

Some apoptosis notes

- Necrosis
 - Causes swelling of cell
 - Causes inflammation
 - Rupture of cell
- Apoptosis is neat, no inflammatory response, no rupture of cell.
- Autophagy- recycling of cell contents by the lysosomal pathway

Know the hallmarks of apoptosis- *on the slide*

Importance of calcium in apoptosis:

- It is a trigger; intracellular calcium increases the pro-apoptotic factor increase from the mitochondria, thus encouraging apoptosis
- For example cytochrome c is a pro-apoptotic factor

Apoptosis involves a family of proteins called caspases. In apoptosis a cascade of caspases is activated.

Once an imitator is activated, many executioner caspases can be activated by the cleaving of pre-domains which are then discarded.

BCL2 proteins are responsible for the intracellular activation of apoptosis. E.g. bax, bac

Note that the BCL2 family consists of both pro-apoptotic factors as well as anti-apoptotic factors—it is the balance between these that determine whether apoptosis will occur or not.

IAPs, BCL2 family and survival factors regulate apoptosis.

Survival factors work in 3 ways to increase survival/ suppress apoptosis:

1. Increase the production of anti-apoptotic BCL2 protein
2. Inactivate pro-apoptotic protein
3. Inactivate anti-IAPs