

Research & Services | Cell Cycle Regulation in Health and Disease (Yissum)

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Scientific Background

- The cell cycle is the series of events that take place within a cell leading to its division and duplication.
- Higher or lower proliferation rates of cell division lead to severe diseases - high rates may lead to cancer, large numbers of quiescent cells may lead to a functional deficiency that can cause diseases such as diabetes
- The ability to control the switch between proliferation and dormancy is the key to devising innovative ways to combat various diseases

Research Hub Goals and Activities

- Providing the appropriate scientific environment for graduate students through relevant courses and a forum in which to discuss their work and advances in the field
- To extend advancements in these fields to the public sector
- To promote research collaborations with industry bodies for the study and development of new diagnoses and treatments for diabetes and cancer
- To understand the ability to control the switch between proliferation and dormancy to devise innovative ways to combat the threat of Bacillus anthrax spores as a biological weapon
- To study the process of DNA replication in order to elucidate how unbalanced replication leads to one of the initial steps in cancer transformation

Hub Members and Focus

- Dr. Ittai Ben Porath – Studying the genes that promote the ability of breast cancer cells to grow and metastasize throughout the body, focusing on regulatory links between stem cells and cancer that control these processes
- Dr. Sigal Ben Yehuda - Investigating the sporulation process in the bacterium Bacillus subtilis
- Prof. Chaim Cedar - Epigenetic control of gene expression during normal development and in cancer
- Dr. Yuval Dor - Stem cells, proliferation and tissue dynamics in the pancreas, regenerative therapy for diabetes
- Dr. Asaf Hellman – Exploring inter-individual epigenetic polymorphisms in association with common human diseases
- Dr. Itamar Simon – Genomic regulation of normal and cancer cell proliferation
- Dr. Eitan Shaulian – The role of Jun in cancer transformation

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