Thymosin -10 disrupts F-actin stress fiber and leads to apoptosis in human ovarian cancer cells

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To understand the molecular changes during ovarian cancer development, we profiled differentially expressed genes in five paired normal and cancer tissues of ovary. Among the genes that show differential expression, thymosin -10 expression was decreased in four out of five cancer tissues. The decreased level of expression was also confirmed by northern blotting analysis. To investigate its functional role in ovarian cancers, we constructed an adenovirus vector expressing thymosin -10 and infected ovarian cancer cell lines, PA-I and SKOV3. The infected cells showed disrupted F-actin stress fibers, markedly decreased cell growth, and a high rate of apoptosis. Thus, loss of thymosin -10 expression may contribute to the development of subset of ovarian cancers. Restoration of thymosin -10 expression may provide a new strategy for ovarian cancer treatment.