Management of bio-resources in Korea

2014.9.3

Dept. ABS Research Support
Korea Research Institute of Bioscience and Biotechnology(KRIBB)

Tae-Eun Jin
1. Korea Research Institute of Bioscience and Biotechnology
Mission

- To carry out R&D activities and related to projects in the bioscience and biotechnology in joint effort with other research institutes, academic and business at home and abroad

- To disseminate the results of its scientific research and technological development
# KRIIBB at a Glance

## History
- 1985. Feb : Founded as a Genetic Engineering Center
- 1995. Mar : Changed its name to KRIIBB
- 2001. Jan : Became an independent legal entity
- 2005. Sep : Established the Ochang Campus
- 2006. Nov : Established the Jeonbuk Campus

## Personal
- 1,136 (as of June 2012)
  - 330 full-time, 525 temporary and 281 students (M.S, Ph.D.)

## Facility
- **HQ**: 100,978 m²
  - Human Gene Bank, Plant Extract Bank, KCTC (Biological RC)
- **Bio-Therapeutic RI (Ochang Campus)**: 212,258 m²
  - Nat’l Primate RC, Biomedical Mouse RC, Bio-Evaluation Center
- **Bio-Materials RI (Jeonbuk Campus)**: 43,559 m²
  - Applied Microbiology RC, Infection Control Material RC

## Budget
- $126 Mil (2012)
  - 47% from government directly, 48% from Project-based
Dept. ABS Research Support

- Establishment: March 1st, 2013
- Major missions
  - Consultative council of competent authorities in Bio-resources
  - The ABS Helpdesk for researchers
2. Bio-resources in Korea
Biological organism including biological resources, biological diversity, biological information which is fundamental sources of biotechnology

Source: National strategy for acquisition, management, and utilization of bio-resources for research (2008)
The application of biotechnology to primary production, health and industry could result in an emerging “bioeconomy” where biotechnology contributes to a significant share of economic output.

Source: The Bioeconomy to 2030 (OECD, 2009)
The market size of bioindustry

* An industry that makes use of biotechnology and other advanced life science methodologies in the creation or alteration of life forms or processes

**Global**

<table>
<thead>
<tr>
<th>Year</th>
<th>$ billion</th>
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<tr>
<td>’04</td>
<td>138</td>
</tr>
<tr>
<td>’08</td>
<td>209</td>
</tr>
<tr>
<td>’09</td>
<td>231</td>
</tr>
<tr>
<td>’10</td>
<td>250</td>
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Increase 9.4% annually (’08-’10)

**Korea**

<table>
<thead>
<tr>
<th>Year</th>
<th>KRW trillion</th>
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<tr>
<td>’97</td>
<td>0.73</td>
</tr>
<tr>
<td>’08</td>
<td>5.66</td>
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<tr>
<td>’09</td>
<td>6.68</td>
</tr>
<tr>
<td>’10</td>
<td>7.23</td>
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Increase 13.1% annually (’08-’10)

source: Datamonitor (’11)

source: Ministry of Trade, Industry & Energy (’13.4)
An average of 67% of 11,000 consumers in 11 countries has heard about biodiversity. Over 80% would like to know more about how companies source natural ingredients. Biodiversity awareness is particularly high in emerging economies like Brazil and China, highlighting the growing importance of biodiversity for business.
# Products from natural resources in Korea

<table>
<thead>
<tr>
<th>제품명</th>
<th>기업명</th>
<th>적용증</th>
<th>주요성분</th>
<th>희망일자</th>
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<td>되지폐 주출물</td>
<td>2012.11</td>
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</table>
Major activities for bio-resources

- **01.10** '01.10
  - Meeting for the role adjustment among branches of the government

- **'05.09**
  - National management plan for biological resources

- **'06.03**
  - Open National biological resource management center

- **'06.09**
  - Strategic plan for enriching the future bio-resources

- **'07.01**
  - Announce the National master plan for bio-resource

- **'07.12**
  - Act on bio-resource for research

- **'09.05**
  - 18th meeting of governmental minister in Science technology area
Acts for bio-resources in Korea

Act on bio-resources for research (2009.11)
- Master plan for bio-resources for research (‘11~’20)
- Designate competent authority and repository institute
- Designate national information center for bio-resources

Act on agriculture and fishery bio resources (2012.7)
- Master plan for agricultural genetic resources (‘09~’18)
- Designate competent authority and repository institute
- Establish bio-resource information system (BRIS)

Act on biological diversity (2013.2)
- National strategy for biodiversity (‘14~)
- Designate biological diversity center
- Establish biological diversity clearing-house mechanism

Act on marine bio-resources (2012.7)
- Master plan for marine bio-resources (‘14~)
- Designate competent authority and repository institute
- Establish marine bio-resource information system (MBRIS)
Acts for bio-resources for research

Consultative council of competent authorities

National information center of bio-resources for research

<table>
<thead>
<tr>
<th>Fundamental research, Information, Statistics</th>
<th>Agricultural resources</th>
<th>Industrial resources</th>
<th>Health and medical resources</th>
<th>Wild organism</th>
<th>Ocean, Fishery</th>
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<tr>
<td>Competent authority</td>
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<td>Not designated</td>
<td>Competent authority</td>
<td>Not designated</td>
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<tr>
<td>Biological resource centers</td>
<td>Biological resource centers</td>
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<td>Biological resource centers</td>
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<td>Biological resource centers</td>
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</tbody>
</table>
3. The Nagoya protocol in Korea
**Financial impact of the NP in Korea**

- **In the case of 10% increase of bio-resource utilization**
  - Financial impact in Korea: **1.35 billion$**
    - (expense increase or business opportunity)
  - Expense for bio-resource in Korea/Import expense: **18.5%**
  - Expense for bio-resource utilization/Production cost in industry: **0.9%**
  - Expense for bio-resources in industry/Import expense: **22.4%**

- **Cost of bio-resource/gross expenditure in Korean economy**: **1.7%**

Source: ‘나고야의정서와 기업의 역할(현대경제연구원 김필수)’ 발표자료
4. Bio-resource management systems
The national measures for bio-resources Information

National information center of bio-resources for research

- Korean Bio-resource information system (KOBIS)
- Bio resource information service (BRIS)
- Health and medical resources
- MarineBio resource information service (BRIS)
- Wild organism
Information center for research resources

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**공지사항**
- 2023년 1월 29일: 1차 정기통장 납부 안내
- 2023년 1월 29일: 2차 정기통장 납부 안내
- 2023년 2월 1일: 2차 정기통장 납부 안내
- 2023년 2월 1일: 3차 정기통장 납부 안내

**마을의 보도자료**
- 2023년 1월 30일: 마을의 보도자료
- 2023년 1월 31일: 마을의 보도자료

**자원봉사자**
- 총무
- 비서
- 홍보
- 비서
- 인적사항

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**마을의 소식**

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**가정용도구**
- 국립공연예술공주 2,317,123원
- 국립공연예술공주 1,730,664원
- 국립공연예술공주 1,433,372원
Information center for agricultural resources
Information center for Korea biodiversity
Information center for marine resources
National information center for bio-resource
Korea Bioinformation Center (KOBIC)
한국 생명학자료정보시스템 (KOBIS)을 활용한
데이터 등록과 정보분석

## 연계정보

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<tr>
<th>전체</th>
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<td>Total</td>
<td>42,059통</td>
<td>4,289,057건</td>
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5. Management system in KCTC
KCTC Homepage renewal
Easy and comfort distribution
Easy interface for search and its result
### Detailed information of resource

**Sphingosinicella microcystinivorans**

<table>
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<tr>
<th>항목</th>
<th>내용</th>
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<td>KCTC No.</td>
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<td>Strain Name</td>
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<tr>
<td>Author</td>
<td>Manzana et al.</td>
</tr>
<tr>
<td>Year</td>
<td>2006</td>
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<td>Type Strain</td>
<td>Type strain [5238/6975]</td>
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<td>History</td>
<td>← HD PARK</td>
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<tr>
<td>Other Collection No.</td>
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Integrated information system for R&D product
Microbial resource storage management by barcode
One-site management, search, and modification
Real-time distribution management for fast and accurate distribution process
Deposit management system
- Easy and comfort electronic deposit
- Fast and accurate integration and search
- Comfort distribution
- PC and mobile compatibility
- Support web accessibility (by Act on disability discrimination)
- Encode for security
- Operate all web browser
Thank you!
谢谢