

## Anti-infective potential of castor oil and ricinoleic acid against selected human-pathogenic bacteria

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Castor oil (CO) and Ricinoleic acid (RA) were evaluated for their anti-infective activity against four different human-pathogenic bacteria, employing the nematode worm *Caenorhabditis elegans* as a model host. *In vitro* assays to study interaction of these two items with test bacteria with respect to bacterial growth, quorum-regulated pigment production, biofilm formation, and few other clinically relevant traits were also performed.

CO and RA were procured from CDH and Sigma-Aldrich respectively. Methodology of the *in vitro* and *in vivo* assays was adopted from our previous publications (Joshi et al., 2019; Patel et al., 2019), which also contains details of the organisms used.

Results explaining effect of CO and RA are presented through Figures 1-15, which indicate CO and RA both to be capable of attenuating virulence of pathogenic bacteria. Latter exerted activity at concentrations much lesser than that of CO. While major observations are mentioned below, full details of this study can be seen in Biswas et al. (2018).

CO (0.5-2%v/v) could attenuate virulence of three of the test bacteria by 25-56%. It could enhance susceptibility of all the four pathogens to lysis in presence of human serum upto 20-39%. CO could eradicate pre-formed *P. aeruginosa* biofilm by 30%. Neither *P. aeruginosa* nor *S. aureus* could develop complete resistance to CO even after repeated exposure to this plant oil. CO was able to modulate quorum-regulated pigment production in all the three multidrug-resistant gram-negative bacteria used in this study. Antibiotic susceptibility of all the test pathogens was modulated upon CO-treatment.

RA (1-20 µg/mL) could attenuate virulence of all the three gram-negative pathogens by 4-63%. Even repeated exposure of *P. aeruginosa* or *S. marcescens* to RA did not induce complete resistance in these pathogens. Susceptibility of three of the test pathogens to lysis in presence of human serum was enhanced upon RA-treatment by 21-77%. Haemolytic potential of *P. aeruginosa* and *C. violaceum* was curbed upto 23-41% as a result of RA-pretreatment. Production of quorum-modulated pigment in all four test pathogens was modulated under influence of RA. Antibiotic susceptibility of all the four pathogens was also modulated as a result of RA-treatment.

As RA seemed to exert anti-pathogenic potential at concentrations lower than that of CO, and since it has been known to be a constituent of CO (Paul et al., 2016); RA can be said to be largely (not necessarily solely) responsible for the anti-infective potential of CO.

# Selected Papers On The Pathogenic Ricket

**Paul Weindling**



## **Selected Papers On The Pathogenic Ricket:**

**Selected Papers on the Pathogenic Rickettsiae** Nicholas Hahon, Rickettsiae comprise a group of paleomorph coccobacillary microorganisms that are now regarded as true bacteria Nicholas Hahon presents a collection of papers that deal exclusively with pathogenic rickettsiae The selected papers twenty nine in all and fully illustrated range from the sixteenth century to the modern era A number of the papers are classics in the field and several of the selections appear in English translation for the first time The editor provides a preface to each selection and his general introduction defines the subject matter surveys historical developments in the field and summarizes recent research The Publishers Weekly ,1968

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National Library of Medicine Current Catalog National Library of Medicine (U.S.),1965 Epidemics and Genocide in Eastern Europe, 1890-1945 Paul Weindling,2000 How did typhus come to be viewed as a Jewish disease and what was the connection between the anti typhus measures during the First World War and the Nazi gas chambers and other genocidal medical practices in the Second World War This powerful book provides valuable new insight into the history of German medicine in its reaction to the international fight against typhus and the perceived threat of epidemics from the East in the early part of this century Paul Weindling examines how German bacteriology became increasingly racialized and how it sought to eradicate the disease by the eradication of the perceived carriers Delousing became a key feature of Nazi preventive medicine during the Holocaust and gassing a favored means of eliminating typhus *Bibliography of Ticks and Tickborne Diseases* Harry Hoogstraal,1970 **Epidemic Disease and Human Understanding** Charles De Paolo,2006-02-24 For more than three thousand years of recorded history human beings have struggled to understand the epidemic the rapid spread of a contagious disease throughout a human population This book draws on an extensive list of primary texts to present a comprehensive history of epidemiological thought The book is primarily concerned with the human experience of epidemic disease and the various ways this experience has been conceptualized and communicated Part I examines ancient religious mythological and philosophical paradigms used to comprehend and interpret epidemic disease Following the ancient period perceptions changed epidemics were understood as natural phenomena rather than as instruments of divine purpose This transition is covered in Part II and illuminated by historical documents such as Thucydides description of the plague of Athens Systematic examination of biomedical phenomena which began in the seventeenth century and developed into modern medicine is the focus of Part III Finally Part IV considers the ways in which epidemic disease has been treated in various works of literature The discussion includes eyewitness accounts as well as such popular works of fiction as Sinclair Lewis Arrowsmith and Albert Camus The Plague In surveying human responses to endemic disease the book draws connections between three sub genres of epidemiological writing the encyclopedia the intellectual history and the biographical collection *American Book Publishing Record* ,1970 **Report of the 3d-4th**

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WHO library acquisitions ,1968 Includes List of periodicals in the World Health Organization Library      **Pathogenesis of Idiopathic Scoliosis** Masafumi Machida,Stuart L. Weinstein,Jean Dubousset,2018-02-23 This book provides comprehensive coverage of current topics in idiopathic scoliosis IS A three dimensional deformity of the spine the condition is characterized by lateral curvature combined with vertebral rotation The primary lesion however lies in the median sagittal plane taking the form of a lordosis Although the clinical manifestations of scoliosis have been well documented its cause and pathogenesis have not yet been determined Research into what causes IS has focused on the structural elements of the spine spinal musculature collagenous structures the endocrine system the central nervous system and genetics Results of these studies have brought about a new perception of IS epiphenomena but the main cause of IS remains unknown Recently several investigators have produced new hypotheses regarding the cause of IS using the developing techniques of genetics biochemistry and neurology This book is a review of the various causative factors thus far proposed for IS and an introduction to the directions in which research is heading to determine the primary cause of IS      *What's New in Endocrinology? (Vol II)* Jeff M. P. Holly,Sally Radovick,Marc R. Blackman ,Hubert Vaudry,2024-12-18 This special edition aims to highlight recent breakthroughs or advances new technologies or challenges in the field of endocrinology We together with the leadership team of Specialty Chief Editors have identified multiple areas of endocrinology where new discoveries were made recently which have led to new questions and challenges for the future With this special collection we hope to further explore the frontiers of endocrinology within and across specialties of endocrinology      **Journal of the American Medical Association** ,1917      **Bibliography of Agriculture with Subject Index** ,1982-10

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## **Table of Contents Selected Papers On The Pathogenic Ricket**

1. Understanding the eBook Selected Papers On The Pathogenic Ricket
  - The Rise of Digital Reading Selected Papers On The Pathogenic Ricket
  - Advantages of eBooks Over Traditional Books
2. Identifying Selected Papers On The Pathogenic Ricket
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Selected Papers On The Pathogenic Ricket
  - User-Friendly Interface
4. Exploring eBook Recommendations from Selected Papers On The Pathogenic Ricket
  - Personalized Recommendations
  - Selected Papers On The Pathogenic Ricket User Reviews and Ratings
  - Selected Papers On The Pathogenic Ricket and Bestseller Lists
5. Accessing Selected Papers On The Pathogenic Ricket Free and Paid eBooks
  - Selected Papers On The Pathogenic Ricket Public Domain eBooks
  - Selected Papers On The Pathogenic Ricket eBook Subscription Services
  - Selected Papers On The Pathogenic Ricket Budget-Friendly Options

6. Navigating Selected Papers On The Pathogenic Ricket eBook Formats
  - ePub, PDF, MOBI, and More
  - Selected Papers On The Pathogenic Ricket Compatibility with Devices
  - Selected Papers On The Pathogenic Ricket Enhanced eBook Features
7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Selected Papers On The Pathogenic Ricket
  - Highlighting and Note-Taking Selected Papers On The Pathogenic Ricket
  - Interactive Elements Selected Papers On The Pathogenic Ricket
8. Staying Engaged with Selected Papers On The Pathogenic Ricket
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Selected Papers On The Pathogenic Ricket
9. Balancing eBooks and Physical Books Selected Papers On The Pathogenic Ricket
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Selected Papers On The Pathogenic Ricket
10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
11. Cultivating a Reading Routine Selected Papers On The Pathogenic Ricket
  - Setting Reading Goals Selected Papers On The Pathogenic Ricket
  - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Selected Papers On The Pathogenic Ricket
  - Fact-Checking eBook Content of Selected Papers On The Pathogenic Ricket
  - Distinguishing Credible Sources
13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
  - Integration of Multimedia Elements

- Interactive and Gamified eBooks

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