



Título del proyecto

Open Source Estrogen

Promotor/es

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Ficha técnica

The goal of Open Source Estrogen is to explore the various ways that estrogen performs molecular colonization of human society, our bodies, and ecosystems. Estrogen is the most ancient of sex hormones. Therefore the mutagenic effects of environmental estrogens disrupt species across all animal taxa, including humans. In response to the ongoing molecular colonization of xeno-estrogens, the project aims to demonstrate how our collective mutagenesis necessitates civil action through DIY/DIWO practice. Three possible approaches are: 1) SYNTHESIS - Are we able to circumvent governments and institutions to gain hormone access? What are the ethics behind self-administering self-synthesized hormones? 2) DETECTION - What are the ramifications of estrogen de-regulation? How can biosensors play a role in mobilizing citizen surveying of local water sources? 3) EXTRACTION - How can citizens remove the hormonal toxicity in the environment that is currently mutagenizing human and non-human bodies? Can the xenoestrogens be recycled back into our bodies?

Herramientas y materiales

We developed several low-cost DIY methods and protocols for the extraction and detection of estrogen in the water. We called it SPE-YES: Solid Phase Extraction followed by Yeast Estrogen Sensor. To build the SPE, we found a Portuguese paper that simplifies the standard laboratory-grade SPE device to a more low-cost version. We then made it even more DIY by replacing the commercially available HLB Oasis filters with cigarette filters, which are basically made of cellulose acetate. We also conducted several polarity experiments on the solubility of estrogen in order to choose the correct solvent. The chemicals we used were chloroform, acetone, methanol, ethanol, glacial acetic acid, silica gel, and sulfuric acid. A DIY chromatography column was constructed using a broken wine bottle and a table clamp. To perform the yeast experiments were performed using DIY laboratory hardware such as a hacked chicken egg incubator and hard drive centrifuge.

Proceso

The project started with discussion and research around the politics of estrogen, defining the terms "slow violence" and "paradox of disruption." We then created a website (estrolocation.org) where users can identify and contribute data on areas polluted with estrogens. Using the help of local collaborators, we analyzed a map of Madrid to pinpoint possible areas of estrogenic pollution for water sampling. Afterwards, we began experimentation and researching scientific papers for a technique for concentrating the water samples through solid phase extraction (SPE). This is an important before detection. We performed several solubility experiments to determine the best solvent for eluting estrogen in the SPE process. Finally we used genetically modified yeast called YES-HER (yeast estrogen sensor / human estrogen receptor) that detect estrogen by a yellow color change. This is by far the most low-cost, feasible method for detecting estrogens in the environment.

Futuros desarrollos del proyecto

In the future, we should try to reproduce all the experiments that happened during Interactivos for good scientific practice.

We we're going on with a publishing of a fanzine 'ESTROZINE'.

Enlaces relacionados

http://hackteria.org/wiki/Open_Source_Estrogen, <http://maggic.ooo/>,
<http://jellypin.hotglue.me/pechblendalab>, <http://gynepunk.tumblr.com/>