AUSTFHU

HEBREW UNIVERSITY – THE INNOVATIVE WAY

Australian Friends of the Hebrew University of Jerusalem Newsletter **Issue 66 Summer 2018-2019**

ROB SCHNEIDER JOINS AUSTFHU

Michael Dunkel, Federal President of the Australian Friends of the Hebrew University announced the appointment of Rob Schneider as the new National CEO of the organisation.

In announcing the appointment, Michael Dunkel stated that "Rob will bring his many years of communal endeavours and successes to the Australian Friends and we are delighted that he will be joining us." He added that "Rob's experience on a national level will help increase the exposure of the Australian Friends and the excellent achievements of the Hebrew University."

Rob commenced his new role on the 1 November and travelled to Israel to meet with relevant personnel of the HU and familiarise himself with the work of the HU.

Michael Dunkel added: "It is an opportune time as mid-November there is a meeting of the HU Executive Committee followed by a meeting of senior professionals of HU Friends from around the world."

Rob is very enthused about his new role saying that "I have always had a kesher (link) with Israel but now I will be graduating to university level! When I was in Israel on the South African Jewish Day Schools Ulpan, it was my dream to one day study at the Hebrew University. I was unable to realise my dream then but in my new role, I hope to promote the Hebrew University to other potential students as well as to the community-at-large. I am proud that since arriving in Australia in 1999, I have had the privilege of serving some of the finest organisations in our community, the Jewish National Fund and the Sydney Jewish Museum but I am now ready to rekindle the flame of my youth – so aptly reflected in the logo of the Hebrew University – and help to ensure that this amazing institution should continue to serve as a beacon of light not just to those who study and work there but indeed to the world!"

HEBREW UNIVERSITY ENTREPRENEURSHIP CENTER

HUstart

The Hebrew University Entrepreneurship Center

HUstart, the Hebrew University Entrepreneurship Center, which fosters innovation among students and researchers, announced the appointment of Dr. Amnon Dekel as Managing Director. Dr. Dekel will spearhead HUstart's national and international programs, transforming the center into a major influencer in the Jerusalem ecosystem and beyond.

"Our vision is that each and every student, from semester one in year one, will learn something about innovation," said Amnon Dekel, the newly appointed managing director of HUstart, the Hebrew University Innovation and Entrepreneurship Center, in an interview with The Times of Israel. "In this century, as you go forward in life, whether you work in tech or in services, you need to be innovative and an entrepreneur."

"HUstart can lead the way in helping to disrupt the traditional role of academia vis a vis industry and establish itself as a focal point to grow and release the huge amount of creative energy at HUJI in viable business directions," said Dr. Dekel. "A multidisciplinary approach is key to ensuring that our universities and academic institutions remain relevant and vibrant places of innovation and originality."

The new leadership will develop tools that integrate the concepts of ideation and entrepreneurship into the academic fiber of the University. Through academic courses and exploratory workshops and labs, the center will create opportunities for a greater cross-section of HUJI students and faculty to develop ideas that they can turn into practical models of innovation.

Yishai M. Fraenkel, Vice President and Director General of the Hebrew University of Jerusalem, said, "Over the years we have seen a number of high profile companies emerge from the Hebrew University. Sitting in the capital of the Startup Nation, Hebrew University plays a leading role in providing a fertile infrastructure for innovation. HUstart's new leadership will nurture ideation among the HUJI community so that it will lead our partners in the Jerusalem ecosystem."

YOUR DONATION TO THE HEBREW UNIVERSITY IS NOW TAX DEDUCTIBLE!

The Australian Friends of the Hebrew University now has tax deductibility via its new company – Hebrew U Health Promotion Pty Ltd. All donations to this company will support the prevention or control of diseases. This includes research into how to detect, prevent or treat physical and/or mental diseases in people and the development of relevant aids and equipment for sufferers of a disease.

As part of the strategy to establish Hebrew University and Jerusalem as a nexus of research and commercial opportunity, Dekel will foster new collaborations with Jerusalem institutions from various sectors and communities, including other academic institutions, industry leaders, government, the IDF, and the vast Hebrew University network.

Dr. Dekel holds a Ph.D. from the Rachel and Selim Benin School of Computer Science and Engineering at the Hebrew University of Jerusalem and was recently Chairman of the Department of Software Engineering at the Shenkar School of Engineering and Design. He has founded three companies, serves as an advisor and mentor to several startups, lectures and teaches widely, and is the author of numerous papers.

HUstart also appointed Ayelet Cohenas Deputy Director. Cohen brings experience in building strategic innovation and entrepreneur projects and platforms. She previously worked at Startup Nation Central, and co-founded Google Educators Groups in Israel. She has also worked with the Jerusalem Development Authority and Siftech. In these roles, she identified challenges in the Jerusalem ecosystem to find solutions and develop strategies to advance the hi-tech environment in Jerusalem, and build communities to reach these goals.

CEO and President of Yissum, Dr. Yaron Daniely, welcomed the move to establish HUstart as a key centre of entrepreneurship in Jerusalem. "Our preparedness for the drastic transformations occurring globally in education and innovation will decide the fate of our University, and its role in the Israeli innovation scene. HUstart embodies our commitment to our faculty and students to seek opportunities for value co-creation and enhancement."

Eyal Haimovsky, CEO of the Jerusalem Development Authority said, "The existence of high-quality academic institutions in Israel's capital city, has the technological, human and economic potential to continue to establish Jerusalem as a global innovation centre and leading ecosystem for the development of start-ups and bio-med companies. This ongoing collaboration between industry and academia is reflected in a variety of directions including enabling access to university clinics and experts, leveraging research methodologies to optimize critical stages in the product development process, fostering profitable connections between Jerusalem-based companies to students and graduates and creating designated academic courses according to the industry's changing needs."

ABOUT HUSTART:

HUstart is a joint venture of Hebrew University's Faculty of Science, the Business School (Through the generosity of the Asper Center for Entrepreneurship and Innovation) and Yissum, the Technology Transfer Company of Hebrew University. Since launching in 2015, HUstart has been a centre for entrepreneurs in training to gain a foothold in industry.

Through its various programs, including a flagship accelerator, BioGiv program for biotechs, TIP program for international summer interns, seminars, and mentorships, HUstart provides practical education and support as well as connections for HUJI students and Jerusalem community members to become effective entrepreneurs.

www.hustart.com

FOR FIRST TIME IN 40 YEARS, CURE FOR ACUTE LEUKEMIA WITHIN REACH

Hebrew University Drug Trials Show 50% Cure Rate in Lab

Acute myeloid leukemia is one of the most aggressive cancers. While other cancers have benefitted from new treatments, there has been no encouraging news for most leukemia patients for the past 40 years. Until now.

As published today in the scientific journal Cell, Professor Yinon Ben-Neriah and his research team at the Hebrew University of Jerusalem (HU)'s Faculty of Medicine have developed a new biological drug with a cure rate of 50% for lab mice with acute leukemia.

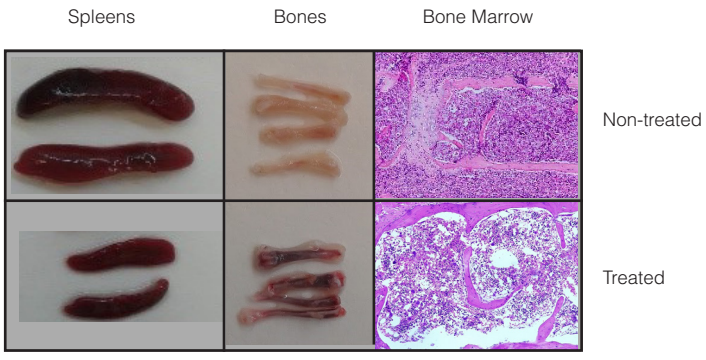
Leukemia produce a variety (and a high quantity) of proteins that together provide leukemic cells with rapid growth and death protection from chemotherapy.

To date, most of the biological cancer drugs used to treat leukemia target only individual leukemic cell proteins. However, during "targeted therapy" treatments, leukemic cells quickly activate their other proteins to block the drug. The result is drug-resistant leukemic cells which quickly regrow and renew the disease.

However, the new drug developed by Ben-Neriah and his team functions like a cluster bomb. It attacks several leukemic proteins at once, making it difficult for the leukemia cells to activate other proteins that can evade the therapy. Further, this single molecule drug accomplishes the work of three or four separate drugs, reducing cancer patients need to be exposed to several therapies and to deal with their often unbearable side-effects.

Additionally promising, is the new drug's ability to eradicate leukemia stem cells. This has long been the big challenge in cancer therapy and one of the main reasons that scientists have been unable to cure acute leukemia.

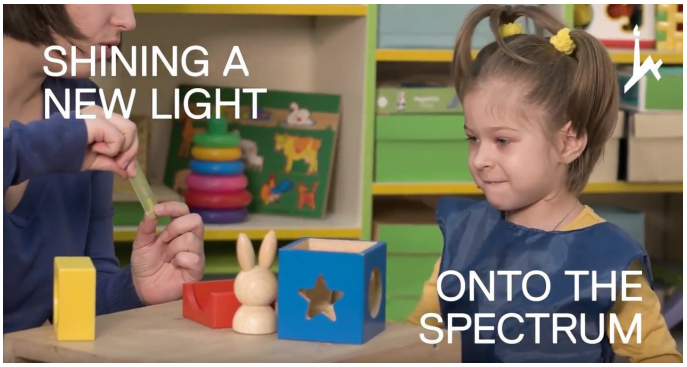
"We were thrilled to see such a dramatic change even after only a single dose of the new drug. Nearly all of the lab mice's' leukemia signs disappeared overnight," shared Ben-Neriah.



Pictures showing how a single oral dose of the new drug clears leukemia cells from bones and spleens within one night after treatment.
(Photos: Waleed Minzel/Hebrew University.)

BioTheryX recently bought the rights to this promising drug from HU's technology transfer company Yissum. Together with Ben-Neriah's research team, they are now applying for FDA approval for phase I clinical studies.

The Hebrew University of Jerusalem is Israel's leading academic and research institution, producing one-third of all civilian research in Israel. For more information, visit http://new.huji.ac.il/en.



Three years ago, the Hebrew University established Israel's first university-based Autism Center, designed to integrate and advance research, training, clinical services, and community engagement for individuals with Autism Spectrum Disorder (ASD) and their families. The education and services the Center provides are vital to progress in ASD research

ASD is a complex neurodevelopmental disorder occurring in 1% of the global population. The Hebrew University Autism Center's physical home will be on HU's Mount Scopus campus in Jerusalem. The building will serve as a hub where researchers, clinicians, and stakeholders can connect and where collaborative, international, and interdisciplinary research, education, and outreach will take place.

CONGRATULATIONS ARE IN ORDER!

#HebrewU mathematician Karim Adiprasito won the 2019 Breakthrough New Horizons in Mathematics prize for "early-career achievements in math".

The $100,000 prize was awarded to Adiprasito for helping to develop "a combinatorial Hodge theory which led to the resolution of the log-concavity conjecture of Rota".

Now, say that three times fast.

NEW EDITION OF SARAJEVO HAGGADAH PUBLISHED

The National Museum of Bosnia and Herzegovina recently announced that after two years of dedicated work, they have published a new facsimile of the Sarajevo Haggadah. The Haggadah is one of the oldest Sephardic Haggadahs in the world, originating in Barcelona around 1350.

The Museum advised that it was delighted to be the independent publisher of the Sarajevo Haggadah, an outstanding monument of medieval Jewish art, in this high quality and in-depth edition. The edition reflects the highest standards in the art of facsimile production, bringing the splendid world of illuminations, vivid colours and gold of the 14th century original to the 21st century reader.

This edition includes the facsimile and a separate detailed study entitled "The Sarajevo Haggadah, History and Art", by Professor Shalom Sabar of the Hebrew University of Jerusalem.

The English edition is available for purchase through the Museum's official web store.

ARCHAEOLOGISTS FIND SIGNS OF 3,000-YEAR-OLD ORACLE CULT IN ANCIENT ISRAEL

The town of Abel Beth Maacah was known in biblical times as a place for conflict resolution, we may divine from references in scripture. Now archaeologists have found a strange shrine that they think may have been associated with the "wise woman" of the city, mentioned in the bible. But rather than being just a clever elder – they suspect she may have fulfilled an oracular role.

The tell in which Abel Beth Maacah was identified lies just south of Israel's border with Lebanon, near the town of Metulla. The archaeological mound, called Tell Abil el-Qameh, covers a huge 100 dunams in area.

In fact, archaeologists have uncovered evidence for a succession of religious cult practices spanning some 300 years. Numerous shrines were found, which, as is the norm for ancient spots of worship, were ornate in some fashion or other. But among the discoveries in recent excavations was an unadorned shrine, the only one of its type found in the town.

The reasons to associate the bare shrine with an oracle stem from puzzling biblical mentions of a "wise woman". The archaeologists now suspect that at least in the case of Abel Beth Maacah, she was a local version of the divine oracles known from other cultures around the Mediterranean.

Various ruins found during the latest excavations, which began in 2013, have been roughly dated to the second and first millennia B.C.E. Aside from the shrine, the archaeologists found a large building complex dating to about 3,000 years ago that served diverse industrial, administrative and religious functions. The dig is being co-directed by Dr. Naama Yahalom-Mack and Dr. Nava Panitz-Cohen of the Hebrew University of Jerusalem and Prof. Robert Mullins of Azusa Pacific University in Los Angeles.

SHEBA FLEES DAVID'S WRATH

The name Abel Beth Maacah means "watered field of the House of Maacah," presumably because of the town's proximity to the nearby Ijon River and numerous springs. Located at a cross-roads of the north-south road linking Egypt with Mesopotamiaand an east-west route from Damascus to Tyre, Maacah was also a trade and storage hub, according to 2 Chronicles 16:4 (though there the town is called Abelmaim).

Among Abel its earliest mentions are Egyptian texts such as the Execration Texts (18th century B.C.E., listing the enemies of the pharaoh) as well as Thutmoses III's list of conquered cities (15th century B.C.E).

References to Abel-Beth Maacah in the Bible include conquest by the Arameans (1 Kings 15:20) and then by the Assyrians (2 Kings 15:29).

But the more intriguing mention from the perspective of the shrines is the drama involving a rebel against King David named Sheba ben Bichri, who fled all the way north to Abel Beth Maacah, hoping to escape David's retribution. The king's general Joab could have destroyed the whole city in his quest to vanquish the varmint.

First, though, David's warriors commanded by Joab besieged Abel Beth Maacah, demanding that Sheba be extradited. Thereupon, a "wise woman" – told Joab: "Long ago they used to say, Get your answer at Abel, and that settled it. I am one of the peaceful and faithful in Israel. You seek to destroy a mother and a city in Israel" (II Samuel 20:18-19).

We don't know what Joab felt about that, but the townspeople also heard her. They decapitated Sheba and pitched his head over the wall. And the city was spared (2 Samuel 20:14-22).

Large room with installations related to cultic activity, Iron Age I, Abel Beth Maacah Robert Mullins

What has any of this to do with the newly unearthed "blank" shrine?

REFUGEES FROM HAZOR

Solid evidence of the city's status is right there. Archaeologists have found that in the second millennium B.C.E., Abel Beth Maacah was a flourishing city, with strong fortifications erected during the Middle Bronze Age II (1,750–1,550 B.C.E.). Those fortifications remained in use through the Late Bronze Age (1,550-1,200 B.C.E.), a time when most other cities in Canaan were unfortified.

Cylindrical cult stand found in Abel Beth Maacah Tal Rogovski

Also from the Late Bronze Age, the archaeologists found a small jug containing a hoard of silver earrings and pieces of ingot, testifying to the inhabitants' material wealth.

Jar with hundreds of astragali bones inside, possibly used in divination rites. Robert Mullins

The city's continuing rise to prominence in the Iron Age I (1,200 B.C.E. to 1,000 B.C.E.) may have owed much to the collapse that befell Hazor, the mighty Canaanite city-state only 35 kilometers to the south. Abel Beth Maacah at this time apparently became a major urban center, featuring large public buildings, and metalworking and trade. Its population clearly increased, possibly due to migrant influxes joining the local Canaanites, such as refugees from the destroyed city of Hazor, Arameans from Syria, and Israelites from the southern parts of Canaan. (The future city of Dan did exist at the time but apparently was more of a village than an urban center.)

Among the cultic, if not oracular, discoveries in Abel Beth Maacah was a building with two rooms dating to the Iron

Small stone seal found in Abel Beth Maacah, depicting a dance scene, 10th-9th centuries BCE. (Photo: Gabi Laron)

Top: Large room with installations related to cultic activity, Iron Age I, Abel Beth Maacah (Photo: Robert Mullins)
Bottom left: Cylindrical cult stand found in Abel Beth Maacah (Photo: Tal Rogovski).
Bottom right: Jar with hundreds of astragali bones inside, possibly used in divination rites. (Photo: Robert Mullins)

Age I, with standing stones, benches and a small bamah (platform) and fragments of a bull figurine indicating its role as a shrine. This structure was violently destroyed and never rebuilt. A slightly later complex of buildings had another apparently cultic room, with standing stones, an offerings table, a cylindrical cult stand made of clay adorned with drooping petals, benches, mortars, and a unique plastered installation with two plastered basins.

Since there are no known parallels to date, the function of the basins is anybody's guess, but it seems to involve liquid, based on the thick plaster coating the interior.

Yet another intriguing find at Abel Beth Maacah from slightly a later time is a jar with 425 animal knucklebones, called astragali. Found throughout the Ancient Near East, astragali were used as gaming pieces and for divination. In this case, the large number of knucklebones collected into one jar is quite suggestive of divination. This jar was found on a courtyard paved with stone, set on a low round podium, and has been dated to the 9th century B.C.E.

Abel Beth Maacah is also where archaeologists found the extraordinary sculpture of a head, complete with hairdo and beard, also dating to the 9th century B.C.E., which they think may be the earliest-known example of figurative art. The postulation is that if he was important enough to be pictured, he was a king, but 3,000 years later, we cannot be sure.

The shrine thought to be associated with an oracle was something completely different.

THE WISE WOMAN OF ABEL-BETH MAACAH

As the King James Version puts her words to Joab: "They were wont to speak in old time, saying, They shall surely ask counsel at Abel: and so they ended the matter." – 2 Samuel 20:18.

The New Revised Standard Version phrases the same: "They used to say in the old days, 'Let them inquire at Abel'; and so they would settle a matter."

Who she was and the interpretation of what she said remain highly speculative. But the words hint at a practice of seeking out oracular advice.

Supporting that theory are the discovery of several cultic installations featuring aniconic standing stones, that is, stones with no devices or designs carved on them, that could have served as generic signs for any worshipers' deity (or, alternatively, for ancestor worship or to commemorate important events, for instance).

It is thus possible that bare cultic installations anywhere indicate that divination and other forms of inquiry of the gods or ancestors took place. Abel Beth Maacah could have been a center for inquiring of the divine.

Yahalom-Mack and Panitz-Cohen note the difficulty of making a one-on-one leap from the text to the archaeological finds, since these words might reflect the reality of a different period, or could be a propagandist narrative.

"We can, however, use such finds to set the stage and help us to better envision the reality of ancient life as it is expressed in the Biblical text," said Lawson Stone, professor of Old Testament studies at Asbury Theological Seminary, and member of the Abel Beth Maacah excavation team.

The Septuagint, a Greek translation of the Hebrew Bible from the 3rd century B.C.E., has a variant text of 2 Samuel 20:18 that also refers to Dan, as if Dan and Abel Beth Maacah were the two main centers in the north for divine inquiry, Stone says. "It is possible that the woman in this story is a leader in the community who was known, like Deborah in the central part of Israel, for settling disputes through inquiring of the deity. All of this is, of course, speculation, but I don't think it's too far into the realm of fantasy."

M.A. student Ariel Shatil examining the astragali bones at the Institute of Archaeology, the Hebrew University of Jerusalem. Nava Panitz Cohen

The Delphic Tholos, a circular building that was constructed between 380 and 360 BC at Delphi, Greece, the mountain town thought to be the "navel of the world." Kufolito, Wikimedia Commons

In the ancient world "wise women" enacted a number of culturally diverse and socially important roles. Ancient Greece had scores of female sacred oracles, including the famed ones at Delphi, Delos or Dodona, where people would go to inquire of their gods with regard to political or military developments as well as private affairs. The prologue of the Sybilline Oracles (an ancient collection of oracular utterances written in Greek verse) lists ten female oracles by name.

Even further back in time, a Hittite text names 13 wise women by name (Haas and I. Wegner, Die Rituale der Beschworerinnen SALSU.GI; Corpus der Hurritischrn Sprachdenkmaler I/5 Roma: Multigrafica Editrice,1988 p 1-4).

In the ancient Near East, the wise woman also enacted multiple wondrous roles, including exorcist, freeing clients from demons. As an incantation-writer, she preserved and interpreted myths and legends of the past she also served as a purification priestess.

"The problem here is that we have no idea of this wise woman's identity. She is very enigmatic. Could she have been an oracle? Perhaps. But this is only guessing," Mullins says. "We think that Abel served some sort of peacemaking or settling disputes role and perhaps there were religious dignitaries of some sort that participated in this. But the biblical text is too ambiguous and we still lack sufficient Ancient Near East parallels to clarify the roles of wise women."

"A variant text of 2 Samuel 20:18 (the Greek Septuagint) has reference also to Dan, as if Dan and Abel Beth Maacah were the two main centres in the north for divine inquiry. It is possible that the woman in this story is a leader in the community who was known, like Deborah in the central part of Israel, for settling disputes through inquiring of deity. All of this is, of course, speculation, but I don't think it's too far into the realm of fantasy", says Lawson Stone, professor of Old Testament studies at Asbury Theological Seminary.

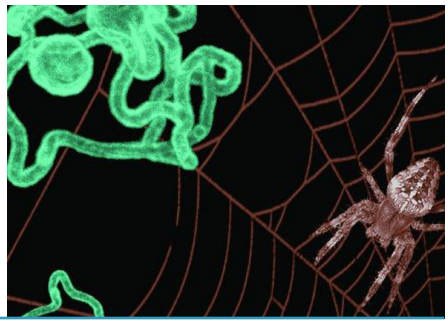
Some two hundred years after the military campaign of Ben-hadad of Damascus, during the reign of the Israeli king Pekah, Abel Beth Maacah was captured by King Tiglath-Pileser III of Assyria, and its inhapbitants were sent into exile (2 Kings 15:29).

START-UP SAYS IT'S FIRST TO COPY SPIDER'S SILK SPINNING PROCESS

Seevix Material Sciences Ltd, a spider silk start-up based in Jerusalem, says it's the only company to successfully replicate the process of creating spider silk.

Real spider silk is strong, incredibly elastic, and able to withstand extreme temperatures. It is also biodegradable and biocompatible.

Seevix's strands are based on 10 years of research from Seevix CTO and Hebrew University Professor Shmulik Ittah. The fibres are a tenth of a millimetre long.



MEET THE NEW MEAT: A PRINTED BURGER

Israeli food tech company Chef-it may soon disrupt the fast food burger industry, according to Chef-it's co-founder, Hebrew University Professor Oded Shoseyov. The start-up's secret weapon: cellulose.

Chef-it is developing a machine that can instantly "print" a juicy burger from a cartridge containing plant-based proteins, fats, flavour components, and cellulose, a common fibre that can be manipulated into a variety of textures, including that of beef. Chef-it's technology uses infrared light to simultaneously cook the food as it prints.

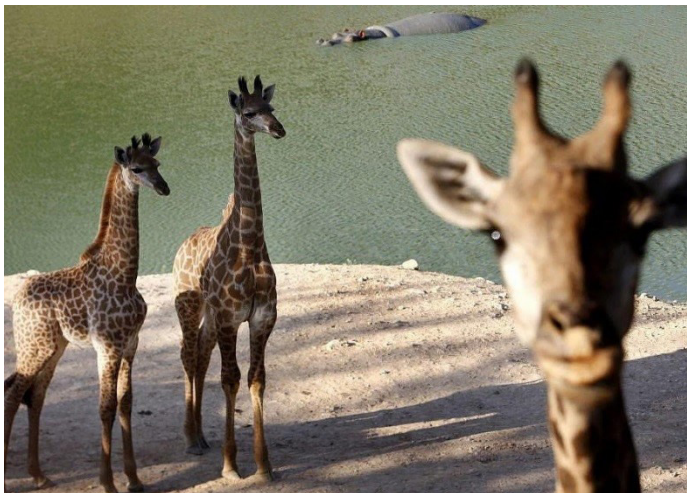
A viable alternative to meat, Chef-it aims to deliver products that are environmentally-friendly and potentially healthier than traditionally processed foods.

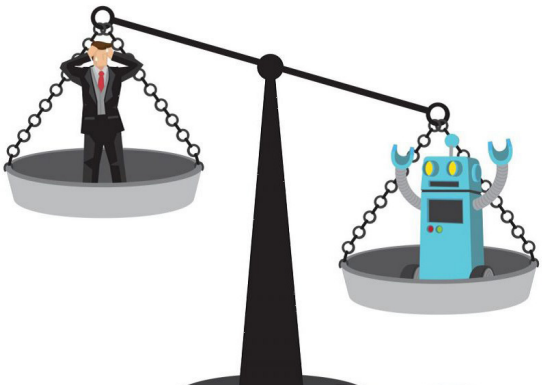
WHERE THE WILD THINGS ARE

Scientists Head to the Zoo to Determine if Cell Size Affects Lifespan

Led by Hebrew University's Yuval Dor, researchers in Israel, Canada, and Germany found that animals with larger pancreatic cells tend to age faster, while those with smaller cells seem to live longer.

A chance observation in the lab sparked the researchers' interest in further examining the pancreatic cell sizes of animals beyond humans and mice. This led Dor and the team to neighbouring labs located at the Jerusalem Biblical Zoo and Kimron Veterinary Institute. They studied the pancreases of 24 mammalian species from the tiny shrew to the tall giraffe. By analysing the data, the scientists found a strong negative correlation between the size of individual pancreatic cells and lifespan. Mammalian species that aged faster had larger cells, whereas species that lived longer had smaller pancreatic cells.





COULD ROBOTS REPLACE PSYCHOLOGISTS, POLITICIANS, AND POETS?

Speaking at a three-day international conference, "What makes Us Human: From Genes to Machine," Hebrew University professor and best-selling author, Yuval Noah Harari, discussed the potential to back humans through a combination of advances in computing power, such as artificial intelligence (AI), and in brain science.

He further suggested no profession is fully safe from automation, even those requiring emotional intelligence, because AI will have the capability to recognize and imitate the biochemical patterns of human emotions.

The one essential element AI would lack is consciousness, a key attribute that mammals use together with intelligence to solve problems. "There has so far been zero development in computer consciousness," said Harari.

RESEARCH INDICATES WE MAY 'GET OLDER' SOONER THAN WE THINK

The human race spends a great deal of time fighting the inevitable. Just about every stage of life is inevitable, but we exercise to live longer, eat certain diets to stay healthier, and undergo treatments and use different products to 'stay younger.'

As it pertains to that last one, an interesting new study indicates that perhaps we are right to be concerned, and if anything, our concerns should start sooner than they already do.

Through the use of separation of young and old yeast cells, which can cycle through a full generation in about four hours, Dr. Yaakov Nahmias at Hebrew University in Jerusalem was able to demonstrate that the ability to remove malformed proteins diminishes as yeast ages.

What does it all mean? According to Dr. Nahmias, founding director of the Alexander Grass Center for Bioengineering at Hebrew University the study implies that signs of aging could occur in humans as early as the onset of puberty.

Of course, most organisms are thought to decline in the later stages of the aging process, and that's certainly the thought process taken by most humans. But as the study points out, there are two aspects of aging in yeast: chronological and replicative aging. Chronological aging corresponds to the life span of a non-dividing cell, while replicative aging corresponds to the number of cell divisions that an individual yeast cell goes through.

Results suggest that protein quality control is affected in early stages of replicative aging, which would explain the predictive signs observed earlier in life.

Proteins are at the heart of most aging-related discussions these days, as researchers at the University of Wisconsin–Madison recently discovered mice making a surplus of a human protein called AT-1 show signs of early aging and premature death, which are also symptoms of the human disorder progeria.

By restoring a cellular function in these mice, the researchers were able to reverse the aging signs and prevent the premature deaths of these mice.

Along with clues about the biological pathways causing progeria, the findings may shed light on other developmental and aging-related disorders. Variations in the AT-1 gene have been linked to several health conditions, including autism spectrum disorder, intellectual disabilities and increased risk of seizures, among others.

"The AT-1 protein is involved in a host of quality-control processes in our cells that affect both development and aging," says Luigi Puglielli, senior author of the new study and a professor in UW–Madison School of Medicine and Public Health and the Waisman Center. "We have taken key steps toward uncovering the biology of this protein."

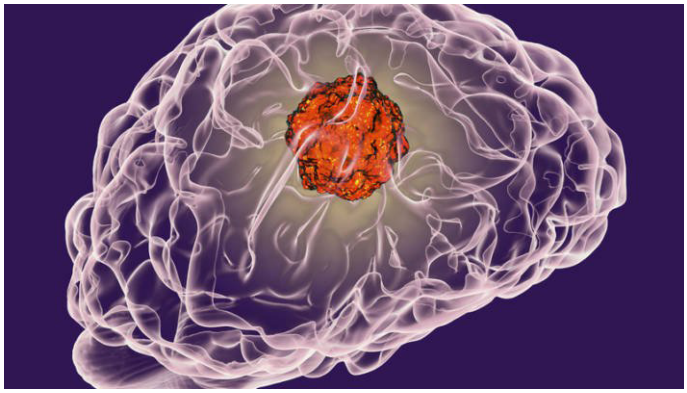
Puglielli clarified that he's not discussing reversing aging; rather, the ability to perhaps delays the onset of age-related conditions by years or even decades, and thus extending the quality of life for people well into the future.

HEBREW UNIVERSITY RESEARCHERS DISCOVER PROMISING TREATMENT FOR AGGRESSIVE BRAIN TUMOURS

Glioblastoma is a serious and incurable brain cancer. Patients receiving this diagnosis typically have 11-20 months to live. One of the main difficulties in treating this cancer is that its cells quickly build up a resistance to chemotherapy.

In the upcoming issue of Nucleic Acids Research, Professor Rotem Karni and his team at Hebrew University's Institute for Medical Research-Israel Canada (IMRIC) share promising results for a new glioblastoma treatment with the potential to improve and extend patients' lives.

As part of their research, Karni and PhD student Maxim Mogilevsky designed a molecule that inhibits glioblastoma tumour growth by regulating the proteins it produces. The MKNK2 gene produces two different protein products through a process called "RNA alternative splicing". These proteins



have two opposing functions: MNK2a inhibits cancer growth, whereas MNK2b supports cancer growth. Karni's new molecule shifts the splicing of MKNK2 so that production of the tumour-stimulating protein decreases, while production of the tumour-suppressing protein increases. As a result, cancerous tumours decrease or die-off completely.

"Not only can this breakthrough molecule kill tumour cells on its own, it has the power to help former chemotherapy-resistant cells become chemotherapy-sensitive once again," shared Prof. Karni.

In his study, the mice with human glioblastoma tumour cells that were treated with this new molecule saw their tumours shrink or die off completely, as opposed to the control mice who were treated with an inactive molecule. "Our research presents a novel approach for glioblastoma treatment. In the future, we'll be able to tailor treatments for patients based on the amount of cancer-inhibiting proteins that their tumours produce," added Karni.

A patent for this technology has been registered and granted in the United States and Europe through Yissum, Hebrew University's R&D company.

IS AN HIV CURE ON THE IMMEDIATE HORIZON?

A major medical breakthrough delivers hope

Researchers believe they are on the cusp of developing a cure for HIV, after a ground-breaking initial human trial of a drug eliminated the virus.

A TEAM of medical researchers believes they are on the cusp of developing a cure for HIV, after an initial human clinical trial delivered astounding results.

In the first phase of testing, the drug Gammora eliminated up to 99 per cent of the virus within the first four weeks of treatment, it was announced today.

Zion Medical, an Israeli biotech company, has worked in conjunction with the Hebrew University of Jerusalem, on the trials.

The ground-breaking results showed the drug significantly reduced the viral load in human subjects by killing HIV-infected cells without harming healthy ones.

While it's the first stage of exploration and a small-scale start, it has offered significant hope of a potential cure for the virus, which first emerged 35 years ago.

"These first clinical results were beyond our expectations and promise hope in finding a cure for the disease," Dr Esmira Naftali, head of development at Zion Medical, said.

In July and August, nine patients at Ronald Bata Memorial Hospital in Uganda were randomly assigned to receive different doses of Gammora for between four to five weeks.

"Most patients showed a significant reduction of the viral load of up to 90% from the baseline during the first four weeks," Dr Naftali said.

In the second part of the trial, conducted two weeks later, patients were given the drug with additional retroviral treatment for another four to five weeks.

The results showed the combined treatments eliminated up to 99 per cent of the viral load in those patients in four weeks. Those patients participating in the trial exhibited no signs of negative side effects and the drug is non-toxic.

During the total 10-week study, patients in both groups showed a "significant" increase in T cell counts, which play a significant role in the immune system's function.

"Given the limited nature of this study, we are excited to prove the efficiency of our drug in phase two with a greater number of participants over a longer period of time."

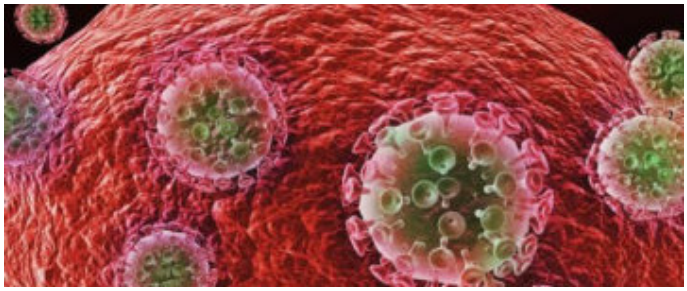
Research first began on the drug 10 years ago at the Hebrew University of Jerusalem by Professor Abraham Loyter.

In 2010, a journal article in AIDS Research and Therapy revealed the results of preclinical trials. The results of human trials mirror the success of that initial research. Zion Medical has previously partnered with the prestigious Mount Sinai Hospital in New York on early development stages.

Phase two of human trials is expected to begin within the coming months, expanding the pool of subjects to 50 and expanding the Gammora dosage period top three months.

HIV organisations in Australia have cautioned against premature excitement, saying much more research was needed to see if the positive results could be replicated widely.

The public education organisation HIV Cure, run by the National Association of People With HIV Australia, said there



are often research announcements touting steps towards a cure.

"However, the story behind the scenes is often more complicated than the headline and science rarely advances with one dramatic leap forward," the group said.

And while the Gammora findings are encouraging, it could be many years before a drug is ready to go to market. More trials and reviews will be required before any new treatment can be certified for wider use.

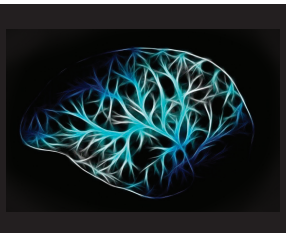
HIV-AIDS emerged some 35 years ago and is regarded as one of modern history's most devastating pandemics.

Significant advancements in retroviral treatment means people with HIV can largely live long and healthy lives, thanks to the drugs blocking the spread of the virus through the body. In many cases, people with HIV have undetectable and untransmittable viral loads. This, combined with the success of the drug PrEP, which blocks the spread of HIV, have resulted in significant reductions in new infection rates in Australia.

However, an estimated 36 million people globally live with HIV and researchers have devoted decades to the search for a cure. Since the outbreak of HIV-AIDS, an estimated 35 million people have died.

Gammora also has potential application in the treatment of certain cancers, with researchers hopeful that it could target infected cells in a similar way.

As originally published on news.com.au by Shannon Molloy on November 1, 2018



PLEASE DONATE TO THE FUTURE OF HUMANITY, THE BRAIN DISEASE RESEARCH CENTER (BDRC) AT THE HEBREW UNIVERSITY OF JERUSALEM

NOW TAX-DEDUCTIBLE **AUSTFHU.ORG.AU/DONATIONS-BEQUESTS**

CONTACT US

- Do you want to know more about the activities of the Friends?
- Interested in upcoming events?
- Going to Israel soon and keen to visit the Hebrew University?
- Interested in studying at the University, or do you know someone who is?

Please contact us; we would love to assist.

Federal Office
L5, 59-75 Grafton St. Bondi Junction 2022
Tel: (02) 9389 2825 Fax: (02) 9387 5584
Email: austfhu@austfhu.org.au

For study inquiries, please contact:
Moran Pitchon: studynsw@austfhu.org.au

Become our Facebook friend – join us on Facebook www.facebook.com/AUSTFHUpage

Instagram: australian_friends_of_the_hu

Twitter: AustFriendsHU