

Questionnaire

Dear friend:

Hello! We are members of the WHU-iGEM team. We want to investigate the sewage treatment in your city in order to understand the situation and problems of sewage treatment and to better protect the environment. The survey data is for research use only. Thank you for your support and cooperation!

WHU-iGEM, Wuhan University, Correspondence Address

Halogenated phenols are a group of organic molecules, characterized by benzene rings with hydroxyl groups and halogen atoms. In general, halogenated phenols tend to be more toxic and less biodegradable than their nonhalogenated counterparts, to note that phenols, cresols, and catechols do not bioaccumulate to any great extent. Used in large quantities for diverse purposes and moderately soluble in water, fugitive phenolics are inevitable and these can be moved around readily by water. It's been reported that halogenated phenols have accumulated in various anoxic subsurface environments as a consequence of improper disposal. What's even worse, increasing levels of halogenated phenol detected in humans and wildlife are of particular concern. With an original dehalogenase named RdhANP from *Nitratireductor pacificus*, we aim to engineer selected microbes to build a dehalogenator, to remove halogen atoms from halogenated phenols, thus reducing their toxicity and facilitate their subsequent treatment. Compared with other enzymes in the dehalogenase subfamily, which are usually membrane-associated and oxygen-sensitive, RdhANP is a soluble, oxygen-tolerant reductive dehalogenase depending on cobalamin (B12) and electron donors (i.e NADPH) for its catalytic activity. After successful heterologous expression of RdhANP, we'd design our dehalogenator to function efficiently in suitable devices.

1. What is your age?
 Below 20 20-30 30-40 Above 40
2. Your career
 students Administration enterprises and institutions other
3. What do you think of the city's water pollution situation compared to five years ago?
 Significant improvement minor improvement No change
 deterioration
4. Do you think that water environmental protection is urgent?
 yes no
5. Do you know about halogenated phenols ?
 Yes no
6. If you know that halogenated phenols are accumulated in various subsurface environments and bad for our health, what do you presume to degrade them?
 Physical processing Chemical treatment Biological treatment
7. Our project is using bacteria to deal with Toxic Chemicals like halogenated phenols in sewage, what else you expect us to do?
It is an open question. You can imagine it. _____
8. What is your suggestion about our project' s name?

Like **WOW** (WHU operate wastewater), **WHU Re-Water**, **Super Water Bug**, and so on.

Whatever you like, we want to hear your voice!