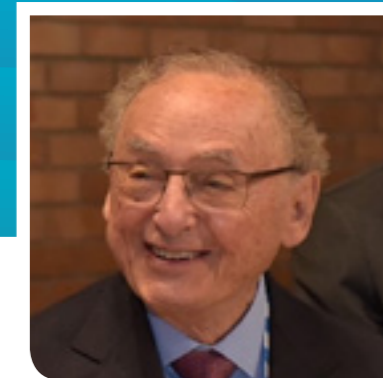


A photograph of a white robotic arm in a greenhouse, positioned over rows of plants. The scene is bathed in a blue and purple light, creating a futuristic atmosphere. The greenhouse structure is visible in the background, with various plants and equipment.

THE KAYE INNOVATION AWARDS

 The Hebrew University of Jerusalem
Board of Governors 2021
**For a BETTER
WORLD**

OCTOBER 2021



ISAAC KAYE

Isaac Kaye is a pharmaceutical chemist who has been very successful at translating novel ideas into profit-generating products.

He established Norton Healthcare, a substantial generic pharmaceutical company in the UK, which later merged with the IVAX Corporation of the USA. Teva, Israel's biggest company completed its acquisition of IVAX in 2006, creating the world's largest generics company.

After retiring from IVAX, he turned his attention to venture capital and together with partners founded Israel Healthcare Ventures (IHCV), a provider of capital to early and expansion stage Israeli companies. IHCV focuses exclusively on healthcare and life sciences.

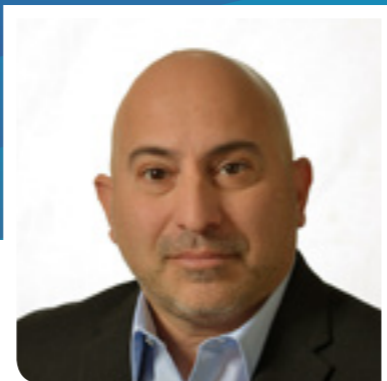
Isaac Kaye's passion for medical innovations that advance human healthcare is matched by a number of other interests, including his love of Israel and its people and his enthusiasm and support for The Hebrew University of Jerusalem and the principles upon which it is based. Fortunately for The Hebrew University, Isaac Kaye's interests in pharmacology, new chemical entities and medical devices are very much in line with areas in which the University has considerable expertise and which it is eager to develop.

In 1995, the Isaac and Myrna Kaye Chair in Immunopharmacology at the School of Pharmacy was established, providing much needed research funds in this field. In 2005, he established five annual fellowships for outstanding

graduate and post-doctoral students. "The Kaye-Einstein Fellowships" encourage recipients to continue their studies at The Hebrew University for a minimum of three years, helping to prevent the University's finest scholars from being recruited by other leading institutions. Subsequent to the first program of scholarships, five additional three year scholarships were awarded in 2010, and another five in 2013 to outstanding students as "Kaye-Einstein Scholarships." Yet another five commenced in 2016.

Isaac Kaye established the annual Kaye Innovation Awards in 1993. The awards have earned an esteemed reputation highlighting innovations with potential for income generation, principally through royalties for the University. Applications must be well focused and accompanied by recommendations but unlike grant proposals anyone from the most senior to the most junior staff may apply. Students are always encouraged to submit proposals. The winners demonstrate not only good science but also a focus on commercial viability and the benefits this brings to the University.

Isaac Kaye has always been active on behalf of The Hebrew University. He served as Chairman of the South African Friends organization and became an active member of the University's Board of Governors. Following his move to the UK, Isaac Kaye joined the British Friends and continued as a member of the Board of Governors of The Hebrew University. He is currently Chairman of the British Friends. Our University is deeply indebted to both Isaac and Myrna for their deep involvement and devotion to this institution.



YISSUM: CELEBRATING OUR BRIGHT FUTURE

Living with the Corona Pandemic over the last two years has been a struggle for all. However, as difficult as these times have been, the Hebrew University's dedication to impactful science continues to be the light at the end of the tunnel. Our researchers have given us a glimpse of the future with their commercialized technologies aiming to solve our real-world problems. This year's Kaye Prize is a celebration not only of greatness, but a promise of great things to come, and we are honored to once again partner in the Kaye Awards Selection process.

As the Tech Transfer Company of the Hebrew University, Yissum's success is thanks to the faculty, researchers and students who continue to question, innovate, and discover. It is our distinct pleasure and role to take this cutting-edge research out of the lab and into the world. With over 180 portfolio companies, almost 11,000 patents and more than 1,000 licensed technologies, we are proud to be a world leading Tech Transfer Company, shining a light on outstanding translational science.

For his scientific contribution in the healthcare sector, the Kaye Prize is awarded to Prof. (Emeritus) David Naor of the Lautenberg Center for Immunology and Cancer Research at the Faculty of Medicine. As a career researcher, Prof. David Naor, has understood the importance of translating academic research into commercialized products that will help solve severe health conditions. As an educator he committed himself to passing on this message to his students. Prof. Naor's development of a short peptide drug candidate (5-MER peptide or 5-MP) was successfully licensed to Galmed Pharmaceuticals (registered in

Nasdaq) and is currently undergoing human clinical trials. Prof. Naor's years of research is a beacon of light, and an example of unwavering integrity for medicine that has an impact.

The sun has always been a source of light and energy. Kaye Prize recipient, Prof. Lioz Etgar of the Institute of Chemistry, Casali Center for Applied Chemistry, the Center for Nanoscience and Nanotechnology, is taking that light and harnessing renewable energy through perovskite solar cells. The cells are a cause of excitement within the solar power industry with their ability to absorb light across almost all visible wavelengths, and exceptional power conversion efficiencies. Prof. Etgar's advancements in the field have led to new cost-effective manufacturing and the basis for three spin-off companies. The printable perovskites provide green energy through a screen-printed three-layered all-nanoparticle network. This matrix enables the perovskite to percolate and form a complementary photoactive network, paving a path for more sustainable green energy production in the future.

Lighting the way to international collaborations with companies including Sigma, Bioline, Integra, GSK, Johnson & Johnson, Novartis, Fisons, is Prof. Francesca Levi-Schaffer of the Institute for Drug Research at the School of Pharmacy. She is awarded the prize this year for her development of antibodies for a variety of uses in the pharmaceutical market and her collaborative spirit with industry that has led to commercial cooperation with Kyorin Pharmaceutical, licensing CD48 as a target for allergies and opportunities with Teva Pharmaceuticals

and Arkin Holdings, interested in her technologies in the field of mast cells, eosinophil and allergic disorders. Through her work in the In WAO (World Allergy Organization), Prof. Levi-Schaffer has not only developed breakthrough research but breakthrough relationships with international pharmaceutical companies interested in her lab's discoveries and professional consulting.

Prof. Rotem Karni's discoveries at the Institute for Medical Research Israel-Canada, have not only spun off into three biotech companies, but have radiated light for many families around the world afflicted with rare diseases. Where once there lacked research, he has transformed the unknown into possibility. For his devotion and translating findings into high-quality therapies for genetic diseases and cancer, Prof. Karni is awarded the Kaye prize. Prof. Karni's Lab is at the forefront of research in understanding the process of alternative RNA splicing (a fundamental step of gene expression) which becomes mutated in chronic human diseases. For cancer it leads to the development, tumor progression and metastatic process. Prof. Karni's expertise in RNA splicing has already led to groundbreaking discoveries; with continued success he will influence innovation of new therapies for patients around the world.

Illuminating the age-old sense of smell, the Kaye prize is also awarded to Dr. Vlad Shumeiko of the Robert H. Smith Faculty of Agriculture, Food and Environment, for his research in developing an artificial 'Optical Nose.' Under the guidance of Prof. Oded Shosheyov, Dr. Shumeiko has leveraged the unique properties of carbon nanotubes to

develop a prototype of a novel paper-based near-infrared optical nose (NIRON). This platform opens new avenues for real-time sensing of dangerous chemical compounds, enabling an expansive number of applications in the sectors of homeland security, healthcare, food and the perfume industry, and has already received inquiries from international companies like Huawei and Central Beverage Company. "Dr. Shumeiko is an outstanding bright scientist that commands a wide spectrum of science disciplines. It is rare to find such a young scientist with such an interdisciplinary approach to science," Prof. Oded Shosheyov said in support and congratulations for his student's success.

Mr. Kaye's generosity and personal commitment to support to Hebrew University's researchers in their quest for innovation continues to inspire us and light the path of cutting-edge technology that will impact our world. We offer him our deep gratitude and extend our earnest congratulations to this year's prize winners.

Dr. Itzik Goldwaser

President & CEO, Yissum



DAVID NAOR

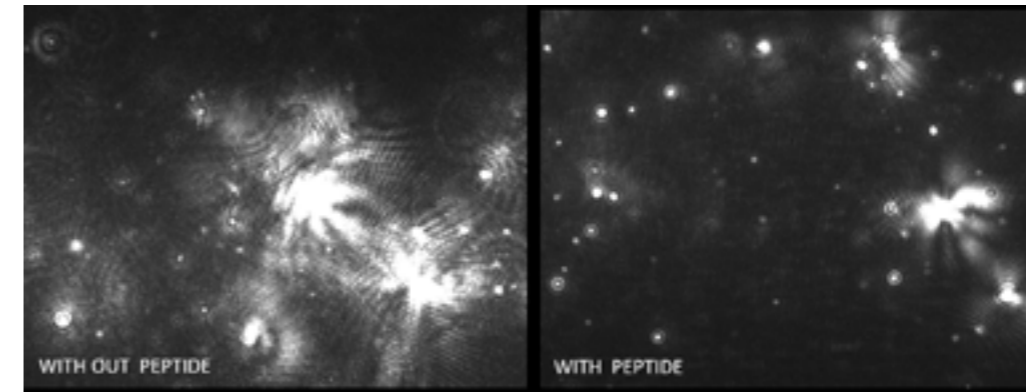
David Naor is Emeritus Professor of Immunology at the Hebrew University of Jerusalem. His research has been part of the present-day efforts to develop an mRNA vaccine (known previously as a cDNA vaccine) against COVID-19. He is translating, together with Galmed Pharmaceuticals (Israel), an anti-inflammatory potential drug called Amio-5MER, which was developed in his laboratory. Amilo-5MER alleviates pathologies in mouse models of chronic inflammations.

He has published 155 articles in leading journals such as Nature and PNAS. A frequent speaker at international conferences, his research was supported by many grants including one from the USA National Multiple Sclerosis Society. Johnson & Johnson gave him an award "In recognition of outstanding research".

RESEARCH DESCRIPTION

A 5-MER peptide (abbreviated 5-MP) is a five-amino acid synthetic peptide (Methionine, Threonine, Alanine, Aspartic acid, Valine), which has therapeutic application in animal models of chronic inflammation diseases. The 5MP neutralizes the supportive activity of Serum Amyloid A (SAA), which accelerates chronic inflammations. Chronic inflammation, supported by SAA, causes damage to the joints in Rheumatoid Arthritis, to the intestine in Crohn's disease/Ulcerative Colitis, and to the central nervous system in Multiple Sclerosis. He found that binding of 5-MP to SAA interferes with pathological assembly and aggregation (generation of particles) of SAA. SAA in its assembled and aggregated forms is responsible for its pathological activity by stimulating the release of proteins called pro-inflammatory cytokines. Pro-inflammatory cytokines at high concentrations (a phenomenon known

as a "cytokine storm") generates tissue damage, thus neutralizing SAA by 5MP can suppress the cytokine storm. SAA is an acute phase reactant whose concentration in serum is elevated rapidly in response to stimuli such as infection or trauma. An elevated concentration of SAA was identified in sera of patients with multiple autoimmune and chronic inflammation diseases and, more recently, in COVID19 infected patients. An ex-vivo study to investigate the effect of 5MP on SAA-stimulated human peripheral blood mononuclear cells from healthy volunteers revealed a significant reduction of pro-inflammatory cytokines release from these cells after treatment with the peptide. This suggests it may be a potential tool for controlling cytokine storms in patients, including patients with COVID-19.



Pic 1. Nanoparticle tracking analysis (NTA) of Serum Amyloid A (SAA) reveals that 5-MER peptide (5MP) prevents the aggregation (particles formation) of serum amyloid A (SAA). Aggregated SAA generates chronic inflammation and amyloidosis. SAA in solution shows many large aggregates (left). Addition of 5-MER peptide (5MP) prevents the particles formation of SAA (right), suggesting that the peptide can ameliorate the SAA-associated diseases (e.g., Multiple sclerosis, Crohn's disease and Rheumatoid Arthritis).



Fig 2. The footpad swelling (indicating inflammation in paws) of mice with Rheumatoid Arthritis-like disease (left) is reduced after 5-MER peptide (5MP) injection (right), showing the therapeutic effect of the peptide.

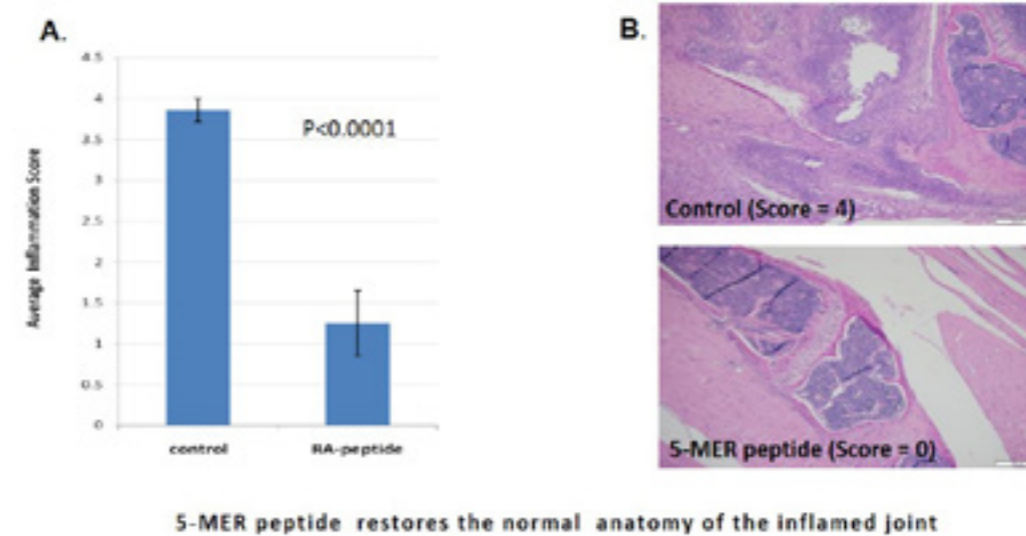
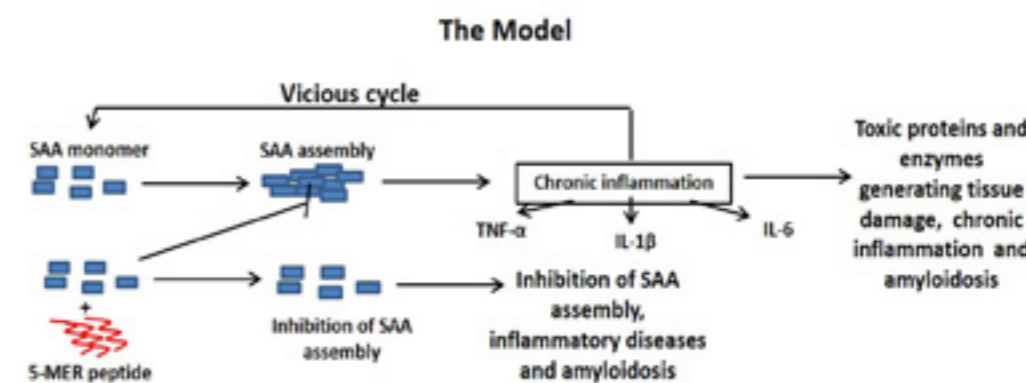


Fig 3. Joint sections from an arthritic mouse treated with PBS (control) or peptide (5MP) are presented. General evaluation of 5 samples from each category is described. Top. We see a massive infiltration of reactive inflammatory cells into the joint spaces and capsule as well as hypertrophy, all narrowing the joint space. Severe damage of cartilage and bone is detected. Bottom. None-to-mild infiltration of reactive inflammatory cells into the joint spaces and capsule as well as none-to-mild hypertrophy are revealed. The joint spaces are preserved. There is no damage of cartilage and bone.



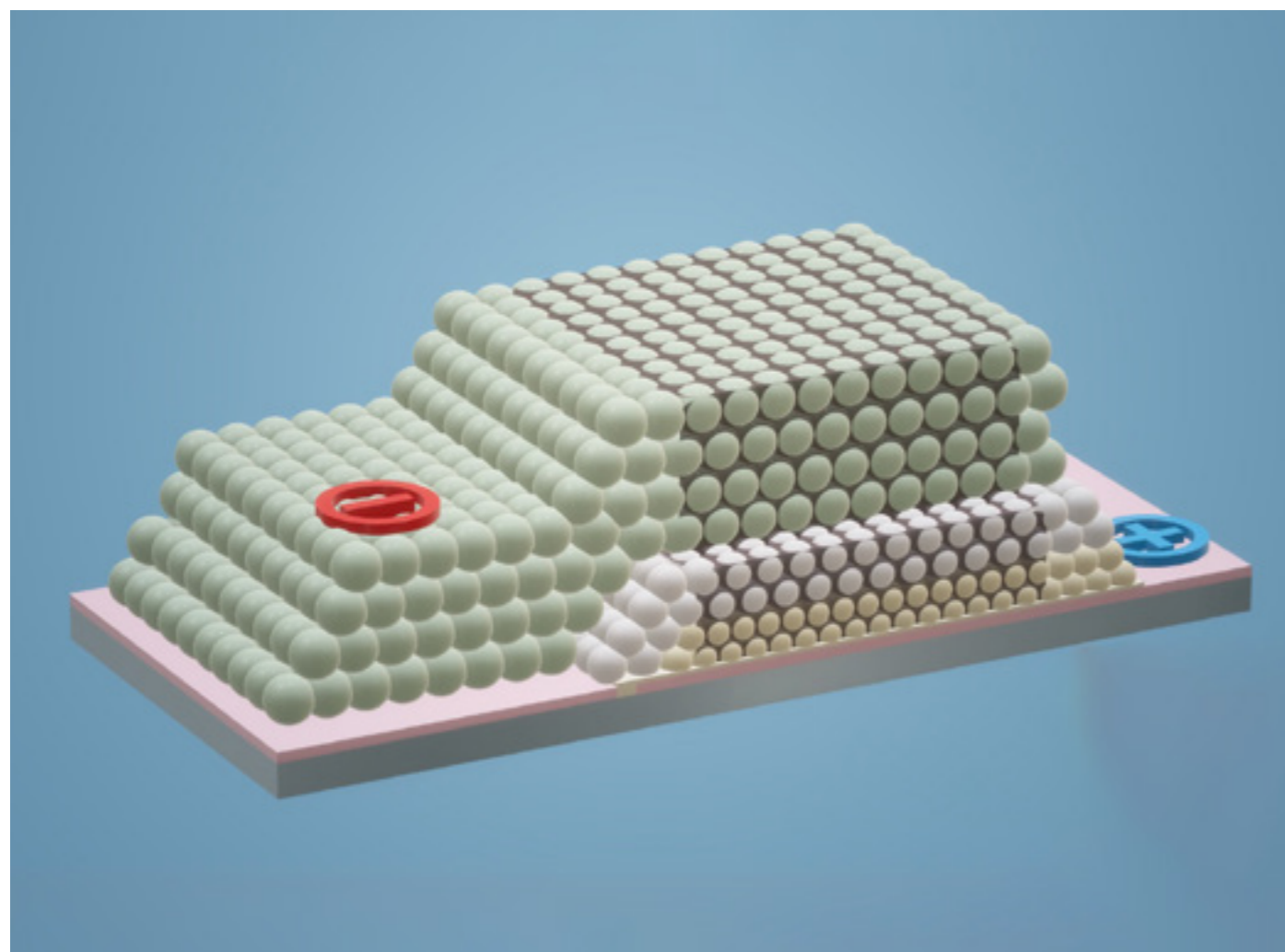
Pic 4. The model. SAA generates assembly of polymers and aggregates that stimulate release of pro-inflammatory cytokines from cells. The pro-inflammatory cytokines generate damage in the body, but also stimulate synthesis of more SAA that induces production of more cytokines. This vicious cycle can be ended by 5-MER peptide that prevents the assembly of SAA.



LIOZ ETGAR

Prof. Lioz Etgar obtained his Ph.D. (2009) at the Technion and completed post-doctoral research with Prof. Michael Grätzel at EPFL, Switzerland. In his post-doctoral, he received a Marie Curie Fellowship and won the Wolf Prize for young scientists.

On 2017 he became an Associate Professor in the Institute of Chemistry at the Hebrew University. Prof. Etgar won the prestigious Krill prize by the Wolf foundation. Prof. Etgar's research is focused on the development of innovative solar cells. He was the first to use perovskite in a much simpler solar cell structure which result in a pioneer publication in the field. He has more than 100 publications, 8 patents and 6 book chapters.

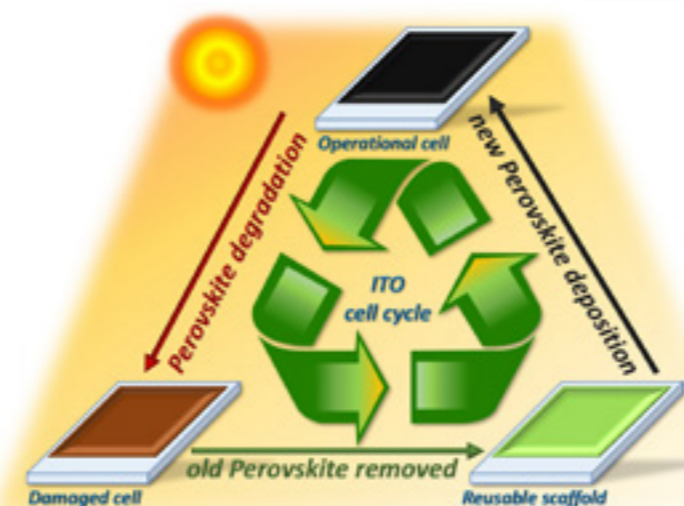


RESEARCH DESCRIPTION

GREEN ENERGY BY RECOVERABLE FULLY PRINTABLE PEROVSKITE SOLAR CELLS

In the progress towards a more sustainable world, wind and solar energy production are the leading renewable contenders. The emerging field of perovskite solar cells has achieved remarkable efficiencies and is gaining a steady foothold among other solar technologies. However, a worldwide deployment of perovskite solar panels poses environmental and economic problems due to degradation over time. The degrading photoactive materials are usually situated between other layers, complicating or inhibiting cell recycling. Here, we developed a new structure for perovskite solar cells, composed of chemically and thermally stable oxides, which includes the application of the photoactive perovskite material as a final step. This structure allows for the removal and replacement of degraded perovskite, with a full restoration of photovoltaic characteristics. Perovskite solar cells have developed into a promising branch of renewable energy.

A combination of feasible manufacturing and renewable modules can offer an attractive advancement to this field. Herein, a screen printed three-layered all-nanoparticle network was developed as a rigid framework for perovskite. This matrix enables perovskite to percolate and form a complementary photoactive network. Two porous conductive oxide layers, separated by a porous insulator, serve as a chemically stable substrate for the cells. Solar cells prepared using this new scaffold structure demonstrated a power conversion efficiency of 16%. Being fully oxidized, the solar cell demonstrated a striking thermal and chemical stability, allowing for the removal of the perovskite while keeping the substrate intact. The application of a new perovskite in lieu of a degraded one exhibited, for the first time, a full regeneration of all photovoltaic performances. Exclusive recycling of the photoactive materials from solar cells pave a path for more sustainable green energy production in the future.



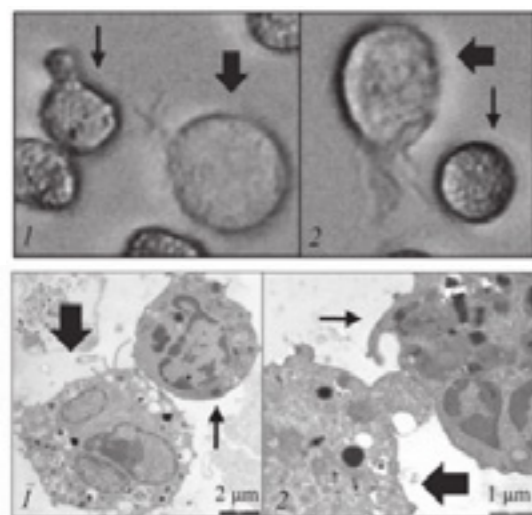
FRANCESCA LEVI-SCHAFFER



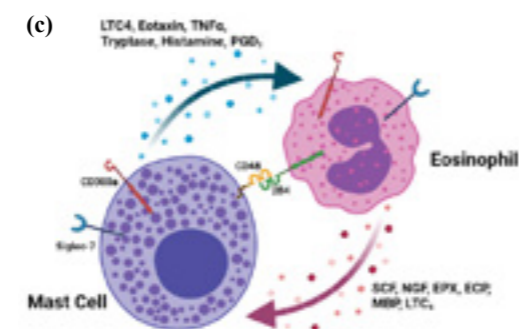
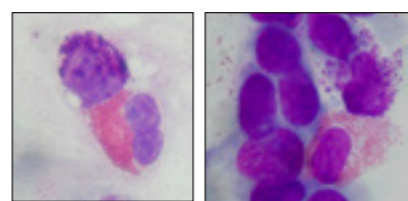
Francesca Levi-Schaffer is a Professor at The Hebrew University of Jerusalem Institute for Drug Research, School of Pharmacy, Faculty of Medicine. She holds the Isaac and Myrna Kaye Chair in Immunopharmacology. She completed her PharmD at the University of Milano, PhD in Immunology at the Weizmann Institute, and post-doctorate at Harvard Medical School. Prof. Levi-Schaffer has published in peer-reviewed journals 174 articles, 98 reviews and editorials and 26 book chapters. She has two patents and four provisional patents pending. Her expertise is in immunopharmacology of allergy focusing on mast cells and eosinophils, their activating and inhibitory receptors, and their cross-talk for a better prophylaxis/treatment of allergic diseases. Moreover, she is also investigating the role of inhibitory receptors on various cancers.

The Allergic Effector Unit (AEU): The physical and soluble cross-talk between Mast Cells and Eosinophils

(a) Physical interactions between mast cells and eosinophils *in vitro*.



(b) Physical interactions between mast cells and eosinophils in nasal tissue from allergic rhinitis patients.



The Allergic Effector Unit (AEU): The physical and soluble cross-talk between Mast Cells and Eosinophils

(a) Physical interactions between mast cells and eosinophils *in vitro*. Mast cells are the bigger cells and eosinophils the smaller ones. Top left figure: snapshot of the two cells during their interactions. Bottom left figure: electron microscopy picture of the interacting cells. (b) Physical interactions between mast cells and eosinophils *ex vivo*. Nasal biopsies of allergic rhinitis patients were stained with Giemsa staining. Pink stained cells are eosinophils and violet stained cells are mast cells. (c) On scheme of the AEU: some of the participating receptors-ligands and soluble/released mediators.

RESEARCH DESCRIPTION

The main goal of my research is to identify new targets for prophylaxis/treatment of allergic diseases such as asthma, atopic dermatitis, allergic rhinitis, etc. by studying the two main effector cells of allergy, mast cells and eosinophils. Based on this research I discovered a critical pro-inflammatory cross-talk between the two cells, that I named the "Allergic Effector Unit" (AEU). This led to my identification of four membrane receptors that I consider to be ideal targets for allergy treatment. These receptors shared by both cells are the inhibitory receptors (IR) CD300a, Siglec-7, CEACAM1, and the activating receptor (AR) CD48. My validated idea is that by producing and using activating/agonist monoclonal antibodies (mAbs) toward the IR CD300a, Siglec-7, CEACAM1 we activate the inhibition of mast cells, eosinophils and the AEU. The same can be achieved by producing and using a blocking/antagonistic mAb or small molecule toward the AR CD48 hence preventing these cells from releasing their potent pro-inflammatory mediators that cause the

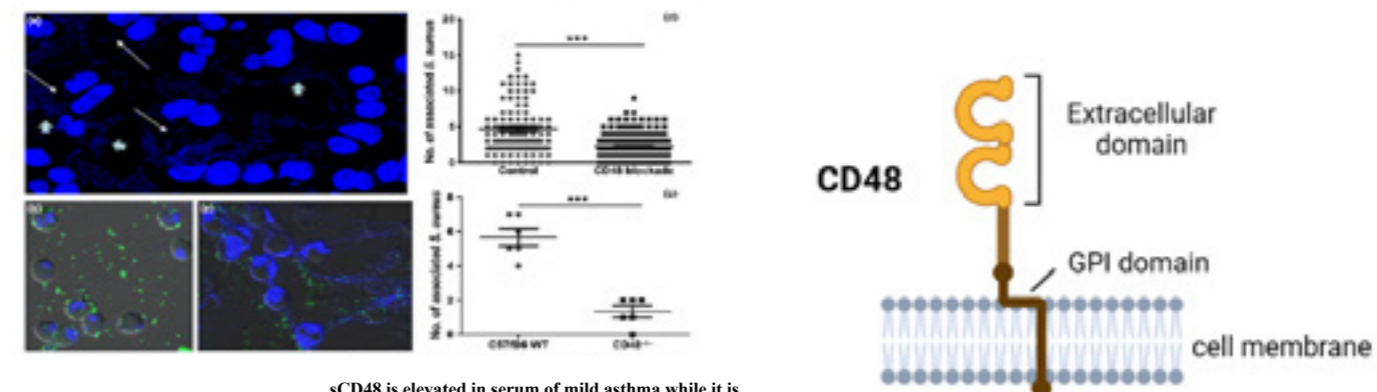
symptoms, severity and chronicity of allergy.

Another goal of my research is, after discovering that also some tumor cells can express CD300a, Siglec-7, or CEACAM1, to curb tumor growth by utilizing our developed mAbs towards these IR. My validated idea is that our agonistic mAbs to the IR activate inhibition, i.e. they block tumor cell proliferation and survival and finally tumor growth. We have found that mastocytosis, a rare mast cell tumor expressing CD300a and Siglec-7 is inhibited by our anti-CD300a or anti-Siglec-7 mAbs. Similarly, melanoma and colon cancer expressing Siglec-7 and CEACAM1 growth is inhibited by our anti-Siglec-7 or anti-CEACAM1 mAbs.

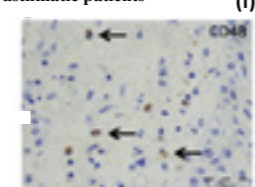
My inventions which are patented consist of the mAbs directed against the aforementioned IR or AR and their use in allergic diseases and possibly other diseases such as cancer in which mast cells and/or eosinophils are important players.

The CD48 activating receptor: Block it!

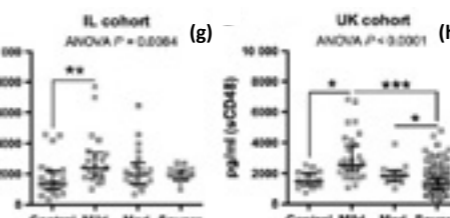
CD48 mediates the physical interactions between eosinophils and *Staphylococcus aureus* (SA)



CD48 is expressed mainly on eosinophils in bronchial tissue of asthmatic patients



sCD48 is elevated in serum of mild asthma while it is decreased in moderate and severe asthma patients.



CD48 mediates the physical interactions between eosinophils and *Staphylococcus aureus* (SA).

(a) Confocal microscopy of human eosinophils incubated with SA and stained with blue fluorescent dye. Bold arrows indicate SA adherent to the eosinophil surface. Thin arrows indicate the internalized bacteria. (b) Human eosinophils incubated with isotype/not relevant antibody and green fluorescent-dyed SA. (c) CD48 blocked human eosinophils incubated with green fluorescent-dyed SA. (d) Number of human eosinophils associated with SA. (e) Bone marrow-derived eosinophils (BMEos) from CD48^{-/-} or Wild Type (WT) mice incubated with SA.

CD48 is expressed mainly on eosinophils in bronchial tissue of asthmatic patients

(f) CD48 immunostaining in bronchial biopsies from asthmatic patients.

sCD48 is elevated in serum of mild asthma while it is decreased in moderate and severe asthma patients.

sCD48 levels in the sera from healthy volunteers and IL cohort (g) and UK cohort (h) of asthmatic patients as measured by ELISA assay.

1 St Prize Researcher

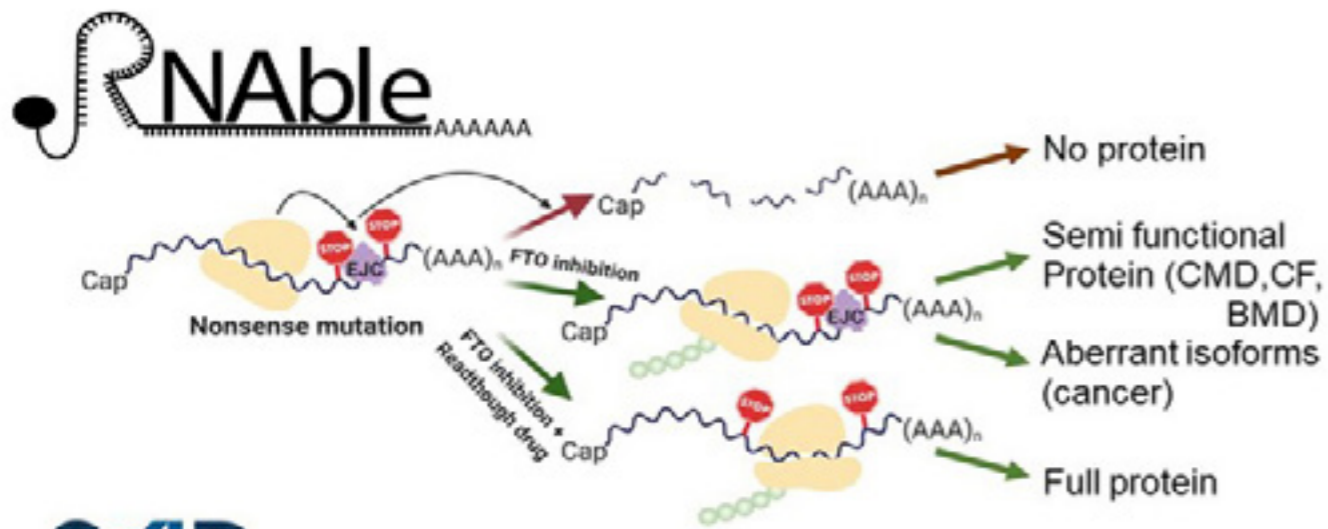


ROTEM KARNI

Prof. Karni, a native of Israel, is an Associate Professor and chair of the Dept. of Biochemistry and Molecular Biology in the Institute for Medical Research at the Hebrew University Medical School. Rotem is married to Ilanit, father to Roi and Daniel and lives in Mevaseret Zion.

Rotem received both his B.Sc. and PhD degrees from the Hebrew University, under the mentorship of Prof. Alex Levitzki. Following post-doctoral studies with Prof. Adrian Krainer, CSHL, NY, Rotem joined the Hebrew University in 2008.

Prof. Karni's group studies many aspects of RNA biology in human diseases and translates this knowledge into novel therapies.

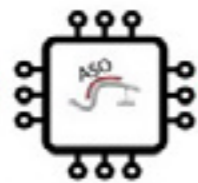


Utilize extensive disease-causing variant data

Clinical variant databases/Patient organizations/Medical centers

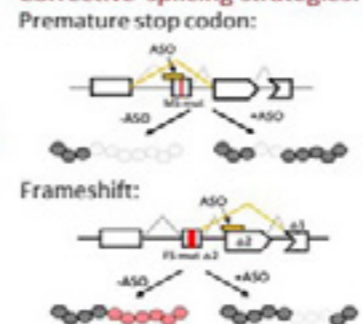


Computational engine



Identification of ASO-based splicing strategies to restore protein function for each mutation

Corrective splicing strategies:



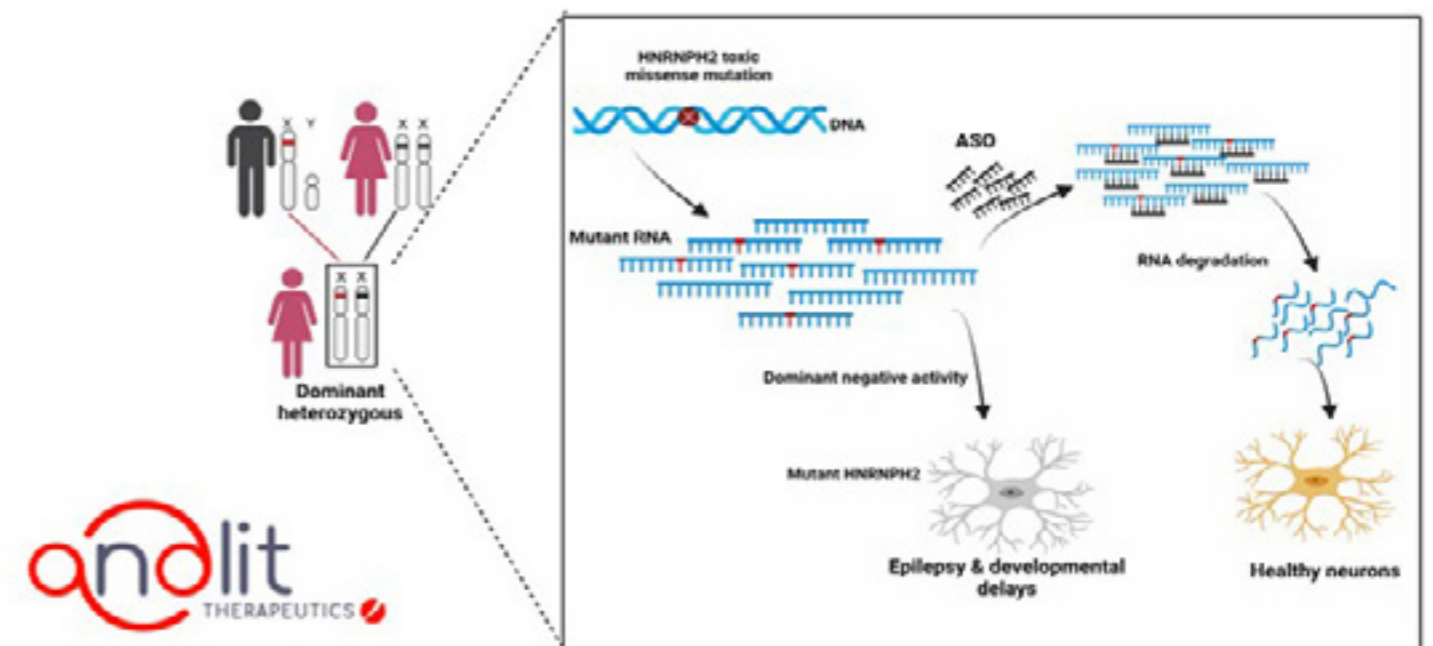
RESEARCH DESCRIPTION

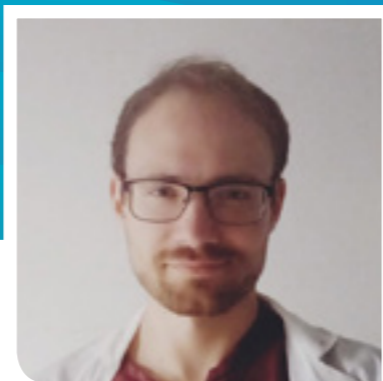
Andlit Therapeutics: Andlit Therapeutics (<https://andlit.com/>) is developing a treatment to two severe genetic disorders characterized by neuro-developmental defects and severe epilepsy. These two diseases are caused by mutations in HNRNPH2 or PCDH19. There is no cure or treatment for these severe diseases. Rotem and his team are developing antisense oligonucleotide molecules (short chemically modified RNA molecules that can bind to the desired mRNA and cause its degradation) to silence PCDH19 and HNRNPH2. They are also characterizing the molecular changes which are caused by the specific mutations in these two genes. Andlit therapeutics was formed by Medison Pharma and the charitable foundation based in NY "The Yellow Brick Road Project". Andlit is currently conducting its research in Rotem's lab under a licensing agreement with Yissum.

Skip Therapeutics: In the past decade the technology of Splice-Switching Oligonucleotides or SSOs (short chemically modified RNA molecules that can bind to the desired pre-mRNA and affect its splicing) have made it into the clinic in two rare diseases – Spinal Muscular Atrophy (SMA) and Duchenne Muscular Dystrophy (DMD). These breakthrough technologies enable now to target theoretically any exon harboring a mutation and to induce its exclusion from the pre-mRNA so the mature mRNA will not contain the mutation. However, in many cases,

excluding such exon can harm the function of the mature protein. Thus, SKIP developed a bioinformatic pipeline that can predict which exon in a given disease's gene can be excluded (skipped) without causing damage to the protein product of this gene. The company will use this pipeline to develop SSOs to some of the 7,000 rare genetic diseases.

RNable LTD: In the past five years Rotem's lab has been focusing on how nonsense mutations affect mRNA stability in genetic diseases such as Duchenne muscular dystrophy (DMD) and others. Rotem has found that an enzyme that regulates RNA methylation (m6A) levels controls mRNA stability. Genetic or pharmacological inhibition of this enzyme stabilized degradation-prone mRNAs, as well as the mutant dystrophin mRNA in DMD patient-derived cells. Furthermore, a new drug Rotem's team discovered that inhibits this enzyme was able to elevate dystrophin protein levels in two DMD patient-derived cells. These results suggest that many diseases caused by mutations that destabilize mRNA can be treated by such a drug. Rotem has also established that inhibition of this enzyme kills cancer cells that harbor specific mutations. These discoveries are patented and a new company, called "RNable", is being established these days by the FutuRX incubator, Israel Innovation Authority and Integra holdings of the Hebrew University.





VLAD SHUMEIKO

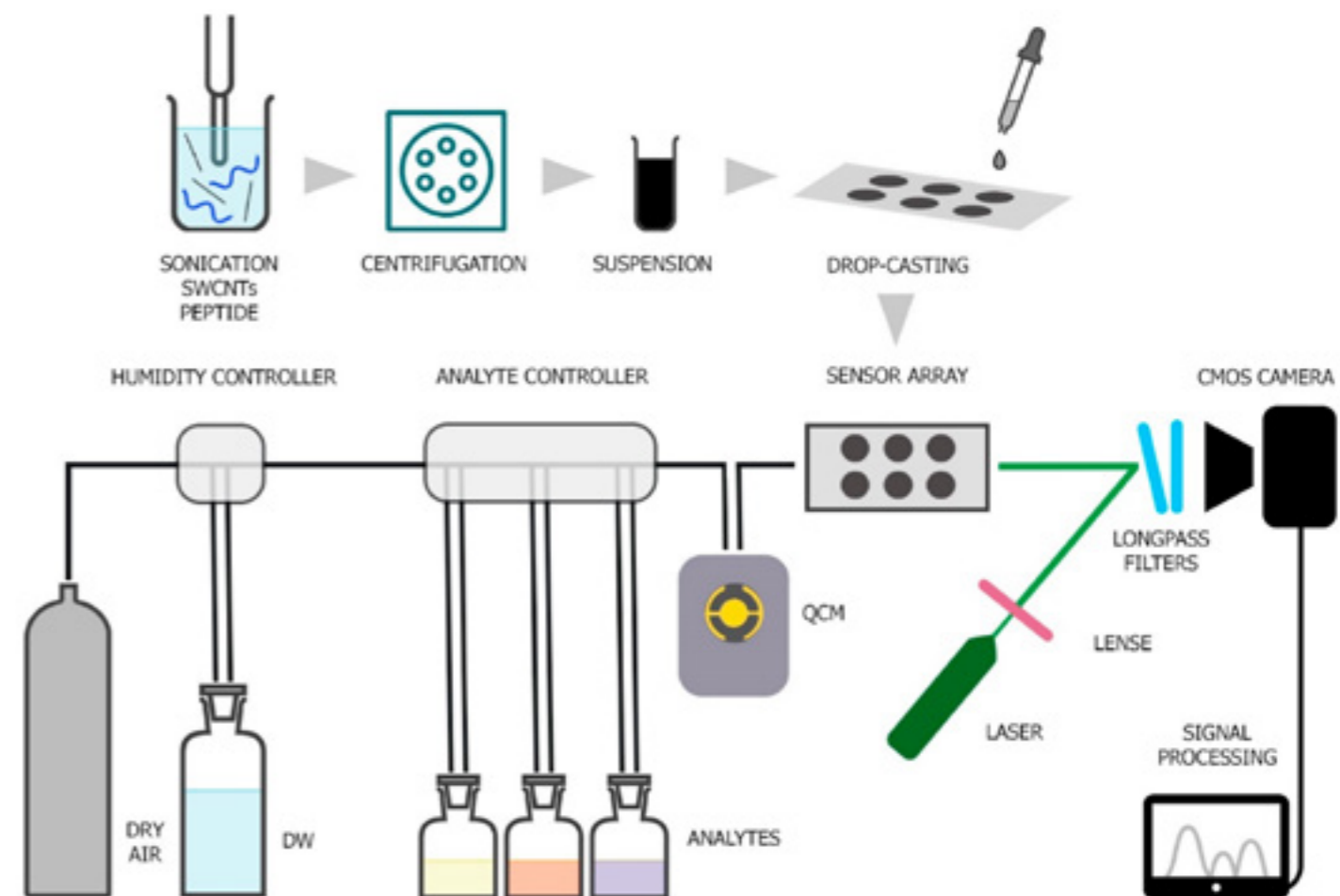
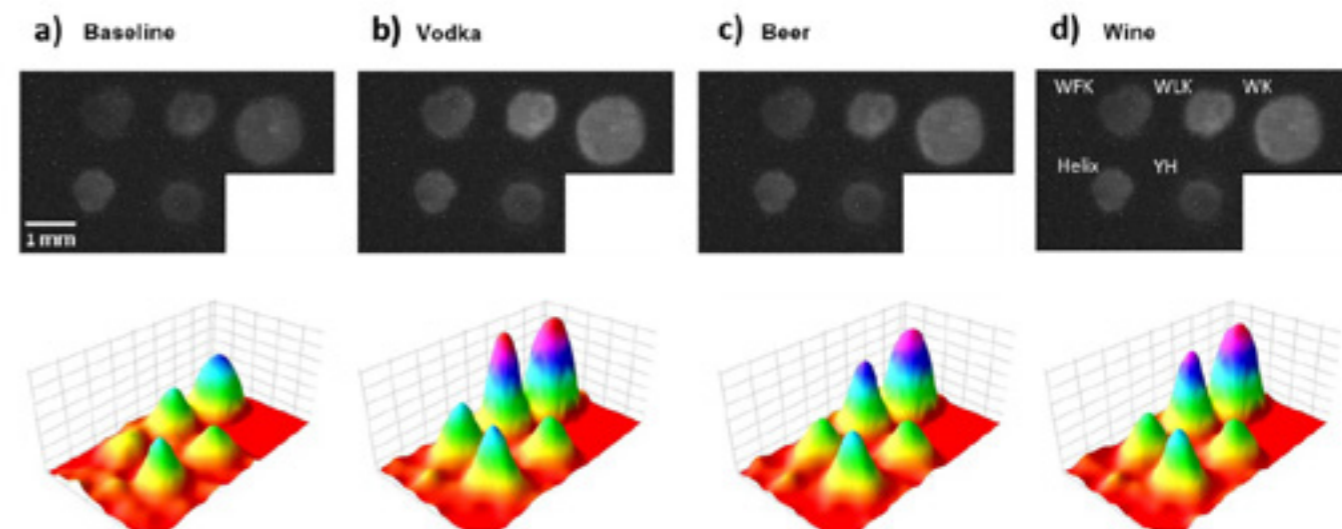
Dr. Vlad Shumeiko completed his Ph.D. in the Robert H. Smith Faculty of Agriculture, Food and Environment at the Hebrew University of Jerusalem. His research focuses on the development of various biosensors for medical, agriculture, and homeland security needs. Among projects he has led, he developed an optical sensor based on near-infrared spectroscopy for early detection of spoilage of vegetables in warehouses. In collaboration with Hadassah Hospital, he developed two different systems for rapid detection and classification of bacteria and performance of antibiotic susceptibility testing as well as a peptide-based biosensor for pancreatitis diagnostic. He has been awarded multiple research grants to support his diverse work in the field of biosensors leads to multiple grants and has three provisional patent applications.

RESEARCH DESCRIPTION

Smell is probably one of the most undervalued senses. Plato wrote that smell is of a “half-formed nature” while Immanuel Kant identified smell as the “most ungrateful” of the senses. However, today we know that a wealth of information can be extracted from the smells that surround our daily life. But need to learn how to measure them.

Electronic noses (e-nose) and optical noses (o-nose) are two emerging approaches for the development of artificial olfactory systems for flavor and smell evaluation. His work leverages the unique optical properties of semiconducting single-wall carbon nanotubes (SWCNTs) to develop a prototype of a novel paper-based near-infrared optical nose (NIRON). He drop-dried an array of SWCNTs encapsulated with a wide variety of peptides on a paper substrate and continuously imaged the emitted SWCNTs fluorescence using a CMOS camera. Odors and different volatile molecules were passed above the

array in a flow chamber, resulting in unique modulation patterns of the SWCNT photoluminescence (PL). Quartz crystal microbalance measurements performed in parallel confirmed the direct binding between the vapor molecules and the peptide-SWCNTs. PL levels measured before and during exposure demonstrated distinct responses to the four tested alcoholic vapors (ethanol, methanol, propanol, and isopropanol). In addition, machine learning tools directly applied to the fluorescence images were able to distinguish between the aromas of red wine, beer, and vodka. Furthermore, he showed that his paper-based optical biosensor could detect limonene, undecanal, and geraniol vapors and differentiate between their smells utilizing the PL response pattern. This novel optical biosensor provides data in real-time and is recoverable and suitable for working at room temperature and in a wide range of humidity levels, and opens new approaches for real-time sensing of volatile chemical compounds, odors, and flavors.



KAYE-EINSTEIN SCHOLARSHIPS

2020-2021

Second year recipients

HAGAI LAVNER

Ph.D. Candidate in Mathematics

Faculty of Science

ELAD ROMANOV

Ph.D. Candidate in Computer Science

Benin School of Computer Science and Computer Engineering

ODELIA TBOUL

Ph.D. Candidate in Astrophysics

Faculty of Science

EDEN KAMAR- Z Aidner

Ph.D. Candidate in Criminology

Faculty of Law

First year recipient

HAYM DAYAN

Ph.D. Candidate

Paul Baerwald School of Social Work and Social Welfare

KAYE INNOVATION AWARDS

AT THE HEBREW UNIVERSITY OF JERUSALEM

2020

INVENTOR: PROF. AMOS NUSSINOVITCH

Department of Biochemistry, Food Science and Nutrition

The Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Developing edible protective films to extend postharvest shelf life of fresh and processed fruit and vegetable

INVENTOR: PROF. ELKA TOUITOU

School of Pharmacy, Institute for Drug Research

Faculty of Medicine

Invention: Breakthrough technology of delivery systems for pharmaceutical cannabinoid products

INVENTOR: PROF. RUTH GALLILY

The Lautenberg Center for General and Tumor Immunology

Faculty of Medicine

Invention: The discovery that CBD is a powerful anti-inflammatory and analgesic and that it is also useful in diabetes and obesity

INVENTOR: ORIT BERHANI

Ph.D. Student in Prof. Ofer Mandelboim's lab at the Lautenberg Center for Immunology and Cancer Research

Faculty of Medicine

Invention: A new immunotherapy involving Natural Killer cells and Bi-and tri-specific antibodies

INVENTOR: AMIJAI SARAGOVI

Completed his Ph.D. under the supervision of Dr. Michael Berger

Faculty of Medicine

Invention: Devised a novel strategy that enable T cells to exclusively utilize alternative carbon source to glucose

2019

INVENTOR: PROF. YOSSI PALTIEL

The Quantum Nano Engineering Laboratory, Applied Physics Department

Invention: A generic way to synthesize and separate chiral enantiomers

INVENTORS:

PROF. GABRIEL NUSSBAUM

MD PhD. Expertise in innate immune signaling in infection and autoimmunity. Institute of Dental Sciences.

PROF. AMNON HOFFMAN

PhD. Expertise in bio-pharmaceutics, drug delivery and clinical pharmacy. Institute of Drug Research.

PROF. CHAIM GILON

PhD. World renowned expert in peptide chemistry, inventor of the backbone cyclization concept for peptide drug design and development.

Institute of Chemistry.

Invention: MyR-c(MyD 4-4), a novel cyclic peptide drug lead for autoimmune disease and cancer therapy

INVENTOR: PROF. OREN TIROSH

Redox Biology Lab.

Institute of Biochemistry, Food Science and Nutrition, Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Novel approach for safe preservation of meat products

INVENTOR: MR. JOSHUA MOSS

MD-PhD student under the mentorship of Prof. Yuval Dor at the Faculty of Medicine and Prof. Tommy Kaplan at the School of Computer Science and Engineering

Invention: A blood test to detect and localize cell death

INVENTOR: MS. BAT-EL COHEN

PhD student in Prof. Lioz Etgar's research lab

The Institute of Chemistry

Invention: Incorporation of 2D perovskite towered enhanced efficiency and stability in solar cells

2018

INVENTOR: PROF. URIEL LEVY

Department of Applied Physics, Faculty of Science

The Harvey M. Krueger Family Center for Nanoscience & Nanotechnology

Invention: CMOS Compatible Low Cost Photodetection in the Short Wave Infrared (SWIR)

INVENTOR: PROF. YAAKOV NAHMIA

Department of Bioengineering, The Selim and Rachel Benin School of Engineering and Computer Science

The Alexander Silberman Institute of Life Sciences, Faculty of Science

Invention: Liver on a Chip Technology (Tissue Dynamics)

INVENTOR: PROF. RAM REIFEN

The School of Nutritional Sciences

The Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: ChickP- The New Vegetarian Protein

INVENTOR: MS. ADI RECHES

Department of Immunology

Lautenberg Center for General and Tumor Immunology

Faculty of Medicine

Invention: Blocking Antibodies against Nectin4 as Cancer Immunotherapy

INVENTOR: MRS. SIVAN NIR-LUZ

Department of Chemistry, Institute of Chemistry

Faculty of Science

Invention: Simple Peptide Particles with Dual Antifouling and Antimicrobial Activity

2017

INVENTORS: PROF. YUVAL DOR AND DR. RUTH SHEMER

Department of Developmental Biology and Cancer Research,
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School.

Invention: Noninvasive Detection of Tissue Damage

INVENTOR: PROF. BERTA LEVAVI-SIVAN

Department of Animal Science,
The Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Growth and Reproduction in Aquaculture

INVENTOR: PROF. AMIRAM GOLDBLUM

Institute for Drug Research, School of Pharmacy, Faculty of Medicine

Invention: A Novel Generic Algorithm Applied for Discovering Highly Active Drug Candidates

INVENTOR: MR. IDO SAGI

Department of Genetics Alexander Silberman Institute for Life Sciences,
Faculty of Science

Invention: Haploid Human Embryonic Stem Cells and Somatic Cells

INVENTOR: MS. SUAAD ABD-ELHADI

Department of Biochemistry and Molecular Biology,
Institute for Medical Research Israel-Canada,
Hebrew University-Hadassah Medical School

Invention: Lipid's ELISA: A Highly Sensitive Diagnostic Assay for Parkinson's Disease

2016

INVENTOR: PROF. YOEL SASSON

Casali Institute of Applied Chemistry
Institute of Chemistry, Faculty of Science

Invention: Novel Reagent for Purification of Oil-Contaminated Soil

INVENTOR: DR. MEITAL RECHES

Institute of Chemistry, Faculty of Science

Invention: Biocompatible and Environmentally-Friendly Antifouling Materials

INVENTORS: PROF. REUVEN REICH, PROF. ELI BREUER, PROF. AMNON HOFFMAN

Institute for Drug Research

School of Pharmacy, Faculty of Medicine

Invention: Novel Carbamoylphosphonate-Based Compounds for the Treatment and Prevention of Metastatic Diseases

INVENTOR: DR. PINCHAS TSUKERMAN

Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine

Invention: New Immunotherapy Against Cancer

INVENTOR: MR. OREN BEN DOR

Department of Applied Physics
The Rachel and Selim Benin School of Computer Science and Engineering
Faculty of Science

Invention: Chiral Molecular-Based Spin Devices

2015

INVENTOR: PROF. URI BANIN

Institute of Chemistry and the Harvey M. Krueger Family Center for Nanoscience and Nanotechnology,
Faculty of Science

Invention: Semiconductor Quantum Rods - A Quantum Leap for Displays

INVENTOR: PROF. OFER MANDELBOIM

Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine

Invention: Development of Monoclonal Antibody against NKp46 for the Treatment of Type 1 Diabetes Mellitus (T1D)

INVENTOR: DR. ZVI PELEG

Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Development of New Elite Sesame Cultivars Adapted for Mechanical Harvest with Enhanced Yield and Seed Quality

INVENTOR: DR. ELAD HOROWITZ

Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine

Invention: Methods of Predicting Efficacy of an Anti-VEGFA Treatment for Solid Tumors

INVENTOR: MS. GEULA HANIN

Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science

Invention: Down Regulating miRNA-132 for the Treatment of Lipid Related Disorders

2014

INVENTOR: PROF. SIMON BENITA & DR. TAHER NASSAR

Institute for Drug Research (IDR)
School of Pharmacy, Faculty of Medicine

Invention: Development of an Original Nano-Delivery Platform for Markedly Improving the Oral Absorption of Poorly Absorbed Drugs and Proteins

INVENTOR: PROF. SHLOMO MAGDASSI

Casali Center for Applied Chemistry
Institute of Chemistry, Faculty of Science

Invention: Transparent Conductive Coffee Rings for Touch Screens

INVENTOR: PROF. MICHAL BANIYASH

Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School

Invention: Novel Prognostic/Diagnostic Biomarkers for Detecting the Immune Status of Patients Suffering from Diseases Characterized by Chronic Inflammation and Associated Immunosuppression

INVENTOR: MICHAEL BRANDWEIN

Biofilm Research Laboratory
Institute of Dental Sciences, Faculty of Dental Medicine

Invention: Novel AntiBiofilm/Antibacterial Polymer for Food Packaging

INVENTOR: YOTAM BAR-ON

Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School

Invention: Development of Novel Antibodies for the Treatment of Influenza Infections

2013

INVENTOR: PROF. ILAN SELA

Robert H. Smith Institute for Plant Sciences and Genetics

Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Silencing of Bee-Affecting Viral Genes in order to Control CCD

INVENTOR: PROF. AVI DOMB

Institute for Drug Research (IDR)

School of Pharmacy, Faculty of Medicine

Invention: Maze Water Purification System

INVENTOR: PROF. RAYMOND KAEMPFER

Department of Biochemistry and Molecular Biology

Institute for Medical Research Israel-Canada (IMRIC)

Hebrew University-Hadassah Medical School, Faculty of Medicine

Invention: Reduction of Inflammatory Disease Symptoms with Short Peptides that Inhibit Signaling through CD28

INVENTOR: URI BEN-DAVID

Department of Genetics

Silberman Institute of Life Sciences, Faculty of Science

Invention: PluriSIns – Pluripotent Specific Inhibitors

INVENTOR: MARGANIT COHEN-AVRAHAMI

Institute of Chemistry, Faculty of Science

Invention: Transdermal Delivery Vehicles for NSAIDs: The Combination of Liquid Crystals with Cell-Penetrating Peptides

INVENTOR: NOA KAYNAN

Department of Immunology and Cancer Research

Institute for Medical Research Israel-Canada (IMRIC)

Hebrew University-Hadassah Medical School, Faculty of Medicine

Invention: Generation of 'Super' Fc Antibody for Improving Medical Treatments

2012

INVENTOR: PROF. RAPHAEL (RAFFI) GOREN

The Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: The Search for a Novel Water-Soluble Cyclopropene Derivative Antagonist (CPAS) of Ethylene Action in Agricultural Crops

INVENTOR: PROF. SAUL YEDGAR

Department of Biochemistry and Molecular Biology

Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine

Invention: A Novel Class of Multi-Functional Anti-Inflammatory Drugs (MFAIDs) for the Treatment of Inflammatory/Allergic Diseases

INVENTOR: PROF. HAYA LORBERBOUM -GALSKI

Department of Biochemistry and Molecular Biology

Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine

Invention: Cell and Organelle-Directed Protein Replacement Therapy for Mitochondrial and other Metabolic Diseases

INVENTOR: LITAL MAGID

Institute for Drug Research, Faculty of Medicine

Invention: Novel Cannabinoid Receptor Type 2 Selective Agonists for the Treatment of Inflammatory Conditions and Acute Central Nervous System Injury

INVENTOR: IDIT SAGIV-BARFI

Alexander Silberman Institute of Life Sciences, Faculty of Science

Invention: Novel T Cells Proliferation Inhibitors

INVENTOR: CHAMUTAL GUR, M.D.

Ph.D. student under the supervision of Prof. Ofer Mandelboim

Lautenberg Center for General and Tumor Immunology

Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine

Invention: Generation of Anti-NKp46 mAb for the Treatment of Type 1 Diabetes

2011

INVENTOR: PROF. HAIM D. RABINOWITCH

Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Genetic Innovations in Vegetable Crops: The Cornerstone of Israel's Prominence in Hi-BioTech Seed Industries

INVENTOR: PROF. DAN GAZIT

Skeletal Biotech Laboratory, Faculty of Dental Medicine

Invention: Novel Technologies for Adult Stem Cell Manipulation and Applications in Tissue Engineering and Regenerative Medicine

INVENTOR: DR. RAANAN FATTAL

Benin School of Computer Science and Engineering, Faculty of Science

Invention: Second-Generation Wavelet-Based Image Enhancement

INVENTOR: MS. KATY MARGULIS-GOSHEN

Casali Institute of Applied Chemistry, Faculty of Science

Invention: Formation of Organic Nanoparticles from Microemulsions: Enhancing Water Solubility for Improved Biological Performance in Pharmaceuticals, Agriculture and Cosmetics

INVENTOR: MR. YFTAH TAL-GAN

Institute of Chemistry, Faculty of Science

Invention: Development of New Peptide-Based Inhibitors of Protein Kinase B (PKB) as Potential Drugs for Cancer

INVENTOR: MS. ADA GRIN

Institute for Drug Research, Faculty of Medicine

Invention: Tissue Regeneration Membrane

2010

INVENTOR: PROF. NISSIM BENVENISTY

Silberman Institute of Life Sciences, Faculty of Science

Invention: Technologies to Enable Directed Differentiation of Human Embryonic Stem Cells

INVENTOR: PROF. ODED SHOSEYOV

The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
The Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Molecular Farming of Human Recombinant Collagen in Transgenic Tobacco Plants

INVENTOR: PROF. SHMUEL PELEG

Benin School of Computer Science and Engineering, Faculty of Science

Invention: Video Synopsis: Summarizing and Indexing Surveillance Video

INVENTOR: PROF. ALEXANDER VAINSTEIN

The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
The Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Towards Tailor-Made Crops and Compounds

INVENTOR: MS. MICHAL ISAACSON

Ph.D. student of Dr. Noam Shoval, Department of Geography, Faculty of Social Sciences

Invention: A Novel System for Tracking and Analyzing Human Spatial Behavior by Monitoring People's Mobility for Tourism, Town Planning and Healthcare Applications

INVENTOR: MR. AVIAD HAI

Ph.D. student of Prof. Micha Spira Department of Neurobiology Alexander Silberman Institute of Life Sciences
Faculty of Science

Invention: In-cell Recordings and Stimulation: A Fundamental Breakthrough Concept and Technology for Neuroprosthetics

Previous Winners

INVENTORS:

MR. EZEQUIEL WEXSELBLATT

Ph.D. Supervisor: Prof. Jehoshua Katzhendler Institute for Drug Research, School of Pharmacy, Faculty of Medicine

MR. ROEE VIDAUSKI

Ph.D. Supervisor: Prof. Gad Glaser Department of Developmental Biology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine

Invention: Compounds for Treating Bacterial Infections

INVENTOR: MR. MICHAEL GROUCHKO

Ph.D. student of Prof. Shlomo Magdassi Casali Institute of Applied Chemistry, Institute of Chemistry
Faculty of Science

Invention: Air Stable Copper Nanoparticles: Conductive Inks for Printed Electronics

2009

INVENTOR: PROF. ABRAHAM HOCHBERG

Department of Biological Chemistry, Faculty of Science

Invention: From a Noncoding Oncofetal RNA to Cancer Therapy: Personalizing Medicine with H19

INVENTOR: PROF. SHLOMO SASSON

Department of Pharmacology & Experimental Therapeutics, School of Pharmacy

Invention: Novel D-Xylose Derivatives: A New Class of Antihyperglycemic Compounds

INVENTOR: PROF. DAPHNE ATLAS

Department of Biological Chemistry, Faculty of Science

Invention: Development of Small Molecules for the Treatment of Neurodegenerative Diseases

INVENTOR: PROF. ARIEH GERTLER

Institute of Biochemistry, Food Science and Nutrition,
Robert H. Smith Faculty of Agriculture, Food and Environment

Invention: Development of Leptin Antagonists and their Potential Use as Therapeutic Modalities

INVENTOR: MR. SHAY SELA

Ph.D. student of Prof. Eli Keshet, Institute for Medical Research Israel-Canada, Faculty of Medicine

Invention: The Identification of a Novel Prognostic and Diagnostic Marker of Preeclampsia

INVENTOR: MR. DIMA LIBSTER

Ph.D. student of Prof. Nissim Garti and Prof. Gil Shoham,
Casali Institute of Applied Chemistry, Faculty of Science

Invention: Lyotropic Hexagonal Liquid Crystals as Carriers of Therapeutic Peptides for Transdermal Administration: Solubilization and Structural Characterization

INVENTOR: MR. SHAUL LAPIDOT

Ph.D. student of Prof. Oded Shoseyov, Smith Institute for Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food & Environment

Invention: Compositions Comprising Fibrous Polypeptides and Polysaccharides

INVENTOR: MS. NETA PESSAH

Ph.D. student of Prof. Meir Bialer and Prof. Boris Yagen, School of Pharmacy

Invention: α -Fluoro and α -Chloro 2,2,3,3-Tetramethylcyclopropylcarboxamide:

Two Novel Chemical Entities for the Treatment of Epilepsy and Other Disorders

2008

INVENTOR: PROF. DANIEL COHN

Casali Institute of Applied Chemistry, Institute of Chemistry, Faculty of Science

Invention: Tailor-made Biodegradable Polymers for the Prevention of Post-surgical Adhesions

INVENTOR: PROF. HERMONA SOREQ

Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science

Invention: Engineered Human Cholinesterases and RNA-Targeted Agents to Suppress Their Functioning

INVENTORS: DR. ARIE DAGAN AND PROF. SHIMON GATT

Department of Biochemistry, Faculty of Medicine

Invention: Development of Novel Anti-cancer Drugs

INVENTOR: MR. YANIV SEMEL

Ph.D. student under the supervision of Prof. Dani Zamir

The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture

Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Phenom Networks: A Web-based System for the Analysis of Quantitative Phenotypes on Both Plants and Animals for Breeding and Research

INVENTOR: MR. NADAV KIMELMAN-BLEICH

Ph.D. and DMD student under the supervision of Prof. Dan Gazit
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine

Invention: Scaffolds with Oxygen Carriers and Their Use in Tissue Engineering

INVENTOR: MR. DIMA SHEYNI

Ph.D. student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine

Invention: Ultrasound-based Non-viral Gene Delivery Induces Bone Formation In Vivo

INVENTOR: MR. MATAN RAPOPORT

Ph.D. student under the supervision of Prof. Haya Lorberboum-Galski

Department of Cellular Biochemistry and Human Genetics, Faculty of Medicine

Invention: Enzyme Replacement Therapy for Mitochondrial Disorders: Lipoamide Dehydrogenase Deficiency as a Proof-of-principle

2007

INVENTOR: PROF. DANI ZAMIR

Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Improving Plant Breeding Using Exotic Genetic Libraries

INVENTORS: PROF. MEIR BIALER AND PROF. BORIS YAGEN

Departments of Pharmaceutics, and Medicinal Chemistry and Natural Products
School of Pharmacy, Faculty of Medicine

Invention: Design and Development of Valnoctamide: A New Drug with Stereoselective CNS Activities

INVENTOR: PROF. LEO JOSKOWICZ

School of Engineering and Computer Science, Faculty of Science

Invention: An Image-guided System with a Miniature Robot for Precise Positioning and Targeting in Keyhole Neurosurgery

INVENTOR: MR. YANIV LINDE

Student of Prof. Chaim Gilon, Department of Organic Chemistry, Faculty of Science

Invention: A Novel Oral Anti-obesity Drug Candidate: Reduction of Food Consumption by Melanocortin-4 Peptide Agonist

INVENTOR: MR. EREZ PODOLY

Student of Prof. Hermona Soreq, Department of Biological Chemistry, Faculty of Science

Invention: A Natural Brain Protein Protection from Alzheimer's Disease

INVENTOR: MR. MORAN FARHI

Student of Prof. Alexander Vainstein and Dr. Hagai Abeliovich

Smith Institute of Plant Sciences and Genetics in Agriculture

Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Engineering Saccharomyces Cerevisiae for the Production of Methylbenzoate and Resistance to Benzoic Acide for Uses in the Food Industry

INVENTOR: MR. YUVAL AVNIR

Student of Prof. Yechezkel Barenholz, Department of Biochemistry, Faculty of Medicine

Invention: Liposomal Glucocorticoids for Treating Inflammatory States

2006

INVENTOR: DR. YONATAN ELKIND

Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Breeding of Pepper Varieties Adapted for Protected Cultivation under Mild Winter Conditions

INVENTOR: PROF. ELKA TOUITOU

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Ethosome Innovative Technology

INVENTOR: PROF. MOSHE KOTLER

Department of Pathology, Faculty of Medicine

Invention: A Prophylactic Vaccine Preventing a Mortal Viral Disease of Koi Fish and Carps

INVENTORS: PROF. MEIR BIALER AND PROF. BORIS YAGEN

Departments of Pharmaceutics, and Medicinal Chemistry and Natural Products, School of Pharmacy,
Faculty of Medicine

Invention: Design and Development of a New Drug with Enantioselective CNS Activities – Propylisopropyl Acetamide (PID)

INVENTOR: MS. ELENA KHAZANOV

Student of Prof. Yechezkel Barenholz, Department of Biochemistry, Faculty of Medicine

Invention: Tumorsuppressive Therapy by Liposome Containing both Doxorubicin and Ceramide

INVENTOR: MR. YEHOSHUA MAOR

Student of Prof. Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products,
School of Pharmacy, Faculty of Medicine

Invention: Novel Anti-hypertensive Agents based on Cannabis Constituent with Anti-inflammatory Properties-synergistic - Beneficial Cardiovascular Effects

INVENTOR: MR. NIR QVIT

Student of Prof. Chaim Gilon, Department of Organic Chemistry, Faculty of Science

Invention: SIB: Small Integrated Building Blocks

INVENTOR: MS. KHULOUD TAKROURI

Student of Prof. Morris Srebnik

Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine

Invention: Synthesis and Anti-microbial Activity of a Novel Series of Alkyldimethylamine Cyanoboranes and their Derivatives

2005

INVENTORS: PROF. SHLOMO MAGDASSI AND DR. YELENA VINETSKY

Casali Institute of Applied Chemistry, Faculty of Science

Invention: Ceramic Ink Jets for Digital Printing on Glass

INVENTOR: DR. ZEHAVA UNI

Department of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Enhancement of Development of Oviparous Species by In Ovo Feeding – Feeding Eggs with Natural Nutrient Supplements Before They Hatch to Produce More Robust Chicks

INVENTOR: PROF. SIMON BENITA

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Cationic Emulsions for Ophthalmic Drug Delivery

INVENTOR: PROF. URI BANIN

Department of Physical Chemistry and Center for Nanoscience and Nanotechnology, Faculty of Science

Invention: Semiconductor Nanocrystals for Optical, Electronic, Imaging and Biological Applications

INVENTOR: MR. TALEB MOKARI

Student of Prof. Uri Banin, Department of Physical Chemistry and Center for Nanoscience and Nanotechnology, Faculty of Science

Invention: Semiconductor Nanocrystals with Conductive Zone

INVENTOR: MR. ADEL JABBOUR

Student of Prof. Doron Steinberg and Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products,
School of Pharmacy and Institute of Dental Sciences, Faculty of Dental Medicine

Invention: Interfering in Bacterial Cross-talk: A Novel Means to Influence Pathogenicity of Biofilms

INVENTOR: MS. NATALYA KOGAN

Student of Prof. Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products,
School of Pharmacy, Faculty of Medicine

Invention: Cancer Drug – Use of Quinonoid Derivatives of Cannabinoids and Such Novel Compounds in the Treatment of Malignancies

INVENTOR: MR. RANI POLAK

Student of Prof. Eran Goldin and Dr. Eitan Israeli, Faculty of Medicine

Invention: GourMed – Cooking School that Will Develop Recipes and Run a Course for People with Dietary Limitations due to Chronic Diseases

INVENTORS: STAFF OF PROF. MICHA WEISS

Department of Computerized Information Systems, Computerized Student Course Registration Project Team

Invention: Computerized Student Course Registration Project Team “Smart Raffle”

2004

INVENTOR: PROF. AMNON SHASHUA

School of Engineering and Computer Science, Faculty of Science

Invention: Monocular Visual Processing for On-board Driving Assistance

INVENTORS:

PROF. ITAMAR WILLNER, DR. EUGENII KATZ, DR. FERNANDO PATOLSKY AND MR. YOSSI WEIZMANN

Institute of Chemistry, Faculty of Science

Invention: Optoelectronic Detection of Telomerase in Cancer Cells: Development of a Screening Test for Urinary Bladder in Urine Samples

INVENTORS:

PROF. MICHAEL FRIEDMAN AND PROF. AMNON HOFFMAN

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

DR. ERAN LAVY

Koret School of Veterinary Medicine, Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Novel Gastro-retentive Dosage Form (GRDF) – A Means for Sustained Administration of Drugs with Narrow Absorption Window at the Upper Gastrointestinal Tract

INVENTORS: MR. AVIRAM SPERNATH AND MS. IDIT YULI-AMAR

Students of Prof. Nissim Garti, Casali Institute of Applied Chemistry, Faculty of Science

Invention: New Nanosized Vehicles for Triggering and Targeting of Phytochemicals

INVENTOR: MS. AVITAL TORRES-KERNER

Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy

Invention: New Natural Sunscreens: UVR Absorbing Compounds from Lichens and Cyanobacteria

INVENTOR: DR. HIJAZI ABU ALI

Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine

Invention: Novel Organoboronic Compounds – Synthesis and Biological Activity

INVENTOR: MR. TAREQ JUBETH

Student of Prof. Abraham Rubinstein and Prof. Yechezkel Barenholz, Departments of Pharmaceutics and Biochemistry, Faculty of Medicine

Invention: Targeting the Intestinal Mucosa by Charged Liposomes

INVENTOR: MR. OMRI BEN-ZION

Student of Prof. Amos Nussinovitch, Institute of Biochemistry, Food Science and Nutrition

Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Novel Method and Apparatus for Testing the Rolling Tack of Pressure-sensitive Adhesive Methods

2003

INVENTORS: PROF. NISSIM GARTI AND DR. ABRAHAM ASERIN

Casali Institute of Applied Chemistry, Faculty of Science

Invention: Nano-sized Self-assembled Structured Liquids

INVENTOR: DR. ABDULLAH HAJ-YEHIA

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Design, Synthesis, and Biological Activity of Novel Hybrid Drugs

INVENTOR: DR. JONATHAN MIRVIS

Melton Centre for Jewish Education, School of Education

Invention: Florence Melton Adult Mini-School: A Social Franchise Model

INVENTOR: MS. DRORA BALAGA

Smith Institute of Plant Sciences and Genetics in Agriculture,
Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: "TOMATO" Computerized System, Breeding Hybrid Varieties

INVENTOR: ENG. TOM KOEVARY

Casali Institute of Applied Chemistry, Faculty of Science

Invention: The Centre for Process Development: A Platform for Thousands of "Inventors to Order" for Industry

INVENTOR: PROF. ZICHRIA ZAKAY-RONES

Institute of Microbiology, Faculty of Medicine

Invention: Anti-cancer Therapy by Newcastle Disease Virus (NDV)

INVENTOR: MR. ARIE GRUZMAN

Student of Prof. Shlomo Sasson, Department of Pharmacology and Experimental Therapeutics, School of Pharmacy, Faculty of Medicine

Invention: Novel Anti-hyperglycemic Drugs

INVENTOR: MS. AVIVA JOSEPH

Student of Prof. Eli Kedar and Prof. Yechezkel Barenholz, The Lautenberg Center for Immunology and Department of Biochemistry, Faculty of Medicine

Invention: INFLUSOME-VAC, Three Novel, Highly Efficient Influenza Vaccines

INVENTOR: MR. HADI ASLAN

Student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine

Invention: Novel Methods for Stem Cells Based Therapy

INVENTOR: MR. SHAI SHALEV-SHWARTZ

Student of Prof. Yoram Singer, School of Engineering and Computer Science, Faculty of Science

Invention: A Query Melody System

INVENTOR: MR. MICKEY KOSLOFF

Student of Prof. Zvi Selinger, Silberman Institute of Life Sciences, Faculty of Science

Invention: Drug-assisted Catalysis, Novel Cancer Therapeutics

INVENTOR: MR. ABED AL-AZIZ QUNTAR

Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine

Invention: The Synthesis of Novel Di-and Tri-Vinylphosphonates

2002

INVENTOR: PROF. SHMUEL BEN-SASSON

Department of Experimental Medicine and Cancer Research, Faculty of Medicine

Invention: Kin-Ace Technology – A Broad Platform Technology for Disease Control via the Interception of Intracellular Signaling

INVENTORS:**PROF. MICHAEL SELA AND DR. DORON ST EINBERG**

Department of Oral Biology, Faculty of Dental Medicine

PROF. MICHAEL FRIEDMAN

School of Pharmacy, Faculty of Medicine

PROF. W. AUBREY SOSKOLNE

Department of Periodontics, Faculty of Dental Medicine

Invention: Periochip-sustained Release Treatment for Periodontal Diseases

INVENTOR: PROF. GERSHON GOLOMB

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Nanoparticulate Drug Delivery Systems for Restenosis Therapy

INVENTOR: PROF. SHMUEL PELEG

School of Engineering and Computer Science, Faculty of Science

Invention: OMNISTEREO: Capturing and Viewing 3D Stereoscopic Panoramic Images

INVENTOR: DR. SHLOMO YITZCHAIK

Department of Inorganic and Analytical Chemistry, Faculty of Science

Invention: Molecular Layer Epitaxy (MLE)

INVENTOR: DR. WILLIAM (BILL) BREUER

Department of Biological Chemistry, Faculty of Science

Invention: A Test for the Detection of Toxic Forms of Iron in Human Plasma

INVENTOR: DR. ITSHAK GOLAN

The Lautenberg Center for Immunology, Faculty of Medicine

Invention: Novel CD44 Variant: Potential Target in the Therapy of Rheumatoid Arthritis

INVENTOR: MR. EYTAN KLAUSNER

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Novel Gastroretentive Dosage Forms

INVENTOR: MS. NINA ISOHERRAREN

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: New Anti-epileptic Drug

INVENTOR: MR. ALEXEI SHIR

Department of Biological Chemistry, Faculty of Science

Invention: Targeted dsRNA Brain Cancer Therapy

INVENTOR: MR. FERNANDO PATOLSKY

Institute of Chemistry, Faculty of Science

Invention: Creating Multi-stress Resistance in Arabidopsis

INVENTOR: MR. ALEXANDER MAZEL

Department of Plant Sciences, Faculty of Science

Invention: Creating Multi-stress Resistance in Arabidopsis Plants

INVENTOR: MS. LITAL ALFONTA

Institute of Chemistry, Faculty of Science

Invention: An Electronic Sensor to Identify Drug Resistance in HIV Patients

INVENTOR: MR. YOSHI GAFNI

Skeletal Biotechnology Laboratory, Faculty of Dental Medicine

Invention: Vascular Tissue Engineering

INVENTOR: DR. GADI PELLED

Skeletal Biotechnology Laboratory, Faculty of Dental Medicine

Invention: Engineering of Complex Hybrid Tissues

2001

INVENTOR: PROF. EDUARDO MITRANI

Silberman Institute of Life Sciences, Faculty of Science

Invention: Micro-organ Technology for Genetically Engineered Bio-pumps

INVENTOR: PROF. SIMON BENITA

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Drug Delivery through Positively Charged Submicron Emulsions

INVENTORS:**MR. DANNY VINITSKY AND MR. EITAN RAZ**

Department of Computerized Information Systems

MR. YEHAVI BOURVINE

Computation Center

Invention: Short Message Service (SMS) Supplied by All Cellphone Operators Sending Short Text Messages to Students' Phones

INVENTOR: DR. ANDREW SHIPWAY

Institute of Chemistry, Faculty of Science

Invention: Novel Technology for the Generation of Electronic Circuits Using a Novel Computer-assisted Printing Method

INVENTORS: PROF. YONA CHEN, PROF. YITZHAK HADAR AND MR. AMIR TOAR

Department of Soil and Water Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: "RollCom" – A Novel, Simple, and Easy to Operate Composting Apparatus

INVENTOR: PROF. ITAMAR GATI

Department of Psychology, Faculty of Social Sciences, and School of Education

Invention: "Future Directions" Internet Site to Facilitate Career Decision Making

INVENTOR: MS. MIRIAM V. KOTT-GUTKOWSKI

Silberman Institute of Life Sciences, Faculty of Science

Invention: MDRTL Ex-Vivo Kit Measure and Select Effective Multi-drug Resistance Blocker

INVENTOR: MS. SUSANNA TCHILIBON

School of Pharmacy, Faculty of Medicine

Invention: HU-320 Anti-inflammatory Drug

INVENTOR: MR. YEHUDA GIL

The Center for Multimedia-Assisted Instruction

Invention: The Mobile Smart Table-MST Combining Various Multimedia Accessories

2004

INVENTOR: PROF. MARTA WEINSTOCK-ROSIN

Department of Pharmacology, School of Pharmacy, Faculty of Medicine

Invention: Development of Exelon: A Drug for the Treatment of Alzheimer's Disease (AD)

INVENTOR: PROF. MEIR BIALER

Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: Valproyl Glycinamide (TV 1901): A New Anti-epileptic (AED) and CNS Drug for the Treatment of Migraine, Neuropathic Pain, and Mania

2000

INVENTORS: PROF. AVNER ADIN AND DR. NICOLAI VESCAN

Assistants: Ms. Rivka Kalbo and Ms. Luba Rubinstein

Division of Environmental Sciences, School of Applied Science, Faculty of Science

Invention: "Electro-Flocculation" for Water Treatment and Reuse

INVENTOR: DR. BARUCH SCHWARZ

School of Education

Invention: The "Kishurim Project"

INVENTOR: MR. ITAI PELES

Computer Authority, Ein Kerem

Invention: IBTS-Internet Based Testing System to Replace Traditional Questionnaires and Written Tests

INVENTOR: MR. REUVAN AMAR

Computer Authority, Mount Scopus

Invention: HUDAP-Hebrew University Data Analysis Package

INVENTOR: MR. MEIR GLICK

Department of Medicinal Chemistry, School of Pharmacy, Faculty of Medicine

Invention: Novel Stochastic Algorithm for Use in Life Sciences, Physics, Telecommunications and Economics

INVENTOR: MR. GIL RONEN

Department of Genetics, Silberman Institute of Life Sciences, Faculty of Science

Invention: Novel Plant Gene "B" and Methods to Genetically Manipulate Color Formulation in Plants

INVENTOR: MR. NIR SITVANI

Department of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Antelope-like Stimulating Device to Reduce Stress of Wild Animals in Captivity

1999

INVENTOR: DR. ODED SHOSEYOV

Department of Plant Pathology and Microbiology, Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: CBD Technology – Using the CBD Protein to Bind Various Molecules to Cellulose

INVENTOR: PROF. ELISHA TEL-OR

Department of Agricultural Botany and Otto Warburg Center for Biotechnology in Agriculture

Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Azolla Biofilter for Waste Treatment

INVENTOR: PROF. HERMONA SOREQ

Department of Biological Chemistry, Faculty of Science

Invention: Antisense Technology – To Treat Various Neurodegenerative Syndromes

INVENTORS:

MR. YARON BEN-ETZION

Head of Manpower and Payroll

MS. CHAVA SPRUCH

Head of Payroll System, Department for Computerized Information Systems

Invention: A Solution for BUG 2000

INVENTOR: MR. LEON MARGOLIN

Department of Anatomy and Cell Biology, Faculty of Medicine

Invention: A Mask for the Treatment of Headaches

INVENTOR: MR. GADI TURGEMAN

Bone Gene Therapy and Molecular Pathology Laboratory, Faculty of Dental Medicine

Invention: The Reciprocal Differentiation System, Controlling the Level of BMP2 Expression

1998

INVENTOR: PROF. ITAMAR WILLNER

Institute of Chemistry, Faculty of Science

Invention: Layered Electrically-Contacted Enzyme-Electrodes and Antigen/Antibody Assembles for Electrochemical and Piezoelectrical Biosensors and Immunosensor Devices

INVENTORS:

PROF. NISSIM GARTI

Casali Institute of Applied Chemistry, Faculty of Science

DR. YURI FELDMAN

Department of Applied Physics, Faculty of Science

Invention: Time Domain Dielectric Spectrometer (TDDS) for Investigation of Advanced Materials and Medical Systems

INVENTORS: PROF. MICHAEL SCHIEBER, DR. JACOB NISSENBAUM, DR. LEONID MELKHOV AND MS. ASAF ZUCK

School of Applied Science, Faculty of Science

Invention: Polycrystalline Hg 12 X-Ray Detector Plates for Digital Radiology

INVENTORS:

PROF. DAVID AVNIR

Institute of Chemistry, Faculty of Science

PROF. SERGEI BRAUN

Silberman Institute of Life Sciences, Faculty of Science

PROF. OVADIA LEV

Division of Environmental Sciences, Faculty of Science

PROF. MICHAEL OTTOLENGHI

Institute of Chemistry, Faculty of Science

Invention: Reactive Organic Sol-gel Ceramic Materials

INVENTOR: PROF. JOSEPH HIRSCHBERG

Silberman Institute of Life Sciences, Faculty of Science

Invention: Genetic Engineering of Astaxanthin Production in Transgenic Plants

INVENTOR: MR. AMIR ZUKER

Kennedy-Leigh Centre for Horticultural Research, Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: Transgenic Carnation Plants with Novel Characteristics

INVENTOR: MR. GALEN MARQUIS

Institute of Jewish Studies, Faculty of Humanities

Invention: Production of The Hebrew University of Jerusalem Bible Project

INVENTOR: MR. JEHUDA BASNIZKI

Silberman Institute of Life Sciences, Faculty of Science

Invention: Novel Seed-planted Hybrid Varieties of the Globe Artichoke

INVENTOR: MR. ALEXEY KAMYSHNY

Casali Institute of Applied Chemistry, Faculty of Science

Invention: Form III Aspartame

1997

INVENTORS:

PROF. YECHAZKEL BARENHOLZ AND DR. RIVKA COHEN

Department of Biochemistry, Faculty of Medicine

PROF. ALBERTO GABIZON AND DR. DORIT GOREN

Hadassah University Hospital

Invention: DOXIL – Liposomal Doxorubicin for Cancer Treatment

INVENTOR: PROF. DAPHNE AT LAS

Department of Biological Chemistry, Faculty of Science

Invention: A New Anti-Parkinson's Drug

Previous Winners

INVENTORS:

PROF. NAVA BEN-ZVI

Center for Multimedia Assisted Instruction

MR. DAVID RASHTY

Computation Center

MR. ELI KANAI

Snunit Educational Information System, Faculty of Science

Invention: Snunit Educational Information System

INVENTOR: MR. YOAV SMITH

Faculty of Medicine

Invention: The Dermal Imaging System

INVENTOR: MS. VARDA HERSHKO

Institute of Biochemistry, Food Science and Nutrition, Faculty of Agriculture

Invention: Hydrocolloid Coatings for Food and Agricultural Products

INVENTOR: MR. SHMARYAHU EZRAHI

Casali Institute of Applied Chemistry, Faculty of Science

Invention: Fire-resistant Hydraulic Fluids

1996

INVENTOR: PROF. SHABTAY DIKSTEIN

School of Pharmacy, Faculty of Medicine

Invention: Development of Topically-applied Drugs for the International Market

INVENTOR: PROF. ABRAHAM SZTEJNBERG

Department of Plant Pathology and Microbiology, Faculty of Agriculture

Invention: AQ10: A Novel Biofungicide for the Control of Plant Diseases

INVENTOR: PROF. DAN DAVIDOV AND DR. MICHAEL GOLOSOVSKY

Racah Institute of Physics, Faculty of Science

Invention: High-resolution Millimeter-wave Scanning Microscope

INVENTOR: PROF. CHAIM GILON

Institute of Chemistry, Faculty of Science

Invention: Backbone Cyclization and Cycloscan™: Novel Technologies for the Fast Discovery of New Peptide Based Drugs

INVENTOR: MR. MICHAEL HOICHMAN

Computer Programmer, Faculty of Medicine

Invention: The "Maestro" Program for Controlling Auditory Experiments

INVENTOR: MR. BARAK HERSHKOVITZ

Faculty of Medicine

Invention: "Biochem Thinker": A New Computer Program to be used by Biochemistry Students as a Tutorial Tool

1995

INVENTOR: PROF. ITAI BAB

Bone Laboratory, Faculty of Dental Medicine

Invention: Osteogenic Growth Peptide (OGP)

INVENTOR: PROF. NISSIM GARTI

Casali Institute of Applied Chemistry, Faculty of Science

Invention: New Emulsifiers

INVENTOR: PROF. YECHESKEL BARENHÖLZ

Department of Biochemistry, Faculty of Medicine

Invention: A Novel Approach to Obtain Efficient and Stable Remote Drug Loading of Liposomes for Clinical Use

INVENTORS: DR. EUGENII KATZ, MS. AZALIA RIKLIN AND MS. RON BLONDER

Institute of Chemistry, Faculty of Science

Invention: Development of Biosensor and Immunosensor Devices

1994

INVENTORS: DR. B. SCHWARZBURD AND DR. MARCELLO CHAFFER

Department of Animal Sciences, Faculty of Agriculture

Invention: Membrane Vesicles of E. coli as a Potent Non-toxic Vaccine Against Colibacillosis in Poultry

INVENTOR: MR. DUDU RASHTY

Computation Center, Faculty of Science

Invention: The Hebrew University Information Retrieval System

INVENTORS: PROF. HAIM RABINOWITCH AND PROF. NACHUM KEDAR

Department of Field and Vegetable Crops, Faculty of Agriculture

Invention: Development of Long Shelf-life Tomatoes

THE KAYE INNOVATION AWARDS

At The Hebrew University of Jerusalem

October 2021

The Hebrew university of Jerusalem

The Authority for Research and Development

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