

Research Staff Vacancy Advertisement

Project background

This is a three-year project revolving around the physiological and immunological profiling/characterisation of a rarely encountered but potentially fatal pathogen: *Rhinoctadiella mackenziei*. This dematiaceous (melanised) fungus causes phaeohyphomycosis, a cluster of clinical manifestations that ranges from the formation of subcutaneous modules to the development of fatal cerebral phaeohyphomycosis, as well as disseminated infection. Although rare compared with other fungal infections (e.g. cryptococcosis, candidiasis, aspergillosis), the incidence of *Rhinoctadiella*-associated phaeohyphomycosis seems to be on the rise, and is alarmingly associated not only with immunocompromised, but also with immunocompetent, individuals. Very little is known about the pathogenesis mechanisms employed by this fungus or the immune evasions mechanisms it uses to subvert host defenses. Furthermore, *R. mackenziei* intriguingly seems to be endemic to the Middle East, although there have been reports of a few sporadic cases outside this region, but all of which have originated in the Middle East. More so, metagenomic studies have identified putative virulence factors that suggest this organism's natural environment may be oil-polluted desert soil.

The objectives of this project are to:

1. explore the physiological and metabolic attributes that may explain the virulence basis of *R. mackenziei*
2. determine the antifungal drug susceptibility profile of a local isolate of *R. mackenziei*
3. measure upregulation and downregulation of key inflammatory markers in *in vitro*-based co-culture models with human microglia cell lines and (potentially) other relevant cell lines

Job requirements and details

1. Job title: Senior Research Assistant/Research Assistant
2. Salary: 600 Kuwaiti Dinars (KD) per month (Senior Research Assistant)/ 550 Kuwaiti Dinars (KD) per month (Research Assistant)
3. Duration: 36 months full-time (extension *may be* possible pending satisfactory performance and administrative processing)
4. Start date: **immediate**
5. Qualifications:
 - a) MSc (very good or equivalent) in Microbiology, Medical Microbiology, Mycology, Biological Sciences, Immunology, Biomedical Sciences, or closely related discipline
 - b) BSc (very good or equivalent) in Microbiology, Medical Microbiology, Mycology, Biological Sciences, Immunology, Biomedical Sciences, or closely related discipline

Note: preference will be given to graduates of Kuwait University and then to candidates with 3+ years' experience post-MSc

6. Essential expertise:
 - a) strong background in mammalian tissue culture (adherent cell lines and primary cells of murine/human origin)
 - b) strong background in fundamental molecular biology, serological, and biochemical techniques, including *but not limited to*: ELISA, Western blotting, qRT-PCR
 - c) strong background in routine cultivation of fungi
 - d) strong background in biosafety level 2 (BSL-2)/containment level 2 (CL2) working conditions

7. Desired/preferable expertise:
 - a) background in clinical/medical mycology and immunology
 - b) background in confocal laser scanning microscopy (CLSM)
 - c) familiarity with biosafety level 3 (BSL-3)/containment level 3 (CL3) working conditions

8. Duties and obligations:
 - a) To carry out tasks as outlined in the project's execution plan
 - b) To assist the PI in routine maintenance of the lab, including cataloguing of consumables and safety datasheets, receiving and cross-checking lab orders...etc
 - c) To assist in the supervision of undergraduate/postgraduate students when applicable

Interested applicants are invited to submit their CV and informal enquiries in the first instance to Dr Mohammed J. Haider at mohammed.haider@ku.edu.kw