E. motion

KIT-Kyoto
19.17
1. Why “E. motion”

2. Experiments and actual artworks

3. Educational use of E. motion
Large scale survey
n = 1571
What do you think about genetic engineering?

Negative = 70%
Which sentence best describes your idea about genetic engineering?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mysterious</td>
<td>45%</td>
</tr>
<tr>
<td>Unproven safety</td>
<td>33%</td>
</tr>
<tr>
<td>Potential effects on future generations</td>
<td>17%</td>
</tr>
<tr>
<td>Potential effects on the ecosystem</td>
<td>11%</td>
</tr>
<tr>
<td>Unethical</td>
<td>10%</td>
</tr>
<tr>
<td>No negative effects on future generations</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
</tr>
<tr>
<td>No response</td>
<td>2%</td>
</tr>
</tbody>
</table>
1. What kind of image do you have on genetic engineering?
- I don't care: 21%
- Good: 38%
- Bad: 41%

2. Do you feel familiar with genetic engineering?
- Yes: 69%
- No: 31%

3. When you go to a grocery store, which do you buy, GM foods or non-GM foods?
- Always non-GM foods: 77%
- Prefer GM foods: 15%
- Prefer non-GM foods: 8%
- No response: 4%

4. If negative, why? Please select all that apply.
- Unsafe as food: 275
- Too much unknown: 186
- Dangerous according to media: 89
- Not sure about: 46
- Other: 42

5. If positive, why? Please select all that apply.
- Able to increase the yield: 163
- Able to desear crops to fill our needs: 123
- GM foods are the results of scientific progress: 117
- GM has already been commercialized: 76
- Other: 19

n=1571
Genetic engineering
Toward better visibility of synthetic biology

HOW?
What is BioArt?
Conventional BioArt

Color only
E. coli + Motion

\[ \parallel \]

E. motion
Color  
Scent  
Motion
1. Why “E. motion”

2. Experiments and actual artworks

3. Educational use of E. motion
Color  

Scent  

Motion
Biological Assay

Measuring Apparatus
8cm

A
Monoterpene
3cm
Control

B

100% Monoterpene Assay

<table>
<thead>
<tr>
<th></th>
<th>A Monoterpene</th>
<th>B Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>128</td>
<td>25</td>
</tr>
</tbody>
</table>
Monoterpene

- Limonene
- Terpenene
- Pinene

γ-terpinene synthase gene
BBa_K1448000
Extra GPP should be added in the medium.
γ-terpinene detected
BioArt Works
Drosophila Video Clip
E. motion
Glowing Trails of *Drosophila*
We made synthetic biology more appealing to everybody.
1. Why “E. motion”

2. Experiments and actual artworks

3. Educational use of E. motion
1. Lectures

High School Visit
1. Lectures

Open House
2. Workshop
Workshop artworks

Depicted best things about Japanese autumn
Wiki

It's too difficult to read…

Project

Overview - E. motion

As a part of Policy & Practices project, we conducted a survey on people's attitudes toward genetic engineering. The results showed that the general public does not feel familiar not only with genetic engineering but also with science. So we designed our project in order to change this for the better.

What can we do to make science more appealing to everyone? One of the solutions for us was to harmonize science with arts. You may say science is incompatible with arts, actually, constitutes of science and art.
Policy & Practices

1. Lectures
2. Workshop
3. Wiki
Broadcast on TV
Inspired with E. motion
Future Plan

1. Better smell in laboratories

→ better results?
Future Plan

2. Movie
3. National BioArt Competition
Acknowledgements

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COSMO BIO CO., LTD.
Inspiration for Life Science