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BIOGRAPHICAL SKETCH

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NAME: **Eithan Galun**

eRA COMMONS USER NAME: GALUN@HMO

POSITION TITLE: Professor of Gene and Cell Therapy

EDUCATION/TRAINING

| INSTITUTION AND LOCATION | DEGREE | Completion Date | FIELD OF STUDY |
| --- | --- | --- | --- |
| Tel Aviv University | M.D. | 1972-1979 | Medicine |
| Hebrew University | Board | 1983-1986 | Internal Medicine |
| Hebrew University | - | 1986-1989 | Hepatology |
| Harvard Medical School | - | 1989-1991 | Fellowship Hepatology |

# A. Personal Statement

I am a Full Professor of Gene and Cell Therapy at the Hebrew University of Jerusalem in Israel. I directed the Gene and Cell Therapy Institute at the Hadassah Hebrew University Hospital for 23 years, which I established in 1998. This entailed the collection of funding for the building of the Institute during the initial stage and recruiting and funding all of the research activities from grant money, collaborations with industry and fundraising. Today, we are 10 research groups, with 70 investigators. In addition to the research groups, I established a GMP-level production facility with four clean rooms engaged in the production of biological materials, including viral vectors, devices, therapeutic cells, e.g., mesenchymal stem cells and human embryonic stem cells, administered to humans in phase I/II studies.

Major achievements in my recent academic career: My achievements are concentrated in the field of translational medicine and include: 1. Development of hepatitis B and C virus monoclonal antibodies that progressed into phase II clinical studies, and the development of the Trimera HBV and HCV mouse models to assess the anti-viral effects of these antibodies. 2. Understanding the molecular and cellular factors that play a role in the biological axis of liver inflammation towards regeneration for hepatocellular cancer. 3. Development of novel gene therapy platforms, e.g., the usage of ultrafast infrared femtosecond laser for dermal, muscle and retinal naked DNA transfection.

Current research interests: Our group investigated the role of inflammatory factors contributing to liver regeneration upon infection. While investigating these factors along the years, we learned that the IL6-gp130 pathway is pivotal for the regeneration of liver parenchyma. This understanding further engaged us in studies aimed at translating the knowledge generated to determine the role of IL6-gp130 in the regeneration and anti-apoptosis in other tissues. Our current data show that this pathway is involved in the protection and regeneration of the kidney, heart, bone marrow stem cells and the salivary gland. In the recent years we have also been investigating the significance of microRNAs in the regulation of physiological and pathological human conditions by studying mouse models. These have revealed some astonishing results. One is the role of miR 122 in controlling lipid metabolism, influencing anemia development and encountering anti-tumor properties.

Translational research: Our researchers at the Institute and I, in particular, are believers in translational investigation. During recent years, I have been involved in a number of programs and these include: 1. Development of a novel therapy for pancreatic cancer based on siRNA targeting K-Ras (I established a company around this technology called Silenseed); 2. Development of FIV as a novel lentiviral vector for gene therapy. 3. Identification of new therapeutic targets for liver cancer. 4. Development of novel imaging technologies for the identification of liver pathology, tools that were further used in our program on liver inflammation for regeneration of hepatocellular cancer.

Director of the Hadassah Biologicals Production Site (Good Manufacturing Production, GMP): I established the Hadassah GMP facility for biologicals in 1997. Since its creation, we have produced 50 different 1st in man products. These were either our products of the Gene and Cell Therapy Institute, or from the hospital or collaborations with outside investigators and companies. This year, we reached an unprecedented achievement: We are the only worldwide academic facility that received a phase 3 license from the Israeli government’s Ministry of Health to produce a therapy. This product, Motixafortide is approved by the FDA and is now on the market for stem cell mobilization. In addition, it is in phase 2-3 development in first-line pancreatic cancer (PDAC) as presented at ASCO 2025 Annual Meeting.

**B.** **Positions and Honors**

**Internships and Residencies**

1978-1979 Internship, Hadassah University Hospital

1983-1988 Residency, Department of Internal Medicine A, Hadassah University Hospital, Jerusalem

1988-1989 Chief Resident, Internal Medicine, Hadassah University Hospital, Jerusalem

**Research Fellowships**

1981-1983 Heller Institute of Physiology, Tel Hashomer Hospital

1986-1987 Research Fellow, Weizmann Institute of Science, Rehovot

1989-1991 Molecular Hepatology Laboratory and MGH Cancer Center, Harvard Medical School

**Academic Appointments**

1985-1988 Instructor in Medicine, The Hebrew University, Jerusalem

1988-1991 Lecturer in Medicine, The Hebrew University, Jerusalem

1991-1999 Senior Lecturer in Medicine, The Hebrew University, Jerusalem

1. Director, Goldyne Savad Gene and Cell Therapy Institute, Hadassah University Hospital
   1. Associate Professor of Medicine, Hebrew University, Jerusalem
2. Full Professor of Gene Therapy, Hebrew University, Jerusalem

2009 Visiting Professor, University of Eppendorf, Hamburg

2020 Member of The Israeli National Academy for Science in Medicine

**Awards**

1987 Outstanding Lecturer in Internal Medicine, The Hebrew University, Jerusalem

1989 Rothschild Fellowship Award

1990 Henry Leon Weiler Fellowship Award

1992 Naftali Foundation Award

2000 Chair, Sam and Ellie Fishman Chair in Gene Therapy

2008 Elkales Medicine Prize

2010 Raskin – Exiqon (USA/Denmark)

2011, 2013 Wolfson Family (UK)

2013 Wohl Foundation (UK)

2014 Selma Kron Trust A (USA)

2015 Robert Benson Trust (USA)

2016 Washington University, St Louis Award (USA)

2018 Recipient of an ERC Advanced Grant

**Recent Patents**

US Patent No. 11,865,090 for "Tumor suppressive microRNAs for cancer therapy” (approved 2024)

# C. Contribution to Science

I am a physician who believes in translational science. In addition to the numerous research fields along the years in which I have directly contributed, as can be depicted from the specific investigative fields described below, I am confident that I have also made a major contribution to students’ science education. I have invested significantly during more than 30 years in teaching medical school, undergraduates and graduate students, and through these educational sessions influenced them to take part in the translational medicine world. Many of these students subsequently entered MD/PhD programs. I taught many residence physicians and many of them came to conduct PhDs after they completed their MD or residency training. At each time point of my academic life, I have personally trained at least 7 PhD and MSc students. Accordingly, I view my educational investment in students and also my peers as a major contribution to science.

As a hepatologist, most of my studies are a result of questions initiated in the clinic, directly or indirectly. To date, my articles have over 9000 citations. Below are some of the specific scientific areas in which I have conducted my research and to which I have contributed:

Gene therapy: Although it may seem simple and straightforward, gene therapy is a very challenging field of translational medicine. One major difficulty is the implementation of efficient and effective delivery systems. The cited work below highlights key programs that I have been involved in. Most of these aimed at overcoming delivery obstacles. Our most recent delivery platform has completed a phase 1 clinical investigation and is now beginning a phase 2 study at two sites in the USA after an FDA approval (phase 1 was performed in Israel). In this study, we show that a biodegradable scaffold is able to shed from within a tumor siRNA targeting K-RASmut and encounter a significant anti-tumor effect. The pre-clinical results of this study are published in PNAS as depicted below:

Lippin Y, Dranitzki-Elhalel M, Brill-Almon E, Mei – Zahav C, Mizrachi S, Liberman Y, Iaina A, Kaplan E, Podjarny E, Shani N, **Galun E**. (2005). Human erythropoietin gene therapy for patients with chronic renal failure. Blood 106:2280-2286.

Freeman AI, Zakay-Rones Z, Gomori JM, Linetsky E, Panet A, Libson E, Linda R, Greenbaum G, Irving CS, **Galun E**, Siegal T. (2006). PhaseI/II trail of intravenous NDV-HUJ (OV001) oncolytic virus in recurrent glioblastoma multiforme. Mol Therapy 13:221-228.

Zeira E, Manevitch A, Manevitch Z, Kedar E, Gropp M, Daudi N, Barsuk R, Harati M, Yotvat H, Troilo P, Griffiths T, Pacchione S, Roden D, Niu Z, Nussbaum O, Zamir G, Pappo O, Hemo I, Lewis A, **Galun E**. (2007). Femtosecond laser - A new intradermal DNA delivery method for efficient, long-term gene expression and genetic immunization. FASEB J 21:3522-33.

Zorde Khvalevsky E,Gabai R,Rachmut I-H, Horwitz E, Brunschwig Z, Orbach A, Shemi A, Golan T, Domb A, Yavin E, Giladi H, Rivkin L, Simerzin A, Elyakim R, Kalila A, Hubert A, Lahav M, Kopelman Y, Goldin E, Dancour A, Hants Y, Arbel-Alon S, Abramovitch R, Shemi A, **Galun E**. (2013). Mutant KRAS as a druggable target for pancreatic cancer. Proc Natl Acad Sci USA 110:20723-8.

Nagler A, Shimoni A, Avivi I, Rowe JM, Beider K, Wald H, Tiomkin L, RibakovskL, RibackY, Ramati Y, Aviel S, **Galun E**,Shaw HL, Eizenberg O, Abraham M, A Peled.(2014). Phase I/II stem cell mobilization study with the high affinity CXCR4 antagonist BKT140. Clin Cancer Res 20:469-79.

Golan T, Zorde Khvalevsky E, Hubert A, Malka Gabai R, Hen N, Segal A, Domb A, Harari G, Ben David E, Raskin S, Goldes Y, Goldin E, Eliakim R, Lahav M, Kopleman Y, Dancour, Shemi A, **Galun E**. (2015). RNAi therapy targeting KRAS in combination with chemotherapy for locally advanced pancreatic cancer patients. Oncotarget 6:24560-70.

Abraham M, Pereg Y, Bulvik B, Klein S, Mishalian I, Wald H, Eizenberg O, Beider K, Nagler A, Golan R, Vainstein A, Aharon A, **Galun E**, Caraco Y, Or R, Peled A. (2017). Single dose of the CXCR4 antagonist BL-8040 induces rapid mobilization for the collection of human CD34+ cells in healthy volunteers. Clin Cancer Res 23:6790-6801.

Hepatitis B virus (HBV) and Hepatitis C virus (HCV): Until quite recently, I have been engaged in the attempt to develop novel approaches for the treatment of HBV and HCV. Two decades ago, it was obvious that the most essential barrier for the development of efficient anti hepatitis drugs, in addition to the basic understanding of HBV and HCV biology, was the fact that there was no animal model to assess the drugs. In addition, the recurrence of both HBV and HCV infection in transplanted liver in patients who are carriers of either virus was a major challenge. Accordingly, we developed the first HBV and HCV small animal models – the Trimera mice with HBV and HCV. In these models we could investigate the properties of anti-hepatitis drugs for the relevant clinical indications. We could assess anti-HBV and anti-HCV human monoclonal antibodies that we have developed and also tested these later in humans in clinical studies. The most prominent reports on the animal models, the effect of the anti-hepatitis monoclonal antibodies in the animal models and the clinical development are depicted below:

Ilan E, Burakova T, Dagan S, Nussbaum O, Lubon I, Eren R, Ben-Moshe O, Arazi J, Berr S, Neville L, Yuen L, Mansour TS, Gillard J, Eid A, Jurim O, Shouval D, Reisner Y, **Galun E**. (1999). The HBV - Trimera mouse: A model for human HBV infection and evaluation of anti-HBV therapeutic agents. Hepatology 29:553-62.

Ilan E, Arazi J, Nussbaum O, Zauberman A, Eren R, Lubin I, Ben-Moshe O, Kischitzky A, Litchi A, Margalit I, Gopher J, Mounir S, Cai W, Daudi N, Eid A, Jurim O, Czerniak A, **Galun E**, Dagan S. (2002). The hepatitis C virus - Trimera mouse: A model for evaluation of anti-HCV therapeutic agents. J Infect Dis 185:153-61.

**Galun E**, Eren R, Safadi R, Ashour Y, Terrault N, Keeffe EB, Matot I, Mizrachi S, Terkieltaub D, Zohar M, Lubin I, Gopher J, Shouval D, Dagan S. (2002). Clinical evaluation (phase I) of a combination of two human monoclonal antibodies to HBV: safety and antiviral properties. Hepatology 35:673-679.

Eren R, Landstein D, Terkieltaub D, Nussbaum O, Zauberman A, Ben-Porath J, Gopher J, Buchnick R, Kovjazin R, Rosenthal-Galili Z, Aviel S, Ilan E, Shoshany Y, Neville L, Waisman T, Ben-Moshe O, Kischitsky A, Foung SKH, Keck Z-Y, Pappo O, Eid A, Jurim O, Zamir G, **Galun E**, Dagan S. (2006). Preclinical evaluation of two neutralizing human monoclonal antibodies against HCV: A potential treatment to prevent re-infection in liver transplant patients. J Virol 80:2654-2664.

**Galun E**, Terrault N, Eren R, Zauberman A, Nussbaum O, Terkieltaub D, Zohar M, Buchnik R, Ackerman Z, Safadi R, Ashur Y, Misrachi S, Liberman Y, Rivkin L, Dagan S. (2007). Clinical evaluation (Phase I) of a human monoclonal antibody against Hepatitis C virus: Safety and antiviral activity. J Hepatol 46:37-44.

Gozlan Y, Bucris E, Shirazi R, Rakovsky A, Ben-Ari Z, Davidov Y, Veizman E, Saadi T, Braun M, Cohen-Naftaly M, Shlomai A, Shibolet O, Zigmond E, Katchman H, Menachem Y, Safadi R, **Galun E**, Zuckerman E, Nimer A, Hazzan R, Maor Y, Saif AM, Etzion O, Lurie Y, Mendelson E, Mor O. (2019). [High frequency of multiclass HCV resistance-associated mutations in patients failing direct-acting antivirals: real-life data.](https://www.ncbi.nlm.nih.gov/pubmed/30880684) Antivir Ther 24:221-228.

Liver inflammation: The liver is a very unique organ in a sense that upon chronic inflammation the liver responds by regeneration to overcome the tissue loss. However, numerous pathological conditions develop that contribute later to the development of hepatocellular carcinoma (HCC). Prior to the investigation, and later on in parallel to the studies aimed to understand the mechanism of how inflammation in the liver causes HCC, we were interested to identify mediator of regeneration in the inflamed liver, and to better understand the contribution of these factors both to the inflammatory process as well as to the regenerative process. We are currently investigating this, and in a report in preparation we show that microRNA 675, which is derived from the lncRNA H19, targets FADD and by this shifts the inflammatory signal of TNF coming from macrophages to necroptosis.

Lavon I, Goldberg I, Amit S, Jung S, Tsuberi BZ, Barshak I, Kopolovic J, **Galun E**, Bujard H, Ben-Neriah Y. (2000). High susceptibility to bacterial infection, but no liver dysfunction, in mice compromised for hepatocyte NF-kappaB activation. Nat Med, 6:573-7.

Khvalevsky E, Rivkin L, Rachmilewitz J, **Galun E**, Giladi H. (2007) TLR3 signaling in a hepatoma cell line is skewed towards apoptosis. J Cell Biochem 100:1301-12.

Ben Moshe T, Barash H, Kang TB, Kim JC, Kovalenko A, Gross E, Schuchmann M, Abramovitch R, **Galun E**, Wallach D. (2007). Role of caspase-8 in hepatocyte response to infection and injury in mice. Hepatology. 45:1014-24.

Zorde-Khvalevsky E, Abramovitch R, Harel-Barash H, Rivkin L, Spivak-Pohis I, Rachmilewitz J, **Galun E**, Giladi H. (2009). TLR3 signaling attenuates liver regeneration. Hepatology 50:198-206.

Rivkin M, Zorde-Khvalevsky E, Simerzin A, Chai C, Yuval JB, Rosenberg N, Harari-Steinfeld R, Schneider R, Amir G, Condiotti R, Heikenwalder M, Weber A, Schramm C, Wege H, Kluwe J, **Galun E\***, Giladi H. (2016). Inflammation-induced expression and secretion of microRNA 122 leads to reduced blood levels of kidney-derived erythropoietin and anemia. Gastroenterology 151:999-1010. (\* corresponding author)

Kleinschmidt D, Giannou AD, McGee HM, Kempski J, Steglich B, Huber FJ, Ernst TM, Shiri AM, Wegscheid C, Tasika E, Hübener P, Huber P, Bedke T, Steffens N, Agalioti T, Fuchs T, Noll J, Lotter H, Tiegs G, Lohse AW, Axelrod JH, **Galun E**, Flavell RA, Gagliani N, Huber S. (2017). A protective function of IL-22BP in ischemia reperfusion and acetaminophen-induced liver injury. J Immunol 199:4078-4090.

Guedj A, Volman Y, Geiger-Maor A, Bolik J, Schumacher N, Künzel S, Baines JF, Nevo Y, Elgavish S, **Galun E**, Amsalem H, Schmidt-Arras D, Rachmilewitz J. (2019). Gut microbiota shape “inflamm-aging” cytokines and account for age-dependent decline in DNA damage repair. Gut 69:1064-1075

Benedek G, Abed El-Latif M, Miller K, **Galun E**, Levite M.[Identification of the novel HLA-B allele, HLAB\*15:539, in a South-Sudanese individual.](https://www.ncbi.nlm.nih.gov/pubmed/31271260) **(**2019).HLA 94:380-381.

Poch T, Bahn J, Casar C, Krause J, Evangelakos I, Gilladi H, Kunzmann LK, Steinmann S, Sebode M, Folseraas T, Karlsen TH, Franke A, Schlein C, **Galun E**, Huber S, Lohse AW, Gagliani N, Schwinge D, Schramm C. (2024). Intergenic risk variant rs56258221 skews the fate of naive CD4+ T cells via miR4464-BACH2 interplay in primary sclerosing cholangitis. Cell Reports Medicine (in press).

IL6 signaling: While investigating the inflammatory process in the liver upon injury, we detected IL6 as a central “player”. We have initiated a program to both understand the mechanism of how IL6 contributes to liver regeneration, while at the same time developing a therapeutic approach of how this signaling is utilized to overcome major liver injury. It appears that IL6-transsignaling (TS) is a major contributor to the regenerative effects of IL6. We have recently also shown that IL6 TS overcomes senescence that is induced by radiation. This last effect is currently being developed into a potential therapeutic platform. Salivary glands are at the radiation zone upon radiating head and neck tumors. The insult to the glands from radiation causes a dry mouth syndrome. We found that this is a result of senescence of the cells in the salivary gland. Pre-treating the salivary gland, by retrograde local administration of an IL6 designer protein that induces TS, prevents senescence and salivary loss of function, enabling salivation. We have also shown direct capability of leveraging our molecular techniques for detecting and assessing IL-6 for RF ablation studies.

**Galun E**, Zeira E, Pappo O, Peters M, Rose – John S. (2000). Liver regeneration induced by a designer human IL-6/sIL-6R fusion protein reverses severe hepatocellular injury. FASEB J 14: 1979-1987.

Hecht N, Pappo O, Shouval D, Rose-John S, **Galun E**, Axelrod JA. (2001). Hyper-IL-6 gene therapy reverses fulminant hepatic failure. Mol Ther 3: 683-687.

Nechemia-Arbely Y, Shriki A, Denz U, Drucker C, Scheller J, Raub J, Pappo O, Rose-John S, **Galun E**, Axelrod JH. (2011). Early hepatocyte DNA synthetic response posthepatectomy is modulated by IL-6 trans-signaling and PI3K/AKT activation. J Hepatology 54:922-9.

Marmary Y, Adar R, Gaska S, Wygoda A, Maly A, Cohen J, Eliashar R, Mizrachi L, Orfaig-Geva C, Baum B, Rose-John S, **Galun E**, Axelrod JH. (2016). Cellular senescence drives radiation-induced loss of salivary gland function and is prevented by IL-6 modulation. Cancer Res 76:1170-80.

Lanton T, Shriki A, Nechemia-Arbely Y, Abramovitch R, Levkovitch O, Adar R, Rosenberg N, Paldor M, Goldenberg D, Sonnenblick A, Peled A, Rose-John S, **Galun E**, Axelrod JH. (2017). IL6-dependent genomic instability heralds accelerated carcinogenesis following liver regeneration on a background of chronic hepatitis. Hepatology 65:1600-1611.

[Moll JM](https://www.ncbi.nlm.nih.gov/pubmed/?term=Moll%20JM%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Wehmöller M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Wehm%C3%B6ller%20M%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Frank NC](https://www.ncbi.nlm.nih.gov/pubmed/?term=Frank%20NC%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Homey L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Homey%20L%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Baran P](https://www.ncbi.nlm.nih.gov/pubmed/?term=Baran%20P%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Garbers C](https://www.ncbi.nlm.nih.gov/pubmed/?term=Garbers%20C%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Lamertz L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Lamertz%20L%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Axelrod JH](https://www.ncbi.nlm.nih.gov/pubmed/?term=Axelrod%20JH%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [**Galun E**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Galun%20E%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Mootz HD](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mootz%20HD%5BAuthor%5D&cauthor=true&cauthor_uid=29136368), [Scheller J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Scheller%20J%5BAuthor%5D&cauthor=true&cauthor_uid=29136368). (2017). Split2 protein-ligation generates active IL-6-type Hyper-cytokines from inactive precursors. [ACS Synth Biol.](https://www.ncbi.nlm.nih.gov/pubmed/29136368) 6:2260-2272.

Schmidt-ArrasD, **Galun E**, Rose-John S. (2021). The two facets of gp130 signalling in liver tumorigenesis. Sem Immunopath 43:609-624.

Paldor M, Levkovitch-Siany O, Eidelshtein D, Adar R, Enk CD, Marmary Y, Elgavish S, Nevo Y, Benyamini H, Plaschkes I, Klein S, Mali A, Rose-John S, Peled A, **Galun E\***, Axelrod JH. (2022). Single-cell transcriptomics reveals a senescence-associated IL-6/CCR6 axis driving radiodermatitis. EMBO Mol Med. 14(8):e15653 (\*co-senior author)

Gunes A, Schmitt C, Bilodeau L, Huet C, Assia Belblidia A, Baldwin C, Giard J-M, Biertho L, Lafortune A, Couture CY, Cheung A, Nguyen BN, **Galun E**, Bémeur C, Bilodeau M, Laplante M, Tang A, Faraj M, Estall JL. (2023). IL-6 trans-signaling is increased in diabetes, impacted by glucolipotoxicity and associated with liver stiffness and fibrosis in fatty liver disease. Diabetes 72:1820-1834.

Inflammation-induced liver cancer: As a hepatologist, one major interest I have is to develop drugs that will prevent or treat HCC. However, prior to developing such a therapeutic approach it is of the utmost importance to understand the mechanism of inflammation induced HCC. We have identified pivotal factors through which the inflammatory process in the liver causes cancer. This is primarily NF-kB. We have adopted the Mdr2 knockout mice as the animal model in which we investigate the significance of the various inflammatory factors contributing to HCC, following a prolonged inflammatory process. One pivotal cell, the macrophage, appears to be central to the development of HCC. We show that in CCR5 knockout mice, which prevent macrophage migration to the liver, HCC is significantly attenuated. We also show that macrophages in the liver are central in the DNA-damage response. We are now investigating the contribution of this to HCC development.

Abramovich R, Tavor E, Jacob-Hirsch J, Zeira E, Amariglio N, Pappo O, Rechavi G, **Galun E**, Honigman A. (2004). The pivotal role of CREB in tumor progression. Cancer Res 64:1338-46.

Pikarsky E, Porat RM, Stein I, Abramovich R, Amit S, Kasem S, Gutkovich-Pyest E, **Galun E**, Ben-Neriah Y. (2004). NF-kB functions as a tumor promoter in a mouse model of inflammation-associated liver cancer. Nature 43:461-6.

Barasa H, Gross E, Edrei Y, Israel A, Cohen I, Ben-Moshe T, Pappo O, Pikarsky E, Goldenberg D, Shiloh Y, **Galun E**, Abramovitch R. (2010). The accelerated carcinogenesis following liver regeneration is associated with chronic inflammation induced double strand DNA breaks. Proc Natl Acad Sci USA 107:2207-12.

Barashi N, Weiss ID, Wald O, Wald H, Beider K, Abraham M, Klein S, Goldenberg D, Axelrod J, Pikarsky E, Abramovitch R, Zeira E, **Galun E**, Peled A. (2013). Inflammation induced hepatocellular carcinoma is dependent on CCR5. Hepatology 58:1021-30.

**Galun E**. (2016). Liver inflammation and cancer: The role of tissue microenvironment in generating the tumor-promoting niche (TPN) in the development of hepatocellular carcinoma. Hepatology 63:354-6.

Simerzin A, Zorde-Khvalevsky E, Rivkin M, Adar R, Zucman-Rossi J, Couchy G, Roskams T, Govaere O, Oren M, Giladi H, **Galun E**. (2016). [The liver-specific miR-122\*, the complementary strand of miR-122, acts as a tumor suppressor by modulating the p53-Mdm2 circuitry.](http://www.ncbi.nlm.nih.gov/pubmed/27302319) Hepatology 64:1623-1636.

Guedj A, Geiger-Maor A, **Galun E**, Amsalem H, Rachmilewitz J. (2016) Early age decline in DNA repair capacity in the liver: In depth profile of differential gene expression. Aging 8:3131-3146.

Stoyanov E, Mizrahi L, Olam D, Schnitzer-Perlman T, **Galun E**, Goldenberg D. (2017). Short-term S-adenosylmethionine supplementation suppresses tumor development in a murine model of inflammation-mediated hepatocarcinogenesis. Oncotarget 8:104772-104784.

Potikha T, Pappo O, Mizrahi L, Olam D, Maller SM, Rabinovich GA, **Galun E**, Goldenberg DS. (2019). [Lack of galectin-1 exacerbates chronic hepatitis, liver fibrosis, and carcinogenesis in murine hepatocellular carcinoma model.](https://www.ncbi.nlm.nih.gov/pubmed/30897344) FASEB J. 33:7995-8007.

Gamaev L, Mizrahi L, Friehmann T, Rosenberg N, Pappo O, Olam D, Zeira E, Halpern KB, Caruso S, Zucman-Rossi J, Axelrod JH, **Galun E**, Goldenberg DS. (2021). The pro-oncogenic effect of the lncRNA H19 in the development of chronic inflammation-mediated hepatocellular carcinoma. Oncogene 40:127-139.

Levite M, Safadi R, Milgrom Y, Massarwa M, **Galun E**. (2021). Neurotransmitters and Neuropeptides decrease PD-1 in T cells of healthy subjects and patients with hepatocellular carcinoma (HCC), and increase their proliferation and eradication of HCC cells. Neuropeptides 89:102159.

Shriki A, Lanton T, Sonnenblick A, Levkovitch-Siany O, Eidelshtein D, Abramovitch R, Rosenberg N, Pappo O, Elgavish S, Nevo Y, Safadi R, Peled A, Rose-John S, **Galun E\***, Axelrod JH. (2021). Decisive roles of IL-6 in hepatic injury, steatosis, and senescence aggregate to suppress tumorigenesis. Cancer Res 81:4766-4777.

Bolik J, Krause F, Stevanovic M, Gandraß M, Thomsen I, Schacht S, Rieser E, Müller M, Schumacher N, Fritsch J, Wichert R, **Galun E**, Bergmann J, Röder C, Schafmayer C, Egberts J-H, Becker-Pauly C, Saftig P, Lucius R, Schneider-Brachert W, Barikbin R, Adam D, Voss M, Hitzl W, Krüger A, Strilic B, Sagi I, Walczak H, Rose-John S, Schmidt-Arras D. (2022). Inhibition of ADAM17 impairs endothelial cell necroptosis and blocks metastasis. J Exp Med 219:e20201039.

Volman Y, Hefetz R, **Galun E**, Rachmilewitz J. (2022) [DNA damage alters EGFR signaling and reprograms cellular response via Mre-11.](https://pubmed.ncbi.nlm.nih.gov/35388101/) Sci Rep 12:5760-75.

Rosenberg N, Van Haele M, Lanton T, Brashi N, Bromberg Z, Adler H, Giladi H, Peled A, Goldenberg D, Axelrod J, Simerzin A, Chai C, Plador M, Markezana A, Yaish D, Shemuliam Z, Gross D, Barnoy S, Gefen M, Amran O, Claerhout S, Fernadez M, Gracia M, Heide D, Shoshkes-Carmel M, Schmidt Arras D, Elgavish S, Nevo Y, Benyamini H, Tirnitz-Parker JEE, Sanchez A, Safadi R,Kaestner K, Rose-John S, Roskams T, Heikenwalder\*M, **Galun E**\*. (2022). Combined hepatocellular – cholangiocarcinoma derives from liver progenitor cells and depends on senescence and IL6 trans-signaling. J Hepatol 77:1631-1641 (also received an editorial in the same issue)

Systemic tumorigenic effects of RF ablation:Most recently, we have developed an additional line of collaborative investigation into the secondary systemic effects of local thermal ablation that may contribute to unwanted ‘off-target’ stimulatory effects on distant tumor present elsewhere in the body. We have completed several studies characterizing post-ablation tumorigenic effects, including identifying key mechanisms responsible, such as periablational inflammation and growth factor production. Together with Profs. Ahmed and Goldberg of Boston, we have successfully combined RFA with adjuvant drug inhibitors of IL-6, c-Met, and VEGFR to block such tumorigenic effects. The following publications support my expertise in the field.

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Other collaborations, in which I contributed ideas and knowledge:

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**Recent patent:**

Jan 2024.United States Patent Application No. 63/627,704. Title: Thiazepine Derivatives, Pharmaceutical Compositions, and Uses in Managing Retinoic Acid Receptor-Related Orphan Receptor Related Diseases and Conditions

**On-going Grants**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Project Title* | *Funding source* | *Amount*  *(Euros)* | *Period* | *Role of the PI* |
| MicroRNA for HCC  RxmiRcanceR  #7865757 | ERC Advanced | 3,000,000 | 2018-2023 | PI (20%) |
| Personalized medicine for NASH | Israel Science Foundation | 350,000 | 2021-2026 | Co-PI (10%) |
| The role of IL6 in NASH and HCC  SFD 841 – C3 | German Research Foundation (DFG) | 400,000 | 2017-2022 | Co-PI (5%) |
| cHCC-CCA mechanism | Israel Science Foundation | 500,000 | 2021-2025 | PI (5%) |
| Peptidomes for infectious disease | MOST- IL | 200,000 | 2022-2024 | PI (5%) |
| Bacterial genome editing systems as a driver of cancer mutations | HFSP | 420,000 | 2022-2025 | PI (5%) |
| MicroRNAs for metastasis | MOST-DKFZ | 140,000 | 2022-2025 | PI (5%) |

**Complete list of published work in MyBibiliography:**

<http://www.ncbi.nlm.nih.gov/pubmed/?term=galun+e>

**My Personal web page address:**

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