

## Expression of *Candida albicans* ALS 2 and ALS 9 Genes Isolated from Women with Vaginal Candidiasis by RT-PCR

Hossein Rahimi<sup>1</sup>, Shahla Roudbarmohammadi<sup>2\*</sup>, Reza Kachouei<sup>3</sup>, Maryam Roudbari<sup>4</sup>

- 1- M.Sc. Student, Department of Medical Mycology, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran
- 2- Assistant Professor, Department of Medical Mycology, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran
- 3- Assistant Professor, Department of Molecular Biology, Faculty of Medical Sciences, Baqiatallah University, Tehran, Iran
- 4- Ph.D. Candidate, Department of Medical Mycology, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran

\*Corresponding Address: P.O.Code: 1411713116, Department of Medical Mycology, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran  
Email: Sh.mohammadi@modares.ac.ir

Received: 11/Mar/2013, Accepted: 16/Nov/2013

### Abstract

**Objective:** Approximately three-fourths of women experience an episode of vaginal candidiasis. *Candida albicans* (*C. albicans*) is the etiological agent in over 80% of cases. *C. albicans* has numerous virulence factors such as the agglutinin-like sequence (ALS) genes which code the large glycoprotein family that has a role in the adherence of *Candida*. The present study aims to evaluate expressions of the ALS 2, 9 genes in *C. albicans* which have been isolated from vaginal candidiasis.

**Methods:** We collected 150 wet vaginal swabs from patients diagnosed with vaginal candidiasis. Samples were cultured on sabouraud dextrose and CHROMagar for morphological analysis. Then, DNA was extracted by glass bead and lysis buffer. We performed RFLP-PCR to confirm the presence of *C. albicans*. For investigation of semi-quantitative expression of ALS2 and ALS9 genes, we performed RT-PCR by using specific primers.

**Result:** From 55 clinical isolates of *C. albicans*, 36.36% expressed both the ALS2 and ALS9 genes. There were 23 (41.81%) isolates that expressed only the ALS2 gene and 21 (38.1%) expressed the ALS9 gene.

**Conclusion:** Expressions of the ALS9 (41.8%) and ALS 2 (38.1%) genes in *Candida* isolates may indicate that these genes play a critical role in adhesion and biofilm formation of vaginal infection. However the presence of both genes in 36.36% of the isolates suggests a positive role for these genes in augmentation of their activities.

**Keywords:** *Candida albicans*, Vaginal candidiasis, ALS gene

Modares Journal of Medical Sciences: *Pathobiology*, Vol 16, No 2, Summer 2013, Pages: 39-49





















