Mitochondrial dysfunction in resveratrol-induced apoptosis in QGY-7701 cells

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ABSTRACT. This study aims to evaluate the cytotoxicity of resveratrol on QGY-7701 cells via a cell viability assay, and determine the cytological alterations and damages that result. Resveratrol was found to inhibit QGY-7701 cell growth and decrease their viability in a remarkably dose-dependent manner. Resveratrol exposure also induced an increase in Caspase-3 activity and a decrease in Bcl-2, which caused an increase in membrane permeability, and the opening of mitochondrial permeability transition pores and mitochondrial depolarization. Cellular ATP is thus exhausted, and apoptosis is induced via the change in mitochondrial membrane permeability and mitochondrial dysfunction.

Key words: Resveratrol; QGY-7701 cells; Mitochondrial dysfunction; Membrane permeability; Apoptosis