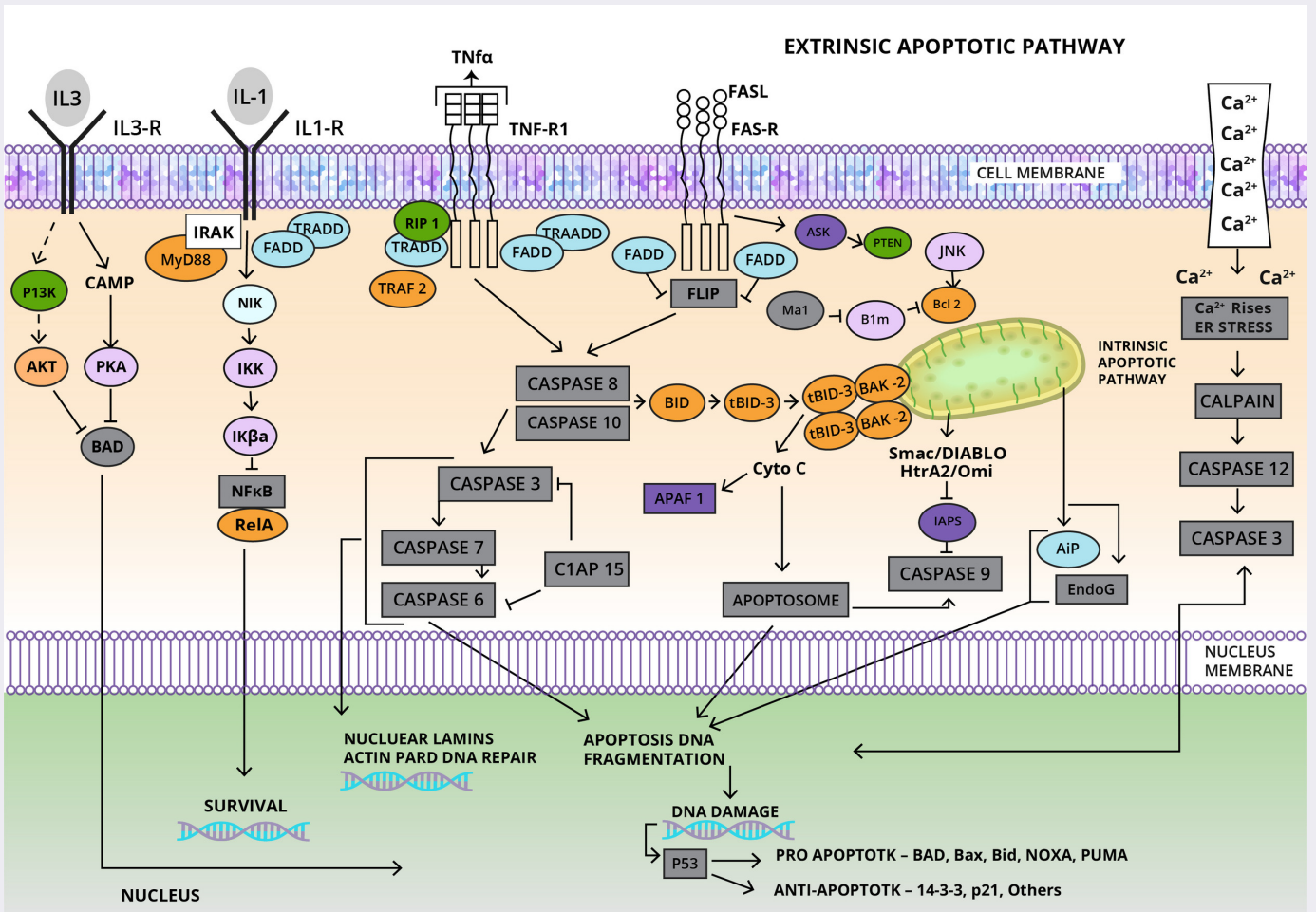


Cancer Pathways – Apoptosis Signaling

Apoptosis is the process of programmed cell death characterized by distinct morphological characteristics and energy-dependent biochemical mechanisms. Apoptosis is considered a vital component of processes including normal cell turnover, proper development and functioning of the immune system, hormone-dependent atrophy, embryonic development and chemical-induced cell death.

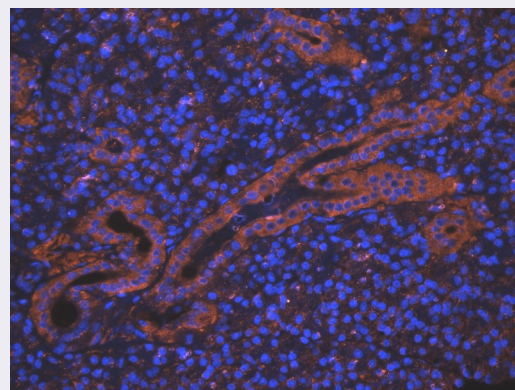
Apoptotic cells undergo morphological changes involving extensive plasma membrane blebbing followed by karyorrhexis. Apoptotic bodies are formed by separation of cell fragments during a process called “budding.” Apoptotic bodies consist of cytoplasm with tightly packed organelles with or without a nuclear fragment. The organelle integrity remains enclosed within an intact plasma membrane. These bodies are subsequently phagocytosed by macrophages, parenchymal cells, or neoplastic cells and degraded within phagolysosomes. There are three main types of biochemical changes observed in apoptosis: 1) Activation of caspases 2) Breakdown of DNA and protein and 3) Membrane changes and recognition by phagocytic cells.



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IF image of mouse lymph node tissue using anti-BCL2 (2.5 ug/ml) - orb10173

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orb154650	Cisplatin	Small Molecule
orb11024	ASK1/MAPKKK5	Antibody
orb419426	Z-VAD-FMK	Small Molecule
orb50135	Human Survivin	ELISA Kit
orb223930	Human TIGAR-TAT	Protein

Apoptosis Pathway References

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- Ichim, G. and Tait, S. W. G. A fate worse than death: apoptosis as an oncogenic process. *Nature Reviews Cancer*. (2016) 16 539-548 doi:10.1038/nrc.2016.58

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