Ultrastructural Changes of HL-60 Cell Line with Aescin by Using Transmission Electron Microscope

M. Kutlu [1], A. Demir [2], A. İşcan[3], İ.Ciğerci[2]

1 Anadolu University, Faculty of Science, Department of Biology, 26470, Eskişehir, TURKEY
2 Afyonkarahisar Kocatepe University, Faculty of Science, Department of Biology, 03200, Afyonkarahisar, TURKEY
3 Anadolu University, Plant, Drug and Scientific Research Center 26470, Eskişehir, TURKEY

hmkutlu@anadolu.edu.tr

Key Words: Aescin, HL60, TEM

Cancer takes the first place around the world of deadly illness. The known cancer theraphies arms to destroy the proliferating cancer cells using some cytotoxic agents. These cytotoxic agents are not specific for the cells but they begin the toxicity and have side- effects in all systems[1]. There are lots of strategies about drug-cell interactions. Cancer cells also produce lots of receptors and biomarkers. Using this properties, different types of cancer cells can be choosen and complex cytotoxic agents may be produced adaptive to these cells receptors.

Interaction of human promyelocytic leukemia HL60 cell line with using aescin ekstract were determined using TEM. They were deposit on Formvar-coated 200-300 mesh copper grids and dried. Cells were fixed with %2,5 glutaraldehyde in 0,1M phosphate buffer (pH:7,4) and left in phosphate buffered saline (PBS) overnight at +4ºC. After being embedded in Agar and stained in 2 % osmium tetroxide. Cells were dehydrated in graded ethanol. Then cells were embedded in EPON 812 epoxy. They were thin sectioned using a diamond knife to a maximum thickness of 100 nm. The sections were stained with lead citrate and uranyl acetate[2].

We postulated that, cancer cells with aescin extract of interaction was estimated. We aimed to investigate in cellular and ultrastructural levels if these particles were taken by cancer cells by endocytosis or not. At first stage, Cancer cells have more vitamin receptors than normal cells. Cancer cells with aescin as a saponin of interaction was displayed on TEM. Furthermore, Transmission Electron Microscope was used to determine ultrastructure of the cells.

1.Jagan M.R. Patlolla, JayadevRaju, Malisetty V. Swamy, and Chinthalapally V. Rao Mol Cancer Ther 2006;5(6). (June 2006) p1459-66.
2.Bozzola J.J, Russell D.L., Electron Microscopy(1999); p1-670.

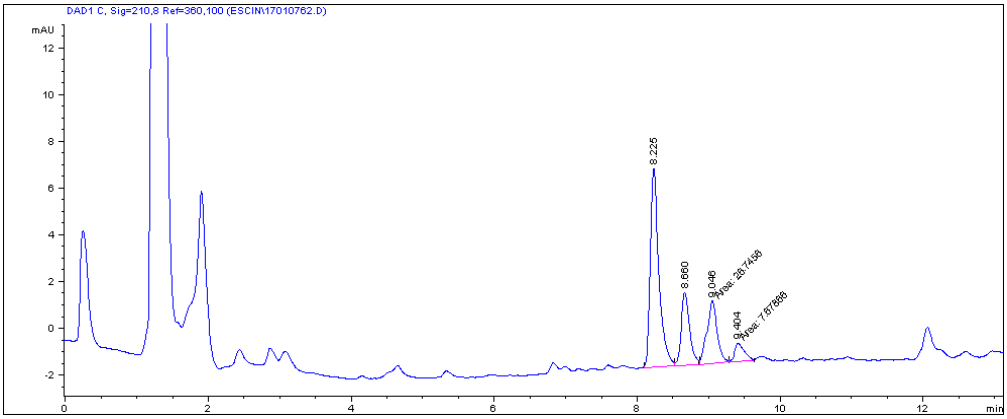

Table 1: Chromatography of horse chesnut extract (25 µg/ml)