財團法人生物技術開發中心
Development Center for Biotechnology

# Institute of Pharmaceutics

## Medicinal Chemistry / Bioactivity Identification

**Research and development** **Small molecule drugs team provides pharmaceutical platform, preclinical in vitro screening platform**

### Contract Services

#### Medicinal Chemistry

**Pharmaceutical Synthesis Platform Technology**

- Rational drug design
- Process development for generic drugs and intermediates
- Prodrug design
- Compound Libraries synthesis
- Reference compounds synthesis
- Metabolites and impurity synthesis

**Pharmaceutical process development**

- The platform for optimizing chemical processes
- Formulate drug specifications and synthesis of metabolites and impurity
- Preclinical drug mass production technology and process technology development transfer
- Intermediates and drug candidates scale-up to several hundred grams

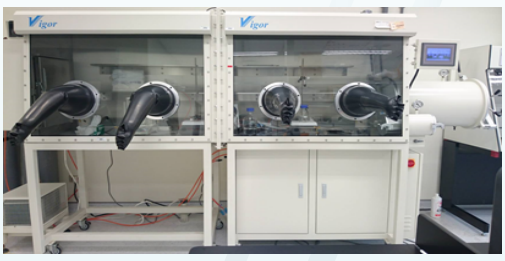
#### Bioactivity Identification

**In vitro biological activity screening for Anticancer drugs**

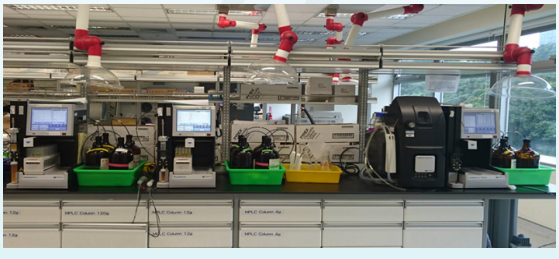
- Kinase activity assay
- Human tumor cell cytotoxicity assay
- Human normal cell cytotoxicity assay
- *In Vitro* ligand-dependent cell proliferation assay
- Tubulin polymerization assay
- Colchicine site competitive binding assay
- Reporter gene assay
- Customized development of *in vitro* activity assay platform

**Safety Pharmacology**

- hERG K+ channel competitive binding assay
- Mode of action analysis
- *In vitro* activity mechanism test
- Intracellular protein phosphorylation test
- Cell signal transduction pathway assay
- Cell apoptosis test
- Cell cycle analysis
- Intracellular localization analysis
- Caco-2 permeability assay








## R&D Achievements

| Technology / Product | Achievement |
|---|---|
| Hedgehog inhibitor as an anti-cancer agent | • PCT and Taiwan patent were filed. |
| Development of anti-Globo H ADC against Cancer | • US, PCT, Taiwan patent were filed. |
| AXL Inhibitor as Anticancer Drug | • PCT and Taiwan patent had been applied. |
| Precision Medicine-Selective FLT3 Inhibitor | • Patentable, highly potent, highly selective and orally active FLT3 inhibitor with high potency against FLT3 D835Y drug resistant mutation.<br>• US Provisional patent. |
| Selective CSF-1R kinase inhibitor for cancer immunotherapy | • Technology was transferred.<br>• Taiwan patent approved, US and PCT patent were filed.<br>• Planning completed IND application in 2019. |
| Raf Inhibitors as Anti-cancers | • Technology was transferred.<br>• Taiwan and US patent were approved, PCT patent was filed.<br>• U.S. FDA / IND approved in 2016 and Taiwan TFDA / IND approved in 2019. |
| mTOR Inhibitors as Anti-cancers | • Patented in 10 countries including the Republic of Taiwan, US, and Japan. The patent were filed in China, Malaysia, and the other 7 countries.<br>• U.S. FDA / IND approved in 2013 and Taiwan TFDA / IND approved in 2014. |
| Fluconazole Process Development | • Process patents have been licensed to foreign manufacturers, and products have been sold in the United States.<br>• Taiwan and US patent approved. |

## Instrument


TopCount

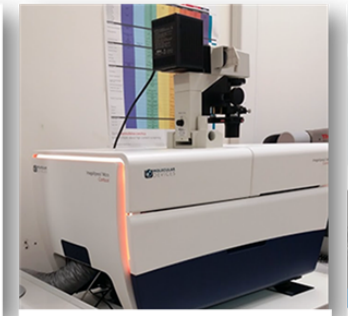
FACScan


ABI 7500 fas


Microwave Synthesizer


BIO-RAD ChemiDoc MP

SpectraMax i3x


ImageXpress Micro Confocal

Odyssey clx

財團法人生物技術開發中心
Development Center for Biotechnology

No 107, Ln 130,Sec. 1, Academia Rd., Nangang Dist. Taipei City 11571, Taiwan, R.O.C.
Tel : 886-2-7700-3800 # 5610 JoJo Wang
Fax : 886-2-7700-3871 E-mail：jojowang@dcb.org.tw