

Abstract

The Bcl-2 protein family consists of about 20 homologues important for stimulation and inhibition of apoptosis. The ratio between pro- and antiapoptotic regulators predetermines fate of the cells. Apoptosis is a physiological form of cell death which plays an important role in tissue development and maintenance of tissue homeostasis. By the apoptotic way are eliminated redundant cells and cells which can damage the organism. Cells undergo apoptosis through two major apoptotic pathways – the extrinsic or the intrinsic apoptotic pathway. Apoptotic cells are characterised by specific changes – nuclear, plasma membrane, mitochondrial etc. The contents of dead cells are packaged into apoptotic bodies. These are then recognized by macrophages and cleared by phagocytosis.

Dysregulation of apoptosis may lead to many malignant, autoimmune or degenerative diseases and some developmental defect. Understanding the mechanisms of apoptosis can be an important part of the diagnostics and therapy in oncology.