

عنوان مقاله:

Comparison of Three Methods of Isolation of the Genus *Nocardia* from the Soil of Hospitals in Isfahan Province, Iran, and its Identification Based on Phenotypic and Molecular Methods

محل انتشار:

مجله دانشگاه علوم پزشکی کرمان, دوره 22, شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 11

نویسندگان:

Hossein Ali Rahdar - *M.Sc. Student, Department of Microbiology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran*

Davood Azadi - *Ph.D. Student, Department of Microbiology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran*

Abbas Daeinaser - *Infectious Disease Research Center, Isfahan University of Medical Sciences, Isfahan, Iran*

Hasan Shojaei - *Professor, Department of Microbiology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran*

خلاصه مقاله:

Background & Aims: *Nocardia* are gram-positive, aerobic, relative acid-fast, and opportunistic bacteria, and one of the causes of systematic infection around the world. The natural habitats of these bacteria are soil and dust. Hospitalized patients with immune deficiency are at high risk of transmission of opportunistic infection. Due to these facts and the complexities that exist in the isolation and identification of these bacteria, the identification and controlling of the environmental resources of *Nocardia* in order to prevent opportunistic diseases are essential in controlling such infections. The objective of this study was to determine an appropriate method for the isolation and identification of *Nocardia* from environmental sources in hospitals. **Methods:** A total of 30 soil samples were collected from hospitals in Isfahan, Iran, and studied using dilution serial method, paraffin baiting (McClung's carbon free broth with paraffin bait), and slip-buried method. Samples were incubated at 28 °C in all three methods. Then, polymerase chain reaction (PCR) which recognized a 596-bp fragment of the 16S rRNA gene was used to confirm the genus *Nocardia*. **Results:** From a total of 30 soil samples from hospitals in Isfahan Province, 11 *Nocardia* isolates (36%) were isolated through dilution serial method, 7 *Nocardia* isolates (23%) through paraffin baiting method, and 6 *Nocardia* isolates (20%) through slip-buried method. **Conclusion:** This study showed that there are some limitations in the use of paraffin baiting method due to the use of paraffin by some soil bacteria such as *Pseudomonas* and the competition between these bacteria and *Nocardia*, and lack of use of paraffin by all *Nocardia* species. Moreover, the slip-buried method was not suitable in this respect due to the sensitivity of some *Nocardia* species to the antibiotics used. Thus, since these two methods were not able to identify all *Nocardia* species in samples, the dilution serial method was identified as an appropriate method. Furthermore, due to the inactivity of some species of *Nocardia* and the long duration of other methods, molecular and phenotypic methods, as rapid methods, are of high importance in the detection and confirmation of these species.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1583355>

