

TOBeATPAIN 4th Scientific workshop: Genomics and Bioinformatics

Review by Patricia García Fernández (ESR9)

The 21st of September 2021 was held online the fourth TOBeATPAIN scientific workshop, entitled “Genomics and Bioinformatics” and carried out by Dr. David E. Collier, from Eli Lilly and Company. In this workshop, Dr. Collier focused the first part of his presentation on explaining the drug development process. The different stages of this process take place in long periods of ten to fourteen years, in which only one drug, out of the thousands of different identified targets, will reach the regulatory approval stage and be available at the market. Next Dr. Collier gives examples of different compounds that are currently being developed at Eli Lilly. These compounds can be found in different stages of the developmental process and can treat several conditions such as Alzheimer’s disease, Parkinson’s disease or pain. The high costs and time necessary for the development of a drug requires an optimal target selection at the beginning of the process. In the second part of his talk, Dr. Collier explains the different criteria that should be followed in order to identify a good drug target. Some of these criteria include a direct involvement of the target in the disease, an expression and specific function in the target tissue and good tractability and safety, among others.

This scientific workshop continues with a second presentation by Dr. Achim Kress, from Eli Lilly and Company, entitled “Exploring pain genetics in rare diseases”. In this workshop, Dr. Kress focuses on the search of new targets in rare diseases, through genome-wide association studies (GWAS). The first part of his talk consists of a well detailed description of the common features of rare diseases. Some of them are the incidence in which they appear in the population. For example, a spinal cord injury can be considered a rare disease since it appears only in 1 per 2400 people. This is a big difference when we compare it to a common disease such as diabetes, which happens in 1 in 10 adults. In the rest of his talk, Dr. Kress explains the importance of studying the human genome, in order to find specific targets against rare disease with a congenital etiology. In the last slide of his presentation, Dr. Kress comments on the relationship between COVID19 and pain, a topic that at this moment is undoubtedly very interesting to us all.