# HSNU-TAIPEI

## The Evengers

E coli. + Avengers

HSNU-Taipei IGEM official Fan Page

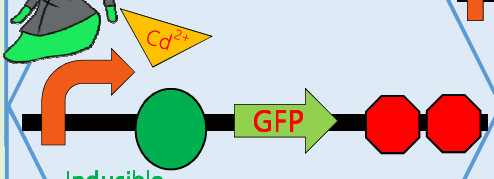
## Problem

Few months ago. Some profit-oriented oil producers did something terrible. They added recycled oil into the cooking oil. Even after refining it, the cooking oil may still contain toxic substances and will damage our health.

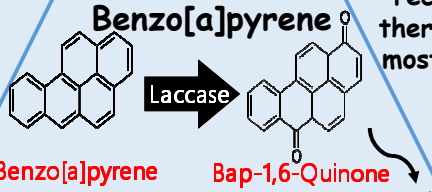
## OverView

Our main goal is to develop an easy way for people to detect recycled oil. We found out that there are six substances are the most common in the recycled oil. Benzo[a]pyrene, Aflatoxin, Lead, Cadmium, Copper, Mercury.

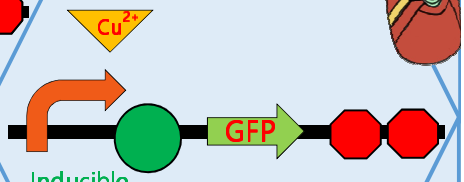
### Cadmium




### Benzo[a]pyrene

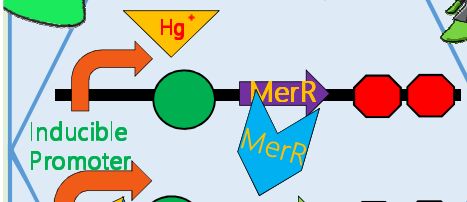



### Copper

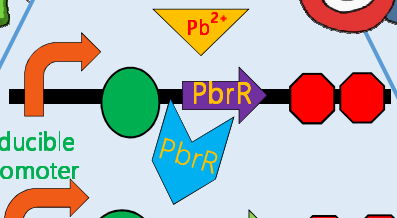



### Recycled Oil Biosensor

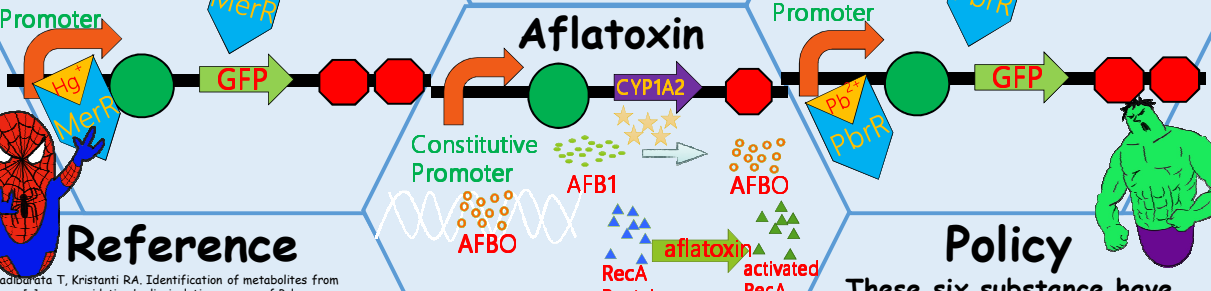
### Mercury




### Lead




### Aflatoxin








## Reference


Hadibarata T, Kristanti RA. Identification of metabolites from benzo[a]pyrene oxidation by ligninolytic enzymes of Polyporus sp. S133. J Environ Manage. 2012 11/30;111(0):115-9.

Ji Q, Zhang L, Jones MB, Sun F, Deng X, Liang H, et al. Molecular mechanism of quinone signaling mediated through Squinonization of a YodB family repressor QsrR. Proceedings of the National Academy of Sciences. 2013 March 26;110(13):5010-5.

Puskárová A, Ferianc P, Kormanec J, Homerová D, Farewell A, Nyström T. Regulation of yodA encoding a novel cadmium-induced protein in Escherichia coli. 2002 Dec;148(Pt 12):3801-11.

Peng Chen, Bill Greenberg, Safiyh Taghavi, Christine Romano, Daniel van der Lelie, and Chuan He. An Exceptionally Selective Lead(ii)-Regulatory Protein from Ralstonia Metallidurans: Development of a Fluorescent Lead(ii) Probe


## Policy

These six substance have been limited in Taiwan's law.

-Benzo[a]pyrene 2.0 ppb
-Cadmium 0.05 ppm
-Copper 0.5 ppm
-Mercury 0.4 ppm
-Lead 0.025ppm
-Aflatoxin B1 10.0 ppb

## Human Practice

➢ Education
- ✓ Senior high schools
- ✓ Junior high schools
- ✓ Elementary schools
- ✓ Kindergarten

➢ Industry
- ✓ Food companies
- ✓ Biotech companies
- ✓ Venders

➢ Government
- ✓ Legislators
- ✓ Ministry of Health and Welfare.

➢ NGO
- ✓ Foundations

➢ Public
- ✓ A fan page

## Meet Our Team

We come from HSNU. We've got this big dream but little time. In our limited time, we gather 50 passionate students, striving for our dreams.

## Acknowledgements