

Effects of a Regional Chinese Diet and Its Vitamin Supplementation on Proliferation of Human Esophageal Cancer Cell Lines¹

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Objective To study the effects of a local diet popular in Yanting region (YT diet) on the proliferation of two human cell lines (Eca-109 esophageal squamous cell carcinoma line and HL7702 normal liver epithelial cell line) in rats by a sero-physiological approach. **Methods** Male SD rats were divided into six groups and fed respectively with a conventional diet and the YT diet (one of the five experimental diets) supplemented with two vitamin mixtures (Mix.1: vitamins A, E, and folic acid; Mix.2: mix.1 plus riboflavin and vitamin C) at two different doses. On the 30th day, sera were collected from the rats and added into a medium for cell culture, with 10% FBS used as a serum control. The effects were assessed by MTT assay, DNA synthesis and flow cytometry assays. **Results** Compared with the control, the sera from rats fed with the YT diet significantly promoted the proliferation of Eca-109 cells, which was, however, reversed by the supplementation with two vitamin mixtures at high doses. Surprisingly, the same treatment produced contrary effects on HL7702 cells as compared with Eca-109 cells. **Conclusion** The sera from rats fed with the YT diet could promote the proliferation of human esophageal cancer cell line Eca-109, whereas the sera from those fed with the YT diet supplemented with vitamin mixtures might have inhibitory effects on the proliferation of Eca-109 cells.

Keywords: Diet; Esophageal cancer; Vitamin supplementation; Sero-physiology; Cell proliferation; Rats

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