عنوان مقاله:

Diagnosis of genetic defects through parallel assessment of PLCζ and CAPZA۳ in infertile men with history of failed oocyte activation

محل انتشار:

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خلاصه مقاله:

Objective(s): Phospholipase C ζ (PLCζ) is considered as a nominee for sperm associated oocyte activating factors and is located back-to-back with CAPZA۳, an actin-capping protein controlling actin polymerization during spermiogenesis. They contain a common bidirectional promoter. The objective of this study was to identify individuals with parallel low expression of PLCζ and CAPZA۳ mRNA, in hope of detecting genetic defects in this bidirectional promoter. Materials and Methods: Semen samples were collected from ۲۴ fertile and ۵۹ infertile individuals with total failed, low and high fertilization rate post intra-cytoplasmic sperm injection (ICSI), as well as globozoospermic individuals.Expression of PLCζ and CAPZA۳ were assessed by Real time PCR. In addition, PLCζ was assessed by Western blot. Results: Significant correlations between PLCζ with CAPZA۳ and also between these two genes with fertilization were observed. Individuals with low fertilization presented significantly lower expression of these two genes. Low expression of PLCζ was also verified by Western analysis. Sequence analysis of bidirectional promoter of these two genes in an individual with parallel low expression of both PLCζ and CAPZA۳, revealed a mutation within the CAPZA۳ predicted promoter, known as human regulatory factor X۴ which is a testis-specific dimeric DNA-binding protein. In the opposite stand, in the same location, the mutation appears to be outside but in the vicinity of PLCζ, in a binding region predicate by Genomatix. Conclusion: Parallel assessment of CAPZA۳ with PLCζ at mRNA level in individuals with inability to induce oocyte activation may help researcher to identify genetic defects associated with

.failed fertilization

کلمات کلیدی:
CAPZA۳, Failed fertilization, ICSI, Mutation, PLCζ, Promoter

لینک ثابت مقاله در پایگاه سیویلیکا: