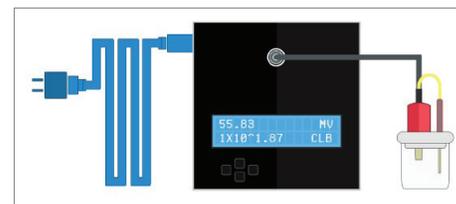


ClenSense Prototype 1



ClenSense Prototype 2



ClenSense Prototype 3

TECHNOLOGY OVERVIEW

ClenSense is a rapid, reliable and portable screening kit for meat inspectors to detect clenbuterol in pork samples to ensure food safety for human consumption.

Clenbuterol, also known as “lean meat powder”, is widely used as additives in animal feeds due to its capacity to promote muscle growth and fat reduction in swine. It also produces pinker meat, leading consumers to believe the pork they are buying is fresher than it is. Studies have shown that residues thereof accumulated in animal tissues can cause a number of human health side effects including heart palpitations, muscle tremors, nervousness, dizziness, nausea, vomiting, fever, chills and, in rare cases, death.

FEATURES AND SPECIFICATIONS

ClenSense is a fabricated potentiometer with an ion-selective electrode (ISE) based on molecularly imprinted polymer (MIP) membrane. With computer interface integration, a portable sensor was developed.

PARAMETER	CLENSENSE
Analyte	Clenbuterol
Detection limit	3.8 ppb
Specificity	100% Clenbuterol
Assay time	3 – 5 minutes
Reusability	Yes
Portability	Yes

MARKET TRENDS AND OPPORTUNITIES

Swine production in the Philippines is a P191-billion industry and is the largest among the livestock and poultry industries of the country. It plays a major role in ensuring the country’s food security by providing about 60% of the total animal meat consumption of Filipinos.

To ensure food safety and monitor the use of banned drugs including Clenbuterol, national laws were passed such as the RA 9296 and RA 10611. The Department of Agriculture - National Meat Inspection Service (DA-NMIS) is the sole national controlling authority on all matters pertaining to meat inspection and hygiene whether sourced locally or abroad. In 2014, their annual report shows a total of 847 slaughterhouses, 112 of which are accredited by the DA-NMIS and 791 hog samples therefrom were submitted for testing.

CUSTOMER BENEFITS

- Meat inspectors can screen meat samples right away in slaughterhouses more often and may impose sanctions to violators thus more efficient meat quality monitoring
- With assay time of 5 minutes, users can conduct multiple tests in a day
- More affordable compared to ELISA kits and other commonly used devices for meat inspection

POTENTIAL APPLICATION

- Provincial and private slaughterhouses
- Department of Agriculture – National Meat Inspection Service (DA-NMIS)
- Meat processing companies

We are looking for partners from above industries or government agencies to validate the current prototype in the field. While further validation analysis for performance optimization; development of the device for detection of other compounds of interest; and improvement of prototype design, incorporating sample preparation, are currently in progress.

Idona Marie Palattao-Portlaje
Technology Transfer Officer
Technology Transfer and Business Development
Office, University of the Philippines System

Where to contact you:
2/F Philippine Genome Center, Ma. Regidor St.
U.P. Campus, Diliman, Quezon City

igpalattao@up.edu.ph
9818500 local 2542
09176647485

