

SCR-THE-010

ADVANCED SCREENING TECHNOLOGIES

Antibody based assays

• Context

Screening methods are defined as analytical strategies providing strong indications of the presence of a drug residue in a sample. The residue present may be in the form of a parent drug or of its metabolite. Desirable features for screening tests are high throughput possibilities combined with a low rate of false negative results. Amongst the potential screening technologies, biosensors, which have been applied to a wide variety of analytical problems in medicine, drug discovery, environment, security and more lately food quality and safety, are promising.

• General objective(s)

General definition of screening tests as well as desirable associated features will be exposed. The main antibody-based screening tests available in the field of residues and contaminants analysis (ELISA, RIA, ...) will be explained as will their basic principles and main fields of application. Insight will be given onto biosensor methods, focusing on the detection of specific molecular interactions on a chip surface like SPR (Surface Plasmon Resonance) technology.

• Main items

Screening tests / ELISA / RIA / Biosensor / Chip / Ligand immobilisation / SPR

• Pedagogical objectives

- ✓ To be able to distinguish between screening and confirmatory tests
- ✓ To name screening tests based on immunoassays
- ✓ To compare RIA and ELISA as to their principles, advantages and disadvantages
- ✓ To cite the basic principle of an SPR bioassay
- ✓ To list the different steps in an SPR test

• Pedagogical tools

- ✓ Powerpoint slide show

• Duration

- ✓ 2 hours

• Pre-requisite

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