DEVELOPMENT OF ANTI-BACTERIAL RESISTANCE PRODUCT IN VETERINARY MEDICINE, DEVELOPMENT OF A SUPPORTING RESPONSE PLATFORM

2020-1.1.2-PIACI-KFI-2021-00246

The project will be implemented in cooperation with a consortium, with the help of the following partners:

- E-GROUP ICT SOFTWARE Informatikai Zártkörűen Működő Részvénytársaság
- PRIM-A-VET Gyógyszer-nagykereskedelmi Korlátolt Felelősségű Társaság
- Állatorvostudományi Egyetem

Amount of fund (HUF): **798,623,943, - HUF**

Total project cost (HUF): **1,095,359,436, - HUF**

Start of implementation of the project: **01.10.2021**

Planned deadline for the physical completion of the project: 30.09.2024.

DETAILED CONTENT OF THE PROJECT

Resistance to antibiotics among bacteria is one of the most serious human and veterinary health problems nowadays. Infections caused by multidrug-resistant pathogens are forecasted to be the leading causes of human death by 2050. Irresponsible use of antibiotics in human and veterinary medicine plays a major role in the increasing prevalence of antibiotic resistance in the general population. The outlook is further exacerbated by the difficulties of developing new antibiotics, including the low success rate and the slow return on investment.

ECDC/EFSA/EMA joint reports make it evident that there is a positive, quantitative correlation between antibiotics used in food-producing animals and resistant microbes in human hospitals, hence One Health approach has become utterly important in which the scientific community is aiming to find a solution to this problem affecting several sectors and scientific fields while threatening society as well.

All these aspects and circumstances raise the need for conceptual and methodological renewal of the innovation chain. One such new direction is drug repositioning (i.e. authorizing already authorized active substances for new indications) that is characterized by lower risk and cost as well as shorter time frame than an innovation starting from a new chemical entity then going through the complete R&D path.

The aim of our project is to create an innovative and intelligent "Animal Health Repositioning Platform" that can effectively identify multiple drug candidates to combat veterinary antibiotic resistance. In addition, the platform could serve as a base for the establishment of a future food chain safety data lake to be developed

which would be valuable for the integration and complex analysis of animal health, veterinary public health, food safety and human health data of different sources.

With the help of the newly forming platform, our goal is to nominate several drug candidates for repositioning and to test them in vitro and in vivo. The expected resultant product of the project is one or more patentable compounds suitable for use as veterinary medicinal products and / or feed additives, which used in combination with antibiotics increase their efficacy or slow or reduce the development of resistance.

Both the market potential and the scientific value of the drug combination(s) developed during the project are particularly significant, there is no product available yet neither on the domestic nor the international market that satisfies all these needs. Furthermore, no such technology platform has been established in the field of veterinary and veterinary public health neither in Hungary nor in Central Europe. The project provides an opportunity to develop a cross-sectoral data storage strategy that will later provide for the complete analysis of the food chain and an integrated reveal of security risks. The resulting data lake can serve as a model for other countries as well as for the common European veterinary public health profession, proving the great market opportunities of the project.