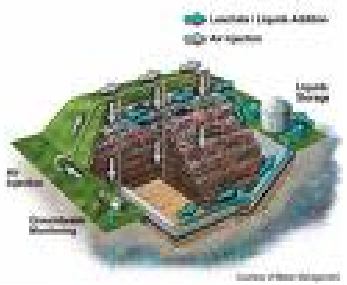

EMHGBN Newsletter

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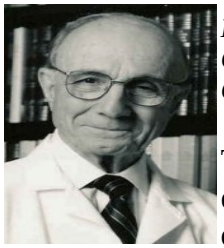
INSIDE THIS ISSUE:

Eastern Mediterranean Health Genomics and Biotechnology Network (EMHGBN) was created in 2004 with collaboration of representatives of selected centre of excellence in (health related) molecular biology, biotechnology & genomics in the Eastern Mediterranean region by recommendations and efforts of WHO/EMRO.

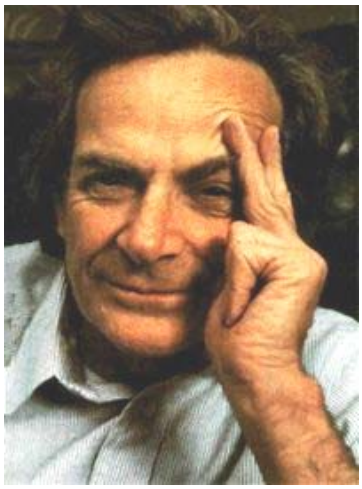
Address:
Biotechnology building, #69, Pasteur Ave., Pasteur Institute of Iran
Tehran, Iran, 13164
Tel: +98-21-66954324
Fax: +98-21-66465132
E-mail: emhgbn@gmail.com, secretariat@emhgbn.net
Website: www.emhgbn.net

Prepared by:
S. Zandvakili
Page design: S. Zandvakili
Editor: Dr. S. Sardari



Edmund D. Pellegrino, M.D. is Professor Emeritus of Medicine and Medical Ethics at the Center for Clinical Medical Ethics at GeorgetownUniversity Medical Center.Dr. Pellegrino is a Senior Fellow of The Center for Bioethics and Human Dignity.

The actual and promised capabilities of biotechnology have given fame to a possible new end of medicine, "enhancement." Almost every present-day analyst underscores the difficulties, impossibility, or pointless of any definition that seeks to distinguish enhancement from therapy. For medicine, the treatment/enhancement distinction cannot be avoided since physicians will play a central role whenever medical knowledge is used both to regain and recover health. To be sure, specialists in other fields are necessary if even the modest promises of biotechnology are to be realized. They will provide the basic scientific and technical expertise from which biotechnological enhancements will appear. But physicians are crucial in the actual use of this technology with individual human beings. Some physicians have already crossed the divide between treatment and enhancement between medically indicated use and patient-desired abuse. There is already a need for physicians to reflect on the ethical suggestions of their involvement in the uses of biotechnology. This reflection centers on these are: (1) The use of biotechnological advancements in the treatment of disease (2) its use to satisfy the desires of patients and non-patients for enhancement of some bodily or mental trait some state of concerns they wish to perfect (3) in the use of biotechnology to redesign human nature and to improve the species in the future. They most closely are traditional to the clinical and ethical ends of medicine. The list of target diseases is long. The physicians functions in their time-honored role as healer. They have a moral obligation to stay informed and educated in the use of these new technologies. The ethical questions are related to the means by which these new treatments are developed and applied. Genetic manipulations, nanotechnology and psychopharmacology are in themselves not basically good or bad morally. New treatments are the most promising use of biotechnology. However, derived from the ruin of human embryos, distortions and bypassing of normal reproductive processes, or cloning of human beings may not ethically be acceptable no matter how useful they might be therapeutically. Elemental questions about how enhancement affects our concepts of the purposes of human life and the nature of human happiness will be obscured by more direct demand for happiness, completion and mental harmony. The modern and post-modern highlighting will be on effective regulatory measures, better techniques and knowledgeable practitioner's not ethical moderation. Moderation or prohibition beyond prevention of abuses and harmful side effects is highly unlikely. Those who restrict freedom of selection will be seen as a danger to the realization of a higher quality of life for all. Any restriction will be understood as a violation of the physician’s commitment to respect patient independence. Many of us will take these to be false arguments, which if accepted would make medicine the handmaiden of biotechnology and gradually destroy traditional role in treating the illness. Counterarguments will be difficult given the powerful vectors of change in our cultural civilization. [**Ref** www.cbhd.org]



Nanotechnology

Guess who is he?

Richard Feynman is the first person that talks about *Nano* in his lecture in 1959 and his speech title was “There's Plenty of Room at the Bottom” but on those days when he talk about Nano strategy which every thing goes precisely in this scale every single person just look at him who is coming from other space!

Nanotechnology is a technology or applied science which working in molecular and atomic scales. This technique is going to be more and more popular so is going to be a prospect technology which brings a lighter, cleaner, less expensive and extremely precise products.

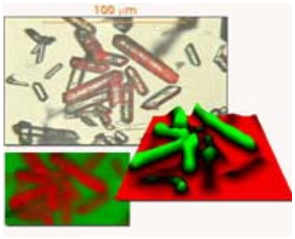


Figure: Nano particles

Now nanotechnology makes revolution in manufacturing, research and medicine. Every time in multimedia, you hear about this molecular scale, but how this development can direct to investigation in accurate approach. Meanwhile, the largest nanotechnology database nanovip.com announced that profits of nano projects around the world will be over to $1 Trillion by 2015. Imagine when you see your physician the detection of any harmful disease would really be easy and fast so we are walking in future road!

[Ref www.nanovip.com and www.sciencedaily.com]

Biomarketing

The group of EMHGBN newsletter decided to have biomarketing section every week to cover-up this news in whole of 22 countries which are in this network. So, this time we talked about bio marketing in Egypt: Biotechnology from Laboratory to the Marketplace.

CAIRO and Germany ARTES Biotechnology, which is specialized in recombinant protein production from yeast expression systems, and Rhein Minapharm Biogenetics jointly, stated that start of a strategic collaboration for developing three therapeutic proteins. This biotech company will apply its proprietary *Hansenula* technology platform and know-how to the generation of production cell lines, analytical assay development and lab-scale fermentation. In addition, ARTES has granted Minapharm a commercial license option to apply its holder technologies to the manufacturing and marketing of these therapeutic proteins and will be responsible for the 100 L-scale production of a Minapharm protein based on an existing process using *E. coli*. Minapharm will carry out the applicable process R & D, production and commercialization of the therapeutic proteins. Dr. Michael Piontek, founder and Managing Director of ARTES believes this long-term agreement marks an important target in the existing relationship between our companies. The yeast strain *Hansenula polymorpha* is often an alternative to *E. coli* for producing therapeutic proteins or technical enzymes inexpensively. A number of products derived from *Hansenula* are already marketed worldwide such as hepatitis B vaccine, insulin, interferon alpha 2a and food enzymes. Minapharm is headquartered in Cairo with production facilities in the 10th of Ramadan City and is among the leading prescription medicine companies in Egypt and the Middle East. The company specializes in the manufacture and marketing of pioneering specialty pharmaceuticals and through its subsidiary Rhein Minapharm Biogenetics in the research, development and manufacturing of biopharmaceuticals. The biotech subsidiary focuses on liver disease, thrombosis and hemostasis as central part of therapeutic areas. Also, these three therapeutic proteins already on the market and several in the pipeline but Minapharm's proficiency is shortening the time to market while remain to the highest international ethical and safety standards. Minapharm has a collective workforce of over 700 employees and is listed on the Cairo and ARTES is a Germany-based biotechnology company specialized in recombinant protein production from yeast expression systems. ARTES offers generation of optimized production cell lines in yeast expression systems based on *Hansenula polymorpha* and Arxula adeninivorans exclusively. The Egyptian Organization for Biological Products & Vaccine (VACSERA) which providing and producing vaccines in viral areas, suspension BCG for urinary bladder Cancer, vaccines for veterinarian use, antisera, blood Bank Products, blood fractions products and diagnostic & laboratory products and medical solutions. [**Ref** www.artes-biotechnology.com and www.vacsera.com]

Science Park

The International Association of Science Parks (IASP) has defined the technology parks as: A Science Park is an organization managed by specialized professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, a Science Park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high quality space and facilities. (IASP International Board, 6 February 2002). The IASP definition of **Science Park** encompasses other terms and expressions such as: Technology Park, Technopolis, Technopole, Technology Precinct and Research Park etc. Iranian Technology Park first introduced in the year 2000 also the year after come under operation. This park is located 20 km North East of Tehran on the hilltops overlooking the town of Bumehen and temperature difference to Tehran is around 4-5 degrees centigrade. The missions of this park are:

1. Facilitate and expedite nation-wide and regional high-tech industry development.
2. Encourage cooperation between industry, academia and research centers with multi-disciplinary. **3.** Commercialize know-how and innovations generated by research centers.
4. Promote research and development in private sector and help growth of Startups.

The public area construction have started since March 2002 and was planned to finish by May of 2003 as well as the first two construction phases of the park central buildings, covering an area of nearly 20,000 esq. are currently under way. [**Ref** www.cnx.siliconair.com]

Effective Microorganisms Research Organization

Revolutionizing life with EM (Effective Microorganisms)

EM Science Technique Training Center in Zhao-an in Fu-jian Prefecture was established in 1997 by Mr. Liu Qi Zhen, who is president of You Mei Bioscience Tech. in Taiwan EM was introduced in the 90s. Today, it is widely used in the fields varying from agriculture to environment. Also, it has been used to overcome the pollution problem of soil in most of the countries. EMs Duck Farm in Hai Nan Island (China) from EMRO Company is an amazing example of this treatment the process has two main goals first remove the pollution in water and soil in biologically way or in the other hand environment friendly and make good business. These EM ducks from the farm are famous in growth and superior fur. Since the ducks are receiving EM treatment, small fish are breeding very well in the pond. The waste water was reserved in an artificial fishpond from Ming-Yang National Starch Factory. Meanwhile, before EM treatment, unpleasant smell reached 10 km away from the pond but after EM treatment, the smell decreased and the waste water can be purified by the pond. The purification level reached the highest in China

The above pictures show the fishpond and the duck farm under EM treatment respectively.

EM research organization was introduced revolutionizing life with EM in most of the countries (USA, New Zealand, Egypt, Indonesia, Myanmar, Thialand, Nepal and Philippines) in worldwide. [**Ref** www.emro.co.jp]

Bioreactor is a vessel in which is carried out a chemical process that involves organisms or biochemically active substances derived from such organisms.
Bioreactors are commonly cylindrical but ranging in size from bio kit, biolab scale to industrial level. Under optimum conditions the microorganisms or cells will reproduce at an astonishing rate. The vessel's environmental conditions like air, oxygen, nitrogen, carbon dioxide flow rates, temperature, pH and dissolved oxygen levels, and agitation speed need to be closely monitored and controlled as this vessel comes from biological environment without any biorepair system so any changes could be make risk in this process.

Figure 1: This figure indicates serial evolutions in bioreactor from kit to commercial rank.

PURATREAT: New energy efficient advance to the operation of Membrane Bioreactors for Decentralized Wastewater Treatment. Water lack is a problem which all the countries of the Mediterranean area faced on a different level. In particular, the EU Water Initiative has identified the Southern Mediterranean as the area of highest water stress in the world. The majority of the treatment plants in the area use activated sludge processes, followed in some cases by rapid and filtration. These techniques were developed to reduce the suspended matter load and oxygen demand of the discharged reclaimed waters and but not designed to remove pathogenic. However, the membrane bioreactors could de-pathogenesis water against bacteria and viruses so it is capable alternative method for purifying water to the conventional treatment of urban wastewaters in the Southern and Eastern Mediterranean regions but these membrane are so costly because of high pressure and high flushing rate.
[**Ref** www.puratreat.com , www.bioonline.com and www.mswmanagment.co]

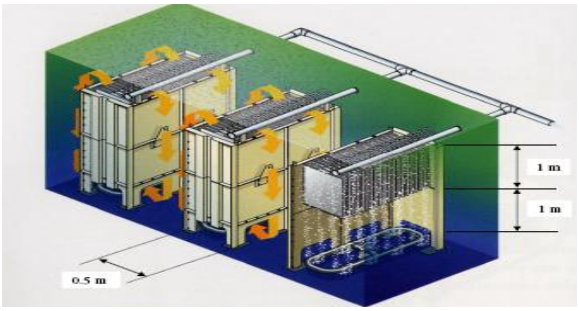


Figure2: Schematic of a submerged MBR system (Kubota/EIMCO).

Interview

In this issue we had interview with Parasitology and Mycology group in Medicine Faculty of Shahid Beheshti University. Dr. S. J. Seed Tabaei is a researcher of this group who we had interesting interview.

Would you please explain general research in your group?

Our group working on produces vaccines, treatment and genetic modifications on some parasites like *Enatoema*, *Leshminia* and *Malaria* to investigate which proteins are involved and what is the interaction between pathogen and host.

How can you link molecular biology and or Biotechnology in your field?

He said first of all I would like to briefly explain our research projects then in my explanation you will receive your answer:

He is working in two parasites which one of them is pathogen (*Entatmoeba Histolitica*) and the other is non pathogen (*Entatmoeba Dispar*) but they are in same shape in point of Morphology. They are analysis these two genomes to identify which gene or group of genes are involve in pathogenesis of this parasite then identify which proteins are translated from these genes and which active site of the proteins are critical then after sequencing and modifying transferred to host body for investigating the severe or weak symptoms of this disease on host body that is basically working on the mice.

His colleague working on *Toxoplasma* which means produces recombinant protein after identify candidate gene or genes, clone to the proper vector subsequently injected to mice to analysis the toxicology of it.

Figure4: The morphologic of *Entatmoeba Histolitica*.

Anouncements

You can have planned to participate in most recent conferences in advance.

BioInformatics Asia 2008 SINGAPORE

BioInformatics Asia 2008

14-17 April 2008

Venue: Suntec International Convention & Exhibition Centre - Singapore

Bioinformatics Asia 2008 is the only forum showcasing the latest developments in bioinformatics in Asia.

BioManufacturing Asia 2008 SINGAPORE

BioManufacturing Asia 2008

14-17 April 2008

Venue: Suntec International Convention & Exhibition Centre - Singapore

Where biopharmaceutical manufacturers explore latest upstream and downstream processing strategies and innovations

BioMedical Asia 2008 SINGAPORE

BioMedical Asia 2008

14-17 April 2008

Venue: Suntec International Convention & Exhibition Centre - Singapore

Biomedical Asia 2008 is Asia's largest biomedical science event. Featuring 6 conferences and 10+ focused summits ands workshops under one roof: BioTherapeutics, BioPartnering, BioManufacturing, BioLogistics and BioInformatics, Bio Licensing

BioTherapeutics Asia 2008 SINGAPORE

BioTherapeutics Asia 2008

14-17 April 2008

Venue: Suntec International Convention & Exhibition Centre - Singapore

Brings together regulators, researchers, pre-clinical and clinical development professionals from biopharmaceutical companies across Asia Pacific and globally to learn and discuss the best strategies and practices to fast-track new generation biotherapeutics development to market in Asia.

BioLicensing Asia 2008 SINGAPORE

BioLicensing Asia 2008

14-17 April 2008

Venue: Suntec International Convention & Exhibition Centre - Singapore

The LEADING pharma and biotech licensing and deal making event located in Asia that brings together potential licensees, licensors, leading legal, IP and technology transfer experts from North America, Europe and Asia Pacific.

Anouncements

BioInvest Asia 2008 SINGAPORE

BioInvest Asia 2008

14-17 April 2008

Venue: Suntec International Convention & Exhibition Centre - Singapore

Bringing together private equities, venture capitalists, biotech funds and other professional investors with leading public and private biotech companies with new drugs, diagnostics and medical technologies from Asia and globally

BioLogistics Asia 2008 SINGAPORE

BioLogistics Asia 2008

15-17 April 2008

Venue: Suntec Convention Centre - Singapore

BioLogistics Asia 2008 is where pharma companies, biotech, healthcare, clinical researcher and solution providers meet on how to optimize and integrate their logistics and supply chain functions to achieve operational profitability, global visibility, and cost efficiency .

Advertising

Advertising

The scientific news group of EMHGB kindly invite all Bio-pharmaceuticals or any other companies which are related to Biosciences and Biotechnology to have advertising in this page.

As we are distribute this newsletter in 22 countries which are members in EMHGBN network.

Our motto is:

“EMHGBN network can lead your business to introduce in entire Eastern Mediterranean Region”

Your company advertises will be here!

For advertising please contact: emhgbn@gmail.com

Plant biotechnology and tissue culture

The plantlets are grown in tubs or bottles containing an agar medium, in which hormones, nutrients and growth regulators are added in exact quantities, specific to each plant variety. The end-result is fully rooted plantlets that can be either exported at this ex-agar stage or transferred into a greenhouse to growing in the soil under natural conditions. Plantlets that have undergone too many cycles and therefore lost their vigor, poorly rooted plantlets that have spent insufficient time in the rooting media, or very tiny plantlets that have been transferred to the greenhouse too soon, are all bound to fall short and fail to thrive. Apart from plants being true-to-type and disease resistant, advantages of using the tissue culture techniques are that:

It is possible to predetermine and manage the quantities of varieties produced according to requirement.

Varieties that otherwise have a very small chance of propagating, or would take very long to germinate from seeds can be easily propagated; the required size and numbers can be obtained within a short period of time.

Bromeliad plants take very long to germinate from seed. Obtaining bromeliads from pups could also mean a pretty long wait. Tissue culture involves the mass production of true-to-type plants from carefully selected, good quality sources under controlled conditions.

This company makes over **million dollars** each year for exporting exotic bromeliad plant all over the world. [**Ref** www.plant biotech.com and www.avtbiotech.com]