

# Editorial Highlights on Medical Microbiology

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## Editorial Note

Journal of Medical Microbiology and Diagnosis commemorates its decade long service to the scientific community by consistently publishing peer-reviewed articles and tracking the progress and significant advancements in the field of Microbiology. Ever since its inception in the year 2012, in addition to regular issue releases on a quarterly basis, this transdisciplinary journal is also releasing special issues and conference proceedings from time to time, thus comprehensively covering a wide range of topics and emerging challenges in Bacteriology, Clinical and Medical Diagnostics, Parasitology, Bacterial Infections. The journal focuses on application oriented research on Bacteriology, Clinical and Medical Diagnostics, Parasitology, Bacterial Infections. In this issue some of the recent and impactful research articles that were published by the journal will be discussed.

The frequency of fungal infections is considerably increased worldwide. This increasing is directly associated with the growing numbers of immune-compromised patients, the prolonged use of broad-spectrum antibiotics, and to the large use of invasive dispositive [1]. These opportunistic mycoses are commonly caused by the genus *Candida spp* and *Candida albicans* is undoubtedly the most frequently reported species in clinical diagnostic laboratories. It has been known for some time that *C. albicans* represents a 'complex' of genetically two different strains: *C. albicans* and *C. dubliniensis*. However, early work showed that species of the 'C. albicans complex' were more genotypically heterogeneous and can be divided into three groups/strains. In 1993, "*C. africana*" was described as a new biovariant of *C. albicans*. Discrimination between species of the 'C. albicans complex' needs the application of accurate and reliable tests demanding DNA analysis, such as DNA amplification by PCR with specific primers and DNA sequencing. In Tunisia, the global epidemiology of candidiasis is still unclear and useful data on *C. albicans*, *C. dubliniensis*, and *C. Africana* are scarce also adds to the misunderstanding of their impact on human pathology. In this study, we describe an essay to differentiate these three species which represent a daily challenge for the clinical diagnostic.

Cellular appliance has become one of the most crucial supplements of executive and communal life undoubtedly; it has made a tremendous impact on our lives in this rapidly changing world. It is used as a fundamental source of communication by affluent societies to low income earner [2]. Furthermore, people who are in hospitals as attendants are more frequent to diseases and their mobile phones are more susceptible to contamination as their hands are

contaminated because many people do not contemplate personal cleanliness and multiple users operate a single phone. This cross use of the phone by many users reveals it to a group of microorganisms. These organisms are ubiquitous and find their ways into the phones through the skin. This is inevitability that some bacteria are the part of normal flora of the skin. All microbiologists states that grouping of continuous handling by the phones creates a prime breeding ground for many microorganisms that are normally found on the skin. *Staphylococci*, particularly *Staphylococcus epidermidis* are members of the normal flora of the human skin, respiratory and gastrointestinal tracts.

*Staphylococcus aureus* is an important bacterial pathogen capable of causing a wide variety of infections in humans and animals [3]. It produces a spectrum of extracellular protein toxins and virulence factors viz., enterotoxins, proteinases, pore-forming hemolysins and leucocidin etc. which contribute to the pathogenicity of the organism in the host. The *Staphylococcal Enterotoxins* (SEs), being the emetic toxins, are the recognized agents of the staphylococcal food poisoning syndrome and may be involved in other type of infections with sequelae of shock in humans and animals. SEs act as pyrogens and Superantigens (SAGs) that stimulate non-specific T-cell proliferation by binding with high affinity to Major Histocompatibility Complex class II (MHC II) molecules on antigen-presenting cells. This binding exerts strong mitogenic activity on T-cells; thus, triggering an excessive TH1-cytokine response, characterized by IL-2, IFN- $\gamma$ , and TNF- $\beta$  production, leading to toxic shock.

These research articles published by the journal have immense relevance and significance in development and optimization of cost-effective and affordable thermal heater-cooler blocks; characterization of heterocyclic nitrate systems and accurate determination of salbutamol in pharmaceutical formulations and biological samples.

## References

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