

## **NAME OF LABORATORY:** The Research Center for Digestive Tract & Liver Diseases

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**PI:** Prof. Iris Dotan MD, PhD

**Research Director at the Division of Digestive Diseases:** Prof. Zamir Halpern MD

**Research Center Manager:** Dr. Chen Varol PhD

### **Research Objectives:**

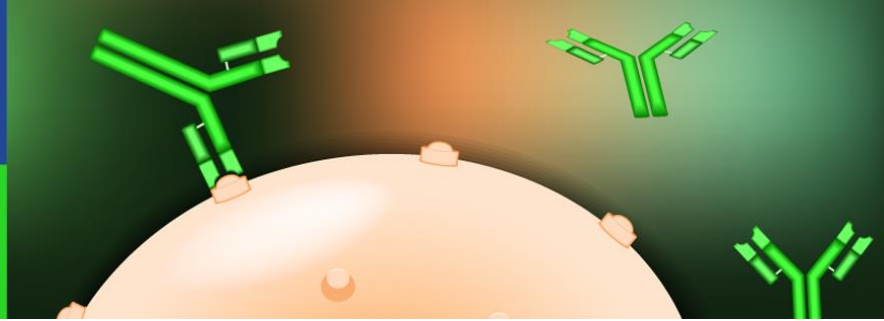
- Immune homeostatic responses in the intestinal mucosa. How does the intestinal epithelium respond to commensal flora (bacteria, fungi) and consequently activates the intestinal immune system.
- Identifying genetic, molecular, microbial, serologic, immune, nutritional and environmental factors associated with intestinal inflammation. Specifically, we focus on patients undergoing total proctocolectomy (pouch) and those with early inflammatory bowel disease
- Data and tissue collection in a longitudinally and multidisciplinary approach, in order to gain meaningful and clinically relevant information regarding inflammatory pathways and ways to modify/manipulate them so that IBD can be prevented, better treated, and even cured
- Mechanistic understanding of response to biologic therapies. Specifically: clearance, immune recognition, tolerance and loss of tolerance.
- Nutritional modification of intestinal inflammation.

### **Main Research topics:**

- Identifying the immunological milieu of the healthy pouch (compared to the healthy intestine); Mechanistic studies of intestinal inflammation in the inflamed pouch.
- Intestinal epithelial cells (IECs) as antigen presenting cells: Response to commensal and pathogenic microbiota and fungi in the healthy and inflamed intestine.
- Molecular regulatory pathways: miRNA processing, mRNA expression and epigenetic changes in the inflamed intestine and how these influences disease progression.
- Deciphering Dual Oxidase 2 dual role in promoting intestinal homeostasis and advancing immune responses in the inflamed intestine.
- Response and loss of response to biologic therapy of IBD.

### **Staff:**

- Keren Rabinowitz PhD – Senior Scientist
- Sarit Cohen-Kedar PhD – Senior Scientist
- Hadas Sherman-Horev PhD – Senior Scientist
- Hofit Elad MSc – Technician researcher
- Sarit Hoffman PhD student (in collaboration with Nitsan Maharshak, MD)
- Lihi Godny- PhD student, Nutrition



- Inbar Cohen- PhD student, Social worker
- Yochanan Peled PhD Technician
- IBD Center researchers

#### Active Grants:

- Leona M. and Harry B. Helmsley charitable trust: Pouchitis, a key to understanding Crohn's disease.
- Leona M. and Harry B. Helmsley charitable trust: Understanding the Pathogenesis of Crohn's Disease: Predicting Disease Behavior and Response to Therapy.
- J-C Health Care Ltd Infliximab individualized dosing using a pharmacokinetic-based algorithm and therapeutic drug monitoring in Inflammatory Bowel disease patients.
- Abbott Medical Laboratories Adalimumab for the management of postoperative Crohn's disease (Dr. Scapa, Dr. Maharshak, Prof. Dotan).

#### Collaborations:

##### IIRN- The Israeli IBD Research Nucleus:

- Shaare Zedek Medical Center, Jerusalem – Prof. Dan Turner
- Soroka Medical Center, Beer Sheva – Prof. Shmuel Odes, Dr. Doron Schwartz
- Sheba Academic Medical Center, Ramat Gen – Prof. Rami Elyakim, Prof Shomron Ben-Horin, Dr. Uri Kopylov
- Rambam Health Care Campus, Haifa – Prof. Yehuda Chowers
- Technion, Haifa – Dr. Shai Shen-Orr
  
- Tel Aviv University, Prof. Uri Gophna
- Wolfson Medical Center, Holon, Prof. Arye Levine
- Tel Aviv University, Dr. Vered Padler Karavani
- Hopital St. Antoine, Paris, France, Prof. Harry Sokol
- Gemelli Medical Center, Rome, Italy, Dr. Franco Scaldaferi
- Mount Sinai School of Medicine, NY, USA, Dr. Jeremiah Faith, Prof. Jean-Frederic Colombel
- UCLA Geffen School of Medicine, CA, USA-Prof. Jon Braun
- Mount Sinai Medical Center, Toronto, Canada-Prof. Mark Silverberg, Prof. Ken Croituro
- St. Vincent's Hospital, Melbourne, Australia, Prof. Michael Kamm

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