



Effects of tachyplesin on the morphology and ultrastructure of the human gastric carcinoma cell line BGC-823

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Abstract

AIM: To investigate the morphological and ultrastructural changes in the human gastric carcinoma cell line BGC-823 after being treated with tachyplesin.

METHODS: Tachyplesin was isolated from acid extracts of Chinese horseshoe crab (*Tachyplesus tridentatus*) hemocytes. BGC-823 cells and the cells treated with 2.0 $\mu\text{g/mL}$ tachyplesin were examined respectively with light microscope, scanning and transmission electron microscope.

RESULTS: BGC-823 cells had undergone restorative morpho-

logical and ultrastructural changes after being treated with 2.0 $\mu\text{g/mL}$ tachyplesin. The cells tended to be flat and spread, and their volume enlarged, nucleo-cytoplasmic ratio decreased, the shape of nucleus became relatively regular, the number and volume of nucleolus decreased, heterchromatin decreased while euchromatin increased, the number of mitochondria increased with their structure relatively consistent, Golgi apparatus turned to be typical, rough endoplasmic reticulum increased, polyribosome decreased, microvilli and filopodia reduced while lamellipodia increased.

CONCLUSION: Tachyplesin could change the malignant morphological and ultrastructural characteristics of human gastric carcinoma cells effectively and had certain effects on inducing differentiation of human gastric carcinoma cells.

Key words: Horseshoe crabs; Stomach neoplasms; Hemocytes/ultrastructure; Heterochromatin; Microscopy, electron; Tachyplesin

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