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# MOLECULAR CHARACTERISTICS OF *TRICHOPHYTON RUBRUM* FROM STRAINS ISOLATED FROM IRAQI PATIENTS

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**ABSTRACT : Here in this paper, we are going to discuss about the Molecular characteristics *Trichophyton rubum* from strains isolated. We conducted the study in the Al-Dewaniyah General Hospital and found positivity of demrmatophytic characters in only 5 clinical samples out of 30 against the micro and macroscopic biochemical tests. Isolated colonies were found in white and brown color there in every surface. The colonies also shown a cottony texture and got changed in a powdery-granular colony after incubation of 3-7 days. Our microscopic experiment was appeared in single-celled. There we found the microconidia which are spherical shaped in clustered shape in each side of hyphae. During the formation of granular colonies, we also saw spiral hyphae and macroconidia, which shaped as multi-septate cigar. Biochemical analysis also showed positive result in case of urease. Utilizing the primers set of ITS1 and ITS4 the molecular identifications gets carried through the PCR protocol and for all isolates it makes a result of 700bp on the gel electrophoresis.**

***Key words :*** Molecular characteristics, *Trichophyton rubrum*, Iraq.

## INTRODUCTION

From thousands of health problems of world, skin infection caused by dermatophytes constitutes is one (Refai *et al*, 2013). Most etiological agents for dermatophytosis is trichophyton rubrumin case of human and animal (Dhieb *et al*, 2014; Nenoff *et al*, 2007). *T. rubrum* is responsible for tineas (pedis, corporis, unguiumcapitis) in case of human (Forobes *et al*, 1998). Hair, nail and skin infection is causes by *T. rubrum*. We performed combined microscopic examination *in vitro* cultural characteristic and as well as other biochemical tests to identify the dermatophytes (Ghojoghi *et al*, 2015). For similarities in dermatophyte species identification becomes complicated in morphological characters. High level scientific laboratory training is needed for this (Graser *et al*, 2008). For species and strain level we used molecular approaches to indentify the dermatophytes (Kanbe, 2008). Our aim was to investigate about conventional and molecular diagnosis of causative agents of dermatophytes and characterize the morpohological and molecular analysis for genes and species.

## MATERIALS AND METHODS

### Samples isolation

We collected 30 specimens from suspected patients such as: hair, nail frayed skin with dermatophytosis and kept them in supervision in dermatology department. The specimens were collected in stric closed tubes from November to December 2018. For further examination we transferred them is research laboratory center.

### Molecular identification of *T. rubrum* by conventional PCR

The genomic DNA of 24 dermatophytes disconnects from youthful parasitic states were extricated by utilizing a processor in nearness of fluid nitrogen. The measure of 6 µl of DNA arrangement was utilized as a layout in the accompanying PCR, examples were checked and evaluated on 2% agarose gel and by utilizing Nanodrop spectrophotometer. The PCR-intensified inward interpreted spacer (ITS) district of ribosomal DNA (rDNA) was performed with ground works ITS-1 forward (5'-ACGATAGGGACCGACGTTCC-3') and ITS-1 turn around (5'-CCCTACCTGATCCGAGGTCA-3') under the accompanying PCR conditions.

## RESULTS AND DISCUSSION

We treated the samples with 10% KOH test including the conventional laboratory identification and all the tests like macroscopic, microscopic, biochemical. Only 5 of the 30 samples showed positive results which is 16.67%. And