



## Capitalising on Israel's BioCapital

Jerusalem, Israel's capital, offers an ideal setting and financial benefits for the development of a vibrant life science industry

In addition to its exceptional beauty and significance, Jerusalem is and has always been a city of knowledge and innovation. Today this characteristic is exhibited particularly in the life and biomedical sciences. The city is known for its robust knowledge base, academic excellence, innovative research, accomplished human capital, state-of-the-art biomedical infrastructure and entrepreneurial spirit, all key elements in developing an innovative industry.

### Financial incentives

In 2005, the Israeli government approved the Jerusalem Economic Development Program, which allocates a total of NIS280M (\$69M) over seven years for programmes devoted to promote economic activity and increase employment in Jerusalem. Some of this funding is being utilised for the development of advanced infrastructure and deepening the involvement of supportive government and local authorities, with the aim of elevating and substantiating Jerusalem's life science cluster. In particular, this activity included the establishment of BioJerusalem, an initiative of the Jerusalem Development Authority (JDA), intended to leverage the existing life science knowledge base in the city in order to boost Jerusalem's biomed industry and employment opportunities. BioJerusalem is the hub for life sciences in the city, connecting life science companies with resources, offering guidance to companies, attracting ventures to Jerusalem, encouraging the creation of new enterprises in the city, and strengthening the ties between the local and global life sciences industry.

In these times of economic uncertainties and turmoil, BioJerusalem's role of supporting the biomed industry in Israel's capital is

further accentuated. In the past year the JDA, through BioJerusalem, has initiated two programmes offering financial aid both to start-ups and to more established life science companies that set up or expand their business in Jerusalem. Aiming to support the biomedical industry in the capital and expand its job market, the JDA is offering, since October 2008, a grant of NIS 30,000 (\$7390) per year for each biomed employee, up to a total of NIS600,000 (\$148,000) per company over a period of two years. The grant is designated to biomed companies founded up to six years ago and that employ up to 20 people. Significant financial benefits are also offered to more established companies. In May, the JDA announced an unprecedented NIS2.4M (\$600,000) grant for life science

companies that will choose to launch or expand their business in the capital, providing their infrastructure exceeds 2500 square meters and that they hire more than 50 new employees. In addition to these financial incentives, biotechnology companies and employees based in the city stand to benefit from a series of municipal perks as well as from tax reductions and R&D benefits originating from the unique status of Jerusalem as the only centrally located city in Israel enjoying the governmental status of Development Area A.

### Cutting edge research

Jerusalem is Israel's most important centre of knowledge in the life science field in general and the bio-pharmaceutical field in particular. The city is rife with leading research institutes, championed by the Hebrew University, where 43% of Israeli biotech research is carried out, and by Hadassah and Shaare Zedek hospitals, which are responsible for approximately half of the clinical research in Israel. Notable is the School of Pharmacy of the Hebrew University that is currently being transformed into a new academic and research entity: The Institute for Drug Research and Development. Ranging from brain research and oncology to research in regenerative medicine, stem cells and nanobiotechnology, these institutions are at the forefront of science and technology innovation. Cutting edge stem cell research, for example, is carried out in the Hebrew University and Hadassah as well as in biotech companies such as Gamida Cell and Cell Cure Neurosciences.

In parallel, Jerusalem boasts extensive technology transfer activity from academia to the industry. Yissum, the technology transfer company of the Hebrew University, is among the top 15 tech transfer companies in the world in terms of revenues from

*Jerusalem is home to Bioline Innovations Jerusalem, Israel's biotechnology incubator, operated by BioLineRx*



## Jerusalem's life science cluster in brief

- 50% of Israel's clinical research and 43% of its biotechnological research are performed in the Hebrew University of Jerusalem and in hospitals in the city
- More than 100 pharma, biotechnology and medical device companies are located in Jerusalem and employ more than 3250 employees. Biotechnology companies in Jerusalem comprise about 35% of the Israel's national biotechnology industry
- Jerusalem is the only centrally located city in Israel to enjoy national development zone A status entitling companies to the best grants and tax incentives available in Israel today
- Two novel and innovative drugs with a market of one billion dollars per year were invented by scientists at the Hebrew University of Jerusalem: Exelon for the treatment of Alzheimer's disease (marketed by Novartis), and Doxil for the treatment of cancer (J&J/Schering)
- The Hebrew University ranks 12th in the world in biotechnology patents (source: Milken Institute)
- Jerusalem boasts a highly efficient system for transferring technology from academia to industry: Yissum of the Hebrew University ranks among the leading 15 technology transfer companies in the world; Hadasit, the technology transfer company of Hadassah medical school, is the first and only technology transfer company that is traded on the stock market
- Approximately 1800 life-science and medicine students complete their studies in Jerusalem every year. Jerusalem is also home to the highest number of life sciences PhD students in Israel
- Bioline Innovations Jerusalem, Israel's biotechnology incubator, is located in Jerusalem
- Leading global enterprises in Jerusalem include Teva Pharmaceuticals, Medinol and Sigma-Aldrich
- Jerusalem is leader in several lucrative and promising life science fields encompassing multidisciplinary approaches such as brain research, regenerative medicine and stem cells
- The first biomed park in Israel 'Jerusalem Bio Park' is located in Jerusalem

licensed innovative technologies. The Hebrew University is ranked number 12 worldwide in biotechnology patents. One billion dollars in annual sales are generated mainly from two blockbuster drugs originating from The Hebrew University, namely Exelon (marketed by Novartis) for the treatment of Alzheimer's disease and Doxil (J&J/Schering) for the treatment of cancer. In addition, Hadasit, the tech transfer company of Hadassah hospital, is highly active in start-up activity and the first and only tech transfer company to ever go public on the stock market.

### Thriving industry

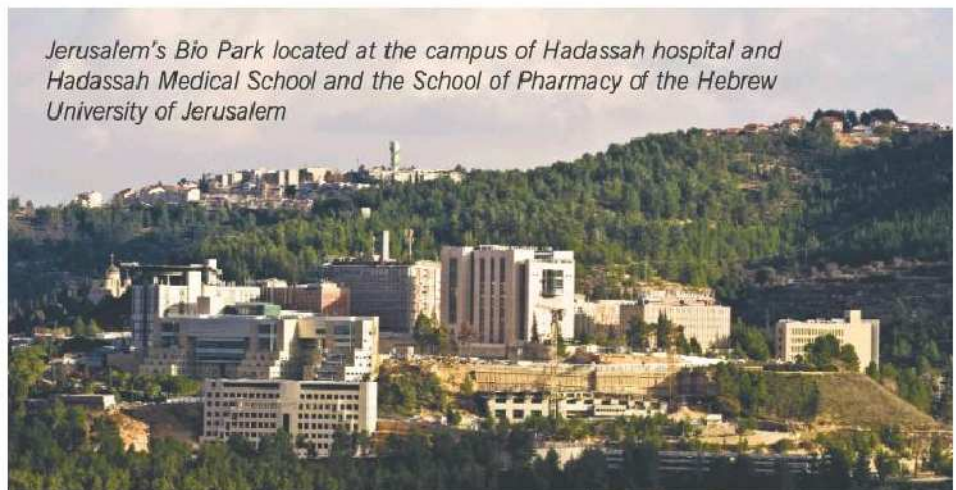
There are more than 100 life sciences companies in Jerusalem, ranging from entrepreneurial start-ups to more established biotech, medical device and pharma companies, including Teva, Rafa Laboratories, Sigma-Aldrich, Medinol and Omrix Pharma. Thirty five percent of Israel's biotechnology companies are located in Jerusalem. Since 1901, Jerusalem is home to the big giant Teva Pharmaceuticals, the largest generic pharma company in the world.

This bustling life science activity is well reflected in the job market. Almost 12% of Jerusalem's workforce (32,000 people) is

hospital and Hadassah Medical School and the School of Pharmacy of the Hebrew University. The park hosts solely life sciences companies, enjoying the benefits of the rich infrastructure existing at the medical centre and University. Jerusalem is also home to Bioline Innovations Jerusalem, Israel's biotechnology incubator, operated by BioLineRx and the soles recipient of an impressive government grant of \$21M as well as the Van Lear incubator dedicated to promote companies in the field of medical device and diagnostics.

### New national biotech fund

In February, Israel's Ministry of Finance together with the Ministry of Industry and Trade announced the establishment of a new government fund in the amount of NIS500M for the support of the Israeli life science industry. The Ministry of Finance will delegate NIS125M and the Office of the Chief Scientist of the Ministry of Industry and Trade will allocate a similar amount. The government's investment will be matched with investments from the private sector. The establishment of a national biotech fund will encourage the advancement of important research and development programmes, preserve and add to the sectors' work force, and assist



*Jerusalem's Bio Park located at the campus of Hadassah hospital and Hadassah Medical School and the School of Pharmacy of the Hebrew University of Jerusalem*

engaged in the biomedical/healthcare arena. Jerusalem is also a student city with an enormous number of life sciences graduates, the highest number of PhD students in the life and biomedical sciences in Israel, and more than 2000 leading scientists and physicians. More than 3250 people are employed in the life science industry in Jerusalem, providing a technical and professional resource for the industry.

Jerusalem's biomedical R&D infrastructure is, accordingly, unique in Israel: it includes state-of-the-art centres and facilities, technology parks and incubators. Of particular note is the new Jerusalem Bio Park located at the campus of Hadassah

the life science industry in successfully overcoming the current crisis.

The strength and advantages of the Jerusalem cluster are well recognised by the Israeli government, as evidenced by its financial support, made even more significant now. The Jerusalem cluster model is especially attractive in this trying period, since it enables maximal use of existing resources and increases the ability of its members to cope with a challenging financial environment, and, given time, will create a robust, self-sustaining industry.

**LSC**

[www.biojerusalem.org.il](http://www.biojerusalem.org.il)