**Purpose:** Natural products have been investigated for promising new leads in pharmaceutical development. The purpose of this study was to analyze the biological effect of GE132+Natural, a novel supplement consisting of 5 compounds: Resveratrol, Ganoderma lucidum, Sulforaphane, Lycopene and Royal jelly. Methods: The antiproliferative activity of GE132+Natural was tested on 3 different human cancer cell lines: MCF7 (breast cancer cells), PC3 (prostate cancer cells), and SW480 (colon cancer cells), as well as on EA.hy 926 (normal human endothelial cell line). In addition, the cytotoxicity of GE132+-Natural on the proliferation of primary human mesenchymal stem cells isolated from dental pulp (DP=MSC), along with its in vitro impact on different peripheral blood parameters, was determined.

**Results:** The results revealed high antiproliferative activity of GE132+Natural on all tested cancer cell lines (PC3, MCF7 and SW480), as well as on the EA.hy 926 endothelial cell line in a dose-dependent manner. However, applied in a wide range of concentrations GE132+Natural did not affect both the proliferation of primary mesenchymal stem cells and the peripheral blood cells counts.

**Conclusion:** The data obtained demonstrated that GE132+Natural is effective in inhibiting cancer cell proliferation, its potential beneficial health effects. In addition, the results pointed that adult mesenchymal stem cells might be valuable as a test system for evaluating the toxicity and efficacy of new medicines or chemicals.

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