

NAME OF LABORATORY: Cancer Prevention Research

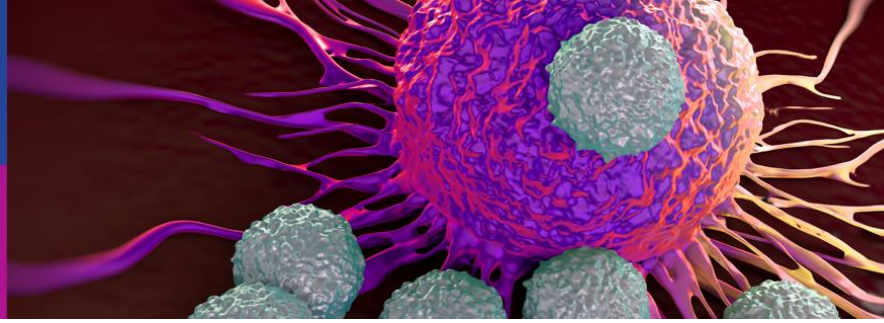
PI: Prof. Nadir Arber MD

Research Objectives: The Integrated Cancer Prevention Center (ICPC) has diverse and broad experience in translational research focused on early detection, prevention and therapy of cancer, particularly in tumors of the gastrointestinal (GI) tract but also other solid and hematology malignancies. The team is highly experienced in preclinical and clinical studies, molecular epidemiology, as well as in molecular and cell biology studies of cancer.

Main Research topics:

- **Early detection** – development of new methods for the early detection of GI tumors and in particular CRC and colorectal adenomas as well as other types of solid and hematological cancers. The tested samples taken from humans e.g. blood, urine and saliva.
- **Prevention** – Serving as the PI of several international, multicenter trials in the prevention of GI tumors, and in particular sporadic and familial CRC. Focusing mostly on NSAIDs, aspirin, COX-2 inhibitors and curcumin.
- **Molecular genetics** - Identifying new oncogenes and tumor suppressor genes that play a role in the multistep process of CRC carcinogenesis.
- **Treatment** - Our main molecule is CD24. We have proved that it is an important oncogene that can serve as a biomarker for early detection and surveillance, and target cancer treatment and cancer-related chronic inflammatory disorders such as, inflammatory bowel diseases (IBD). We engineered humanized anti-CD24 monoclonal antibodies, immunotoxins and other immunoconjugates. We also developed a natural compound; a combination of curcumin, selenium and green tea that is suitable for IBD therapy. Identifying a new polymorphism in the APC gene (I1307K) that is a global cancer risk (OR- 2.5) especially in Ashkenazi men, as well as (E1317Q), which is more common in Sephardic Jews and Arabs and is associated with a HR of ~4. When it is combined with another polymorphisms in the CD24 gene (V248A) the OR is 7.8. A fascinating novel out –side of the box therapy is based on Ras and Wnt pathways using gene therapy lethal agents and highly sophisticated viral vectors such as lentiviruses and adeno-associated viruses. Additional research topics in the laboratory deal with Atherosclerosis, wound healing, Alzheimer disease, obesity, fracture healing and ATN

Staff: Basic research takes place at the Laboratory of Molecular Biology. The laboratory contains lab manager, researchers, technicians, PhD students, MD in their basic science research and post-docs. The clinical part is covered by the research clinical team and physicians



Active Grants:

- **CBRC-** Oncology Research Grant
- **Djerassi-ELIAS-** oncology research grant
 - Israel Cancer Research Fund - ICRF
 - Israel Ministry of Trade and Industry - KAMIN Grant
 - Dotan, The Varda and Boaz Dotan research center in Hemato-Oncology, Tel-Aviv University
 - TRANSCAN, ERA-NET
 - The Industry Academy Programs of the Chief Scientist (OCS) Israeli Ministry of Industry and Trade

Collaborations:

- Prof. Robert Benamouzig,
- Dr. Ravid Doron,
- Prof. Uri Ashery,
- Sirion,
- Prof. Eitan Fridman,
- Prof. Noam Shomron,
- Prof. Anil Rustgi,
- Prof. Ajay Goel,
- Prof. Hanina Hibshoosh,
- Prof. Itai Benhar

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