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TITLE

SEPTIN 14 EXPRESSION LEVEL IS CRITICAL FOR HUMAN SPERMATOGENESIS

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ABSTRACT

Septins are an evolutionary conserved group of GTP-binding and filament-forming proteins that have diverse cellular roles. An increasing body of data implicates the septin family in the pathogenesis of diverse states including cancers, neurodegeneration and male infertility. The objective of this study was to evaluate the expression pattern of Septin14 in testis tissue of azoospermic men in level of gene and protein. Testicular tissues (N=20) were obtained from biopsies of azoospermic men who underwent diagnostic testicular biopsy in Royan institute and were subdivided into two groups (TESE+) with positive result in testicular sperm extraction and (TESE-) with negative result in testicular sperm extraction each containing 10 patients. Total RNA and protein was extracted using trizol reagent. Septin expression level of gene and protein were assessed by real-time reverse transcription polymerase chain (RT-PCR) and western blot technique, respectively. The transcript levels of Septin 14 in testicular tissue specimens of azoospermic patients were analyzed by quantitative RT-PCR (Q-PCR) between TESE- and TESE+ patients. The mRNA expression of septin 14 was significantly lower ($p<0.05$) in TESE- group than TESE+ and septin 14 protein expression in the testis tissue was observed by western blot. Also the amount of protein was higher in TESE+ group in comparison with TESE- group. It could be concluded that Septin 14 expression level is critical for human spermatogenesis.

Key words: Septin 14, gene expression, Spermatogenesis, Male infertility

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