rapid and applicable methods for Brucellosis diagnosis using validated test methods and standardized reagents. For the control of brucellosis at the national or local level, the buffered *Brucella* antigen tests (Boats), i.e. the Rose Bengal test (RBT) and the buffered plate agglutination test (BPAT), as well as the ELISA and the FPA, are suitable screening tests. Positive reactions should be retested using a suitable confirmatory and/or complementary strategy (OIE manual, 2009). The OIE reference standards are those against which all other standards are compared and calibrated. These reference standards are all available to national reference laboratories and should be used to establish secondary or national standards against which working standards can be prepared and used in the diagnostic laboratory for daily routine use. These sera have been developed and designated by the OIE as International Standard Sera. The use of these promotes international harmonisation of diagnostic testing and antigen standardisation.

Methods: Sudanese national standard antiserum equivalent to OIEISS was produced and standardised from naturally infected cows with a high titre of *Brucella* according to Veterinary laboratory agency-Webridge Laboratory methods (Hendry *et al.*, 1985) and OIE manual (OIE, 2009). Apanel of naturally infected cows sera were tested for *Brucella* Agglutinins by RBT, SAT and ELISA.The selected sera and OIEISS were titrated, tested and compared with previously mentioned serological tests.

Results: An sterile pooled high titre sera were successfully prepared. The serum was diluted perfectly with negative serum to match with the OIEISS titre which was 1000 IU.

Conclusion: This study was result in production of standardized National standard antiserum for the first time in Sudan, when checked locally using the appropriate methods of Veterinary laboratory agency-Webridge, but needs further quality control check in the specialist OIE reference laboratories.

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Identification of novel microRNA biomarkers of viral infection

P. Naraghi-Arani[1,*], S. Bavari[2], S. Gardner[1], C. Jaing[1], J. Thissen[1]

[1] *Lawrence Livermore National Laboratory, Livermore, CA, USA*
[2] *United States Army Medical Research Institute of Infectious Diseases, Fredrick, MD, USA*

Background: It has become clear in the recent years that predictive biomarkers are becoming an integral part of successful clinical management. Further, a lack of clear biomarkers has created a real challenge in licensing biodefense therapeutics and vaccines. The study presented seeks to develop tools for the discovery of new microRNA (miRNA) biomarkers for infectious diseases using advanced computational tools coupled with high density microarrays and animal test facilities to find novel miRNA markers of viral infection. The system is expected to be of utility to diagnostics and vaccine and therapeutics development.

Methods: Extant software developed for miRNA sequence mining coupled with supercomputers has been used to analyze the genomes of human, mouse, rhesus macaque, and all full-length viral genomes available to identify candidate miRNAs that may be of utility for detecting viral infections and other perturbances of normal metabolic function. These sequences are being incorporated into high density microarrays that will be used to assess miRNA expression responses from humans, rhesus macaques, and mice for any infectious agent. Initial tests will be conducted on healthy tissue and tissue infected with filoviruses to determine miRNA responses specific to filovirus infection. This system can also be used for any other viral infection as well as other metabolic disturbances not necessarily related to viral infection and for biomarker discovery related to therapeutics and vaccine efficacy testing. The research proposed also aims to apply, for the first time, an miRNA screening tool to discovery of miRNA biomarkers for filovirus infection.

Results: We have thus far identified 20442 viral pre-miRNA sequences, and 124292, 90054, and 104037 pre-miRNA sequences for humans, macaque, and mouse, respectively.

Conclusion: Given our preliminary results, we are confident that our experiments seeking to validate these predicted miRNAs will yield novel markers of infection.

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Procalcitonin as a diagnostic marker in differentiating bacterial from abacterial meningitis

H. El-Shamy[1,*], A. Abbass[1], Y. Omran[2], A. Amine[1]

[1] *High Institute of Public Health, Alexandria, Egypt*
[2] *Fever Hospital, Alexandria, Egypt*

Background: Clinical differentiation of bacterial and abacterial meningitis is difficult even for experienced clinician, and current laboratory tests cannot distinguish between them accurately and rapidly. Therefore, we aimed to study the role of Procalcitonin (PCT) in differentiating bacterial from abacterial meningitis.

Methods: Patients suspected of having meningitis admitted to Alexandria Fever Hospital were included in the study. CSF and blood samples were collected. CSF samples were subjected to microscopic examination, and culture. Blood samples were used to measure serum PCT level.

Results: Out of the 75 examined cases; equal percentages (42.7%) were definitely diagnosed as bacterial and abacterial meningitis cases. Elevated PCT level was found in (81.3%) of bacterial meningitis versus (9.4%) of abacterial meningitis. PCT was the least method of diagnosis to be affected by preadmission antibiotic intake. PCT serum level had a sensitivity of 80.6%, a specificity of 91.3%, a negative predictive value of 93.5%, and a positive predictive value of 75.0%.

Conclusion: Measurement of PCT blood level is a rapid, simple and specific test and may be recommended in the diagnosis of bacterial meningitis cases, especially those who received antibiotic therapy before hospitalization.

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