ЕВРАЗИЙСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ Л.Н.ГУМИЛЕВА

Филологический факультет
Кафедра иностранных языков

СБОРНИК МАТЕРИАЛОВ

международного семинара

«STRENGTHENING FOREIGN LANGUAGES TEACHING: CHALLENGES, APPROACHES AND TECHNOLOGIES»

27-29 марта 2018 года

Астана, Республика Казахстан

ЕВРАЗИЙСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ Л.Н.ГУМИЛЕВА
Филологический факультет
Кафедра иностранных языков

СБОРНИК МАТЕРИАЛОВ

международного семинара

«STRENGTHENING FOREIGN LANGUAGES TEACHING: CHALLENGES, APPROACHES AND TECHNOLOGIES»

27-29 марта 2018 года

Астана, Республика Казахстан

УДК 811
ББК 81.2
S 88

S 88
Strengthening Foreign Languages Teaching: Challenges, Approaches and Technologies: - сборник статей / Отв. ред. Сагимбаева Д.Е., – Астана: Изд-во ЕНУ им. Л.Н. Гумилева, 2018. – 238 с.

ISBN 978-601-337-006-4

Сборник содержит статьи участников международного семинара «Strengthening Foreign Languages Teaching: Challenges, Approaches and Technologies». В сборнике рассмотрены актуальные вопросы касательно основных тенденций и особенностей развития современной методики преподавания иностранных языков в средней и высшей школе в условиях полиязычия, проанализирован опыт по реализации инновационных технологий в языковом образовании, рассмотрены вопросы преподавания предметов на иностранном языке, представлены исследования результатов независимого и интегрированного подходов с особым упором на креативность и критическое мышление, необходимых для академического письма в учебной деятельности магистрантов.

Издание адресовано ученым-методистам, докторантам, магистрантам и педагогам-практикам в области обучения языкам, а также широкому кругу читателей.

УДК 811
ББК 81.2

ISBN 978-601-337-006-4

ОГЛАВЛЕНИЕ

2. Anju Shandilya. (2012). *Benefits of Genetic Engineering*. «Buzzle.com:complete source for articles and categorized information».
3. *GMOs: Symbolic For What's Wrong With America's Food System?*(2015). "Forbes".
4. Horovitz, B. (2014). *Cheerios drops genetically modified ingredients*. USA Today.
5. *Nazarbayev prioritizes robotics industry and genetic engineering*. (2015). Interfax-Kazakhstan: Kazakhstan news agency.
6. Acosta, L. (2014). *Restrictions on Genetically Modified Organisms: United States*. Library of Congress
7. *Why are GMOs Banned in Other Countries?*(2012). Best food facts: Food for thought blog.
8. TokbergenAbiyev. (2014). *ГМО в Казахстане быть или не быть – вот в чем вопрос*. "Legal information site :ABIYEV.kz"
9. Anar Bazmukhametova. (2012). *В Казахстане обсуждают законодательное регулирование использования ГМО.* Zakon.kz

NANOTECHNOLOGY IN THE FIELDS OF BIOMEDICAL SCIENCES

Mukanova G.M.
Master degree programme's student,
Foreign language teacher:
Tazhitova G.Z.,
Master of Pedagogy,
L.N.GumilyovEurasian National University

During the last few decades, about thirty infectious pathologies have been revealed. These include AIDS, "avian influenza", Ebola virus and others. Currently, millions of people around the world are diagnosed with and die from cancer. As statistics show, the number of death from these pathologies makes about five hundred thousand people a year [1]. These "shocking statistics" are not going to decrease unless we make change. So, today the world often faces with such kind of global issues. The humanity is not standing in one place, it is developing and trying to provide the substantial assistance to cope with various problems, of course, with cancer too. Obviously the exact treatment of that has not yet fully obtained, but the privilege of nanotechnology can be probably tackle the health problems.

Nanotechnology is one of the new branches of science and technology that has been actively developing in recent years. It starts with the creation and use of materials, devices and technical systems, the functioning by nanostructures, that are ordered fragments ranging in size from 1 to 100 nanometers [2]. Today nanotechnology is essential to create a variety of materials that can be used in a particular area. The simplest and most striking example of the use of nanotechnology is in cosmetology, such as well-known soap solution. It has not only disinfectant and detergent properties, it also forms micelles, nanoparticles. In addition to other applications, the nanomedicine is also developing rapidly, which attracts not only purely scientific achievements, but also social significance. Today this term is accepted as the use of nanotechnology in the diagnosis, monitoring, implant and tissue engineering and treatment of diseases.

The development of nanomedicine is closely related to the revolutionary achievements of genomics and proteomics, that allow scientists to come closer to understanding the molecular foundations of diseases. Nanomedicine often works where genomics and proteomics where they are combined with opportunities to create materials with new properties at the nanometer level. There are 5 main spheres of nanotechnology applications in medicine: delivering active drug substances, new methods and means of treatment at the nanometer level, the diagnosis in vivo, diagnosis in vitro, medical implants [3].

Today the new methods and means of treatment at the nanometer level, the most developed one among others shown above, is valuable for diagnosing diseases that have already determined in prospective works, also for preventing malignant tumor. There is a non- surgical method of tumor removal which is based on hyperthermia. The principle of this method is that carbon nanotubes which are injected into the tumor, penetrate into its cells, and under the influence radiation of certain frequency, begin to emit heat, raise the temperature of the tumor, and then it causes death.

The technique that works by this principle is the particles of titanium dioxide which was developed by Dr. Elena Rozhkova from Argonne's NanoBio Interfaces group. The particles of titanium dioxide are attached to the antibody, capable of detecting cells glioblastoma multiform and connect with them. By influencing with the light, titanium creates an electric charge, which is transmitted to the oxygen molecule, then goes into active form starts to destroy the cell membrane. And this leads to the apoptosis, what is a programmed cell death. However, this technique requires surgery to deliver the light source to the tumor [4].

Despite the wide applications of nanoparticles in medicine, there is one of the most important problems; their targeted delivery often fail to make the treatment more effectively. The drug substances after adsorption are usually distributed relatively through the tissues of the body. In particular, anticancer drugs inhibit the active dividing non-transformed cells, as well as the division of transformed cells. The side effects of many statistics are related to this. One of them is anticancer drugs make the treatment ineffective. At the same time, the quality of patient's health improves, but in the same level decreases. The targeted drug delivery also allows to increase the selectivity for the effectiveness of the treatment. Different methods of loading medical molecules for targeted delivery are used, like encapsulation and conjugation. Targeted drug delivery in cancer therapy offers solutions of several problems:

- Protection of the drug from degradation and undesirable interactions with biological molecules;
- Enhancing the selective absorption of the drug by tumor cells;
- Control of pharmacokinetics;
- Increase in the bioavailability of drugs inside tumor cells [5].

Nanotechnology's applications appear in tissue engineering too. How can you help person who needs new bones, teeth or other tissues? With the way of creating, repairing or replacing cells, tissues and organs by using cell and combinations of cells with biomaterials or biologically active molecules. Tissue engineering with the

combination of nanotechnology helps to produce materials for replacement the body's native tissues. In typical tissue engineering cells are seeded on biomimetic scaffold providing adhesive surfaces, and then cells deposit their own protein to make them more biocompatible.

The main principles of this approach are the development and application of carriers of biodegradable materials in the implantation of the damaged organ or tissue, which are used in combination with donor cells or bioactive substances. For example, in the treatment of wound process - this can be a collagen coating with fibroblasts and vascular surgery - artificial blood vessels with anticoagulants. In addition, one of the serious requirements for this kind of materials-carriers is that they must provide a reliable support, which makes structure-forming function in the damaged area of the tissue or organ.

Therefore, tissue engineering in the treatment of bone diseases creates the artificial biocomposites consisting of xenomania in combination with bioactive molecules (bone morphogenetic proteins, growth factors, etc.) and able to induce osteogenesis. At the same time, the biomaterials shoud implement and maintain the volume of the defect, so they are actively encouraged in osteoblasts and possibly other mesenchymal cells to bone formation and good indicators of biointegration and biocompatibility, that can be a degradable and not to cause immune reactions. That is actually what is the nanotechnology applications in biomedical fields [6].

The nanotechnology in medicine presents only a small part of the results of research conducted in a variety of scientific laboratories. The number of scientific journals published on nanomedicine is estimated in hundreds and increases every year. Thus, there is an accumulation of experimental data, the development of new technologies for the needs of medicine.

The prospects of development of nanotechnologies are great. It is convincing that in the near future, with the help of them it will be possible to prevent physical illnesses. In my opinion, the use of classical methods of treatment in combination with nanotechnology will improve the quality of therapy of cancer, cardiovascular and infectious diseases.

References:

1. Philatov, I. (30 March , 2013). *"Нанотехнологии в медицине-наше будущие!".* http://fb.ru/article/53520/nanotehnologii-v-meditsine---nashe-buduschie
2. *"Нанотехнологии и области их применения. Справка"*. (3 December, 2018). https://ria.ru/nano_spravka/20081203/156376525.html
3. "Нанобиотехнологии в биологии и медицине" . (12 July, 2016). http://www.vechnayamolodost.ru/articles/biomedicin/navmifc9/
4. "*Применение нанотехнологий в отрослях медицины*". http://refleader.ru/jgeqasyfsujgyfs.html
5. Islamov, R. (19 May, 2010). *"Нанотехнология для медицины"*. http://www.nanometer.ru/2010/05/10/nanotechnology_213687.html
6. "Что такое тканевая инженерия?". https://vuzlit.ru/865750/takoe_tkanevaya_inzheneriya