BioGrid Center Kansai

(Nonprofit Organization)

Established in February 2004, BioGrid Center Kansai is a nonprofit organization to promote bio/IT related R&D, educational activities, intellectual property management and to assist business promotion in these fields. The NPO has a mission of quick technology transfer from academic research to industry. Striving hard toward its goal, the NPO has helped to create a community that integrates IT, bio and medical science. The BioGrid Center Kansai currently conducts the following activities.

1) Planning and coordinating Research & Development projects
2) Coordinating and assisting collaborated research between academia and industry
3) Providing a cutting-edge IT based test-bed environment developed by universities and other research institutes
4) Managing and utilizing intellectual property invested through R&D
5) Promoting and fostering business by venture companies
6) Bio-IT human resource development

The Value Chain for Drug Discovery

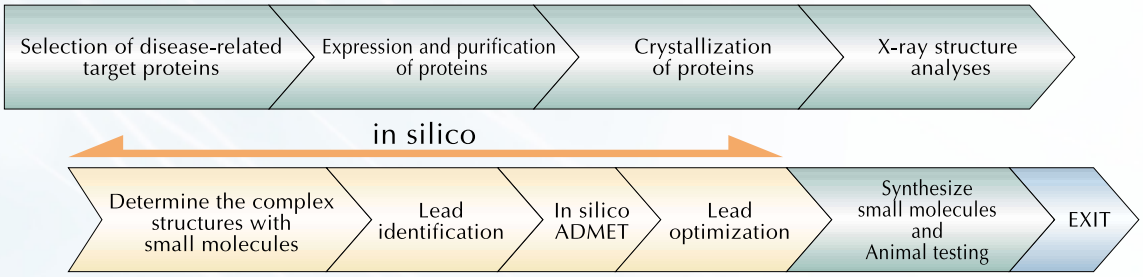
Mission

We contribute to society by discovering drugs while reducing costs and the development period by using the output of the BioGrid project.

Overview

BioGrid computing technology, which is the outcome of Biogrid project (2002-2006) funded by MEXT(Ministry of Education, Culture, Sports, Science and Technology), enables us to determine protein structures and to execute docking simulation of small molecules for medicine in silico.

For drug discovery, many processes, which are described in the following image, must be executed.
To enhance a value chain for drug discovery, working in concert with leading partners who have a high degree of engineering expertise is important.



We create a new project called "Souyaku Value Chain Project" ("Souyaku" means drug discovery and development in Japanese), which consists of venture companies, medium-to-small sized companies, large sized companies, academia laboratories and other organizations. The core of this project is the computing technology for drug discovery, such as simulation for protein complexes (Molecular Mechanics: myPresto by JBIC), and molecular orbital simulation(Quantum Mechanics: AMOSS by NEC), for example. In this project, we determine disease-related protein structures by an actual wet experiment, and identify and optimize the new lead compounds for medicine by means of computing technology. After animal testing, we carry them into market.

The Souyaku Value Chain project is funded by MEXT and the National Institute of Biomedical Innovation for developing different lead compounds. MEXT funds for lead compounds for antiallergenic drugs while the National Institute of Biomedical Innovation funds for compounds for anticancer drugs.

Structure-based Drug Discovery