MetaboBank
Public Repository for Metabolomics

National Institute of Genetics (遺伝研)
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Omics research for small chemicals (compounds)

MetaboBank is the primary repository for metabolomics

RIKEN PMM (2019-) with Kazusa DNA Res Instit
MetaboBank (2020-)

Metabolomics Workbench by NIH

NIH Common Fund

< 20% are published

Web-based analysis

Meta-data are minimum.
(harder to reuse)

Data repository for research integrity / verification
MetaboLights Repository by EBI

Since 2012
All species / methods
Started by Chris Steinbeck and Reza Salek
CC-BY

90% data are published.
Meta-data registration with ISA-TOOLS

Still, data reuse is difficult.
### Public Project

**Keyword search**

```plaintext
Input Keyword: [search]
```

<table>
<thead>
<tr>
<th>ID</th>
<th>TITLE</th>
<th>EXPERIMENT GROUP</th>
<th>SAMPLE</th>
<th>MEASUREMENT</th>
<th>CONTACT</th>
<th>PUBLISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTKS1</td>
<td>Unbiased characterization of genotype-dependent metabolic regulations by metabolomic approach in Arabidopsis thaliana</td>
<td>E1</td>
<td>51</td>
<td>51</td>
<td>FUKUSHIMA Atsushi</td>
<td>2020-10-0</td>
</tr>
<tr>
<td>MTKS2</td>
<td>Metabolomic Characterization of Knockout</td>
<td>E1</td>
<td>699</td>
<td>699</td>
<td>FUKUSHIMA Atsushi</td>
<td>2020-10-0</td>
</tr>
</tbody>
</table>

**Submission through Excel**

**Detailed metadata for reproducibility**

**Embargo ok**
Advantages

- Summary view and detailed metadata
- Information in Japanese
MetaboBank Editor using Excel

- 100 Information sheets are organized in the Excel file.
- Users can reuse previously input information.
### Re-analysis you can do

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPMM0043</td>
<td>Metabolomic Evaluation of the Quality of Leaf Lettuce Grown in Practical Plant Factory</td>
<td>Vegetables produce metabolites that affect their taste and nutritional value and compounds that contribute to human health. The quality of vegetables grown in plant factories under hydroponic cultivation, e.g., their sweetness</td>
</tr>
<tr>
<td>RPMM0045</td>
<td>WINDI induces dynamic metabolic reprogramming during regeneration in Brassica</td>
<td>Plants often display a high competence for regeneration under stress conditions. Signals produced in response to various types of stress serve as critical triggers for organogenesis, but the identity of these signaling pathways is poorly understood.</td>
</tr>
<tr>
<td>RPMM0046</td>
<td>Effects of molybdenum deficiency and defects in molybdate transporter MOT1 on</td>
<td>Molybdenum (Mo) is a micronutrient essential for plant growth, as several key enzymes of plant metabolic pathways contain Mo cofactor in their catalytic centres. Mo-containing oxidoreductases include nitrate reductase.</td>
</tr>
<tr>
<td>RPMM0047</td>
<td>Enhancement of oxidative and drought tolerance in Arabidopsis by overaccumulation of antioxidant</td>
<td>The notion that plants use specialized metabolism to protect against environmental stresses needs to be experimentally proven by addressing the question of whether stress tolerance by specialized metabolism is directly reflected in the antioxidant status.</td>
</tr>
</tbody>
</table>

![Pie chart showing the distribution of plant metabolome project instances](chart.png)

- **Arabidopsis**: 32%
- **Rice**: 12%
- **Tomato**: 9%
- **Soybean**: 6%
- **Lettuce**: 3%
- **Onion**: 3%
- **Others**: 37%
ご意見等、お待ちしております
(3日以降にアクセスをお願いします)

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今後、DDBJ講習会にも登場する予定です
YouTube: DDBJ Channel