Original Paper

Anti-proliferative and apoptotic effects of Lovastatin on K562 Erthromyloidy cancer cell line

Vaezi M (M.Sc)¹, Mohammadzadeh M (Ph.D)²*, Pazhang Y (Ph.D)²

¹M.Sc in Biochemistry, Department of Biology, Faculty of Sciences, Urmia University, Urmia, Iran.
²Assistant Professor, Department of Biology, Faculty of Sciences, Urmia University, Urmia, Iran.

Abstract

Background and Objective: Lovastatin is a HMG-CoA reductase inhibitor and used for the treatment of hypercholesterolemia. Inhibition of HMG-CoA reductase results in inhibiting the activity of the Ras proto-oncogene that has mutations in most cancers. This study was done to determine the Anti-proliferative and apoptotic effects of Lovastatin on K562 Erthromyloidy cancer cell line.

Methods: The K562 Erthromyloid cancer cell line were cultured and treated with different concentrations of lovastatin. Their antitumor effect on K562 cells were assessed via MTT assay after 72 hours. Hoechst (33342) staining and DNA electrophoresis were used for study of apoptosis.

Results: Lovastatin had antitumor effect on K562 Erthromyloid cancer cell line and this effect increased by increase of time and concentration. The maximum inhibitory effect was 59% in higher concentration (100 µM) and 72 hours after the treatment. Reduced cell growth at 24 and 48 hours after treatment was 24% and 43%, respectively. Lovastatin significantly inhibited K562 cell growth (P<0.05).

Conclusion: This study showed that lovastatin has antitumor effect on K562 Erthromyloid cancer cell line.

Keywords: K562 Erthromyloid cancer cell line, Lovastatin, Hoechst staining, DNA electrophoresis

*Corresponding Author: Mohammadzadeh M (Ph.D), E-mail: m.mohamadzade@urmia.ac.ir

Received 29 Jun 2016  Revised 29 Jan 2017  Accepted 19 Feb 2017