

## The Influence of Amygdalin on Glioblastoma Multiforme Cell Lines

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**Abstract :** Amygdalin is found in many fruit seeds, including apricot, peach, quince, apples, and almonds. Amygdalin (also named vitamin B17), as well as its sources, are commonly used as an alternative therapy or prevention of cancer. The potential activity of amygdalin is related to its enzymatic degradation to the hydrogen cyanide. Hydrogen cyanide is a toxic substance that causes liver and nerves damage, fever, coma or even death. Amygdalin is much better tolerated after intravenous than oral administration. The aim of this study was to examine the influence of amygdalin on glioblastoma multiforme cell lines. Three glioblastoma multiforme cell lines - U87MG, T98, LN18 were incubated (48 h) with amygdalin in concentrations 100, 250, 500, 1000 and 2000 µg/mL. The MTT (Thiazolyl Blue Tetrazolium Bromide) test and DNA binding test by [3H]-thymidine incorporation were used to determine the anti-proliferative activity of amygdalin. The secretion of metalloproteinases (MMP2 and MMP-9) from U87MG cells was estimated by gelatin zymography. The statistical analysis was performed using Statistica v. 13.0 software. The data was presented as a % of control. Amygdalin did not show significant inhibition of viability of all the glioblastoma cells in concentrations 100, 250, 500, 1000 µg/mL. In 2000 µg/mL there were significant differences compared to the control, but inhibition of viability was less than 20% (more than 80% of control). The average viability of U87MG cells was 92,0±4%, T98G: 85,8±3% and LN18: 94,7±2% of the control. There was no dose-response viability, and IC50 value was not recognized. DNA binding in U87MG cells was not inhibited (109,0±3 % of control). After treatment with amygdalin, we observed significantly increased secretion of MMP2 and MMP9 in U87MG cells (130,3±14% and 112,0±5% of control, respectively). Our results suggest that amygdalin has no anticancer activity in glioblastoma cell lines.

**Keywords :** amygdalin, anticancer, cell line, glioblastoma

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