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Important Events: Biotechnology Havana 2010 Congress

In the framework of the scientific meetings Biotechnology Havana, the 2010 edition will be devoted to the “INTEGRAL CARE OF DIABETIC FOOT ULCER PATIENT USING HEBERPROT-P”, which will be held at the Center for Genetic Engineering and Biotechnology (CIGB) of Havana, Cuba.

Today Diabetes affects more than 300 million people worldwide, where diabetic foot ulcers (DFU) are among its main complications with worse medical evolution and higher resources drained from health systems. Since its registration in Cuba in 2006, the Heberprot-P efficacy and safety has been demonstrated combining “evidence based study facts” regarding successful clinical trials phase I, II and III execution and “experience based study facts” regarding clinical experience accumulated in more than 7000 treated patients from Cuba, Venezuela, Algeria and Argentina. Today Heberprot-P is a main part of the basic frame of drugs aimed at the diabetic foot ulcer (DFU) therapy in Cuba.

The therapy with Heberprot-P® fills the gap of an urgent unmet medical need for the treatment of complex DFU. Heberprot-P is a novel and unique medicine indicated for DFU treatment. Its innovative achievement is based on the action of the recombinant human epidermal growth factor (rhEGF) used as active pharmaceutical ingredient (API) and applied by intralésional infiltration directly into the wound site.

Previous editions of Biotechnology Havana have gathered about 800 participants from more than 30 countries. Renowned specialists have delivered Plenary Conferences and Key Lectures including Nobel Laureates in Medicine and Chemistry, among them, Prof. Stanley Cohen, the scientist who discovered and characterized the epidermal growth factor, a key molecule in Heberprot-P® formulation, who attended the BH2003 edition. The Havana Biotechnology congress counts with large National and International participation due to their high scientific level, the Poster sessions and the open and frankly atmosphere created for discussions and experience exchanges.
The BH2010 Congress will be held from 20 to 22nd October 2010 but now incorporating a change based in integrating Symposia two and three into a single one in order to facilitate the exchange of experiences between different DFU specialists, so now BH2010 will hold two main Symposia: The first symposium maintain its focus in the Molecular biology of the epidermal growth factor (EGF) and the pharmacogenomic of drugs based in EGF, and the second symposium will cover the current status of the integral care of Diabetic Foot Ulcer patients worldwide.

It is our intention also to take advantage of the BH2010 Congress Organization to launch a call for considering as an option to participate in a Pre-Congress Course-Workshop: Practical application of Heberprot-P in diabetic foot ulcers, with the purpose to share mainly to international specialists practical procedures for applying Heberprot-P in DFU. The Course-Workshop will be held during 18-19th October, at the facilities of the prestigious Research Center for Medical Surgery (CIMEQ) in Havana, Cuba.

Hoping to count with your participation in BH2010 next October, Sincerely

Dr. Luis Herrera

President of the BH 2010 Organizing Committee and CIGB General Director

http://bh2010.cigb.edu.cu

Cheaper Drugs Vaccines Forecast as Collaborations Grow Between Developing Countries' Biotech Firms

*ScienceDaily (May 10, 2010)* — The availability of more affordable drugs, vaccines and diagnostics that would help countless people worldwide is the foremost benefit expected from a growing number of collaborations between biotech firms in developing countries, according to a study to be published Mon. May 12 in the UK journal *Nature Biotechnology*. 
Researchers from five developing countries, together with colleagues at Canada's McLaughlin-Rotman Centre for Global Health, interviewed over 300 experts in 13 developing countries to produce the first-ever large scale study of "south-south" collaboration in health-related biotechnology.

They found health biotech firms in Africa, Asia and Latin America are increasingly building trade and marketing links and pooling resources to address shared health problems in countries where a large proportion of the population can only afford low-priced health products.

When these developing country firms fully leverage their respective strengths, they could deliver health products that reach far more poor people than products from firms in rich countries, according to the study.

The international research team focused both on collaboration in research, typically carried out by universities and public research organisations, and collaboration in entrepreneurial activities, typically carried out by firms.

They say more than one quarter of health biotech firms in Brazil, China, Cuba, Egypt, India, and South Africa have built linkages with other developing countries as south-south collaborations start catching up to more traditional north-south partnerships.

Says project leader Halla Thorsteinsdóttir of the McLaughlin-Rotman Centre for Global Health, at the University Health Network and University of Toronto: "The key finding is that biotechnology firms in developing countries are becoming less dependent on relationships with similar firms in the industrialized north -- they are able to help each other. We expect that, in future, we will increasingly see 'brother-sister' relationships between biotech
firms in the developing world, and fewer 'parent-child' relationships with firms in developed countries."

"This first-ever survey of such relationships reveals that there are huge benefits to so-called 'south-south' collaboration, that the seeds of such collaboration can indeed deliver the fruit of better health to those in need."

For example, during Africa's 2007 meningitis outbreak, biotech firms in Brazil and Cuba used their respective strengths to provide African countries with affordable vaccines to prevent further spread of the disease.

"By working together, the two countries quickly developed a cost effective vaccine for Africa -- a clear example of how south-south collaboration is motivated by solidarity with each other and can actively improve global health," says co-author Dr. Tirso Sáenz of the University of Brasilia.

And, to combat persistent cholera outbreaks, firms in Bangladesh and India have teamed up to develop a new vaccine that, if successful, will be manufactured by the Indian firm Biological E (Hyderabad, India).

"India has strength in vaccine manufacturing and can do it cheaply. This is an advantage that other countries and international organisations should take advantage of," says co-author Dr. Sachin Chaturvedi of the New Delhi think tank Research and Information System for the Developing Countries.

Firms in Brazil, China, Cuba, Egypt, India and South Africa reported nearly 280 south-south collaborations. Brazil reported more than 60 such arrangements while mighty China -- reflecting its massive domestic market -- had fewer than little Cuba, a long time leader in innovative health strategies.

Surprisingly, governments and international organizations play a minimal role at this point, involved in less than 10 per cent of all south-south collaborations, the study reports.

Still, third party organisations can be important for south-south collaborations. The World Health Organisation, for instance, was crucial for the success of the Brazil-Cuba collaboration in providing meningitis vaccine for Africa, and the Academy of Sciences for the Developing World has been
instrumental in building capacity through south-south collaboration in poorer African countries.

In many ways such collaborations are a more relevant model of promoting innovation than the traditional model of relying on linkages with developed countries.

Says Dr. Wen Ke, a co-author from the Chinese Academy of Sciences: "Even large countries such as China need at times to look beyond their borders to access the necessary expertise."

South-south collaborations strengthen the capability of firms in southern countries to meet shared problems by pooling their expertise and resources -- to address issues rich countries in the north may not be affected by, nor interested in," says Dr. Victor Konde from the University of Zambia.

Earlier research shows Africa bears a quarter of the world's disease burden, yet accounts for less than one per cent of global expenditure on health. Sub-Saharan Africa imports nearly 90 per cent of its medicines. However this could rapidly change with 37 countries on the continent now engaged in some form of medicine production.

Collaborations have enabled Egypt and Tunisia to meet the majority [60-95 per cent] of their own drug needs now.

"This locally-appropriate technology transfer between developing countries can bridge the divide between the health biotech have and have nots," says Dr. Magdy Madkour at the Ain Shams University in Cairo. "When Egypt faced a shortage of insulin imported from developed countries, only China's door was open to overcome the insulin deficiency crisis."

Firms in developing countries are far from reaping the full benefits of south-south collaboration but cannot be expected to do everything on their own, according to the study.

Governments in the south need to better integrate south-south collaborations into their innovation policies and provide support to joint activities of firms from different developing countries. International organizations and philanthropic organizations engaged in promoting global
health need to pay attention to the power of such south-south engagement in providing affordable health products.

"What is actually needed is a model of north-south-south collaboration, which harnesses the appropriate learning between developing countries and the technological and financial strengths of the North," says co-author Dr. Abdallah Daar of the MRC.

"There is considerable potential for firms in developing countries to be more cost effective than those in developed countries, providing health products that can reach more poor people in the developing world," he adds. "If successful, south-south collaboration increases capacity in science-intensive fields, improves the ability of developing countries to address their own problems, and contributes to economic development and quality of life in developing countries."

Although collaborations in science and technology have been high on the agendas of developing countries since the 1960s there has been little study of such collaborations and none at all into the health biotech sector until now.

Of the 288 health biotech firms that responded to the MRC survey, 27% reported south-south and south-north collaborations. South-north collaboration still dominates, with over half (53%) of the firms reporting collaborations with developed countries.

The study also determined that the vast majority (near 90 percent) of south-south collaborations relied on formal arrangements that ranged from supply agreements, to R&D cooperation and licensing agreements, to marketing and distribution agreements.

Cost and risk reduction are among the primary drivers of these partnerships but obtaining access to new markets is of paramount importance, firms reported, particularly for small countries like Cuba that are especially dependent on exporting their products to develop a more balanced economy.

Collaborations also open the door to vital new research knowledge and technical skills.
"Everyone brings something to the table in successful collaborations: scientific expertise, technologies, skills, contacts and experience," says Dr. Thorsteinsdóttir. "For instance, many small firms taking their first steps in product development often need help navigating the regulatory environment."

Developing country biotech firms are increasingly aware of the importance of promoting development and innovation through joint efforts with one another, and have set up networks to deal with malaria, tuberculosis, HIV/AIDS and other common diseases. Brazil, China, Cuba, Nigeria, Russia, Thailand and Ukraine are working together in a network that jointly promotes research and development aimed at developing innovative diagnostics kits, drugs, and vaccines for HIV/AIDS prevention and treatment.

Concludes co-author Peter A. Singer, MD, Director of the MRC: "There are 5 billion brains in the developing world. When they connect, the light bulbs will really start to glow. And the more they work with each other, the less they will depend on the industrialized world."

**Further examples, south-south collaborations:**

**Global south-south-north consortium for clinical cancer trials**

Nimotuzumab is cancer therapeutic aimed at various cancer types including esophageal, brain metastasis, colorectal, pancreatic, prostate, cervical and breast. To carry out cost effective clinical trials on nimotuzumab, CIMAB SA (Havana, Cuba), and its partner YM BioSciences (Mississauga, Canada), have established a consortium of mainly small biotech firms from 20 developing countries as well as seven developed countries.

As a result nimotuzumab has been approved as a treatment for head and neck cancers and glioma, in 23 countries worldwide including Argentina, Brazil, China, India, Indonesia, Mexico and Ukraine. The consortium members license the drug from CIMAB and market it in their home countries. By including a south-south collaboration strategy, biotech firms can bypass pharma companies, retain greater presence in latter stages of the product's development, and potentially have a greater share of the revenues.
Vaccines for Africa's meningitis outbreak

To counter a meningitis outbreak in 2007 the World Health Organization (WHO) identified Bio-Manguinhos (Rio de Janeiro, Brazil), in collaboration with the Finlay Institute (Havana, Cuba), as the most suitable suppliers of a meningitis vaccine. They relied on their respective strengths in the development and manufacturing process and neither firm alone would have been able to respond so quickly and efficiently to this request. This shows how south-south collaboration can be harnessed to address a health threat spurred by demand and funding from an international organization.

South-South approach to dealing with HIV/AIDS based on local biodiversity

China and Thailand are working together to develop a remedy against HIV/AIDS based on Chinese biodiversity and knowledge from traditional Chinese medicine. After extensive animal testing in China, clinical trials began in Thailand where the incidence of HIV/AIDS is far higher. The herbal-based anti HIV drug -- Complex SH -- is the first to ever undergone Phase I, II, and III clinical trials. Complex SH is said to inhibit growth of HIV and kill the virus and has an efficacy rate of 89% when used alone, and even higher with other therapies. And all without the side effects that accompany a similar class of biomedical drugs.

The product is patented and has received regulatory approval both in China and Thailand.

Extending health biotech capacity through south-south collaboration saves Egypt's diabetics

Human insulin has at times been in short supply in Egypt, a considerable health threat to the country's diabetics. To help overcome this, the Holding Company for Biological Products and Vaccines (VACSERA, Giza, Egypt) transferred the technology to produce recombinant insulin from the Chinese company Dongbao (Shanghai, China) and can now produce recombinant insulin locally. As a result, Egypt is capable of meeting its own demands for insulin and ensuring a more affordable product is available to its population in need.
India-Africa Bridge the Technology Divide through joint-ventures

India has transferred technology for diagnosing infectious diseases to South Africa. As part of a joint venture between the publicly funded, LIFElabs in South Africa (Durban, South Africa), and the Indian Tulip Group Diagnostics (Bambolim, India) the Indian company agreed to transfer several diagnostic technologies to South Africa including rapid malaria diagnostic kits, and pregnancy diagnostic kits. The Tulip Group committed to transfer the technology and provide substantial capacity and technical assistance. By transferring the technology to South Africa, the South African firms are able to diagnose diseases locally and rapidly.

World Class Pharma that Puts People First
By Patricia Grogg

HAVANA, Dec 1 , 2009 (IPS) - Cuban biotechnology and pharmaceutical products are already among the country's major exports, and the industry is on course to continue developing while maintaining a firm focus on making a real difference to the health of all Cubans and of people in the numerous countries where Cuba provides medical assistance.

The existence of market forces is a reality that has to be reckoned with because of production costs, but health decisions cannot be governed by business considerations alone, said Agustín Lage, head of the Centre for Molecular Immunology (CIM), whose anti-cancer product Nimotuzumab is currently undergoing clinical trials in the United States.

Lage and other Cuban scientists presented the strategy and results obtained by Cuba's biotechnology industry at the Global Forum for Health Research, held mid-November in Havana. The biotech industry, which began to develop in Cuba in the 1980s, now holds some 1,200 international patents.

Cuban pharmaceutical research centers had to adopt policies on intellectual property and protect their inventions with patents in order to generate export revenues, as otherwise a high-tech sector like this could not exist,
Lage explained. "At the CIM, about 60 percent of the patents are used commercially in some way," he added.

According to official reports delivered at parliamentary sessions in late 2008, biotech export sales increased by 20 percent last year compared with 2007.

Export sales totalled 340 million dollars in 2008, according to estimates by academics.

Luis Herrera, head of the Centre for Genetic Engineering and Biotechnology (CIGB), said the development and sustainability of the industry is based on its "closed circle" approach, which deals with the full life cycle of its products, from research to production and marketing. "Without this approach, we would not have got the same results," he said.

Another key element is cooperation and exchange between all the institutions. "From the start we realised that we were too poor to indulge in competition with each other," said Herrera, who added that as well as integration, the industry is characterised by a "vocation" for applied research in line with national interests. "A result is not a result until it has a positive impact on the health system," he said.

The CIGB, the leading institution of Cuba's biotech industry, founded over 20 years ago, has recently produced a vaccine against hepatitis B, a synthetic vaccine against Haemophilus influenzae type B, and Heberprot-P, regarded as the only effective treatment in the world for diabetic foot ulcers.

CIGB scientists take pride in showing how all Cubans have benefited from their research, one way or another. Eight years after the hepatitis B vaccine came into use, there has not been a single case of the illness in children under five on the island, Herrera said.

When this Caribbean island nation plunged into economic crisis in 1990, triggered by the collapse of the Soviet Union and the East European socialist bloc, the government decided to carry on developing the biotechnology and pharmaceutical industries, creating new facilities in what is known as the West Havana Scientific Pole.

The Carlos J. Finlay Institute for vaccine development opened in 1991, the National Biopreparations Centre, which ramps up production for the biotech
institutions, in 1992, and in 1994 the CIM was established, for research and development and production of monoclonal antibodies.

Monoclonal antibodies are produced in laboratories and bind to specific target molecules (like proteins) on the surface of, for instance, cancer cells.

Each monoclonal antibody preparation recognizes only one target protein or antigen.

Later on, biotech research spread throughout the country and at present 12 provinces have so-called "scientific poles", which integrate the efforts of researchers, university professors, business experts and innovators, among others, according to Cuban academics Betsy Anaya Cruz and Mariana Martín Fernández.

A study by the two authors underlines that vaccine development has led to the eradication of diseases like polio, diphtheria, measles, German measles and mumps in Cuba, and drastic reductions in the incidence of meningococcal meningitis type B and hepatitis B, thanks to the mass vaccination programme for children.

"This scientific development is due to political will, and is an expression of a conception of human rights in which resources and investment are devoted to the welfare of the country's people as well as that of other countries," Concepción Campa, the head of the Finlay Institute, told IPS.

VAMENGOC-BC, the only vaccine in the world effective against meningitis caused by type B meningococci, was developed in the Finlay Institute's laboratories. A production plant opened in partnership with Brazil in 2007 is making 50 million doses of the vaccine this year to fight meningitis in over a score of African countries, Campa said.

The joint Cuban-Brazilian production of the vaccine supplies the needs of the World Health Organization (WHO), which says 400 million people in 21 African countries are at risk from meningitis. "The incidence is more than 1,000 cases per 100,000 population during outbreaks," Campa said.

The plant has been enlarged for future production of other vaccines, such as the anti-pneumococcal vaccine which will undergo clinical trials in 2010.

Pneumococcus is a disease organism that affects humans nearly exclusively,
causing infections such as pneumonia, sinusitis and peritonitis as well as severe invasive processes like pneumococcal meningitis and septicemia.

Among CIM's most recent products is a vaccine for therapeutic treatment of advanced lung cancer. Registered in 2008, it has proved effective in prolonging patient survival and improving quality of life.

In mid-2009, the Canada-based drug development company YM Biosciences obtained a license for clinical trials in the United States of the monoclonal antibody Nimotuzumab (CIMAher), for the treatment of advanced tumors of the head, neck and brain, another achievement of Cuban biotechnology.

YM Biosciences owns 80 percent of CIMYM, the company holding the rights to Nimotuzumab in North America, Europe, Japan and other regions. The remaining 20 percent is owned by CIM, as developers of the vaccine. Trials are expected to last three or four years.

If the drug trials are successful, changes will be needed to the U.S. embargo, which bans all trade with Cuba, before it can be sold in the United States. Previously, pharmaceutical companies SmithKline Beecham and CancerVax obtained licenses for experimental trials of the vaccines against meningitis and for treating lung cancer, although they decided not to continue with clinical trials.

Political stumbling blocks aside, Cuba's biotech industry has proved to be a resounding success in every way: by generating new products, and due to their impact on public health, the number of patents registered, the volume of exports and the returns on investments, according to Cruz and Martín Fernández.

The industry is presently enjoying steady growth, and even higher economic returns are to be expected in future, the study says.

Cuba registers therapeutic vaccine for lung cancer

THE first therapeutic vaccine for the treatment of advanced lung cancer has been registered in Cuba, the only one for this type of malignancy worldwide, reported the national news agency, AIN.
Named CIMAVAX EGF, the antigen has been shown to be effective, extending patients’ survival and quality of life, said the doctor of biological science, Gisela González, manager of the project.

The expert explained to the press that the drug was developed at the Molecular Immunology Center (CIM), one of the flagship institutions within Havana’s Scientific Pole.

The first clinical trial was conducted in Cuba in 1995 with more than 400 patients with advanced lung cancer who had previously received conventional treatment with chemotherapy and radiation therapy, González indicated.

The drug’s positive effects include a decrease or disappearance of shortness of breathe, weight gain, better appetite and controllable pain, allowing patients to participate in social life, she said.

She explained that the vaccine which provokes an immune system response and does not have serious side-effects, is composed of two proteins, one from epidermal growth factor and the other, P-64 K, from cell membrane, both produced through DNA recombination methods by the Genetic Engineering and Biotechnology Center.

González indicated that five Phase I trials have been conducted and two Phase II trials, one in Cuba and another in Canada and England.

The results of the Phase II trials showed clinical benefits for patients, as compared with those who did not receive the vaccine, leading to a registration request to the Cuban regulatory agency.

González announced that in 11 hospitals within the country, a Phase III clinical trial is being conducted with 579 patients and that in August of this year Phase II trials will begin in Peru and subsequently in China.

Dr. Tania Crombet, director of clinical research for CIM emphasized that Cuban scientists are investigating CIMAVAX EGF for other epidemic (solid) cancers and have demonstrated its effectiveness in cases of neoplasia of the lung, head, neck, brain, stomach, breast, rectum, prostrate, cervix, bladder, ovary and pancreas.
Cuba began studies of the new vaccine in 1992 which included pre-clinical trials with laboratory animals and, in 1995, conducted the first clinical trial.

Cuba exports medical equipment all over the world

MEDICAL equipment for cardiology and clinical neurophysiology services, some in the final phase of testing before production is begun, are among the products developed by a Cuban industry born 25 years ago.

This industry is composed basically of the Cuban Neuroscience Center (CNC) and the Central Institute for Digital Research (ICID), both part of the West Havana Scientific Complex.

The devices and equipment produced have been installed within the network of Cuba’s national health system hospitals, where they contribute to improving the population’s quality of life, and are sold in a number of countries where they are sought for their excellence and competitive pricing.

ALMOST 2,000 PIECES OF EQUIPMENT IN THE HANDS OF CUBAN DOCTORS ABROAD

Fernando Arrojas, general director of the ICID, informed Granma International that 5,647 items created by the Institute have been placed in hospitals and polyclinics across the country, 1,948 are in the hands of Cuban internationalist health professionals overseas and that more than 10,000 have been sold during the last five years. Currently the Institute has contracts to produce more than 4,000 items which will be used within the national health network and for export.

The ICID has developed a line of devices for cardiology services, prominent among which are the portable electrocardiogram, CARDIOCID BB, to monitor and analyze heart rhythms, and the EXCORDE, a system for the study of the electrocardiogram patterns of patients engaged in daily activities over a 24 hour period. Its improved versions, according to engineer Fernando Arrojas, are already in the final phase of testing prior to production. The CARDIODEF 2, a modern defibrillator-monitor used in resuscitation, and the HIPERMAX, an ambulatory monitor that allows for the medication and recording of a
patient’s blood pressure and heartbeat over the course of 24 hours, are also among the products created.

The DOCTUS VI used for the monitoring of physiological parameters was conceived for intensive care units, and an improved version has recently been introduced into the national health system.

Also produced at the ICID is the TERAPLUS (a therapeutic electro-stimulator) and the ERGOCID-AT PLUS, based on a PC that allows for the evaluation of the physiological response of healthy people or those with medical problems to physical effort, by analyzing the electrocardiogram, as well as the flow and concentration of gases in air inhaled and exhaled.

COMBIOMED AFFILIATES NOW IN VENEZUELA AND ALGERIA

This equipment is sold by the company COMBIOMED, which has two affiliates abroad, one in Venezuela and the other in Algeria, countries which have made large-scale purchases, and three branches in Cuba: Havana, Santa Clara and Las Tunas, fundamentally to provide technical services.

For its part, the CNC has developed another line of equipment for the specialty of clinical neurophysiology, which includes the latest advances in the field of neuroscience.

Dr. Mitchell Valdés Sosa, CNC director, recalled the center’s creation in 1990 at the initiative of President Fidel Castro and discussed the work of specialists there, the results of which include the MEDICID (a digital electroencephalograph) and the AUDIX (which records electrical brain activity and allows for the detection of hearing loss and its extent).

Valdés Sosa, also the president of NEURONIC S.A., which commercially distributes the CNC’s medical products and technology, informed Granma International that the MEDICID is being used in brain research projects in Spain and in Mexico.

DETECTING DEAFNESS IN YOUNG CHILDREN

Valdés Sosa emphasized the usefulness of the AUDIX in Cuba in detecting deafness in very young children who could be candidates for cochlear implants, the insertion of an electronic device where the sound receiving auditory organ is found, allowing these patients a normal life.
The AUDIX is also being used in China, Venezuela, Colombia, Spain and Italy, according to his statement.

NEURONIC S.A. exports its products to more than six countries, reported Valdés Sosa, pointing out that the group is working on a monitor that measures the effect of anesthesia on an individual, in collaboration with the University of Oriente, as well as on methods to detect and diagnose learning disabilities with more precision.

In relation to the important international project to map the human brain, he said that Cuba is working independently since the United States is funding the effort and has prevented Cuba’s official participation. Scientists involved, however, collaborate regularly with specialists in the country.

Cuba’s program will serve to describe the brain development of Cubans from infancy through to an advanced age, explained the scientist and commented that, at this point, more than 300 people in the Havana municipality of La Lisa have been studied using a variant of the MEDICID that has 132 channels, allowing for the measurement of electrical activity at 132 points on the skull, as opposed to the usual 19 to 22 channels used, along with magnetic resonance techniques.

**MEDICID 03: FIRST OF ITS KIND IN THE WORLD**

The MEDICID 03 was the first Cuban medical device to be exported and the first of its kind in the world.

The digital electro-encephalograph with 24 channels to measure electrical activity at 24 points on the skull performs specific tests and a cartographic analysis of brain activity. It includes as well the MICROCID 02, the first computer developed by the Central Institute for Digital Research (ICID)

The multidisciplinary group which developed the device included doctors and specialists at that time members of the Neuroscience Board of Directors of the National Scientific Research Center (CNIC) with ICID engineers and technicians.

The birth of the industry in Cuba took place in 1982.
Stem Cells to Treat Degenerative Osteoarthritis of the Knee

A pilot study for the use of stem cells in the treatment of degenerative osteoarthritis of the knee, the most frequent of all rheumatic diseases, has begun at the Public Health Ministry’s Hematology and Immunology Institute (IHI) and, after their application to 21 patients, results look "promising."

The procedure consists of the obtaining of stem cells from the patient’s bone marrow, carried out as a conventional blood donation, and its administration by way of an injection through the skin directly to the articular cavity of the diseased knee.

Stem cells, thanks to their capacity of transforming in any type of cell, can regenerate tissues damaged by different types of diseases, as a consequence of an injury, or simply due to aging, hence the emergence of the so-called Regenerative Medicine at the beginning of the 1980’s.

Dr. Porfirio Hernández, coordinator of the National Group of Regenerative Medicine of the Public Health Ministry, told this newspaper that the procedure is being carried out by IHI physicians with the cooperation of professionals from the Enrique Cabrera General Teaching Hospital and the Sports Medicine Institute.

The scientist, who is also IHI’s deputy director for Science and Technology, pointed out that from the 21 patients treated so far, 31 knees of which have been applied the procedure, ten have had a positive evolution throughout the three months they have received it, with a decrease in the intensity of pain caused by degenerative osteoarthritis and the disappearance of this pain in 70% of the patients.

Also observed, he said, were "improvements in the structures of the knee", according to the X-ray and ultrasound studies made, and none of the patients has shown adverse or secondary effects as a result of the treatment.
For specialists, these assessments are "very encouraging", since they provide evidence that the method used is feasible, simple, safe, economic and of minimum invasion. However, he clarified that it will be necessary to wait for the evaluation of a larger number of patients in order to reach definitive conclusions with regard to the real benefits this therapeutic procedure can bring.

Degenerative osteoarthritis affects mainly the hands, hips and knees. This ailment, which usually appears in a gradual and progressive way, becomes more evident in approximately 10% of people over 60 years of age, when the protective layer of the end of the bones, the cartilage (a kind of cushion), wears down and underlying bones begin to chafe among themselves.

In the beginning of the 21st century, specialists consider that the treatment of degenerative osteoarthritis of the knee is still "a real therapeutic challenge."

Cuba develops product from royal palm

Experts from the National Scientific Research Center (CENIC) have developed a product from the royal palm to treat the benign prostatic hyperplasia or hypertrophy, said CENIC Director, Doctor Carlos Gutiérrez.

Experts from the National Scientific Research Center (CENIC) have developed a product from the royal palm to treat the benign prostatic hyperplasia or hypertrophy, said CENIC Director, Doctor Carlos Gutiérrez.

During a meeting with colleagues from Santiago de Cuba, Gutiérrez highlighted the favorable results achieved with the royal palm, which is patented already and is undergoing clinical trials, as one of the latest contributions of the center, inaugurated by Fidel Castro in July 1965 and turned into a precursor of Cuban scientific development.

The expert added that in these 45 years, efforts have been oriented to illnesses of high prevalence, with vaccines against cholera and whooping cough, as well as preparations for diagnosis, eye and bone implants, uropathies, gastrointestinal ailments and maxillofacial surgery.
He stressed that CENIC has been the headquarters for seven research centers and is a human resource-training facility, boasting a staff with a very high scientific level.

**Cuba a nation without hepatitis B**

Systematic immunization campaigns carried out in Cuba over the past 17 years have allowed the Caribbean nation to reduce the incidence of acute Hepatitis B in more than 99%

According to Granma news daily, the prevention campaign is being implemented by the Cuban Ministry of Public Health using a highly efficient vaccine produced by the Havana-based Center of Biotechnology and Genetic Engineering.

In 1992, a total of 2,194 cases of acute Hepatitis B were diagnosed. The figure decreased to 1,344 in 1997 and the number of cases dramatically dropped to 34 in 2006; 17 in 2007 and 15 in 2008, while there are no cases reported in the first quarter of the current year.

The Granma article recalls that according to criteria from the World Health Organization, from the epidemiologic point of view, when the number of cases reported are below 10, the disease is not regarded as a health problem.

However, vaccination strategies and the strict control of blood donations remain in place in order to prevent chronic patients from transmitting the disease to people that have not been immunized.

Cuba will mark the World Day against Hepatitis on May 19 with a series of activities that include events and panels to discuss current strategies to diagnose and treat Hepatitis B and C.
Venezuela Readies Cuba-Advised Vaccine Factory

A Venezuelan vaccine factory, a project currently developed with Cuban advisory, will be ready in three months to support national immunization programs, Deputy Health Minister Eugenia Sader confirmed.

Starting the operations of a productive line to obtain the pentavalent vaccine, which grants protection against five diseases, is among the priorities.

Sader told Prensa Latina that most of the prophylactic doses currently applied in the country are bought in Belgium, Denmark, England, France and Cuba, which is provider of the vaccine against hepatitis B.

The new plant is being built to meet the national and South American needs and demands, the minister asserted.

The official highlighted that this effort shows compliance with the constitutional mandate regarding supply production, in the interest of a sovereign country and the willingness to develop preventative medicine.

Venezuela is boosting the national vaccination plan, which will protect around 20 million citizens against 14 diseases, applying 10 vaccines free of charge.
A natural Cuban cure for malaria, arthritis, poor memory?

Havana, April 8 - A 'natural' medicine derived from a herb that grows wild in Cuba can reportedly fight arthritis, malaria and memory problems and will also be tried on people with HIV.

'Anamu' or Petiveria alliacea, commonly known as 'garlic weed' due to its strong garlic-like odour, has been found to be an 'anti-spasmodic, diuretic, stimulant and sudorific, local analgesic and anti-inflammatory in different skin complaints, and it is used against arthritis, malaria, rheumatism and memory problems,' Cuba's official news agency AIN said.

The anamu tablet, 400 mg and completely natural and herbal, will be supplied initially to patients with the AIDS virus in Santiago de Cuba province, where its effectiveness will be verified, according to its immune response...in the human organism, it said.

Martha Zoe, a specialist in natural medicine, said the pills are made from powdered leaves and young stems of anamu, a grassy herb that grows wild in Cuba, the Caribbean, South America and Africa.

'The tablets already have the first health registration, backed by medical reports on the plant and research linked with its traditional use and reported benefits,' the report said.

--IANS/EFE

Focus on the Centre of Molecular Immunology

The Center of Molecular Immunology's main mission is to obtain and produce new biopharmaceutical products used in the treatment of cancer and other chronic non transmissible diseases and introduce them in the Cuban Public Healthcare System. Make the scientific and
productive activities economically sustainable and contribute to the economy of the country.

On December 5th, 1994 on the west side of Havana the Center of Molecular Immunology is inaugurated. For the design and construction of the Center of Molecular Immunology the current Good Manufacturing Practices Guidelines adopted by Cuba and recommended by the World Health Organization were used particularly those adopted also by the countries member of the European Community.

The new building is basically two floor facility of over 15,000 square meters.

In the Center of Molecular Immunology work approximately 830 employees, most of them scientists and engineers. These personnel are administratively organized in three main areas: Research and Development, Production and Quality Assurance.

Today CIM produces Biopharmaceutical products, such as: an anti CD3 monoclonal antibody for the treatment of patients with organ transplant rejection, human recombinant Erythropoietin for the treatment of anemia, granulocyte Colony Stimulating Factor for the treatment of neutropenia, a humanized monoclonal antibody that recognizes the epidermal growth factor receptor for cancer treatment as well as other monoclonal antibodies for tumor imaging.

Since 1992 CIMAB S.A. is devoted to the commercialization of Biopharmaceutical products, in the national Market and abroad, especially monoclonal antibodies and other recombinant proteins, for the diagnosis and treatment of cancer and other diseases related to the Immune System.

CIMAB S.A. is the exclusive representative for the commercialization of the products and services of the Center of Molecular Immunology (CIM), a Cuban biotechnology institution devoted to basic research, product development and production of mammalian cell culture
products in compliance with current Good Manufacturing Practice (cGMP).

CIMAB S.A. commercializes several products from CIM and other scientific institutions. These are an anti CD3 monoclonal antibody for the treatment of patients with organ transplant rejection, human recombinant Erythropoietin for the treatment of anemia of patients with chronic renal failure, granulocyte Colony Stimulating Factor for neutropenia treatment in cancer patients, “humanized” anti epidermal growth factor receptor monoclonal antibody for cancer treatment as well as other monoclonal antibodies for tumor imaging, chemotherapy medicaments for neoplastic diseases, as well as a panel of products for the in vitro study of different pathological conditions, including malignant tumors, AIDS and other disorders of the immune system.

The negotiation of research projects at different development stages mainly related with monoclonal antibodies and therapeutic vaccines for cancer treatment is another of the aims of CIMAB S.A. Our negotiation policy includes the licensing of projects and technology patents and strategic alliances for joint development of projects among others.

CIMAB S.A. has established commercial associations with more than 25 pharmaceutical companies in different countries for product distribution and different license agreements for joint development of research projects.

Our goal is to continue growing in this highly competitive Market based on the quality and efficacy of our products and the efficiency of our commercial management, devoted to succeed in supplying a better quality of life.

The human quality of CIMAB S.A. staff is characterized by professional commitment, dedication and enthusiasm, responding to the constant growing demands of the Market.
With the highly qualified personnel from CIM and other scientific institutions CIMAB offers you the opportunity to develop different business models for the marketing of our products and licensing our projects.

For more details of our products and services, please contact us.

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