Drug Resistance In Leishmania Parasites Consequences Molecular Mechanisms And Possible Treatments

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Drug Resistance In Leishmania Parasites

Buy Drug Resistance in Leishmania Parasites: Consequences, Molecular Mechanisms and Possible Treatments 2013 by Ponte-Sucre, Alicia, Diaz, Emilia, Padrón-Nieves, Maritza (ISBN: 9783709102381) from Amazon's Book Store. Everyday low prices and free delivery on eligible orders.

Drug Resistance in Leishmania Parasites: Consequences ...

Drug resistance is a fundamental factor in treatment failure in diseases like leishmaniasis, although additional factors also play a role in this phenomenon. This volume is the second edition of a well-received book that provides a comprehensive update on the pathology of the disease, as well as on the concept of parasitic drug resistance, its molecular basis, consequences and possible treatments.

Drug Resistance in Leishmania Parasites | SpringerLink

One of the main problems concerning therapeutic tools for the treatment of parasitic diseases, including leishmaniasis, is that some field parasites are naturally resistant to the classical drugs; additionally, current therapies may select parasites prone to be resistant to the applied drugs. These features are (at least partially) responsible for the disappointing persistence of the disease and resultant deaths worldwide.

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Although this class of drugs has been used for over 60 years for leishmaniasis treatment, it is only in the past 2 years that the mechanisms of action and resistance have been identified, related to drug metabolism, thiol metabolism, and drug efflux.

Drug Resistance in Leishmaniasis | Clinical Microbiology ...

This is now considered to be due to acquired resistance. Although this class of drugs has been used for over 60 years for leishmaniasis treatment, it is only in the past 2 years that the mechanisms of action and resistance have been identified, related to drug metabolism, thiol metabolism, and drug efflux.

Drug resistance in leishmaniasis

Shyam Sundar, an author on the study from the Institute of Medical Sciences of Banaras Hindu University, told SciDev.Net that the resistance of the leishmaniasis parasite, Leishmania donovani, to sodium stibogluconate — a common drug used to treat the disease — is widespread in India.

Leishmaniasis drug resistance mechanism exposed - SciDev ...

Drug resistance represents one of the main problems for the use of chemotherapy to treat leishmaniasis. Additionally, it could provide some advantages to Leishmania parasites, such as a higher capacity to survive in stress conditions. In this work, in mixed populations of Leishmania donovani parasites, we have analyzed whether experimentally resistant lines to one or two combined anti ...

Fitness of Leishmania donovani Parasites Resistant to Drug ...

It has been suggested that decreasing the intracellular thiol concentrations through thiol depletors may increase the leishmanicidal action of drugs and thus reverse parasite resistance . Overexpression of the membrane-bound ATP-binding cassette (ABC) transporters on the surfaces of leishmanias is another mechanism of antimonial resistance.

Drug Resistance in Visceral Leishmaniasis

Furthermore, the selection of resistant parasites carrying genetic mutations that lessen the parasite's response to drugs may emerge upon mass drug administration. Leishmania has an intricate life cycle, and one of the developmental forms, the amastigote, dwells within immunological cells of the mammalian host, which adds to the challenge of accessing the parasites with specific drugs.

Drug resistance and treatment failure in leishmaniasis: A ...

Overall, these results provide the first evidence that Leishmania parasites can acquire drug resistance that contributes to treatment failure in cutaneous leishmaniasis. They also indicate that Glucantime-resistant L. tropica isolates are now frequent in Iran. Additional work is needed to understand the nature of the resistance mechanisms, with the goal to improve diagnosis and treatment of resistant leishmaniasis.

Drug-Resistant Leishmania tropica Parasites Detected in ...

Drug susceptibility is defined as the response of a certain Leishmania strain/isolate to a standard drug under defined in vitro conditions, whereas drug sensitivity implies measuring the response of the strain/isolate to a standard drug in vivo using predefined doses, dose-schedules, and including pharmacokinetics and immune status of the host.

Evaluating drug resistance in visceral leishmaniasis: the ...

Drug Resistance in Leishmania Parasites: Consequences, Molecular Mechanisms and Possible Treatments eBook: Ponte-Sucre, Alicia, Diaz, Emilia, Padrón-Nieves, Maritza ...

Drug Resistance in Leishmania Parasites: Consequences ...

Resistance mechanisms highlighted in this review include: 1. Decrease of drug uptake because of the loss of a transporter required for uptake. This decrease contributes to resistance to arsenicals and diamidines in African trypanosomes. 2. The export of drugs from the parasite by P-glycoproteins and other traffic ATPases.

New mechanisms of drug resistance in parasitic protozoa

Common adaptations include: target enzyme mutations reducing interactions with the drug (antifolates in malaria); reduced drug uptake (diminazene aceturate in T. b. brucei or antimonials in L. donovani); up-regulation of a metabolic bypass (methotrexate in Leishmania); failing to activate a prodrug (nifurtimox in T. cruzi); increased drug efflux (chloroquine in malaria); and even the failure to produce the target (amphotericin B in Leishmania).

Drug resistance in protozoan parasites | Emerging Topics ...

In recent years, there has been an increase in Leishmania drug resistance and treatment failure. Scientists, including us, are searching for clues to better understand how these parasites survive...

A flesh-eating parasite carried by dogs is making its way ...

One of the main problems concerning therapeutic tools for the treatment of parasitic diseases, including leishmaniasis, is that some field parasites are naturally resistant to the classical drugs; additionally, current therapies may select parasites prone to be resistant to the applied drugs. These…

Drug Resistance in Leishmania Parasites on Apple Books

The protozoan parasite L. donovani resides inside macrophages as amastigotes and inflicts a potentially lethal disease visceral leishmaniasis (VL). Due to absence of a vaccine, chemotherapy with antimonials, amphotericin B, miltefosine or paromomycin remains the only option for treating VL.

The drug resistance mechanisms in Leishmania donovani are ...

Read "Drug Resistance in Leishmania Parasites Consequences, Molecular Mechanisms and Possible Treatments" by available from Rakuten Kobo. One of the main problems concerning therapeutic tools for the treatment of parasitic diseases, including leishmaniasis, ...

One of the main problems concerning therapeutic tools for the treatment of parasitic diseases, including leishmaniasis, is that some field parasites are naturally resistant to the classical drugs; additionally, current therapies may select parasites prone to be resistant to the applied drugs. These features are (at least partially) responsible for the disappointing persistence of the disease and resultant deaths worldwide. This book provides a comprehensive view of the pathology of the disease itself, and of parasitic drug resistance, its molecular basis, consequences and possible treatments. Scientists both from academic fields and from the industry involved in biomedical research and drug design, will find in this book a valuable and fundamental guide that conveys the knowledge needed to understand and to improve the success in combating this disease worldwide.

Leishmania parasites plague the mammalian host causing high morbidity and mortality. The parasites persist in the hostile milieu, crippling its defensive arsenal. In the face of mounting resistance to an antiquated drug arsenal, new approaches are urgently desired to keep the infection at bay. Furthermore, to strengthen the leishmaniasis elimination drive, particular emphasis has to be laid on identification of new targets and vaccination strategies. This book gives a brief glimpse of the epidemiology of leishmaniasis, immune evasion, vaccination, and therapeutic modalities that may work by untangling the immunological cross-wires of pathogenic cross-talk. The Conventional treatment and its drawbacks, the prospects of phytotherapy and nanomedicines, are also discussed. The identification of drug targets with the aim of designing inhibitors is also exemplified.

Molecular Advancements in Tropical Diseases Drug Discovery presents in-depth knowledge relating to the detection of infection, epidemiology, drugs against various tropical diseases, new target sites for drug discovery and multidrug resistance issues using bioinformatics tools and approaches. The book's chapters are written by experts in their respective fields so that each disease is covered in a rational manner and with a solid foundation on existing facts and prospective research ideas. Updates knowledge about tropical diseases with recent advancements in the field Presents an overview of new research covering detection, infection, epidemiology and risk factors of the most common tropical diseases using bioinformatics tools Encompasses a detailed description of developments in drug discovery, new drugs and their molecular mechanisms of action

Of all the parasitic diseases, leishmaniasis is one of the most diverse, with a variety of manifestations, from relatively minor cutaneous lesions to deadly visceral infections. It is also widespread, causing human disease in the Americas, Asia, Europe and Africa. The environments in which this disease occurs range from desert to tropical jungle to urban habitats. Not surprisingly, the literature on this disease is written in a variety of languages including Portuguese, Arabic, English and French among others. This book provides a synopsis in English of much of the recent research on leishmaniasis, with a focus on the epidemiology, diagnosis and treatment of the disease as described by researchers around the world, but with a focus on the research from Brazil and the Middle East.

Out of the 20 neglected tropical diseases (NTDs) prioritized by the World Health Organization, the leishmaniases rank in the top 3 among those caused by protozoa. The purpose of this book is to provide the reader with a comprehensive and updated overview of all the aspects of leishmaniasis with a worldwide perspective - authors of many chapters include eminent scientists from both the Old and New Worlds. The chapters cover a wide range of topics, classically organized into biology and epidemiology, followed by clinical and control aspects. Following an introductory chapter intended to take the reader into the leishmaniasis complexity, a chapter on Leishmania taxonomy reports on the most recent advances in molecular and phylogenetic data. Parasite biology is then described in detail by means of two separate chapters devoted to phlebotomine vectors and reservoir hosts, respectively. The medical part of the book begins with a chapter on basic immunology and immunopathology associated with Leishmania infection, followed by a classical chapter on clinical aspects of different disease entities. The complexity of disease case management is presented by means of 3 chapters, respectively on diagnosis, treatment of visceral forms and treatment of tegumentary forms. Finally, the last chapter deals with the available approaches to control leishmaniasis and related public health issues.

The two volumes included in Antimicrobial Drug Resistance, Second Edition is an updated, comprehensive and multidisciplinary reference covering the area of antimicrobial drug resistance in bacteria, fungi, viruses, and parasites from basic science, clinical, and epidemiological perspectives. This newly revised compendium reviews the most current research and development on drug resistance while still providing the information in the accessible format of the first edition. The first volume, Antimicrobial Drug Resistance: Mechanisms of Drug Resistance, is dedicated to the biological basis of drug resistance and effective avenues for drug development. With the emergence of more drug-resistant organisms, the approach to dealing with the drug resistance problem must include the research of different aspects of the mechanisms of bacterial resistance and the dissemination of resistance genes as well as research utilizing new genomic information. These approaches will permit the design of novel strategies to develop new antibiotics and preserve the effectiveness of those currently available. The second volume, Antimicrobial Drug Resistance: Clinical and Epidemiological Aspects, is devoted to the clinical aspects of drug resistance. Although there is evidence that restricted use of a specific antibiotic can be followed by a decrease in drug resistance to that agent, drug resistance control is not easily achieved. Thus, the infectious diseases physician requires input from the clinical microbiologist, antimicrobial stewardship personnel, and infection control specialist to make informed choices for the effective management of various strains of drug-resistant pathogens in individual patients. This 2-volume set is an important reference for students in microbiology, infectious diseases physicians, medical students, basic scientists, drug development researchers, microbiologists, epidemiologists, and public health practitioners.

A compendium of proven experimental approaches and strategies for studying the bioactivation, detoxification, tissue distribution, and elimination of xenobiotics in the metabolism and/or transport of various chemicals. The authors address several of the major drug metabolizing systems, including the cytochrome P450 family, flavin-containing monooxygenases, glutathione, S-transferase, glucuronidation, N-acetylation, and sulfotransferases. Additional chapters present novel approaches to the study of: signaling pathways in the regulation of drug metabolism enzymes, how the modulation of thiols and other low molecular-weight cofactors can alter drug metabolism, and how modulation of drug metabolism pathways can influence antiviral therapy.

Vectors and Vector-Borne Zoonotic Diseases is about a group of diseases that can infect humans and animals, and that are transmitted by vectors. These diseases are called vector-borne zoonotic diseases. This book is meant to be used by veterinarians, medical doctors, entomologists, and other experts, as well as students, animal owners, nature lovers, etc. The book has several sections: "Introduction," "Vectors", "Vector-Borne Diseases and Pathogens," and "Vector Control." Each of the sections concerns one stage of a vector-borne disease. Each group of authors has dedicated their work to one of the topics with key roles on pathogens or vectors that are of great public health interest in their country or region. In this book, the authors have tried to show which vectors and diseases are the most interesting, having in mind that their spreading represents a danger to health. With this book, we hope to broaden readers' knowledge by sharing experiences with vector-borne diseases,with the aim to upgrade the knowledge of general public health from a One Health perspective.

Leishmaniasis is a neglected tropical disease that is known to be transmitted by 90 different species of sandflies which carry 20 Leishmania species that cause human infection particularly in endemic countries. Pathogenesis, Treatment, and Prevention of Leishmaniasis aims to provide information on this vector-borne disease and explore strategies for diagnosis and treatment. The book begins with an overview of leishmaniasis which includes historical and future perspectives of the disease. It also discusses the clinical manifestation of the disease, mechanisms of infection, therapeutic strategies, diagnostics, prevention, and cure of Leishmania parasite. The book goes on to explain new insights and challenges in the development of promising drug targets, biomarkers identification and advance vaccination strategies against leishmaniasis. Chapter contributions brings together diverse areas of expertise making Pathogenesis, Treatment, and Prevention of Leishmaniasis aims to bring together elements of leishmaniasis into one place and be a valuable resource for researchers, health care professionals, and graduate students, working in the field of leishmaniasis. Provides an overview Leishmania and leishmanisis which include its history, transmission, clinical picture, and treatment Discusses novel approaches to study parasite infection and treatment Explores recent advances in the development of diagnostic kits, drug development and various vaccination strategies