

### Worldwide Counterfeit Drug Crisis

Counterfeit pharmaceuticals represent a violation of intellectual property rights and a serious public health risk. The World Health Organization (WHO) estimates that roughly 10 percent of the world's pharmaceuticals may be counterfeit or substandard, with some regions of the developing world with far higher rates. Even in Europe and the United States, counterfeit drugs are increasingly entering the supply chain, especially via internet sales. These drugs at best will not deliver the therapy they promise and at worst can endanger patients' very lives. Thousands of people, many of them young children, have lost their lives because they failed to receive the treatment they needed when they unknowingly took counterfeit drugs.



Instant authentication of suspect drugs

### Detecting Counterfeit Drugs

Makers of counterfeit pharmaceuticals are becoming increasingly sophisticated in their ability to create packaging that is visually indistinguishable from the authentic product. They are even able to duplicate holograms intended to make counterfeiting more difficult. Therefore, since visual inspection of counterfeits is inadequate to detect, chemical testing is the only viable alternative.

The standard test methods that can confirm the identity of pharmaceutical products require that samples be taken to a laboratory, where the packages are opened so that the samples can be prepared for analysis using instruments that require a highly trained technician to operate. In developing countries, laboratories of this type frequently lack the capacity to handle the number of samples that a counterfeit inspection program would generate.

It is clear that detecting counterfeit pharmaceuticals in developing countries requires a new approach to chemical testing; one that is not only rapid, accurate, and reliable, but can be performed on-site by non-technical personnel. The ideal technology would require no sample preparation and allow most samples to be tested in their original packaging.

### TruScan Makes Chemical Analysis as Easy as Visual Inspection

TruScan allows non-technical users to perform highly reliable and repeatable analyses wherever pharmaceuticals are found in the market. Using Raman spectroscopy, TruScan examines the chemical composition of all components of a pharmaceutical dosage—APIs, excipients, fillers, dyes, and coatings—to create a spectrum representative of the specific authentic material. Any slight deviation from the original formulation will lead to a detectable change in the resulting spectrum. This makes TruScan an ideal tool for rapid detection of counterfeit pharmaceuticals in the field.

- Analyze both solid and liquid dosage forms
- Scan directly through packaging, such as plastic, glass, blister packs and clear gel caps
- No sample handling or preparation required
- Easy to use by non-technical personnel with minimum training

### Using TruScan

TruScan is designed to be used by non-technical persons:

- Field Inspectors
- Regulators
- Customs Officials

The following steps enable a user to set up and use the TruScan system for detection of counterfeit pharmaceuticals:

A Program Administrator:

- Generates a reference signature or “fingerprint” of the authentic dosage form

A User:

- Uploads a reference signature from the central administrator to all units in the field via the internet or compact flash cards
- Selects the reference signature of the product to be tested
- Scans the product and one minute later receives a Pass/Fail result
- Downloads all results for a series of tests to central administrator for review and archiving

Ahura Scientific is committed to delivering solutions that bring chemical identification from the laboratory to the field and is proud to be part of the fight against counterfeit drugs.

The company is a contributing sponsor of the European Alliance for Access to Safe Medicines (EAASM) and participates in a number of global forums committed to combating the counterfeit drug trade.

