

DATA INTEGRATION ON RARE DISEASE AND ORPHAN DRUG WITH OPEN SOURCE DRUG DISCOVERY DATABASE

The drug discovery process is costly and takes a long period of time. The drug target identification is the starting point of the process. Efficient target identification and validation utilizing known biological and chemical data are important for accelerating the later development process. Industrial companies have not been active in the sector because the market size of each rare disease is too small. Basic research for many of these diseases is still not enough. However, there is a possibility that some of the diseases could have a druggable target even though such cases have been ignored so far.

We have been organizing a scientific research team, named Collegium for Rare Disease Drug Discovery in Japan (CoRDs Japan). One of projects in the team is to collect the knowledge of orphan drugs and rare diseases and analyze possible drug targets for which drugs have not yet been developed. In the previous study, we focused on rare diseases whose estimated prevalence is less than 10/10,000, and developed a bioinformatics approach to collecting scientific literature and analyzing the causal or related proteins and genes using open source databases such as Orphanet, PubMed and Uniprot.

Recently, the accumulation of chemical genomics data including drug compounds and their targets has increased rapidly. We used one of the drug discovery databases (ChEMBLdb) and mapped known drug target data on the disease-related genes. We also collected orphan drug data in Japan and the US and mapped the marked orphan drugs on ChEMBLdb, and then integrated the drug discovery information.

In this poster presentation, we will update the recent progress of our survey including drug target analysis for some specific diseases and discuss the potential of the bioinformatics approach for rare disease studies.

- TITLES IN CAPITAL LETTERS, **Authors in bolds, Last name and Initials**, Institutions and e-mail in Arial normal size 11 letters. Provide text without free spaces, use international abbreviations or clarify them in the text and respect the space available in the form. The summary must clarify the objectives of the work, the used methods, the results and conclusions.
- The **deadline** for abstracts submission is **December 15th 2011**.