderabad, Telangana, India.
3920-3927
DOI: 10.13040/IJPSR.0975-8232.10(8).3920-27

Abstract | HTML Full Text | PDF | Citation

51. A VALIDATED ANALYTICAL METHOD FOR QUANTIFICATION OF CRISABOROLE IN MATRICES BY UPLC-ESI-MS/MS

3251 795 0

The validated analytical method was applied for the estimation of Crisaborole in aqueous and human plasma with Crisaborole-D4 as an internal standard by using UPLC-ESI-MS/MS. The chromatographic separation was achieved with 10mM ammonium acetate buffer solution (pH- 4.5): Methanol, (10:90) (% v/v) using the Xterra C18, 100 × 4.6, 5µ. The total analysis time was 2 min, and the flow rate was set t...

T. M. Rao *, C. B. Reddy and P. S. Babu
Jawaharlal Nehru Technological University, Kakinada, Kakinada, Andhra Pradesh, India.
3928-3936
DOI: 10.13040/IJPSR.0975-8232.10(8).3928-36

Abstract | HTML Full Text | PDF | Citation

52. EXPLORING THE POTENTIAL EFFECTS OF AMARANTHUS TRICOLOR LEAVES IN DYSLIPIDEMIA AND DYSLIPIDEMIA INDUCED COMPLICATIONS IN RATS

1227 502 0

The present research work was considered to achieve preliminary phytochemical screening, acute oral toxicity, antioxidant activity, and to evaluate the antihyperlipidemic property of the aqueous and ethanolic extracts of leaves of Amaranthus tricolor. Antioxidant activities of the aqueous and ethanolic extracts of leaves of Amaranthus tricolor were investigated by Free Radical Scavenging Activity ...

L. Singh *, S. Kumar and N. A. Khan
Department of Pharmacology, Sanskar College of Pharmacy and Research, Ghaziabad, Uttar Pradesh, India.
3937-3945
DOI: 10.13040/IJPSR.0975-8232.10(8).3937-45

Abstract | HTML Full Text | PDF | Citation

53. EVALUATION OF ANTI-ULCER ACTIVITY OF ETHANOLIC EXTRACT OF OECOPHYLLA SMARADINA IN ALBINO RATS

1182 455 0

Objective: Oecophylla smaradina (Formicidae) is an ant evaluated for its variety of medicinal uses. The objective of this study to evaluate the anti-ulcer activity using albino rats. Methods: The albino rats of either sex were divided into four groups. Ethanolic extract of Oecophylla smaradina (EEOS) was tested in the dose of 200 and 400 mg/kg p.o. respectively against by pylorus ligation induced ...

P. Natarajan *, R. S. Singh and K. Balamurugan
Department of Pharmacy, Annamalai University, Chidambaram, Tamil Nadu, India.
3946-3950
DOI: 10.13040/IJPSR.0975-8232.10(8).3946-50

Abstract | HTML Full Text | PDF | Citation

54. PHYTOCHEMICAL SCREENING, ANTIOXIDANT AND ANTIDIABETIC EVALUATION OF LEAF EXTRACTS FROM DIOSPYROS BLANCOI A. DC.

2576 701 0

The objective of the study was to determine the phytochemicals present in the leaf extracts of Diospyros blancoi A. DC and to evaluate its antioxidant and antidiabetic activities. Qualitative phytochemical tests

were used to detect the presence of bioactive compounds present in leaf extracts of D. blancoi. Antioxidant activity was measured through diphenyl-1-picrylhydrazyl assay, and antidiabetic ...

M. T. Demetillo *, O. M. Nuñeza, M. M. Uy and W. T. P. S. K. Senarath
Department of Biology, Caraga State University, Butuan City, Philippines.
DOI: 10.13040/IJPSR.0975-8232.10(8).3951-56
3951-3956

Abstract | HTML Full Text | PDF | Citation

55. PRELIMINARY PHYTOCHEMICAL INVESTIGATIONS AND ANTIEPILEPTIC ACTIVITY OF TREMA ORIENTALIS (LINN.) EXTRACTS

1449 692 3

Objective: The antiepileptic potential of the petroleum ether (PETO) and methanolic extracts (METO) of the whole plant (roots, leaves, stem, and bark) of Trema orientalis (family: Ulmaceae) was evaluated using different experimental models of epilepsy in rats and mice. Materials and Methods: The anti-epileptic activity of the PETO and METO was evaluated using Picrotoxin, Isoniazid, and NMDA induce...

K. M. Geetha *, K. Vishnupriya, F. Jaferi and V. Murugan
Department of Pharmacology, College of Pharmaceutical Sciences, Dayananda Sagar University, Bangalore, Karnataka, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3957-62
3957-3962

Abstract | HTML Full Text | PDF | Citation

56. A NOVEL RP- HPLC METHOD FOR THE QUANTIFICATION OF CABOZANTINIB IN ACTIVE PHARMACEUTICAL INGREDIENTS AND PHARMACEUTICAL DOSAGE FORMS

2007 731 3

A simple, specific, accurate reversed-phase high performance liquid chromatographic method was developed for the quantification of Cabozantinib. Although extensive studies on Cabozantinib have been developed for determining Cabozantinib in human place and urine by LC-MS, studies on the pharmaceutically active ingredient and formulation are scarce. The effective separation was achieved through BDS ...

A. K. Kuna *, G. Saru and G. V. Radha
Department of Pharmaceutical Analysis, Gitam Institute of Pharmacy, Gitam University (Deemed to be University), Rushikonda, Visakhapatnam, Andhra Pradesh, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3963-69
3963-3969

Abstract | HTML Full Text | PDF | Citation

57. IN-VIVO PLATELET ANTI-AGGREGATION ACTIVITY OF CRUDE FUCOIDAN OF SARGASSUM POLYCYSTUM

1437 572 0

Platelet or thrombosis is one of the most important factors in blood clots formation. However, activation of platelet aggregation plays a significant role in homeostasis process, but in excess, it causes different cardiovascular diseases such as myocardial infarction, atherothrombosis disease, and coronary artery disease. To reduce the occurrence of these diseases, anti-platelet agents can be used...

B. A. Borang, Kusmardi, B. P. Priosoeryanto, D. R. Laksmitawati and S. Abdillah *
Department of Pharmacology, Faculty of Pharmacy, Universitas Pancasila, Jakarta, Indonesia.
DOI: 10.13040/IJPSR.0975-8232.10(8).3970-73
3970-3973

Abstract | HTML Full Text | PDF | Citation

58. MOLECULAR DETECTION OF β-LACTAMASE GENE [SHV] IN KLEBSIELLA PNEUMONIAE

3799 476 0

Klebsiella pneumoniae is a significant pathogen for nosocomial infections and quickly becomes the most prevalent beta-lactamases produced that are resistant to several antimicrobials. To comprehend deeper the condition of multidrug resistance [MDR]. Objectives: Our research was directed at identifying Klebsiella pneumoniae isolates containing shv β-lactamase gene and the relationship between them...

Z. O. Hamed * and A. A. Awni
Department of Clinical Pharmacology and Therapeutics, Baghdad College of Medical Sciences, Baghdad, Iraq.
DOI: 10.13040/IJPSR.0975-8232.10(8).3974-78
3974-3978

Abstract HTML Full Text PDF Citation

59. EFFICIENT GENOMIC DNA EXTRACTION AND MOLECULAR ANALYSIS OF MEDICINALLY RICH VALERIANA JATAMANSI DRY ROOTS — 1130 446 0

One of the major problems faced by the pharmaceutical industry is to maintain the quality and efficacy of herbal drugs due to the lack of purity of herbal raw materials. Furthermore, using traditional identification methods to identify the correct plant part needed for the preparation of herbal medicine can be difficult. Creating a novel system to assess the quality of a medicinal herb and to disc...

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Department of Biotechnology, KET's V. G. Vaze College of Science, Commerce and Arts, Mithagar Road, Mulund (E), Mumbai, Maharashtra, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3979-83
3979-3983

Abstract HTML Full Text PDF Citation

60. EVALUATION OF ANTIOXIDANT PARAMETERS OF MUKIA MADERASPATANA — 1151 445 0

The present study was an attempt to investigate the effect of extracts and fractions of Mukia maderaspatana on glycemia, lipid profile, lipoprotein level and antioxidant profile in STZ induced diabetic rats for 21 days. Diabetes was induced using streptozotocin (50 mg/kg i.p) and after the induction of diabetes the animals were given with MMEE (100 mg/kg, 200 mg/kg), MMCF (100 mg/kg) and MMBF (100...

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Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3984-88
3984-3988

Abstract HTML Full Text PDF Citation

61. DIURETIC ACTIVITY OF HYDROALCOHOLIC EXTRACT OF FRAGARIA ANANASSA FRUIT IN WISTAR ALBINO RATS — 1172 391 0

Fragaria ananassa fruit are small shrubs belonging to family rosaceae. Fragaria ananassa mainly contains anti-oxidants such as tocopherols, ascorbic acid and b-carotene which are effective against cancer, heart disease and cataracts. The focus of the study was toanalyze the diuretic activity of hydro alcoholic extract of Fragaria ananassa fruit in albino rats. Diuretic activity of hydroalcoholic (...

P. Lodhi, A. Maru *, A. Joshi, S. Malviya and A. Khatia
Modern Institute of Pharmaceutical Sciences, Gram Alwasa, Indore, Madhya Pradesh, India.
DOI: 10.13040/IJPSR.0975-8232.10(8).3989-92
3989-3992

Abstract HTML Full Text PDF Citation

IJPSR (2019), Volume 10, Issue 8 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 30 November 2018; received in revised form, 16 March 2019; accepted, 29 March 2019; published 01 August 2019

THE INFLUENCE OF ETHANOL EXTRACTS OF RAMBUTAN LEAVES (*NEPHELIUM LAPPACEUM* L.) AGAINST OBESITY AND INSULIN RESISTANCE IN RATS

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Keywords:

Obesity,
Insulin resistance,
Nephelium lappaceum L.

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ABSTRACT: Ethanol extracts of rambutan leaves have been investigated for their anti-diabetes properties using the glucose tolerance method as well as insulin deficiency through alloxan induction. This study aimed to further evaluate these properties in obese and insulin resistant animals. The rat models were feeding with foods high in carbohydrates, fats, and propylthiouracil. The animal models were divided into seven groups: normal group, the positive control group, rambutan leaf extract at doses of 17.5, 35, and 70 mg/kg b.w., and the orlistat and metformin groups. The parameters evaluated during therapy were body weight, food index, feces index, and blood glucose levels. The rambutan leaf ethanol extract at a dose of 17.5 mg/kg b.w. resulted in a decrease in body weight by 2.44% compared to the initial body weight and could also decrease appetite with the amount of food intake equal to 10.71 g compared with the positive test group at 12.49 g. The rats administered 35 mg/kg b.w. rambutan leaf ethanol extract excreted 6.29g of feces and exhibited a decreased organ and fat index in the liver, spleen, and perirenal fat. In the anti-diabetic test, the blood glucose level was increased 123 mg/dL, but diabetes mellitus and insulin resistance had not yet occurred following administration of 17.5 mg/kg bw rambutan leaf ethanol extract, although the blood glucose level was lower compared with the positive test group (93 mg/dL). In conclusion, the rambutan leaf ethanol extract was shown to decrease body weight and blood glucose levels in rats.

INTRODUCTION: The incidence of overweight and obesity is increasing rapidly in different parts of the world. Obesity has become an epidemic by contributing to 35% of pain and 15–20% of deaths in developed countries. Death is not always directly caused by obesity, but obesity can cause serious health problems that can result in a metabolic disorder; cardiovascular, kidney, and prothrombin issues; as well as an inflammatory response [1].

QUICK RESPONSE CODE

DOI:
10.13040/IJPSR.0975-8232.10(8).3672-78

The article can be accessed online on
www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(8).3672-78

According to the World Health Organization (2011), obesity is characterized as excessive or abnormal fat build-up that can impair health. Complex related etiology, *i.e.*, genetic factors, metabolism, living habits, eating habits, activities, and socio-cultural and economic factors, occur in people with obesity [2].

Diabetes mellitus is one complication that can arise as a result of obesity. Diabetes mellitus is a chronic disease that occurs when the pancreas is no longer able to produce insulin, or when the body cannot use the insulin that is produced. Insulin is a hormone produced by the pancreas that functions to allow glucose from the foods we eat to pass through the bloodstream into cells in the body to produce energy.

All carbohydrates are broken down into glucose in the blood, and insulin helps glucose enter cells [3]. The prevalence of obesity in the adult population worldwide in 2005 reached 400 million people [4,] and in 2011, the American Heart Association indicated that 12 million (16.3%) children in America aged 2-19 years are considered obese. In 2013, according to the Riset Kesehatan Dasar [5], the prevalence of obese male and female adults rose 19.7% and 32.9%, respectively. The global prevalence rate of diabetes mellitus in 2012 according to the International Diabetes Federation was considered to be 8.4% of the world's population. The high prevalence of degenerative diseases that include obesity and diabetes then was undertaken therapy or treatment that can help heal and maintenance of degenerative disease itself, both pharmacological and non-pharmacological. Recommended non-pharmacological therapy includes reducing calorie intake, increasing exercise, and weight loss of 5-10% of initial weight, while pharmacological therapy can be achieved with medicines such as orlistat and metformin [6].

The use of medicines such as phentermine, lorcaserin in combination with topiramate, phentermine, and diethylpropion, which are commonly used for anti-obesity pharmacological therapy, has been limited due to significant side effects. Side effects of the drug lorcaserin include headaches, constipation, dizziness, fatigue, and dry mouth. The mechanism of action of these drugs is to control appetite through the effects of serotonin, which causes a sense of satiety so the intake of nutrients is limited [7]. The risk of severe hypoglycemia in oral therapies, as well as insulin injection in the treatment of diabetes mellitus, is high. Due to the side effects of currently available drugs, research into plants to obtain traditional medicine has been undertaken as an alternative for obesity. One herb that has shown anti-obesity properties is the leaf rambutan (*Nephelium lappaceum* L.).

One previous study reported that the inhibition of IGF-1 in obese rats can reduce body weight [8]. Rambutan has also been tested to determine the influence of skin extract concentration on lipid and rambutan accumulation in the livers of obese mice [9] and rambutan extract has been proven to reduce levels of glucose in the blood [10]. Diabetes is considered an obesity-related disease because one of the causes of obesity is the metabolic disruption of carbohydrates or glucose in the blood. Based on the highest prevalence of degenerative diseases as well as the lack of alternative treatments for these diseases, we will develop of ethanol extracts of leaves of rambutan for degenerative diseases. This study aimed to determine the effect of ethanol extracts of rambutan leaves (*Nephelium lappaceum* L.) on blood glucose levels in rats.

MATERIALS AND METHODS:

Identification of Rambutan (*Nephelium lappaceum*) Leaves: The leaves of rambutan (*Nephelium lappaceum* L.) were obtained from Kalijati-Subang, Indonesia and determination of plants was conducted in the Herbarium Plant Taxonomy Laboratory, Department of Biological FMIPA, University of Padjadjaran, Jatinangor, Indonesia. The plant authentication number is no. 069/HB/02/2017.

Preparation of Ethanol Extract of *N. lappaceum*: A total of 2 kg of dried simplicia was macerated with 10 L of 96% ethanol for 3 × 24 h at room temperature. The macerate obtained was 5 L and concentrated using a rotary evaporator.

Animals: White Wistar rats aged 2-3 months and weighing 150-250 g (University of Padjajaran) were used in this study. Before animals were tested, firstly, animals were adapted to new cage environments including feeding. Animal experiments were conducted according to the Commission of the Ethics of Health Research Faculty of Medicine, the University of Padjajaran Bandung (No. 399/UN 6. C. 10/PN/2017).

Anti-Obesity Activity Test: *In-vivo* testing of rats was performed following induction with foods high in carbohydrates, fats, and propylthiouracil (PTU), with 29 days of treatment and observation [11]. The test animals were divided into six groups, with five rats per group. The groups were as follows: normal (negative control), the positive control comparison group, orlistat (10.8 mg/kg b.w.), and rambutan leaf extract at 17.5, 35, and 70 mg/kg b.w. Induction and therapy were performed simultaneously. The parameters observed during therapy were weight, food index, and feces index. At the end of the

experimental period, the animals were sacrificed, and organs (liver, kidneys, spleen, and testicles) and fats (retroperitoneal fat, perirenal fat, and epididymal fat) were weighed.

Anti-Diabetic Activity Test: An insulin resistance hanger model was induced in 30 rats divided into six groups: negative control, positive control, comparison group using metformin (45 mg/kg b.w.), and rambutan leaf extract at 17.5, 35, and 70 mg/kg b.w. All groups, except for the negative control group, were fed foods high in carbohydrates, fats, and PTU. Orlistat, a gastrointestinal lipase inhibitor, was used to produce a weight gain standard for the measurement of body weight, metformin was used to measure blood sugar levels, and the body weights and organ index of the rats were recorded daily.

Determination of Blood Glucose Levels: A total of 10 µl of serum was added to 1000 µl hexokinase reagent (glucose) and incubated at 37 °C for 5 min. Then, UV absorption was measured at 340 nm using a UV spectrophotometer (Microlab 300®)

Insulin Tolerance Test Constant Measurements (KTTI): On day 29 of the experimental period, insulin tolerance tests were performed. Testing was performed by administering insulin by intraperitoneal injection at 0.05 U/kg b.w. and was performed as many as five times every 15 min throughout 1 h. Measurement of blood glucose levels was conducted using Easy Touch®.

Statistical Analysis: All results obtained were analyzed for statistical significance using one-way analysis of variance (ANOVA). Data were expressed as mean ± standard error of the mean for triplicate determinations or a sample size of n = 4. $P<0.05$ was considered significant.

RESULTS: In this study, we tested obesity and insulin resistance by administering rambutan leaf ethanol extract (*N. lappaceum* L.) to obese mice induced with foods high in carbohydrates and fats. The obesity test parameters observed during therapy included measurement of weight, food, and feces indices, which were obtained by comparing the weights of food and feces daily with the weights at the end period of the induction. At the end of the experimental period, animals were sacrificed, and the organs (liver, kidney, spleen, and testicles) and fat (perirenal fat, retroperitoneal fat, and epididymal fat) were measured. In terms of insulin resistance parameters, blood glucose levels were measured on day 0 and 29. Measurement of the constant insulin tolerance test (KTTI) was performed at the end of the experimental period. KTTI indicates insulin sensitivity, with a low K value indicating low sensitivity and *vice versa* [12].

Analysis of Animal Body Weight During Phase Testing: All groups (except for the negative control group, which was given normal feed) were induced with high levels of carbohydrates, fats, and PTU for 29 days. Administration of the induction foods high in carbohydrates, fat, and PTU in combination with extracts of leaves of rambutan was conducted on several animal groups to determine the effect of the rambutan extract on body weight. Data obtained using ANOVA analysis are shown in **Table 1**.

TABLE 1: COMPARISON OF THE PERCENTAGE OF BODY WEIGHT OF EACH GROUP DURING THE TEST PHASE

Test group	Average weight index ± SD			
	T8	T15	T22	T29
Negative control	0.80±9.88	2.40±12.54	5.20±10.42$^{\#}$	4.60±11.12$^{\#}$
Positive control	1.40±3.91	10.20±3.42	12.80±2.04$^{\#\wedge}$	21.20±6.68$^{*\wedge}$
Rambutan leaf ethanol extract, 17.5 mg/kg b.w.	-1.20±3.91	0.60±5.22	-2.60±0.89$^{*\wedge\#}$	-2.80±3.42$^{\#}$
Rambutan leaf ethanol extract, 35 mg/kg b.w.	1.20±4.86	5.80±3.27	7.20±4.43	7.60±3.64$^{\#}$
Rambutan leaf ethanol extract, 70 mg/kg b.w.	3.60±2.70	2.80±2.95	-0.20±4.38$^{\#}$	7.00±9.22$^{\#}$
Orlistat, 10.8 mg/kg b.w.	3.80±1.30	7.80±4.20	5.29±3.11$^{\#}$	0.40±2.40$^{\#}$

* Significantly different than negative control ($P<0.05$). # Significantly different than positive control ($P<0.05$). ^ Significantly different than comparison control ($P<0.05$).

Analysis of the Test Weight of Feces: Analysis of feces weight was performed to determine the anti-obesity effect of rambutan leaf extract on the amount of feces. Our results indicate the percentage of feces from each test group **Table 2**, based on this observation, the mechanism of weight loss by rambutan extract was suggested by inhibition of fat absorption in adipose tissue. Index comparison of

the amount of feces is the percentage of feces compared to body weight.

Analysis of Organ and Fat Index Test: Further testing of the anti-obesity effects of the rambutan leaf extract with organ index parameters (liver, kidney, spleen, and testicles) and fat (perianal, retroperitoneal, and epididymal fat). Observation of the organ index including the liver, kidneys, spleen, testicles, and fat was performed to see the distribution of fat in the sample after the end of the therapy period (29 days). The liver, kidneys, spleen, and testicles were weighed and recorded. The organ index is the percentage of the ratio of organ weight to the body weight of the test animal. Data obtained using ANOVA analysis are shown in **Tables 3** and **4**.

Analysis of Reduced Blood Sugar Levels During Therapy: Blood glucose levels obtained in this study are shown in **Fig. 1**.

TABLE 2: EFFECT OF EXTRACT OF LEAVES OF HERBS AGAINST COMPARATIVE FECES WEIGHT

Test group	Average ± SD Feces index			
	T8	T15	T22	T29
Negative control	4.20±1.30^	3.80±1.30^	2.80±1.30^	3.40±1.14^
Positive control	2.00±1.22^	2.60±0.54^	2.40±1.51^	4.20±0.83^
Rambutan leaf ethanol extract, 17.5 mg/kg b.w.	3.80 ±1.30^	3.40±1.5^	3.60±1.67	4.60±1.51^
Rambutan leaf ethanol extract, 35 mg/kg b.w.	6.20±3.42#	6.80±3.11*#	5.20±3.70	6.20±1.64*#
Rambutan leaf ethanol extract, 70 mg/kg b.w.	5.20±1.78#^	4.40±1.34^	6.20±2.16*#	4.20±0.83^
Orlistat, 10.8 mg/kg b.w.	8.40±2.51*#	8.00±2.34*#	5.80±1.92*#	7.40±0.89*#

* Significantly different than negative control (P<0.05). # Significantly different than Positive control (P<0.05). ^ Significantly different than Comparison control (P<0.05).

TABLE 3: EFFECT OF RAMBUTAN LEAF EXTRACT ON ORGAN INDEX

Test group	Average ± SD Organ index			
	Testicle	Kidney	Liver	Spleen
Negative control	5.95±1.36	1.52±0.19	6.06±1.31#^	0.70±0.30#
Positive control	8.90±1.20	5.18±7.73	10.4±0.93*	1.40±0.39*
Rambutan leaf ethanol extract, 17.5 mg/kg b.w.	6.27±2.76	1.96±0.15	9.98±1.54*	0.75±0.39#
Rambutan leaf ethanol extract, 35 mg/kg b.w.	6.74±1.50	1.40±0.25	8.64±0.79*#	0.84±0.29
Rambutan leaf ethanol extract, 70 mg/kg b.w.	5.94±0.98	1.62±0.19	9.07±0.87*	1.28±0.29*
Orlistat, 10.8 mg/kg b.w.	6.52±1.45	1.54±0.18	8.82±0.82*	0.98±0.55

* Significantly different than negative control (P<0.05). # Significantly different than positive control (P<0.05). ^ Significantly different than comparison control (P<0.05).

TABLE 4: EFFECT OF RAMBUTAN LEAF EXTRACT ON FAT INDEX

Test group	Average ± SD Fat index		
	Perirenal fat	Retroperitoneal fat	Epididymal fat
Negative control	0.20±0.14#	0.80±0.64	0.62±0.61
Positive control	0.80±0.31*^	0.82±040	0.40±0.45
Rambutan leaf ethanol extract, 17.5 mg/kg b.w.	0.23±0.15#	0.90±0.22	0.78±0.40
Rambutan leaf ethanol extract, 35 mg/kg b.w.	0.26±0.15#	0.98±0.23	0.95±0.51
Rambutan leaf ethanol extract, 70 mg/kg b.w.	0.20±0.07#	1.16±0.64	0.68±0.82
Orlistat, 10.8 mg/kg b.w.	0.31±0.22#	1.07±0.71	0.96±0.73

* Significantly different than negative control (P<0.05). # Significantly different than positive control (P<0.05). ^ Significantly different than comparison control (P<0.05).

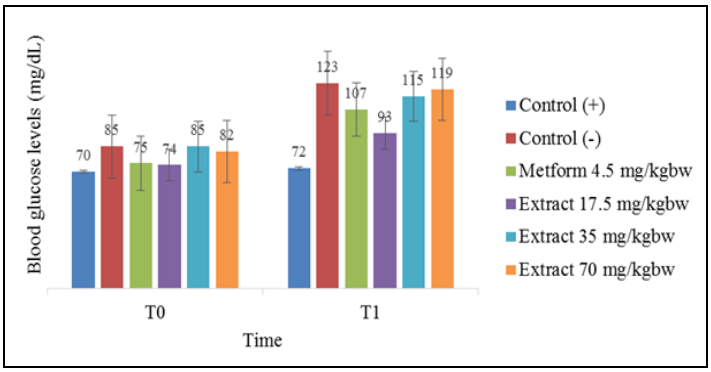

FIG. 1: REDUCED BLOOD SUGAR LEVELS DURING THERAPY

Constant Testing of Insulin Tolerance Test: This test was conducted in a preventive manner in rats induced with high-fat carbohydrate foods and PTU using different doses of rambutan leaf ethanol extract. Testing of insulin tolerance test constants (KTTI) was performed to determine whether the animal tested exhibited insulin resistance. In this study, insulin sensitivity was determined using the intraperitoneal insulin tolerance method. Blood glucose levels were measured every 15 min for 1 h following intraperitoneal administration of 0.05 U/kg bw insulin. The results of the insulin tolerance test are shown in **Table 5**.

Decreased Body Weight: We also measured overall body weight to determine the influence of body weight on blood glucose levels. Body weight data were statistically analyzed using ANOVA, and the results are shown in **Table 6**.

TABLE 5: KTTI MEASUREMENTS

Test group	KTII
Normal group	0.19±0.08*
Induction group	0.03±0.01
Metformin, 45 mg/kg b.w.	0.11±0.09*
Rambutan leaf ethanol extract, 17.5 mg/kg b.w.	0.09±0.06
Rambutan leaf ethanol extract, 35 mg/kg b.w.	0.05±0.02
Rambutan leaf ethanol extract, 70 mg/kg b.w.	0.06±0.05

*Significantly different from positive control (P<0.05).

TABLE 6: AVERAGE BODY WEIGHT (g)

Test group	Average ± SD body weight index				
	T0	T8	T15	T22	T29
Normal group	181.80±18.80	180.00±15.24	182.40±19.29	185.80±17.32	188.40±26.29
Inductio group	181.80±9.49	182.00±13.28	190.80±12.63	205.00±19.30	212.80±19.48
Metformin, 45 mg/kg b.w.	186.00±5.47	184.80±5.54	180.40±5.68	181.00±6.44	180.00±6.55*
Rambutan leaf ethanol extract, 17.5 mg/kg b.w.	196.60±37.17	191.80±34.47	196.20±39.09	193.20±42.25	188.60±27.98
Rambutan leaf ethanol extract, 35 mg/kg b.w.	174.17±15.44	178.33±16.24	178.33±16.24	187.50±18.64	186.83±20.77
Rambutan leaf ethanol extract, 70 mg/kg b.w.	197.25±18.78	196.25±19.61	188.57±20.37	196.25±19.61	198.75±21.54

*Significantly different from positive control (P<0.05).

DISCUSSION:

Analysis of Animal Body Weight During Phase Testing: Body weight was measured **Fig. 1** at the start of week 0, when animals (150-250 g) had not been induced. In the first week, body weight decreased, which was expected because the animals are adapting to the foods high in carbohydrates and fats. In week II, body weight increased in all groups, whereas in weeks III and IV, all groups except the positive control experienced weight loss. The positive control group experienced an increase in body weight of 21.45% of the initial weight, indicating the animals were obese, confirming successful induction.

ANOVA analysis with P<0.05 indicated that significant differences occurred at Time of 22 days and Time of 29 days. Multiple comparisons post-hoc Bonferroni analysis with P<0.05 revealed significant differences in the positive control at T22 and T29 compared with the negative control. Significant differences compared with the positive control were demonstrated by the negative control, rambutan leaf ethanol extract at 17.5, 35, and 70 mg/kg b.w. as well as comparators at T22 and T29. A significant difference was demonstrated by the positive control and rambutan leaf ethanol extract at 17.5 mg/kg b.w. at T22 and T29. This suggests that the rambutan leaf extract reduced overall body weight. Based on Duncan's homogenous subset analysis, the effective dose that can decrease the body weight of the test animals at day 29 is 17.5 mg/kg b.w because it is closest to the comparison.

Analysis of the Test Weight of Feces: From **Table 2**, it can be seen that the comparison group exhibited a meaningful difference compared with the positive and negative controls. The test dose of 17.5 mg/kg b.w. of 70 mg/kg b.w. also exhibited meaningful differences compared with the comparison, suggesting that at a test dose of 17.5 mg/kg b.w. and 70 mg/kg b.w. Index feces not in influence. With the test dose of 35 mg/kg b.w., there are meaningful differences compared with the positive and negative controls. Administration of orlistat at 10.8 mg/kg b.w. resulted in a large increase in feces compared with the normal and control groups.

ANOVA analysis with P<0.05 revealed a significant difference at T8, T15, T22, and T29. Based on post-hoc Bonferroni multiple comparisons analysis, a substantial difference with the negative controls was demonstrated by comparators at T8, T22, and T29; ethanol extract of 35 mg/kg b.w. of rambutan leaves at T15 and T29;

and rambutan leaf ethanol extract at 70 mg/kg b.w. at T22. Duncan's homogenous subset analysis showed that the effective dose showed by the ethanol extract of rambutan leaf group treated with 35 mg/kg b.w., it can increase the amount of fat expelled in the feces. This indicates that the rambutan leaf extract can affect the expenditure of fat released with feces but cannot significantly decrease the body weight of the test animal.

Analysis of Organ and Fat Index Test: ANOVA analysis with P<0.05 revealed a significant difference in the liver, spleen, and perirenal fat. Based on post-hoc Bonferroni multiple comparisons analysis, the significant difference of the liver compared with the negative control was shown by the positive control; ethanol extract of rambutan leaves at 17.5, 35, and 70 mg/kg b.w.; and the comparison. A significant difference in the liver compared with the positive control was indicated by the negative control, extract ethanol leaf rambutan at 17.5 mg/kg b.w., and the comparison. The negative control only indicated the difference in mean liver weight with the comparison.

In the spleen, significant differences with the positive control were demonstrated by the negative control and rambutan leaf ethanol extract at 17.5 and 70 mg/kg b.w. There was no significant difference in the spleen compared with the comparison group. In perirenal fat, a substantial difference with the negative control was demonstrated by the positive control. The negative control demonstrated a significant difference with the positive control; ethanol extract of rambutan leaves at 17.5, 35, and 70 mg/kg b.w.; and the comparison. The difference was significant with the correlation shown by the positive control. With Duncan's homogenous subset analysis, the effective dose for liver, spleen, and perirenal fat shown by rambutan leaf extract at 35 mg/kg b.w., which influence the distribution of fat in the liver, spleen, and perirenal fat, which means a dose of 35 mg/kg b.w. can effectively decrease the weight of the liver, spleen, and perirenal fat.

Analysis of Reduced Blood Sugar Levels During Therapy: Fig. 1 shows that during the 29 days of testing following induction with foods high in carbohydrates, fats, and PTU, all test groups had elevated blood glucose levels except the negative control group. The increase in blood glucose levels in the positive control group indicated that the research was successful. In the comparison group of metformin at a dose of 45 mg/kg bw, the ethanol extract groups of rambutan leave at 17.5, 35, and 70 mg/kg b.w. exhibited decreased blood glucose levels compared with the positive control group. A decrease in blood glucose levels in the comparison group with metformin therapy may be due to the presence of a metformin mechanism that can increase the insulin sensitivity of pancreatic β-cells [13]. The blood glucose data were statistically analyzed using ANOVA to determine significant differences between test groups.

Statistical analysis after 29 days showed a significant difference compared with the positive control with P<0.05 in the negative control group; metformin comparison group at 45 mg/kg b.w.; and the rambutan ethanol extract group at 17.5 mg/kg b.w. This indicates that both the metformin comparative arm and the rambutan ethanol extract test group decreased blood glucose levels, although these levels did not return to normal. In a previous study, rambutan leaf was shown to decrease blood glucose levels using an animal model of insulin deficiency with an alloxan inducer performed for 14 days [10].

Constant Testing of Insulin Tolerance Test: Table 5 indicates the state of insulin resistance that can be seen from the speed of insulin in lowering blood glucose levels. The rate at which insulin lowers blood glucose levels indicates the sensitivity of the tissue to insulin [14]. In the positive control group, decreased tissue sensitivity to insulin resulted in a reduced rate insulin-dependent lowering of blood glucose levels. This was marked by a significant difference in the negative control and metformin comparison group of 45 mg/kg bw to the positive control group with P<0.05, which indicated an improvement in tissue sensitivity to insulin. In the ethanol extract test group of rambutan leaves at 17.5, 35, and 70 mg/kg b.w. was not found insulin resistance.

Decreased Body Weights: Table 6 shows that in all test groups of ethanol extracts of rambutan leaves there was no significant difference compared with the positive control group, but at the Group's

benchmark dose of 45 mg metformin/kg bw, there is a significant difference towards the positive control group ($P<0.05$). It has been shown that metformin can also be used for sufferers of type 2 diabetes mellitus experiencing excess body weight (obesity).

CONCLUSION: Ethanol extracts of rambutan leaves (*N. lappaceum* L.) improve diabetes by reducing insulin resistance and decreasing glucose concentration. Additional studies will be important for the further analysis of this phenomenon.

ACKNOWLEDGEMENT: This project was supported by Research Grant of the Sekolah Tinggi Farmasi Bandung (Bandung School of Pharmacy) 2017.

CONFLICT OF INTEREST: The authors declare that there is no conflict of interest.

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How to cite this article:
Susilawati E, Sukmawati IK, Noranisa, Hayati NS and Aligita W: The influence of ethanol extracts of rambutan leaves (*Nephelium lappaceum* L.) against obesity and insulin resistance in rats. Int J Pharm Sci & Res 2019; 10(8): 3672-78. doi: 10.13040/IJPSR.0975-8232.10(8).3672-78.