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Study of IL-8 response and molecular detection of *LAP1* and *LAP2* of *Trichophyton rubrum* in Skin Infection

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By

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Abstract

Samples of skin, hair, and nails were gathered to represent persons of various ages, races, and environments, were collected for the period between October 2021 and February 2022 from Al-Hussein Tacking Hospital and a private clinic under the supervision of doctors. A total (118) samples were examined, and dermatophytes were found in 80 of them, *Trichophyton rubrum* were found in 30 samples, species, (14 cutaneous, 9 hair and 7 nail isolates),With the collection of blood samples for each person infected with dermatophytes, and the separation of blood components from the serum for the purpose of the immunological study

Male injuries constituted 43 samples (53.75%) of the total, while female injuries constituted 37 (46.25%) of the total samples. This is in contrast to other types of ringworm where no significant differences were found, and it was (X^2 value = 82.306, not significant) (NS), with different age groups, which ranged. Between (5 months - 70 years) to classify ringworm cases, where the age group (5 months - 70 years) recorded the highest infection rate (26.66%) at a significant level ($P \leq 0.05$).

The Using clinical tests to diagnose cutaneous fungal infections, then the skin samples were examined in the laboratory and identified using hypothetical, microscopic and scientifically proven diagnostic procedures such as hair piercing test, urease test which gave a negative result and the dye production test on potato dextrose agar(PDA) medium which gave red dye Under a microscope the forming colonies were checked for white or granular white fungi as well as microscopic characteristics such small spherical conidia, examined the role of inflammatory interleukins-8 (IL-8) by evaluating their

immune responses by *T. rubrum* patients using ELISA. Blood samples from people infected with *T. rubrum* were immunoprecipitated for this purpose, and the outcomes were compared with those obtained from a control group. Interleukin-8 is statistically significantly increased P≤00.05 in patients with *T. rubrum* infection, in contrast to the control group, the highest value for infected individuals was 203.54 and the lowest was 0.65.

Molecular techniques based on polymerase chain reactions were used to identify *T.rubrum* isolated from dermatophytoses patients polymerase chain reaction (PCR), the study of some of the virulence factors of dermatophytes, such as adhesion, invasion, enzyme production analyst of protein, and development of a host response, led to the discovery of the virulence genes leucine aminopeptidase1 (*LAP1*) and leucine aminopeptidase2 (*LAP2*), which allow the fungi to penetrate host tissues, it is observed that there are no significant differences in the percentages of *T. rubrum* gene isolates at the 5% level of significance(P>= 0.05).