

ISRAEL HIGH-TECH & INVESTMENT REPORT

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Columbia Shuttle Includes Israeli Astronaut

On January 16 at 5:39 PM Israel Time, the US space shuttle Columbia, lifted off effortlessly and flawlessly from its launch pad at the Kennedy Space Center in Florida. It marked a historic first for Israel. Prior to this space shuttle launch, Israel was one of only eight nations with a successful space program.

The current space flight was an "international flight". Officials during their one-hour after launch press conference, were effusive in praising the capabilities of Israel's first astronaut, Col. Ilan Ramon. Ramon was selected by NASA, the IDF and the Israel Space Agency to become Israel's first astronaut in 1997. Israel's space agency was formed in 1983, but its first opportunity to send someone up didn't come until President Bill Clinton offered to have an Israeli astronaut fly aboard the shuttle.

Ramon was informally assigned to the STS-107 shuttle flight in 1999. Technical delays had the flight rescheduled to January 2003.

Col. Ramon has been trained as a Payload Specialist for this mission. Prime Minister Sharon spoke by phone to Ramon, the evening before the launch and said "I was excited, and I believe that the pilot was the most excited. We had a long talk and I can tell you that Col. Ramon is a man busting with national pride. Col. Ramon's flight and his mission into space are a source of honor to us all, and his success is yet another step in Israel's integration into the "space age".



As part of his personal gear, Ramon will carry "Moon Landscape," a drawing by Peter Ginz (1928-1944), who died in the Theresin concentration camp.

"It's a drawing of Peter as he imagined himself looking at Earth from the moon," said Ramon, 48. "I really feel I'm taking his imagination and kind of fulfilling his wish of being there."

Mission Symbolism

Although other Jews have flown in space, Ramon clearly sees the mission as symbolic.

"To be the first Israeli astronaut is symbolic for all Israelis," he said. "And probably the fact that I'm a son of a Holocaust survivor is even more symbolic. I'm proof that despite all the hard time the Holocaust generation went through, we are going forward."

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Columbia Shuttle Includes Israeli Astronaut
Israel's Preparations for War
BIRD Foundation Approves Investment of \$12m.
Centrino=Banias
Israeli Smallpox Syringe Firm Targets U.S. market
Removal of Foreign Exchange Controls
The Outlook for the Venture Capital Industry
VC Industry Expects a Revival of Interest in 2003
Vertex in Merger Talks with Formula Ventures
Evergreen and Telecom Italia Mobile in Cooperation Agreement
Biggest Single Capital Raising for MedTech in 2002
Solar Surgery Takes the Spotlight Science Corner
Transplanted Tissue Could Offer a solution to Kidney Donor Shortage
Selects XACCT Software for High-Speed, In-Flight Internet Service to Passengers
Skyscraper-Escape Technology
MI Receives \$22m US Navy Order for UAV Decoys Boeing
Teva Gets Tentative Approval of Carboplatin Injection
Procognia Acquires Sense Proteomic
Government Authorizes Plan to Protect Civilian Israeli Aircraft
Technion Study: Rasagiline Treats Early-stage Parkinsons

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Ramon's presence on the flight has generated interest, both in Israel and the international press, perhaps because his life story mirrors the challenges and successes of his nation.

"It's an important reminder of the contributions that victims of the Holocaust could have made had their lives not been lost. It's important for Holocaust survivors and all of Israel." said Rabbi Marvin Hier, founder of the Simon Wiesenthal Center, a Jewish human rights group.

The influence of the Holocaust on Ramon's life view is due to his mother's survival of Auschwitz, a Nazi death camp where his grandfather and many other relatives perished. His father escaped from Berlin to Palestine in 1935 and was, one of the original Israeli settlers who fought for the nation's creation during the 1940s.

After earning a degree in electronics and computer science from Tel Aviv University, Ramon entered the Israeli military, serving in both the 1973 Israeli-Arab war and the conflict in Lebanon in 1982. It has also been revealed that in 1981, Ramon was one of eight F-16 pilots who bombed the Iraqi nuclear reactor. It was a milestone because the pilots flew over enemy Arab territory for hours without detection.

In addition to seeing combat, he once had to bail out of a jet after a midair collision.

Eventually, he reached the rank of commander of an F-16 fighter jet squadron, and in the mid-1990s took a post with the weapons acquisition and development branch of the Israeli Air Force.

Ramon said he never dreamt of becoming an astronaut but when the call came in 1997 he moved his wife and four children to Houston, joining NASA's astronaut class of 1998.

Israel is be one of more than a dozen nations to send up a crew member aboard the American space shuttle. National pride aside, Col. Ramon, on the 16 - d a y



research mission, will be responsible for a number of experiments. These include the use of a multi-spectral camera, to track dust particles from the sandstorms that blow from the Sahara over the Mediterranean and Middle East.

Another experiment assigned to the Israeli astronaut, is to examine the influence of weightlessness on the creation of bone cells in space, as compared to their development on earth. The shuttle will be carrying stem cells engineered with genes turning them into bone cells. "We want to see how these cells behave in conditions of nongravity," stated a scientist from, the Hebrew University of Jerusalem, which is carrying

on basic research in this field.

The findings may help understand mechanisms involved in development of bone depletion in astronauts, and the molecular influences involved in creating bone cells in space and on earth.

Israel's Preparations for War

As war rhetoric was ratched up to new heights in Washington, in Israel the "Red Hail" war alert went into effect on January 14 with the opening of large scale US-Israel air defense exercises. The Israeli

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Minister of Defense informed Washington that its army, air, navy and home front forces have completed war preparations.

Previously on January 5, Israel carried out a definitive test to establish whether its anti-missile and anti-air defenses are proof this time against potential hazards from the sky.

The test was part of the Arrow System Improvement Program – A.S.I.P which is currently being jointly carried out by Israel and the U.S.

Israel's Ministry of Defense reported that it was the tenth Arrow Interceptor test and the fifth test of the complete weapon system and its timing was decided in advance of the joint exercises, as part of the planning program.

The test objectives which were defined together with the U.S. partner, were to analyze the interceptor's performance under special flight conditions. An incoming target was not needed for the test. The Air Force launched four Arrow interceptor missiles nearly simultaneously from a base in the center of the country.

The test confirmed ability of the missile launcher to send four missiles - one of which will be armed with a warhead - to different targets.

The approximately \$10 million test launching was the first time Israel fired more than one Arrow missile in the same attempt.

All the system components performed in their operational configuration.

Immediately after the start of the targets simulation, the Fire Control Radar (FCR) acquired the targets, the Battle Management Command Center (BMC) calculated the defense plan for each target and sent a mission command to the launcher.

The launcher was equipped with six interceptors; four of them were launched.

The test's success was judged as a major step in the development of the Arrow Weapon system and in response to the evolving threat of ballistic missiles in the arena.

BIRD Foundation Approves Investment of \$12m.in 14 Projects

When you include the cash participation of the recipients', the projects have a combined value of over \$31 million.

"The investments approved, like the investments of the past year, position BIRD at the forefront of those entities continuing to make significant investments in a wide range of technological fields characterized by a high growth potential" stated Dov Hershberg, Executive Director of the BIRD Foundation at a reception after the Board of Governors Meeting of the BIRD Foundation, held in Jerusalem on January 8th.

He added that "many venture capital funds are floundering without direction. Ineffective decision processes, which led to the creation of the investment bubbles that collapsed over the past two years, are now resulting in an almost total lack of investment, with many missed opportunities. Global markets, which until recently were very promising, are now in a slump. The communications market, the semiconductors industry, life sciences and other fields, have reached their lowest point in years. Therefore, this is an opportunity to invest. This is the time for experts and well informed investments with long-term strategy."

Of the total grants approved by BIRD, approximately \$6 million is being invested in seven life sciences projects, with a combined budget of \$16 million. This



decision of the Foundation, at a time when investments in life sciences from other sources are practically non-existent, positions it as the major source of massive support in this area.

From a total of 15 companies, BIRD-F approved a \$1.0 million funding for Cbyond's R&D project titled Urological and Gynecological Endoscope Development.

IHTIR has published a CByond company report in its October 2002 issue which also appears on the IHTIR web site <http://ishitech.co.il/1002ar3.htm>.

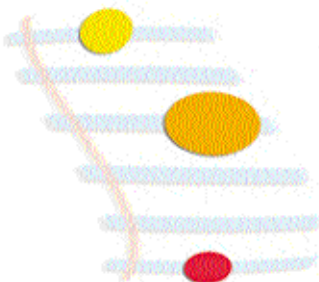
Centrino=Banias

Intel chief executive Craig Barrett has announced that the Centrino microprocessor, "in chip set and networking technology" would be released in the first half of the year. The newest chip, dubbed Centrino, will be slower than current processors, while giving future laptops longer battery life and built-in wireless networking capabilities. Centrino components are based on a new microprocessor architecture aimed at mobile computing, designed to enable computer makers to build thinner, lighter machines that use less power and thus don't require frequent battery charges. Intel developed the technology under the code name Banias, over a period of three years, at Intel's Haifa, Israel R&D center. The name Banias is the Hebrew name of a stream.

David Perlmutter, vice president of Intel's mobile platforms group and leader of the Haifa team, said that the R&D center is already working on the company's next mobile processor, code named Dotan. The Haifa center also developed the company's latest cellular device chip, the Manitoba. The new chip will be manufactured using Intel's newest 0.9 microns technology and should make its debut before the end of 2003. The Israeli Kiryat Gat foundry works with 0.18 micron technology and is not suited to Centrino's 0.13

micron technology or to that of Dotan. The Centrino processors will be much faster than the competition and will reach Pentium 4 speeds while using just a few watts of electricity. The precise speed of the Centrino was not

divulged, it is said it would be close to Pentium 4's 3 gigahertz. The new processor's low power usage will allow for an average four-hour run on battery power compared to the current two hours.



Israeli Smallpox Syringe Firm Targets U.S. market

Tel Aviv based E. Nechmad Ltd. said it was hoping to sell to the United States a special syringe for delivering smallpox vaccine, as fears of a U.S.-led war on Iraq intensify.

The company developed the syringe for the Israeli government in record time after the Health Ministry approached it in August amid fears of a chemical and biological counter-attack by Iraq. In the 1991 Gulf War, it fired 39 Scud missiles at Israel.

Udi Nechmad, general manager of the firm, said its syringe was more effective than traditional needles used in smallpox vaccinations and cut the cost of administering the vaccine by as much 75 percent.

According to a company executive the fact that the syringe has been tested, approved and bought by the State of Israel is an important selling point. Since the action of the syringe is not invasive it is possible that the needle may not require American regulatory approval, to be sold in the US. However, even more important, is that according to the company, its product delivers exactly the needed amount of vaccine, resulting in cost savings.

Israel has already vaccinated 15,000 key personnel but no official decision has been taken whether the country's whole population will be vaccinated.

The threat of a small pox terror attack has become the subject of discussion at high governmental levels, in countries that feel threatened by terror attacks.

Traditionally the vaccine has been administered using a bifurcated, or two-pronged needle, which places the vaccine on the skin. The vaccine administrator then pricks the patient's skin around 15 times to allow it to enter the bloodstream.

But this method does not deliver the right amount of vaccine, leading to substantial waste of the expensive product.

The needle can only be used once, and the process is painful for the patient since the needle is not as sharp as an ordinary disposable one.

An additional drawback is that the needle has a limited shelf-life. If a country buys them and then decides not to vaccinate, they must all be thrown away.

Nechmad said its needle could be used to administer the vaccine to hundreds of patients and that the metal syringe could be stored indefinitely in case of a future smallpox vaccination order.

Removal of Foreign Exchange Control

The Bank of Israel announced that as of January the remaining foreign exchange control restrictions, over investments outside-of-Israel executed by financial institutions, are rescinded. Previously, financial institutions were allowed to invest overseas up to 20 percent of their total assets. As a result of the new regulations, the Israeli currency is now fully convertible, as is practiced in many industrialized countries.

The process of liberalization, which began towards the end of the 1980s, included the gradual lifting of restrictions that hampered individual financial transactions as well as those conducted by the business and financial sectors. Some of the restrictions precluded Israelis from physically holding foreign currency in cash, maintaining freely negotiable foreign-currency accounts in Israel or outside of its borders, among others. The need to obtain permits from the Bank of Israel to carry out various business or personal financial activities was also abolished. With the completion of the liberalization process, Israelis can freely perform transactions in foreign currency with non-residents, and non-residents may perform transactions in Israeli currency, without restrictions or limitations.

The completion of the liberalization process is seen in Israel as a milestone on the road of adjusting Israel's economy to internationally accepted standards, and a pre-condition for Israel's continued integration into the global economy. The latest step yields significant benefits. On the macroeconomic side, it boosts the integration of Israel's capital market into the world markets, and encourages competition and efficiency.

Regarding the public's investment portfolio, the latest step improves portfolio diversification, lowers volatility and reduces exposure to fluctuations in the domestic capital market, which is markedly shallow considering the extent of the assets managed by institutional investors.

As liberalization in foreign exchange proceeded, the exchange-rate regime was made more flexible, and over the last five years the exchange rate has been determined by market forces, without central bank intervention. The changes encouraged the creation of market instruments for hedging exchange-rate risks and helped create a growing foreign exchange market

The Outlook for the Venture Capital Industry

The US, which gave birth to the venture capital industry, experienced a low level of such investments in Q3/2002, when they totaled \$3.9 billion. Compared to the same quarter a year ago, VC investments were sharply lower, down by a third according to the influential Venture 1 report. They were at the lowest level in four years, and nearly identical to sums invested in 1996-97.

In 2002, Israeli venture capital funds invested approximately \$480 million in Israeli and Israel-related high-tech companies, a 40% decline from the \$812 million invested in 2001, according to a recent report issued by the IVC Research Center. One can argue, that though the figures are not parallel to the American experience but they do not differ either in term of time frames or other factors.

Therefore, the recent report issued by IVC certainly can be interpreted somewhat more positively than some of the voices of gloom and doom being heard today. Our predictions and expectations of a contraction of Israel's incredibly bloated VC industry have come true in 2002. At the end of 2001 there were 91 venture capital management companies active in Israel. This figure has been confirmed by Israel's Venture Capital Association as well as by the IVC Research Center. Nine companies closed shop and ceased operations and we believe this process is not finished and expect more closures and perhaps mergers of these entities.

Several management companies are continuing to make investments in Israeli high-tech companies at a brisk pace, despite a difficult investment environment. IVC Research Center has compiled a list of the most active venture investors in Israeli high-tech firms for 2002, ranked by the number of First Time and Follow-On investments made during the year. The rankings are based on data from the IVC Online Database. Amounts invested were not used as a criterion.

During 2002, Pitango, Evergreen, Star and Giza were the funds that made the largest number of



deals (First Time and Follow-On investments). Pitango Venture Capital invested in 21 companies, Evergreen in 17, Star in 16 and Giza in 14. The largest numbers of Follow-On investments were made by Pitango (17), Evergreen (14) and Star (14).

Topping the list of new (first time) investments is Giza Venture Capital with six new investments in 2002, three of which were in the life sciences sector and three were in Information Technology. Challenge (Etgar) and Ascend trailed Giza with five First Time investments each. Challenge had three of its first investments in telecommunications, and Ascend made three first investments in software companies. Doron Rosenbaum, Information Manager at IVC, observed, "the deflated valuations on high-tech companies this year stirred several venture capital funds to capitalize on the opportunity and make First Time investments."

Among the most active Israeli venture capital funds reviewed, two-thirds of total investments were Follow-On investments, indicating that VC activity was primarily focused on existing portfolios rather than on new investments.

This report is based on the IVC-Online Database and was confirmed by contacting all of the Israeli funds. It examines the level of activity each fund performed during the last 12 months and ranks the funds according to the number of deals the fund participated in. It details all portfolio companies for each management company.

VC Industry Expects in 2003 a Revival of Interest

A third of the venture capital fund managers who responded to the VC Indicator Survey conducted by the accounting firm Deloitte Touche Brightman-Almagor, predict an upswing in early-stage venture investment in 2003, as compared with 2002.

No less than 77% are confident that investment in 2003 will be greater than in 2002, which was a grim one for startups seeking seed money.

The figures are surprising, based on the decreasing

amount of capital managed by the firms and their difficulty in securing fresh money for investment.

Startups attracted only around \$1 billion to \$1.2 billion venture backing in 2002.

In a similar survey Deloitte Touche conducted in Silicon Valley, 45% of the respondents estimated that 2003 venture investing will be greater than in 2002.

In the Israeli survey, 63% of the respondents estimated that most of their investments would be in companies only expected to achieve profitability in two to five years.

Some 43% of the fund managers expect most of their money to be routed to first-stage companies, compared with 27% in the third quarter of 2002. Another 35% plan to route more money to mid-stage firms in second-round financing, compared with 50% in the third quarter of 2002.

22% of the respondents said the lion's share would go to seed-stage firms.

The venture capital managers generally predict more consolidation and contraction in 2003, and 54% expect more mergers between venture capital funds – compared with 63% in the last survey.

Deloitte Touche Brightman-Almagor carries out the survey every quarter. It relates to the two quarters to come. The survey targeted managers and partners in 50 venture capital funds in Israel, comprising 85% of the industry.

Vertex in Merger Talks with Formula Ventures

Vertex Management Israel and Formula Ventures are in advanced negotiations for a merger. Vertex Management Israel is also negotiating to assume the management of Poalim Capital Markets' portfolio. The two funds are already cooperating in managing the UBC portfolio. If the merger goes through, Vertex Management Israel, will become Israel's largest fund. Israeli venture capital funds If the negotiations are concluded satisfactorily it will solidify Vertex' Management Israel's industry leadership.

Evergreen and Telecom Italia Mobile in Cooperation Agreement

Evergreen Partners, an Israeli venture capital firm, said that it had signed a strategic cooperation agreement with Italian mobile phone operator Telecom Italia Mobile (TIM). TIM said that the agreement could lead to a full scale commercial

agreement. Under the terms, TIM will be granted broad access to Evergreen's portfolio companies and other firms that the VC fund is considering investing. At the same time, Evergreen will be given direct access to TIM's subsidiaries in Europe and South America. It could also be assisted by the Italian company in due diligence studies for further investments in its portfolio companies.

Roberto Parodi, TelecomTIM New Ventures Implementations executive, was quoted as saying that the agreement was part of TIM's strategy to strengthen its links with the Israeli market and the country's technology.

Evergreen said the agreement would contribute significantly to its portfolio companies and assist its investment professionals by deepening their understanding of markets in which the fund focuses its investments.

Evergreen is one of Israel's leading venture capital funds, with approximately \$600 million of private equity capital under management. It recently raised \$95 million for its fourth fund from overseas investors. Most of the funds received came from institutional investors. Evergreen fund managers believe, that by the second quarter of 2003 they will have completed raising the money for the fourth fund - some \$140 million.

The firm has invested in some 85 technology companies, and has participated in some of the most successful exits in Israel's venture capital industry

Biggest Single Capital Raising for MedTech in 2002

Israeli startup TopSpin Medical a developer of innovative medical imaging technology, closed the largest round of fundraising in the medical device sector in 2002, bringing in \$16.5 million in a second round effort.

Venture capital funds Pitango Venture Capital and Giza Venture Capital led the round. It was managed by investment bank TopNotch Capital, Israel Seed Partners and Platinum and Neuron Venture Capital were involved in the round, as was the venture arm of U.S. drug giant Johnson & Johnson.

TopSpin Medical has developed a unique technology platform - the first to enable MRIs to be conducted without using external magnets. This is a breakthrough in medical imaging as it enables MRIs to be used in a wide range of applications. A miniature, portable imaging probe, containing all the magnetic

field sources enables high-resolution local MRIs to be conducted without the bulkiness of conventional MRIs and at much lower costs.

One of the TopSpin applications is imaging of cardiac arteries during angioplasty.

It claims to have developed a unique technology for local high-resolution MRI imaging using a miniature hand-held probe incorporating all magnetic field sources and eliminating the need for external magnets and a bulky and expensive MRI scanner.

This breakthrough technology extends the unique tissue-characterization capabilities of MRI to a whole new range of clinical applications in medicine, such as detection and staging of cancer in the prostate and colon, as well as intravascular imaging. The primary application for TopSpin's platform technology is the detection of coronary vulnerable plaque - the underlying cause for sudden death and heart attacks.

Using TopSpin's MRI catheter during cardiac catheterization will enable the interventional cardiologist to guide therapy to vulnerable plaques and to potentially reduce cardiac event rates - the world's leading cause of death.

The capital raised by TopSpin will allow it to begin human clinical trials in the first half of 2003, receive marketing clearance in Europe and in the US and start marketing its products at the beginning of 2004".

"Considerable efforts are being made by the industry to identify vulnerable plaques", said Pitango vice-president Nissim Darvish. "We believe that the MRI technology developed by TopSpin is most promising". Investors included Polaris Venture Capital in the Lead Pitango Venture Capital, Giza Venture Capital, Israel Seed Partners, Johnson & Johnson, Peregrine Systems, Platinum Group

Prospects in View for a Great Exit

BMC, the New York Stock Exchange listed provider of e-business systems management, and a member of the S & P 500, is in talks to buy the Israeli start-up Business Layers for about \$80-\$90 million. BMC Software, Inc. is a worldwide provider of software and services designed to greatly increase the productivity, reliability and recoverability of its clients' core IT operations. For the six months ended 9/30/02, its net revenues stood at \$596.4 million and net income of \$15.3 million

If the deal is concluded, it will be a speedy and profitable exit for several Israeli venture capital

companies who continue to be denied access to Initial Public Offerings. This results in companies seeking alternative routes to cash out of investments and raise funds to support their portfolio companies. In September 2001 the company completed a financing round of \$50 million of which \$25 million was Canaan Partners, Formula Ventures, Israel Seed, Ascent Venture Partners, Gemini, software company Novell and Shlomo Kramer, co-founder of Check Point Software Technologies.

Business Layers' key product is its e-Provision software which provides digital resources and access management to employees, consultants and business partners. The Business Layers technology automates procedures related to the hiring and departure of employees. The software's application can manage the opening of new phone lines, or blocking of old ones, and the automatic sorting of new e-mail addresses, all aimed at cost reduction..

The company was founded in 1999 by its president and CEO Izhar Shay, along with Avi Zamir, former president of RADCOM, Amir Weinstein and David Lavenda.

The company currently employs 120 workers at its development center in Ra'anana, Israel while its management center is in the USA.

Solar Surgery Takes the Spotlight

Scientists at Ben-Gurion University Jacob Blaustein Institute for Desert Research (BIDR) are experimenting with a view of converting solar energy



as a substitute for surgical laser now in popular use.

Prof. Jeffrey M. Gordon of the Institute's Department of Energy and Environmental Physics, of the BIDR, together with Prof. S.

Mizrahi of the Soroka University Medical Center, and Dr. R. Shaco-Levy of the Faculty of Health Sciences, are currently experimenting on animals, to determine the efficacy of using highly concentrated solar energy as a replacement for surgical lasers.

They have harnessed solar rays, and transferred them by fiber optic cable, to the surgical theatre, where the surgeon will have them available for surgical procedures.

The prototype solar collector developed by scientists at BGU can concentrate light into a laser-like beam and deliver it up to 100 meters away via fiber optic cable.

The idea originated in 1998 with Jeffrey M. Gordon, a professor of BGU's department of energy and environmental physics and the project's lead researcher.

"We were searching for an alternative to lasers," says Gordon. "Ultra-bright, immense power density, light sources uniquely suited to photo-thermal surgery and similar medical procedures." In initial tests using animal tissue Gordon says the setup appears to function much like a medical laser.

The group has tested the concentrated sunbeam on chicken breasts and livers. The effects on tissue are comparable to ablasing, says surgeon Solly Mizrahi of Ben-Gurion University, who participated in the experimental work.

Liver tumours are good candidates for solar surgery, says Mizrahi - particularly in patients who require minimally invasive keyhole surgery,

"Based on conversations I've had with manufacturers, I would project that if the solar surgery prototype could be mass produced, it has the potential to cost around \$1,000 per unit," he says. By comparison, he says traditional medical lasers can cost up to \$150,000.

Science Corner

Transplanted Tissue May Offer a Solution to Kidney Donor Shortage

Instead of searching for a kidney donor, a new study suggests, one might be able to grow a new kidney. A team headed by Prof. Yair Reisner of the Weizmann Institute of Science has induced human stem cell tissue to grow into functional kidneys, and have accomplished the same with porcine stem cell tissue. Published in Nature Medicine, the method could lead to a promising solution to the severe shortage of kidney donors.

The findings suggest that human or porcine fetal tissue might take on the shape and function of a

healthy kidney if transplanted into humans as well. Pig tissue, as opposed to pig organs, is not expected to cause hyperacute rejection (common in cross-species transplants). The scientists hope that porcine stem cells might thus provide a ubiquitous source for those in need of a kidney.

According to the U.S. National Kidney Foundation and the United Network for Organ Sharing, more than 50,000 people in the United States alone are on the waiting list for kidney transplants and more than 2,000 died this year waiting for a match. The wait can last years. And after a kidney is transplanted patients run the risk of transplant rejection.

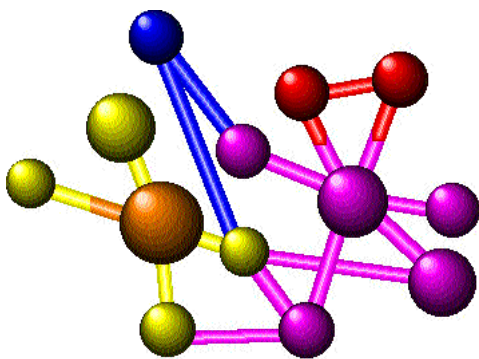
Reisner and Ph.D. student Benny Dekel of the Weizmann Institute's Immunology Department, together with Prof. Justen Passwell, head of the pediatric department at the Sheba Medical Center, transplanted human and porcine "kidney precursor cells" (stem cells that are destined to become kidney cells) into mice. Both human and porcine tissues grew into perfect kidneys, the size of the mice's kidneys. The miniature human and pig kidneys were functional, producing urine. In addition, blood supply within the kidney was provided by host blood vessels as opposed to donor blood vessels, greatly lowering the risk of rejection.

The scientists pinpointed the ideal time during embryonic development in which the stem cells have the best chance to form well-functioning kidneys with minimal risk for immune rejection. Their findings suggest that 7-8 week (human) and 4 week (porcine) tissue offers an optimal window of opportunity for transplantation. If taken at earlier time points the tissues will develop disorganized tissue that would include non-kidney structures such as bone, cartilage, and muscle. If taken at later time points the risk for immune rejection is substantial.

Within this optimal time range, the tissue has not as yet developed certain cells that the body recognizes as foreign (antigen-presenting cells), the scientists found. These cells, which originate in the blood system, reach

a developing kidney only after ten weeks.

After growing the human and porcine kidney tissue in mice, the scientists checked how



human lymphocytes (fighter cells in the immune system) might react to it. They injected human lymphocytes into immunodeficient mice (that have no immune system and thus do not interfere with the immune response). The findings were encouraging: as long as the kidney precursors were transplanted within the right time range, the lymphocytes did not attack the new pig or human kidneys – despite the fact that lymphocytes and kidney precursors originated from different donors. Immune rejection was also tested in normal mice and was shown to be reduced compared to that induced by precursors from later time points.

The procedure is now in the pre-clinical study stage. If all goes well, a treatment may ensue within a few years.

Skyscraper-Escape Technology

Larry Silverstein, the American owner of the now destroyed World Trade Center Towers, recently expressed interest in becoming a strategic investor in Advanced Evacuation Systems, an Israeli company that produces a fire-resistant steel-coil chute permanently installed in the top floors of high-rise buildings. When it detects emergency frequency, the rescue tube extends down to the ground, where it is anchored with a cable. Escaping office workers simply slide down to safety.

The prototype for such a system was unveiled in October 2002 in Washington. From 11 stories up, men and women swished through a giant tube made of fire-resistant fabric girded with steel cables, emerging at ground level. The device resembles a slide one might find at a water park, but bigger.

The developers of the Advanced Modular Evacuation System, see it as the first major breakthrough in building safety, since the invention of the fire escape.

A spokesman for Advanced Evacuation Systems, based in Tel Aviv and Hong Kong -- related that company chairman Eli Nir came up with the idea after his son Ofir was trapped on the top floor of a hotel during a fire. Ofir was rescued, but it occurred to Nir that existing procedures for evacuating people from high-rise structures were inadequate. He started to think about innovative ways of getting endangered people out of buildings faster.

The system is packaged in a relatively small, unobtrusive container, which is fitted into the walls of buildings. "As the name indicates, it's modular, so you can put several on each floor. You can put them on numerous floors depending on occupancy. When

the fire alarm is activated, the system deploys automatically.

According to the company the existing prototype, which is ready for production, is effective up to 22 floors. New models, which will work on a corkscrew principle, theoretically will be effective up to 100 stories and higher."

The system will cost approximately \$20,000 per unit decreasing in price as production increases. Custom designed chutes can be installed and be operational within six months.

IMI Receives Orders for \$22m US Navy UAV Decoys

Israel Military Industries will supply the US Navy with Improved Tactical Air Launched Decoys which are manufactured at its UAV factory in Israel. The 100-200 unmanned aviation vehicles (UAVs) will act as decoys against anti-aircraft missiles. The contract is valued \$22 million.

The US Navy is a regular customer for IMI's ITALDs. The present order is the single largest ever order received by IMI.

In addition to the ITALDs, IMI will supply testing and programming equipment. IMI was declared the exclusive supplier of ITALDs to the US Navy in 1996, and has since delivered contracts worth nearly \$90 million. IMI originally marketed its ITALDs jointly with Brunswick Corp. (NYSE:BC) of the US, before severing its relations with the company and marketing them independently.

ITALDs disrupt enemy anti-aircraft systems. Israel used early versions to destroy Syrian SAM defenses during the 1982 Lebanon War. The US Air Force also used ITALDs launched by US Navy planes against Iraq's anti-aircraft defenses in the 1991 Gulf War. ITALDs and served as decoys and induced enemy SAM batteries to fire against the UAVs instead of against the planes that follow later.

Boeing Selects XACCT Software for High-Speed, In-Flight Internet Service to Passengers

XACCT Technologies Inc., an Israeli provider of network data management solutions for global communications service providers, announced that Connexion by Boeing(SM), a business unit of the world's leading aerospace company, has adopted the XACCT Network-to-Business (N2B) platform for its

mobile information service.

With a 20Mbps forward link and up to 1 Mbps return link, Connexion by Boeing is the first true airborne broadband service for commercial aircraft. In addition to the multitude of personalized communications services for airline passengers, Connexion by Boeing's unique broadband capability provides airlines with a choice for an e-enablement framework for commercial aircraft, transforming them into a value-added node on an airline's global information network, allowing in-flight crews to talk to the airline operation center and move data simultaneously over multiple channels when they want, wherever they want, further enhancing operational efficiencies on the ground and in the cabin.

The XACCT N2B platform allows Connexion by Boeing to create, deliver and bill for its broadband, high-speed data and connectivity services, including e-mail, Internet and firewall-protected intranet access and audio/video streaming applications. Using the XACCT technology, airlines will be able to implement multiple pricing and billing options for their services based on duration, events, volume and quality of service.

"A key service requirement for airlines is a scalable and flexible solution that can quickly be configured to accommodate the varying billing requirements around the world such as pricing by flight segment to more complex plans such as event and transaction-based pricing," said Ed Laase, director of System Development for Connexion by Boeing. "We believe this technology platform contributes to our ability to effectively address that need."

"Connexion by Boeing is taking broadband data communications to new heights," said Eric Gries, president and CEO of XACCT Technologies. "In-flight communications will greatly enhance business travelers' productivity as well as present new revenue opportunities for the airlines. We are excited to be a part of this pioneering effort. As a frequent business traveler, I'm personally looking forward to this service."

Teva Gets Tentative Approval of Carboplatin Injection

Teva Pharmaceutical Industries Ltd. (NASDAQ: TEVA) announced that the U. S. Food and Drug Administration has granted tentative approval for the company's ANDA for Carboplatin Injection, 50 mg, 150 mg, and 450 mg.

Carboplatin Injection is the generic equivalent of

Bristol-Myers Squibb's Paraplatin(R). The product is indicated for the treatment of cancer.

The brand product has annual sales of approximately \$513 million.

U.S. Patent No. 4,657,927, which protects the brand product from generic competition, is currently scheduled to expire on April 14, 2004. Market entry by Teva prior to expiration of that patent depends on the successful outcome of Teva's challenge to the validity of that patent. A District Court decision adverse to Teva on a threshold issue in that challenge is currently on appeal to the United States Court of Appeals for the Federal Circuit.

Teva Pharmaceutical Industries Ltd., headquartered in Israel, is among the top 35 pharmaceutical companies and among the largest generic pharmaceutical companies in the world.

Procognia Acquires Sense Proteomic

Procognia Ltd, an Israeli biotechnology company, announced that it has acquired the Maidenhead UK Sense Proteomic Ltd, to advance its mission to create a suite of technological solutions for needs arising in drug discovery, development and manufacture. In conjunction with the acquisition, the company closed another round of finance for \$4 million from existing shareholders, Apex Partners, Evergreen Partners and Vitalife, bringing to \$18.3 million the funds raised by Procognia since its inception in April 2002.

Commenting on the acquisition, Ron Long, CEO of Procognia said: "We are pleased with this opportunity to integrate two such complementary technologies and to merge the talents of the two excellent teams that created the technologies. This acquisition will allow us to more rapidly exploit the commercial value of both technologies. It is a tremendous advantage for Procognia".

Procognia has developed integrated, rapid glycoanalysis technologies to increase the probability of success of biopharmaceutical products. The glycosylation on biopharmaceutical products is one of the most difficult manufacturing processes to control. Analysis of the glycosylation pattern is usually a lengthy process requiring several highly trained scientists. Procognia technology is an automated process that can perform glycoanalysis in a few hours. The ability to perform 'real time' analysis of glycosylation patterns during clone selection and optimization, process development, manufacture and QC have the potential to greatly improve both the number and quality of biological drugs.

The company's technology complements and will

expand Procognia's technology suite by adding functional protein array capability. This technology integrates the cloning, expression and protein capture/purification of only the functionally folded proteins in arrays of numerous formats that include mass spectrometry and fluorescence. The capture process assures the uniform orientation, accessibility and density of the spotted proteins. These arrays are the highest density of proteins and the greatest sensitivity of detection that can be analyzed by mass spec. Because the arrays can be prepared from almost any family of proteins, the technology significantly expands the primary and secondary screening of both biologic and small molecules for therapeutic benefit, toxicity and diagnostics.

These two protein array-based technologies can improve every step in the process of drug discovery, development and manufacture. Most pharmaceutical and biotech companies have a need for both glycoanalysis and functional protein arrays for screening. Therefore, Procognia's customers span the pharmaceutical industry.

Following the acquisition, the scientific founder of Sense Proteomic, Dr. Jonathan Blackburn, will become Procognia's Chief Scientist and will join Ron Long, Johanna Griffin, Dr. Yeshayahu Yakir and Chris Lyddon as a member of the company's executive team. Former Sense employees will be integrated into the Procognia team and will share in the continued development of the integrated technologies of both entities. The former Sense group will remain at the Babraham, UK facilities for at least the next 6 months.

Commenting on the opportunities that the acquisition presents Dr. Blackburn, said: "As the former Deputy Chairman of Amersham plc and CEO of Amersham Biosciences, Mr. Long has a history of integrating and commercializing enabling technologies. Under his leadership we are excited at the prospect of realizing the commercial value of the technology that we have created at Sense to date and of that which we expect to create together in the future".

Amos Goren, Director of Apex Partners added, "Procognia's strong and experienced team and breakthrough technologies offer multiple opportunities in biopharmaceutical drug discovery, development and manufacturing. Apex Partners is delighted to extend its investment in Procognia particularly given the additional potential that the

Sense acquisition brings. Our investment in Procognia exemplifies our strategy of creating and building leading biotechnology companies that are targeting solutions to the important challenges of the industry."

Following the acquisition and recent expansion Procognia now has 60 employees. R&D will be performed in Israel and the United Kingdom.

Government Authorizes Plan to Protect Civilian Israeli Aircraft

Following the missile attack on the Arkia flight in Kenya, a decision by the government and the defense establishment is expected, regarding the installation of systems to intercept shoulder launched missiles at civilian aircraft.

The choice will be between Rafael Armament Development Authority and ELTA, a subsidiary of Israel Aircraft Industries. In recent years, ELTA has sold 150 Flight Guard models of such systems, to a number of countries.

Given Announces Revenue Guidance for Q4

Given Imaging (NASDAQ: GIVN), featured by IHTIR in October 2000 and on the IHTIR web site <http://ishitech.co.il/sep00ar2.htm> has announced that sales of its Given Diagnostic Imaging System and M2A video capsule reached \$9.0 million in the fourth quarter of 2002 representing a 157% increase over sales in the fourth quarter of 2001.

However, in announcing its revenues, the company gave no guidance as to its earnings. Given Imaging expects to release its fourth quarter financial and full-year 2002 results on February 12, 2003.

Brokers estimate that in 2003 the company will double its sales while losses will decrease. For 2002 the estimates are a loss of \$0.70 a share with the loss decreasing to \$0.06 for all of 2003.

New Technion Study: Rasagiline Treats Early-stage Parkinson

A study conducted on 404 patients at several U.S. sites has determined that a new drug called Rasagiline

effectively treats early-stage Parkinson's disease. The study was reported in the December "Archives of Neurology".

"These findings are especially important since hopes for treating patients afflicted with Parkinson's with fetal cells were recently dashed," said Professors Moussa Youdim and John Feinberg of the Department of Pharmacology at the Technion- Israel Institute of Technology. The two researchers developed Rasagiline.

The study was conducted as part of the clinical trials for FDA approval. Rasagiline is now in the last stage of the FDA approval process, after which Teva will market the new drug.

As early as 1975, Prof. Youdim and colleagues introduced I-Deprenyl (Selegiline), a drug that has been shown to slow the progress of Parkinson's disease.



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