

SCR-THE-050

ADVANCED SCREENING TECHNOLOGIES
Electrochemical biosensors

• **Context**

Screening methods are defined as analytical strategies providing strong indications for the presence of a drug residue in a sample. Desirable features for screening tests are high throughput possibilities combined with a low rate of false negative results. Voltammetric techniques involve the application of a potential to an electrode and the measurement of the resultant current flowing through the electrochemical cell and either the applied potential is varied or the current is monitored over a period of time. Oxidation or reduction of the analyte at the electrode surface is caused by the potential applied, resulting in a change in concentration which subsequently alters the current being measured.

• **General objective(s)**

General definition of screening tests as well as desirable associated features will be exposed. Electrochemical biosensor principles will be explained and applied to the detection of mycotoxins.

• **Main items**

Screening tests / Electrochemical sensor / Oxido-reduction / Mycotoxins

• **Pedagogical objectives**

- ✓ To be able to distinguish between screening and confirmatory tests
- ✓ To cite the basic principle of an electrochemical assay
- ✓ To list the different steps in an electrochemical test

• **Pedagogical tools**

- ✓ Powerpoint slide show

• **Duration**

- ✓ 1 hour

• **Pre-requisite**

- ✓ Knowledge of the residues and contaminants of interest (REG-THE-010)