**E. motion**

**Dawn of the New Generation BioArt**

1. **Introduction**
   
   We conducted a large-scale survey on Japanese people's attitudes toward genetic engineering (n = 1571). Our survey disappointingly indicates that more than 50% of Japanese people think GM foods are enigmatic and have bad images on genetic engineering.

2. **E. motion**
   
   We adopted BioArt as a powerful tool to familiarize people with genetic engineering. We added MOTION and scent to the conventional BioArt and took it to the next level. E. motion is the BioArt with dynamics and it inspires not only your visual sense but also your olfactory perception. E. motion shakes your emotion!

3. **Conventional BioArt**
   
   In 2010, team KIT-Kyoto produced E. coli expressing fluorescent proteins. Hundreds of students experienced BioArt in our institute.

4. **Motion**
   
   Larvae’s motion is guided by monoterpene, yet it is art of chance unlike any other. 200 larvae were placed at the center of an agar plate (2.0%, radius: 8 cm). A piece of filter paper was placed on each end of the plate (Fig.1). 2.5 µl of monoterpene was dropped on one side of the filter paper (Monoterpene) and cover the plate with a lid. Three minutes later, the number of larvae within a 3 cm radius from the filter paper was counted (A or B). The concentrations of monoterpene are diluted by 20% and 10% with DMSO. The control is DMSO.

5. **Scent**
   
   We designed E. coli and yeast cells which synthesize aromatic substances in orange and lemon such as limonene, pinene and terpinene. We successfully produced y-terpinene in yeast cells.

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**Policy & Practices**

The large-scale survey was conducted in the downtown Kyoto and at our institute.

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**Conclusion**

1. We conducted a large-scale survey on genetic engineering (n = 1571).
2. We constructed new devices that produce monoterpene in E. coli and yeast cells.
3. More than 600 people experienced BioArt and genetic engineering through our activities.

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**Future Plan**

1. We will hold the National BioArt competition in Japan to spread BioArt.
2. We will shoot movies with E. motion and show them to the general public.
3. Laboratory environment will surely improve with the smell of citrus which is famous for aromatics.

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