Toxicology Discipline Training Plan

Section Four – Technique/Instrument Update
Enzyme-Linked Immunosorbent Screening for Drugs-of-Abuse
Section Three – Technique/Instrument Update

Immunoassay Screening for Drugs-of-Abuse in Blood and Urine

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Section Three – Technique/Instrument Update
Immunoassay Screening for Drugs-of-Abuse in Blood and Urine

4.1 TRAINING OBJECTIVES

4.1.1 Introduction
This section of the Idaho State Police Forensic Services (ISP-FS) toxicology training plan is designed as a guide to provide a previously trained ISP-FS Analyst with the background necessary to screen blood or urine specimens to detect drugs-of-abuse compounds with the ELISA principle utilizing Analytical Method 1.0

4.1.2 Approach to Training
4.1.2.1 In order to address the training plan questions, the Required Reading cited, or equivalent, must be consulted if the Trainee is not familiar with the subject matter. Both the education and work experience of the Trainee must be considered, however, at least a verbal review of material for the trainer must be done to the satisfaction of the Trainer.

4.1.2.2 Answers to training plan questions may be provided verbally and/or in written form. This choice is at the discretion of the trainer.
**Section Three – Technique/Instrument Update**

**Immunoassay Screening for Drugs-of-Abuse in Blood and Urine**

4.2 IMMUNOASSAY

4.2.1 The trainee must demonstrate a working knowledge of theory and application of enzyme-linked immunosorbent assay (ELISA) technique.

- 4.2.2.1 Describe the basic ELISA process.
- 4.2.2.2 Discuss the attributes and limitations of ELISA.

3.3 DSX Chemistry ANALYZER OPERATION AND MAINTENANCE

4.3.1 The Trainee must demonstrate their ability to apply the DSX system software to operate the analyzer.

4.3.2 The Trainee must demonstrate a thorough understanding of the required periodic and as needed maintenance for the DSX analyzer.

4.3.3 The Trainee must demonstrate a thorough understanding of troubleshooting techniques for the DSX analyzer.

4.3.4 Background Reading:


- 4.3.4.3 DSX Automated ELISA System™ User’s Manual, REV.04-20-05, 2005.

- 4.3.4.4 OraSure Technologies DSX™ Startup Procedure and Setup of a Worklist.

- 4.3.4.5 OraSure Technologies Package Inserts for Serum Microplate EIA.

4.4 QUALITY ASSURANCE PACKET AND CASEFILE PREPARATION

4.4.1 The Trainee must describe how ELISA-generated data is to be included in analysis casefile.

4.4.2 The Trainee must describe the QA data that must be compiled in centrally stored files.
4.5 ANALYTICAL METHOD SIGN-OFF

4.5.1 The trainee must fully describe the steps involved in Analytical Method 1.0: Enzyme-Linked Immunosorbent Screening for Drugs-of-Abuse in Blood and Urine.

4.5.2 Trainee must describe the quality assurance requirements described in Analytical Method 1.0.

4.5.3 Trainee must describe the acceptance criteria for an ELISA analysis run.

4.5.4 Trainee must describe how quality assurance data is monitored and where it must be stored.

4.5.5 Required Reading
1. Analytical Method 1.0 Enzyme-Linked Immunosorbent Assay Screening for Drugs of Abuse in Blood and Urine.

4.6 COMPETENCY TESTING FOR ELISA URINE SCREEN
Upon the completion of this training plan update, the trainee must complete a competency test consisting of ≥6 specimens. The specimens will contain compounds commonly encountered in ELISA analysis or participate in the validation of the instrument and demonstrate competency by testing controls and case samples in parallel with another screening method.

4.7 COMPETENCY TESTING FOR ELISA BLOOD SCREEN
Upon the completion of this training plan update, the trainee must complete a competency test consisting of ≥6 specimens. The specimens will contain compounds commonly encountered in EMIT analysis or participate in the validation of the instrument and demonstrate competency by testing controls and case samples in parallel with another screening method.
Section Three – Technique/Instrument Update
Enzyme Immunoassay Screening for Drugs-of-Abuse in Urine

4.8 TRAINING PLAN TOPIC COMPLETION SIGN-OFF

4.1 TRAINING OBJECTIVES

Date of Completion  
Trainee

Trainer

4.2 ELISA

Date of Completion  
Trainee

Trainer

4.3 DSX CHEMISTRY ANALYZER OPERATION AND MAINTENANCE

Date of Completion  
Trainee

Trainer

4.4 CASEFILE PREPARATION

Date of Completion  
Trainee

Trainer
## Section Three – Technique/Instrument Update

Enzyme Immunoassay Screening for Drugs-of-Abuse in Urine

### 4.8 TRAINING PLAN TOPIC COMPLETION SIGN-OFF

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### 4.5 ANALYTICAL METHOD SIGN-OFF

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### 4.6 COMPETENCY TESTING - URINE

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### 4.7 COMPETENCY TESTING - BLOOD

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Revision History

Section Three – Technique/Instrument Update

Immuoassay Screening for Drugs-of-Abuse in Blood and Urine

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