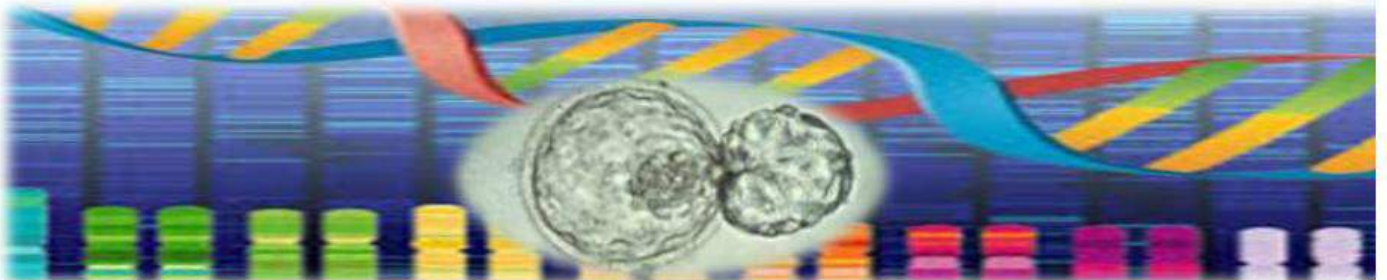
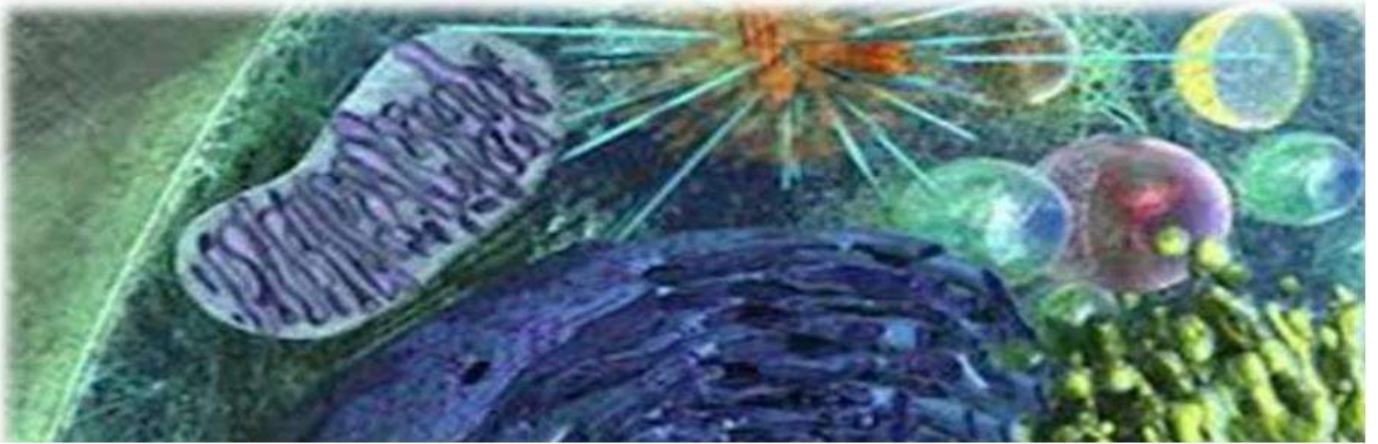




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جامعة مدينة السادات
معهد بحوث الهندسة الوراثية والتكنولوجيا الحيوية
**Genetic Engineering and
Biotechnology Institute**



اصدار 2018



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Index

Topic	Page
Dean's Introduction.....	2
Brief history.....	5
Organizational Chart.....	9
Institutional Objectives.....	10
Inscription requirements.....	11
Study system and examinations.....	11
Departments of Institute.....	12
Scholarships.....	14
Degrees awarded by the Institute.....	15
Current Research.....	19
Research projects.....	26
Laboratories and network.....	29
Units of a special character.....	32



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Word of Mr. Professor / Dean of the Institute

The Institute of Genetic Engineering and Biotechnology at the University of Sadat City is distinguished by its human potential and the most comprehensive in the diversity of its specialties in the sectors of health, agriculture, industry and environment, and unique in its academic and administrative staff, capable of developing society and serving the environment and working to solve its problems. The Institute has the honor to include a number of distinguished researchers in various scientific disciplines, whose research has so far reached 486 international researches, 789 local researches and 115 international researches under the umbrella of the University of Sadat City. In order to join our nascent university by joining the other universities and, God willing, will be in the forefront in addition to the number of students who have achieved the master's and doctorate degrees and the certificate of sub-specialized diplomas, which numbered up to 1000 students so far. The rapid changes in the current era necessitate the urgent needs of us to review, update and develop, adapt academic programs to ensure the sustainability of excellence, and keep pace with the horizontal and vertical complexities in local, regional and global labor markets.

The Institute has done a great deal, and is still doing, every minute of its time is a production window, but the road is still long and extended, and space is still welcome to accommodate more achievements, the challenges of modern times and modern scientific technology, and the needs of the knowledge-based society, The development of new strategies to enable them to overcome these challenges and access to the world where the Institute includes a number of central laboratories distinguished, which includes the latest scientific equipment for the service of scientific research in addition to the tests and analyzes that serve companies, factories and hospitals. It also includes a number of excellent



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industrial and production plants. The Institute's vision, mission and objectives necessitate the formation of committees to redefine priorities, review and modify available performance indicators, targeted learning outcomes in all disciplines, computerization of administrative work and standardization of references. Global research, the most committed to quality standards , and the most innovative in the fields of scientific research, education, management and community services. The Institute continues to develop scientific research capabilities to meet local, regional and global challenges and to give high priority to providing an environment conducive to creative research activities of a global level. The Institute's pursuit of universality requires the establishment and nurturing of centers of excellence that maintain a balance between basic and applied research, and encourages applied research directed at innovation, manufacturing and how to develop and commercialize it.

The administrative body of the Institute will remain the focus of our efforts and will contribute to the success of the transformation into an indispensable international research institute. It will be supported, capacity-building and skills development to achieve best management practices through ongoing training and training through workshops and training courses, This will serve to transform the Institute's vision, mission, objectives and absorptive capacity. Students and academics alike will be encouraged to actively participate in the Institute's policies rather than being in the recipient's seat

We welcome the cooperation between the Institute and the colleges and institutes of the university and other universities. We also welcome cooperation with factories, companies, farms and hospitals in the city of Sadat and other governorates. We ask God Almighty to provide our institute with a useful knowledge in various fields and be a step towards the progress of our beloved Egypt.

Prof. Dr. Omima Ahmed Khamiss



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Institute data

Institute Address: Sadat City – University Campus – Institute of Genetic Engineering and Biotechnology – P. 79/32897

Telephone:

Switch: 048 / 2601264 - 048 /2601263

Office of Dean / Dean: 048 / 2601597

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Fax: 048 / 2601266

Website: <http://gebri.usc.edu.eg/ar>

Email: gebri@gebri.usc.edu.eg



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Who are we:

Genetic Engineering and Biotechnology Research Institute was established as one of the fields of Future Science in 1995 by Presidential Decree No. 416 of 27/12/1995. The internal regulations of the Institute were approved by Ministerial Resolution No. 780 of 2000 and the postgraduate studies were started in the academic year 1999/2000.

It was established as:

- 1- A group of integrated laboratories serving the different specialties of the institute (48 labs)
- 2- A research farm serving the specialties of the Institute of 6 acres and 6 vegetarian approaches

Former Dean of the Institute

Prof. of Genetics and Founding	1- Prof. Dr. Mahmoud Nasr Nasr
Prof. of Genetics and Vice President of Graduate Studies and Research	2- Prof. Dr. Khalil Abdul Hamid Al- Halafawi
Prof. of Plant Biotechnology	3. Prof. Dr. Ibrahim Abdel Maqsoud .
Prof. of Crop science	4- Prof. Dr. Abdul Khaliq Al-Absawi
Prof. of Plant Biotechnology	5- Prof. Dr. Hamdi Ahmed Emara
Prof. of Molecular Biology	6- Prof. Dr. Amal Ahmed Abdel Aziz
Prof. of Molecular Biology	7- Prof. Dr. Mohamed El-Shahat Ebeid

The Institute has nine scientific departments:

- Department of Molecular Biology
- Microbial Biotechnology Department
- Plant Biotechnology Department
- Department of Animal Biotechnology
- Department of Industrial Biotechnology
- Environmental Biotechnology Department
- Molecular diagnosis section
- Bioinformatics Department



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- Department of Social Biotechnology (inactive).

These departments are awarded master's and doctorate degrees and qualify students for specialized diplomas in the fields of cell culture, animal tissue, molecular biology and biochemistry. The institute hopes to achieve excellence in genetic engineering and biotechnology in different fields of scientific research as well as serving the community through quality concepts and cooperation with various local and international sectors.

Institute Location: -

The Institute is located in the building of the college complex in Sadat City. The building was allocated to the building number 1.9 and it consists of 48 laboratories in addition to the related services such as lecture halls, computer labs, warehouses, environment preparation laboratories and sterilization. The administrative building (9) includes the library and the tissue culture center, which includes 12 laboratories, postgraduate laboratories, virology lab, the gene bank and germ-plasm station, as well as various administration departments and emergency restrooms for faculty members.





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University Mission:

Sadat City University is committed to preparing graduates who meet the needs of the labor market locally through educational, research and community services that encourage innovation and excellence in the framework of continuous development.

Vision of the Institute:

"Achieving leadership and innovation as a model for genetic engineering research"

Mission of the Institute

The Institute of Genetic Engineering and Biotechnology Research - Sadat City University is committed to preparing a graduate capable of competing locally and regionally and excellence in scientific and applied research to serve the community and develop the environment"



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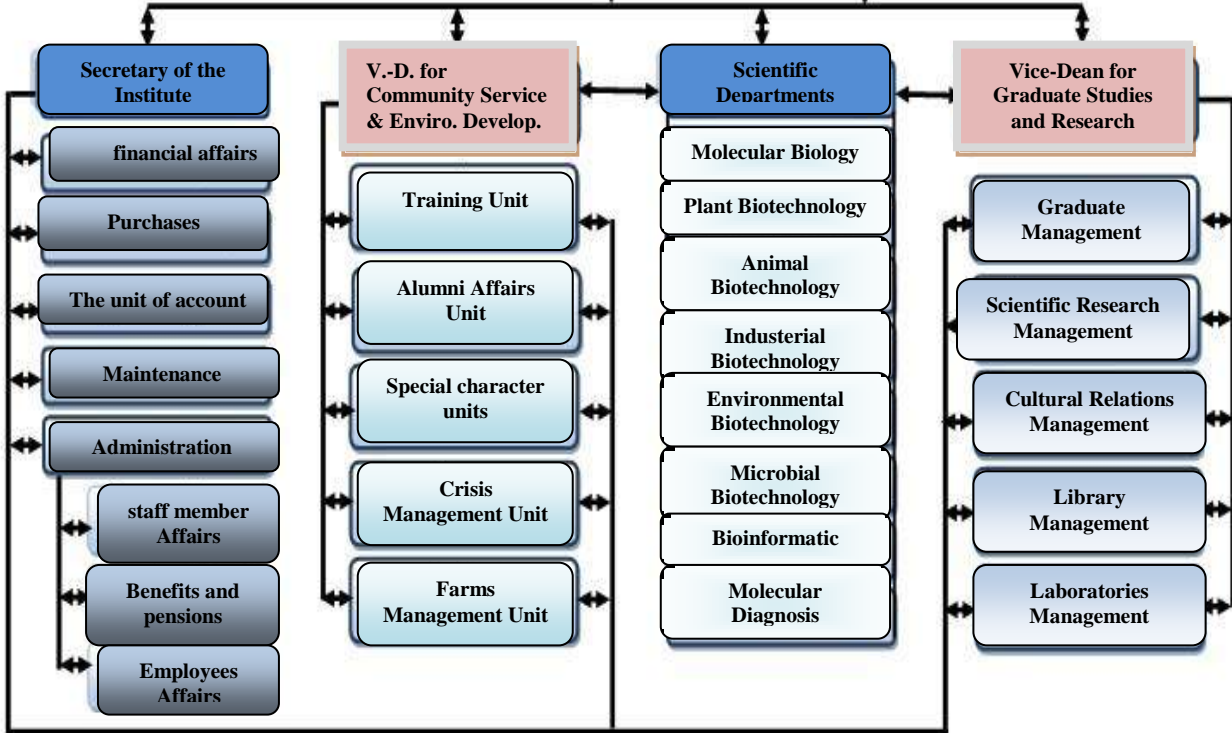
Genetic Engineering and Biotechnology Research Institute **GEBRI**



Institute Council

Dean

Quality assurance &
continuous development
unit





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Institute strategic objectives:

1-Prepare a skilled and professional graduate who will keep pace with the local and regional labor market

1. Objectives:

- A- Advanced programs in light of the needs of the labor market
- 2- Continuous updating of the educational process
- 3- Provide excellent care for students

B- Excellence and innovation in scientific research

- 1- Providing the possibilities of scientific research
- 2. Developing the capacity of researchers
- 3. Conduct applied research and global partnership
- 4. Participation of research and international organizations and donors for projects to develop

C-Excellence in community service and environmental development

- 1. Effective community partnership with the community
- 2 - Advanced plan to serve the community
- 3 - employ research to develop the environment

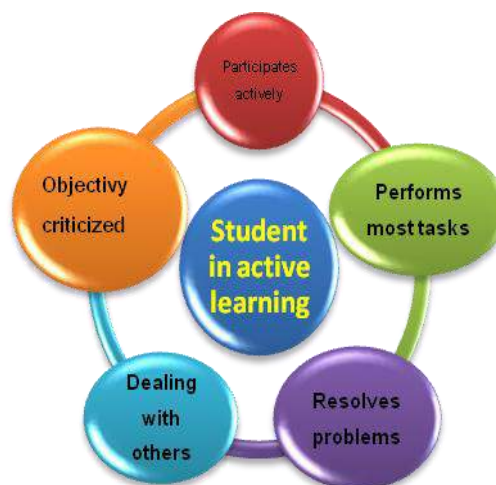
D- Modernization of infrastructure contributes to innovation and innovation

- 1- Renewing, replacing and equipping the student and research labs
- 2- Provision of requirements to deal with disasters and crises
- 3- Provision of safety and security precautions

The University of Sadat City has adopted a strategy for teaching and learning 2014-2017:

"Self-learning based on output and student-centered"

Approved by the University Council of the League on 30/4/2014, and is reviewed and updated every three years.



Accordingly, the Institute adopts strategies in line with the University's strategies



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1- Conditions of admission to the Institute:

- A student must have a bachelor's degree from one of the practical colleges of an Egyptian university or equivalent are required to enroll the student to get a diploma in one of the disciplines of the institute
- A student must have a bachelor's degree from one of the practical colleges of an Egyptian university or equivalent with a good general grade are required to enroll the student for a master's degree in one of the disciplines of the institute
- Students who receive a diploma from the Institute are accepted to enroll in the master's degree in one of the specializations in which the diploma is obtained.
- The Council of the Institute may at the request of the supervisor that the student be charged with examining some introductory courses as a complementary requirement of specialization within or outside the Institute with not calculated within the required units at another college or another recognized scientific institute.
- A student who holds a PhD degree in one of the specializations of the Institute is required to hold a master's degree from the Institute or from a recognized scientific institute
- Non-Egyptian foreign students may be admitted to postgraduate studies at the Institute to obtain diplomas and master's and doctorate degrees.

2- Study System and Examinations:

- The duration of the study for obtaining the diploma is two academic years, each of which is two semesters. The number of units for each semester is nine units of courses determined by the relevant department council and approved by the Institute Council.
- A Master's degree must pass the examinations in the courses specified by the concerned department among the general, specialized and applied courses listed in the Rules, which are equal to eighteen units. The letter shall be submitted to the Judging and Discussion Committee.
- The student must pass the examinations in the academic courses determined by the concerned department from the general, specialized and applied courses listed in the list of eighteen units. The student will conduct an innovative research in one of the specializations of the institute, pass the qualifying exam and submit his research results in a thesis which will be accepted by the judging panel discussion which must include scientific new addition.



Institute Departments:

1- Department of Molecular Biology:

It includes the following subspecialties: (Master and PhD degrees) Molecular microbiology - Molecular parasitology - Molecular immunology - Molecular pathology - Molecular cell biology - Molecular genetics - Molecular taxonomy - Molecular evolution - Molecular Entomology - Molecular cancer biology - Molecular Tissue engineering -Molecular Human Genomics - Biochemistry and Molecular Biology..

2-Microbial Biotechnology Department:

It includes sub-specialties that serve in the field of isolating, classifying, conserving and genetically modified organisms and methods of their industrial use and preparation for application.

3- Plant Biotechnology Department:

It has the following sub-specialties: Plant Cells, organs and tissues culture - Genetically modified plants - Biotechnology of horticultural crops - Biotechnology of field crops - Seed biotechnology.

4- Department of Animal Biotechnology:

It has the following sub-specialties:
Transgenic animals - animal cells and tissues culture - Reproduction techniques (IVF - Embryo fertilization - Embryo transfer - Reproduction) - Aquatic Biotechnology.

5- Department of Industrial Biotechnology:

It includes the following sub-specialties: fermentation - biotechnology food and dairy - pharmaceutical industries.

6-Department of Environmental Biotechnology.

It includes the following sub-specialties: Environmental pollution – Genotoxicity - Biological treatment of waste and environmental sanitation - Biomass destruction – Bio-fertilizers - Biological control.



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7- Department of molecular diagnostics and treatments:

It includes sub-specialties in molecular diagnostics of human, animal, poultry, fish and plant diseases.

8 - Department of Bioinformatics:

It includes sub-specialties that serve all other divisions, banks, assets, genetic resources, databases and sources of biodiversity.

9- Department of Social Biotechnology (inactive)

It includes sub-specialties that serve in the field of biosafety, biotechnologies, bioethics, international relations, international cooperation, intellectual property rights, transfer and assimilation of technology, social dimensions, economics, policies and management of biotechnology.

Degrees granted by the Institute:

The University of Sadat City, upon request of the Institute, grants postgraduate diplomas, master's degrees and Ph.D. in Genetic Engineering and Biotechnology in the specializations given to each section of the Institute. Other specialties may be added on the recommendation of the Institute Council and the approval of the University Council Regulations and laws.



Current Research:

Department of Molecular Biology:

- 1- Molecular characterization of highly pathogenic avian influenza (isolated subtypes from Egypt 2010 to 2016)
- 2- Diagnosis of hepatocellular carcinoma by early and sensitive detection of liver cells
- 3- Differential diagnosis of liver cirrhosis and hepatocellular carcinoma (HCC) using gypican miRNA
- 4- Effects of MIR-215 in the transition from virtual cells to intermediate cells in patients with hepatitis and liver cancer
- 5- Paternal Parental Regulation (PEG10) through the MIRNA cluster 17-29 cluster in patients with hepatitis C and hepatocellular carcinoma
- 6- Evaluation of the chemical attractant protein -1 for nucleotide nuclei (mcp-1) 2518 / g poly-form and osteoponucleic urinary and their relationship with renal impairment in patients with type II diabetes
- 7- Molecular and biochemical study on some genes in pathogenic bacteria helicopter Balory
- 8- A study of the molecular and biochemical protein synthesis bone 7 in Egyptian patients with certain liver diseases
- 9- Molecular and biochemical studies on the possibility of some compounds as anti-tumor in mice
- 10- The relationship between the gene nucleus of vitamin D receptors and renal impairment in diabetic patients
- 11- Biochemical studies on the protein of the nuclear membrane in patients with colon cancer
- 12 - Investigation of some antibiotic resistant genes in bacterial isolates from the local environment
13. Inhibition of the telomerase enzyme kinetics using the negative molecules and their effect in hepatocellular carcinoma
- 14-Study of the genetic mutation of cytokinin 17 in Egyptian patients with lupus erythematosus
- 15-Hepatitis and Toll-Like Receptor receptors not dependent on Myd-88
16. Molecular and biochemical development of htert and p53 protein in the resistance of multiple drugs to the treatment of liver cancer
17. Use of a dioxin ribose vaccine as a means of initiating a cellular immune response against mycoplasma.
- 18- Molecular biological studies on the production of oral vaccines to fight hepatitis B virus.
19. Genetic studies on some fish species.
- 20 - The protective effect of natural antioxidants against the effect of adriamycin, which causes acute cardiac toxicity in rats.
21. The carcinogenic effect of some newly formed compounds.



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- 22- Molecular study of the effect of honey bee toxin on white mice carrying tumors.
23. Biochemical and biological studies of patients with pulmonary tuberculosis.
- 24 - Evaluation of some anti-cirrhosis drugs derived from natural products.
- 25 - Molecular diagnosis of the fifth factor mutation between Egyptian cases with the death of parts of the heart muscle
- 26- Analytical study of the factors affecting the formation of blood vessels in the serology of patients with liver cancer caused by hepatitis C (0)
- 27 - Regulate the stimulant and inhibitory factors for the formation of blood vessels in mice infected with cancer
- 28- Use of molecular fingerprint to define genetic diversity and sites of quantitative characteristics in some plant populations
- 29- The medical importance of vascular endothelial growth factor as one of the factors that regenerates in bone marrow tumors.

Microbial Biotechnology Department:

- 1-- Studies on the activity of some antimicrobial agents derived from algae.
- 2 - Genetic studies on the productivity of a beta - lactamase inhibitor in bacteria
- 3 - Regulation and gene expression of cellulose destruction genes transferred to colon bacteria.
- 4 - Improvement the biological fertilizers using free bacteria.
- 5 - Biotechnological studies on antifungal agents of actinomycosis.
- 6- Chemical and molecular studies on some microbial enzymes with medical applications.
- 7 - Chemical study of the products of some microbes against tumor formation.
- 8- Studies of some physiological factors that regulate nitrogen fixation genes in microbes
9. Biotechnological studies of the microbial enzymes of hemicelluloses (Manan).

Department of Plant Biotechnology:

- 1- Biotechnology studies on sugar beet.
- 2- Studying the genetic diversity of some Egyptian olive varieties using modern methods in molecular biology and biotechnology.
- 3- The response of some varieties of sugar beet to nitrogen and bio-fertilization in the new lands
- 4 - Studies on some of the bacteria ISO Activator Ambassador for plant growth and its relationship to the exact propagation of palm dates
- 5- Biotechnology studies on nematodes affecting bananas
- Biotechnological studies on the adaptation of date palm seedlings to tissue culture.
- 7- Physiological and biotechnological studies on plant propagation of banana plants.
8. Production of potato plants free from diseases.
- 9- Studying the resistance of the yellow planning virus in corn in Egypt.
- 10 - Studies on plant tissue farms as a source of biochemical compounds



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- 11- propagation of oil plants with tissue culture
12. Studies on the propagation of ginkgo plant and the production of secondary compounds using tissue culture techniques
13. Chemo-plant studies on medicinal plants (Jatropha)
- 14- Biotechnology studies on the disease of cytotoxicity in some newly grown barley strains and their relation to non-biotic stresses.
15. Improving soybeans with genetic engineering techniques
16. Biotechnological studies on the production of the physical embryos of artificial date palm seeds.
- 17- Studies on the propagation of the Aswan date palms and their laboratory conservation

Department of Animal Biotechnology

- 1- Studies on the production of Baculovirus expression vector through the cell cultures of HCV-HBV-H5N1 viruses
- 2- Cellular, molecular and phylogenetic studies on palm weevil and modern methods of control
- 3- Studies on applications of nano-in vivo and in vitro
- 4- Studies of the production of cellular fusion proteins using coagulant viruses coated as an expression vector in cell cultures
- 5- Studies on the use of amniotic membrane for therapeutic purposes and beauty products
- 6- Studies in modern techniques of reproduction and factors affecting the level of genetic and cellular before, during and after the procedure.
- 7- Studies on the stem cell
- 8- Molecular diagnosis of infectious diseases in fish
- 9- Study the transfer of genetic material to make changes desirable in poultry breeding
- 10- The molecular effect of the common treatments of poultry on certain varieties in Egypt.
- 11- Comparative studies on the production of cellular products and extracts in the cellular farms.
- 12- Biochemical and molecular study of the activity of polyphenols on solid cancer cells in white mice.
- 13- Studies in resistance insect cell cultures and their relationship to the efficiency of infection of Entomopathogenic viruses.
- 14- The combined molecular and immunological effects of insect infestation with specialized Baculoviruses.

Department of Industrial Biotechnology

- 1 - Studies on the deadly protein of yeast and its role in fermentation industries.
2. Biotechnological studies on the production of bio-degradable polymers.
- 3- Microbial studies on some yeasts to produce materials of economic importance.
- 4- Production of corn-fermented maize using lactic acid bacteria.
- 5 - A comparative study on the precise packaging of alpha interferon and its efficiency
- 6 - Studying the activity of alketin plant Jatropha kurkas industrial.



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- 7 - Properties of allergens to the pollen of Delonix Regia plant.
8. Recycling of biological waste for dairy products.
- 9 - Functional properties of lactic acid bacteria isolated from Egyptian fermented food

Environmental Biotechnology Department:

- 1- Environmental use of some microbial enzymes.
- 2- Molecular biology studies on the root zone microbes
- 3- Use advanced environmental technology applications to address specific POPs and pesticide options.
4. Biological control of some pathogenic fungi.

Molecular diagnosis department

- 1- Genetics of skin infections in children
- 2- Studying the incidence of deletion in (Y) chromosome (4) in Egyptian males suffering from defects in the composition of sperm.
- 3-Genetic analysis of male infertility
- 4- Production of monoclonal antibodies in cultures for medical and environmental applications
- 5- study the programmed cell death in the blood diseases of cancer in children
- 6- Diagnosis of early genetic diseases of the physical fetuses resulting from the process of fertilization outside the uterus
- 7- possible mutations in the administration of a particular drug under the influence of some of the updated diseases or exposure to contaminants (physiological study satisfactory).
- 8- Molecular studies on some aspects of cancer.
- 9- partial diagnosis of infection with hepatitis C virus
- 10- Qualitative assessment of the hepatitis virus in chronic liver patients using PCR method compared with what is done in commercial way

Bioinformatics Department:

- 1-Partial diagnosis of some protease inhibitors
- 2 - Molecular study on the gene (s) of the environmental stresses of salinity and drought in some wild plants.
3. Utilization of biophysics in plant biotechnology
- 4- Studies on genetic and molecular diversity in wheat
5. Molecular biology studies on some plant protection proteins.
6. Molecular studies on date palms.
7. Study the resistance to soybean viruses.



Research Projects:

1	Project title	Comprehensive research project for the production of standard fruit seedlings
	Principal Investigator	Prof. Mahmoud Emam Nasr
	Sponsor	Interdependence between Egyptian and American Universities (USAID)
	Finance	2.5 \$ million US dollars
2	Project title	The introduction of gene delta andotoxin from Bacillus Thingensis bacteria into cotton plants to become self-resistant to insects
	Principal Investigator	Prof. Mahmoud Emam Nasr
	Sponsor	Academy of Scientific Research and Technology Program Science and Technology (USAID)
	Finance	thousand US \$ + 227047 Egyptian pounds in addition to 165225 \$ \$ 83537 thousand US dollars in addition to 66 thousand pounds for .travel abroad and directed the amount for the purchase of devices
3	Project title	Project of genomic and genetic treatment of melons and melons to increase economic diversification.
	Principal Investigator	Prof. Mahmoud Emam Nasr
	Sponsor	University Linking Projects in its second phase.
	Finance	400 \$thousand USD
4	Project title	Project to transfer drought-tolerant genes to sunflower plant
	Principal Investigator	Prof. Hassan Hassanein and MP Prof. Mahmoud Emam Nasr
	Sponsor	University Linking Projects in its second phase
	Finance	400 \$thousand USD
5	Project title	Towards the production of date palm genetically engineered resistant to pests (Project No. 45
	Principal Investigator	Prof. Ibrahim Abdel Maqsoud Ibrahim
	Sponsor	Academy of Scientific Research
	Finance	100thousand thousand pounds
6	Project title	finger print on the chemical and molecular level of olive varieties and date palms in Siwa Oasis (Project No. 44
	Principal Investigator	Prof. Dr. Alaa Eddin Abdullah Hemaيدا
	Sponsor	Academy of Scientific Research
	Finance	100thousand thousand pounds
7	Project title	The role of autofage and small ribosome DNA molecules during the infection of Legonella bacteria in the elderly
	Principal Investigator	Dr. Hani Hamed Ismail
	Sponsor	Academy of Scientific Research
	Finance	14,000thousand Egyptian pounds
8	Project title	Applications of tissue culture technology and non - traditional industries in the expansion of palm tree cultivation and improvement of yield in the new Valley Governorate No. 29
	Principal Investigator	Prof. Ibrahim Abdel Maqsoud Ibrahim



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	Sponsor	Academy of Scientific Research
	Finance	600thousand Egyptian pounds
9	Project title	Functional detection and characterization of new and effective compounds against influenza virus 4694
	Principal Investigator	Dr. Hani Hamed Ismail
	Sponsor	Academy of Scientific Research
	Finance	623340thousand Egyptian pounds
10	Project title	Molecular identification of oxidizing bacteria of ammonia in the waters of Al - Mahmoudiyah canal No. 4786
	Principal Investigator	Dr. Ibrahim Al-Sayed Musa
	Sponsor	Academy of Scientific Research
	Finance	100 thousand thousand pounds
11	Project title	Purchase of plasma induction device and accessories 2741
	Principal Investigator	Dr. Ibrahim Al-Sayed Musa
	Sponsor	Academy of Scientific Research
	Finance	1285429Egyptian pound
12	Project title	Center of exelancy for Biotechnology Industries
	Principal Investigator	Prof. Ashraf Faraj El-Baz
	Sponsor	Academy of Scientific Research
	Finance	5000000Egyptian pound
13	Project title	International Laboratory Accreditation Project for Higher Education Institutions Biotechnology and Food Biotechnology Lab (LIAP(
	Principal Investigator	Dr. Ayman Saeed Al Derghami
	Sponsor	Ministry of Scientific Research - project management
	Finance	1435000Egyptian pound
14	Project title	International Laboratory Accreditation Project for Higher Education Institutions Molecular Molecular, Therapeutics and Genomic Laboratory (LIAP(
	Principal Investigator	Dr. Manal Osama Al-Hamashri
	Sponsor	Ministry of Scientific Research - project management
	Finance	1499000Egyptian pound
15	Project title	Project of the role of Altofaji and small ribosome DNA molecules No. 6117
	Principal Investigator	Dr. Hani Hamed Ismail
	Sponsor	Academy of Scientific Research
	Finance	142958Egyptian pound
16	Project title	Project of developing a system for commercial production and genetic improvement of some palm varieties in the New Valley No. 2714
	Principal Investigator	Prof. Ibrahim Abdel Maqsoud Ibrahim
	Sponsor	Academy of Scientific Research
	Finance	1526800Egyptian pound
17	Project title	Project for the production of potato free of disease in New Valley Governorate No. 4
	Principal Investigator	Prof. Ibrahim Abdel Maqsoud Ibrahim
	Sponsor	Academy of Scientific Research



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	Finance	600000Egyptian pound
18	Project title	Project of production of male and male offspring all males of tilapia No. 5667
	Principal Investigator	Dr. Medhat Helmy Hashem
	Sponsor	Academy of Scientific Research
	Finance	954800Egyptian pound
19	Project title	Project of production of Rosemarytic acid from root plantations No. LGA11130160
	Principal Investigator	Prof. Ashraf Farag El-Baz
	Sponsor	Misr El Kheir Foundation
	Finance	835000Egyptian pound
20	Project title	Project of cell dysfunction Immunology No. 15123
	Principal Investigator	Dr. Roba Mohamed Talaat
	Sponsor	Academy of Scientific Research
	Finance	838000Egyptian pound
21	Project title	Arthritis Treatment Project
	Principal Investigator	Dr. Roba Mohamed Talaat
	Sponsor	Academy of Scientific Research
	Finance	208115Egyptian pound
22	Project title	Bioethanol Production Project No. 23005
	Principal Investigator	Dr. Noha Mohammed Sorour
	Sponsor	Academy of Scientific Research
	Finance	233400Egyptian pound
23	Project title	Bacillus Thoranogenesis with Nanoparticles No18530
	Principal Investigator	Prof. Ashraf Farag El-Baz
	Sponsor	Academy of Scientific Research
	Finance	1294480Egyptian pound
	Total current projects	17100000Egyptian pound



Hands on workshops

- 1- Active genomes in plants.
- 2- Molecular biology and bioinformatics.
- 3- Treatment of industrial wastewater.
- 4- Identification of DNA sequences
- 5- Plant tissue farms.
- 6- PCR technology.
- 7- Nanotechnology technology and its applications.
- 8- Biometric statistical analysis.
- 9- Cultivation of animal cells and tissues
- 10- Identification of SNPs(single nucleotide polymorphism)
- 11- ELISA and Real-time PCR
- 12- Comet assay
- 13- HPLC
- 14- Bio-analyzer
- 15- Stem cells
- 16- Viral isolation and identification



Environmental Development and Community Service Sector

Special character units:

1-Plant cell and Tissue culture Center:

The center of tissue culture and genetic engineering was founded by Prof. Dr. Mahmoud Imam Nasr in the era of Prof. Dr. Sayed Hassan Hassanein, President of Menoufyia University. In 1990, the Supreme Council of Universities approved the establishment of a special technical, administrative and financial unit called the Center for Tissue Culture and Genetic Engineering of Menoufyia University And issued the decision of the Supreme Council of Universities in its session No. 321 dated 21/6/1990 in accordance with the provisions of Article 307 second paragraph of the Regulations of the law of the organization of universities and then was established Institute of Genetic Engineering and Biotechnology in Sadat City And became the center followed the Institute at the University of Menoufyia until the establishment of the University of Sadat City and then became both the Institute and the Center of the University of Sadat City.

- ✚ The Center established and supported the **gene bank** at the Institute's farm in Sadat City, which includes the various types of mangoes (13 varieties), citrus fruits, grapes, fruit leaves (peaches, apples, broccoli, pomegranate), olives, medicinal and aromatic plants and ornamental plants, Tissue culture. The work of the genetic fingerprint of the olive and palm plantations of the Siwa Oasis cultivars is a scientific precedent for the use of modern methods of genetic engineering to define the *Egyptian genetic heritage*. **This bank is a unique scientific source** of Egyptian plant genetic resources to preserve our national plant wealth. In order to support the genetic preservation of plant genetic resources and collect the genetic assets of medicinal and aromatic plants, fruit plants, vegetables, wood trees and ornamental plants
- ✚ The Center successfully introduced natural desalination plants (plants of *Stevia*) where they could be propagated through plant culture plants and planted in the institute to be an alternative to sugary crops (sugar cane and sugar beet). In this case the local substances are not sucrose (white poison) but glycoside Astrophosphate, which is very low in energy compared with sucrose, although very high, is equivalent to 200 times sucrose, which results in many health problems such as obesity, tooth decay, heart disease and diabetes.
- ✚ The Center for Tissue Culture introduced other new plants for Egyptian agriculture through



the techniques of tissue culture, namely pineapple and jacquard plants, and it was possible to multiply them in a laboratory and to select the good breeds that the institute could devise and cultivate in the institute's view.

- ✦ The Tissue Center has been able to produce citrus plants free of viral diseases by means of precise laboratory vaccinations. This method will solve many problems for orange and tangerine growers.
- ✦ The Center also found an ideal way to produce the bulbs and korams of important ornamental plants such as gadiolis as well as the production of potato tubers free from viral diseases to provide a modern method for the production of these tubers, bulbs and koramat instead of imported from abroad.

The center also aims to produce industrial seeds for many crops of economic value.

Important plants produced by the plant

A group of plants that have an economic return to farms in the laboratory are produced using tissue culture techniques free of disease and standard specifications and matching the species at competitive prices in order to achieve the goal of establishing the center in the development of environment and community service and the most important plants:

1 - Bananas: Interest in the production of banana seedlings in the plant due to the interest of the surrounding area - the villages of Sadat City and also the desert road farms and the province of the lake to grow and produce the banana in 2015 - 2016 was increased production capacity of the plant to 500 thousand banana seedlings were contracted and delivered to farmers.



Lab. production of banana seedlings



Bananas in the greenhouse



2. Palm Dates: Scientific cooperation between the Academy of Scientific Research - Genetic Engineering Research Institute and the Ministry of Agriculture through the Center for tissue culture by the head researcher Director of the Center for tissue culture at the Institute of Genetic Engineering University of Sadat City has been produced some palm varieties such as Sioui and Barhi.



3-Potatoes: propagation of different potato varieties and production of varieties for eight varieties in cooperation with the Academy of Scientific Research through the production of potato seeds using tissue culture





As well as kinds of fruit and ornamental plants and internal coordination such as:

-pineapple - blackberry - strawberry - stevia as a source of sugar - paulownia plant source of wood - eozora plant kordaline - alucasia amazon - flodendron salome - - spathifilm plant - plant anthurium-





General Service Center for Genetic Counseling (General Service):
The center's objectives are as follows:

- 1- Work as an experience house for the University of Sadat City in all matters related to human genetics, genetic engineering and molecular analysis
- 2- Preparation and organization of specialized training programs in the field of the Center's activity in order to prepare scientific cadres capable of solving specialized problems
- 3 - covered by the requirements of the community in the province of Menoufyia and neighboring provinces of integrated services in medical and chemical analysis
- 4 .Diagnosis of genetic diseases in ways that depend on molecular analysis
5. Supporting scientific applied research and cooperation between the different departments of the Institute and in all the medical colleges, the National Liver Institute, the Research Center and the Tudhar Balhars Institute.
6. Conduct research and studies that serve the treatment of genetic diseases and scientific and research cooperation between the Center and the ministries and bodies concerned in this regard such as the Ministry of Health and Population - National Research Center, Educational and University Hospitals and the National Authority for Drug Control and Research.
- 7 - Linking the Center with educational institutions to diagnose diseases arising from genetic disorders and the work of comprehensive medical examinations of cases.
- 8 - Establishment and modernization of specialized laboratories to be adopted as reference laboratories in accordance with the Egyptian and international standards.

The center includes:

Medical and chemical analysis, genetic diagnosis unit and scientific imaging laboratory

Applied Research and Marketing Unit:

The Unit's objectives are as follows:

- 1- Works as a basic experience house for the University of Sadat City in all matters related to the applied research service and marketing.
- 2 - Holding courses and seminars for analysis of research results and scientific messages.
- 3 - Adopt applied research at the university and the Institute and marketing them to companies and factories.
- 4 - Holding courses and seminars on the production of mushrooms and biological fertilizers as an alternative to the use of chemical fertilizers to obtain clean cultivation and how to rotate agricultural and organic waste and convert them to fertilizers and biofuels.



- 5- To conduct feasibility study for projects, companies and factories through specialized statistical programs.
- 6 - The treatment of problems in the plans to highlight the economic, social and technical fields.
- 7 - Provide the means for scientific openness through applied research and its association with the problems of society and how to solve them.
- 8 - The cooperation and cooperation of the Applied Research Unit and its marketing with the local and international scientific centers and bodies that carry out similar activities in developing and developed countries.

Examples of applied research existing and beneficiary community:

- 1 Use of microorganisms to safely dispose of (waste)
2. Use of microorganisms in the disposal of agricultural wastes (cellulose and hemocellulose)
3. Use of natural compounds as anti-cancer agents
- 4 - the production of anti - pathogenic vaccines of some human viruses
5. Use of microorganisms Obtain local compounds against pathogenic microorganisms
- 6 - The development of new ways to diagnose some diseases in humans and plants
- 1 - The development of some varieties resistant to salinity and drought, such as rice and wheat
2. Treatment of industrial wastewater and drinking water
- 3 - Production of some compounds for use in industry (benzoic acid)

Central Laboratory Unit:

1. Laboratory of Biotechnology and Chemical Analysis.
2. Genetic Engineering Laboratory.

Vision:

The two central laboratory units seek to be a leader in biotechnology and genetic engineering analysis and to contribute effectively to scientific research and community service.

The message:

Conducting biotechnological and genetic engineering analyzes at a level of accuracy required in accordance with quality standards to serve Egyptian universities, research centers and the outside community.

A. Biotechnology and Chemical Analysis Lab.

1. This lab is equipped with the latest equipment to provide high quality services in all fields of education, research and community analysis of the environment and food analysis and separation of secondary vehicles and serves this laboratory in the analysis of samples received from abroad and inside These analyzes include the following:
2. -1Industrial wastewater according to the laws of the environment.
3. -2Measurement of wastewater pollutants.
4. .3Fluorescent detection samples.
5. -4Samples with chromatic and non-colored pigments.



6. - 5th the work of consulting and environmental studies.
7. .6Microbiology research on water, soil and food

B.Genetic Engineering Laboratory.

This laboratory is equipped with the latest equipment in the field of genetic engineering to provide high quality services in all fields of education, research and community analysis of genetic engineering of microorganisms and serves this laboratory in the analysis of samples from outside and inside.

Laboratory equipment and equipment:

Equipment	Model	The purpose
1- HPLC	S.N:DEAB803783 Made in Germany	
2- Bioanalyser	DE1385748 Made in German	
3- pH meter	Made in Italy	pH measurement (pH)
4- Heating magnetic stirrer	Made in (EUROPE S.N: 146813	Mold heater
5-Balance 3 digits	S.N: 101205048 Made in Germany	Balance for three decimal numbers
6- Biological safety cabinet (Laminar flow)	S.N: 3895570 Made in USA	Air sterilization cabins for working under sterile conditions
7- TC plus PCR Coventional	S.N: 300795 Made in (UK)	Polymerase chain reaction
8-RT PCR (Real Time PCR)	S.N: P05287 Made in Singapore	Sequence of real-time sequential polymerase measurement of gene expression
9- Vortex	S.N: MS3BS36 Made in (USA)	Rotary mold
10- Bench centrifuge under cooling rpm 24000	S.N: 24772 Made in Spain	Centrifuge 24000 rpm
11- Incubator		HUB CONTROLLER FOR CONTROLLING TEMPERATURE AND HUMIDITY
12- Ice maker	Kastel s.r.l fusina Terviso- ITALY	Ice maker
13- Autoclave	S.N: 804172 Made in Japan	Autoclave for hot water sterilization under pressure
14- Refrigerator (No frost)	Made in Egypt	Refrigerator to store samples and all that needs to be kept refrigerated
15- Freezer vertical (No frost)	Made in Egypt	Freezers for freezing
16- Microwave		For gel preparation and rapid heating
17- Balance 4 digits		The balance of four decimal digits
18- Balance 3 digits		Balance of three decimal digits
19- ELISA		
20- Water bath (Shaker Incubator)		Water bath vibrator
21- Micro-centrifuge		Centrifuge 1000 RPM / min
24- Inverted microscope	LEICA Made in Germany	Binocular microscope for scanning and imaging of cell cultures





Protection of intellectual property rights and patents:

It is necessary to identify the rights of the author and the rights of the author to understand the implications of the new technologies on these rights; the diversity of sources and methods of access to information, as well as the diversity of different means of publication not limited to materials printed in traditional methods (paper), but beyond this There has been so-called e-publishing, even online publishing, or digital IP works. The Institute adopted a document for the protection of intellectual property and patents.

The definition extends according to the TRIPS Agreement to include software, whether in machine language, in addition to databases. These rights protect computer programs and databases according to copyright throughout life and after death. These rights include the following:

- 1- Moral rights
- 2- Material rights

Intellectual property rights can generally be defined as:

"The rights enjoyed by persons for the exclusive use of the product of their ideas for a specified period of time"

These include:

- Intellectual property of electronic works
- Computer programs
- Databases
- Integrated circuits Topographies of integrated circuits



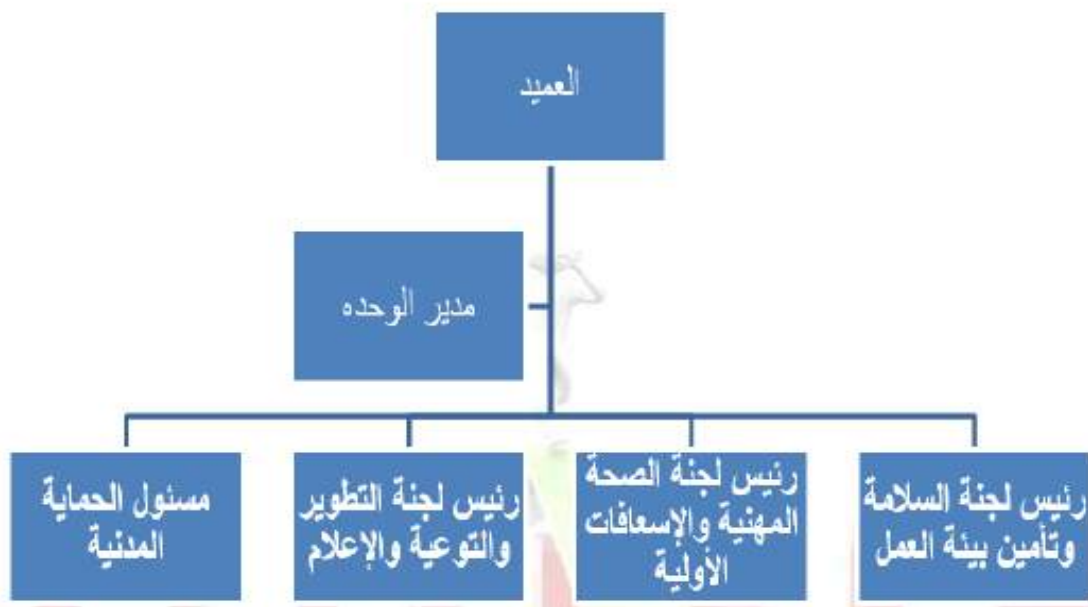
It is necessary to mention the specific Egyptian law for this type of protection in order to allow everyone in the institution to know its rights and duties in this regard.

Law No. 82 of 2002

(Crisis and Disaster Management Unit:

The Unit was established by the Board of the Institute on 21/11/2011 through the quality unit of the Institute. The unit management was also formed by the decision of Mr. / Dean of the Institute No. 22 dated 31/10/2011 / The unit's headquarters was allocated in the lab building in the ground floor

Organizational Structure of the Crisis and Disaster Unit



Job description

- ✚ To promote awareness of peace and security through seminars and educational lectures.
- ✚ Preparation of educational studies related to the implementation and application of the specifications contained in the regulations of defense and civil protection of the various activities and facilities of the Institute.



- ✚ Raising the efficiency of the employees in the unit and encouraging them to attend specialized training courses.
- ✚ Study and analyze crises and disasters through their occurrence elsewhere, with a view to how to address deficiencies that have occurred.
- ✚ Availability of information and data in a full window of transparency

Committees emanating from the Council of unity and tasks:

First: Committee for Safety and Security of the Work Environment:

Functions of the Committee:

- ✚ Preparing protection plans for the Institute's facilities.
- ✚ Develop emergency and evacuation plans with scenarios that simulate how to behave in the event of a crisis.
- ✚ Ensure the validity of fire fighting systems and their conformity with the specifications and to secure the facilities of the Institute.
- ✚ Continuous communication and cooperation with the Civil Defense and Protection Unit at the University.

Second: Development, Awareness and Information Committee:

Functions of the Committee:

- ✚ To promote awareness of peace and security through seminars and educational lectures.
- ✚ Preparing educational studies related to the implementation and application of the specifications contained in the Defense Regulations and civil protection for various activities and facilities of the Institute.
- ✚ Raising the efficiency of the employees in the unit and encouraging them to attend specialized training courses.
- ✚ Study and analyze crises and disasters by occurring elsewhere with a visualization how to remedy the shortcomings that have occurred.
- ✚ Availability of information and data in a full window of transparency

Third: Committee on Occupational Health and First Aid:

Functions of the Committee:

- ✚ Preparation of preventive and therapeutic programs.
- ✚ Spread health awareness, especially in the field of preventive medicine in the event of an epidemic (such as avian influenza and swine flu).
- ✚ Ensure that there are the required capabilities for first aid in the event of a disaster, God forbid.



- ✚ Coordinating with the competent authorities, especially the hospitals, to establish a mechanism for dealing with the crisis.
- ✚ Coordination between the doctors of the department of diagnoses of the successive presence in the clinic