

Academic drug discovery with pharmaceutical modality in Center for Research and Education on Drug Discovery of Hokkaido University

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Hokkaido University Institute of Pharmaceutical Sciences established an affiliated drug discovery science research and education center, Center for Research and Education on Drug Discovery of Hokkaido University (CRED), in 2011 to promote academia drug discovery research. We have set up over the last 8 years the 'state of the art' instruments necessary for chemical screening, and provided the expertise for drug discovery to novice users, supported by the projects, such as "Basis for Supporting Innovative Drug Discovery and Life Science Research". We also organize a "Platform for medical care and drug discovery" network with related academic departments and universities, Hokkaido University hospital and pharmaceutical companies mainly in Hokkaido Area.

We are proceeding drug discovery modality research using a seamless "from drug seeds to preclinical" development system with a cryo-electron microscope: (1) unique Hokkaido University chemical library (peptides, nucleic acids and natural compounds) and semi-automatic preparation system, (2) preparation technology of difficult-to-express proteins, (3) complete physicochemical measurement technology, (4) Integrated structural analysis technology with cryo EM.

In this lecture, I would like to look back over the past eight years and introduce the current efforts of CRED with some specific examples including the cooperation with the Development Unit of Drug Discovery Initiative of the University of Tokyo to proceed ADME evaluation and derivative synthesis.