ANNOTATION

of thesis "**Development and Research of New Drugs on the basis of Iodine Adduct**" for the degree of doctor of philosophy (PhD) specialty 6D074800 – "Technology of pharmaceutical production"

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The topicality of the research

The Republic of Kazakhstan state program of health care development " Салауатты Қазақстан " for 2011-2015 and the Republic of Kazakhstan State program of health care development " Денсаулық " for 2016-2020 are directed to strengthening of population health, to ensuring availability with medical and pharmaceutical services. The JSC Scientific Center of Anti-infectious Drugs carries out the research program on a subject: "Development of new anti-infectious drugs" (number of the state registration No. 0.0671 for 2015-2017).

The pharmaceutical market is one of the most highly profitable and fast-growing sectors of world economy. The research Pricewaterhouse Coopers predicts by 2020 increasing of global market of a pharmaceutical production volume more than twice. The increasing of the market is bound to quickly growing demand for drugs and prophylactics around the world which is caused by such phenomena as body height of number, aging, an obesity and rising of welfare of the population.

The developed state pharmaceutical industry is considered as an indicator of high innovation of economy. Production of medicines is strategically important branch providing security of national interests of Kazakhstan in the sphere of drug circulation. Today the pharmaceutical market of Kazakhstan represents one of the most dynamic and fast-growing in the world.

Due to the fast increasing of pharmaceutical production quantity in the international market and entry of the CIS countries into the World Trade Organization quality maintenance and safety of the made production is necessary.

Pharmaceutical production has to be organized at the appropriate level for release of qualitative, effective and safe medicinal preparations. For achievement of this purpose when developing of the produced medicines in JSC Scientific Center of Anti-infectious Drugs pharmaceutical quality system on the basis of Good Laboratory Practice, Good Manufacture Practice is introduced.

One of perspective extensive classes of the chemical compounds which are of practical interest is made by adducts. Now, adducts are applied in development of various medicinal substances, providing constant technological structure. According to references conservation of adducts properties, is accurately not established so far.

Example of creation of medicinal substances on the basis of adducts are medicines of antibiotic action, applied to prophylaxis and treatment of infectious diseases. However, with increasing of fastness of infectious diseases originators to the famous groups of antibiotics, the problem of development of new antimicrobials remains significant.

Due to the above, creation of domestic original substances with antibacterial action and development of medicines on the basis of new bonds remains relevant.

The purpose of the research:

Receiving substance of iodine adduct for pharmaceutical development of tablets on its basis.

Research tasks

1. Receive iodine adduct substance and to study its physical and chemical parameters, pharmacotechnological properties;
2. Perform quality control and to define conditions and periods of storage of iodine adduct substance;
3. Perform biological researches of iodine adduct substance;
4. Develop rational structure and technology of tablets on the basis of iodine adduct substance;
5. Perform quality control and study stability of a dosage form on its basis.

Objects of the research: R-1 and R-8 substances and R-8 75 mg tablets.

Methods of the research: physical, physical and chemical, pharmacotechnological, biological and statistical methods.

Scientific novelty

- For the first time, a new original substance of the iodine adduct is obtained;
- First time compatibility of the iodine adduct substance with auxiliary substances was studied and on the basis of the obtained data, tablets based on the iodine adduct substance were developed;
- First time complex studies of a substance and tablets based on an iodine adduct;

An innovative patent for a utility model was filed, registration No. 2017 / 0473.2. Name of the utility model: A drug based on the iodine adduct substance.

Projects of the AND (analytical normative document) were prepared for "Substance R-8", "Tablets R-8 75 mg"; technological regulations for "Substance R-8", "Tablets R-8 75 mg".

The main provisions of the dissertation research put on defense:

- the optimum technology of R-8 iodine adduct substance is experimentally proved;
- stages of physical and chemical, pharmacotechnological, biological properties of R-8iodine adduct substance are revealed and characterized;
- results of pharmaceutical development of R-8 75 mg tablets on the basis of R- 8 iodine adduct substance.

A practical significance of the work:

- R-8 substance is received and tablets on its basis are developed;
- laboratory regulations on production of substance and tablets on its basis are developed;
- standardization of medicines on the basis of R-8 iodine adduct is carried out;
- results of a research are introduced in practical activities of pilot production of JSC Scientific Center of Anti-infectious Drugs (The act of introduction of 2016).

Approbation of the research results

Basic provisions of dissertation work are reported and published in materials: II All-Russian scientific and practical conference with the International participation "An innovation in nation health " (St. Petersburg, 2014); International Conference: "Pharmacy today and tomorrow – Theory and Practice" (Poland, Lublin, 2015); The All-Russian scientific conference of students and graduate students with the International participation "Young pharmacy – future potential" (St. Petersburg, 2016); The Scientific and practical conference of young scientists and students of TGMU of Abuali Ibn Sino with the International participation, Tajikistan (Dushanbe, 2016); International Scientific and Practical Conference: "WORLD SCIENCE" Dubai (United Arab Emirates); LX-LXI International correspondence scientific and practical conference "Scientific discussion: medicine questions", Moscow (Russia); 17th International multidisciplinary scientific geoconference "SGEM 2017" (Albena, Bulgaria).

Information on publications

By results of researches 19 printing are published, including:

- article in the international log entering the Scopus database - 1;
- articles recommended by Committee for Control of Education and Science MES Republic of Kazakhstan - 7;
- articles published in the international scientific and practical conferences (Russia, Poland, Tajikistan, the United Arab Emirates, Bulgaria, Kazakhstan) - 11.
- requests for the invention of the useful model – 1.

A connection between the research tasks and the plan of scientific programs

Dissertation work is performed according to the plan of scientific research of S.D. Asfendiyarov KAZNMU and within the research and development program on a subject: "Development of new anti-infectious medicines" (number of the state registration No. O.0671 for 2015-2017) JSC Scientific Center of Anti-infectious Medicines the Ministry for Investments and Development of Republic of Kazakhstan.

The scope and structure of the thesis

The dissertation is explained on 130 pages of the typewritten text in a computer set, contains 68 tables and 44 figures, the list of references including the 146 th source.